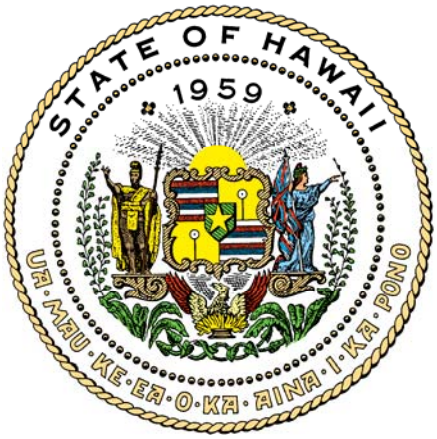
Report to the 2007 Hawai‘i State Legislature

Lead by Example
State of Hawai‘i Agencies’ Energy Initiatives
FY 2005-2006



State of Hawai‘i
Department of Business, Economic Development & Tourism
January 2007

This report and the original agency submissions in fulfillment of Act 96, SLH 2006, Part III and Act 160, Section 168.5, SLH 2006, can be found on the internet at:

http://www.hawaii.gov/dbedt/info/energy/efficiency/state/

Hawaiʻi. Dept. of Business, Economic Development and Tourism. Strategic Industries Division.
State of Hawaiʻi agencies' energy initiatives: leading by example, FY 2005-2006. Honolulu: 2007.

Report to the 2007 Hawaiʻi State Legislature.

1. Public buildings-Energy conservation-Hawaiʻi.
TJ163.5.B84.H39.2007

Table of Contents

Executive Summary 4
Legislative and Executive Mandates 7
Organizational Structure 8
Highlights of Agency Electricity Consumption 11
Electricity Costs by State Agencies 14
Best Practices in Building 17
Utility Rebates Save Money at State Facilities 20
Building a Solid Foundation for Lead by Example 22
Lead by Example Targets for Ongoing Efforts 26
Plans for Future Lead by Example Activities 27
Individual Agency Responses 29
Compilation of Agencies' Reports of Activities Relating to
the Statutory Requirements of Act 96 and Act 160 30
(Grouped by reporting requirement, with agencies in alphabetical order by initials)
Appendices .....
1. UHCC Report on Campus Efforts to Minimize Waste and Prevent Pollution 112
2. DHHL Transportation Vehicles and Fuel data 116
3. DOT Airports Transportation Vehicles and Fuel data 120
4. DOT Harbors Transportation Vehicles and Fuel data 126
5. HPHA Transportation Vehicles and Fuel data 129
6. HPHA Energy Consumption in kWh 133
7. DOT-Airports Planned projects to reduce energy consumption 138

State of Hawai‘i Agencies’ Energy Initiatives: Leading by Example During FY 05/06

Executive Summary

The Lead by Example (LBE) initiative began in 2006 in response to legislative and executive mandates to change the way that state executive agencies approach energy use in operations and facilities. These measures acknowledge the high cost of electricity in Hawai’i, the energy security benefits of alternative fuel use, and the many opportunities for increasing energy efficiency in new and existing state offices, facilities and schools. The legislation also called for the incorporation of environmentally preferable purchasing and procedures into state agency operations. Taken together and fully implemented, the Lead by Example initiative represents an important step in achieving long-term economic and environmental benefits for the state and is part of a comprehensive energy package passed in the 2006 legislative session. The continuing participation with and input from the Leadership Group and three Working Groups of LBE were essential to gathering the data contained in this initial report and will lay a strong foundation for future years’ activities.

Highlights of Achievements

- State executive agencies consumed only about 0.5% more energy in FY06 as compared to FY05.

- However, electricity costs rose 19.22% due to the escalating cost of oil—underscoring the importance of efficiency.

- Over $3.6 million in rebates have been provided by HECO and its subsidiaries to State of Hawai‘i agencies since 1996.

- Hawai‘i’s first state building to receive an Energy Star award is the Kapolei State Office Building. The Director of the U.S. Environmental Protection Agency presented an Energy Star plaque to Governor Lingle in February 2006. An Energy Star award means that a building is ranked in the upper 25% of all similar buildings nationally. The Kapolei State Building exceed the 75% standard with a ranking of 95%.

- In 2006 DBEDT joined a number of energy programs which provide support for energy efficiency efforts:

    - U.S. Environmental Protection Agency (EPA) Energy Star 10% Challenge program to improve the energy efficiency of state facilities by 10% and reduce greenhouse gas emissions.

- EPA's Clean Energy-Environmental State Partnership Program to develop and implement cost-effective strategies to further environmental and energy goals and achieve public health and economic benefits.

- U.S. Green Building Council (USGBC), on behalf of the state, to provide all state employees access to USGBC publications and training sessions at a reduced cost, as well as exclusive on-line reports, participation in local USGBC chapter events and reduced Leadership in Energy and Environmental Design (LEED) project registration and certification fees.

- In FY06 alone, DBEDT sponsored or cosponsored more than 45 training and informational events which included participation by over 289 state employees.

- Six state buildings have been completed or are under construction to meet LEED standards, from LEED Certified to LEED Platinum. The buildings are:

  - NELHA Hawai'i Gateway Energy Center: LEED Platinum

  - UH John A. Burns School of Medicine: LEED Certified

  - UH-Mānoa Frear Hall Resident Building (Building permit application phase; foundation under construction): LEED Silver

  - DOE Waipahu Intermediate School Cafeteria: LEED Certified

  - UH-Hilo Student Life Complex – Phase 1A (Under construction): LEED Certified

  - UH Hilo – Mauna Kea Astronomy Education Center (construction completed; pending verification for LEED Silver): LEED Silver

A number of other buildings and facilities also are planned to meet LEED standards.

- State agencies' purchases of environmentally preferable products increased from $750,000 in 2004 to $2.6 million in 2006.

- Agencies are now preparing to collect information on vehicle purchase cost, EPA rated fuel economy, mileage, fuel consumption and other data which will ensure a comprehensive approach to reducing costs with state vehicles.

Challenges

- While participating agencies are committed to Lead by Example, future results also are dependent on securing adequate implementation resources.

- Continuing to expand, refine, and assess data, activities, and plans will be essential to Lead by Example.

Legislative and Executive Mandates

This report is provided in response to legislative and executive mandates in 2006 which require state agencies to implement energy activities. These activities are now called the Lead by Example initiative. In leading by example, executive agencies are following requirements established by Act 96, SLH 2006, Part III, which reflects Administrative Directive 06-01, issued on January 20, 2006. Agencies are directed to improve energy, water and resource efficiency in state buildings, increase fuel efficiency, and use alternative fuels in state vehicles. In addition, in accordance with Act 160, Section 168.5, SLH 2006, agencies are reporting their electricity consumption for the past two years, steps taken to implement energy reduction efforts, and plans to reduce energy consumption in the future. Although not mandated, costs for the purchase of utility electricity also have been compiled.

This introduction provides information on electricity use and costs compiled from state agencies' reports, highlights of agencies' activities, and a discussion of the foundations laid in prior years which underlie present energy activities in support of Lead by Example. Executive agencies were invited to submit a report addressing Act 96, Part III, activities and Act 160, Section 168.5, requirements. These reports have been consolidated by the Department of Business, Economic Development, and Tourism (DBEDT). The consolidated report, which is attached, lists all agencies' activities under each section of Acts 96 and 160. Also available on the DBEDT website are the separate reports as submitted by each department and attached agency.

In response to the legislation and the administrative directive, DBEDT convened a kick-off meeting for all cabinet members on May 11, 2006 to initiate Lead by Example (LBE) efforts and to form plans to address the statutory and administrative mandates. At present, participating agencies are in what can be called the staging phase of LBE. As such, the agencies are focused on setting the framework for a course change in agency operations to implement LBE. This includes: developing a framework for communicating, planning, implementating and reporting energy efficiency activities; providing technical assistance and training to state agency personnel; developing tools for agencies to achieve their goals; establishing data baselines; and setting energy-savings targets.

A Leadership Group, assisted by three Working Groups, is constructing the framework outlined above.

Organizational Structure

In order to facilitate communication, technical assistance, data collection, and other tasks, the executive agencies developed an organizational structure for input and feedback.

1) The Leadership Group shares, discusses, and reviews plans, prepares reports, and makes recommendations governing the measures and requirements identified in the statutory and administrative directives. The Leadership Group is an inter-departmental horizontal partnership.

There also is a vertical intra-departmental partnership: each department's representative to the Leadership Group is responsible for coordinating that department's response to Act 96, Act 160, and Administrative Directive 06-01. The individuals in this Leadership Group are high-level representatives of executive departments and the University of Hawai‘i who have the authority to ensure communication and the commitment to develop policies and plans for each department. Certain key attached agencies who are large energy users also participate.

Overall coordination through the Leadership Group has allowed discussion on policy issues and recommendations. All agency input is channeled through the representative assigned to the Leadership Group. Working through the Leadership Group, each participating agency has developed its departmental energy Action Plan which is provided on the DBEDT website.

While preparing budget submittals for FB 07-09, the Leadership Group prioritized energy-efficiency-only projects to be funded by CIP or operating funds. The ranking was based on a sense of high return on investment and visibility value. The Leadership Group focused on selected energy-efficiency-only projects, as determined by each agency. Agencies also separately submitted "health and safety" budget requests which include energy efficiency measures, including requests to design and build to LEED standards.

2) The Buildings Working Group addresses implementation of the buildings and facilities directives, such as meeting the Leadership in Energy and Environmental Design (LEED) Silver standard. The Buildings Working Group is composed of department representatives (such as Division Heads for Public Works and Central Services of the Department of Accounting and General Services) who develop strategies, collect data, and implement projects. Ultimately, the Buildings Working Group's plans and recommendations will be forwarded to the Leadership Group for review.

3) The Environmental Practices and Procurement Working Group addresses waste minimization and pollution prevention. Its goals are to: promote "reduce, reuse, and recycle" as a standard operating practice; improve water conservation, construction and demolition waste management, and office paper and packaging recycling programs; use

life cycle cost-benefit analysis to support the purchase of Energy Star and other energy efficient equipment; and procure environmentally preferable products, including those having recycled content. The Environmental Practices and Procurement Working Group's plans and recommendations will be forwarded to the Leadership Group for review.

4) The Transportation Vehicles and Fuels Working Group addresses incorporating life cycle cost-benefit analyses so that projected fuel costs are included in vehicle purchasing decisions. In addition, it facilitates awareness of federal regulations affecting state fleets and ensures that purchased vehicles can use alternative fuels such as biodiesel and higher blends of ethanol-blended fuel. The working group also will discuss education programs to promote efficient vehicle operation and fuel purchases. The Transportation Vehicles and Fuels Working Group's plans and recommendations will be forwarded to the Leadership Group for review.

In the first year of Lead by Example, the Leadership Group focused on setting up the framework for communication and gathering information for this report. Due to time constraints, much of the efforts of 2006 were conducted primarily through the Leadership Group. Efforts with the Working Groups focused on introducing members to the new mandates, providing training opportunities, and gathering feedback about agency needs in addressing LBE. The discussions with the Working Groups will continue, but in 2007, new efforts specific to each Working Group will be initiated in support of LBE.

This initial phase of LBE also included identifying and preparing the tools to help agencies succeed. Therefore, DBEDT provided training support by funding registration fees for conferences, seminars, and workshops. For example, DBEDT paid the registration fees for 40 state personnel who attended the American Council of Engineering Companies of Hawai'i symposium which included a track on LEED practices and application in Hawai'i. State personnel appreciated this assistance because departmental budgets would not otherwise have allowed such extensive participation. DBEDT also sponsored and co-sponsored a number of workshops, training sessions, and other opportunities for state personnel. By co-sponsoring events with private organizations such as professional organizations, state funds were matched or exceeded by external funding. DBEDT and the Leadership Group will continue training opportunities and to develop tools such as guidelines for LEED and performance contracting, case studies, and other documents.

Providing technical assistance is another method of supporting agencies as they incorporate commissioning, retrocommissioning, and new design and operating proceedures under LEED. *Building commissioning* is associated with new construction projects and is a process of ensuring that new buildings and their systems perform as designed. It is a whole-building approach which examines operating systems and characteristics to optimize performance. Commissioning of existing buildings, also known as *retrocommissioning*, helps to systematically optimize building systems so that they operate efficiently and effectively. Retrocommissioning typically focuses on

heating, ventilating, and air conditioning systems as well as lighting controls to reduce electrical consumption and demand. Commissioning is an important element of the LEED process for designing new buildings or remodeling existing ones.

Agencies need objective technical information which specifically applies to their circumstances. DBEDT has already held preliminary meetings with other state agencies, including several meetings with the Public Works and Central Services Divisions of the Department of Accounting and General Services (DAGS). DBEDT and DAGS will work together to implement pilot projects and provide staff training. Discussions with other departments also show the need for technical assistance and training appropriate to the target audience. Implementing LEED and commissioning/retrocommissioning will require educating state personnel, from facilities managers to project managers. Without training and the tools to achieve efficiency goals, LBE cannot succeed.

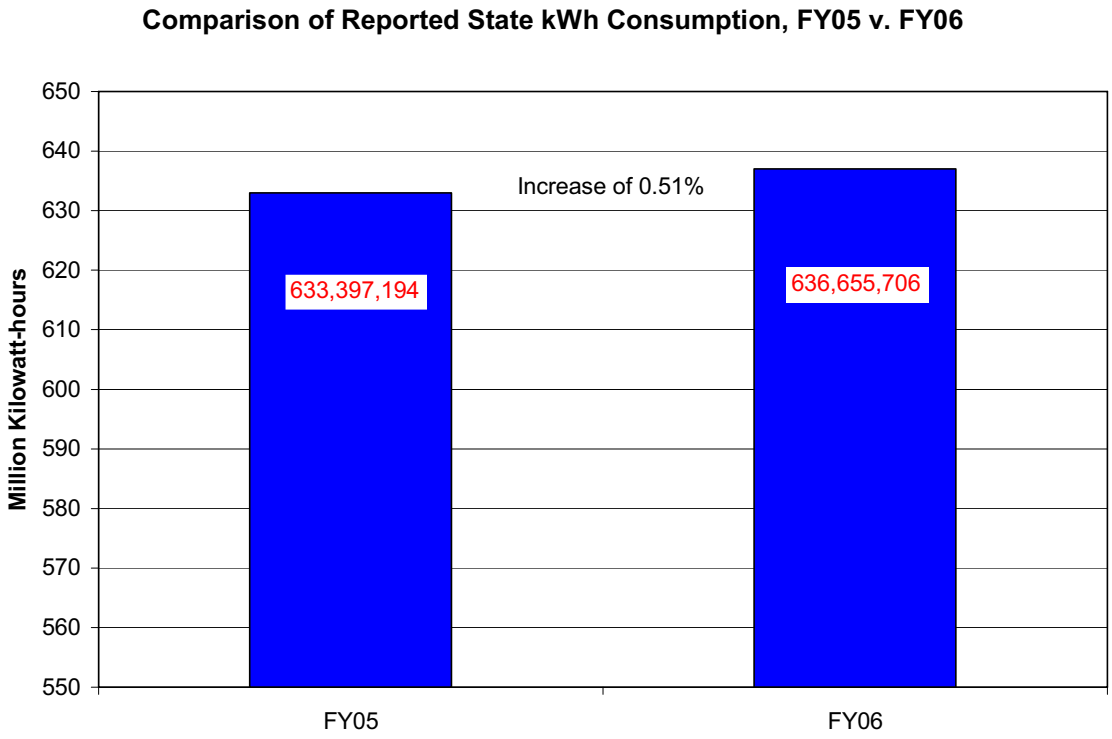
Developing a data baseline will be valuable for measuring progress. Knowing what the baseline is and how near agencies are to their energy savings targets will provide valuable feedback. Certain specific types of activities will be tracked, but the actual amount of savings will depend on a variety of factors, such as the degree of efficiency of the equipment purchased, the funding available to purchase more efficient systems, and the timing of a project. In general, new construction projects can take four to six years for planning through completed construction. The task before Lead by Example will be to develop appropriate types of reporting/data collection systems in cooperation with other agencies.

Some challenges will be faced when developing baseline data and targets. Devising targets often depends on resolving technical issues, such as the ability to obtain a separate utility bill for a single building or for separate floors of a building. Some departments are responsible for building maintenance, others are not. Some buildings house multiple departments. Addressing these technical issues will be just one of many challenges facing LBE efforts.

This report summarizes the achievements, activities, and needs of agencies to Lead by Example. It focuses on consolidating and highlighting information on agency efforts to implement energy savings. At present, state agencies implement energy and renewable energy without a coordinated effort to articulate, report, and evaluate activities. Therefore, the successes, lessons learned, and data may not be shared. Barriers and challenges are faced separately. Possible solutions are lost. Lead by Example will compile and report on successes, as well as help to coordinate efforts to find solutions to challenges. This report shows that through the dedicated efforts of agencies, much has been achieved, but much more is planned. With support and resources, agencies are optimistic that LBE goals can be achieved.

Highlights of Agency Electricity Consumption

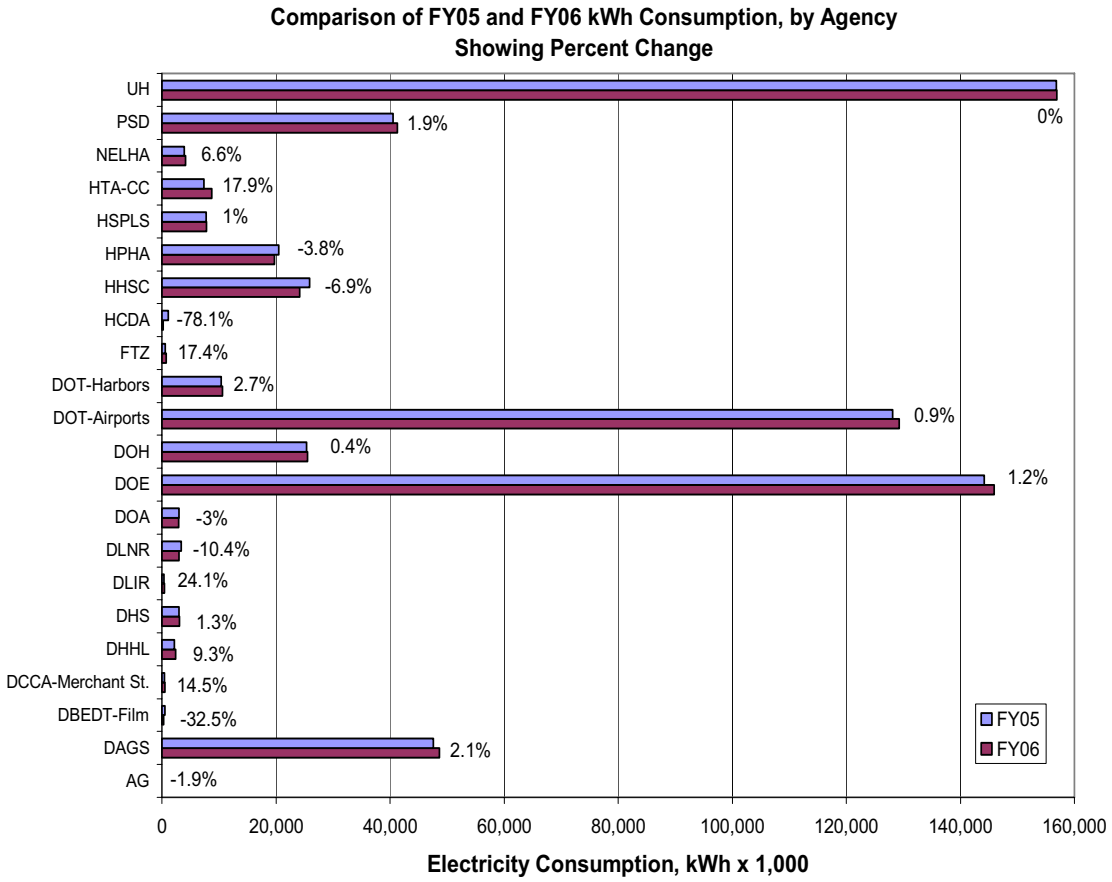
Each agency's reported kWh consumption, as required under Act 160, SLH 2006, has been summarized. Energy use within individual agencies varied widely during the past biennium, with some agencies' consumption increasing significantly while others used notably less electricity. Overall, however, state executive agencies consumed only about 0.5% more energy in FY06 compared to FY05, as shown below.[1]



Some agencies have responsibility for their own electric bills, while others' consumption is aggregated under DAGS. Four agencies account for a major portion of the electricity used by the executive branch: the University of Hawai'i campuses, the Department of Education, the Airports Division of the Department of Transportation, and DAGS.

Roughly 80% of the 2,625 buildings owned and operated by the state government are on O'ahu.

[1] The amounts shown do not include several executive agencies which did not report their kWh consumption: Department of Defense, the Department of Transportation's Highways Division, and Hawai'i Housing Finance & Development Corporation.



As shown in the chart above, the four agencies with the largest electricity consumption showed minimal increases in the amount of electricity consumed in 2006 compared to 2005. A number of the smaller agencies showed much greater differences. Some decreases, such as the DBEDT Film Office's reduction of 32.5%, reflect deliberate energy conservation measures; in this case, the new film studio was designed with energy-efficient lighting. The 78% decrease experienced by the Hawai'i Community Development Authority (HCDA), however, resulted from a tenant vacating a building.

Other offices showed significant increases in electricity consumption, sometimes the result of moving to larger facilities. This was the case with the Foreign Trade Zone and the Department of Labor and Industrial Relations. The 6.6% increase at the Natural Energy Laboratory of Hawai'i Authority, though, reflected increased electrical consumption for pumping seawater.

The kilowatt-hour consumption and percentage changes are also summarized in the following table. It should be noted that several agencies' utility bills are consolidated into DAGS' report, since they are not separately billed.

Utility Electricity Consumption by State Agencies

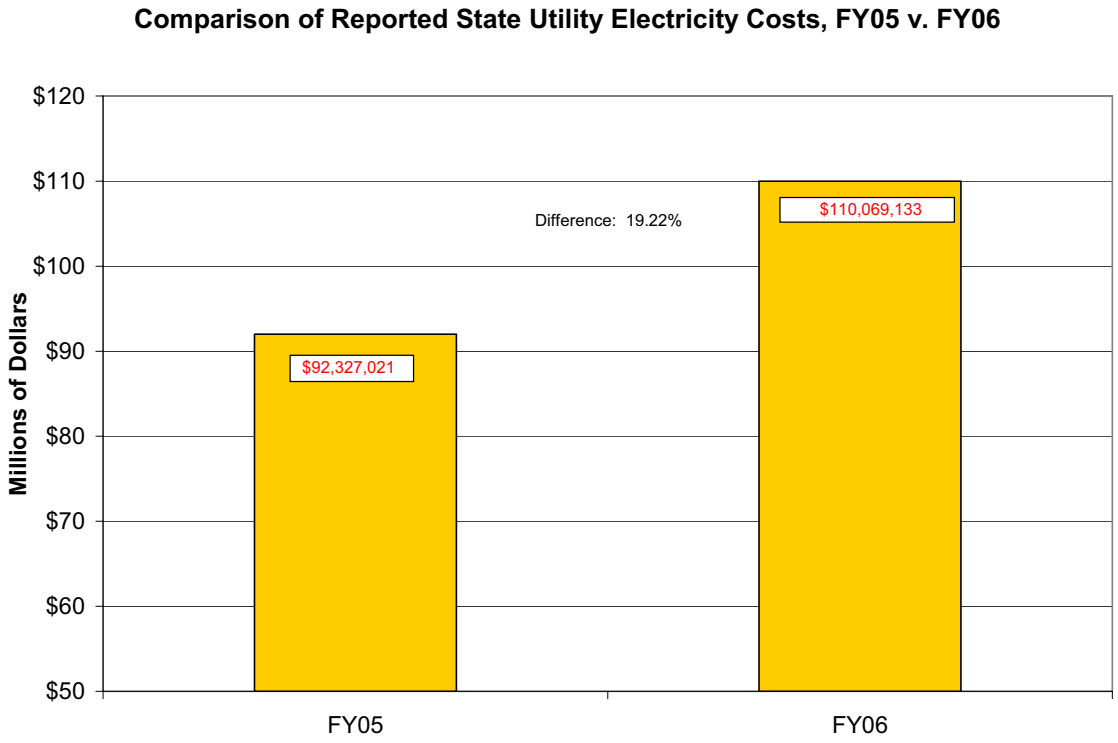
Agency[2]	FY05 kWh	FY06 kWh	Difference	%
Attorney General (AG)	35,471	34,794	-677	-1.9
Accounting & General Services (DAGS)[3]	47,633,924	48,653,881	1,019,957	2.1
Business, Economic Development & Tourism (DBEDT) Film Office	496,413	335,160	-161,253	-32.5
Commerce & Consumer Affairs (DCCA)	461,668	528,754	67,086	14.5
Hawaiian Home Lands (DHHL)	2,213,061	2,418,248	205,187	9.3
Human Services (DHS)	3,048,045	3,087,144	39,099	1.3
Labor & Industrial Relations (DLIR)	368,917	457,698	88,781	24.1
Land & Natural Resources (DLNR)	3,401,920	3,049,065	-352,855	-10.4
Agriculture (DOA)	3,029,525	2,937,939	-91,586	-3
Education (DOE)	144,176,208	145,947,093	1,770,885	1.2
Health (DOH)	25,419,459	25,512,832	93,373	0.4
Transportation (DOT) Airports Division	128,112,378	129,281,336	1,168,958	0.9
Transportation (DOT) Harbors Division	10,374,592	10,656,125	281,533	2.7
Foreign Trade Zone (FTZ)	614,400	721,280	106,880	17.4
Community Development (HCDA)	1,150,027	252,285	-897,742	-78.1
Hawai‘i Health Systems Corp. (HHSC)	25,933,919	24,151,087	-1,782,832	-6.9
Public Housing Authority (HPHA)	20,480,548	19,705,985	-774,563	-3.8
Public Library System (HSPLS)	7,779,767	7,857,594	77,827	1
Convention Center (HTA-CC)	7,389,600	8,715,000	1,325,400	17.9
Natural Energy Laboratory (NELHA)	3,917,223	4,175,209	257,986	6.6
Public Safety (PSD)	40,544,906	41,295,569	750,663	1.9
University of Hawai‘i (UH)	156,815,223	156,881,628	66,405	0

[2] Data were not provided by the Department of Defense, Department of Transportation-Highways Division, or Hawai‘i Housing Finance and Development Corporation.

[3] DAGS' data include consumption by the Aloha Stadium plus that of agencies occupying buildings operated by DAGS, such as Dept. of Budget & Finance, Dept. of Human Resources Development, Dept. of Taxation, and most locations of Dept. of Business, Economic Development & Tourism and Dept. of Commerce & Consumer Affairs.

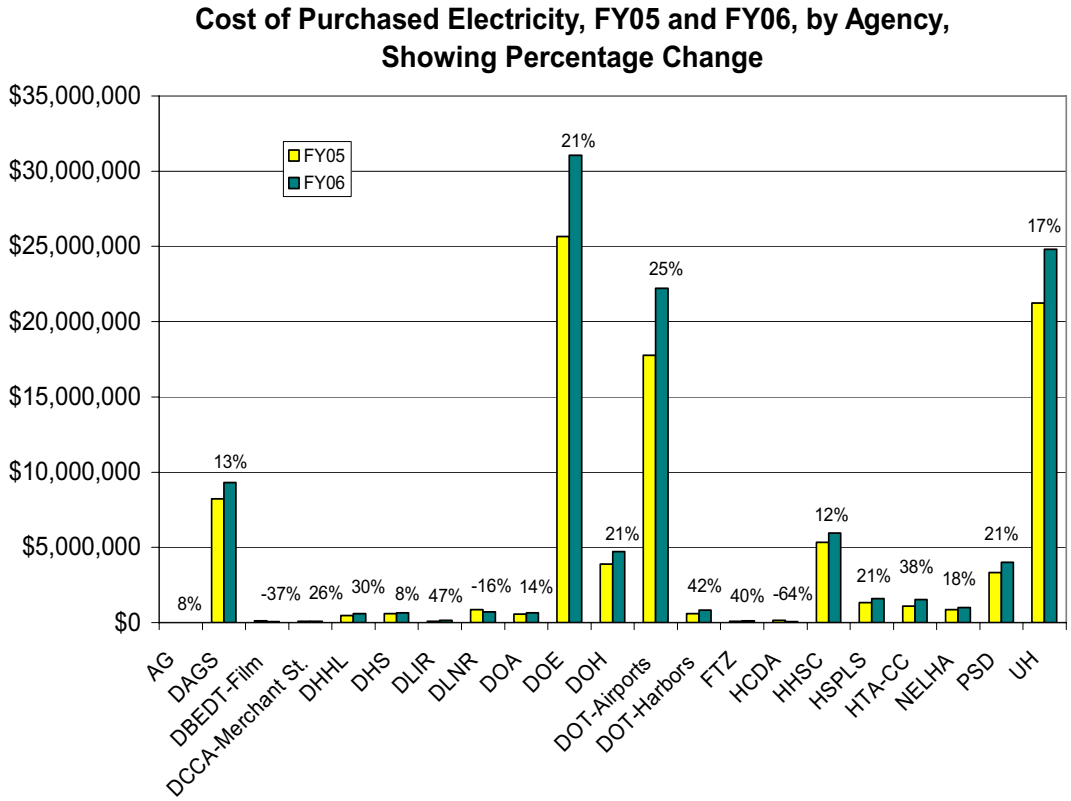
Electricity Costs by State Agencies

State agencies reporting their electricity use consumed 633,397,194 kWh of utility electricity in fiscal year 2005. This consumption increased to 636,655,706 kWh during FY06, an increase of 0.51%. Electricity purchased from the public utilities cost the state $92,327,021 in FY05, compared to $110,069,133 in FY06. This increase of 19.22% in electricity costs, despite the minimal increase in electrical consumption, is due to the escalating cost of oil. The totals for the two fiscal years are shown in the chart below.[4]



Individual agencies' energy bills generally reflected increased utility costs due to the escalating price of oil in FY06, as shown in the following chart.

[4] Total electricity costs shown in the chart do not include those of several executive agencies which did not submit these data: Department of Defense, Department of Transportation-Highways Division, Hawai'i Housing Finance & Development Corporation, and Hawai'i Public Housing Authority.



Agencies reported electricity costs for FY05 and FY06 as shown in the table below, which also lists the difference in dollars paid for utility electricity from year to year, and percentage change.

In addition to the purchased electricity documented in the table, the Hawai‘i Health Systems Corporation (HHSC) spent $233,154 in 2006 on fuel for its cogeneration system at Kona Community Hospital, and $255,411 in 2006 for the West Kaua‘i Medical Center cogeneration system. The Kona system, however, was not operative for the entire year. Sometimes called “combined heat and power” (CHP), cogeneration systems produce heat (often used to heat water) as well as electricity and can reduce total energy costs. They also provide an independent, non-utility source of power.

Cost of Purchased Electricity by State Agencies

Agency[5]	FY05	FY06	Difference	%
Attorney General (AG)	$10,747	$11,648	$901	8.4
Accounting & General Services (DAGS)[6]	$8,234,347	$9,299,119	$1,064,772	12.9
Business, Economic Development & Tourism (DBEDT) Film Office	$113,702	$71,280	-$42,422	-37.3
Commerce & Consumer Affairs (DCCA)	$76,812	$96,583	$19,771	25.7
Hawaiian Home Lands (DHHL)	$464,665	$599,422	$134,757	29
Human Services (DHS)	$599,238	$645,238	$46,000	7.7
Labor & Industrial Relations (DLIR)	$92,199	$135,558	$43,360	47
Land & Natural Resources (DLNR)	$852,455	$712,227	-$140,228	-16.4
Agriculture (DOA)	$571,592	$651,192	$79,600	13.9
Education (DOE)	$25,669,598	$31,061,774	$5,392,176	21
Health (DOH)	$3,897,300	$4,709,723	$812,423	20.8
Transportation (DOT) Airports Division	$17,764,163	$22,207,907	$4,443,744	25
Transportation (DOT) Harbors Division	$574,858	$815,110	$240,253	41.8
Foreign Trade Zone (FTZ)	$87,877	$122,938	$35,060	39.9
Community Development (HCDA)	$149,278	$53,436	-$95,842	-64.2
Hawai‘i Health Systems Corp. (HHSC)	$5,334,695	$5,946,096	$611,401	11.5
Public Library System (HSPLS)	$1,317,074	$1,593,157	$276,083	21
Convention Center (HTA-CC)	$1,104,125	$1,521,343	$417,218	37.8
Natural Energy Laboratory (NELHA)	$859,245	$1,015,794	$156,549	18.2
Public Safety (PSD)	$3,321,225	$4,006,252	$685,027	20.6
University of Hawai‘i (UH)	$21,231,826	$24,793,336	$3,561,509	16.8

[5] Data were not provided by the Department of Defense, Department of Transportation-Highways Division, Hawai‘i Housing Finance & Development Corporation, or Hawai‘i Public Housing Authority.
[6] DAGS' data include expenses by the Aloha Stadium plus those of agencies occupying buildings operated by DAGS, such as Dept. of Budget & Finance, Dept. of Human Resources Development, Dept. of Taxation, and most locations of Dept. of Business, Economic Development & Tourism and Dept. of Commerce & Consumer Affairs.

Best Practices in Building

Building for energy efficiency is becoming a standard practice. For example, in 2006 a number of existing state buildings were assessed for compliance with federal Energy Star standards; an Energy Star label means that a building is ranked in the upper 25% of all similar buildings nationally. The new Kapolei State Building received an Energy Star award, with a ranking of 95%. Other state buildings may achieve Energy Star status after additional upgrades.

DBEDT has also joined the U.S. Environmental Protection Agency (EPA) Energy Star 10% Challenge program. EPA has set a program goal of improving the energy efficiency of state facilities by 10% and reducing greenhouse gas emissions.

The processes involved in achieving Energy Star status complement those of the Leadership in Energy and Environmental Design (LEED) program. In general, U.S. buildings which are designed and built to the LEED Silver standard are about 30% more efficient than conventional buildings, but cost an average of only 2% more to construct, due mostly to increases in architectural and engineering design time. As more experience is gained in green design, the cost premium has dropped several percent, or even to zero in some markets. In Hawai‘i, DAGS' preliminary estimate is that the cost premium may be somewhat higher than the national average, perhaps as much as 10% to 15% more for total design and construction costs.

In addition to energy savings, LEED Silver standards dictate improved indoor environmental quality, which has been linked to reduced absenteeism and increased productivity.

Recognizing the long-term benefits of green buildings, some state agencies have aggressively pursued sustainable design in new construction, including attaining LEED certification. State agencies' participation in the LEED program is encouraged by DBEDT, which joined the U.S. Green Building Council (USGBC) in 2006. DBEDT's membership in USGBC on behalf of the state allows all state employees access to USGBC publications and training sessions at a reduced cost, as well as exclusive on-line reports, participation in local USGBC chapter events and receiving reduced LEED project registration and certification fees.

In strong support of Lead by Example by state agencies, the following LEED buildings have been completed or are in process:

- Natural Energy Laboratory of Hawai‘i Authority Gateway Center: LEED Platinum
- UH John A. Burns School of Medicine: LEED Certified
- UH-Mānoa Frear Hall Resident Building (Building permit application phase for one section; under construction for another section; pending verification for LEED Silver): LEED Silver
- DOE Waipahu Intermediate School Cafeteria: LEED Certified

- UH-Hilo Student Life Complex—Phase 1A (under construction; pending verification for LEED Silver): LEED Silver
- UH-Hilo – Mauna Kea Astronomy Education Center (construction completed; pending verification for LEED Silver): LEED Silver

The listing below indicates agencies' commitments to build more efficient buildings with improved indoor environmental quality. The number of projects which were already in the planning stages before Lead by Example was formally initiated, and the new projects proposed, show that state agencies are prepared to Lead by Example. State agencies have proposed the following LEED buildings:

- DAGS/Libraries Pilot Projects (Planning phase): LEED Silver
  - Mānoa Public Library
  - Kohala Public Library
- DAGS Pilot Projects (Planning phase):
  - Kamamalu Building renovation: LEED Silver
  - Retrocommissioning Pilots
    - O‘ahu - 3 projects (State Capitol, Kalanimoku Building, and Ke‘elikolani Building)
    - Neighbor Islands - 2 projects (Hilo State Office Building and Lihu‘e State Office Building)
- DOE – Evaluating opportunities for LEED Silver
  - New School: Considering LEED Silver for Wailuku II Elementary and ‘Ewa Makai Middle Schools
  - New Classroom Projects: Considering LEED Silver for Na‘alehu Elementary & Intermediate Six Classroom Building followed by Lāna‘i High & Elementary Six Classroom Building.
  - New Support Facilities (include administration, cafeteria, library, auditorium, and locker/shower): Considering libraries for Kapa‘a Elementary and Baldwin High Schools.
- DOT – Airports:
  - Honolulu International Airport, Terminal Modernization, New Mauka Concourse Improvement (planning and design phase): LEED Silver
  - Kona International Airport, Terminal Modifications (planning and design phase): LEED Silver
  - Moloka‘i Airport Aircraft Rescue Fire Fighters Station Improvements (planning and design phase): LEED Silver
- HPHA does not foresee any new building being constructed in the near future. However, for all existing housing projects that will be modernized, HPHA is committed to working toward LEED Silver. Current Projects under modernization are:
  - Ka Hale Kahalu‘u
  - Kalihi Valley Homes
  - Lanakila Homes Phase 3A
- UH-Leeward Community College – Social Science and Teacher Education (funded for design phase): LEED Silver

- UH-Hilo - Science and Technology Building (under design): LEED Silver
- UH-Hilo – Hawaiian Language Building (funded for planning and design phase): LEED Silver
- UH- Mānoa – Kennedy Performance Arts Facilities (funded for design phase): LEED Silver
- UH- Mānoa – Coconut Island Biology Research Laboratories (under design; no construction funds; to seek federal funds): LEED Gold
- UH- Mānoa - College of Education/Laboratory School Building (preliminary planning phase; no funding): LEED Silver
- UH West O‘ahu – New campus (under design; currently included in budget request for construction): LEED Silver
- Maui CC – Science Facility (program planning phase; funded for design; funds not released): LEED Silver
- Kapi‘olani CC – Culinary Institute of the Pacific (preliminary design phase; no construction funds): LEED Silver

Some agencies are also pursuing renewable energy projects to offset their purchase of utility electricity. NELHA expects to obtain electricity from both OTEC and photovoltaic (PV) projects, and UH-Hilo is installing PV arrays on its buildings. As provided for by Act 96, SLH 2006, up to $5 million will be spent to install photovoltaic arrays on at least one public school in each of the four counties. A number of agencies are jointly examining the use of renewable energy and net metering opportunities.

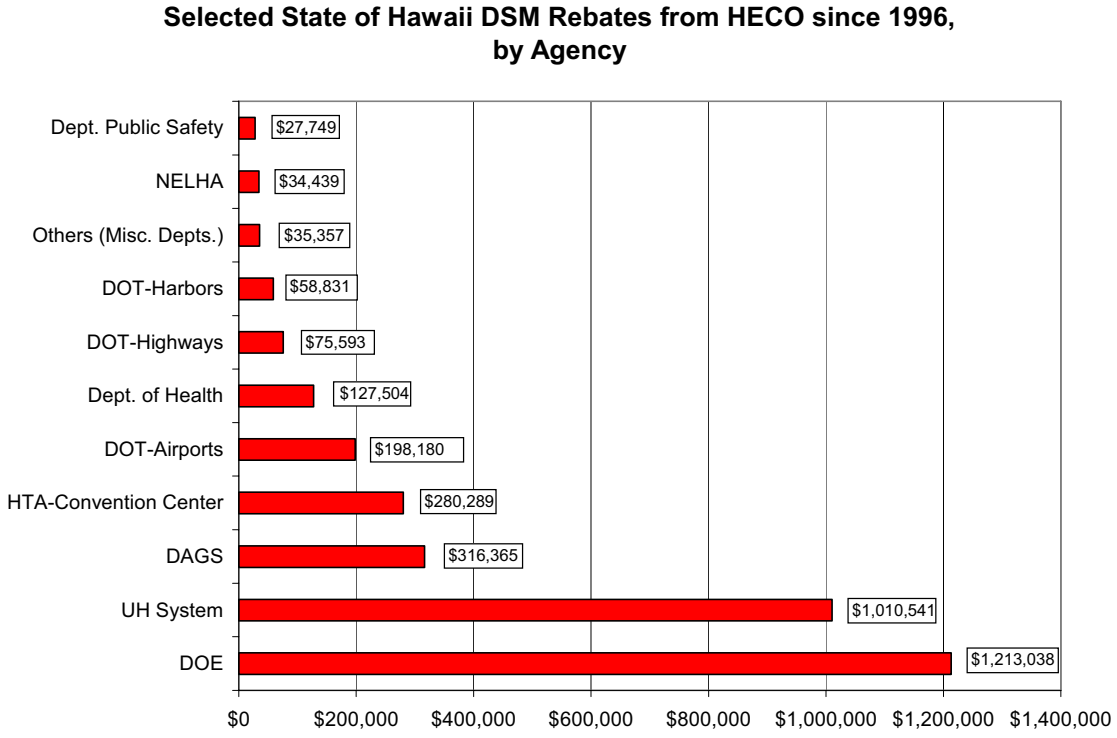
Utility Rebates Save Money at State Facilities

Many public agencies also have taken advantage of utility-sponsored demand-side management (DSM) programs offered during the past decade. Under various DSM programs, utilities have provided rebates for both retrofit and new construction in the areas of lighting, heating/ventilation/air conditioning (HVAC), and motors, and also have supported customized approaches.

According to figures from Hawaiian Electric Company, Ltd. (HECO), over $3.6 million in rebates have been provided by HECO and its subsidiaries to State of Hawai‘i agencies since 1996. Most of the rebates—$2.7 million—were provided to agencies on O‘ahu, with facilities on the island of Hawai‘i receiving $511,842 and those in Maui County receiving $420,194. Kaua‘i Island Utility Cooperative (KIUC) does not provide rebates but does offer facility audits, pending availability of KIUC staff.

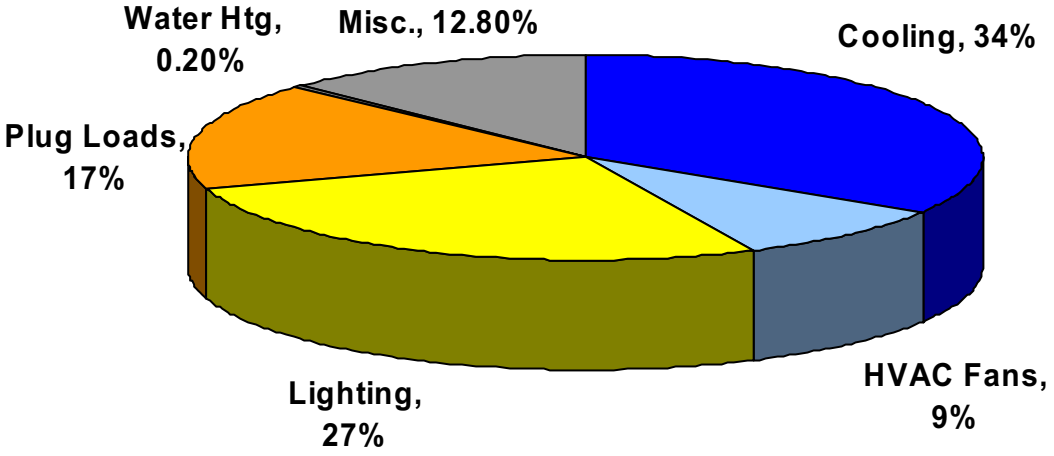
The benefits of the HECO-supported rebates include 11 megawatts (MW) of demand savings and 50,000 MWh of energy savings each year, approximately enough electricity to serve 6,800 homes annually. Cumulatively, since 1996, 301,823 MWh have been saved at state facilities. The efficiency measures avoided the importation of 93,800 barrels of oil and the emission of 48,000 tons of carbon dioxide, and saved enough power to energize 41,000 households for one year.

The Department of Education and the University of Hawai‘i were the largest beneficiaries, with over $1 million in rebates each as shown in the following chart.



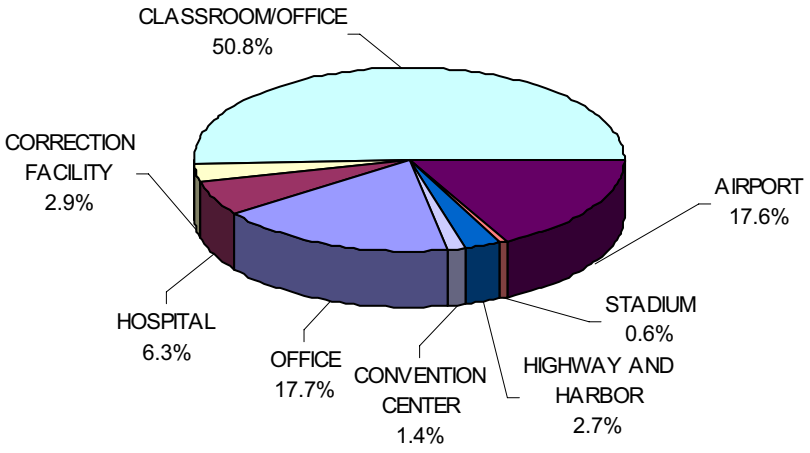
HECO's data show that a typical office building's electricity is primarily used for space conditioning: providing cooling and operating HVAC fans required 43% of a building's electricity. Lighting was a strong second at 27%. "Plug loads" such as computers, copiers and other equipment were responsible for 17% of the electricity consumed, and water heating was only 0.2%. Miscellaneous uses accounted for the remaining 12.8%. These data, shown in the chart below, indicate some of the most promising targets for energy conservation.

Office Building Energy Breakdown (per HECO data)



When State of Hawai'i facilities on O'ahu are examined by type, it is evident that campuses consisting of classrooms and offices consume half of the electricity. Office buildings and the Honolulu International Airport respectively consume 17.7% and 17.6% of the total. The public hospital system is also a significant consumer, accounting for 6.3%. These data are shown in the chart below.

STATE OF HAWAII FACILITIES IN OAHU ELECTRICITY CONSUMPTION BY OCCUPANCY TYPE



Building a Solid Foundation for Lead by Example

Since the State of Hawai‘i established its energy program in 1974, state agencies have undertaken myriad activities focusing on energy efficiency, conservation, and renewable energy, often assisted by DBEDT. DBEDT's director, the state's Energy Resources Coordinator, is responsible for coordinating energy activities statewide.

These years of programmatic action have positioned the administration to rapidly implement the Lead by Example initiative. The state's energy efforts have progressed through the following stages: foundation; benchmarking; assessments; training and certification; project identification and prioritization; budgeting; and execution. Decades of effort by the state's energy staff and state agencies' efforts have already built a solid foundation, completed some benchmarking and assessments, provided numerous opportunities for training, and initiated project identification, budgeting and execution for a number of specific buildings. Some of the achievements activities and achievements are described below.

Building Efficiency

Buildings consume 70% of the nation's electricity and a large portion of the materials, water and waste used and generated in our economy. Because energy efficiency in buildings pays off over the multi-decade life of the structure and equipment, much of Hawai‘i's energy program has focused on embedding conservation practices in building construction and operation. In cooperation with the counties, DBEDT developed a Model Energy Code which has been the basis for updates to each county's building code. It's estimated that these codes will conserve approximately 3 billion kWh and at least $316 million in cumulative savings by the year 2022.

In order to assess improvements in building efficiency, it's necessary to determine how much energy is being consumed prior to implementing conservation efforts. A recent study of state facilities on O‘ahu evaluated their electricity consumption in 2004 and characterized the distribution of electricity use by agency, building occupancy type and end use. Selected energy conservation measures were then benchmarked and a projection of the cost for their implementation and their associated energy savings potential were identified.

Although the study was conducted with limited funding, was of short duration, and, of necessity, relied on existing data, the benchmarking study showed that air conditioning was the largest single use for electricity in the O‘ahu facilities examined, at 44%, with lighting second at 38%. Eleven energy conservation measures were identified which, if implemented, could produce annual energy savings of over 78 million kWh. The top four measures, in order of magnitude, are chiller retrofits, interior and exterior lighting replacement, facility energy management systems, and variable speed drives. The study projected annual cost savings of $10.74 million, or 15%. The results of this study, and those of energy surveys and audits previously

conducted, are being used to determine the potential for energy performance contracting by the affected state agencies.

Energy performance contracting is a proven method of achieving energy savings when retrofitting existing buildings. DBEDT initiated performance contracting a decade ago, and continues to offer technical assistance to agencies. Performance contracts have been saving significant amounts of energy at agencies such as the University of Hawai‘i at Hilo and The Judiciary. Others, including the Hawai‘i Public Housing Authority, are soliciting similar contracts.

The first energy savings performance contract on a state facility covers the University of Hawai‘i at Hilo and Hawai‘i Community College campuses. Implementation at the more than 50 buildings on the two campuses in Hilo began in October 1996; the project will end February 14, 2007. Although the contract ends in February, the energy-efficient equipment that was installed will continue to accrue energy savings. As of June 2006, the $3 million investment in energy efficiency retrofits had produced over $6.5 million in energy cost savings.

More recently, The Judiciary instituted a $1.5 million lighting-only retrofit of five courthouses, four on O‘ahu and one on Maui. The first year savings, as of April 2005, was $253,000 or 16%. There is a 10-year guaranteed payback.

Campuses of Hawai‘i’s public schools use a significant amount of energy, nearly 146 million kWh in FY06. Working with DBEDT and professional architects, DOE has developed guidelines for high-performance schools which will ensure that facilities are as efficient as possible. Along with other analyses—such as fact sheets on commissioning for schools and high-performance classroom prototypes—and a study of energy use in K-12 classrooms performed by the U.H. School of Architecture, these guidelines offer recommendations for increasing comfort and reducing energy use on Hawai‘i’s public school campuses.

Training and Outreach

Numerous training and education opportunities have been organized or cosponsored by DBEDT to benefit state agency employees, the private sector and the general public. These training opportunities, seminars, workshops, conferences and events ensure that state facilities managers are aware of the latest equipment and energy-saving techniques. In FY06 alone, DBEDT sponsored or cosponsored more than 45 training and informational events which included participation by over 289 state employees.

Included among these events were many LEED training sessions. LEED, the Leadership in Energy and Environmental Design program administered nationally by the U.S. Green Building Council, is a widely-accepted framework which can result in significant energy savings and reduced environmental impact for buildings which incorporate its criteria. A member of DBEDT’s staff was the first state employee to

become a LEED-accredited professional. Others participated in study sessions preparing for the LEED exam; subsequently, an employee of the Department of Transportation's Airports Division also earned this distinction. Other state personnel are planning to take the exam to become LEED-accredited professionals.

In addition, numerous references have been published to assist agencies in their energy projects. Future energy reduction in state facilities will be guided by continued training and reference to documents such as *Hawai'i High-Performance Schools Guidelines* and *Hawai'i High Performance Classroom Prototypes*, developed by DBEDT and the Department of Education (DOE). Other agencies have also drafted documents to guide them, such as the Department of Agriculture's *Energy and Water Action Plan*, the University of Hawai'i's *Repairs and Maintenance Program*, DOE's *Goals and Policy for the Implementation of Act 96*, DAGS' *Design Consultant Criteria Manual*, DBEDT's *Energy Performance Contracting Guide*, and the *Commercial Building Guidelines for Energy Efficiency*. For residential construction, DBEDT's *Field Guide for Energy Performance, Comfort, and Value in Hawai'i Homes* is a valuable reference.

In addition to utilizing formal certification programs such as LEED and Energy Star, simple improvements can be made to reduce energy consumption. For instance, in order to prevent heat gain in state-owned residential buildings, the Hawai'i Public Housing Authority is ensuring that roof repairs carried out at six different housing projects comply with the Model Energy Code, which requires insulation, radiant barriers and similar "cool roof" construction techniques.

Completing assessments of electricity use, replacing incandescent lamps with efficient compact fluorescents, ensuring that air conditioning is turned off during evenings and weekends, reducing thermostat settings on water heaters, and issuing reminders to staff regarding energy conservation are among the other actions taken by state agencies to reduce energy use. Activities to date have helped to keep statewide electricity consumption levels nearly flat, helping to minimize utility bills which are escalating along with international oil prices. Continued data collection, facilitated in some cases by the installation of sub-meters on individual buildings, such as at the UH-Mānoa campus, will provide a solid basis for continued action.

Purchasing Practices

Exploring another avenue for saving energy, DBEDT obtained a U.S. Department of Energy grant and worked with the UH-Mānoa to demonstrate an Energy Star dorm room, documenting that simply purchasing energy-efficient equipment can save over $138 per room annually. As a result, UHM Housing Services has committed to purchasing Energy Star refrigerators and washing machines, and converting incandescent lighting to either compact fluorescent or LED fixtures. The new 800-bed Frear Hall student housing project, which is aiming for LEED Silver, will use Energy Star appliances. In May 2006, the UHM campus signed on with EPA as an Energy Star partner, confirming its commitment to environmental stewardship.

Environmentally preferable products, including those with Energy Star ratings and those with recycled content, are incorporated into the price and vendor lists provided by DAGS' State Procurement Office (SPO). Thus, choices for energy efficient products are available for all offices utilizing devices such as copiers and computers, as well as those purchasing supplies such as office paper, manila folders and envelopes. State purchasing agencies are required to purchase office paper and printed materials with recycled content.

To supplement the energy- and resource-efficient products already on the SPO price list, a Western States Contracting Alliance contract has been signed with Grainger, Inc. This will provide agencies with additional purchasing opportunities and access to Energy Star, Green Seal, National Electrical Manufacturers' Association Premium, recycled content and water-conserving products approved for purchase by state agencies.

State agencies' purchases of environmentally preferable products during 2004 were surveyed by the State Department of Health and EPA. A total of 112 agencies reported spending more than $750,000 on recycled content products. The agencies found that 90% of the office paper they purchased contained recycled content, resulting in the environmental savings of 523 trees, 741,360 gallons of water, 359,714 kilowatt-hours of electricity, and 160,796 pounds of greenhouse gas/CO2 emissions.

Due to resource constraints, the survey was not conducted in 2005.

The FY2006 survey showed that state agencies' total spending on environmentally preferable products increased significantly to $2.6 million. Environmental benefits are being calculated.

Agency Actions Relating to Vehicles

Not all state agencies have vehicle fleets. Those that do must comply with federal and state regulations relating to the purchase of efficient vehicles, and to purchase the most fuel-efficient vehicles that meet the needs of their programs.

State Purchasing Office (SPO) contracts include the purchase of ethanol-blended gasoline and will include other alternative fuels when available. SPO also requires contractors who supply fuel to state vehicles to provide reports on the purchase of gasoline and diesel fuel, which will allow analysis of fuel use. State law has also established a purchase preference for biofuels.

Agencies are now preparing to collect information on vehicle purchase cost, EPA rated fuel economy, mileage, fuel consumption and other data which will ensure a comprehensive approach to reducing costs with state vehicles.

Lead by Example Targets for Ongoing Efforts

In response to Governor Lingle's Administrative Directive 06-01and subsequent legislative mandates stemming from her "Energy for Tomorrow" 2006 legislative package, State of Hawai'i executive agencies are reporting continuing progress in meeting the state's energy goals. Governor Lingle has emphasized the importance of state agencies "leading by example" in energy projects. Lead by Example has set the following targets.

Lead by Example Targets
(Baseline FY 2005)

Action Item	Impact Short Term 0-3 yrs. (FY08)	Impact Long Term 10 yrs (FY2015)
Provide education programs on energy efficiency	3% reduction in kWh	6% reduction in kWh
R&M/O&M facilities in place as of FY05 (such as lighting retrofits, purchasing more efficient equipment)	6% reduction in kWh	20% reduction in kWh
LEED Silver for New Construction	30% reduction in kWh for each new building built to LEED Silver	30% reduction in kWh for each new building built to LEED Silver
Increase energy efficiency and fuel diversification of State vehicles as of FY 05	5% reduction in petroleum consumption	12% reduction in petroleum consumption
Increase availability of environmentally preferable products to state agencies	3% increase in availability of environmentally preferable products	12% increase in availability of environmentally preferable products
Increase procurement of environmentally preferable products	5% increase in procurement of environmentally preferable products	12% increase in procurement of environmentally preferable products

Plans for Future Lead by Example Activities

Building From a Strong Foundation

Assessments, training, benchmarking, energy performance contracts and other activities undertaken during the past several decades have established a solid foundation for improving energy efficiency in state buildings. In 2006 the issuance of Executive Directive 06-01 and the passage of Acts 96 and 160 galvanized state agencies to proceed even more aggressively.

Continued improvements in efficiency and the use of renewable energy in state facilities are expected. This first report on Lead by Example has focused on the existing foundation and initial efforts supporting this initiative. This foundation phase set a number of goals: developing and working through a framework for communicating, planning, and implementing energy efficiency; identifying existing tools and determining need for developing additional tools which agencies can use to achieve increased efficiency; developing data baselines and identifying additional data needs; and setting energy-savings targets. This initial phase will continue with data gathering during to enable agencies to modify operations, thus improving energy efficiency. Continuing to expand, refine, and assess data, activities, and plans are essential to Lead by Example.

Need for Adequate Implementation Resources

As part of the LBE initiative, DBEDT coordinated interagency discussion and helped to establish dual criteria for agencies' biennium budget submittals for energy efficiency projects: a high return on investment and project visibility. High-priority projects include lighting, LEED commissioning, improvements such as window tints and energy management controls, and renewable energy projects. While participating agencies are committed to the LBE effort, future results are also dependent on securing adequate implementation resources.

Continued Training & Education, and Development of Reference Documents

Training and certification are necessary to ensure the smooth, aggressive, and correct implementation of energy projects. In coming years, DBEDT will continue to provide technical assistance to state agencies who wish to employ performance contracting, Energy Star, and LEED methodologies. DBEDT will be developing, in coordination with other state agencies, a LEED Guideline, case studies, and other tools to help implement energy efficiency measures and renewable energy systems.

Agency Goals and Plans

As part of the Lead by Example initiative, state agencies have clarified and prioritized their plans for future energy improvements. These plans include new construction as well as retrofits and repairs. As an example of the increased attention

given to energy efficiency, the interim chancellor of UH-Mānoa has proposed an energy policy that would reduce the campus' energy use by 30% by 2012 and 50% by 2015.

The development of a Tropical Energy Code, a new DBEDT project supported by federal funding, will result in proposed efficiency standards more stringent than those currently applied to Hawai'i's buildings. Work will commence in 2007.

To implement Lead by Example and legislative directives, representatives of state executive agencies have formed several Working Groups to coordinate and focus their efforts. During the coming year, the Working Groups are expected to address the following LBE tasks:

1) Data Collection:
- Develop a standardized data collection system to establish and refine baselines for various target areas: buildings, transportation, environmental practices and procurement.
- Develop standardized documents/formats for various data requirements.
- Train personnel to use the data tools; collect data for the various target areas.

2) Training and Education Activities:
- Conduct training/education for the various Working Group members (e.g., speakers, selected discussion topics, inter-Working Group meetings to promote information/idea exchanges.)
- Develop an education/promotional campaign for state personnel to implement and practice increased efficiency.
- Continue technical training and education efforts to support LBE.

3) Technical Assistance:
- Development of LEED projects and identifying pilot projects.
- Development of Commissioning and Retrocommissioning Projects.
- Building assessments, including walk-through audits.
- Performance Contracting assistance.

4) Evaluation:
- Continue assessment and discussion process to identify future tasks such as development of evaluation criteria, data requirements, and training needs.
- Develop evaluation tools, quantitative and qualitative, such as conducting post-occupancy evaluations (objective and subjective) of LEED Silver Buildings or buildings with selected technology installations for energy efficiency improvements.

5) Policy Review and Recommendations:
- Continue discussion on energy-efficiency-only budget requests to improve the request process and information provided.
- Continue examination of potential policy recommendations from the Leadership Group, Buildings Working Group, Transportation Working Group, and the Environmental Practices and Procurement Working Group.

Individual Agency Responses

A compilation of the responses of most State of Hawai‘i executive agencies may be found in the following section. Agencies were asked to report on their specific activities relating to Act 96 and Act 160, SLH 2006. The original submissions from each agency are available on the internet at:

http://www.hawaii .gov/dbedt/info/energy/efficiency/state/.

DBEDT issued invitations to participate in this first report to all state executive branch agencies, including attached agencies. The Department of Defense and the Department of Transportation's Highways Division did not participate.

The departments and offices which responded include: Accounting and General Services (DAGS); Agriculture (DOA); Attorney General (AG); Budget and Finance (B&F); Business, Economic Development & Tourism (DBEDT); Commerce and Consumer Affairs (DCCA); Education (DOE); Foreign Trade Zone (FTZ); Hawai‘i Community Development Authority (HCDA); Hawai‘i Health Systems Corporation (HHSC); Hawai‘i Housing Finance & Development Corporation (HHFDC); Hawai‘i Public Housing Authority (HPHA); Hawai‘i State Public Library System (HSPLS); Hawai‘i Tourism Authority Convention Center (HTA-CC); Hawaiian Homes Lands (DHHL); Health (DOH); Human Resources Development (DHRD); Human Services (DHS); Labor and Industrial Relations (DLIR); Land and Natural Resources (DLNR); Natural Energy Laboratory of Hawai‘i Authority (NELHA); Public Safety (PSD); Taxation (DOTax); Transportation—Airports and Harbors Divisions (DOT-Airports and DOT-Harbors); and the University of Hawai‘i system (UH).

Data regarding fiscal year utility electricity consumption were not received from HHFDC, which occupies buildings operated under a private management contract that includes utility expenses. HHFDC has requested these data, but the information was not received in time to include in its report of activities. Likewise, the total cost of electricity for HHFDC was not available for its report; the cost data, however, are not statutorily required. In addition, HPHA, while submitting the statutorily required report on activities and electricity consumption, was unable to provide the cost of electricity.

Agencies which did not submit statutorily required reports to DBEDT include the Department of Defense and the Department of Transportation's Highways Division.

Selected details from specific responses, such as vehicle fleet data, are attached as appendices.

Compilation of Agencies' Reports of Activities Relating to the Statutory Requirements of Act 96 and Act 160

Grouped by reporting requirement, with agencies in alphabetical order by initials

The following pages contain the responses by 26 agencies of the State of Hawai'i executive branch to the statutory requirements of Act 96 and Act 160, SLH 2006. These laws required reports on electricity consumption, actions relating to efficiency and renewable energy, and future plans for energy projects. The reports, which were submitted to DBEDT through the Lead by Example Leadership Group, were lightly edited for consistency and readability in this document. The original submissions from each agency are available on the internet at: http://www.hawaii.gov/dbedt/info/energy/efficiency/state/.

The agencies' responses are grouped under each point of information specified by the laws. The statutory language appears at the top of each section, in blue. Agency responses follow, organized in alphabetical order by the agencies' abbreviated initials. Some of the agencies are attached to cabinet-level departments, but are reported separately for clarity; for instance, the Hawai'i Community Development Authority is organizationally attached to DBEDT but reports individually in this document. Also, two divisions (Airports and Harbors) of the Department of Transportation are reported separately in order to clearly differentiate their energy consumption, since the DOT Airports Division is one of the state's largest energy consumers. These are the 26 agencies whose reports appear in the following pages:

AG: Department of the Attorney General
B&F: Department of Budget and Finance
DAGS: Department of Accounting and General Services
DBEDT: Department of Business, Economic Development and Tourism
DCCA: Department of Commerce and Consumer Affairs
DHHL: Department of Hawaiian Home Lands
DHRD: Department of Human Resources Development
DHS: Department of Human Services
DLIR: Department of Labor and Industrial Relations
DLNR: Department of Land and Natural Resources
DOA: Department of Agriculture
DOE: Department of Education
DOH: Department of Health
DOT-Air: Department of Transportation, Airports Division
DOT-Har: Department of Transportation, Harbors Division
FTZ: Foreign Trade Zone
HCDA: Hawai'i Community Development Authority
HHFDC: Hawai'i Housing Finance and Development Corporation
HHSC: Hawai'i Health Systems Corporation
HPHA: Hawai'i Public Housing Authority
HSPLS: Hawai'i State Public Library System

HTA-CC: Hawai‘i Tourism Authority—Hawai‘i Convention Center
NELHA: Natural Energy Laboratory of Hawai‘i Authority
PSD: Public Safety Department
TAX: Department of Taxation
UH: University of Hawai‘i system

As noted previously, the Department of Defense and the Department of Transportation's Highways Division were also invited to participate in this coordinated report, but declined to do so. Other state government agencies—for instance, The Judiciary—have also acted to conserve energy but are not reported here since they are not part of the executive branch.

Following this combined matrix are appendices containing several documents detailing information mandated by the laws. For instance, spreadsheets of data on vehicle fuel consumption are attached as appendices for agencies which have numerous vehicles. Individual agency reports may be found at on the internet at the address listed above.

Act 96 SLH 2006: Buildings and Facilities

(1) Design and construct buildings meeting the Leadership in Energy and Environmental Design silver or two green globes rating system or another comparable state-approved, nationally recognized, and consensus-based guideline, standard, or system, except when the guideline, standard, or system interferes or conflicts with the use of the building or facility as an emergency shelter;

AG: n/a. We do not design or construct buildings.

B&F: n/a. Department does not oversee the design, construction or maintenance of building facilities.

DAGS: The Division of Public Works (PWD) has already implemented and constructed a pilot project, Waipahu Intermediate School Cafeteria, which is expected to receive a LEED Certified rating. Construction of this project was completed under the DOE due to Act 51; however, staff from the Division of Public Works are still actively involved in a working group formed by DBEDT which is reviewing this pilot project and its results.

We have already gained experience and learned from the Waipahu Intermediate School Cafeteria project, including just becoming more familiar with LEED and sustainable design. We also have at least one source to identify potential costs impacts from this pilot project.

The project only sought a LEED Certified rating due to budget constraints and, to some degree, the type of facility, which may not allow or provide for enough points in the LEED rating system without being unreasonable in the design and associated costs.

The PWD currently has three designated "pilot" projects in trying to achieve a LEED Silver rating. While Act 96, SLH mandates LEED Silver or Two Green Globes rating system, it also allows for something less by stating "to the extent possible." This statement in the law is hard to define. However, by doing these pilot projects, and committing to achieve a LEED Silver rating, we hope to find out by this experience how feasible it is to achieve a LEED Silver rating and better define "to the extent possible."

The three projects are:

1. Kamamalu Building
   Asbestos Removal and Renovation
   DAGS Job No. 12-10-935
2. Mānoa Public Library
   Expansion and Site Improvements
   DAGS Job No. 12-36-6364
3. Kohala Public Library
   DAGS Job No. 11-36-6367

These projects were chosen as pilots because it would give us a range of experience in applying LEED or sustainable design. The Kamamalu Building project is a major renovation that will be done in phases. The first phase is a core and shell renovation and the second phase will be a tenant improvement project. The Mānoa Public Library is an expansion to the existing library and Kohala Public Library is a new library which is also located on a neighbor island. In addition, the State Library System is very supportive in allowing the two library projects to be pilots. The Kamamalu Building is a DAGS building and the Comptroller is also supportive of this effort.

The pilot projects above are steps taken, but are also part of developing our strategy. For the immediate strategy, the Division of Public Works will implement projects in accordance with Act 96, SLH 2006 "to the extent possible."

PWD's general strategy in defining and applying "to the extent possible" is to take the following steps:

1st level: Look for and implement sustainable design practices and elements that we do already, thus having no impact on operation/function and cost.

2nd level: Look for and implement sustainable design practices and elements that we may not have normally done, but can do without negative impact to cost and negative impact to operation/function of the facility.

3rd level: Look for and possibly implement sustainable design practices and elements that we may not currently do that are not very costly and improve operation/function of the facility. Associated costs, benefits, budget and maybe even schedule will start to become factors in deciding whether to implement.

4th level: Look for and possibly implement requirements that we may not currently do and will impact cost and will improve operation/function of the facility. Associated costs, benefits, budget and schedule will be factors in deciding whether to implement.

5th level: And so forth...

Part of the strategy also includes knowing what we do not want to do:

We shouldn't implement sustainable design practices and elements that do not offer any real value. We definitely do not want to implement sustainable design requirements to get LEED points just to achieve a rating that does not provide a real value even if the project budget would allow it.

As we gain the experience and knowledge from the pilots and the various projects that will occur over the year, we intend to develop a LEED or, generically stated, Sustainable Design and Commissioning application guideline and programmatic support for PWD and possibly other State agencies.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

On behalf of the State of Hawai'i, DBEDT joined the U.S. Green Building Council (USGBC) in 2006. USGBC administers the Leadership in Energy and Environmental Design (LEED) rating system. DBEDT has co-sponsored many LEED training sessions over the past years and serves on the USGBC Hawai'i Formation Chapter. There are now several State of Hawai'i LEED projects completed, under construction and consideration. A DBEDT staff member was the first state employee to become a LEED-accredited professional. DBEDT is offering study groups to prepare other state personnel to take the USGBC examination and become accredited professionals.

DCCA: n/a. DCCA has no current plans to construct/renovate any buildings.

DHHL: Encourage Land Development Division to design and plan all new future housing projects to meet Energy and Environmental Design Silver or Two Green Globes rating.

Encourage Land Management Division to require all new general lessees and licensees to plan and design their commercial projects to meet the same requirement.

Encourage Fiscal Office to purchase Energy Star products for the office.

Incorporate DBEDT's "Hawai'i Commercial Building Guidelines for Energy Efficiency" into all future building and facilities projects.

DHRD: n/a. The Department does not design or construct buildings.

DHS: The Department of Human Services will coordinate all building and facility projects with the Department of Accounting and General Services to ensure that all construction, repairs and alterations projects are in compliance with the applicable standards and guidelines.

DLIR: The Department of Labor and Industrial Relations (DLIR) does not own or manage any buildings. The majority of DLIR personnel are housed in building facilities constructed and managed by the Department of Accounting and General Services (DAGS). The

remaining DLIR personnel are out stationed in privately owned buildings. The DAGS Leasing Branch secures all rental lease agreements for DLIR occupants housed in privately owned buildings. In addition, the DLIR does not have any plans to design or construct new buildings or facilities at this time.

DLIR will continue to learn about energy efficiency and environmental designs. As DLIR staff gains more knowledge in energy efficiency and environmental designs, it will incorporate these standards into our DLIR standards. DLIR will work with the appropriate DAGS agencies to incorporate energy efficiency measures to reduce energy consumption.

DLNR: DLNR continues to work with the Department of Business, Economic Development, and Tourism (DBEDT) in a statewide collaboration on energy efficiency, as a member of DBEDT's Lead by Example Leadership Group. DLNR will continue to work with the Leadership Group on ideas to implement energy savings across the State. As department staff learns more about such initiatives, they will incorporate such guidelines into DLNR standards.

DLNR's facility portfolio is limited. Most of buildings owned by DLNR are composed of base yards, harbor facilities and park restrooms. DLNR incorporates energy saving concepts into all of its owned facilities as appropriate. Energy saving concepts include the use of solar water heaters, natural ventilation and lighting, and use of energy efficient lights. Additionally, DLNR has begun to incorporate energy savings practices into design projects such as the recycling of existing asphalt concrete pavement into backfill material.

DLNR evaluates the feasibility of implementing energy conservation measures when capital improvement projects are designed. As DLNR staff learns more about energy efficiency and environmental design, they will incorporate these concepts into building and facility design and renovations.

DOA: Not applicable since the department utilizes the engineering services of the Public Works Division of the Department of Accounting and General Services and follows their guidelines and standards for designing and constructing buildings.

DOE: All future designs for new or substantially renovated Department of Education (DOE) buildings will include these requirements where appropriate. Beginning with this fiscal year, all design estimates for new or substantially renovated facilities will include a separate line item cost for project documentation and commissioning requirements to meet LEED Silver or Two Green Globe ratings.

The DOE has developed a document called the *Hawai'i High Performance School Guidelines* which provides direction/guidance for our design consultants. This document, developed by Charles Eley through a grant from DBEDT, identifies design methodologies specific to Hawai'i which are sustainable and support both LEED and Two Green Globe ratings. The document is now given to all consultants designing new DOE facilities.

We plan to develop guidelines and specifications for sustainability in our operations and maintenance procedures and train school-level personnel in their application. We plan to incorporate a review of school-level practices in the annual School Inspection Program beginning with FY 07-08.

Many of the CIP projects which we are planning to initiate this fiscal year will be designed to meet LEED Silver certification. This should help decrease the forecasted consumption somewhat.

DOH: The Department of Accounting and General Services handles all capital improvement projects for the Department of Health. DOH coordinates its own small projects such as office renovations and minor improvements costing less than $25,000.

The Department of Health will be moving into the renovated Kamamalu Building in 2009. DAGS has contracted with AM Partners, Inc. to design the renovation. They will be designing the building to qualify for a LEED Silver certification. A charrette is planned for

Sept 28- 29, 2006. The agenda includes the following: discuss goals and possibilities, review the site, introduce the LEED documentation process, identify target LEED points, and clarify LEED documentation responsibilities.

The Department is requesting funds in this biennium (08-09) to renovate several buildings at Waimano Ridge. If money is appropriated, the architects will be instructed to design to qualify for LEED certification. Completion date for this project is 2009.

The Department is requesting funds in this biennium (08-09) for the design of a new Forensic Facility at the Hawai‘i State Hospital. If money is appropriated, the architects will be instructed to design to qualify for LEED certification. Completion date for this project is 2013.

DOT-Air: Airports Division has been designing and constructing buildings with energy efficient technology since 1996. Many lighting fixtures of our facilities had been changed to save electricity and we took advantage of Electrical Company's Rebate program. We will continue to design and construct our facilities to implement energy efficiency and LEED standards into the building facilities projects.

DOT-Har: Train staff on LEED methodology; require design consultants and construction contractors to be knowledgeable of and able to comply with Act 96 SLH 2006; ensure that all designs for new construction meet LEED Silver certification; develop program milestones to encourage 100% implementation over a period of time.

FTZ: The FTZ does not design or construct buildings.

HCDA: HCDA does not have plans to construct any buildings.

HHFDC: The HHFDC does not have any plans to design or construct new buildings or facilities at this time.

HHSC: For all new construction, Hawai‘i Health Systems Corporation will assess the cost of LEED building criteria. If the cost for LEED design exceeds the budget of the project, then the project will incorporate as many energy conservation measures as are possible to achieve within the budget. For long range planning, the corporation will try to include LEED design costs whenever possible.

HPHA: Hawai‘i Public Housing Authority (HPHA) does not foresee any new building being constructed in the near future. However, all existing housing projects that will be modernized will trying and achieve LEED Silver rating. Current projects under modernization are Ka Hale Kahalu`u, Kalihi Valley Homes, and Lanakila Homes Phase 3A.

HSPLS: HSPLS, working directly with DAGS and the State Administration, will be designing and constructing a new library building in Kohala and an expansion of the Mānoa Public Library to meet the Leadership in Energy and Environmental Design Silver rating. Both appropriations were released and design is underway to include these guidelines, standards, and systems for these libraries wherever possible.

HTA-CC: HTA has no plans to design or construct any buildings.

NELHA: NELHA has one of the eight LEED Platinum buildings in the entire world. No new structures are anticipated in the foreseeable future.

PSD: The environment in correctional facilities plays an important role in the rehabilitation process. While safety, security, and efficiency are obviously primary concerns, good design in facilities focuses on creating healthy spaces and minimizing operating and maintenance costs. An energy-efficient, sustainably designed facility can support inmate rehabilitation while reducing electricity, fuel, and water expenses for the State.

Challenges:

<u>Funding</u>

Funding for sustainability strategies for correctional facilities is a significant concern. Budgeting and procurement does not, at this time, earmark monies specifically for sustainable design features or LEED certification. As such, integrated design solutions that shift costs to within the overall fixed construction budget may be most effective – but only if functional requirements and challenges of the facility are clearly understood and sustainable design and other value-added goals are clearly identified as early as possible in the design process.

As such, quantifiable goals should be used whenever possible to target an anticipated level of achievement. These goals should be integrated with LEED and other benchmarks such as energy performance.

Site

Correctional facilities are generally built or expanded in rural areas where consuming green space for the project site and expending valuable natural resources to build the necessary infrastructure is a given. Recreating wildlife on site is not easily accomplished, as facilities need clear, open spaces that do not provide potential hiding spaces for escapees. In addition, parking lots must be quite large to accommodate parking for two shifts at once. Finally, for security purposes high lighting levels are mandated at all times which leads to high energy use.

Water

Due to the occupancy characteristics and use, water consumption at correctional facilities is high. Kitchens, laundries, and shower facilities require large volumes of hot water, and special construction requirements for plumbing fixtures in inmate areas limit the ability to specify equipment based on efficiency alone.

Energy

With buildings occupied 24/7, correctional facilities are energy-intensive. Because most cells have toilet fixtures, they must be treated like toilet rooms, which means that a tremendous amount of air must be exhausted instead of recirculated, thereby increasing energy use. Opportunities to reduce lighting energy consumption through day lighting measures are frequently limited due to conflicts with security and privacy requirements.

Materials

Choices of materials for correctional facilities are limited due to strict maintenance and security requirements.

Opportunities to GO GREEN:

Just as there are challenges, it is important to be aware of the opportunities to incorporate sustainable design features with moderate to no cost premiums or loss of functionality.

Site

If possible, consider Brownfield sites such as abandoned landfills or industrial facilities that may be reclaimed for prisons in rural areas. In addition to reducing the loss of green space, using such sites may qualify PSD for financial assistance from federal or state agencies.

Water

Consider the options of collecting stormwater that would otherwise need to be diverted. Instead, water is piped to a retention structure used for storing the water for building and/or site use. Employ water management systems that allow security to shut off individual or

group plumbing fixtures in a cell, group showers, or individual showers rather than shutting down the entire water system.

Energy

Design a tight, energy-efficient building that will generate savings in operational expenses. Consider high mass construction such as precast concrete to take advantage of thermal inertia to regulate the internal temperature. Integrating a radiant heating or cooling system within the walls or floors may also cut energy use and costs, particularly in large open-plan spaces. The use of combined heat or power systems can be beneficial for facilities with high demand for hot water. Providing daylight and views in cells, dayrooms, and public areas where appropriate will not only create a calmer, more pleasant environment but will also permit lighting systems to be dimmed or turned off in response to daylight levels, saving energy and decreasing lamp replacement.

Materials

Need to maximize recycled content in materials used in correctional facilities, such as steel or concrete. When possible, source materials locally. This will both contribute to the local economy and reduce the use of fossil fuels in transport.

To date, the Department of Public Safety has only made a limited number of improvements at correctional facilities to conserve energy and water resources. The improvements include conversion of fluorescent T-12 to T-8 light fixtures at various areas and replacement of water fixtures to provide for low flow shower heads and low gallon flushing toilets.

Our correctional facilities typically provide the only viable 'emergency shelter' location for their clients. Nevertheless, PSD is committed to moving towards development of new facilities that will seek at the very least LEED Certified or equivalent standard.

The department recognizes the importance of taking the long view in terms of both initial and long-term outlays of both capital expenditures and ongoing operational cost expenditures when it comes to incorporating LEED or equivalent design standards. It will also make a sincere effort to make staff and inmates alike aware of the need and benefits of measures that conserve energy and promote sustainable resources.

The PSD-Programs, Planning and Budget Office is working with the Wardens of the O'ahu Community Correctional Center and the Halawa Correctional Facility to implement three designated "pilot" projects in trying to achieve a LEED Silver rating. While Act 96, SLH mandates LEED Silver or Two Green Globes rating system or other, it also allows for something less by stating "to the extent possible." This statement in the law is hard to define. However, by doing these pilot projects, and committing to achieve a LEED Silver rating, we hope to find out by this experience how feasible it is to achieve a LEED Silver rating and better define "to the extent possible."

The three projects are:

1. PSD Resource Efficiency Management Program Planning Survey
   O'ahu CCC, Energy Awareness Pilot Program
   PSD Job No. 07-407-P0084-01
2. Halawa CF, Laundry Gray-water Recycling Project
   PSD Job No. 07-402-P20084-02
3. O'ahu CCC, Voltage Regulator Retrofit Project
   DAGS Job No. 07-407-P20084-03

These projects were chosen as pilots because it would give us a range of experience in applying LEED or sustainable design. The Resource Efficiency Management Program Planning Survey project is the logical first step in the development of an enlightened program that "begins with the end in mind". The measurable objectives are to increase the

awareness of the need to conserve energy and other sustainable resources in new development as well as ongoing operations within the Department; plan and design new (and renovations to existing) projects with cost-efficient usage in mind of building operating systems as well as the physical plants themselves as a key objective; and finally, target an overall measurable "end-game" objective of a permanent energy consumption/per-capita reduction, based upon a percentage basis lowering from a survey "baseline" value or other equally relevant measure.

The aforementioned survey project will 'establish the baseline' in addition to providing insights into the strategy to formulate and implement energy conservation efforts along with increasing the usage of sustainable resources throughout the department.

The pilot projects above are steps taken, but are also part of developing our strategy. For the immediate strategy, the Department of Public Safety will implement projects in accordance with Act 96, SLH 2006 "to the extent possible."

PSD/PPB-Capital Projects' general strategy in defining and applying "to the extent possible" is to take the following steps:

1st level: Look for and implement sustainable design practices and elements that we do already, thus no impact on operation/function and cost.

2nd level: Look for and implement sustainable design practices and elements that we may not have normally done, but can do without negative impact to cost and negative impact to operation/function of the facility.

3rd level: Look for and possibly implement sustainable design practices and elements that we may not currently do that are not very costly and improve operation/function of the facility. Associated costs, benefits, budget and maybe even schedule will start to become factors in deciding whether to implement.

4th level: Look for and possibly implement requirements that we may not currently do and will impact cost and will improve operation/function of the facility. Associated costs, benefits, budget and schedule will be factors in deciding whether to implement.

Part of the strategy also includes knowing what we do not want to do:

What we do not want to do is implement sustainable design practices and elements that do not offer any real value. We do not want to implement sustainable design requirements to get LEED points just to achieve a rating that does not provide a real value even if the project budget would allow it.

As we gain the experience and knowledge from the pilots and the various projects that will occur over the year, we intend to develop a LEED or generically stated, Sustainable Design and Commissioning application guideline and programmatic support for PSD and possibly other State agencies.

TAX: Department of Taxation (DOTAX) buildings are constructed and managed by the Department of Accounting and General Services (DAGS).

UH:
- UH Mānoa – School of Medicine has been designed and constructed for LEED certification rating that is pending.
- UH Mānoa – Frear Resident Housing has been designed for LEED Silver rating certification.
- UH Mānoa – Coconut Island Biology Research Laboratories currently under design with the goal of LEED Gold rating.
- UH Mānoa – Kennedy Performance Arts Facilities (funded for design phase): LEED Silver.
- UH Hilo - Student Life Center complex has been designed for LEED Silver rating; project is currently under construction.
- UH Hilo - Science and Technology Building (under design): LEED Silver.

● UH Hilo - Hawaiian Language Building (funded for planning and design phase): LEED Silver.
● UH Hilo – Mauna Kea Astronomy Education Center has been designed and constructed for LEED Silver rating that is pending.
● UH West O‘ahu – New campus development in Kapolei currently designed for LEED Silver rating.
● Maui CC – Science Facility currently in the program planning phase will incorporate guidelines and principles for design and construction for LEED silver rating certification.
● Kapi‘olani CC – Culinary Institute of the Pacific facilities at the former Cannon Club site on Diamond Head currently under design with the goal of LEED Silver rating.
● The University of Hawai‘i systemwide has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects. Sustainability guidelines to be included in the development for all campus long range development plans and project development reports. In general, the goal is for LEED Silver certification and if the goal cannot be attained due to budget constraints, other sustainable design principles will be incorporated into the new or major renovation projects.

Act 96 SLH 2006: Buildings and Facilities

(2) Incorporate energy-efficiency measures to prevent heat gain in residential facilities up to three stories in height to provide R-19 or equivalent on roofs, R-11 or equivalent in walls, and high-performance windows to minimize heat gain and, if air conditioned, minimize cool air loss. R-value is the constant time rate resistance to heat flow through a unit area of a body induced by a unit temperature difference between the surfaces. R-values measure the thermal resistance of building envelope components such as roof and walls. The higher the R-value, the greater the resistance to heat flow. Where possible, buildings shall be oriented to maximize natural ventilation and day-lighting without heat gain and to optimize solar for water heating. This provision shall apply to new residential facilities built using any portion of state funds or located on state lands;

AG: n/a. DAGS handles this for us

B&F: n/a. Department does not oversee the design, construction or maintenance of building facilities.

DAGS: PWD very rarely will be involved in residential facilities; however, energy efficiency measures to prevent heat gain can apply to any facility. These measures are already taken into design consideration. The strategy for PWD on these measures is finding ways to improve, starting by just simply being more aware of these energy efficiency measures, doing better review of designs, and considering new products and technologies.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT successfully worked for adoption of an Energy Code for Maui County, including mandating R-19 or equivalent in residential roofs.

DBEDT promoted the use of cool roofs and radiant barriers in Molokai's residences via MECO's Solar for Molokai program, which included state-owned housing.

DBEDT coordinated the May 2006 Build & Buy Green Conference & Expo at the Hawai'i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. The topics of R-19 insulation, radiant barriers, orientation, natural lighting, and natural ventilation were discussed at length.

DBEDT arranged a meeting between an energy efficiency professional and DHHL on May 18, 2006 to discuss the benefits and challenges of implementing LEED for Homes.

DCCA: All DCCA buildings are maintained by DAGS.

DHHL: If all possible, Land Development Division shall orient the placement of the homes to optimize benefits from the trade winds and the sunlight.

DHRD: n/a. The Department does not own or operate residential facilities.

DHS: As applicable, the DHS will coordinate these activities with the DAGS to effect energy efficient measures.

DLIR: DLIR does not manage, own, or construct residential facilities or buildings. All facilities occupied by DLIR are constructed and managed by DAGS or in private building leases promulgated by DAGS Leasing Branch. DLIR will work with DAGS to incorporate energy efficient measures into building facilities occupied by DLIR.

DLNR: DLNR does not have any residential facilities in its building inventory.

DOA: Not applicable since the department does not have any residential type facilities.

DOE: We will include the roofing R-value requirements in the specifications when we re-roof the Lahainaluna School dormitories and, when they are transferred to the DOE from HCDCH, teacher cottages. In addition, all new DOE facilities are being designed to meet LEED or Two Green Globe ratings which incorporate energy-efficient measures and minimize heat gain or cool air loss.

DOH: The Department has no residential facilities except for historic homes at Kalaupapa Settlement. These buildings must be restored to their original condition.

DOT-Air: Not applicable at this time. DOT-Airports will apply this requirement if we build or fund any construction to new residential facilities.

DOT-Har: Not applicable to Harbors. Residential facilities are not within Harbors' scope of responsibilities.

FTZ: The FTZ does not manage any residential facilities.

HCDA: HCDA has not constructed any residential buildings under three stories.

HHFDC: The HHFDC is reviewing its requests for proposals, program requirements, policies, procedures, and administrative rules to determine how to incorporate these requirements, where possible, for its affordable housing programs.

HHSC: Hawai'i Health Systems Corporation will address the use of insulation materials, daylighting, and solar in its construction projects whenever possible.

HPHA: HPHA is in the process of replacing/repairing several roofs. We are requiring our consultant/contractor to abide by the current Hawai'i Model Energy Codes. Current Projects with roof repairs include: Mayor Wright Homes; Noelani I & II; Ka'ahumanu Homes; Wahiawa Terrace; Makani Kai Hale I & II; and Kauhale O Hanakahi. HPHA will research the feasibility of installing low heat gain windows on future renovation projects.

HSPLS: HSPLS will be working directly with DAGS and our consultants/ contractors to incorporate these energy efficiency measures to prevent heat gain wherever possible in our re-roofing, air conditioning, and renovation projects.

HTA-CC: HTA has not constructed, nor does it intend to construct, any residential buildings under three stories.

NELHA: NELHA does not plan to construct, operate or facilitate any residential buildings.

PSD: PSD very rarely will be involved in residential facilities; however energy efficiency measures to prevent heat gain can apply to any facility. These measures are already taken into design consideration. The strategy for PSD on this measure is to find ways to improve, starting by just simply being more aware of these energy efficiency measures, doing better review of designs, and considering new products and technologies.

TAX: DOTAX buildings are constructed and managed by DAGS.

UH:
- UH Mānoa – Existing resident halls are not air-conditioned. The new Frear resident housing redevelopment will include air conditioning with individual unit controls to minimize energy use; building oriented with long walls facing North and South, walls insulated, and insulated glazing with low-e coating to minimize heat gain; and use of operable windows to minimize use of air conditioning.
- UH Hilo - Resident halls are not air conditioned
- Maui CC – Resident halls are not air conditioned and are oriented to utilize the natural trade winds for cooling.
- The University of Hawai'i system has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects. The design principles for energy efficiency measures to prevent heat gain will be incorporated into the building to the extent possible.

Act 96 SLH 2006: Buildings and Facilities

(3) Install solar water heating systems where it is cost-effective, based on a comparative analysis to determine the cost-benefit of using a conventional water heating system or a solar water heating system. The analysis shall be based on the projected life cycle costs to purchase and operate the water heating system. If the life cycle analysis is positive, the facility shall incorporate solar water heating. If water heating entirely by solar is not cost-effective, the analysis shall evaluate the life cycle, cost-benefit of solar water heating for preheating water. If a multi-story building is centrally air conditioned, heat recovery shall be employed as the primary water heating system. Single family residential clients of the department of Hawaiian home lands and any agency or program that can take advantage of utility rebates shall be exempted from the requirements of this paragraph so they may continue to qualify for utility rebates for solar water heating;

AG: n/a. DAGS handles this for us.

B&F: n/a. Department does not oversee the design, construction or maintenance of building facilities.

DAGS: Although few DAGS facilities utilize enough hot water to make solar water heating cost-effective, our strategy on this measure is to continue encouraging our customers to consider using solar water heating systems in their projects, where feasible and advantageous.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT has advised HPHA regarding the cost/benefit of solar water heating.

DBEDT has participated in MECO's Solar for Moloka'i program, which includes state-owned housing.

DBEDT coordinated the Build & Buy Green Conference & Expo at the Hawai'i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. Solar water heating, life-cycle cost analysis, and heat recovery technologies were discussed at length.

DBEDT has provided DHHL with brochures and other information on solar water heating, sustainable residential building design, and energy conservation at home to distribute to DHHL's clients.

DCCA: n/a. DCCA does not use hot water.

DHHL: Even though the Department of Hawaiian Home Lands is exempted, wherever possible the Department will encourage our beneficiaries to take advantage of the utility rebates to install solar water heating systems. In fact, one of our projects in Kona, with over 200 homes to be built, will have solar systems installed as part of the agreement with Hawai'i Electric Light Company.

DHRD: n/a. The Department does not own or operate any buildings or facilities.

DHS: As applicable, the DHS will coordinate these activities with the DAGS to maximize energy efficiency and costs effectiveness.

DLIR: DLIR does not manage, own, or construct residential facilities or buildings. All facilities occupied by DLIR are constructed and managed by DAGS or in private building leases promulgated by DAGS Leasing Branch. DLIR will work with DAGS to incorporate solar powered systems to improve the energy efficient measures in building facilities occupied by DLIR.

DLNR: DLNR's facility portfolio is limited. Most of buildings owned by DLNR are composed of base yards, harbor facilities and park restrooms. DLNR incorporates energy saving concepts into all of its owned facilities as appropriate. Energy saving concepts include the use of solar water heaters. DLNR evaluates the feasibility to implement energy

conservation measures such as use of solar water heaters when capital improvement projects are designed. As DLNR staff learns more about energy efficiency and solar water heating design, they will incorporate these concepts into building and facility design and renovations.

DOA: May not be applicable since very few facilities have a need for water heating systems; however, as part of our retrocommissioning projects the cost-benefit of converting to a solar water heating system will be reviewed.

DOE: When constructing new facilities or when replacing existing water heaters (typically located in school cafeterias and locker rooms), our Facilities Development Branch will undertake the solar alternative analysis.

DOH: The Department has a solar water heating system at the Diamond Head Health Center.

Presently, there are no plans to change any water heating systems at any of the health centers. An assessment will be done when a project of this nature is initiated to determine if the water heating system being changed can be converted to a solar system.

DOT-Air: Not applicable at this time. DOT-Airports will apply this requirement if we build or fund any new or renovated residential facilities.

DOT-Har: Train staff on Life Cycle Cost Analyses and solar water heating technologies. Perform Life Cycle Cost Analyses on existing and planned facilities for solar water heating systems. Require design consultants and construction contractors to be knowledgeable of and be able to comply with Act 96, SLH 2006. Ensure installations of solar water heating systems are made, where cost-effective, with priority to water heating systems experiencing the highest demand. Develop program milestones to encourage 100% implementation over a period of time.

FTZ: The FTZ does not have a water heating system for its facility.

HCDA: HCDA does not own any buildings where it has decision making responsibility over heated water system.

HHFDC: The HHFDC currently requires program participants receiving state financing to provide a comparative analysis for solar water heating systems to demonstrate whether solar water heating systems are a cost-effective alternative over the life cycle of the system.

HHSC: Hawai‘i Health Systems Corporation presently has a contract with NORESCO to perform energy audits on 12 of its facilities. Solar water heating is one of the energy conservation measures that is being analyzed for those facilities that do not have large central air conditioning equipment. Three facilities that have large central air conditioning now use cogeneration to heat water.

HPHA: On HPHA’s jobs where roofing or modernization is being performed, we will conduct a cost analysis on solar water heating versus gas or electric.

HPHA is in the process of soliciting an Energy Performance Contract with a qualified Energy Service Company. We anticipate awarding the contract by mid 2007. The contract could incorporate solar water heating on majority of our projects.

HSPLS: Not applicable since we do not have any water heating systems in any of our libraries.

HTA-CC: HTA will work with the Hawai’i Convention Center management to review its existing hot water systems and see where it may be possible to add to or convert any existing hot water systems to solar water systems.

NELHA: A solar water heating system has been operational on top of NELHA’s Administration Building for the past 15 years. NELHA does not have capital funding to install energy efficient water heating systems on any of its other buildings. NELHA uses cold seawater to air condition all of its buildings, which saves approximately $3,000 a month in deferred electrical costs.

PSD: Our strategy on this measure is to consider using solar water heating systems in correctional facilities and law enforcement capital projects, where feasible and advantageous.

TAX: DOTAX buildings are constructed and managed by DAGS.

UH: ● UH Mānoa - Frear resident housing hot water system utilizes a heat recovery system.

● UH Hilo - Athletic facility uses solar hot water system with 1,000 gallon hot water capacity.

● Maui CC – Four two-story resident housing with 180-gallon solar water heating system in each building.

● The University of Hawai‘i system has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects. The design principles for solar water heating systems, where it is cost effective, will be incorporated into the building to the extent possible.

Act 96 SLH 2006: Buildings and Facilities

(4) Implement water and energy efficiency practices in operations to reduce waste and increase conservation;

AG: All departmental staff were provided tips on energy efficient practices and information on the benefits of energy efficiency. With the assistance of DAGS, signs have been posted to remind staff to turn off computers, lights, and other equipment when exiting. Water leaks are to be reported to the Administrative Services Office immediately, including sprinkler systems and outdoor faucets.

B&F: The Department will issue a memorandum encouraging all employees to initiate and implement energy efficient practices (i.e., turning off office lights when not in use or when leaving for the day, turning off computer terminals at the end of the day, distributing Energy Star saving tips, etc.).

DAGS: As funding has become available, the department has initiated projects to replace aging air conditioning and elevator equipment that have resulted in improved operating efficiency. DAGS' facilities on O‘ahu have also been retrofitted with energy efficient electronic ballasts and T-8 lamps. The landscape irrigation system at the Kalanimoku Building has been replaced with a system that incorporates rain sensors and a sub-meter as water conservation measures.

During fiscal year ’07, pilot retro-commissioning projects will be initiated on O‘ahu, Hawai‘i, Maui and Kaua‘i to develop strategies that would result in energy savings. The replacement of T-12 fluorescent lamps with energy efficient electronic ballasts and T-8 lamps will be initiated on the neighbor islands. The department will also be conducting cost-benefit analyses to determine the feasibility of replacing existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps on O‘ahu. Also on O‘ahu, a major effort will be made to repair and upgrade landscape irrigation systems in the downtown civic center to increase water conservation. The department will also be working with the Board of Water Supply to determine the feasibility of using leak detection loggers to locate and repair “phantom” plumbing leaks.

DAGS will be looking into cost/benefit analysis for replacing the existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps.

DBEDT: Most of DBEDT’s energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT coordinated a voluntary program of private sector businesses installing cool roof technologies on portable classrooms at Waipahu High School. Temperature readings are taken by students.

DBEDT, through the Rebuild Hawai‘i Consortium, facilitated a County of Kaua`i/Department of Education project to secure a photovoltaic system for Ni‘ihau School.

DBEDT coordinated the Build & Buy Green Conference & Expo at the Hawai‘i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. Water and energy efficiency practices were discussed at length as a means of achieving Hawai‘i BuiltGreen™ 3-Star Level. Hawai‘i BuiltGreen™ is a program of the Hawai‘i Building Industry Association, a non-profit trade organization representing building developers, builders, suppliers and associates.

DCCA: All fixtures throughout our buildings are water saving fixtures. The landscape is watered only during evening hours.

DHHL: We plan to develop and circulate educational pamphlets to our homesteaders and staff on water and energy efficiency practices to encourage waste minimization and increase conservation.

DHRD: We circulated Office and Lighting Tips to promote energy efficiency practices.

DHS: The DHS will issue water and energy conservation procedures for buildings and offices that will require compliance by all staff. In developing these procedures, the DHS will consult with DAGS and DOH, agencies with the appropriate expertise.

DLIR: An assessment of electricity usage was completed for nine of the Department of Labor and Industrial Relations (DLIR) offices that are not maintained by DAGS Central Services. The assessment of the nine offices covered the period July 1, 2004 through June 30, 2006. Based on our review the nine offices utilized a total of 825,515 kilowatt hours resulting in a total cost of $227,757.07.

Based on the energy usage, the DLIR plans to do the following: (1) DLIR will seek consultation from DAGS to insure that best energy saving practices are incorporated into the drafting of a reminder memorandum as required to address energy conservation. (2) DLIR will work with DAGS to incorporate some of the following energy saving measures: replace toilets and sinks with low-flow fixtures; replace old lighting fixtures; request that DAGS Leasing Branch conduct energy efficiency analysis in private building leases and work with landlords to replace old toilets, sinks, air conditioners and lights.

DLNR: The department installs low flow fixtures (toilets and sink faucets) to replace older fixtures, which use more water, as we renovate our department facilities. Additionally, some of our remote restrooms use composting toilets, which require very little water.

Staff are reminded to turn off equipment when not in use, keep blinds closed, and report equipment malfunctions. Energy efficient light bulbs are used where feasible and timed sensors have been installed to allow automatic shutoff off of lights. Additionally, natural ventilation and lighting is used in most of our comfort stations.

DOA: DOA has identified departmental buildings/facilities and motor vehicles under the department's control and management for reporting purposes. It has also compiled electricity and water consumption data for these managed and controlled buildings/facilities for FY 2005 and FY 2006.

DOA obtained the electronic file of an existing condition survey to use in establishing an electricity baseline for these managed and controlled buildings/facilities. It has researched and compiling blueprints of the floor layout for each building/facility to be monitored for energy and water consumption.

DOA obtained from Department of Accounting and General Services (DAGS) a listing of retro-commissioning and specific energy efficiency projects and related costs to review, in order to request funding in the FB 2007-2009 Executive Budget.

DOA staff researched energy, fuel and water conservation practices and tips to include in the Departmental Energy and Water Conservation and Resource Efficiency Program. Staff also attended various energy workshops and meetings to obtain information that can be utilized in developing the Departmental Energy and Water Conservation and Resource Efficiency Program.

DOA has met with the DAGS Automotive Management Division and System and Procedures Office staff to determine how data on fuel consumption and mileage for the department's motor vehicles can be obtained from their system for FY 2005 and FY 2006.

DOA has also asked the State Procurement Office (SPO) if a vendor who is awarded the fuel bid price can be required, as part of the contract, to provide the State with a report on fuel consumption by department, vehicle, fuel type and fiscal year. DOA was informed by SPO that the current vendor has data available on their website to access fuel

consumption by vehicle beginning from May 2006 and will continue to make data available so long as they are the selected vendor.

DOA asked DAGS' Central Services Division to review our air conditioning systems, make recommendations on how to improve efficiency of system, and recommend a replacement schedule.

DOA has also developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goals of minimizing energy, fuel and water consumption and implementing resource-efficient operations. DOA also developed a draft Energy and Water Action Plan to identify steps/actions to implement energy and water conservation efforts.

DOE: We are approaching utilities comprehensively – electricity, water, sewage disposal, and gas. Our Facilities Maintenance Branch personnel will install low-flow bathroom fixtures as appropriate whenever existing fixtures need replacing. We will advise school-level personnel to install low-flow bathroom fixtures whenever existing fixtures need replacing, if the work will be done by school-level personnel or by a third party at the direction of school-level personnel.

We are replacing the fluorescent light fixtures in all schools 25 years or older with energy efficient ballasts and lamps, and conducting a pilot project to outfit classrooms and restrooms with motion detector light switches.

We are working with schools to use sensor-type restroom fixtures where appropriate.

We plan to look at a number of ways to conserve electricity and other utilities at schools. Some of these ideas include:

- Installing timers on school night lights and turning off lights after a certain period (i.e., 11:00 PM).
- Instituting a blackout at night for all schools where appropriate.
- Limiting the use of personal appliances in school classrooms and offices.
- Limiting the watering of school grounds to early morning or late evening.
- Encourage the use of networked printers rather than individual printers.
- Encourage shutting off all computers at the end of the workday.
- Encourage shutting off central air conditioning one half hour prior to the close of business.

DOH: Presently, the Department has not addressed this issue except through State-sponsored programs. The Department plans to issue material to its employees to encourage conservation via bulletins regularly issued by the Communications Office.

DOT-Air: The airports must try to minimize water usage, but must also be mindful of the time constraints on passengers. The airport is exempt from rules on low-flush toilets to accommodate passengers' time restrictions, but utilize sensors for toilet flushing and sink use to keep from wasting water.

The airport utilizes R-1 water where possible and non-potable water next for irrigation to landscaping. As an example, Kona International Airport at Keahole uses the effluent of their Wastewater Treatment Plant for irrigation, while Honolulu International Airport uses non-potable water from Sumida Watercress Farm for irrigation.

At Honolulu International Airport and Dillingham Airfield, the Airports Division has a contract with an outside firm to provide monitoring of the water system so repairs can be found and repaired quickly to keep from wasting water. Meters are also read and checked against prior usage to see if there is a spike in water use, which may indicate a problem.

The airports must also try to conserve energy, but must also be mindful of the comfort level of the passengers and workers.

At Honolulu International Airport, there is an Energy Monitoring and Control System to turn off lights in areas that are not in use and reduce / eliminate air conditioning in these

same areas. Current projects at Honolulu International Airport include the elimination of older, less efficient chillers with new chillers and a chilled water loop system which will enable chillers to be shut down during low utilization periods, and operating on fewer chillers, but at a higher efficiency.

At Kona International Airport at Keahole, plans are continuing for the use of cold "deep sea" water as chilled water for cooling enclosed areas, and installing a new parking deck covered with photovoltaic cells to provide the airport with approximately 1/5 of its current energy needs.

DOT-Har: Water efficiency: DOT Harbors Division will: install, where practical, low flow toilets, low flow shower heads, and faucet aerators; install timers or require staff to conduct irrigation and watering of plants during early morning or evenings to reduce water lost to evaporation; and develop program milestones to encourage 100% implementation over a period of time.

Energy efficiency: DOT Harbors Division will: install timers onto HVAC and/or motion detectors onto lighting systems and other equipment facilities as appropriate; install tinting to windows and glass doors as appropriate; monitor lighting levels and use natural window/skylight lighting as sufficient; and develop program milestones to encourage reduction of energy consumption over a period of time.

FTZ: Faucets in the two bathrooms in the newly constructed wing of the building provide a timed flow of water before shutting off. Toilets installed in the two new bathrooms use a commercial flush system.

FTZ had two forty-ton chiller units installed about four years ago and one fifty-ton chiller unit installed last year. The chiller units were purchased and installed based on a 2001 Energy Feasibility Study of the Foreign-Trade Zone No. 9, prepared by a consultant. Approximately 40 new individual air conditioning units with high efficiency motors were purchased and installed last year, also based on the 2001 Energy Feasibility Study of the Foreign-Trade Zone No. 9.

FTZ's outside lights are on a timer system. FTZ uses T8 fluorescent lights in its administrative and tenants' offices. DBEDT's Strategic Industries Division staff briefed FTZ staff on energy efficiency, specifically in the areas of lighting and HVAC. FTZ staff attended training concerning new developments in lighting.

HCDA: HCDA has installed moisture sensors on the irrigation system in Kakaako Waterfront and Kakaako Makai Gateway Parks to conserve water.

HHFDC: HHFDC is reviewing its requests for proposals, management contracts, policies, procedures, and administrative rules to determine how to incorporate water and energy efficient practices.

HHSC: Hawai'i Health Systems Corporation presently has a contract with NORESCO to perform energy audits on 12 of its facilities. To address this issue, three facilities have installed low water flow fixtures. Energy audits for the remaining facilities will include the use of low water fixtures. Another practice to reduce water and energy loss will be scheduling lawn watering for nights or early mornings.

HPHA: HPHA is in the process of soliciting an Energy Performance Contract with a qualified Energy Service Company. We anticipate awarding the contract by mid 2007. The contract will include water saving programs on most of our projects.

HSPLS: HSPLS has incorporated several energy efficiency practices in our operational procedures, such as turning off the lights when not in use, adjusting the air conditioning timer and temperature (although we need to maintain it at a certain level to prevent mold problems), minimizing landscape watering, etc.

HTA-CC: The Hawai'i Convention Center has automatic flushometers on all of its urinals and automatic faucets on all of its sinks in order to regulate the amount of water used.

Irrigation is controlled by a moisture sensor which prevents it from coming on in the rain. Cooling towers and irrigation have secondary meters located on the potable water inlet to record the amount of water that is not going back to the sewer. The new dish machine recycles its waste water to recover heat and reuses water until it is in a "brown" state.

NELHA: Staff uses cold water whenever possible for washing dishes for and personal hygiene. Staff uses electric golf carts instead of other vehicles whenever possible. The golf carts have all been retrofitted with photovoltaic solar panels to charge their electric batteries.

PSD: As funding has been made available, the department has initiated projects to replace aging air conditioning and elevator equipment, resulting in improved operating efficiency. Many PSD facilities on O‘ahu have also been retrofitted with energy efficient electronic ballasts and T-8 lamps. We will identify landscape irrigation systems throughout our correctional system which may be replaced with a system that incorporates rain sensors and a sub-meter as water conservation measures.

During fiscal year ’07, pilot retro-commissioning projects will be initiated on O‘ahu, Hawai‘i, Maui and Kaua‘i to develop strategies that would result in energy savings. The replacement of T-12 fluorescent lamps with energy efficient electronic ballasts and T-8 lamps will be initiated at neighbor island Corrections and Law Enforcement Division facilities. The department will also be conducting cost-benefit analyses to determine the feasibility of replacing existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps on O‘ahu. Also on O‘ahu, a major effort will be made to repair and upgrade landscape irrigation systems in each Corrections and Law Enforcement Division facility to increase water conservation. The department will also be working with the Board of Water Supply to determine the feasibility of using leak detection loggers to located and repair "phantom" plumbing leaks.

PSD will be looking into performing a cost/benefit analysis for replacing the existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps.

TAX: On March 1, 2006, the Director of Taxation issued a Memorandum regarding Energy Conservation to all Department of Taxation Employees. The Department of Taxation (DOTAX) coordinated with the Department of Accounting and General Services (DAGS) to ensure that best practices were incorporated in this memorandum.

DOTAX is charged for after hours and weekend air conditioning usage. Requests for after hour and weekend air conditioning are primarily during tax season when we run night and weekend shifts to process a surge of tax returns, deposits and refunds. These requests continue to be monitored and approved by the Administrative Services Officer.

UH: ● Toilets and urinals have low flow flush valves and existing valves have been replaced with sensor valves where possible. Waterless urinals have not been adopted, but are being tested for operation and maintenance review.

● Showers have low flow heads.

● Fluorescent fixtures, when required to be replaced, are converted to energy efficient ballasts and lamps.

● Water leaks get top priority for repairs.

● Major water pumps and fans have variable speed drives.

● Classes are consolidated into filled buildings during evening and weekends when possible.

● Systemwide, the University of Hawai‘i has implemented water and energy efficiency practices in operations through its repairs and maintenance programs. All major air conditioning projects provide for the installation of energy efficient equipment, and existing lighting is replaced with energy efficient fixtures.

Act 96 SLH 2006: Buildings and Facilities

(5) Incorporate principles of waste minimization and pollution prevention, such as reducing, revising, and recycling as a standard operating practice in programs, including programs for waste management in construction and demolition projects and office paper and packaging recycling programs;

AG: All purchasing staff have been advised to first consider recycled materials, especially paper, when reviewing and processing purchase requisitions. Our offices continue to utilize the recycle bins in the copier rooms, and within each division boxes are provided for recycling paper. Staff have also been trained to save and transmit documents electronically, whenever possible.

B&F: The Department currently participates in an office paper recycling program. The Department will issue a memorandum to remind all employees of the recycling program and review the program to determine if measures can be taken to increase participation.

DAGS: A program of office recycling (white paper and cardboard) has been in place for several years. However, due to the termination of the recycling contract that was entered into by the Department of Health, DAGS is now in the process of soliciting bids to continue these services. In the future, the department will be looking to expand its recycling efforts.

A pilot reverse-vending machine project for recycling aluminum cans, glass and plastic has been established at the State Capitol to determine feasibility of the concept. The machines allow individuals to recycle empty containers and receive payment for the containers that were deposited. Although the project is doing well, the pilot will be analyzed further before expanding to other sites. The machines, which are supplied by Reynolds Recycling, are expensive. In essence, it was determined that the machines must have 24/7 security, hence they should be located inside buildings. We also learned that the state must service (empty) the machines, crush the aluminum cans, and store all the cans, glass and plastics for pick-up. This limits the ease of operating the program at all state facilities.

A draft Construction Waste Management Guide Specification (CWMGS) was posted on the PWD website for implementation. Much of the CWMGS concerns monitoring and keeping records of construction waste management. We were informed via discussions with construction industry representatives that these may be additional tasks that take time and money. Unfortunately, if we do away with the monitoring and record-keeping, there is no way that we can "measure compliance." PWD sought input from contractors, vendors, and the public via on-line surveys and continued participation in the Environmental Committee of the General Contractors' Association for ideas to draft a construction waste management specification which would not add to project cost. Response from the construction industry was sparse, and without a mandate and adequate funding to continue, it lacked the necessary support for full implementation. Once funding for this type of initiative is identified, say, as part of a LEED certification initiative, the specification can be used.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT coordinated the recycling of white paper, newspaper and phone books in ten state buildings located in downtown Honolulu.

DBEDT assisted with the coordination of a marine debris recycling program. The program won a "Top 50" award from the Harvard School of Business' 2006 Innovative Government competition which received over 1,000 applications. Over 570 tons of fishing net have been collected and recycled for fuel over a 7-year period.

DBEDT coordinated the Build & Buy Green Conference & Expo at the Hawai‘i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. Construction and demolition waste management and pollution prevention practices were discussed at length as means of achieving Hawai‘i BuiltGreen™ 3-Star Level.

Through its Environmentally Preferable Purchasing (EPP) project, DBEDT helped document and prepare a case study of the successful reuse or recycling of over 90% of the construction and demolition waste at the John A. Burns School of Medicine (JABSOM). The $150 million JABSOM project, about 338,000 square feet, replaced a Hawai‘i Department of Agriculture facility consisting of post-war buildings, concrete slabs, and steel-framed warehouses. The primary demolition waste, concrete, 82.7% of total waste by weight (12,607 tons out of 15,242 tons), came from foundations, slabs, and pile cutoffs. Concrete was either crushed and reused onsite as concrete aggregate, or hauled offsite to the demolition contractor's salvage yard or a State Department of Transportation site for reuse. Metal, 4.6% of total waste by weight (698 tons), was generated from the steel building structure, reinforcing, and metal siding, and was recycled offsite. Miscellaneous items totaling 614 tons (4% of total waste by weight), including paving, landscape, cardboard, and paper waste, were collected and separated on-site for offsite recycling.

DCCA: DCCA always encourages employees to recycle used paper. Blue recycle bins are located in the building and picked up weekly by Island Recycling, contracted through DAGS.

DHHL: Staff has been encouraged to recycle office paper and other recyclables whenever possible. Land Development Division is encouraged to incorporate waste management programs in their development/construction contracts to minimize waste and pollution prevention.

DHRD: The Department participates in the office paper recycling program in the Leiopapa a Kamehameha Building.

DHS: DHS will issue waste minimization and recycling procedures, consulting with the appropriate agencies.

DLIR: DLIR is currently participating in an Environmental Preferable Purchasing (EPP) survey mandated under the following Federal and State law, and the applicable Administrative Directives:

1. Resource Conservation and Recovery Act (RCRA), Section 6002, 42 U.S.C. 6962. The RCRA requires state and local government agencies and their contractors receiving appropriated federal funds to purchase EPA designated recycled content products.
2. Section 103D–1005(b) of the Hawai‘i Revised Statutes. Section 103D-1005(b) requires state purchasing agencies and encourages county purchasing agencies to
   - Apply preferences to purchase of products with recycled content;
   - Be consistent with RCRA Section 6002, E/O. 13101 and its progeny; and
   - Ensure, to the maximum extent economically feasible, the purchase of materials that may be recycled or reused when discarded and to avoid the purchase of products deemed environmentally harmful.
3. Administrative Directive 06-01, signed by Governor Lingle in January 2006, requires State agencies to purchase environmentally preferable products that reduce their impact on the environment and improve indoor environmental quality. Also included are Energy Star and low toxic products that are examples of environmentally preferable products.

DLIR will utilize the results of the EPP survey to structure and plan for the period July 1, 2006, to June 30, 2007. In addition, DLIR will continue to utilize the SPO price list and require all programs to purchase recycled and environmentally preferable products.

DLNR: DLNR staff has implemented office paper recycling. DLNR has begun to incorporate energy savings practices into design projects such as the recycling of existing asphalt concrete pavement into backfill material.

DOA: DOA has installed recycling bins for collecting white paper only on O‘ahu. It is working with DAGS to have Island Recycling continue pick-up service for a fee. DOA asked SPO if recycling services for paper, computer equipment, etc., can be placed on the bid list. It was informed by SPO that, for computer related equipment, the current WSCA computer contract has provisions for “taking back” equipment and the department needs to research the specific contract provisions.

DOA developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goal of minimizing energy, fuel and water consumption and implementing resource-efficient operations including promoting the “4 Rs” – reduce, recycle, reuse and rebuy. DOA also developed a draft Energy and Water Action Plan to identify steps/actions to promote the 4 Rs and establish a recycling program.

DOE: In meeting the requirements for LEED Silver or Two Green Globes rating systems, waste minimization, pollution prevention, and recycling of construction materials by the contractor will be included in the construction specifications for all new facilities. We will also incorporate these specifications for repair and maintenance (R&M) projects where applicable.

We are studying the feasibility of including separate refuse contracts for school-generated green waste and recyclable cardboard. We plan to initiate student-led “reduce, reuse, recycle” programs at the school level and monitor them for effectiveness. We plan to develop and implement a “reduce, reuse, recycle” program at the state and complex area offices.

DOH: All facilities recycle office paper. Bins are also available for recycling cans and bottles. DOH plans to issue guidelines for all health centers to follow.

DOT-Air: DOT’s Airports Division has implemented an island-wide dedicated unit for environmental compliance. This consists of Environment Health Specialists located at the major airports (Honolulu International Airport, Kona International Airport at Keahole, Kahului Airport and Lihu‘e Airport) to ensure compliance with all environmental regulations and to provide training to tenants and employees regarding environmental regulations.

Honolulu International Airport, even after the statewide recycling program was ended by a contractor, continues to recycle white paper and monitor the amount recycled. Glass, newspaper, plastic and aluminum recycling is made difficult by security regulations at airport locations. Currently, there is no program in place at our airports.

DOT-Har: DOT’s Harbors Division requires double-sided printing from copiers and printers as practical. It provides recycling bins for aluminum cans, bottles, plastic and papers where convenient. It will develop program milestones to encourage 100% implementation over a period of time.

FTZ: FTZ recycles cans and will be instituting a recycling program for cardboard boxes and newspapers.

HCDA: HCDA has incorporated recycling of bottles, cans, plastic and paper within its office. In demolition projects, the contractor is encouraged to separate and recycle materials whenever practical.

HHFDC: HHFDC is reviewing its requests for proposals, contracts, program requirements, policies, procedures, and administrative rules to determine how to incorporate these requirements, where possible.

HHSC: HHSC has identified hazardous substances such as chemicals and toxic pollutants. Each facility must manage different hazardous waste recycling activities in accordance with the degree of hazard they pose. As of 2004, HHSC took steps to eliminate medical equipment containing mercury by contracting with a certified waste disposal company to remove the hazardous waste. Plans were to reduce waste by 10%, increasing to a 20% reduction by 2009. Silver is being reclaimed as a precious metal, a valuable commodity with significant economic value. Used oil from automobiles, generators, vacuum pumps, and compressors is delivered to the County Landfill under their recycling program.

All Biohazard Wastes are autoclaved then shredded to tiny chips and placed into a large covered bin. A consultant is being hired to remove all biohazard sharps in compliance with county codes, eliminating a health hazard to personnel. Batteries with lead-acid and alkaline content are disposed of through a designated contractor.

Construction materials are separated whenever possible. Paper and cardboard boxes are recycled. Green waste is stored in bins and delivered to a green waste facility for composting. CRT and TV monitors are removed and disposed of through a Computer-Swap Program sponsored by the County of Maui.

HPHA: HPHA is researching the development of a recycling program (white paper) and may solicit bids to implement these services. HPHA will review the potential of including a program for construction waste management.

HSPLS: HSPLS does subscribe to recycling through the state program which was discontinued only recently.

HTA-CC: The Hawai'i Convention Center has an extensive recycling program that is used both for all administrative offices and for events within the building.

NELHA: Recycling has been practiced at NELHA for years. It recently became impractical due to thefts by the public from the recycling containers, creating more staff work cleaning up the beaches and areas around recycle containers. It is NELHA practice to save every piece of material from any demolition project in the hope that it may be reusable to defray future capital costs. We have a "boneyard" of pipe, pumps, OTEC parts, instrument readers, etc., for this purpose.

PSD: A program of office recycling (white paper and cardboard) has been in place for several years at all state departments. However, due to the termination of the recycling contract that was entered into by the Department of Health, DAGS is now in the process of soliciting bids to continue these services. Based on these future contracts, the department hopes to resume its recycling efforts.

A pilot reverse-vending machine program for recycling aluminum cans, glass and plastic has been established at the State Capitol to determine feasibility of the concept. The machines allow individuals to recycle empty containers and receive payment for the containers that were deposited. It is doing well, though the pilot will continue before expanding to other sites. The machines are expensive. In essence, it was determined that the machines must have 24/7 security, hence they should be located inside buildings. We also learned that the State must service (empty) the machines, crush the aluminum cans, and store all the cans, glass and plastics for pick-up. This limits the ease of operating the program at all State facilities, including correctional and PSD administrative offices. Staff are reminded to turn off equipment when not in use, keep blinds closed, and report equipment malfunctions. Energy efficient light bulbs are used where plausible.

TAX: DOTAX's standard operating practice includes monthly paper recycling.

UH: University of Hawai'i System – Apple Computer, in partnership with the University of Hawai'i (UH), will host an End-of-Life (EOL) Electronics recycling event in order to collect, consolidate and recycle UH's and Hawai'i Department of Education's (HDOE) EOL electronics in an environmentally sound and friendly manner. Eligible equipment will

include: CPUs, laptops, servers, CRT monitors, LCD displays, CRT or LCD televisions (no wood console or projection), printers, scanners, desk top copiers, external floppy/hard drives, keyboards/mice, computer speakers, standard computer related peripherals, cell phones, PDAs, DVD players and home stereo systems (no wood speakers). During the week of October 23, 2006, Apple will coordinate the collection of these materials at a designated area on a UH campus on each of the islands of Oʻahu, Kauaʻi, Maui and Hawaiʻi. At no cost to the UH or HDOE, Apple will take responsibility for preparing and loading these materials for shipment to Apple's contracted corporate recycling partner in California, ECS Refining. Systemwide, UH recycles unneeded cardboard, white paper, shredded paper, mixed/color paper, glass, plastic, aluminum, batteries, landscape cuttings, and printer cartridges. Unneeded computers are sent to educational programs for reuse, such as in the prison or in the electronics program for training purposes. Food service vendors use re-usable tableware where practical. Campuses partner with local county recycling points to actively promote program. The University of Hawaiʻi has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects systemwide. Waste management will be specified in construction and demolition projects to the extent possible, including waste minimization and pollution prevention practices in the campus operations and maintenance.

University of Hawaiʻi at Mānoa: Mixed paper, newspaper, and cardboard are collected at 35 different locations on campus and taken to Honolulu Disposal where they are recycled. Green waste is collected and processed into chips and used as mulch throughout the campus. When it cannot be used as mulch, it is taken to Hawaiian Earth Products where it is recycled and packaged as compost. Metal is collected, sorted by grade, and then taken to Hawaiʻi Metal Recyclers where it is recycled. All remaining trash collected from UH-owned dumpsters is sent to H-Power where it is converted into energy. Glass, plastic and aluminum beverage containers from the Recycling Pilot Project are taken to Honolulu Disposal. Since February 2005, UHM has had a contract with RRR Recycling Services Hawaiʻi to provide, operate, and maintain a mobile redemption truck operation for redemption of acceptable containers with the HI-5 label.

University of Hawaiʻi at Hilo – UHH recycles unneeded cardboard, white paper, shredded paper, mixed/color paper, glass, plastic, and aluminum. Batteries are recycled. Old computers are sent to educational programs at the prison for reuse and/or to electronics programs for training purposes. The campus food vendor uses reusable plates, glasses, table wear where practical. Food byproducts are used as slop food for farm pigs.

University of Hawaiʻi West Oʻahu – UHWO has an informal paper recycling program for which its custodians transfer paper to a recycling container on the campus. The program has been ongoing for five years and approximately 300 pounds are collected per month. UHWO also plans to participate in the islandwide Apple/UH computer recycling program.

Community Colleges – Please see Appendix 1.

Act 96 SLH 2006: Buildings and Facilities

(6) Use life cycle cost-benefit analysis to purchase energy efficient equipment such as ENERGY STAR products and use utility rebates where available to reduce purchase and installation costs; and

AG: All staff involved in purchasing of equipment have been advised of the Energy Star program and must document reasons for not purchasing Energy Star, when available.

B&F: The Department will include the use of life cycle cost-benefit analysis where applicable.

DAGS: Mechanical equipment (i.e. a/c, pumps, etc.) have long been required by DAGS to be of high efficiency type and utility rebates have been used to help offset installation and higher pricing costs for the energy efficient products. DAGS has been working with HECO to improve internal procedures to insure utility rebates are not missed.

DAGS will be looking into cost/benefit analysis for replacing existing a/c systems with new, more efficient, systems even prior to the existing systems reaching their expected life span. Energy Star equipment, where available, will be a standard requirement for all construction.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT coordinated the annual International Illuminating Design Awards Program which highlights energy-efficient lighting projects and includes life-cycle costing in judging superior design and application.

DBEDT conducted or cosponsored numerous seminars on energy efficiency for state employees and the private sector.

DBEDT managed the Energy Star Product Promotion and Procurement Project, which included the following activities:

- Conducting Energy Star product procurement workshops to promote purchasing of Energy Star products by State of Hawai‘i and local government housing as well as other state, federal agencies, and the Pacific island territories.
- Providing technical assistance to housing, local government, state and/or federal agency representatives in purchasing Energy Star products.
- Promoting other training opportunities such as on-line Energy Star webcasts in areas such as Energy Star Procurement and Products.
- Providing technical assistance to support a case study project using Energy Star products in a residential setting.
- Coordinating participation and attendance of various state agency representatives at the training sessions.

DBEDT coordinated the Build & Buy Green Conference & Expo at the Hawai‘i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. Life-cycle cost analysis and Energy Star products were discussed at length as a means of achieving Hawai‘i BuiltGreen™ 3-Star Level.

DBEDT's Energy Star Demonstration Dorm Room Open House was held on October 5, 2005, National Energy Star *Change a Light, Change the World Day*. Television and newspapers covered this event at the Hale Wainani Student Apartments at the University of Hawai‘i at Mānoa (UHM). The demonstration documented that simply purchasing Energy Star equipment can save over $138 per room annually. Since then, UHM Facilities has purchased and is committed to continue purchasing Energy Star refrigerators and washing machines to replace old/outdated ones at the student dormitories.

Governor Lingle joined the National Energy Star *Change a Light, Change the World Campaign* and also proclaimed October 2005 Energy Awareness Month. A similar

proclamation has been proposed for the 2006 *Change a Light, Change the World Campaign.* DBEDT coordinated Hawai'i 's observance of the US Department of Energy's *Change a Light, Change the World* program, including publicizing economic benefits via life-cycle costing.

The Kalani Gardens Case Study/Energy Star for Low-Income Housing Project identified energy saving opportunities in low-income housing facilities in a 119-unit multi-family housing development in Mililani. The proposed annual cost savings resulting from the replacement of conventional products with Energy Star products was estimated to be $23,000 per year (increasing to $50,000 per year if solar water heating was included.)

DCCA: DCCA purchases Energy Star products for all available computer equipment.

DHHL: Fiscal office and staff involved in purchasing equipment for the office and development projects are encouraged to look at Energy Star Products and use rebates where available to reduce purchase and installation cost.

DHRD: The Department uses the State Procurement Office price/vendor lists for procurement of most of its goods and equipment. All computers, monitors, and printers that are purchased are Energy Star products.

DHS: DHS will issue procurement procedures that will require energy efficient and utility rebate specifications as applicable.

DLIR: DLIR programs have not been major users of Energy Star products; however, DLIR will include a procedure to add Energy Star products as part of the procurement approval process. In addition, DLIR will include in our procurement procedure a policy to check whether utility rebates are available and can be utilized in the purchase of the products.

DLNR: DLNR uses life cycle cost-benefit analysis to purchase energy efficient equipment such as Energy Star products and uses utility rebates where available to reduce purchase and installation costs.

DOA: DOA has developed a draft Energy and Water conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goal of minimizing energy, fuel and water consumption and implementing resource efficient operations, including purchasing energy efficient equipment such as Energy Star products and using utility rebates where available.

DOE: The Office of Business Services, through the Auxiliary Services Branch, will specify Energy Star products in all relevant purchases and will advise school-level personnel of this requirement. The Procurement and Contracts Branch will help schools and DOE offices develop the bid specs to analyze life cycle costs and benefits to purchase energy efficient equipment over $25,000.

DOH: The Diamond Head Health Center and the Lanakila Health Center have recently been retrofitted with T-8 lamps and electronic ballasts in conjunction with HECO's rebate program. HECO recently discontinued this program. Mechanical and electrical equipment purchases are coordinated by the CIP office. It has been a standard practice to purchase energy efficient items. If any HECO programs are initiated in the future, the Department will apply for them. Programs will be instructed to purchase Energy Star products.

DOT-Air: Efficiency in energy use is always a major consideration in cooling tower, chiller and other HVAC equipment at all airports.

DOT-Har: DOT's Harbors Division will train staff on life cycle cost analyses and on available Energy Star technologies. The Division will replace existing equipment with comparable Energy Star equipment.

FTZ: FTZ had an Energy Star copy machine installed this year and will be purchasing new energy-efficient computers for its staff later this year.

HCDA: HCDA has instructed property managers in projects where HCDA is a general partner to replace light fixtures with energy efficient fixtures.

HHFDC: HHFDC is reviewing its requests for proposals, management contracts, program requirements, policies, procedures, and administrative rules to determine how to incorporate these requirements, where possible.

HHSC: Hawai‘i Health Systems Corporation will incorporate in its procurement process the acquisition of Energy Star products and other energy saving equipment.

HPHA: Currently, HPHA has a vendor list for appliances, where refrigerators are Energy Star rated. HPHA is in the process of soliciting an Energy Performance Contract with a qualified Energy Service Company. We anticipate awarding the contract by mid 2007. The contract will replace most appliances with Energy Star appliances at majority of our Projects. Energy Star equipment, where available, will be a standard requirement for all construction. HPHA will include utility rebates when analyzing life cycle cost benefit in purchasing.

HSPLS: HSPLS has already included these Energy Star products on our internal supply lists and has started incorporating compact fluorescent bulbs into incandescent fixtures to improve energy efficiency and reduce the workload of constantly changing the older, shorter-life bulbs. We have also applied for and received rebates from HECO on the installation of new lighting fixtures at Mililani and Hawai‘i Kai and will be pursuing more of these projects for the near future.

HTA-CC: The Hawai’i Convention Center has a policy of only purchasing Energy Star lighting and motor products. It added a 200-ton Jockey Chiller that provides chilled water to the a/c system when needed to maintain a limited air conditioning load in the building and allows the four 750-ton chiller plant to stay turned off, saving an enormous amount of energy. When installed, it was anticipated that the Jockey Chiller savings would have a ROI (Return on Investment) of 2-1/2 years. It has paid for itself in a little more than 1 year. Our Energy Management System automatically determines when the chiller will run based on outside air temperatures and inside building heat load. This also qualified for a HECO rebate.

Lighting and air conditioning are the two major areas where electricity is used at the Center. The loads are managed through our Energy Management System which schedules these loads based on our event schedule. We only light and condition space needed for a particular event, trying to minimize waste.

A new energy management system is going through its final phases of installation at this time. It was designed and installed by Automated Logic Company, a unit of United Technologies Corporation, and represents the latest technology in managing energy. It takes the event schedule directly out of Ungerboeck, our Meeting Room scheduling system, and schedules the lighting and air conditioning loads in real-time. It can make changes on the fly and track data so as to tell us where the energy is being used and how much energy is being used. It also has the logic ability to make adjustments in the system to save energy.

The parking garage has converted all of its lighting from metal halide to fluorescent. The payback was six months of operation and qualified for a HECO rebate.

Currently, we are analyzing replacement fixtures to replace all of the Exhibition Hall metal halide fixtures with a new hybrid lighting technology fixture that reduces the amount of energy used without losing the amount of lumens of light given off by each fixture.

Currently, we are analyzing the replacement of fixtures used in the exit corridors with a new automated energy efficient fluorescent fixture that lights the corridor on an as-needed basis instead of on a 24/7 basis, using a motion detector.

We continue to schedule escalators based on group size and the amount of people needed to be transported over a window of time, using the correct number of escalators for the exact amount of people, minimizing the amount of electricity used.

NELHA: NELHA was given a $6,000 rebate by HELCO last year for installing energy efficient equipment at its new 55" pump station. A total of $30,000 in rebates has been received from HELCO over the past seven years for the installation of energy efficient lighting, electric motors and motor controls. With an electric bill over $100,000 per month, NELHA practices extreme energy conservation, including not lighting offices whenever possible.

PSD: Mechanical equipment (i.e. a/c, pumps, etc.) have long been required by DAGS to be of high efficiency type and utility rebates have been used to help offset installation and higher pricing costs for the energy efficient products. DAGS has been working with HECO to improve internal procedures to insure utility rebates are not missed. DAGS will be looking into cost/benefit analysis for replacing existing a/c system with new, more efficient, systems even prior to the existing systems reaching their expected life span. Energy Star equipment, where available, will be a standard requirement for all construction.

TAX: DOTAX will use life cycle costs to evaluate future equipment procurements and use utility rebates where available to reduce purchase and installation costs.

UH: The University purchases Energy Star products from the SPO vendor lists for copiers and facsimile machines and personal computers and printers. In FY 2006, the University purchased Xerox copiers amounting to approximately $200,000. In addition, the University purchases Energy Star compliant Dell computers in the total dollar amount of $6,503,518.34.

The University of Hawai‘i at Mānoa issued RFP No. 07-27 in August 2006 for a vendor to provide a Beverage and Vending Rights Program for the campus. The RFP requires that all glass front coolers that contain non-perishable goods and all beverage and snack vending machines be equipped with an energy control device.

UH Hilo has been working with HELCO on energy efficient air-conditioning and light fixtures on all renovations and new projects.

Systemwide, the various campuses have been working with the local electric company's rebate program to purchase energy efficient air conditioning and lighting through the campus repairs and maintenance program. The University of Hawai‘i system has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects. The use of life cycle cost-benefit analysis will be incorporated into the design to determine the most energy efficient equipment to be incorporated into the building.

Act 96 SLH 2006: Buildings and Facilities

(7) Procure environmentally preferable products, including recycled and recycled-content, bio-based, and other resource-efficient products and materials.

AG: Recycled paper is required, unless previously approved by the Administrative Services Office. Staff are aware of the policy to utilize environmentally friendly products; however, there is very minimal use of hazardous materials within the department.

B&F: The Department currently purchases environmentally preferred products as contained in the SPO price lists. The Department will issue a memorandum to all employees emphasizing the preference to purchase environmentally preferable products when feasible and practical.

DAGS: The Central Services Division has begun field testing custodial cleaning products that are environmentally friendly. The goal for fiscal year '07 is to increase the use of such products by 70%. The division is also researching the availability of environmentally friendly products for landscape maintenance application. The department continues to purchase paper and other products that are recycled or have a recycled content whenever such products are available.

The State Procurement Office (SPO) makes available to executive departments and other jurisdictions, including the counties, the following price or vendor list utilizing Energy Star, recycled, or EPP products. When other SPO price/vendor list contract terms are due for re-solicitation, the specifications are reviewed and amended to allow for energy efficient products.

SPO PRICE AND VENDOR LIST:

Energy Star Products

- Copiers and Facsimile
- Personal Computers and Printers

Recycled Products

- Paper Products, Coarse (i.e. paper towels, toilet paper, etc.)
- Paper, Recycled Office
- Office Supplies (paper products such as manila folders, etc.)
- Printed materials
- Bags, Disposable Poly (plastic)
- Calendar Refills
- Computer and Printer Supplies (Remanufactured printer cartridges)
- Forms (white paper stock)
- Envelopes

Environmental Preferable Purchasing (EPP) Products

- Gasoline and Diesel Fuel, Bulk Deliveries (E10 regular fuel)
- Gas Fueling and Credit Card Services
- Industrial Supplies (WSCA)

For products not covered by SPO price or vendor list, purchasing agencies utilize the following requirements:

RECYCLED PRODUCTS PREFERENCE

Reference: HRS §103D-1005 and HAR Chapter 3-124, Subchapter 4.

- Encourages the use of recycled products by State and county purchasing agencies.
- Provides a preference to all Invitation for Bid solicitations, when it is required or so stated in the solicitation.

- Solicitation shall state the percent of recycled content required to qualify for the preference.
- The solicitation shall state the percentage of the preference be at least five percent of the price of the recycled item, and will be for evaluation purposes.
- State purchasing agencies shall purchase office paper and printed material with recycled content; County purchasing agencies are urged to purchase office paper and printed material with recycled content.

PREFERENCE FOR OIL PRODUCTS WITH GREATER RECYCLED CONTENT

Reference: Act 053/1999 establishes HRS §§103D-1301 to 103D-1304.

- Purchasing agencies shall purchase oil products containing the greatest percentage of recycled oil.
- Virgin oil or oil products containing a lower percentage of recycled oil may be purchased provided the recycled oil is:
  - Not available within a reasonable time or quantities that meet an agency's needs;
  - Not able to meet the performance requirements as recommended by the equipment or vehicle manufacturer;
  - Cost is greater than the cost of comparable virgin oil; or
  - Likely to breach any warranty requiring the purchase of virgin oil only.

The SPO issued Procurement Circular 1999-07, September 21, 1999, to solicit agencies' requirements to issue a statewide price list for recycled oil products to be in compliance with Act 053/1999. The resulting price list, *Oils, Lubricants and Greases*, was established to address the requirements listed in Act 053/ 1999. The SPO has continued to obtain solicitations for recycled oil offering a 5% recycled product preference; however, suppliers have only bid virgin oil.

Since suppliers have submitted bids for only virgin oil, the low demand for recycled oil products does not warrant bringing in recycled products, especially since the cost for virgin oil is generally lower than recycled oil. Additionally, no bids have been received for any products (virgin oil or recycled oil) on the island of Hawai'i. A possible explanation is that the annual dollars spent for these products by each purchasing agency do not exceed the small purchase threshold of $25,000. Therefore, both the agencies and suppliers on the island apparently feel it is not necessary to submit requirements or offers.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT procured office and copy paper with 35% post-consumer recycled content.

DBEDT provided input into the EPP Survey sent out by DOH and DAGS SPO in August 2006 to assess the FY 2005 environmental purchasing efforts of the state agencies. Results from the DOH and DAGS SPO survey are expected in late 2006.

DBEDT coordinated the Build & Buy Green Conference & Expo at the Hawai'i Prince Hotel Waikīkī, attended by about 430 people, including 84 from state agencies. Environmentally preferred purchasing practices, including recycled, bio-based, and other resource-efficient products and materials, were discussed at length as a means of achieving Hawai'i BuiltGreen™ 3-Star Level.

DBEDT worked with the State Departments of Accounting and General Services (DAGS) and Health (DOH), the University of Hawai'i at Mānoa, and other agencies to expand the state's buy-recycled purchasing efforts and examine opportunities to purchase other environmentally-preferable products. Developed the following in support of the Environmentally Preferable Purchasing (EPP) - Resources, Outreach, and Technical Assistance Project:

- List of EP Products available in Hawai'i - webpage and publication

- Fact Sheets on Federal Executive Orders, Hawai‘i Statutes and Resources - webpage and publication
- Case Study of Successful EPP Efforts - webpage and publication
- Evaluation and Report of present procurement practices and procedures
- Recommendations regarding procedural, specs, bid requests, etc., guidance to address EPP concerns
- Review and follow-up of technical assistance with summary of impact and degree of change in agency procurement practice as a result of the technical assistance
- Summary Report of EPP Technical Assistance and Buy Recycled Results: The 112 Hawai‘i EPP Survey responses received for FY 2004 revealed that State of Hawai‘i agencies spent approximately $750,000 on recycled products. The survey also found that 90% of office paper purchased contained recycled content. The purchase of recycled office paper by State of Hawai‘i agencies alone resulted in an environmental savings of: 1,628 trees; 488,460 gallons of water; 286,089 kilowatt hours of electricity; and 4,187 pounds of air pollution. A summary for the FY 2005 EPP survey was not completed, but an FY 2006 survey summary is forthcoming.

DCCA: DCCA purchases recycled paper products when available on and off bid list.

DHHL: The Fiscal Office has been requested to look into buying environmentally preferred products and material whenever available.

DHRD: The Department uses the State Procurement Office price/vendor lists for procurement of most of its goods and equipment. Office paper and plastic trash bags that are purchased are recycled content products. The Department also completed the EPP Survey that will assist the State Procurement Office with the development of a recycled product procurement program.

DHS: DHS will coordinate with the State Procurement Office (SPO) to ensure that price list products satisfy environmentally preferable requirements.

DLIR: DLIR’s practice is to mandate the purchase of recycled paper and to utilize the State Procurement Offices Price List (SPO PL) for all purchase where products are available through the SPO PL. DLIR will also issue a departmental instructional memo to insure conformance with the results of the EPP Survey and be included in the procurement policy.

DLNR: DLNR encourages the use of recycled products with contractors. DLNR also adheres to the allowed 10% price preference for bids using recycled products in accordance with Section 103D-1005, Hawai‘i Revised Statutes.

DOA: DOA has completed and submitted the Environmentally Preferable Purchasing (EPP) Survey to the Department of Health (DOH) reflecting the amount of recycled goods purchased during FY 2002, FY 2004 and FY 2006 compared to non-recycled counterparts. DOH recently informed department that we were one of four agencies with outstanding EPP reporting efforts for FY 2004.

We have compiled data provided in the EPP Survey on recycled and non-recycled content products purchased in FY 2002, FY 2004, and FY 2006 to establish a baseline for monitoring the department’s recycling efforts. We have requested from DOH results of the survey for FY 2002 and FY 2004 on a statewide basis, but none have been received to date.

DOA has inquired with SPO if vendors who are awarded bids for recycled products can be required to report to the State, as part of their contract, the amount of recycled products purchased by each agency at the end of each fiscal year. We were informed by SPO that most vendors are not able to separate data by department, so departments have to track their own purchases.

DOA developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goals of minimizing energy,

fuel and water consumption and implementing resource-efficient operations, including promoting the "4 Rs" -- reduce, recycle, reuse and re-buy--and encouraging use of the Department of Business, Economic Development, and Tourism (DBEDT) Environmental Product Guide for listing of environmentally preferred products.

DOE: Our Procurement and Contracts Branch will include environmentally preferable specifications where appropriate.

DOH: Presently, the Department has not addressed this issue except through state-sponsored programs. Programs will be advised to purchase these products, provided they are not mandated to purchase specific items from the Statewide Bid List.

DOT-Air: Our baseyard and custodial staff purchase their products through the State procurement system.

DOT-Har: DOT's Harbors Division will implement this procurement and develop program milestones to encourage 100% implementation over a period of time.

FTZ: All paper products, including Xerox paper, bond paper, paper towels, toilet paper, and so forth, are purchased through the State Bid List.

HCDA: HCDA has utilized cold plane to minimize the need for weed eradication on its Historic Pump Station lot.

HHFDC: HHFDC is reviewing its requests for proposals, management contracts, program requirements, policies, procedures, and administrative rules to determine how to incorporate these requirements, where possible.

HHSC: Hawai'i Health Systems Corporation will incorporate in its procurement process the acquisition of environmentally preferable products.

HPHA: HPHA has purchased/leased Energy Star rated equipment such as refrigerators, printers, copiers, and facsimile machines HPHA purchased SPO price list items such as recycled content plastic trash bags (340 cases), toilet paper (135 boxes), hand towels (439 cases), office paper (560 cases), etc. HPHA will disseminate information to educate staff and residents about the benefits of purchasing recycled and environmental preferable purchasing products.

HSPLS: HSPLS procures these types of products wherever practical and cost efficient.

HTA-CC: The Hawai'i Convention Center mandates that all its procurement of expendable products must give preference to recycled and environmentally friendly products at all times.

NELHA: State policies, guidelines, and procedures are followed in the procurement of products. To the extent possible, recycled, bio-based, and resource-efficient products are procured.

PSD: Various Corrections Division facilities have begun field testing custodial cleaning products that are environmentally friendly. The goal for fiscal year '07 is to increase the use of such products by 70%. The division is also researching the availability of environmentally friendly products for landscape maintenance application. The department continues to purchase paper and other products that are recycled or have a recycled-content whenever such products are available.

TAX: DOTAX will coordinate with the State Procurement Office in the purchase of environmentally preferable products including recycled and recycled-content, bio-based, and other resource-efficient products and materials.

UH: LEED (Leadership in Energy & Environmental Design) requirements are included in all new construction projects. Systemwide, the University of Hawai'i has adopted the LEED rating system in all Capital Improvement Program new and major renovation projects. Environmentally preferable products for construction will be specified in accordance with LEED principles and guidelines to the extent possible.

The University participates in various SPO price and vendor lists that include recycled products. The extent of the procurement of environmentally preferable products and materials is not known. Copier paper is recycled paper.

The University participates in the SPO price lists for bulk gasoline and gas credit card services. The University is a participant in the WSCA Industrial Supplies vendor list.

All Invitations for Bids issued by the University of Hawai‘i include a Recycled Products Preference (Reference: Section 103D-1005, HRS, and Subchapter 4, Chapter 3-124, HAR).

For all small purchases of office paper, University departments will be required to purchase recycled paper products, specifying that each sheet or individual unit shall consist of thirty percent (30%) recycled material, post consumer recovered material waste, or both.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(1) Comply with Title 10, Code of Federal Regulations, Part 490, Subpart C, "Mandatory State Fleet Program", if applicable;

AG: We do not have a fleet.

B&F: The entire section not applicable to B&F.

DAGS: DAGS Automotive Management Division (AMD) has determined that it is in compliance with the federal requirement by purchasing only new alternative fuel vehicles. AMD recommends that departments determine the applicability of their vehicles or fleet to the federal requirements under 10 CFR, Part 490.

The SPO has procured alternative fuel E85 vehicles when requested by Departments of the Executive Branch since January, 2000. The Department of Agriculture and Department of Accounting & General Services, Automotive Management Division, have submitted requests and purchased E85 vehicles based on the Alternative Fuel Transportation Program (10 CFR, Part 490).

DBEDT: Does not apply. DBEDT does not have a "covered fleet."

DCCA: n/a. DCCA does not own any vehicles.

DHHL: DHHL is already in compliance and will continue to comply with Title 10, "Mandatory State Fleet Program."

DHRD: n/a. The Department does not have any transportation vehicles.

DHS: DHS will coordinate with the DAGS-Automotive Management Division (AMD) to ensure that vehicle purchases comply with the applicable requirements.

DLIR: DLIR currently owns two gas engine operated vehicles and is not required to comply with Title 10, Code of Federal Regulations.

DLNR: Federal regulations not currently applicable to DLNR.

DOA: The department is in compliance with Title 10, Code of Federal Regulations.

DOE: Our Auxiliary Services Branch is reviewing the Federal Regulations to see if they are applicable to DOE, based on our fleet size and administrative organization. Once that is determined, we will take the necessary steps to comply, if applicable.

DOH: The programs are in compliance.

DOT-Air: Airports Division is a covered fleet under this CFR. The Division has been and is still in total compliance with the Federal Law.

DOT-Har: We need to do more research and develop an implementation plan.

FTZ: None of our agencies operate a "covered fleet" of more than 50 non-excluded light duty vehicles.

HCDA: Our agency does not operate a "covered fleet" of more than 50 non-excluded light duty vehicles.

HHFDC: n/a

HHSC: None of our agencies operate a "covered fleet" of more than 50 non-excluded light duty vehicles.

HPHA: Hawai'i Public Housing Authority has been and is still in compliance with the Federal laws.

HSPLS: HSPLS will continue to consult with DAGS Procurement staff to ensure compliance with the referenced regulations.

HTA-CC: None of our agencies operate a "covered fleet" of more than 50 non-excluded light duty vehicles.

NELHA: Not applicable.

PSD: The vehicles owned by the PSD are classified as Law Enforcement vehicles—Sheriff Division, Narcotics Enforcement Division and the Division of Corrections.

TAX: None of our agencies operate a "covered fleet" of more than 50 non-excluded light duty vehicles.

UH: University of Hawai‘i Transportation Services is currently in compliance.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(2) Comply with all applicable state laws regarding vehicle purchases;

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: Act 96/2006, Part IV, amended HRS §103D-412 for energy-efficient vehicles. The SPO is drafting a revision of rules to HAR §3-122-13 to reference the new section of law, which provides the guidance. DBEDT, DAGS-AMD, and the SPO have been collectively working together to draft procedures and guidelines for the purchase of new vehicles by purchasing agencies to implement Act 96/2006; the guidelines are expected to be finalized at the beginning of 2007. Under these procedures and guidelines, agencies will have the oversight of the AMD and SPO when making vehicle purchases through the SPO to ensure compliance with state laws. However, if vehicles are purchased by the agency (small purchase), oversight by the AMD and SPO will not be possible and enforcement of these new procedures and guidelines will be required from the Administrative Services Offices of the agencies.

DBEDT: When available, vehicle procurement instructions will be distributed throughout the Department.

DCCA: DCCA does not plan on purchasing any vehicles.

DHHL: There are no state laws regarding vehicle purchase other than that the vehicles purchased match the needs of the department; however, the department shall from now on not only look at the price by obtaining three quotes, but also consider fuel efficiency or even opt for hybrid vehicles when purchasing vehicles.

DHRD: The Department does not have any transportation vehicles.

DHS: DHS will coordinate with the AMD to ensure that vehicle purchases comply with the applicable requirements.

DLIR: DLIR owns the following vehicles: 1999 Ford Windstar; 1994 Chevrolet Astrovan. DLIR does not have immediate plans to purchase another vehicle in the near future; however, DLIR will adhere to the applicable state laws regarding vehicle purchases.

DLNR: DLNR will continue to work with the Department of Business, Economic Development, and Tourism (DBEDT) in a statewide collaboration on energy efficiency, as a member of DBEDT's Lead by Example Leadership Group. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: The department is in compliance with all applicable state laws.

DOE: Our Procurement and Contracts Branch will develop procurement guidelines for DOE schools and offices regarding compliance with the applicable state laws.

DOH: The programs are in compliance.

DOT-Air: The Airports Division is in compliance.

DOT-Har: We need to do more research and develop an implementation plan.

FTZ: We are not contemplating the purchase of any vehicles in the near future.

HCDA: HCDA's two vehicles are procured and maintained by Department of Accounting and General Services (DAGS).

HHFDC: n/a

HHSC: HHSC is in compliance with all state laws regarding vehicle purchases and will continue to comply with all applicable state laws.

HPHA: Hawai'i Public Housing Authority is in compliance with procurement Laws.

HSPLS: HSPLS has consulted with Procurement and Contract Specialist at DAGS Procurement to ensure compliance with bidding procedures and processes.

HTA-CC: HTA has one vehicle procured and maintained by DAGS, and the Hawai'i Convention Center has three vehicles that were procured as part of outfitting the building in 1997. The vehicles are registered by the State of Hawai‘i and are maintained to all manufacturer's suggested specifications.

NELHA: We follow SPC.

PSD: Refer to the comment in item #1.

TAX: DOTAX will comply with all applicable state laws regarding vehicle purchases.

UH: University of Hawai‘i Transportation Services is currently in compliance with all applicable State laws regarding vehicle purchases. As a part of a long-term vehicle purchasing strategy, University of Hawai‘i Transportation Services has purchased ten hybrid vehicles for the University fleet and will continue to evaluate newly introduced energy efficient vehicles for future purchases.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(3) Once federal and state vehicle purchase mandates have been satisfied, purchase the most fuel-efficient vehicles that meet the needs of their programs; provided that life cycle cost-benefit analysis of vehicle purchases shall include projected fuel costs;

AG: We do not have a fleet or purchase fuel.

B&F: Entire Section Not Applicable to B&F.

DAGS: The review outlined in item #2, above, will educate the agencies regarding the new law and, after legal mandates have been satisfied, agencies can analyze and evaluate which vehicles best meet their needs.

DBEDT: When available, vehicle procurement instructions will be distributed throughout the Department.

DCCA: DCCA does not own any vehicles.

DHHL: The department is currently looking at purchasing a vehicle for our West Hawai‘i District Office. The department shall consider all aspects, such as fuel consumption, capacity, and need, in addition to price, to reach the decision on the purchase. The department should also look at hybrid vehicles.

DHRD: The Department does not purchase transportation vehicles at this time.

DHS: DHS will coordinate with the AMD and SPO to ensure that vehicle purchases meet fuel efficiency requirements in relation to operational needs.

DLIR: DLIR's two current vehicles are in sound operational condition and thus DLIR has no plan to replace the vehicles in the near future. Prior to purchasing a vehicle in the future, DLIR will insure that any vehicle purchase satisfies federal and state mandates. In addition, DLIR will purchase the most fuel efficient vehicle that meets the needs of our program.

DLNR: DLNR will continue to work with the Department of Business, Economic Development, and Tourism (DBEDT) in a statewide collaboration on energy efficiency, as a member of DBEDT's Lead by Example Leadership Group. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goals of minimize energy, fuel and water consumption and implementing resource-efficient operations, including purchasing the most fuel efficient vehicle that meets the needs of the program once federal and state vehicle purchase mandates have been met.

DOE: Our Procurement and Contracts Branch will develop procurement guidelines, use DBEDT-established assumptions about future fuel costs, and purchase vehicles accordingly.

DOH: This policy is not in effect. The programs will be advised of this strategy.

DOT-Air: All of the Division's vehicles not covered under EPACT have specifications to meet the requirements of the job and get the most efficient fuel use and life cycle fuel cost.

DOT-Har: We need to do more research and develop an implementation plan.

FTZ: Please see the response to #2 above.

HCDA: See Item #2 immediately above.

HHFDC: n/a

HHSC: HHSC continues to purchase the most fuel efficient vehicles whenever possible.

HPHA: Hawai‘i Public Housing Authority meets EPACT requirements.

HSPLS: HSPLS will incorporate projected fuel cost analysis based on the cost of regular unleaded as approved under bid contract. Life of the vehicle will be estimated, factoring the DAGS vehicle replacement guidelines (100,000 miles and/or 10 years). Fuel efficiency will be cross-referenced with performance statistics of bidded vehicles to ensure the best weight/hauling efficiency for the anticipated load capacities of the vehicle.

HTA-CC: See Item #2 above.

NELHA: Due to the nature of the land with which we deal and the requirements of operations, we must generally have four-wheel drive vehicles. The ages of our vehicles do tend to show cost-benefit analysis: 2005 P/U (gas), 1993 P/U (gas), 1997 van (gas), 1986 P/U (diesel) and 1985 P/U (diesel). Heavy equipment is all diesel-powered.

PSD: Effective immediately, new solicitations for vehicles will include considerations for fuel efficiency, life cycle cost-benefit analysis and projected fuel costs.

TAX: DOTAX will purchase the most fuel-efficient vehicle that meets the needs of our programs and will include a life cycle cost-benefit analysis, including projected fuel costs, in vehicle procurements.

UH: UH Transportation Services reviews all vehicle purchases for appropriateness. UH Transportation Services keeps historical information on all vehicles assigned to the Transportation Services Fleet. Individual departments keep their own vehicle records pertaining to department owned vehicles. A life cycle cost-benefit analysis has not been done for any vehicles. Vehicle fuel consumption is not tracked.

UH's strategy will be to develop a web-based program to record and compile individual vehicle data during the current fiscal year. The program shall allow departments that own vehicles the ability to enter their program's vehicle data via the web. The web will collect data for analysis to determine life cycle cost-benefit and fuel efficiency, providing historical reference for future purchases.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(4) Purchase alternative fuels and ethanol blended gasoline when available;

AG: We do not purchase fuel.

B&F: Entire Section Not Applicable to B&F.

DAGS: The SPO contracts include the purchase of ethanol-blended gasoline and the SPO will procure alternative fuels when such fuels are available. AMD recommends that agencies prepare for the use of alternate fuels by having their covered fleets with vehicles ready to use E-85 gasoline.

The SPO Price List for Gas Fueling and Credit Card Services, currently out for re-solicitation, includes new requirements to establish monthly reports from the contractors of purchases by each cardholder. The SPO Price List for Gasoline and Diesel Fuel, Bulk Deliveries currently requires contractors' monthly reports listing, by product, the total gallons purchased and the total dollar amount including all applicable taxes. Information shall be used to determine total gasoline purchases and expenditures by the purchasing agency. The above actions will hopefully account for 90% of the gasoline and diesel purchased by the State. There will be situations where Departments are granted exemptions to purchase outside the above price list, or are not a part of this contract; therefore, each agency would need to track and report these purchases to determine usage for each vehicle.

In addition, per the Comptroller Memorandum No. 2005-13 dated May 17, 2005, departments are required to purchase only regular 87 gasoline unless approval is granted by the Comptroller through DAGS-AMD to purchase premium gasoline or mid-grade gasoline. Current purchases are for E10 regular fuel.

DBEDT: DBEDT intends to purchase alternative fuels and ethanol blended gasoline when available.

DCCA: DCCA does not own any vehicles.

DHHL: SPO-PL 07-06 provides that all gasoline provided by DAGS is blended with 10% ethanol. The department also purchases gasoline from Tesoro Petroleum; we have requested information to confirm what percent blended ethanol they sell. The department shall continue using these vendors for gasoline to fuel our vehicles.

DHRD: The Department does not purchase transportation fuels.

DHS: DHS will coordinate with SPO on purchasing alternative fuels from established price lists.

DLIR: The assessment performed by DLIR indicates that all alternative fuels were purchased from DAGS Automotive Management Division. The DAGS Automotive Management motor pool alternative fuel meets the alternative fuel ethanol blend requirement.

DLNR: DLNR purchases fuel from vendors as selected by the State Procurement Office in compliance with the Procurement Code. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA has developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goals of minimizing energy, fuel and water consumption and implementing resource-efficient operations, including the purchase of alternative fuels and ethanol-blended gasoline when available.

DOE: For light duty vehicles, only ethanol-blended gasoline is currently available, so no specific further action is required.

DOH: The programs are mandated to purchase gasoline from Tesoro, which has a contract with the State.

DOT-Air: All of our Airport's Baseyard refueling tanks carry the SPO Price List fuels. At present that is E-10 regular gas. We have been contacted by a fuel company regarding our count of E-85 capable vehicles in order to determine the possible location of a fueling point for their new E-85 station pumps and their proximity to our fleet. We use the "fueleconomy.gov" guidelines for reference to fuel economy of vehicles.

DOT-Har: We purchase environmentally fuels when available and practical.

FTZ: We purchase fuels from DAGS' automotive division.

HCDA: HCDA refuels at DAGS' central motor pool.

HHFDC: n/a

HHSC: All HHSC facilities are using ethanol blended gasoline.

HPHA: The entire fleet of the Hawai'i Public Housing Authority purchases E-10 regular gas (87) for all of its gas driven vehicles.

HSPLS: HSPLS currently uses vehicles that are able to utilize the current ethanol/gasoline blended, regular-unleaded fuel as designated under the state contract with Tesoro and Kaua'i Fuels.

HTA-CC: HTA refuels at DAGS' central motor pool and HCC refuels exclusively at Tesoro where ethanol blended gasoline is available.

NELHA: Not practical for most of our equipment; ethanol blend is what the bulk dealer delivers us for gas.

PSD: The state has implemented E-10 fuel statewide.

TAX: DOTAX will purchase alternative fuels and ethanol-blended gasoline when available.

UH: UH Transportation Services does not purchase biodiesel. UH Transportation Services does purchase gasoline from the approved State bid list.

An evaluation is currently being undertaken to assess the feasibility of converting to biodiesel fuel. If feasible, conversion to these fuels during the current fiscal year is desired.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(5) Evaluate a purchase preference for biodiesel blends, as applicable to agencies with diesel fuel purchases;

Not applicable. Superseded by Act 240 of 2006, which established a 5¢ gallon preference for biodiesel.

DAGS: ACT 240, SLH 2006 (SB 2957) PART III, SECTION 4, BIOFUEL PREFERENCE

Summary of the requirements of this new preference:

- Contracts for the purchase of diesel fuel or boiler fuel shall be awarded to the lowest responsible and responsive bidders, with preference given to bids for biofuels or blends of biofuel and petroleum fuel.
- Biofuel is defined as "Fuel from non-petroleum plant or animal based sources that can be used for the generation of heat or power."
- Biodiesel is defined as "A vegetable oil-based fuel that meets ASTM International standard D6751, Standard Specification for Biodiesel (B100) Fuel Blend Stock for Distillate Fuels."
- Amount of Preference: Biofuel for use in boilers - Five cents per gallon. For blends of biofuel and petroleum based boiler fuel, preference shall be applied only to the biofuel portion of the blend. Biodiesel for use in diesel engines - Five cents per gallon. For blends of biodiesel and petroleum based diesel, the preference shall be applied only to the biodiesel portion of the blend.

The SPO is drafting Hawai'i Administrative Rules of the procurement code to implement this new preference.

Act 96 SLH 2006: Transportation Vehicles and Fuel
(6) Promote efficient operation of vehicles;

AG: We do not have a fleet.
B&F: Entire Section Not Applicable to B&F.
DAGS: DAGS provides guidelines for the general operation of vehicles, including the efficient use of vehicles. AMD recommends that agencies which operate their own fleets also provide information to their personnel on improving mileage and keeping vehicles in good operating condition.
DBEDT: Tips for efficient operation of vehicles will be distributed department-wide.
DCCA: DCCA does not own any vehicles.
DHHL: The department does not have posters or fliers regarding efficient operation of vehicles; however, driving and maintenance tips have been mailed to the neighbor island offices. For O'ahu, driving tips were posted on the mileage logs that goes with the vehicles and driver and maintenance tips given to employees that handles the servicing of the department's vehicles.
DHRD: DHRD has circulated Energy Tips on driving and car maintenance.
DHS: DHS will issue procedures that will include available federal guidelines.
DLIR: DLIR vehicles are serviced by the DAGS Automotive Management Division Motor Pool on a regular basis. Both of the DLIR vehicles are in sound condition and they operate at maximum efficiency. The vehicles' operational efficiency can be certified and recertified by the DAGS Automotive Management Division.
DLNR: DLNR encourages maintenance and regular service of vehicles. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.
DOA: DOA has developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with the goals of minimizing energy, fuel and water consumption and implementing resource-efficient operations, including tips on efficient operation of vehicles.
DOE: We will distribute information on "how to drive fuel-efficiently" to all employees, whether they drive a department vehicle or not, and we will monitor the fuel consumption of individual state-owned vehicles to identify low-economy vehicles and counsel the drivers of the vehicles on how to drive fuel-efficiently.
DOH: This policy is not in effect; the programs will be advised.
DOT-Air: Operators are reminded of the economical operation issues of the vehicles at the baseyard or when signed out. When new guidelines are published, they are and will be distributed by memo to all sections.
DOT-Har: We need to do more research and develop an implementation plan.
FTZ: FTZ does not have a formal program, but follows the state plan for efficient use of vehicles.
HCDA: HCDA encourages staff to walk to properties/appointments whenever possible.
HHFDC: n/a
HHSC: HHSC facilities perform required maintenance of vehicles conforming to manufacturer's recommendations.
HPHA: Operators are to be reminded of the economical use of vehicles.
HSPLS: HSPLS delivery staff currently track service cycles for delivery vehicles based on the manufacturer's recommendations in the owners manual. Other miscellaneous repairs and maintenance will continue to minimize delivery downtime.

HTA-CC: HTA encourages car pooling when using the State of Hawai‘i vehicle and HCC specifically logs all trips and mileage using its three assigned vehicles.

NELHA: NELHA staff uses golf carts whenever practicable, does not leave vehicles idling, etc.

PSD: PSD has issued a department wide memorandum promoting the efficient operation of vehicles (Inter-Office Memo 2006-2711, dated August 16, 2006.)

TAX: DOTAX will promote efficient operation of vehicles through an educational campaign.

UH: Information regarding the efficient operation of vehicles is currently not distributed. UH will develop information brochures and distribute them to vehicle operators during the current fiscal year.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(7) Use the most appropriate minimum octane fuel; provided that vehicles shall use 87-octane fuel unless the owner's manual for the vehicle states otherwise or the engine experiences knocking or pinging;

AG: We do not purchase fuel.
B&F: Entire Section Not Applicable to B&F.
DAGS: See response in item #4, above, on purchase of regular 87 gasoline.
DBEDT: This instruction will be distributed department-wide.
DCCA: DCCA does not own any vehicles.
DHHL: Twenty-two out of the department's 24 vehicles use 87-octane gasoline. The other two (a cargo and a dump truck) on Moloka`i use diesel fuel. DHHL shall enforce this policy and confirm that all vehicles besides the two on Molokai use 87-octane fuel.
DHRD: The Department does not have any transportation vehicles.
DHS: DHS will continue the present policy of requiring the purchase of 87-octane fuel
DLIR: The DLIR vehicles are refueled at the DAGS Automotive Management Division Motor Pool. Both DLIR vehicles have not experienced problems with knocking or pinging.
DLNR: DLNR is in compliance with State Procurement Office bid list rules as stated above. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.
DOA: DOA has developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines and practices with goal to minimize energy, fuel and water consumption and implement resource-efficient operations including using 87 octane fuel unless the owner's manual for the vehicle states otherwise or the engine experiences knocking or pinging.
DOE: We will determine which vehicles require gasoline with an octane rating higher than 87, attach a label on the dashboard of all gasoline-fueled vehicles of the octane rating to be used in the vehicle, and monitor fuel purchases to confirm that the octane rating conforms to vehicle requirements.
DOH: The programs are mandated to purchase specific octane fuel from Tesoro, which has a contract with the State.
DOT-Air: The Airports Division doesn't have any Exemption Request at the SPO for use of other fuels. We comply with the SPO listed fuels.
DOT-Har: The Division will purchase environmentally preferable fuels when available and practical.
FTZ: We purchase fuels from DAGS' automotive division.
HCDA: HCDA complies by refueling at DAGS' central motor pool.
HHFDC: n/a
HHSC: Under the State Contract, all our vehicles are filled with 87 octane, 10% ethanol blended gasoline.
HPDA: Hawai'i Public Housing Authority uses 87 octane only.
HSPLS: HSPLS is in compliance.
HTA-CC: HTA and HCC comply with the above requirement.
NELHA: This is already done as part of NELHA's continual cost-savings program.
PSD: Comptroller's Memorandum 2005-13 prohibits the purchase of premium and mid-grade gasolines unless authorized in writing by the Comptroller.

TAX: DOTAX will use the most appropriate minimum octane fuel provided that vehicles shall use 87-octane fuel unless the owner's manual for the vehicle states otherwise or the engine experiences knocking or pinging.

UH: UH Transportation Services is in compliance.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:
(A) Vehicle acquisition cost;

AG: We do not purchase vehicles.
B&F: Entire Section Not Applicable to B&F.
DAGS: DAGS has this information on file for its vehicles. Other agencies should be able to obtain this information which should be accurate.
DBEDT: Data will be collected if vehicles are acquired.
DCCA: DCCA does not own any vehicles.
DHHL: Please see Appendix 2.
DHRD: The Department does not have any transportation vehicles.
DHS: The DHS will issue applicable procedures.
DLIR: 1999 Ford Windstar acquired on 1-23-01 for $17,500.00. 1994 Chevrolet Astrovan acquired on 5-3-01 for $5,900.00.
DLNR: DLNR has a department-wide database that captures vehicle acquisition cost and is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. Additionally, DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.
DOA: DOA has captured vehicle acquisition cost for all vehicles in the department's Automotive Management System.
DOE: The Department of Education plans to collect this information for all vehicles owned by the Department of Education. This will exclude vehicles purchased by Charter Schools, since Charter Schools do not come under the Department's jurisdiction. We will collect these data for all vehicles beginning with vehicles purchased in FY 2005-06. We do not have the manpower or the means to collect back data since we have over 400 vehicles on the DOE's inventory, which range from over ten years old to new vehicles.
DOH: These data are not available in one central file. Each program maintains its own records. Presently the department has over 40 programs at 80 facilities throughout the State. A database must be created for the individual programs to input the information requested in items A thru F. This database should be web accessible.
DOT-Air: These data are not collected in the present program.
DOT-Har: Please see Appendix 4.
FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.
HCDA: Not applicable; maintained by DAGS.
HHFDC: n/a
HHSC: No vehicles purchased in 2005-2006.
HPHA: Please see Appendix 5.
HSPLS: (blank)
HTA-CC: HTA complies.
NELHA: Only one new vehicle was purchased in FY06. This vehicle is a pickup truck and cost approximately $22,000.
PSD: PSD has issued a department-wide memorandum requesting this information by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.
TAX: DOTAX will comply for each vehicle acquired beginning fiscal year 2005-2006.

UH: This information is recorded in department hard copy files. UH will convert hard copy data to computer file format during the current fiscal year to facilitate data analysis.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:

(B) United States Environmental Protection Agency rated fuel economy;

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: This Information should be available at time of solicitation for prior year models; prior model data can also be used for new models if not available.

DBEDT: Data will be collected if vehicles are acquired.

DCCA: DCCA does not own any vehicles.

DHHL: Please see Appendix 2.

DHRD: The Department does not have any transportation vehicles.

DHS: DHS will coordinate with SPO on the issuance of applicable procedures.

DLIR: 1999 Ford Windstar; 17 mpg City and 23 mpg Highway. 1994 Chevrolet Astrovan: 17 mpg City and 22 mpg Highway.

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA has reconfigured the department's current Automotive Management System to capture additional data on U.S. EPA fuel economy rating required for each vehicle. It has located fuel economy ratings for all vehicles on the U.S. EPA website and is entering the fuel economy rating for each vehicle as time permits.

DOE: Once we determine Item A, above, we can obtain this information for all vehicles purchased beginning with FY 05-06.

DOH: See Item A, above.

DOT-Air: This is not in our present program.

DOT-Har: Please see Appendix 4.

FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.

HCDA: Vehicles are maintained by DAGS.

HHFDC: n/a

HHSC: No vehicles purchased in 2005-2006.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA complies.

NELHA: No data are presently available.

PSD: PSD has issued a department-wide memorandum requesting the information by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.

TAX: DOTAX will comply for each vehicle acquired beginning fiscal year 2005-2006.

UH: This information is not recorded in department files. UH will research and record information in computer file format during the current fiscal year.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:

(C) Vehicle fuel configuration, such as gasoline, diesel, flex-fuel gasoline/E85, and dedicated propane;

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has this available for each vehicle. This information should be available in each vehicle's specifications and/or owner's manual.

DBEDT: These data will be collected if vehicles are acquired.

DCCA: DCCA does not own any vehicles.

DHHL: Please see Appendix 2.

DHRD: The Department does not have any transportation vehicles.

DHS: DHS will issue applicable procedures.

DLIR: 1999 Ford Windstar – Gasoline/E85. 1994 Chevrolet Astrovan – Gasoline/E85.

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA has reconfigured the department's current Automotive Management System to capture additional data on vehicle fuel configuration required for each vehicle. It has captured vehicle fuel configuration for all vehicles in the department's Automotive Management System.

DOE: Once we determine Item A, above, we can obtain this information for all vehicles purchased, beginning with FY 05-06.

DOH: See Item A, above.

DOT-Air: Included in present program.

DOT-Har: Please see Appendix 4.

FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.

HCDA: Vehicles are maintained by DAGS.

HHFDC: n/a

HHSC: No vehicles purchased in 2005-2006.

HPHA: Please see Appendix 5.

HSPLS: All vehicles operate on current regular/E85 gasoline.

HTA-CC: HTA complies.

NELHA: No data are presently available.

PSD: PSD has issued a department-wide memorandum requesting the information below by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.

TAX: DOTAX will comply for each vehicle acquired beginning fiscal year 2005-2006.

UH: This information is recorded on department hard copy files. UH will convert hard copy data to computer file format during the current fiscal year to facilitate data analysis.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:

(D) Actual in-use vehicle mileage;

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has this information for each of its vehicles.

AMD recommends that agencies with fleets that do not have this information estimate it, because this requirement of Act 96 was not known to agencies prior to June 2006. AMD would recommend that agencies who must estimate these data do so based on a statewide procedure. Some methods include:

- Estimate mileage based on a 3-month period; multiply by 4 to obtain annual mileage.
- Determine the amount of fuel each vehicle consumed in FY 2006 and multiply the amount by the manufacturer's average city/highway driving miles per gallon.

DBEDT: Data will be collected if vehicles are acquired.

DCCA: DCCA does not own any vehicles.

DHHL: Please see Appendix 2.

DHRD: The Department does not have any transportation vehicles.

DHS: The DHS will issue applicable procedures that will be uniform on a statewide basis.

DLIR: July 1, 2004 to June 30, 2005:

- 1999 Ford Windstar – 1575.1 Miles
- 1994 Chevrolet Astrovan – 317.7 Miles

July 1, 2005 to June 30, 2006:

- 1999 Ford Windstar – 2096.1 Miles
- 1994 Chevrolet Astrovan – 327.5 Miles

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA met with the DAGS Automotive Management Division and Systems and Procedures Office staff and determined that FY 2006 data on fuel consumption and mileage for the department's motor vehicles can not be obtained electronically from their Gas Boy System. DOA searched for and copied monthly DAGS Automotive Management Division billings to obtain its monthly fuel consumption and odometer readings for FY 2006. DOA needs to compile monthly data to obtain annual data for FY 2006.

DOE: We plan to collect this data directly from the school/offices as soon as we can set up the tracking system and disseminate the procedure to the schools.

DOH: See Item A, above.

DOT-Air: Included in present program.

DOT-Har: Please see Appendix 4.

FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.

HCDA: HCDA complies.

HHFDC: n/a

HHSC: No vehicles were purchased in 2005-2006.

HPHA: Please see Appendix 5.

HSPLS: (blank)
HTA-CC: HTA complies.
NELHA: No data are presently available.
PSD: PSD has issued a department-wide memorandum requesting the information below by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.
TAX: DOTAX will comply for each vehicle acquired beginning fiscal year 2005-2006.
UH: This information is recorded on department hard copy files. UH will convert hard copy data to computer file format during the current fiscal year to facilitate data analysis.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:

(E) Actual in-use vehicle fuel consumption; and

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has this information for each of its vehicles.

Agencies must obtain this amount from actual purchases for each vehicle in FY 2006. If fuel was purchased in bulk and the actual number of gallons fueled in vehicles cannot be determined, agencies can only estimate fuel consumption. On a prospective basis, AMD recommends that agencies record vehicle miles each time the vehicle is fueled. This would be accomplished using a fueling log sheet. The log sheet would include information such as Department/Program/Year/Make/Model/License and have five columns for date, mileage, gallons filled, cost per gallon and comments.

DBEDT: Data will be collected if vehicles are acquired.

DCCA: DCCA does not own any vehicles.

DHHL: Please see Appendix 2.

DHRD: n/a

DHS: The DHS will issue applicable procedures.

DLIR: July 1, 2004 to June 30, 2005:

- 1999 Ford Windstar – 158.3 Gallons
- 1994 Chevrolet Astrovan – 37.7 Gallons

July 1, 2005 to June 30, 2006:

- 1999 Ford Windstar – 226.7 Gallons
- 1994 Chevrolet Astrovan – 21.7 Gallons Miles

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA met with the DAGS Automotive Management Division and Systems and Procedures Office staff and determined that FY 2006 data on fuel consumption and mileage for the department's motor vehicles can not be obtained electronically from their Gas Boy System. DOA searched for and copied monthly DAGS Automotive Management Division billings to obtain monthly fuel consumption and odometer readings for FY 2006. We need to compile monthly data to obtain annual data for FY 2006.

DOE: We plan to collect this data directly from the school/offices as soon as we can set up the procedures and disseminate them.

DOH: See Item A, above.

DOT-Air: Included in present program.

DOT-Har: Please see Appendix 4.

FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.

HCDA: HCDA's data are part of central motor pool data.

HHFDC: n/a

HHSC: No vehicles purchased in 2005-2006.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA complies.

NELHA: No data are presently available.

PSD: PSD has issued a department-wide memorandum requesting the information below by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.

TAX: DOTAX will comply for each vehicle acquired beginning fiscal year 2005-2006.

UH: This information is not recorded in department files. UH will begin to collect vehicle fuel use data in computer file format during the current fiscal year to facilitate data analysis.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(8) Beginning with fiscal year **2005-2006** as the baseline, collect and maintain, for the life of each vehicle acquired, the following data:

(F) Actual in-use annual average vehicle fuel economy;

AG: We do not purchase vehicles.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has this information on each vehicle. Agencies will need to record actual mileage and fuel purchased to arrive at miles per gallon. Agencies which do not have reliable data will have to estimate amounts per vehicle. On a prospective basis, AMD recommends that agencies record mileage and fuel purchased at each fill up of fuel as noted in item E, above.

DBEDT: Data will be collected if vehicles are acquired.

DCCA: DCCA does not own any vehicles.

DHHL: Please see Appendix 2.

DHRD: n/a

DHS: DHS issue applicable procedures.

DLIR: July 1, 2004 to June 30, 2005:

- 1999 Ford Windstar – 9.95 Miles Per Gallon
- 1994 Chevrolet Astrovan – 8.59 Miles Per Gallon

July 1, 2005 to June 30, 2006:

- 1999 Ford Windstar – 9.25 Miles Per Gallon
- 1994 Chevrolet Astrovan – 15.1 Miles Per Gallon

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: Annual average vehicle fuel economy will be calculated when fuel consumption and mileage data are compiled.

DOE: We plan to collect this data directly from the school/offices as soon as we can set up the procedures and disseminate them.

DOH: See Item A, above.

DOT-Air: Not included in present program.

DOT-Har: Please see Appendix 4.

FTZ: No vehicle was purchased in FY 2005-2006 and there is no intent to purchase any vehicle in the foreseeable future.

HCDA: HCDA vehicles' data are part of central motor pool data.

HHFDC: n/a

HHSC: No vehicles purchased in 2005-2006.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA complies.

NELHA: No data are presently available.

PSD: PSD has issued a department-wide memorandum requesting the information below by September 14, 2006. As of this date (09/22/06), data are being received and consolidated.

TAX: DOTAX will comply for each vehicle acquired, beginning fiscal year 2005-2006.

UH: This information is not recorded in department files. UH will facilitate data analysis during the current fiscal year.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(9) Beginning with **fiscal year 2005-2006** as the baseline with respect to each agency that operates a fleet of thirty or more vehicles, collect and maintain, in addition to the data in paragraph (8), the following:

(A) Information on the vehicles in the fleet, including vehicle year, make, model, gross vehicle weight rating, and vehicle fuel configuration;

AG: We do not have a fleet.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS needs to incorporate the GVW and fuel configuration information into its current reporting system and is working with the Systems and Procedures Office to add this information into one report. This information is easily obtainable from the vehicle registration and owners manual.

DBEDT: Does not apply. DBEDT does not operate 30 or more vehicles.

DCCA: DCCA does not own any vehicles.

DHHL: This section does not apply to Department of Hawaiian Home Lands. We have a total of 24 vehicles on all islands.

DHRD: The Department does not operate a fleet of vehicles.

DHS: DHS will issue applicable procedures.

DLIR: DLIR only owns two light duty vehicles.

DLNR: DLNR continues to gather the required information on its vehicle fleet. DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA has reconfigured the department's current Automotive Management System to capture additional data on gross vehicle weight rating and vehicle fuel configuration required on each vehicle. DOA has researched and began inputting required data into Automotive Maintenance System.

DOE: We already have these data for all vehicles.

DOH: These data are not available in one central file. Each program maintains its own records. Presently, the Department has over 40 programs at 80 facilities throughout the State. A database must be created for the individual programs to input the information requested in items A thru D. This database should be web accessible.

DOT-Air: Not included in present program. Please see Appendix 3.

DOT-Har: Please see Appendix 4.

FTZ: FTZ does not operate a fleet of thirty or more vehicles.

HCDA: HCDA does not maintain fleet of 30+ vehicles.

HHFDC: n/a

HHSC: This is not applicable since the facilities do not have thirty or more vehicles.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA does not maintain a fleet of 30+ vehicles.

NELHA: Not applicable.

PSD: The PSD memorandum also requires its programs to record and forward the information below to the ASO by July 31 of each year hereafter.

TAX: DOTAX does not operate a fleet of thirty vehicles or more.

UH: This information is recorded on department hard copy files. UH will convert hard copy data to a computer file during the current fiscal year to facilitate data analysis.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(9) Beginning with **fiscal year 2005-2006** as the baseline with respect to each agency that operates a fleet of thirty or more vehicles, collect and maintain, in addition to the data in paragraph (8), the following:

(B) Fleet fuel usage, by fuel;

AG: We do not have a fleet.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has the consumption record for all its vehicles.

DBEDT: Does not apply. DBEDT does not operate 30 or more vehicles.

DCCA: DCCA does not own any vehicles.

DHHL: This section does not apply to Department of Hawaiian Home Lands. We have a total of 24 vehicles on all islands.

DHRD: The Department does not operate a fleet of vehicles.

DHS: DHS will issue applicable procedures.

DLIR: DLIR only owns two light duty vehicles.

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA met with DAGS Automotive Management Division and System and Procedures Office staff and requested that an electronic file of monthly fuel consumption and odometer readings for the department's vehicles be made available so that we can manipulate and compile data on each vehicle.

DOE: We will be able to collect this data once we set up a tracking system and schools/offices begin inputting the information.

DOH: See Item A, above.

DOT-Air: Included in present program.

DOT-Har: Please see Appendix 4.

FTZ: FTZ does not operate a fleet of thirty or more vehicles.

HCDA: HCDA does not maintain fleet of 30+ vehicles.

HHFDC: n/a

HHSC: This is not applicable since the facilities do not have thirty or more vehicles.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA does not maintain a fleet of 30+ vehicles.

NELHA: No data are presently available.

PSD: The PSD memorandum also requires its programs to record and forward the information below to the ASO by July 31 of each year hereafter.

TAX: DOTAX does not operate a fleet of thirty vehicles or more.

UH: This information is not recorded on department hard copy files. UH will begin recording fleet fuel usage by fuel type during the current fiscal year.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(9) Beginning with **fiscal year 2005-2006** as the baseline with respect to each agency that operates a fleet of thirty or more vehicles, collect and maintain, in addition to the data in paragraph (8), the following:

(C) Fleet mileage; and

AG: We do not have a fleet.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS has the mileage record for all its vehicles.

DBEDT: Does not apply. DBEDT does not operate 30 or more vehicles.

DCCA: DCCA does not own any vehicles.

DHHL: This section does not apply to Department of Hawaiian Home Lands. We have a total of 24 vehicles on all islands.

DHRD: The Department does not operate a fleet of vehicles.

DHS: DHS will issue applicable procedures.

DLIR: DLIR only owns two light duty vehicles.

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: DOA met with DAGS Automotive Management Division and System and Procedures Office staff and requested that an electronic file of monthly fuel consumption and odometer readings for the department's vehicles be made available so that we can manipulate and compile data on each vehicle.

DOE: We will be able to collect these data once we set up a tracking system and schools/offices begin inputting the information.

DOH: See Item A, above.

DOT-Air: Not included in present program.

DOT-Har: Please see Appendix 4.

FTZ: FTZ does not operate a fleet of thirty or more vehicles.

HCDA: HCDA does not maintain fleet of 30+ vehicles.

HHFDC: n/a

HHSC: This is not applicable since the facilities do not have thirty or more vehicles.

HPHA: Please see Appendix 5

HSPLS: (blank)

HTA-CC: HTA does not maintain a fleet of 30+ vehicles.

NELHA: No data are presently available.

PSD: The PSD memorandum also requires its programs to record and forward the information below to the ASO by July 31 of each year hereafter.

TAX: DOTAX does not operate a fleet of thirty vehicles or more.

UH: This information is recorded on department hard copy files. UH will compile and record data on computer files during the current fiscal year.

Act 96 SLH 2006: Transportation Vehicles and Fuel

(9) Beginning with **fiscal year 2005-2006** as the baseline with respect to each agency that operates a fleet of thirty or more vehicles, collect and maintain, in addition to the data in paragraph (8), the following:

(D) Overall annual average fleet fuel economy and average miles per gallon of gasoline and diesel."

AG: We do not have a fleet.

B&F: Entire Section Not Applicable to B&F.

DAGS: DAGS currently tracks this information.

DBEDT: Does not apply. DBEDT does not operate 30 or more vehicles.

DCCA: DCCA does not own any vehicles.

DHHL: This section does not apply to Department of Hawaiian Home Lands. We have a total of 24 vehicles on all islands.

DHRD: The Department does not operate a fleet of vehicles.

DHS: DHS will issue applicable procedures.

DLIR: DLIR only owns two light duty vehicles.

DLNR: DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. DLNR continues to seek the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DOA: Annual average vehicle fuel economy will be calculated when fuel consumption and mileage data are compiled.

DOE: Our Auxiliary Services Branch will develop procedures and a program that accomplish this.

DOH: See Item A, above.

DOT-Air: This is not included in our present program. Note: mixing large pieces of equipment with the regulated vehicles in figuring overall fleet mileage will not give a true picture of the on-road light duty vehicle's performance. If they should be separated, then please officially advise us.

DOT-Har: Please see Appendix 4.

FTZ: FTZ does not operate a fleet of thirty or more vehicles.

HCDA: HCDA does not maintain fleet of 30+ vehicles.

HHFDC: n/a

HHSC: This is not applicable since the facilities do not have thirty or more vehicles.

HPHA: Please see Appendix 5.

HSPLS: (blank)

HTA-CC: HTA does not maintain a fleet of 30+ vehicles.

NELHA: No data are presently available.

PSD: The PSD memorandum also requires its programs to record and forward the information below to the ASO by July 31 of each year hereafter.

TAX: DOTAX does not operate a fleet of thirty vehicles or more.

UH: This information is not recorded in department files. UH will begin data analysis to determine fleet fuel economy during the current fiscal year.

Renewable Energy and Resource Development

All affected agencies and programs are directed to **review internal policies, rules, and practices regarding permitting requirements affecting renewable energy development**. To the extent possible, permitting policies and practices should be **streamlined to expedite implementation** of renewable energy projects.

It is requested that agencies prepare by January 12, 2007, a report to my office identifying the **specific steps they have taken to expedite** the approval of renewable energy projects.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

Wave Energy: For planning purposes, DBEDT drafted a table of potential state permits for wave energy, citing the name of the permit, the activities for which the permit is required, the applicable areas of the state's lands and coastal waters, the authority (e.g., HRS, HAR) and responsible regulatory agency. Permits appear to be required of DBEDT, DLNR, and DOH. To assist with planning, GIS maps have been prepared showing information which may affect the siting of wave power devices, such as bathymetry, military hazard zones, and recreational ocean areas. Supporting documents outlining the state permitting process, ocean zones of military concern and marine management areas were also prepared.

Geothermal Energy: Recent reports have identified state and county regulations governing non-electric uses of geothermal energy. DBEDT's current Geothermal Outreach project is refining that information and drafting clarifying legal language pertaining to Hawai'i County rules and regulations for the consideration of Hawai'i County decision makers.

DLNR: DLNR continues to review internal policies, rules, and practices regarding permitting requirements affecting renewable energy development. To the extent possible, DLNR streamlines permitting policies and practices to expedite implementation of renewable energy projects. Two of these permitting processes are detailed below.

1) DLNR issuance of Conservation District Use Permits

The Office of Conservation and Coastal Lands (OCCL) oversees activities within the Conservation District. OCCL rules state, "energy generation facilities utilizing the renewable resources of the area (e.g. hydroelectric or wind farms) … and other such land uses which are undertaken by non-governmental entities which benefit the public and are consistent with the purpose of the conservation district." Thus, renewable energy projects can be located on within the Conservation District with approval by way of a Conservation District Use Permit.

2) DLNR issuance of Incidental Take Licenses

In order to be in compliance with both state and federal endangered species laws, energy and resource development projects that impact threatened and endangered species must be issued an Incidental Take License by both the DLNR and the United States Fish and Wildlife Service (USFWS). Both agencies require that project proponents complete a Habitat Conservation Plan (HCP) prior to the issuance of the take licenses. In order to minimize procedural burdens on the applicants, DLNR works cooperatively with USFWS in concurrently processing the request for take licenses. After notice in the periodic bulletin of the Office of Environmental Quality Control, a public hearing is held on the islands affected, which is, whenever possible, held jointly with USFWS. The Board of Land and Natural Resources (BLNR) may approve the federal HCP without requiring a

separate version if the federal HCP satisfies all the criteria of the state endangered species statutes. All state agencies, to the extent feasible, work cooperatively to process applications for HCPs on a consolidated basis including concurrent processing of any state land use permit application that may be required. In order to further streamline the process of approving an HCP and the issuance of an Incidental Take License, the state established the Endangered Species Recovery Committee that serves as a consultant to the BLNR by reviewing all HCPs and making recommendations regarding whether they should be approved or not.

DOA: Research on renewable energy projects may require the importation of various types of sugarcane, grasses, palms or other plant materials that require permitting through the Plant Industry Division of the Hawai‘i Department of Agriculture (HDOA). The department will contact the University of Hawai‘i College of Tropical Agriculture and Human Resources, the Hawai‘i Agricultural Research Center, the Pacific Basin Agricultural Research Center, and the ethanol consortium made up of Grove Farms, Kamehameha Schools, and Maui Land and Pine, to identify plant feedstock of high potential and interest to researchers in order to determine if the feedstock is subject to permit restrictions. We will conduct an outreach effort to these institutions and private companies to make them aware of the permitting process

DOE: We will replace existing light fixtures with energy-efficient fixtures and bulbs in all classroom renovation projects and whenever a light bulb needs to be replaced. We will develop or identify an existing handout that identifies specific utility-saving actions, for students to take to their families. We will encourage individual schools to establish a student-led program which monitors utility consumption at the school and publicizes the results to the school community. We will furnish schools with utility-saving ideas.

We will establish a program to reduce utility consumption at the school level that includes (i) specific measures that schools can take to reduce utility consumption, (ii) financial incentives for schools that reduce utility consumption by greater than XX% (to be determined) and (iii) financial penalties for schools that fail to reduce utility consumption by XX%.

HCDA: There are no plans to expedite approval processes as HCDA already has Administrative Rules which mandate that decisions be made within a set amount of time or else permits are automatically approved. However, HCDA is currently requiring, as a permit condition, private developers to consult with HECO, DBEDT Energy Division, and the Board of Water Supply on ways to conserve/preserve resources. HCDA is also considering, as part of its Mauka Area Plan and Rules, incorporation of LEED standards as a requirement of all development – public or private – in its Kaka`ako Community Development District. The same is true at Kalaeloa. Neither will be complete before January 12, 2007, but this policy direction may be incorporated into HCDA’s report.

HTA-CC: HTA & HCC are reviewing all future CIP projects to implement renewable energy or energy efficient programs and projects wherever possible.

Act 160, SLH 2006

(1) Energy consumption in kilowatt hours for the past two years (July 1, 2004 to June 30, 2006)

AG: FY05: 35,471. FY06: 34,794.

B&F: See DAGS' report.

DAGS: FY05: 47,633,924 kWh (includes 7,089,018 kWh for Aloha Stadium). FY06: 48,653,881 kWh (includes 7,358,312 kWh for Aloha Stadium).

DBEDT: FY05: Film Studio only--496,413. The remainder of DBEDT's consumption is reported by DAGS. FY06: Film Studio only--355,160. The remainder of DBEDT's consumption is reported by DAGS.

DCCA: FY05: 500,695 (335 Merchant St.) FY06: 454,980 (335 Merchant St.) We are not aware of consumption at other DCCA locations, which are handled through DAGS.

DHHL: FY05: 2,213,061. FY06: 2,418,248.

DHRD: Energy consumption will be reported by the Department of Accounting and General Services.

DHS: FY05: 3,048,045 kWh. FY06: 3,087,144 kWh.

DLIR: DLIR energy consumption from July 1, 2004 to June 30, 2006 – 368,917 kWh. DLIR energy consumption from July 1, 2005 to June 30, 2006 – 457,698 kWh. Increase in kWh from FY05 to FY06: 88,781 or 24%. There was an increase of approximately 48% (9,426 to 13,979 square feet) in total premise area when DLIR moved from the Hilo Plaza to their new location. The increase in new premise area was a major factor in the increase in the total electricity kWh consumption. FY05 Hilo Plaza reflected 74,373 kWh used versus the new FY06 location which consumed 177,162 kWh of electricity.

DLNR: FY05: 3,401,920 kwh. FY06: 3,049,065 kwh.

DOA: FY 05: 3,029,525. FY06: 2,937,939.
Reduced kWh consumption from 3,029,525 in FY 2005 to 2,937,939 in FY 2006 for a total reduction of 91,586 kWh or an approximate 3% reduction in kWh consumption.

DOE: FY05: 144,176,208 kWh. FY06: 145,947,093 kWh.
There are several reasons for the increase in consumption. First, the number of DOE facilities is increasing due to the capital improvement projects (CIP) appropriated by the legislature. Second, the legislature has also appropriated a number of electrical or telecom upgrade projects which increases the schools' kWh consumption when those projects are completed. Third, there are several Department initiatives which are increasing the number of computers in schools.

DOH: FY05: 25,419,459 kWh. FY06: 25,512,832 kWh

DOT-Air: FY05: 128,112,378 kWh. FY06: 129,281,336 kWh.

DOT-Har: FY 05: 10,374,592. FY06: 10,656,125.

FTZ: FY05: 614,400 kWh. FY06: 721,280 kWh. The increase is due to the addition of 12,000 square feet of office space and 6,500 square feet of warehouse work/chilled storage space July, 2005.

HCDA: FY05: 1,150,027. FY06: 252,285. The reduction in FY 06 is attributable to Armstrong Produce vacating CFS3 building.

HHFDC: Because HHFDC facilities are operated under a private management contract that includes utility expenses, HHFDC is in the process of obtaining its energy consumption data for the past two years.

HHSC: Systemwide totals: FY05—25,933,919 kWh. FY06—24,151,087 kWh.
FY05 kWh consumption by facility:

Hilo Medical Center: 2,726,794 kWh
Kohala Hospital: 283,612 kWh
Ka`u Hospital: 258,360 kWh
Hale Ho`ola Hāmākua Hospital: 1,573,200 kWh
Kona Community Hospital: 2,800,800 kWh
Maui Memorial Medical Center: 8,760,000 kWh
Lāna‘i Medical Center: 210,000 kWh
Kula Hospital: 845,700 kWh
Leahi Hospital: 3,412,680 kWh
Samuel Mahelona Memorial Hospital: 586,240 kWh
West Kaua‘i Medical Center: 2,039,000 kWh
Maluhia: 2,437,533 kWh

FY06 kWh consumption by facility:

Hilo Medical Center: 2,623,813 kWh
Kohala Hospital: 282,285 kWh
Ka`u Hospital: 275,080 kWh
Hale Ho`ola Hāmākua Hospital: 1,836.600 kWh
Kona Community Hospital: 2,325,600 kWh (Cogeneration System activated but there was a lot of down time because of problems)
Maui Memorial Medical Center: 8,823,000 kWh
Lāna`i Medical Center: 209,100 kWh
Kula Hospital: 835,680 kWh
Leahi Hospital: 3,416,711 kWh
Samuel Mahelona Memorial Hospital: 565,920 kWh
West Kaua‘i Medical Center: 750,200 kWh (Difference from FY 05 is because Cogeneration System in operation in FY 06)
Maluhia: 2,207,098 kWh

HPHA: FY05: 20,480,548 kWh. FY06: 19,705,985 kWh. Please also see Appendix 6.

HSPLS: FY05: 7,779,767. FY06: 7,857,594. Energy consumption increased substantially in FY 05 and on due to the opening of the new Kapolei Public Library. This is the second largest public library in the State, next only to the Hawai‘i State Library.

HTA-CC: FY05 July to June is 7,389,600 kWh. FY06 July to June is 8,715,000 kWh.

NELHA: FY05: NELHA used a total of 3,917,223 kWh of electricity in FY05. Most of this consumption was to pump seawater. FY06: NELHA used a total of 4,175,209 kWh of electricity in FY06. Most of this consumption was to pump seawater.

PSD: FY05; 40,544,906 kWh. FY06: 41,295,569 kWh.

TAX: DOTAX facilities are managed by DAGS. This information will be included in DAGS' analysis.

UH: Systemwide: FY05--156,815,223 kWh. FY06--156,881,628 kWh.

FY05 kWh consumption by campus:

- UH Mānoa – 111,646,247 kWh
- UH Hilo – 10,936,431 kWh (includes Hawai‘i CC)
- UH West O‘ahu – included with Leeward CC
- Honolulu CC – 6,200,312 kWh
- Kapi‘olani CC – 8,074,680 kWh
- Leeward CC – 5,757,068 kWh
- Windward CC – 6,155,400 kWh
- Hawai‘i CC – 137,082 kWh (for West Hawai‘i Campus)
- Maui CC – 5,872,533 kWh
- Kaua‘i CC – 2,035,470 kWh

FY06 kWh consumption by campus:

- UH Mānoa – 111,663,998 kWh
- UH Hilo – 11,165,833 kWh (includes Hawai‘i CC)
- UH West O‘ahu – included with Leeward CC
- Honolulu CC – 6,331,131 kWh
- Kapi‘olani CC – 8,121,960 kWh
- Leeward CC – 6,058,707 kWh
- Windward CC – 5,854,500 kWh
- Hawai‘i CC – 131,976 kWh (for West Hawai‘i Campus)
- Maui CC – 5,629,203 kWh
- Kaua‘i CC – 1,924,320 kWh

Act 160, SLH 2006

(2) Steps taken to **inventory, investigate, plan, and implement** energy reduction efforts; and

AG: Reminders to staff to "Switch it Off", keep blinds closed, and report equipment malfunctions. All new equipment purchases must be Energy Star, or approved by Administrative Services Office, if not Energy Star.

B&F: Please see items 4, 5, 6 and 7 under "Act 96 SLH 2006: Buildings and Facilities."

DAGS: Mechanical equipment has been replaced as the equipment reaches its expected life span or begins to cause problems, and as funding is available. The new equipment has higher efficiencies due to newer technologies and because the older equipment has decreased in efficiency due to age. DAGS is working with the service and maintenance contractors to aid in the inventory process; they have the greatest knowledge of the operations and condition of the equipment since they physically see and inspect all of our major equipment on a quarterly basis, at minimum. DAGS is preparing a cost/benefit analysis for replacing existing A/C system with new, more efficient, systems prior to the existing systems reaching their expected life span. DAGS is preparing a cost/benefit analysis to determine if replacing the existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps is cost justified.

DAGS has been working closely with HECO to streamline the process for tracking projects to ensure and encourage maximum participation in rebate programs.

The Stadium Authority will take the following steps to reduce its energy consumption:

(a) Develop an inventory of all incandescent lighting sources, and initiate steps to convert to higher efficiency lighting.
(b) Initiate a program for turning off all lighting and electrical equipment when not in use.
(c) Implement a policy where office temperatures in air-conditioned spaces are set at 78 degrees Fahrenheit.
(d) Lower water heater thermostat settings to 120 degrees Fahrenheit or less.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT's new Film Studio was designed with high-pressure sodium, metal halide and T-8 fluorescent lamps which resulted in a $2,678 rebate from HECO. When window unit air conditioners are added to bungalows, they are ENERGY STAR labeled. Approximately 14 have been purchased to date.

DBEDT has provided funding and technical assistance for the following projects:

- Developing a Cost/Benefit Analysis of Green vs. Conventional Construction for Department of Education. A cost/benefit analysis of the cost of green buildings vs. conventional construction will be completed in February 2007. The study examines available data on existing, constructed and occupied K-12 public schools that exemplify good sustainable design practices in order to develop a report on the comparative life-cycle cost of these buildings, tangible and intangible occupant benefits, and comparative construction costs. Two case studies developed as part of the project include comparative life-cycle cost studies of Waipahu Intermediate School Cafeteria and Campbell High School Classrooms for both a base case and a green case.
- Judiciary Energy Performance Contract. The Judiciary completed its six-building, lighting-only energy performance contract and is producing an aggregate of 16.5% energy (kWh) savings over pre-retrofit energy consumption. The $1.5 million project is saving the Judiciary more than $254,000 annually on

utility bills. In addition to lighting, there is an added calculated HVAC savings, bringing total kWh savings to over 20.2% annually. HECO and MECO provided $97,000 in rebates for the project, which were deducted from the Judiciary's energy bills. The project is financed with a tax-exempt lease.

- UH-Hilo Energy Performance Contract. UH-Hilo has completed a successful ten-year energy savings performance contract. For the period July 1, 2005, to June 30, 2006, the project provided $764,253 in energy and operational savings, exceeding the guaranteed savings by $58,289. Since the start of the contract in 1996, the University has saved $6,575,580. Cost of the contract was $2.9 million.
- Hawai'i Public Housing Authority Energy Performance Contract. An RFP for energy and water efficiency in 5,363 residential units in 68 projects on five Islands was prepared and is currently under review at the HPHA. These projects are federal housing developments operating on rental revenues and annual subsidies from HUD.
- Hawai'i Air National Guard Air Compressor Project. Developed detailed information to support an energy audit (which will be cost-shared by Rebuild America partner HECO Energy Solutions) for the air compressor system at the Hawai'i Air National Guard Facility at Hickam Air Force Base Bldg 1055. The compressor is oversized and the entire system needs extensive repairs which will be funded for construction in 2007.
- Hawai'i BuiltGreen™ Verification & Analysis Project. DBEDT is working with the Building Industry Association of Hawai'i to certify the number of 3-Star Hawai'i BuiltGreen™ homes, perform an analysis of energy savings due to building to HBG standards, develop a consumer-oriented fact sheet and presentation on the results of this project, and distribute the results.
- Energy Star Portfolio Manager Rating System Benchmarking of Six State of Hawai'i facilities. DBEDT worked with The Cadmus Group to assess the ranking of six State of Hawai'i facilities using the Energy Star Portfolio Manager, utility and building occupancy data. After receiving verification by a professional engineer, the Kakuihewa, Kapolei State Office Building achieved an Energy Star Building Label in early 2006. An Energy Star label means that the building is ranked in the upper 25 percent of all office buildings nationally; the Kapolei State Building was ranked 95%. Kapolei High School initially ranked very high and may also qualify to receive an Energy Star Building label. The State Office Tower and No. 1 Capitol District were among other buildings that were assessed, and along with the State of Hawai'i Capitol Building, Kalanimoku and the Department of Health's AFEES buildings, which are mostly older buildings with older equipment, will need additional upgrades in order to qualify for an Energy Star Building label.

DBEDT has sponsored the following workshops, seminars, conferences and meetings for FY05/06:

- A Seminar on Measurement and Verification (M&V) of Energy Performance Contracts was held on October 4, 2005. The seminar included discussion on the role of M&V, risk and responsibility, M&V methodology, developing an M&V plan, case study, and M&V tools and resources. There were 32 participants from state, federal, and local governments. The seminar was sponsored by DBEDT, DAGS-PW, DAGS-CS, HCDCH, and HDOE.
- The Rebuild Hawai'i Consortium, a 250-member local partnership of both public and private sector organizations continued to hold quarterly meetings. Major

topics at these meetings, in addition to reports on projects and technologies, included: Tax-exempt Financing; Peak Oil and the End of Cheap and Easy Oil; Sea Level Rise; Moisture and Energy Management in Hawai‘i Buildings; U.S. Navy Ford Island Photovoltaic (PV) System; Marine Corps Super T8 bulbs with Daylight Harvesting Ballast Demonstration Project; Efficient Housing in DOD facilities; Hawai‘i Energy Policy Forum-10 Point Energy Program; Hawai‘i K-12 High Performance School Guidelines; Fuel Cells at Navy Facilities; Retrocommissioning; Integrating High Performance in Buildings; Niihau PV Project; Feasibility Study on Potential of Using Methane Gas from a Kaua‘i County Landfill to Generate Power at Barking Sands; City and County of Honolulu Projects—savings from energy performance contracting at Honolulu Hale, Municipal Building and Police Department Headquarters.

- The “Costs and Benefits of Green Buildings” were explained to public and private sector professionals in a DBEDT co-sponsored HECO workshop. The presenter met separately with members of DBEDT’s State Facilities Energy Efficiency Discussion Group, the BuiltGreen Steering Committee, and the American Institute of Architects.
- “Costs and Benefits of Green Buildings” was also presented during the plenary session of HECO’s 2005 Pacific Coast Electrical Association (PCEA) Conference and Expo. The PCEA agenda included a variety of other sessions on energy efficient technologies.
- Workshops on Greening Affordable Housing were cosponsored with federal and nonprofit housing agencies.
- A technical review workshop for commercial interiors achieving Leadership in Energy and Environmental Design criteria was held at the Punahou School Science Center, reaching 25 people.
- A Cool Roofs Seminar featured presentations by DBEDT staff, who also contributed to discussions of the benefits of garden roofs at events sponsored by the Hawai‘i Roofing Contractor’s Association.
- A workshop on residential air conditioning emphasizing the importance of correct sizing attracted 80 professionals.
- ENERGY STAR presentations in 2005-2006 included sessions for: Roofing Contractors Association of Hawai‘i; National Association of County Officials’ Conference and Exposition in Honolulu; and a presentation on the Hawai‘i Green Business Program at the National Environmental Performance Summit in Chicago.
- The Build & Buy Green Conference & Expo, cosponsored by DBEDT, was held at the Hawai‘i Prince Hotel Waikīkī. There were 134 attendees at the May 16, 2006, Greening Approaches to Affordable Housing Workshop; and 295 attendees at the May 17 Build & Buy Green Seminars and Expo. Eighty-four attendees were from various state agencies (DOT, DAGS, DOE, UH, DHHL, Public Safety, HCDCH, HTDC, DBEDT), 10 from various county agencies, and four from a federal agency (HUD). Topics covered on May 16 included sustainability and affordability, energy comfort and health, HUD's Energy Action Plan, water conservation, and a local case study. There were three simultaneous tracks on May 17 that covered the Hawai‘i BuiltGreen™, Energy Star® Homes, and LEED (Leadership in Energy and Environmental Design) for Homes rating systems; LEED and Energy Star® for commercial buildings; and construction/demolition waste management, recycling, green purchasing, and green cleaners. About 600 energy related publications were distributed.

- During the Build & Buy Green Conference, plans for DHHL homes were used as the basis for a design charrette. Various suggestions were offered that would assist the homes to achieve Hawai‘i BuiltGreen™ 3-Star Level.
- DBEDT assisted with the updating of the Durability and Materials Conservation section of the "Hawai‘i BuiltGreen™ Program" Checklist and User Guide. For more than a year, members of the BIA's Technical Review Committee, of which SID staff are members, focused on developing language on which the steel framing, lumber products, and cement & concrete representatives could agree. That goal was accomplished and the changes were presented to the BIA Hawai‘i BuiltGreen Steering Committee for approval.
- A seminar by Stan Walerczyk, PE, was offered on efficient lighting practices, with emphasis on life-cycle costing. State employees were among those in attendance.

DCCA: Most electricity is for air conditioning. Regular maintenance and cleaning of air ducts ensure efficient air flow of system. 90% of all light fixtures use cost saving light bulbs and are activated by motion detectors or timers

DHHL: Steps have been taken to develop an inventory of departmental electric meters, departmental operations and construction. Electric companies on all islands have provided an historical record of energy consumption in kilowatt hours for the past two years (July 1, 2004 to June 30, 2006); the historical data will be used as a benchmark to implement DHHL’s energy reduction effort.

DHRD: (blank)

DHS: DHS is a participating agency in the State’s Lead by Example project. As a part of this statewide project, DHS will develop a plan to implement energy reduction efforts.

DLIR: An assessment of electricity usage was completed on nine of the Department of Labor and Industrial Relations (DLIR) offices that are not maintained by DAGS Central Services. The assessment of the nine offices covered the period July 1, 2004 through June 30, 2006. Based on our review, the nine offices utilized a total of 825,515 kilowatt-hours resulting, in a total cost of $227,757.07.

Based on the energy usage, DLIR plans to do the following:

- Consult with DAGS and issue a departmental memorandum reminding all offices of the need to adhere to energy efficient practices such as turning off electrical lights when not in use.
- Request assistance from DAGS to provide an analysis for the nine affected DLIR program offices. Based on DAG’S analysis, develop a plan work with DAGS and DLIR offices to develop and implement energy saving measures to reduce electricity kilowatt usage.
- Access each office’s space need requirements and consider consolidation of offices.

DLIR is currently participating in an Environmental Preferable Purchasing (EPP) survey mandated under the following Federal and State laws and the applicable Administrative Directives:

- Resource Conservation and Recovery Act (RCRA), Section 6002, 42 U.S.C. 6962. The RCRA requires state and local government agencies and their contractors receiving appropriated federal funds to purchase EPA designated recycled content products.
- Section 103D–1005(b) of the Hawai‘i Revised Statutes. Section 103D-1005(b) requires state purchasing agencies and encourages county purchasing agencies to
  - apply preferences to purchase of products with recycled content;
  - be consistent with RCRA Section 6002, E/O. 13101 and its progeny; and

- ensure, to the maximum extent economically feasible, the purchase of materials that may be recycled or reused when discarded and to avoid the purchase of products deemed environmentally harmful.

- Administrative Directive 06-01, signed by Governor Lingle in January 2006, requires state agencies to purchase environmentally preferable products that reduce their impact on the environment and improve indoor environmental quality. Energy Star and low toxic products are examples of environmentally preferable products.

The DLIR plan includes the following:

- DLIR will utilize the results of the EPP survey to structure and plan for the period July 1, 2006 to June 30, 2007. In addition, DLIR will continue to utilize the SPO price list and require all programs to purchase recycled and environmentally preferable products.
- DLIR programs have not been major users of Energy Star products; however, DLIR will include will include a procedure to add Energy Star products as part of the procurement approval process. In addition, DLIR will include in our procurement procedure a policy to check whether utility rebates are available and can be utilized in the purchase of the products.
- The DLIR practice is to mandate the purchase recycled paper and to utilize the State Procurement Offices Price List (SPO PL) for all purchases where products are available through the SPO PL. DLIR will also issue a departmental instructional memo to ensure conformance with the results of the EPP Survey and be included in the procurement policy.

The use and cost of the two vehicles owned by DLIR were derived by manually reviewing all invoices submitted by the DAGS Automotive Management Division and preparing a spreadsheet.

DLIR owns a 1998 Ford Windstar and a 1994 Chevrolet Astrovan. DLIR does not have immediate plans to purchase another vehicle in the near future; however, DLIR will adhere to the applicable state laws regarding vehicle purchases. DLIR's two current vehicles are in sound operational condition and thus DLIR has no plan to replace the vehicles in the near future. Prior to purchasing a vehicle in the future, DLIR will ensure that any vehicle purchased satisfies federal and state mandates. In addition, DLIR will purchase the most fuel efficient vehicle that meets the needs of our program.

DLNR: DLNR continues to work with the Department of Business, Economic Development, and Tourism (DBEDT) in a statewide collaboration on energy efficiency, as a member of DBEDT's Lead by Example Leadership Group. DLNR will continue to work with the Leadership Group on ideas to implement energy savings across the State.

Act 96, SLH 2006, mandated that each state agency comply with a variety of energy directives involving buildings and facilities, transportation vehicles and fuels. To this extent, DLNR is developing a program to track vehicle expenses and energy consumption for all cars in the department's inventory. Additionally, DLNR is seeking the advice of other state agencies through DBEDT's Lead by Example Leadership Group and will implement internal procedures as appropriate.

DLNR's facility portfolio is limited. Most of buildings owned by DLNR are composed of base yards, harbor facilities and park restrooms. DLNR incorporates energy saving concepts into all of its owned facilities as appropriate. Energy saving concepts include the use of solar water heaters, natural ventilation and lighting, and use of energy efficient lights. Additionally, DLNR has begun to incorporate energy savings practices into design projects such as the recycling of existing asphalt concrete pavement into backfill material.

DLNR evaluates the feasibility of implementing energy conservation measures when capital improvement projects are designed. As DLNR staff learn more about energy efficiency and environmental design, they will incorporate these concepts into building and facility design and renovations.

For energy reduction efforts at non-DLNR owned offices and buildings, staff have implemented office paper recycling. Staff are also reminded to turn off equipment when not in use, keep blinds closed, and report equipment malfunctions. Energy efficient light bulbs are used where plausible and timed sensors have been installed to allow automatic shutoff off of lights.

DLNR uses life cycle cost-benefit analysis to purchase energy efficient equipment such as Energy Star products and uses utility rebates where available to reduce purchase and installation costs.

DLNR further encourages the use of recycled products with contractors. DLNR also adheres to the allowed 10% price preference for bids using recycled products in accordance with Section 103D-1005, Hawai‘i Revised Statutes.

DOA: DOA has identified departmental buildings/facilities and motor vehicles under the department's control and management for reporting purposes. DOA has also:

- Compiled electricity and water consumption data for these managed and controlled buildings/facilities for FY 2005 and FY 2006.
- Obtained the electronic file of an existing condition survey to use in establishing an electricity baseline for these managed and controlled buildings/facilities.
- Researched and begun compiling blueprints of the floor layout for each building/facility to be monitored for energy and water consumption.
- Obtained from DAGS' Central Services Division a listing of retro-commissioning and specific energy efficiency projects and related costs to review and request funding in the FB 2007-2009 Executive Budget.
- Researched information on energy, fuel and water conservation practices and tips to include in the Departmental Energy and Water Conservation and Resource Efficiency Program document.
- Attended various energy workshops and meetings to obtain information that can be utilized in developing the Departmental Energy and Water Conservation and Resource Efficiency Program.
- Met and determined with the DAGS Automotive Management Division and Systems and Procedures Office staff how data on fuel consumption and mileage for the department's motor vehicles can be obtained from their system for FY 2005 and FY 2006.
- Inquired with SPO if vendors who are awarded bids for recycled products can be required to provide to the state, as part of their contract, a report on the amount of recycled products purchased by each agency at the end of each fiscal year.
- Inquired with SPO if recycling services for paper, computer equipment, etc., can be placed on the bid list.
- Inquired with SPO if vendor who is awarded the fuel bid price can be required, as part of the contract, to provide the state with a report on fuel consumption by department, vehicle, fuel type and fiscal year.
- Inquired and obtained from Tesoro a listing of fuel consumption by motor vehicles for FY 2005. We are following up with Tesoro since data are incomplete.
- Completed and submitted EPP Survey to DOH reflecting amount of recycled goods purchased during FY 2002, FY 2004, and FY 2006 compared to nonrecycled counterparts.

- Compiled data provided in the EPP Survey on recycled and non-recycled content products purchased in FY 2002, FY 2004, and FY 2006 to establish a baseline for monitoring department's recycling efforts. Requested from DOH results of the survey for FY 2002 and FY 2004 on statewide basis, but none have been received to date.
- Requested that DAGS' Central Services Division review our air conditioning systems, make recommendations on how to improve efficiency, and recommend a replacement schedule.
- Developed a draft Energy and Water Conservation and Resource Efficiency Program to provide policies, guidelines, and practices with the goals of minimizing energy, fuel and water consumption and implementing resource-efficient operations.

DOE: Please see responses above. The Legislature, via Act 96, has appropriated an Energy Coordinator position to the Department of Education (DOE) to assist with this effort.

DOH: The Kamamalu Building, into which the Department will be moving, will be LEED Silver Certified. All future designs for renovations and construction will be LEED Certified.

Air conditioning for the various health centers is shut off at 6 PM and on holidays and weekends. Window units have been installed in several offices to avoid having to turn on the central building units for those working late or on weekends. Air conditioning units on order for Kinau Hale renovations are energy efficient and qualify for a HECO rebate.

Windows in several newly renovated spaces at Kinau Hale were tinted and a rebate was issued by HECO. Lamps and ballasts at several health centers have been changed to more energy efficient ones thru HECO's rebate plan.

DOT-Air: We are collecting data on our building facilities of any current projects in the design phase. We will investigate the energy consumption to plan for reduction, and plan for efficient design. We will investigate current facilities' options to reduce energy use.

DOT-Har: The Division needs to develop a program to ensure that inventorying, investigation, planning and implementation are effective and in compliance with Act 160.

FTZ: FTZ will replace the current lighting system in the warehouse by reducing the number of lights and replacing the 300 incandescent light bulbs with energy efficient 50-80 watt CFL bulbs. We will also be installing a relay to allow lights inside the warehouse to be turned on remotely and tied in with the new security system currently being installed.

HCDA: HCDA's 897,742 kWh reduction between FY 05 and 06 is attributable to Armstrong Produce vacating CFS3 building.

HHFDC: HHFDC is in the process of obtaining energy consumption data to submit to HECO to obtain an energy consumption baseline from which to plan and implement energy reduction efforts.

HHSC: HHSC has contracted with NORESCO to evaluate all feasible energy reduction alternatives for each facility.

HPHA: HPHA is in the process of soliciting an Energy Performance Contract with a qualified Energy Service Company. We anticipate awarding the contract by mid 2007. The contract will incorporate solar water heating and water reduction on majority of our projects.

Mechanical equipment is being replaced as the equipment reaches its expected life span or begins to cause problems, and as funding is available. The new equipment has higher efficiencies due to newer technologies and because the older equipment has decreased in efficiency due to age. HPHA is working with the service and maintenance contractors to aid in the inventory process; they have the greatest knowledge of the operations and condition of the equipment since they physically see and inspect all of our major equipment on a quarterly basis, at minimum.

HPHA is preparing a cost/benefit analysis for replacing the existing a/c systems with new, more efficient, systems prior to the existing systems reaching their expected life span. HPHA is also preparing a cost/benefit analysis to determine if replacing the existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps is cost justified.

HPHA has been working closely with HECO to streamline the process for tracking projects to ensure and encourage maximum participation in rebate programs.

HPHA will take the following steps to reduce its energy consumption in staff offices and housing projects:

- Develop an inventory of all incandescent lighting sources, and initiate steps to convert to higher efficiency lighting.
- Initiate a program for turning off all lighting and electrical equipment when not in use.
- Implement a policy where office temperatures in air-conditioned spaces are set at 78 degrees Fahrenheit.
- Lower water heater thermostat settings to 120 degrees Fahrenheit or less.

HSPLS: HSPLS has already retrofitted lighting at many of our libraries through DAGS and HECO. We always request energy efficient products (i.e. lighting, air conditioning) in all of our construction projects through the design specifications. Projecting or calculating energy savings proves to be very difficult, since there are many variables which affect usage from the installation of new energy efficient lighting and/or air conditioning systems. Some of the affected libraries shared meters with other facilities and with the schools, if located on their campuses. From FY 2000 to FY 2007, there were dozens of scheduling changes and public service hour increases which impacted utility use as well.

HTA-CC: HTA and HCC are currently analyzing where energy is being used and alternative sources to provide it. We have already implemented many projects with good returns on investment. We are currently trying to secure more alternatives (ongoing process).

NELHA: The major use of electricity at NELHA is pumping water for the tenants who all use the pristine seawater producible only at NELHA. Approximately 70% of the electricity consumed at NELHA by NELHA is for this purpose. In monthly terms, that is about $70,000.

Management has, in its reorganization plan, dedicated a full-time, extremely experienced person to only analyze seawater, seawater electricity consumption, methods to reduce consumption (including declaring a force majeur if that becomes necessary), and methods to improve the efficiency of the six separate seawater production facilities.

NELHA is also investigating producing alternative sources of energy at NELHA to reduce its dependency on the electrical grid. This includes construction and operation (by private companies) of a 1-megawatt OTEC plant and a 5-megawatt PV plant. While investors are ready to build such plants and active negotiations for them are underway, a major impediment to their operation and consequent reduction in electric energy costs for NELHA is the implementation of power purchase agreements. If these have to be put out to public bid, it is extremely unlikely the projects will move forward.

In such an event, unless the price of electricity declines, NELHA will probably deem it necessary to implement a plan that includes restrictions on water deliveries to fish and shellfish farmers and will as to refuse new tenants who would use seawater.

PSD: Mechanical equipment has been replaced as the equipment reaches its expected life span or begins to cause problems, and as funding is available. The new equipment has higher efficiencies due to newer technologies and because the older equipment has lost efficiency due to age.

DAGS works with the service and maintenance contractors to aid in the inventory process; they have knowledge of the proper operation of the equipment as well as physically seeing all of our major equipment on a quarterly basis, at minimum. DAGS will be looking into a cost/benefit analysis for replacing the existing A/C system with new, more efficient, systems even prior to the existing systems reaching their expected life span. DAGS will be looking into a cost/benefit analysis for replacing the existing energy efficient electronic ballasts and T-8 lamps with the new Super T-8 lighting ballasts and lamps. DAGS has been working closely with HECO to streamline the process for tracking projects to ensure and encourage maximum participation in rebate programs.

TAX: On March 1, 2006, the Director of Taxation issued a Memorandum regarding Energy Conservation to all Department of Taxation Employees. The Department of Taxation (DOTAX) coordinated with the Department of Accounting and General Services (DAGS) to ensure that best practices were incorporated in this memorandum.

DOTAX is charged for after-hours and weekend air conditioning usage. Requests for after-hours and weekend air conditioning are primarily during tax season when we run night and weekend shifts to process a surge of tax returns, deposits and refunds. These requests continue to be monitored and approved by the Administrative Services Officer.

UH: Steps taken include:

- UH Mānoa – Discussions are currently underway with HECO into renew their partnership that will focus on beneficial solutions to the campus energy issues. Through the campus' original partnership agreement with HECO, energy audits of selected buildings were undertaken and UH sub-meters at various building locations were replaced. The sub-meters provide essential information related to energy consumption. Mechanical and lighting retrofit projects were identified in the energy audit. Due to the significant backlog of deferred maintenance projects, the implementation of projects to improve energy efficiency has been limited to funding for repairs and maintenance projects.
- UH Hilo - a/c schedules are reviewed and adjusted to follow changing operating hours each semester. Night light time clocks and light sensors were each checked, adjusted and/or repaired. Motion sensors were installed in classrooms and offices, as appropriate, to turn off lights automatically. Sensor flush valves for low flow toilets and urinals were installed. Water heater temperatures are set at the recommended lowest settings. Lights are turned off by cleaning crews after the last scheduled use. Vehicles are checked and serviced monthly to ensure energy efficient operations.
- Honolulu CC – The College has an energy management system for its central air conditioning system, which allows automatic time setting in coordination with their facilities use scheduling. The campus also schedules classroom use with energy conservation in mind, such as utilizing classrooms with window air conditioning units instead of turning on the central air conditioning system to the larger buildings. In addition, in all buildings campus-wide, fluorescent fixtures have been replaced with electronic ballasts and T8 lamps.
- Kapiʻolani CC – The increasing popularity of programs, such as the culinary program, has required the campus to extend hours to accommodate the increased demand. This has increased the number of hours that kitchen facilities are operational as well as extended dining room hours. Some of the actions implemented have been the re-ballasting and re-lamping of all existing light fixtures campus-wide; replacement of exterior campus lights with energy efficient lamps and ballasts; timer adjustments on air-conditioning units in accordance with season and usage needs; and consolidating classes into filled buildings during evenings, weekends, and summers to minimize air conditioning, lighting and other utility costs.

- Leeward CC – The College has sought ways to reduce energy consumption and has: implemented the installation of timers campus-wide to turn parking and walkway lights off during non-operational hours; consolidated facilities use through scheduling to minimize hours of operation; replaced fluorescent lights with electronic ballasts and T8 lamps campus-wide; and, in the central chiller plant, replaced two of three main chillers with high efficiency units.
- Windward CC – Electricity costs have risen dramatically at the campus, in large part due to the addition of new facilities. A majority of the new buildings were designed and constructed with energy efficient measures. Also, in order to reduce the use of energy, night classes have been clustered to certain areas/buildings, class sizes increased whenever practical, and the number of lamps reduced in fixtures in non-critical areas.
- Hawai‘i CC – Electricity expenses at Hawai‘i CC's Manono campus in Hilo are paid by UH Hilo. Hawai‘i CC pays directly for electricity expenses incurred at its West Hawai‘i campus. Some of the energy savings employed by the College include controlling lighting and air conditioning systems to minimize waste, scheduling classes to achieve energy efficiency, and promoting energy conservation awareness among faculty and staff.
- Maui CC – Over a span of ten years, Maui CC has added and/or renovated a total of approximately 190,000 square feet, most of which is air conditioned. The College has made energy management one of its highest priorities and has aggressively pursued energy conservation measures. The College has since implemented a computerized energy management system to control lighting and air conditioning in all of its new facilities. The Campus administration has formed an alliance with Maui Electric Company to jointly seek conservation measures for the College. The College's own Sustainable Technology program has played a major role in reviewing the College's capital improvement program projects, air conditioning systems, sub-metering, lighting, etc., to ensure installation of the most energy efficient equipment, and chiller systems, as well as to seek alternative energy sources. The College also schedules evening and weekend activities in single buildings to avoid cooling multiple buildings and promotes energy awareness on campus. Maui CC staff also monitor air conditioning schedules of buildings, classrooms, and offices via its energy management system to minimize waste and reduce electricity costs.
- Kaua‘i CC – In 1982, the Energy Division of DBEDT coordinated a Technical Assistance Energy Audit of the campus. This audit resulted in a matching federal grant that was earmarked for the modification of the College's air conditioning system. The contract included the installation of hand timers, energy efficient pump motors, a variable speed drive for the main chiller, and a power factor capacitor for the air conditioning plant. Other measures the College has undertaken include the installation of a computerized energy management system; installation of energy light fixtures; installation of a variable frequency drive for the chilled water pumps; and replacement of two air-conditioning chillers with energy efficient chillers.

Act 160, SLH 2006

(3) A **plan** or alternatives to reduce energy consumption in the future;

AG: We are looking to the Lead by Example policy group and DAGS for further ideas to implement energy savings.

B&F: The Department will issue a memorandum encouraging all employees to initiate and implement energy efficient practices (i.e. turning off office lights when not in use or when leaving for the day, turning off computer terminals at the end of the day, distributing Energy Star saving tips, etc.). In addition, DBEDT has established a Leadership Committee to research, review and provide recommendations to the Executive Branch for the implementation of energy reduction initiatives. B&F, as well as all other departments, is participating in this effort to identify and implement energy reduction initiatives.

DAGS: PWD efforts include: developing a LEED application guideline for State agencies; providing LEED and commissioning programmatic support; pilot projects to apply for LEED certification at Mānoa Library, Kohala Library and the Kamamalu Building; a pilot retro-commissioning project at the State Capitol; on-going training and partnering with HECO and in conjunction with DBEDT; sub-metering where feasible; updating and implementing additional policies; and keeping abreast of the latest energy reducing innovations and practices.

The Stadium Authority will be evaluating the following alternatives for reducing energy consumption in the future:

- Purchasing and using Energy Star listed products whenever possible.
- Replacing old low-efficiency electrical equipment with higher-efficiency replacement products.
- Initiate projects to replace air-conditioning insulation.

DBEDT: Most of DBEDT's energy-related work is supported by Federal funds, often the result of winning nationwide competitive grant solicitations.

DBEDT will continue to offer technical assistance and training opportunities to state facilities in assessing potential for energy, water, and renewable energy measures, financing considerations, and implementation. This will include continuing to invite state employees and consultants to seminars on energy efficiency.

DBEDT has selected a contractor to develop a Tropical Energy Code which will formalize efficiency standards more stringent than ASHRAE 90.1-2004 for Hawai'i's buildings, including state buildings. This is a federally-funded project awarded to the State of Hawai'i as a result of a national competitive process.

DBEDT continues to assist the State Dept. of Education with implementation of the Hawai'i High Performance Schools Guidelines, which were developed last year. These guidelines include the use of life-cycle cost analysis and commissioning, and an 8-page Hawai'i High Performance Classroom Prototypes booklet. The guidelines were developed under a federally-funded grant which was awarded after a national competitive process.

DBEDT has initiated the preparation of a series of eight 30-second spots with KHON TV2 promoting energy efficient and renewable technology products that reduce energy costs and protect the environment. Also, a draft of a half-hour video highlighting local residents who are utilizing energy efficiency and renewable technologies to make a difference in Hawai'i has been reviewed by DBEDT.

DBEDT signed an agreement with the US Environmental Protection Agency (EPA) on October 14, 2005 to participate in the ENERGY STAR 10% Challenge program. The goals are to improve the energy efficiency of state facilities by 10% and reduce greenhouse gas emissions. The State of Hawai'i's Partnership Plan includes:

- Developing public and private partnerships to promote EPA's Portfolio Manager energy performance rating system;
- Providing training for public and private partnerships to identify opportunities for improvements;
- Participating in and promoting EPA's Energy Star webcasts, programs, and resources; and
- Incorporating Energy Star products in state agency procurements.

DBEDT will take the lead in a voluntary Clean Energy-Environment State Partnership with the EPA to develop goals and implement plans for using energy policies and programs to improve quality, decrease energy use, reduce greenhouse gas emissions, and enhance economic growth. Hawai'i is considered one of the leading states in energy efficiency and renewable energy by the EPA. The EPA will provide technical assistance to Hawai'i to assist in analyzing and developing best practices, among others. Hawai'i is trying to focus on implementation of energy policies through the Lead by Example program, encouraging capacity building in state facilities and trying to make better use of energy performance contracting as an implementation tool. One of the benefits of the partnership is that it will provide some focus to interagency cooperation in the state and provide Hawai'i with opportunities to study how other states implement energy efficiency and renewable projects.

DCCA: DCCA plans regular maintenance of its air conditioning system.

DHHL: DHHL will develop an in-house energy program to inform all department staff to reduce energy consumption, using guidelines and recommendations from the educational leaflet from US Department of Energy, "There are Many Easy Ways to Save Energy," and DBEDT's "Hawai'i Commercial Building Guideline for Energy Efficiency." DHHL will also develop an education program for the department's homesteaders on the benefits from use of solar water heating, which may use publications such as Hawaiian Electric's "This is the Hottest Deal Under the Sun." In addition, DHHL will use our department publication, "Ka Nuhou," to inform homesteaders and staff of the benefits of using solar and other alternative energy.

DHRD: (blank)

DHS: DHS is a participating agency in the State's Lead by Example project. As a part of this statewide project, DHS will develop a plan to implement energy reduction efforts.

DLIR: Based on energy usage, DLIR plans to do the following:

- Consult with DAGS and issue a department memorandum reminding all offices of the need to adhere to energy efficiency practices such as turning off electrical lights when not in use.
- Request assistance from DAGS to provide analysis for the nine affected DLIR program offices. Based on DAG'S analysis, develop a plan work with DAGS and DLIR offices to develop and implement energy saving measures to reduce electricity use.
- Access each office's space need requirements and consider consolidation of offices.

DLNR: DLNR hopes to undertake two large projects in FY 2008, which will serve as demonstration projects for energy efficiency across the state.

1. <u>'Iolani Palace.</u> 'Iolani Palace is not only a Hawaiian national treasure but is the only official state residence of royalty in the United States. Built in 1882, the Palace was the official residence of the Hawaiian kingdom's last two monarchs. Restoration in the 1970s included the installation of air conditioning units to help preserve the building as well as the treasures held within.

   Located in a humid environment, the Palace is highly susceptible to mold growth and other forms of biodeterioration. Inadequate air conditioning systems can lead to variations in relative humidity, which can further lead to chemical reactions. The negative results of

these chemical reactions are that metals may corrode, many dyes may fade, glass collections may be damaged, furniture joints may be loosened, paint may chip from canvases, and paper may be cockled. Thus, as with any historical site, ‘Iolani Palace’s air conditioning system is of great importance to the environment in which the collections are housed.

The existing air conditioning system has deteriorated and has failed to provide the necessary climate control for uniform temperature and humidity. The system continues to experience breakdowns and continued system failures will lead to eventual damage and loss of invaluable cultural artifacts.

Thus, the entire air conditioning system needs to be replaced. This creates an opportunity for DLNR to look toward energy efficiency in the development of a new air conditioning system for the Palace. Staff has begun to look at new technologies in air conditioning systems, which utilize photovoltaic technology and recycled water. Additionally, commissioning of the chosen system will be included for the design and installation for optimum performance.

Taking into consideration its historic significance, the Palace’s façade would not be altered. However, adjoining buildings could be utilized for alternative energy production, which could in turn be used at the Palace. With $900,000 allocated in FY 2006 for design and construction, DLNR has begun to design an air conditioning and climate control system for the Palace.

The State would benefit greatly from taking this opportunity to have ‘Iolani Palace serve as a pilot project for energy efficient air conditioning technology for the state while saving money and preserving Hawai‘i ’s history.

2. Kaho`olawe Island Reserve. Kaho`olawe presents a unique opportunity for alternatives to reduce energy consumption due in part to the Island’s small population and isolation. Concerns have emerged regarding whether appropriate power sources and adequate fuel supplies exist to successfully maintain planned facilities and operations on Kaho`olawe because of its geographic and logistical isolation from the other Hawaiian Islands. Additionally, because of the Island's unique status as a cultural and environmental preservation, the use of alternative energy resources is believed to be most appropriate.

   The use of alternative energy resources for the Island's power needs is advisable and is in keeping with the Kaho`olawe Island Reserve Commission's mandate and vision to restore, preserve, and maintain a pristine natural environment for the Island.

   Currently, Kaho`olawe depends on fuel flown in from Maui at a cost of about $8/gallon. This is highly inefficient and, because of the small population, is not viable.

   DLNR is looking at a program to replace the diesel generation plant which is currently on the Island. This project will investigate, design and construct alternative energy systems to provide power for activities on Kaho`olawe. Alternative energy systems that may be considered include solar, wind, wave and photovoltaic.

   In addition to energy needs, fresh water is scarce on the Island and must be caught through catchment systems or brought to the Island by boat. Thus, DLNR is also investigating how energy produced on Island can be used to produce potable water, including the development of an advanced water purification system, which would allow the Island to be water self-sufficient.

   Another component of this project will be the ongoing evaluation of long-term alternative energy applications to support the future vision and historical, cultural, archeological, and restorative activities for Kaho`olawe, including an evaluation of the feasibility of using renewable resource options for pumping of fresh water, desalinization, ice production, and fuel for vehicles.

   The alternatives for Kaho`olawe’s energy and water needs are non-existent. This project on Kaho`olawe can serve as a model project for sustainability and alternative energy

research and application. Additionally, the project will serve as a model to determine energy and logistical requirements of future.

DOA: A draft Energy and Water Action Plan has been developed. The goal of the plan is to minimize energy, fuel and water consumption and implement resource-efficient operations and management measures by accomplishing the following objectives:

- Promote energy and water consumption and management awareness by establishing a Departmental Energy and Water Conservation and Resource Efficiency Program.
- Operate energy- and water-efficient buildings/facilities.
- Operate fuel-efficient motor vehicles.
- Promote the 4 Rs – Reduce, Recycle, Reuse and Rebuy.
- Promote renewable energy and resource development.

DOE: The Legislature, via Act 96, has appropriated an Energy Coordinator position to DOE to assist with this effort. The Legislature also appropriated $5 million to DOE for pilot photovoltaic projects to be constructed on at least one school on each of the islands of Hawai‘i, Kaua‘i, O‘ahu, and in the County of Maui. When constructing new air conditioned facilities or when central air conditioning equipment needs replacing, our Facilities Development Branch personnel will undertake the heat recovery and ice-thermal storage system alternative analyses.

DOH: The Department will have the Communications Office issue periodic bulletins to the employees illustrating ways for them to save energy at work and at home. All future designs for renovations and new construction will be LEED Certified. The Department's fiscal office will insure that any appliance purchases by programs meet Energy Star ratings.

The Department's fiscal office will insure that vehicle purchases meet all energy conservation requirements.

The Department will assess the cost of purchasing a central energy management system to control the air conditioning units at all of its major buildings. Presently, the timers are located at each individual building and not controlled at one location. This is not an efficient way to control air conditioning for multiple buildings.

DOT-Air: DOT‘s Airports Division will: provide education on saving energy to our employees and tenants; educate our engineering staff on building green and energy efficient technology in order to implement whole-building design practices; upgrade our design and construction standards and guidelines according to LEED standards; and select new and existing building improvement projects for certification and commission. Please see Appendix 7.

DOT-Har: DOT's Harbors Division will increase awareness and training for employees on available energy conservation technology or practices. It will also develop program milestones or metrics to encourage reduced energy consumption.

FTZ: FTZ is exploring the option of using photovoltaic lighting for its roof. FTZ will have a photometric survey undertaken for its parking lot lighting system to ensure that the most efficient lighting system is used with the new security system, currently being installed.

HCDA: HCDA will incorporate energy saving devices and procedures in future developments as well as retrofit where appropriate.

HHFDC: HHFDC is in the process of obtaining energy consumption data to submit to HECO to obtain an energy consumption baseline from which to plan and implement energy reduction efforts.

HHSC: HHSC plans to use the NORESCO report to implement as many energy reduction alternatives as possible when funds become available.

HPHA: HPHA efforts include: developing a LEED application guideline for State agencies; providing LEED and commissioning programmatic support; a pilot retro-commissioning project on O‘ahu; on-going training and partnering with HECO and in conjunction with

DBEDT; sub-metering where feasible; updating and implementing additional policies; and keeping abreast of the latest energy reducing innovations and practices.

HPHA will be evaluating the following alternatives for reducing energy consumption in the future:

- Purchasing and using Energy Star products whenever possible.
- Replacing old low-efficiency electrical equipment with higher-efficiency replacement products.
- Initiate projects to replace air conditioning insulation.

HSPLS: HSPLS will continue to retrofit our libraries with energy efficient lighting through special HECO projects and library renovation projects. We tried to implement a performance contract for the lighting at all 51 public libraries but could not enlist the support of the DAGS Procurement office to conduct our request for proposal.

HTA-CC: We will incorporate energy savings devices and procedures in all future procurements, both remedial and capital.

NELHA: NELHA plans to have a 1-MWe OTEC plant built and get a joint venture with private industry to install up to 10-MWe of PV and battery storage, which will help secure its independence from fossil fuels in terms of electricity.

PSD: As most of PSD's energy consumption is found in the correctional facilities, strategies or plans to seek to reduce consumption throughout these buildings have been identified in the section of this report addressing Act 96. Additional proposed strategies for the department as a whole have also been delineated throughout this report.

TAX: DOTAX plans to reduce energy consumption through an educational campaign.

UH: The plans to reduce energy consumption in the future in the UH system include:

- UH Mānoa - The campus is continuing its efforts to support more energy efficient building equipment/technology through its Repairs and Maintenance Program. All major air conditioning projects provide for the installation of energy efficient equipment, and additional lighting retrofit projects have been identified for implementation.
- UH Hilo - A 10-kW PV system is being installed on PB-11. UH Hilo plans to install more PV panels in the future.
- Honolulu CC – The campus replaces burnt out electrical bulbs, fixtures and motors with energy efficient models. New energy conserving technologies are implemented whenever possible, especially when older facilities are renovated to meet current instructional needs. The campus has implemented an on-going effort to promote energy conservation awareness.
- Leeward CC – Control of campus lighting and air-conditioning systems are especially critical and have been the focus of conservation measures. Through the campus repairs and maintenance program energy consuming devices will be replaced with energy efficient equipment. The campus has an on-going effort to promote energy awareness.
- Windward CC – The campus has taken measures to eliminate waste through an on-going energy conservation program such as faculty/staff education and awareness, signage, and reminders posted in classrooms.
- Hawai‘i CC – The College has on-going effort to promote energy conservation awareness and on-going effort to promote efficiency through class scheduling.
- Maui CC – The College will continue its partnership relationship with Maui Electric Company to jointly pursue energy conservation measures; the Campus has an on-going effort to promote energy conservation awareness, and on-going effort to promote efficiency through class scheduling.
- Kaua‘i CC – Replace the obsolete Johnson Controls energy management system; continue the on-going effort to promote efficiency through class scheduling; and continue the campus operations committee to promote energy conservation awareness program.

Recycling Pilot Projects
UPDATE
August 28, 2006

We would like to set up a Recycling System to establish base lines for the collection of recyclable materials in like buildings or high use areas. These established base lines will give us a better understanding of the potential of a campus wide comprehensive recycling program and a chance to test some of the systems already available to us. It will also provide us with the opportunity to create and finesse a program that is user friendly for both custodial and refuse collection staff as well as faculty, office staff and students. Together with a well communicated educational program and signage, we anticipate this program to be well received.

The following are the areas in which we would like to create these pilot projects.

1. Courtyard with Food – SUSTAINABILITY COURTYARD
    - **Collection sites are already in place.**
2. Mixed Use Building – Classrooms, Offices and an Auditorium – HIG
    - A system has been set up and the requisite bins have been purchased. They include; 5-95 gallon roll out bins, 180 desk side systems, 11 beverage container bins for lunch areas, 11 recycle paper bins for copy areas, 2 cardboard collection carts and a rolling collection system to assist the custodial staff in collection.
    - **To begin on September 1, 2006**
3. Offices Only - HAWAII HALL
    - **Collection sites are already in place.**
4. Courtyard without Food – SHERMAN COURTYARD
    - Bins have been acquired
    - Signage needs to be completed
    - Bins include 65-gallon roll out container and 65-gallon double duty can and bottle container.
    - **To begin September 1, 2006**

We are presently collecting recyclables and their subsequent data utilizing Office of Sustainability's student help and a pick up truck with a lift gate provided by Buildings and Grounds Management.

Programs to Minimize Waste & Prevent Pollution

Campus	Program Title	Description of Program	Vendor (if applicable)	Duration of Program	Materials Recycled	Quantity Recycled (Per Year)	Any Other Information
Kaua'i CC	Recycle cooking oil and grease	Vegetable oil and grease is cleaned out of the grease traps by the vendor; the cooking oil is recycled	Kaua'i Grease Trap Maintenance	Approximately 17 years	Vegetable oil and grease	200 gallons	
Kaua'i CC	Collection of waste oil from vehicles	Kaua'i CC students bring their cars to the automotive shop to learn how to properly change and collect the vehicle oil. The collection is given to the vendor.	Speedie Lube	Approximately 30 years	Engine oil	100 gallons from Automotive Technology; 25 gallons from Operations and Maintenance	
Kaua'i CC	White paper recycling program	Kaua'i CC faculty started a program recycling white paper. Collection bins are located throughout the campus facilities; the maintenance staff transports the paper to a collection dumpster where the vendor collects the paper to be recycled.	Garden Island Disposal	Approximately 6 years	White paper	1,000 lbs.	
Leeward CC	Community Recycling Center Program	Designed to provide convenient recycling drop-off services to campus community	City & County of Honolulu in conjunction with Honolulu Disposal	Exact date unknown	1) aluminum cans, glass 2) newspaper, corrugated cardboard, office paper	Undetermined	40-cubic yard roll off container custom designed for recycling is provided

Leeward CC	Community Mulch Program	Leeward CC is designated as one of the City & County of Honolulu's recycled green waste sites where mulch is available for campus and community pickup and use	City & County of Honolulu in conjunction with Hawaiian Earth Products	April, 2006	Green waste	Undetermined	N/A
Leeward CC	Cartridge Recycling Program	Leeward CC is in the preliminary stages of establishing a recycling program for used printer cartridges	Entrade Corporation	To be determined	Cartridges for printers, facsimiles, copiers, and multi-function machines	N/A	Program is currently being established - soon to be implemented
Leeward CC	Computer Recycling	Statewide computer recycling effort involving UH and the K-12 schools to be coordinated at the UH-M campus	Apple Computer	Late September, early October 2006	Computers and monitors, all brands	Potentially hundreds of pounds	Program is supported by Apple Computer
Maui CC	Maui County Recycling Site	Maui CC has agreed to allow usage of space on campus for a community recycling site run by Maui County. This site allows Maui CC a convenient location for the campus to recycle bottles, plastics, and paper waste. This is also a HI-5 redemption center.	Maui County, who hires Maui Disposal to operate the recycling center	Approximately 3 years	Newspaper, plastics, bottles, cardboard, HI-5 redemption center		
Maui CC	Maui CC Campus Recycling Program	A Maui CC student club manages several recycling collection points on campus and transports recyclables from the collection points to the Maui County recycling/redemption site.	Hawai'i Institute for Human Rights	Approximately 2 years	plastic bottles and cans		
Maui CC	Administrative Services shredded paper	Paper generated by the Administrative Services Unit at Maui CC is shredded and given to a local flower farmer who uses the shredded paper for their business.	Helani Farms Hāna and Maui Floral Farms in Kula	Approximately 2 years	shredded paper	250 garbage bags a year	

Maui CC	Recycled glass chips	Maui CC purchases large quantities of recycled glass chips to use in planter beds located throughout the various parking lots.	Aloha Plastic Recycling Company	Approximately 6 years	glass chips	50 tons of glass chips	
Maui CC	Recycled plastic parking curbs	Maui CC has constructed parking lot curbs that are molded with recycled plastics	Aloha Plastic Recycling Company	Approximately 8 years	recycled plastics	100 parking lot curbs	
Maui CC	Telephone books	When the new telephone books are issued, a staff member organizes a collection site on campus to collect the old phone books as part of an annual phone book recycling contest.	Judy Moon	3 years	telephone books	100-300	
Maui CC	Reuseable coffee mugs	When people purchase an MCC plastic reuseable coffee mug in the campus cafeteria, they receive a discount on their beverage each time they use it.	Paina / Logo designed on campus	Started Spring 2006	Saves paper product use from landfill and saving for culinary dept in purchases	200/year	
Windward CC	Cans/plastic recycling	The janitors at the college began recycling cans and plastics.	Janitors	Approximately 6 years	Cans and plastics		
Windward CC	Paper recycling	As part of a paper recycling effort campuswide, faculty and staff use notepads that have been converted from used paper.	Campuswide	Approximately 26 years	Paper		
Windward CC	Green waste recycling	Win CC has designated a site on campus where green waste is collected and used by the grounds crew as mulch.	Groundskeepers	Approximately 26 years	green waste, i.e., grass, leaves, plant trimmings, tree branches and prunings		
Windward CC	Telephone books	The faculty and staff at the college turn in old telephone books in an effort to recycle the old books		Approximately 6 years	telephone books		

DHHL Vehicle Inventory

FY 2007

Oahu Vehicles

	License Plate	Model	Vehicle Description		Serial Number			Model Year	Acquisition Cost	Mileage	As of Date
1	SH7297	Chevy	Van passenger - astro		2GNEG25H8N4132080			1992	$17,053.04	99,038	2004
2	SH9412	Chevy	Corsica		1G1L055MISY264061			1995	$5,900.00	61,012	7/19/2006
3	SH9110	Ford	Ranger		1FTCR10U2NUDO6502			1992	$4,500.00	81,883	7/26/2006
4	SHB577	Ford	Explorer 4x4 4WD 4door		1FMZU62K75ZA32343			2005	$24,460.42	12,139	7/26/2006
5	SHB268	Chevy	Tahoe		3GNEK18RXVG164830			1997	$8,000.00	52,896	7/27/2006

					gallons per 100 miles (fuel economy)	average	actual fuel consum. (gal)			fuel	econ rating cty/hwy
1	SH7297	Chevy	Van passenger - astro		6.667/5	5.84	5783.82			gasoline87	15/20
2	SH9412	Chevy	Corsica		4.762/3.448	4.11	2507.59			gasoline87	21/29
3	SH9110	Ford	Ranger		5.882/4.762	5.32	4356.18			gasoline87	17/21
4	SHB577	Ford	Explorer 4x4 4WD 4door		7.143/5	6.07	736.84			gasoline87	14/20
5	SHB268	Chevy	Tahoe		7.692/5.882	6.79	3591.64			gasoline87	13/17

DHHL Vehicle Inventory

FY 2007

Maui Vehicles

License Plate	Model	Vehicle Description		Serial No.		Model Year	Acquisition Cost	Mileage	As of date
SH8652	Jeep	Cherokee SUV 4-door		1J4FJ28S3VL578912		1997	$23,812.35	51,603	7/28/2006

				gallons per 100 miles (fuel economy)	average	actual fuel consum. (gal)		fuel	econ rating city/hwy
SH8652	Jeep	Cherokee SUV 4-door		6.667/5	5.84	3013.62		gasoline 87	15/20

DHHL Vehicle Inventory

FY2007

Kauai Vehicles

License Plate	Model	Vehicle Description		Serial Number		Model Year	Acquisition Cost	Mileage	As of Date
SH9218	Ford	Ford MPVH Explorer 4x4		1FMZU34X9XZA90464		1999	$24,943.59	25,080	7/28/2006

				gallons per 100 miles (fuel economy)	average	fuel consump. (gal)		fuel	econ rating city/hwy
SH9218	Ford	Ford MPVH Explorer 4x4		6.667/5.263	5.97	1497.28		gasoline87	15/19

DHHL Vehicle Inventory

FY 2007

West Hawaii Vehicles

License Plate	Model	Vehicle Description	Serial No.		Model Year	Acquisition Cost	Mileage	As of Date	
SH6131	Ford	F-150 pick up truck	1GKDT13Z8P2540286		1993	$15,990.10			disposed: 12/20/04
SH9064	Chevy	4x4 pick up truck	1GCGK24R9WE252855		1998	$25,088.95	75048	8/3/2006	
SH9054	GMC	Dump truck auto car	1WBUCCJF8GH		1986	$13,166.04	40474	8/3/2006	
SHB591	Chrysler	1500 Quad cab pickup	1D7HU18N45J516396		2005	$26,568.59	36869	8/3/2006	
SH8514	Chevy	Flatbed truck	1GBHK34J4VF008123		1997	$30,449.95	46865	8/3/2006	
SH847	SnowBr	Trailer	2SWUW11456260072		2005		no mileage		

			gallons per 100 miles (fuel economy)	average	fuel consum. (gal)		fuel	econ rating city/hwy
SH6131	Ford	F-150 pick up truck	7.143/5.556	6.35			gasoline	14/18
SH9064	Chevy	4WD p/u truck k1500	6.667/5	5.84	4382.8		gasoline	15/20
SH9054	GMC	Dump truck jimmy	6.667/5	5.84	2363.68		gasoline	15/20
SHB591	Chrysler	dodge ram 1500 p/u	7.143/5.556	6.35	2341.18		gasoline	14/18
SH8514	Chevy	Flatbed truck					gasoline	
SH847	SnowBr	Trailer	n/a				gasoline	n/a

DHHL Vehicle Inventory
FY2007

East Hawaii Vehicles

License Plate		Model	Description		Serial No.		Model Year	Acquisition Cost	Mileage	As of Date
~~SH9111~~	-	~~Ford~~	~~F350 pickup truck~~	-	~~2FTJW35HONCA94822~~	-	~~1992~~	~~$8,000.00~~		
SHA154		Mercury	Mountaineer		4M2ZU76E11UJ09823		2002	$24,999.01	43990	7/27/2006
SHB897		Toyota	Tacoma 4x4 v6		5TEUU42N55Z122690		2005	$24,778.06	6762	7/27/2006

					gallons per 100 miles (fuel economy)	average	fuel cons. (gal)		Fuel	econ rating city/hwy
~~SH9111~~	-	~~Ford~~	~~F350 pickup truck~~	-	~~6.667/5.263~~	~~5.97~~	-	-	n/a	15/19
SHA154		Mercury	Mountaineer		6.667/5.263	5.97	2626.2		gasoline - 87	15/19
SHB897		Toyota	Tacoma 4x4 v6		5.882/4.762	5.32	359.74		gasoline - 87	17/21

DHHL Vehicle Inventory
FY
2007

Molokai Vehicles

License Plate	Model	Description		Serial No.		Model Year	Acquisition Cost	Mileage	As of Date	
~~SH6107~~	~~Ford~~	~~F250 1ton truck~~	-	~~2FTHF26H2NCA36833~~	-	~~1992~~	~~$22,535.00~~	n/a	n/a	12/29/2005 disposal application
SH8310	Ford	Explorer 4x4 4WD		1FMDU34X8SUC34215		1995	$24,424.04	97,863	8/1/2006	
SH8369	Chevy	Cargo truck 2dr		1GCGD34J4EF343955		1984	$1,600.00	41529	8/1/2006	inoperative
SH8558	GMC	GMC dump truck		1GDP7H1J0VJ501905		1997	$55,434.00	2434	7/31/2006	
SH9067	GMC	Pick up truck		2GDGK29K9K1562569		1989	$23,916.43	167077	8/1/2006	inoperative
SHA305	Chevy	Silvarado 4x4		1GBHK24U52E113017		2002	$32,490.00	69650	7/28/2006	
SHA907	Ford	Explorer 4x4 4WD		1FMZU72K24ZA03031		2004	$26,051.43	28147	8/1/2006	
SHC230	Ford	Ford pick up F250		IFTNF21566EC86474		2006	$24,355.97	2178	7/28/2006	

				gallons per 100 miles (fuel economy)	average	fuel consump. (gal)		fuel	econ rating city/hwy
~~SH6107~~	~~Ford~~	~~F250 1ton truck~~	-	-	-	-	-	gasoline	15/19
SH8310	Ford	Explorer 4x4 4WD		6.667/5.263	5.97	5842.42		gasoline	15/19
SH8369	Chevy	Cargo truck 2dr		n/a				diesel	n/a
SH8558	GMC	GMC dump truck		n/a				diesel	n/a
SH9067	GMC	Pick up truck		5.882/4.545	5.22	8721.42		gasoline	17/22
SHA305	Chevy	Silvarado 4x4		7.143/5.882	6.52	4541.18		gasoline	14/17
SHA907	Ford	Explorer 4x4 4WD		5.263/5	5.13	1443.94		gasoline	19/20
SHC230	Ford	Ford pick up F250		6.667/5	5.84	127.2		gasoline	15/20

HNL K-9 Vehicle MPG

Vehicle	License	Engine Size	MPG		Mileage
			Average	as of	
2002 Chevrolet Astro Van	SH-A500	4.3L	14.51	14-Jun-06	31016
1998 Jeep Cherokee SUV	SH-B972	4.0L	14.51	14-Jun-06	51778
1998 Chevrolet S-10 Pickup	SH-8876	2.2L	22.99	21-Jun-06	75391
1991 Chevrolet Blazer SUV	SH-4890	4.3L	15.73	20-Jun-06	173932
1997 Chevrolet Astro Van	SH-8874	4.3L	18.12	8-Jun-06	101977
2002 Chevrolet Astro Van	SH-A499	4.3L	14.80	24-Jun-06	52356

Airports Division, Oahu District, Honolulu International Airport Maintenance Baseyard

Veh Year	Vehicle description (Make, Model)	Acquisition Cost	Lic Plate No.	Gross Vehicle Weight	Vehicle Fuel Configuration	Total Miles travelled	Total Gallons used (from 7/1/04- 6/30/06)	Avg Mile Per Gal.	Type Fuel used	
2004	TRACTOR EL 100 VIN#1EEEL25X94A043896	$178,690.47	SHB259		Electric				(Electric)	
2005	TRACTOR EL 100 VIN#1EEEL25X04A043916	$174,131.85	SHB451		Electric				(Electric)	
2004	SHUTTLE EL25 VIN# 1EEEL25XX3A043890	$164,239.12	SHB237		Electric				(Electric)	
2004	SHUTTLE EL25 VIN# 1EEEL25X13A043888	$164,239.12	SHB235		Electric				(Electric)	
2004	SHUTTLE EL25 VIN# 1EEEL25X33A043889	$164,239.12	SHB236		Electric				(Electric)	
2004	SHUTTLE EL25 VIN# 1EEEL25X93A043881	$166,965.19	SHB234		Electric				(Electric)	
	Totals					6	0	#DIV/0!		
2005	TRUCK, OSHKOSH VIN#10TDKAK1955081532	$1,083,037.00			Diesel			#DIV/0!	Diesel	
1987	TRUCK CF OSHKOSH T1500 SN28574 FED POR	$224,334.11	SH4001		Diesel			#DIV/0!	Diesel	
1987	TRUCK CF OSHKOSH T1500 SN28551 FED POR	$224,334.11	SH4002		Diesel			#DIV/0!	Diesel	
1987	TRUCK CF OSHKOSH P19 SN 28595 FED POR	$178,864.74	SH4038		Diesel			#DIV/0!	Diesel	
1993	SWEEPER ELGIN G-2030D 1FDXH70P5NVA08324	$103,111.93	SH4048		Diesel			#DIV/0!	Diesel	#NAME?
1984	TRACTOR BUS CT90-715 ECP70199 L-1437	$126,452.09	SH4368		Diesel			#DIV/0!	Diesel	
1991	TRACTOR BUS 1C9CA2DS2LW077532 L-1832	$142,484.00	SH4391		Diesel	42096	12946	3.25	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CA2DS3LW077538 L-1838	$142,484.00	SH4394		Diesel	46669	13103	3.56	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CA2DS4LW077547 L-1847	$142,484.00	SH4397		Diesel	41541	14112	2.94	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CA2DS5LW077550 L-1850	$142,484.00	SH4398		Diesel	41969	14563	2.88	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CA2DS5LW077556 L-1856	$142,484.00	SH4400		Diesel	43044	13469	3.20	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CA2DS3LW077562 L-1862	$142,484.00	SH4402		Diesel	42125	13003	3.24	Diesel	WikiWiki
1991	TRACTOR BUS 1C9CM2DS4MW077565 L-1865	$142,484.00	SH4404		Diesel	42194	13258	3.18	Diesel	WikiWiki
1988	TRUCK PUMP PIERCE 1P9CT01D6JA040266	$232,795.00	SH4435		Diesel			#DIV/0!	Diesel	
1989	TRUCK CF OSHKSH T3000 10T9L5EH8K1037008	$81,606.18	SH4436		Diesel			#DIV/0!	Diesel	
1989	TANKER WATER KEN 1NKWL59XOKS525225	$87,412.00	SH4437	52,060	Diesel	1657	512	3.24	Diesel	
1991	TRUCK INTL DUMP 2MSFBG3R7LC038210	$71,031.44	SH4440	50,860	Diesel	5265.4	1112.6	4.73	Diesel	
1991	TRUCK TRACTOR KEN 1XKDD20X2MS557716	$73,537.00	SH4451	18,240/86,940	Diesel	2605	592.5	4.40	Diesel	
1991	TRUCK CF OSHKOSH TA1500 SN41741	$74,205.25	SH4459		Diesel			#DIV/0!	Diesel	
1991	TRUCK CF OSHKOSH TA1500 SN41741 FED POR	$223,694.75	SH4459		Diesel			#DIV/0!	Diesel	
1988	TRUCK CF OSHKOSH P19 SN32866 FED POR	$167,511.00	SH4561		Diesel			#DIV/0!	Diesel	
1988	TRUCK CF OSHKOSH T3000 SN33605 FED POR	$167,511.00	SH4562		Diesel			#DIV/0!	Diesel	
1976	TRUCK FIRE 3000 SN006725 (TRANFER #AIR-	$209,754.00	SH4850		Diesel			#DIV/0!	Diesel	
1988	TRUCK CF OSHKSH T3000 10T9L5EHXJ1033606	$79,241.20	SH4851		Diesel			#DIV/0!	Diesel	
1991	TRUCK CF OSHKOSH TA1500 SN41742	$74,205.26	SH4852		Diesel			#DIV/0!	Diesel	
1991	TRUCK CF OSHKOSH TA1500 SN41742 FED POR	$223,694.74	SH4852		Diesel			#DIV/0!	Diesel	
1987	TRUCK CF OSHKSH T1500 10T9L5BH1G1028551	$75,300.99	SH4854		Diesel			#DIV/0!	Diesel	
1983	TRUCK INT AP 1HTAA1952CHA21031	$96,316.56	SH4874		Diesel			#DIV/0!	Diesel	
1989	TRUCK CF OSHKOSH T3000 SN37008 FED POR	$246,153.89	SH4932		Diesel			#DIV/0!	Diesel	
1993	BUS PARATRANSIT 2B7KB31ZONK170351	$39,015.74	SH5241		Diesel			#DIV/0!	Diesel	
1995	TRACTOR BUS #1C9M3ABS7RW535716 L-2070	$197,985.00	SH7120		Diesel	41413	12947	3.20	Diesel	WikiWiki
1995	TRACTOR BUS #1C9M3ABSORW535718 L-2072	$197,985.00	SH7122		Diesel	42096	12848	3.28	Diesel	WikiWiki
1995	TRACTOR BUS 1C9M3ABS9RW535721 L - 2075	$115,035.00	SH7388		Diesel			#DIV/0!	Diesel	
1997	TRUCK DODGE P/U D150 1B7GE16X7MS297546	$5,200.00	SH8658		Diesel	4461	396.5	11.25	Diesel	
2000	TRUCK CHEV TOW # 469586	$55,250.00	SH9679	15,000	Diesel	397	86.5	4.59	Diesel	
2000	TRUCK CHEV FLAT BOOM # 459753	$43,625.00	SH9680	15,000	Diesel	633	155	4.08	Diesel	
2001	HANDI VAN 2000, LT-250 BUS, 1FDSE35F8YH	$98,099.00	SH9855		Diesel	35844	0	#DIV/0!	Diesel	WikiWiki
2001	HANDI VAN 2000, LT-250 BUS, 1FDSE35F4YH	$98,099.00	SH9881		Diesel	36541	14523	2.52	Diesel	WikiWiki
2001	HANDI VAN 2000, LT-250 BUS, 1FDSE35F3YH	$98,099.00	SH9882		Diesel	30262		#DIV/0!	Diesel	WikiWiki
2001	HANDI VAN 2000, LT-250 BUS, 1FDSE35F2YH	$98,099.00	SH9898		Diesel	26280	10950	2.40	Diesel	WikiWiki

Airports Division, Oahu District, Honolulu International Airport Maintenance Baseyard

Veh Year	Vehicle description (Make, Model)	Acquisition Cost	Lic Plate No.	Gross Vehicle Weight	Vehicle Fuel Configuration	Total Miles travelled	Total Gallons used (from 7/1/04- 6/30/06)	Avg Mile Per Gal.	Type Fuel used	
2003	SWEEPER JOHN 770 CYCLONE#H582061	$172,861.39	SHA868	32,000	Diesel	15295	4855.5	3.15	Diesel	
1993	TRUCK CHEVY AERIAL 1GBHC34JXNE194016	$40,656.87	SH4466		Diesel	3929	347.5	11.31	Diesel	
1991	TRUCK FORD F/B 1FDWK64PTMVAO1441	$34,880.60	SH4454	23,160	Diesel	339	102.5	3.31	Diesel	
1993	TRUCK GMC P/U 1GTEK14Z9NZ535684	$18,625.95	SH4892		Diesel	5268	710	7.42	Diesel	
1995	TRUCK FORD DUMP F800 1FDXF80EXSVA16909	$48,165.00	SH7232	33,000	Diesel	4924	708.6	6.95	Diesel	
	Ford Mini Bus AIR-O Hardly ever moves		SHA286		Diesel				Diesel	Insuff. Data
2005	Truck, Oshkosh, 3000		SHB989		Diesel				Diesel	
2005	Truck, Oshkosh, 1500		SHB990		Diesel				Diesel	
2003	SWEEPER INTL/ELGIN 4700 #534097	$125,671.70	SHA382	30,000	Diesel	15476	3690.4	4.19	Diesel	
2005	TRUCK, OSHKOSH 1500, VIN #10TBKAK135S08	$142,049.50	SHC128		Diesel			#DIV/0!	Diesel	
2005	TRUCK, OSHKOSH 1500, VIN #10TBKAK135S08	$426,146.00	SHC128		Diesel			#DIV/0!	Diesel	
2005	TRUCK, OSHKOSH 1500 VIN#10TBKAK135S0855	$142,049.50	SHC129		Diesel			#DIV/0!	Diesel	
2005	TRUCK, OSHKOSH 1500 VIN#10TBKAK135S0855	$426,146.00	SHC129		Diesel			#DIV/0!	Diesel	
2005	TRUCK, OSHKOSH 3000 VIN#10TDKAK165S0855	$203,685.00	SHC130		Diesel			#DIV/0!	Diesel	
2005	TRUCK, OSHKOSH 3000 VIN#10TDKAK165S0855	$611,061.00	SHC130		Diesel			#DIV/0!	Diesel	
2000	FIRE ENGINE	$125,000.00	SH		Diesel			#DIV/0!	Diesel	
2000	FIRE ENGINE	$125,000.00	SH		Diesel			#DIV/0!	Diesel	
2005	Truck, Sweeper, Tennant	$225,000.00	SHC165	33,000	Diesel	3242	1316.9	2.46	Diesel	
2005	Truck, Sweeper, Tennant	$225,000.00	SHC166	33,000	Diesel	2043	668.6	3.06	Diesel	
2006	Truck, Ford, F-350, Crew Cab		SHC227		Diesel	999	17.1	58.42	Diesel	Insuff. Data
2006	Truck, Ford, F-350, Crew Cab		SHC228		Diesel	123	1440	0.09	Diesel	Insuff. Data
	Totals				61	578730.4	162434.2	3.56		

Fire Trucks only have fuel usage data. Mileage not reported. No response for request for mileage used.

Airports Division, Oahu DIstrict, Honolulu International Airport Maintenance Baseyard

Veh Year	Vehicle description (Make, Model)	Acquisition Cost	Lic Plate No.	Gross Vehicle Weight	Vehicle Fuel Configuration	Total Miles travelled	Total Gallons used (from 7/1/04- 6/30/06)	Avg Mile Per Gal.	Type Fuel used	
2003	EXPLORER FORD # 1FMZU73W22ZC61841	$23,894.58	SHA557		(Sheriff) Gas	7553.4	701.5	10.77	E-10	
2003	EXPLORER FORD # 1FMZU73W02ZC61840	$23,894.58	SHA558		(Sheriff) Gas	7015.9	2287.8	3.07	E-10	
2003	SUV FORD EXCURSION # 1FMNU41S83EA28116	$29,940.44	SHA559		(Sheriff) Gas	24574.9	3362.7	7.31	E-10	
2003	VAN FORD CUSTODY # 1FBSS31S92HB64439	$21,867.51	SHA709		(Sheriff) Gas	10913	2210.1	4.94	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W13X15	$32,513.07	SHA729		(Sheriff) Gas	43129	3820.1	11.29	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W13X15	$32,513.07	SHA730		(Sheriff) Gas	31615	2759.7	11.46	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W53X15	$32,513.07	SHA731		(Sheriff) Gas	42286	3530	11.98	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W53X15	$32,513.07	SHA732		(Sheriff) Gas	52860	4494	11.76	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W33X15	$32,513.07	SHA733		(Sheriff) Gas	44332	3806.4	11.65	E-10	
2003	SUV, Ford Excursion (Public Safety)	$32,513.07	SHA559		(Sheriff) Gas	24574.9	3362.7	7.31	E-10	
2003	TRUCK FORD F-350 # 1FTSW31S72ED24254	$32,513.07	SHA560		(Sheriff) Gas	5709.2	704	8.11	E-10	
2000	FORD TAURUS LX 4DR,MODP52 1FAFP5221YG2	$22,770.66	SH9794		E-85	3230	203.5	15.87	E-10	
2005	TRUCK FORD EXPLORER 4DR #A28828	$32,810.97	SHB592		E-85	14478	913.4	15.85	E-10	
2005	TRUCK DODGE RAM 1500 #556399	$29,165.44	SHB623		E-85	9276	1117.1	8.30	E-10	
1985	WAGON STN FORD 1FABP44F2EZ184232	$10,328.84	SH4364		Gas	6311	684.8	9.22	E-10	
1987	S/W CHEV CELEBRITY 1G1AW81W486180038	$12,082.56	SH4379		Gas	2086	149.5	13.95	E-10	
1988	WAGON STN FORD 1FABP55U1JG192119	$13,451.73	SH4381		Gas	5815	415	14.01	E-10	
1988	WAGON STN FORD 1FABP55UXJG192118	$13,451.73	SH4382		Gas	1314	120	10.95	E-10	
1992	WAGON STA FORD 1FACP55U5NG188181	$18,260.48	SH4408		Gas	1410	126	11.21	E-10	
1985	TRUCK CHEV PU 1GCGK24M5FJ147564	$16,744.00	SH4421		Gas	3772	528	7.14	E-10	
1990	TRUCK GMC RESCUE E-1 1GDJR33J9LF700631	$176,949.75	SH4441		Gas	2243	313.9	7.15	E-10	
1993	SEDAN CHEV LUMINA 2G1WL54T1N9251831	$15,292.09	SH4816		Gas	3722	329.6	11.29	E-10	
1993	WGN STN CHEV 1G1JC8449N7323946	11,310.90	SH4817		Gas	3998	214.7	18.62	E-10	
1990	AUTO CHEV 1G1AWS1WOK6248888	$20,449.94	SH4819		Gas	3312	163.7	20.23	E-10	
1989	TRUCK CHEV P/U 1GCCS14R9J8205261	$10,762.57	SH4825		Gas	2113	161.5	13.08	E-10	
1987	TRUCK FORD P/U 1FTDF15NXGPB32162	$10,269.64	SH4861		Gas	2698	301.9	8.94	E-10	
1982	TRUCK FORD 1FTCF10E3CRA17954	$10,684.93	SH4875		Gas	3820	500.3	7.84	E-10	
1975	TRUCK DODGE P/U D14AB5S128442	$3,988.97	SH4881	3491	Gas	3316	316.8	10.47	Gas	
1991	TRK CHEV P/U S10 1GCCS14Z3M8192740	12,395.87	SH4884		Gas	1230	92.6	13.28	E-10	
1991	TRUCK CHEV P/U 2GCEC19Z1L1239179	$17,798.00	SH4885		Gas	4587	419.1	10.94	E-10	
1991	TRK CHEV P/U S10 1GCCS14Z2M8192731	12,395.87	SH4886		Gas	3293	267.3	12.32	E-10	
1991	TRUCK CHEV U/BDY 1GBGC24K9ME119952	$19,218.81	SH4887		Gas	2688	315.5	8.52	E-10	
1991	TRUCK CHEV U/BDY 1GCDC14H3LZ226824	$15,174.00	SH4888		Gas	10347	944.3	10.96	E-10	
1991	TRUCK P/U CREW CAB 1GTGR33KXMF700484	$17,828.69	SH4889		Gas	12510	1639	7.63	E-10	
1993	TRUCK GMC P/U 1GTDC14Z7NZ537684	$15,145.00	SH4893		Gas	3763	335.5	11.22	E-10	
1993	TRUCK CHEV P/U 1GCDC14ZXNZ203178	$16,409.28	SH4894		Gas	5012	372.8	13.44	E-10	
1989	TRUCK DODGE P/U 1B7FN14XOJS735902	$13,429.30	SH4896		Gas	10063	743.3	13.54	E-10	
1991	TRUCK GMC PU 1GTCS14EXM8512651	$10,566.00	SH4897		Gas	7602	518.9	14.65	E-10	
1989	TRUCK CHEV P/U 1GCDC14H5JZ270692	$13,140.62	SH4899		Gas			#DIV/0!	E-10	Incomp Data
1989	TRUCK CHEV P/U 1GCCS14R7J8205131	$10,762.57	SH4900		Gas	441	64.2	6.87	E-10	
1987	Truck, Ford P/U 1FTFF25HXHPA97388	$14,734.42	SH4901		Gas	11340	1369.2	8.28	E-10	
1988	TRUCK FORD P/U 1FTFF25H8HPA97387	$14,558.38	SH4902		Gas	3274	378.3	8.65	E-10	
1993	SEDAN CHEV LUMINA 2G1WN54T8N9269253	$16,249.00	SH5492		Gas	6485	493.8	13.13	E-10	
1994	TRUCK GMC SIERRA #1GTG33KXPJ749901	$20,649.50	SH6112		Gas	5597	793.4	7.05	E-10	
1994	TRUCK GMC SIERRA #1GTGC33K4P5749859	$20,649.50	SH6114		Gas	4194	549.3	7.64	E-10	
1994	TRUCK GMC COUP P/UP#1GDGK29K3PE556773	$23,259.00	SH6324		Gas	14583	1818.8	8.02	E-10	
1994	TRUCK GMC TC P/UP #1GTEC19H3PE556716	$16,908.40	SH6326		Gas	13642	1387.9	9.83	E-10	
1994	VAN FORD 1FMEE11H7PHB23772	$14,019.00	SH6339		Gas	11717	1678	6.98	E-10	

08/15/2006

Airports Division, Oahu District, Honolulu International Airport Maintenance Baseyard

Veh Year	Vehicle description (Make, Model)	Acquisition Cost	Lic Plate No.	Gross Vehicle Weight	Vehicle Fuel Configuration	Total Miles travelled	Total Gallons used (from 7/1/04- 6/30/06)	Avg Mile Per Gal.	Type Fuel used	
1995	TRUCK CHEV P/U 1GCDC14H1RZ259040	$17,543.89	SH7258		Gas	4787	413	11.59	E-10	
1995	TRUCK CHEV P/U 1GCDC14ZOJZ244915	$6,100.00	SH7371		Gas	4925	616.6	7.99	E-10	
1995	TRUCK CHEV P/U S-10 1GCCS14Z3K8215141	$4,900.00	SH7787		Gas	2791	246.2	11.34	E-10	
1995	SEDAN OLD CIERA 4DR 1G3AG55M5R6430433	$16,539.95	SH7933		Gas	5022	334.9	14.99	E-10	
1995	TRUCK CHEV P/U 3/4 1GCFC24K4SZ112338	$19,199.00	SH7988		Gas	5306	567.4	9.35	E-10	
1995	TRUCK P/U CHEV 1GCHC34K5SE108529	$35,500.00	SH8005		Gas			#DIV/0!	E-10	ODF Fire Resp
1995	TRUCK FORD F350 1FTJW35HXSEA26906	$24,639.01	SH8056		Gas	5971.4	759.4	7.86	E-10	
1995	TRUCK FORD FLATBED 1FTJW35H7SEA10470	$29,160.54	SH8057		Gas	13657	1490.4	9.16	E-10	
1995	TRUCK FORD P/U 1FTJW35H8SEA26905	$28,542.11	SH8058		Gas	4543	682.5	6.66	E-10	
1995	TRUCK FORD 250 COUP 1FTHX26H2SKC15782	$32,736.26	SH8195		Gas	11224	1305.1	8.60	E-10	
1995	TRUCK FORD 350 1FTJW35H1SEA77078	$32,714.28	SH8199		Gas	4166.5	422.1	9.87	E-10	
1995	TRUCK FORD P/U 1FTJW35H9SEA63574	$28,785.21	SH8200		Gas	11882.3	1171.1	10.15	E-10	
1995	TRUCK FORD P/U 1FTJW35H2SEA77073	$25,267.82	SH8201		Gas	5859.5	706.3	8.30	E-10	
1996	SEDAN FORD TEMPO 1FACP36X7PK160752	$5,200.00	SH8321		Gas	4187	239.1	17.51	E-10	
1996	CHEV 4DSD 1G1JC5246V7136732	13,041.61	SH8476		Gas	6334	316.4	20.02	E-10	
1996	VAN PASSENGER CHEV 1GNDM19WXVB139106	20,129.56	SH8477		Gas	1872	157.9	11.86	E-10	
1997	TRUCK CHEV CS-10 #1GCCS1446V8112112	$17,500.00	SH8478		Gas	3998	321	12.45	E-10	
1997	VAN FORD BOOM 5.4L 1FTJE34LOVHA28854	$56,487.00	SH8491		Gas	546	143	3.82	E-10	
1997	TRUCK GMC AERIAL 1GDM7H1J2VJ502749	$147,384.00	SH8571		Gas	714	240.5	2.97	E-10	
1997	FORD TAURUS 4DR WHITE 1FALP52UXVA281883	16,971.76	SH8650		Gas	1767	102.7	17.21	E-10	
1998	TRUCK CHEV P/U 1GCHC34R2VF048768	$23,007.20	SH8729		Gas	11639.2	1802.3	6.46	E-10	
1997	TRUCK FORD P/U F250 1FDHX26H3VEC03722	$36,229.44	SH8730		Gas	24097	2855.9	8.44	E-10	
1998	TRUCK CHEV FLAT 1GBHC34R5VF054830	$27,295.00	SH8773		Gas	10724	1524.3	7.04	E-10	
1997	FORD 2DSW 2FMDA51U8WBB57680	18,311.21	SH8774		Gas	2807	210.5	13.33	E-10	
1997	FORD 2DSW 2FMDA51U1WBB57679 sheriff miniva	18,311.21	SH8775		Gas	6398	453.2	14.12	E-10	
1997	FORD 2DSW 2FMDA51UXWBB57681	18,311.21	SH8776		Gas	2518	117.4	21.45	E-10	
1998	VAN CHEV FR WACKENHUT 1GCDM19W0VB229969	$21,667.11	SH8874		Gas			#DIV/0!	E-10	K-9
1998	VAN CHEV FR WACKENHUT 1GCDM19W4VB229943	$21,667.11	SH8875		Gas			#DIV/0!	E-10	K-9
1998	P/U CHEV FR WACKENHUT 1GCCS144XWK114899	$13,599.17	SH8876		Gas			#DIV/0!	E-10	K-9
1998	VAN CHEV BUCKET #1GCHG39R2W101387	$49,218.43	SH8905		Gas	260	83	3.13	E-10	
1998	FORD TAURUS-4DR. 1FAFP52U1WG196328	15,680.94	SH8906		Gas	2124	131.9	16.10	E-10	
1998	WAGON STA HYUNDAI ELE #WU109447	$17,745.72	SH8926		Gas	4970	247.9	20.04	E-10	
2000	JEEP, Jeep		SH9569		Gas	11492	861.1	13.35	E-10	
2000	TRUCK CHEV P/UP #278836	$21,020.17	SH9620		Gas			#DIV/0!	E-10	JRF
2000	TRUCK GMC P/U UTILITY # 425112	$36,157.41	SH9621		Gas	4438.2	534.5	8.30	E-10	
2000	TRUCK FORD P/UP CAB #K818517	$21,728.77	SH9677		Gas			#DIV/0!	E-10	JRF
2001	TRUCK,P/U 1GCGC33R1YF47889	$21,728.77	SH9678		Gas	4288	587	7.58	E-10	
2001	TRUCK, CHEVROLET 2000, 1GBJG31R9Y121065	$68,778.05	SH9829		Gas			#DIV/0!	E-10	OCF/JRF??
2001	TRUCK FORD F350 CREW #51811	$31,093.42	SH9929		Gas	21241	2554.3	8.32	E-10	
2001	CAB CREW,FORD,SRW HX2AND VHF	$30,322.68	SH9991		Gas			#DIV/0!	E-10	ODF
2003	TRUCK FORD RAN X P/U #ITYR14V02PB36000	$16,853.60	SHA473		Gas	3510	260.5	13.47	E-10	
2003	VAN 02 CHEV ASTRO #1GCDM19XX2B150572	$20,785.00	SHA499		Gas			#DIV/0!	E-10	K-9
2003	VAN 02 CHEV ASTRO #1GCDM19XX2B150662	$20,785.00	SHA500		Gas			#DIV/0!	E-10	K-9

Airports Division, Oahu District, Honolulu International Airport Maintenance Baseyard

Veh Year	Vehicle description (Make, Model)	Acquisition Cost	Lic Plate No.	Gross Vehicle Weight	Vehicle Fuel Configuration	Total Miles travelled	Total Gallons used (from 7/1/04- 6/30/06)	Avg Mile Per Gal.	Type Fuel used	
2003	CHEVROLET TAHOE, 4 DR, #1GNEK13Z32R1873	$41,318.28	SHA515		Gas	4180	339.5	12.31	E-10	
2003	FORD EXPLORER SPORT, 1FMZU77E93UA80431	$22,634.79	SHA604		Gas	14615	1199.8	12.18	E-10	
2003	SEDAN FORD CROWN VICTOR # 2FAHP71W33X15	$32,513.07	SHA748		Gas	48614	4179.5	11.63	E-10	
2005	FORD EXCURSION, 1FMNU40S35EB92362	$58,355.87	SHB720		Gas			#DIV/0!	E-10	OCF
2005	FORD EXCURSION, 1FMNU40S35EB92361	$58,355.88	SHB721		Gas			#DIV/0!	E-10	OCF
2005	FORD EXCURSION 1FMNU40SE35EB36907	$58,355.88	SHB722		Gas	5193.6	718.2	7.23	E-10	
1993	VAN GMC SAFARI XT 1GKDM19Z4NB546331	$17,979.95	SH4049		Gas	1770	168.2	10.52	E-10	
1991	WAGON STA CHEV. 2G1AW84T6L2116465	$18,418.00	SH4824		Gas	10076	644	15.65	E-10	
1989	WAGON CHEV CELEBRITY 1G1AW81W2J6260928	$13,348.57	SH4826		Gas			#DIV/0!	E-10	JRF
1985	TRUCK CHEV P/U, 1GCCC14D1EJ175415	$8,264.88	SH4871		Gas	6536	637.8	10.25	E-10	
1991	TRUCK CHEV P/U 1GCCS14E6M8142797	$10,150.00	SH4898		Gas	7439	434.3	17.13	E-10	
1989	TRUCK CHEVEROLET PICK UP	$5,925.00	SH5402		Gas	3668	362.8	10.11	E-10	
1994	TRUCK 83 CHEVY BLAZER 1G8ED18J1EF103438	$1,600.00	SH6865		Gas			#DIV/0!	E-10	K-9
1995	TRUCK CHEV P/UP 1GCDC14H3RZ259279	$17,543.89	SH7257		Gas	16762	1596.6	10.50	E-10	
2000	TRUCK GMC P/UP ALTER. #123335	$15,869.36	SH7712		Gas	9883	648.9	15.23	E-10	
1995	TRUCK CHEV P/U #1GCDC14ZXKZ232708	$6,200.00	SH8055		Gas	6107	539.3	11.32	E-10	
1995	TRUCK CHEV P/UP RACK #1GCGC33K5SF001049	$26,043.51	SH8080		Gas	13494	1874.7	7.20	E-10	
1995	TRUCK CHEV P/U #1GCGC33K1SF001016	$26,043.51	SH8081		Gas	8102	996.4	8.13	E-10	
1996	TRUCK CHEV P/U C10FS 1GCDC14Z6KZ233550	$5,400.00	SH8282		Gas	3803	283.1	13.43	E-10	
1996	SEDAN FORD TEMPO 1FACP36X2PK174767	$5,200.00	SH8314		Gas	3390	252	13.45	E-10	
1996	TRUCK CHEV 1500 1GCDC142KZ229321	$4,500.00	SH8315		Gas	6531	749	8.72	E-10	
1997	VAN DODGE RAM 250 #434035	$7,500.00	SH8659		Gas	5431	601.2	9.03	E-10	
1997	TRUCK FORD P/UP #VEC03723	$27,269.84	SH8728		Gas	11606	1924.1	6.03	E-10	
1998	VAN CARGO FORD E-150 1FTRE1468WHB60537	$19,715.28	SH9029		Gas	2440	291	8.38	E-10	
1999	TRUCK GMC P/U XF017110	$34,292.96	SH9187		Gas	559	73	7.66	E-10	
1999	TRUCK GMC P/U XE509651	$23,371.92	SH9188		Gas	6562	667.5	9.83	E-10	
1999	VAN GMC SAFARI 7 PX 1GKDM19W5XB536318	$19,173.44	SH9436		Gas	2451	220	11.14	E-10	
2000	TRUCK, P/U CHEV 1GCCS14W6YK117111	$17,640.00	SH9593		Gas			#DIV/0!	E-10	ODF
2000	TRUCK CHEV S-10 #K192338	$15,842.46	SH9600		Gas	12058	897.2	13.44	E-10	
2001	TRUCK CHEV P/UP #481787	$32,808.19	SH9701		Gas	18606.5	2639.1	7.05	E-10	
2003	VAN P DODGE 1D4GP253138101035	152,408.00	SHA630		Gas	1264	6.7	188.66	E-10	PT 1 of 2
2003	VAN P DODGE 1D4GP253138101035	16,934.25	SHA630		Gas			#DIV/0!	E-10	PT 2 of 2
2003	2003 FORD EXPLORER 1FMZU72K93ZA12274	$31,817.81	SHA710		Gas	72050	5220.2	13.80	E-10	
2005	TRUCK, FORD EXCURSION VIN#1FMNU40S35EB3	$58,355.87	SHB722		Gas	5193.6	718.2	7.23	E-10	
1998	TRUCK FORD F-250 1998 #1FTRF27Z5WKB8822	$7,500.00	SHB780		Propane/Gas	2861	276	10.37	E-10	
1998	Truck, Ford, F-250	$6,500.00	SHC103		Propane/Gas	1485	163.5	9.08	E-10	
2005	Truck, Ford, F-350 Crew Cab		SHB959		Gas	2142	300.1	7.14	E-10	
2005	TRUCK, FORD EXCURSION VIN#1FMNU40S55EB3	$58,388.88	SHB723		Gas			#DIV/0!	Insuff Data	OCF
2005	FORD EXCURSION 1FMNU40SE55EB36908	$58,355.87	SHB723		E-10			#DIV/0!	E-10	OCF
2006	SUV, Dodge, Durango		SHC236		E-85	132	12	11.00	E-10	
2006	SUV, Dodge, Durango		SHC237		E-85	795	31.5	25.24	E-10	Incomp Data
	Totals				132	1024440.1	103878	9.86		

199 200

08/15/2006

Harbors Division
Act 96 Vehicle Baseline Data
FY 2006 (July 2005 - June 2006)

LIC. NO.	DESCRIPTION	VIN	YR	Class	Island	Vehicle Acquisition Cost ($)	EPA Rated Fuel Economy (MPG) (city/hwy)	Type of Fuel	Milage (Miles)	Fuel Consumption (GAL)	Actual Fuel Economy (MPG)
SH 4955	TRUCK INT'L CRANE	D1225GGB13195	77	Truck (10,000 - 20,000 GVW)	HAWAII	$72,959		diesel	13291.00		13.00
SH 4070	P/U TRUCK CHEV FLEETSIDE	1GCCS14R9J2175844	88	Truck (0 - 10,000 GVW)	HAWAII	$10,094		unl	76685.00		15.00
SH 4077	P/U TRUCK CHEV	1GCDC14H4JE173023	88	Truck (0 - 10,000 GVW)	HAWAII	$10,672		unl	90488.00		15.50
SH 4076	P/U TRUCK 90 GMC	2GTDC14H4L1506485	90	Truck (0 - 10,000 GVW)	HAWAII	$13,675		unl	151810.00	454.06	15.95
SH 4078	P/U TRUCK 92 FORD F-150	2FTDF15N1NCA39867	92	Truck (0 - 10,000 GVW)	HAWAII	$15,556		unl	60187.00	71.58	10.43
SH 6901	P/U CHEV FLATBED	1GBG6H1P9RJ104067	94	Truck (20,000 - 45,000 GVW)	HAWAII	$30,871		unl	13089.00		12.00
SH 7027	P/U TRUCK CHEV	1GCDC14H6RZ207273	94	Truck (0 - 10,000 GVW)	HAWAII	$13,595		unl	42330.00	105.62	14.50
SH 9716	SUV ISUZU MPVH	4S2DM58W0Y4331777	00	Truck (0 - 10,000 GVW)	HAWAII	$22,362		unl	43296.00	224.36	11.24
SH 7091	TRUCK FORD STYLESIDE	1FTJW36H3REA44107	94	Truck (0 - 10,000 GVW)	KAUAI	$29,036	13	GAS	31,288	2,234.00	14.00
SH 7094	TRUCK CHEV STYLESIDE	1GCCS19Z2R8199520	94	Truck (0 - 10,000 GVW)	KAUAI	$16,249	19	GAS	45,376	2,669.00	17.00
SH 8084	SUV CHEV BLAZER	1GNCS13W1S2243585	95	Truck (0 - 10,000 GVW)	KAUAI	$22,769	17	GAS	53,00	3,117.00	17.00
SH 9245	P/U CHEV FLATBED	1GBHC34R7XF016843	99	Truck (0 - 10,000 GVW)	KAUAI	$26,680	14	GAS	9,759	697.00	14.00
SH 9260	SUV CHEV BLAZER	1GNCS13W2XK159671	99	Truck (0 - 10,000 GVW)	KAUAI	$32,019	16	GAS	34,692	2,168.00	16.00
SH 9261	P/U TRUCK CHEV	1GBGC24R1CF015029	99	Truck (0 - 10,000 GVW)	KAUAI	$27,350	14	GAS	26,386	1,884.00	14.00
SH 9671	TRUCK CHEV	1GBGC24R2XF067253	99	Truck (0 - 10,000 GVW)	KAUAI	$26,817	14	GAS	26,388	1,884.00	14.00
SH 9902	P/U TRUCK FORD	1FTYR10U41PA92546	01	Truck (0 - 10,000 GVW)	KAUAI	$15,375	21	GAS	56,680	3,148.00	18.00
SH 4261	INTL STAKE	1HTLBD4K2EHA61438	84	Truck (10,000 - 20,000 GVW)	MAUI	$20,661	N/A	Gas	38411	3,274.00	11.74
SH 4265	P/U FORD	1FTEF15YXGPA10688	86	Truck (0 - 10,000 GVW)	MAUI	$9,550	18/24	Gas	69963	6,500.00	10.76
SH 4267	P/U TRUCK GMC SONOMA	1GTCT19Z9M8509359	91	Truck (0 - 10,000 GVW)	MAUI	$17,405	18/24	Gas	56731	2,534.00	22.39
SH 4007	P/U TRUCK FORD	1FTEX15H8NKB27063	92	Truck (0 - 10,000 GVW)	MAUI	$19,621	12/17	Gas	35673	3,360.00	10.62

SH 7090	SDN OLDS CUTLASS CRUISER	1G3AJ85M3R6428263	95	Sedan, Coupe, Station wagon, SUV	MAUI	$14,765	19/29	Gas	68963	3,076.00	22.42
SH 7596	TRUCK GMC	1GTFC24Z0SZ511129	95	Truck (0 - 10,000 GVW)	MAUI	$20,182	16/21	Gas	21277	1,815.00	11.73
SH 7597	TRUCK GMC	1GTEC14Z3SZ511132	95	Truck (0 - 10,000 GVW)	MAUI	$15,954	16/21	Gas	85685	5,000.00	17.14
SH 8408	P/U CHEV	1GCCS14XXVK115298	97	Truck (0 - 10,000 GVW)	MAUI	$15,625	17/23	Gas	14762	1,026.00	14.39
SH 8954	SUV CHEV BLAZER	1GNCS13W8W2228684	98	Truck (0 - 10,000 GVW)	MAUI	$31,100	16/20	Gas	43069	3,744.00	11.51
SH 4325	TRUCK AERIAL LADDER INTL	1HTAA17B2BHB25932	81	Truck (20,000 - 45,000 GVW)	OAHU	$36,381	no listing	unleaded	41.0	43.40	0.90
SH 5483	TRUCK INTL AERIAL LIFT	1HTAA19580HAZ1017	82	Truck (20,000 - 45,000 GVW)	OAHU	$97,017	no listing	diesel	0.0	0.00	0.00
SH 4244	P/U CHEV	1GBGC24M4EJ146308	84	Truck (0 - 10,000 GVW)	OAHU	$12,785	no listing	unleaded	1218.0	189.80	6.40
SH 4253	P/U CHEV	1GBGC24M8EJ146277	84	Truck (0 - 10,000 GVW)	OAHU	$12,785	no listing	unleaded	503.5	88.50	5.70
SH 4254	P/U CHEV	1GBGC24MXEJ146300	84	Truck (0 - 10,000 GVW)	OAHU	$12,785	no listing	unleaded	2381.0	293.30	8.10
SH 4239	P/U GMC	1GTDC14N0GF706090	86	Truck (0 - 10,000 GVW)	OAHU	$9,006	no listing	unleaded	603.0	69.90	8.60
SH 4330	P/U GMC FLATBED	1GDJ7D1F8GV505206	86	Truck (10,000 - 20,000 GVW)	OAHU	$28,576	no listing	diesel	0.0	0.00	0.00
SH 4269	P/U DODGE D250	1B6KD2455HS446454	87	Truck (0 - 10,000 GVW)	OAHU	$16,026	11/13	unleaded	1660.0	251.80	6.60
SH 7031	VAN CHEV ASTRO	1GNDM15Z9JB193006	88	Van (passenger, cargo)	OAHU	$5,900	17/22	unleaded	354.8	49.80	7.10
SH 4270	TRUCK GMC TC 10703	1GTDC14ZXLZ544867	90	Truck (0 - 10,000 GVW)	OAHU	$13,724	18/21	unleaded	1326.1	120.00	11.10
SH 4326	TRUCK FORD F600 W/LIFT	1FDMF60KXLVA39248	90	Truck (10,000 - 20,000 GVW)	OAHU	$47,618	11/15	unleaded	225.0	76.90	2.90
SH 4331	TRUCK INT'L 4900 W/BM & JIB	1HTSDZ3R9LH280523	90	Truck (20,000 - 45,000 GVW)	OAHU	$95,229	no listing	diesel	0.0	0.00	0.00
SH 4246	P/U TRUCK 91 GMC	1GDGR33KXMF701050	91	Truck (0 - 10,000 GVW)	OAHU	$21,443	15/19	unleaded	odometer broken	720.40	
SH 4262	TRUCK INT'L FTBD	1HTSHNHROMH354189	91	Truck (over 45,000 GVW)	OAHU	$62,857	no listing	diesel	65.0	27.70	2.30
SH 5485	TRUCK FLATBED GMC	1GDGR33K9MF701055	91	Truck (0 - 10,000 GVW)	OAHU	$21,443	15/19	unleaded	odometer broken	657.40	
SH 4055	VAN CHEV	1GCGG35K4N7101482	92	Van (passenger, cargo)	OAHU	$23,799	14/18	unleaded	4678.0	619.10	7.60
SH 4004	SDN FORD TAURUS	1FACP57U5PA115878	93	Sedan, Coupe, Station wagon, SUV	OAHU	$18,148	19/27	unleaded	872.3	79.70	10.90
SH 4005	SDN FORD TAURUS	1FACP57U7PA115879	93	Sedan, Coupe, Station wagon, SUV	OAHU	$18,148	19/27	unleaded	589.0	59.30	9.90
SH 6822	TRUCK CHEV FLTSIDE	1GCFC24HXRE121390	94	Truck (0 - 10,000 GVW)	OAHU	$16,838	14/19	unleaded	4008.7	435.00	9.20
SH 6823	VAN CHEV	1GCDG15H0RF115936	94	Truck (0 - 10,000 GVW)	OAHU	$13,687	14/19	unleaded	2368.9	243.30	9.70
SH 7244	TRUCK CHEV CAB	1GBGC24K9RE303358	94	Truck (0 - 10,000 GVW)	OAHU	$18,192	13/17	unleaded	6846.0	706.20	9.70
SH 7245	TRUCK CHEV CAB	1GBGC24K5RE306404	94	Truck (0 - 10,000 GVW)	OAHU	$18,192	13/17	unleaded	1822.0	250.60	7.30

SH 7246	TRUCK CHEV CAB	1GBGC24K5RE304040	94	Truck (0 - 10,000 GVW)	OAHU	$18,192	13/17	unleaded	4105.1	499.00	8.20
SH 9419	SDN CHEV CORSICA	1G1LD55M9SY273574	95	Sedan, Coupe, Station wagon, SUV	OAHU	$6,300	21/29	unleaded	365.8	37.70	9.70
SH 9420	SDN CHEV CORSICA	1G1LD55M3SY267785	95	Sedan, Coupe, Station wagon, SUV	OAHU	$6,300	21/29	unleaded	1594.0	118.30	13.50
SH 9421	SDN CHEV CORSICA	1G1LD55M2SY272900	95	Sedan, Coupe, Station wagon, SUV	OAHU	$6,300	21/29	unleaded	957.0	62.10	15.40
SH 8249	P/U CHEV	1GBHC33R6TF004193	96	Truck (0 - 10,000 GVW)	OAHU	$25,187	15/19	unleaded	5012.0	743.90	6.70
SH 9328	INT'L MSTR KOMATSU PAY LDR	1HTSCABL4XH683803	99	Truck (20,000 - 45,000 GVW)	OAHU	$69,695	no listing	diesel	2256.0	266.10	8.50
SH 9650	P/UP CHEV	1GBHC33J6XF003240	99	Truck (0 - 10,000 GVW)	OAHU	$36,145	12/16	unleaded	3796.0	585.30	6.50
SH 9739	TRUCK PETERBILT	1NPGN08X2Y0527575	00	Truck (20,000 - 45,000 GVW)	OAHU	$81,932	no listing	diesel	967.0	147.70	6.50
SH 9899	VAN CARGO CHEV	1GCHG39F911133293	01	Van (passenger, cargo)	OAHU	$56,655	no listing	diesel	1084.0	145.20	7.50

HPHA Transportation Vehicles and Fuel

	License	Area	Year	Make	Model	GVWR	ACQUISITION COST	U.S.E.P.A. RATED FUEL	FUEL	ODOMETER	MILES PER GAL	ANNUAL FUEL USE	ANNUAL MILES TRAVELED
1	B 736	MSS	91	INTL	DUMP	13,840	$ 400.00	N/A	DIESEL	272,083	10.15	152	1,543
2	SH 9013	MU-3	90	FORD	F600	11,260	$ 12,500.00	N/A	DIESEL	84,012	24	634	15,216
3	SH8999	MU-4	93	FORD	F 350	7,300	N/A	19	DIESEL	39,947	19	110	2,090
4	SHB901	MU-1	90	INTL	4600 DUMP	12,000	$ 34,317.00	N/A	DIESEL	143,083	8	1030	8,240
5	SH8947	MU-7	93	FORD	F-350	7,280	$ 23,845.00	17	DIESEL	63,725	16	212	3,392
6	SH8948	MU-2	93	FORD	F-350	7,260	$ 13,000.00	17	DIESEL	133,410	17	605	10,285
									Total		**14.86**	**2743**	40,766

	License		Year	Make	Model	GVWR	ACQUISITION COST	U.S.E.P.A. RATED FUEL	FUEL	ODOMETER	MILES PER GAL	ANNUAL FUEL USE	ANNUAL MILES TRAVELED
1	SH 6924	MSS	94	PONTIAC	GRND. PRIX	3,140	$ 13,608.00	20	GAS	13846	12.65	145	1,834
2	B-869	MSS	97	CHEV	MSTR	4,070	$ 7,500.00	14	GAS	44,030	17.57	79	1,388
3	SH 6370	MSS	89	GMC	3500	5,260	$ 18,230.00	13	GAS	130,250	9.2	175	1,610
4	SH 6473	MSS	90	CHEV	1500	3,760	$ 14,817.00	14	GAS	57,379	9.25	126	1,166
5	SH 6474	MSS	90	CHEV	1500	3,760	$ 15,375.00	14	GAS	77,914	12.48	80	998
6	SH 6991	MSS	93	CHEV	MPVH	4,050	N/A	18	GAS	85,658	10.54	198	2,087
7	B 737	MSS	97	CHEV	MSTR	6,940	$ 9,000.00	14	GAS	32,071	6.74	210	1,415
8	SH 8843	MSS	91	DODGE	VAN	4,560	$ 7,700.00	13	GAS	72,067	8.43	140	1,180
9	B 927	MSS	98	DODGE	3500	6,480	$ 9,280.00	14	GAS	31,456	10.26	180	1,847
10	SH 6425	MSS	88	DODGE	1500	4,420	$ 12,593.00	14	GAS	64,633	11.5	145	1,668
11	SH 6368	MSS	86	GMC	3500	5,460	$ 15,912.00	16	GAS	94,317	10.21	165	1,685
12	SH 6367	MSS	86	GMC	MSTR	5,960	$ 14,792.00	14	GAS	61,464	not in use	not in use	
13	SH 6369	MSS	86	GMC	MSTR	5,920	$ 14,480.00	14	GAS	10,303	not in use	not in use	
14	SH 8786	RSS	91	DODGE	RAM 350	4,610	$ 7,700.00	26	GAS	47,842	22	not in use being disposed	
15	SH 120	MU-3	88	CUSHMAN	46188	970	$ 8,902.00	35	GAS	63,153	33	180	5,940
16	SH 141	MU-	93	CUSHMAN	FSMS	1,370	$ 998.00	33	GAS	50,123	28	148	4,144

17	SH 142	MU-3	93	CUSHMAN	FSMC	1,370	FREE	33	GAS	49,885	28	not in use being disposed	
18	SH 143	MU-3	93	CUSHMAN	FSMC	1,370	$ 998.00	33	GAS	48,901	28	119	3,332
19	SH 156	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	20,851	26	241	6,266
20	SH 157	MU-3	96	GO-4	PCMS	1,530	$ 22,747.00	30	GAS	28,663	28	196	5,488
21	SH 158	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	27,899	28	241	6,748
22	SH 159	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	30,227	28	72	2,016
23	SH 160	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	42,601	26	241	6,266
24	SH 163	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	48,914	26	241	6,266
25	SH 164	MU-3	96	GO-4	PCMC	1,530	$ 22,747.00	30	GAS	33,117	26	not in use being disposed	
26	SH 6428	MU-3	85	NISSAN	SENTRA	1,960	$ 6,517.00	26	GAS	24,534	24	504	12,096
27	SH 6434	MU-3	88	JEEP	COMANCHE	3,350	$ 11,160.00	16	GAS	30,852	15	785	11,775
28	SH 6716	MU-3	93	DODGE	W250	4,630	$ 19,927.00	12	GAS	49,275	9	1086	9,774
29	SH 8425	MU-3	97	CHEV	CAVALIER	2,750	$ 13,083.00	25	GAS	8,167	23	504	11,592
30	SH 9743	MU-3	2001	FORD	F 150XL	4,300	$ 20,847.00	16	GAS	18,188	14	785	10,990
31	SH A607	MU-3	2003	CHEV	1500 SLVRDO	4,680	$ 24,195.00	15	GAS	11,883	16	423	6,768
32	SH 8228	MU-8	96	CHEV	1500	4,180	$ 20,929.00	17	GAS	54,648	15	300	4,500
33	SHC 220	MU-8	95	FORD	F350	5,230	$ 1,200.00	17	GAS	165,585	15	200	3,000
34	SHC 219	MU-8	95	FORD	TAURUS	3,150	$ 800.00	30	GAS	81,232	23	200	4,600
35	SHA 561	MU-8	2002	CHEV	SILVERADO	4,590	$ 25,189.00	19	GAS	22,499	18	370	6,660
36	SHC 218	MU-8	92	CHEV	3500 F/B	6,640	$ 2,000.00	20	GAS	168,471	18	200	3,600
37	SHA 701	MU-8	2002	CHEV	2500 X-CAB	6,460	N/A	17	GAS	6,101	15	vehicle just transferred	
38	SHA 554	MU-5	2001	FORD	RANGER XLT	3,430	$ 13,679.00	14	GAS	36,613	8	149	1,192
39	SHA 609	MU-	2002	CHEV	SILVERADO	4,680	$ 24,195.00	16	GAS	12,356	19	257	4,883

40	SH 9166	MU-5	92	CHEV	2500CHEY	4,120	$ 7,000.00	19	GAS	47,905	5	248	1,240
41	SH 6431	MU-5	90	GMC	SONOMA	2,960	$ 11,027.00	18	GAS	146,558	8	191	1,528
42	SH 6423	MU-5	91	GMC	1500 SIERRA	3,870	$ 16,560.00	21	GAS	20,644	8	137	1,096
43	SH6432	MU-5	86	TOYOTA	HILUX	2,620	$ 6,750.00	22	GAS	48,600	17	103	1,751
44	SH 6421	MU-4	86	TOYOTA	HILUX	2,620	$ 6,700.00	22	GAS	31,154	26	41	1,066
45	SH6422	MU-4	90	GMC	2500 SIERRA	4,900	$ 15,000.00	28	GAS	35,929	21	26	546
46	SHA608	MU-4	2003	CHEV	SILVERADO	4,680	$ 23,385.00	20	GAS	9,367	30	251	7,530
47	SH8067	MU-1	95	CHEV	CAVALIER	2,730	$ 13,679.00	25	GAS	33,716	21	150	3,150
48	SH8952	MU-1	98	GMC	1500	4,290	$ 106,189.00	17	GAS	10,615	18	83	1,494
49	SH6377	MU-1	89	GMC	2500	4,150	$ 17,646.00	17	GAS	90,410	16	288	4,608
50	SH6376	MU-1	89	GMC	2500	4,950	$ 15,704.00	17	GAS	109,357	16	402	6,432
51	SHA605	MU-1	2003	CHEV	1500	4,680	$ 21,898.00	17	GAS	21,837	15	485	7,275
52	SH7682	MU-1	95	OLDS	CUTLASS	3,190	$ 16,044.00	22	GAS	41,827	19	200	3,800
53	SH6544	MU-1	90	DODGE	350 VAN	5,160	$ 18,707.00	12	GAS	89,337	11	500	5,500
54	SH6543	MU-1	90	DODGE	250 RAM	4,880	$ 17,666.00	14	GAS	76,053	13	350	4,550
55	SHA553	MU-1	2001	FORD	RANGER XLT	3,240	$ 14,999.00	22	GAS	40,695	21	385	8,085
56	SHB899	MU-1	98	CHEV	1500	4,580	$ 7,780.00	17	GAS	26,503	17	210	3,570
57	SHB867	MU-1	98	CHEV	1500	4,080	$ 15,283.00	17	GAS	15,270	17	130	2,210
58	SH9742	MU-1	2001	FORD	F-150	4,300	$ 20,848.00	18	GAS	31,215	16	390	6,240
59	SHA629	MU-7	2003	FORD	F-350	5,750	$ 29,119.00	17	GAS	42,002	16	1296	20,736
60	SHA720	MU-7	2003	CHEV	3500	5,620	$ 19,370.00	19	GAS	19,898	18	1332	23,976
61	SH6427	MU-7	84	CHEV	S-10	2,906	$ 12,698.00	22	GAS	118,957	21	780	16,380
62	SH6475	MU-	91	FORD	F-250	4,820	$ 17,951.00	19	GAS	94,575	17	1212	20,604

63	SH8997	7 MU-7	93	GMC	1500	4,050	$ 19,968.00	21	GAS	141,309	19	888	16,872
64	SH6132	MU-7	91	FORD	TAURUS	2,204	$ 19,005.00	23	GAS	45,892	22	798	17,556
65	SH8585	MU-7	97	FORD	350 VAN	5,810	$ 26,265.00	18	GAS	94,362	18	323	5,814
66	SH8068	MU-2	95	CHEV	CAVALIER	2,730	$ 13,679.00	25	GAS	34,941	24	112	2,688
67	SH6397	MU-2	87	CHEV	1500	3,830	$ 12,784.00	15	GAS	73,718	13	298	3,874
68	SH6399	MU-2	91	CHEV	1500	3,910	$ 16,302.00	17	GAS	74,105	15	330	4,950
69	SH6396	MU-2	87	CHEV	1500	3,830	$ 12,784.00	16	GAS	71,157	14	268	3,752
70	SH6436	MU-2	83	FORD	F-150	3,540	$ 7,823.00	17	GAS	73,406	15	212	3,180
71	SHA606	MU-2	93	CHEV	1500	4,460	$ 26,000.00	16	GAS	17,568	14	139	1,946
									Total		**17.04**	**21643**	**368,773**

	License		Year	Make	Model	GVWR	ACQUISITION COST	U.S.E.P.A. RATED FUEL	FUEL	ODOMETER	MILES PER GAL	ANNUAL FUEL USE	ANNUAL MILES TRAVELED
1	SH B868	MU-3	98	FORD	F250	4,890	$ 7,000.00	15	propane	27,030.00	15	883	13,245
2	SH B873	MU-3	98	FORD	F250	4,890	$ 7,500.00	15	propane	27,323.00	12	883	10,596
3	SHB872	MU-2	98	FORD	F-250	4,890	$ 7,500.00	17	propane	29,900.00	15	203	3,045
4	SHB871	MU-2	98	FORD	F-250	4,890	$ 7,500.00	15	propane	37,649.00	13	360	4,680
									Total		**13.55**	**2,329**	**31,566**

HAWAII PUBLIC HOUSING AUTHORITY
Energy Consumption
FY '05-'06

	2005			2006		
	KWH		Cost	KWH		Cost
MU 1						
Puuwai Momi	2,733,418	$	363,063.66	2,921,077	$	469,510.59
Hale Laulima	1,006,211	$	161,135.60	889,161	$	171,964.57
Salt Lake	44,273	$	7,897.13	41,374	$	8,617.06
Waipahu I	75,177	$	13,562.41	91,153	$	18,887.79
Waipahu II	106,049	$	18,247.32	122,259	$	24,609.23
MU 2						
Kalihi Valley Homes	233,294	$	64,384.72	230,067	$	61,830.23
Hauiki Homes	929,200	$	140,279.94			
Puahala Homes	173,111	$	33,192.66	61,187	$	18,501.09
MU 3						
Mayor Wright Homes	1,455,664	$	209,724.71	1,413,537	$	249,601.02
Kaahumanu Homes	34,211	$	10,393.58	40,707	$	13,587.39
Kamehameha Homs	94,580	$	16,001.67	96,709	$	19,786.17
MU 4						
Kalakaua Homes	2,704	$	718.43	2,532	$	963.90
Makua Alii/Paokalani	1,986,000	$	252,138.56	2,037,541	$	323,056.83
MU 5						
Punchbowl Homes	638,480	$	82,841.11	619,280	$	99,688.33
Kalanihuia	685,500	$	89,373.02	695,700	$	112,517.88
Makamae	400,440	$	52,363.19	394,577	$	63,859.42
Spencer House	9,305	$	1,655.72	9,344	$	1,959.21
Pumehana	492,011	$	64,398.41	498,236	$	80,673.22

HAWAII PUBLIC HOUSING AUTHORITY
Energy Consumption
FY '05-'06

MU 7						
Lanakila Homes	181,710	$	40,810.45	125,446	$	35,798.94
Hale Aloha O Puna	71,521	$	21,195.39	78,304	$	26,337.90
Hale Olaloa	104,340	$	31,515.36	101,079	$	35,300.77
Kauhale O'Hanakahi	10,161	$	3,816.37	8,696	$	4,071.48
Lokahi	59,452	$	15,118.86	54,298	$	16,508.21
Pahala	84,922	$	23,647.41	91,516	$	29,254.05
Pomaikai Homes	51,192	$	13,556.56	51,842	$	16,141.09
Punahele Homes	2,974	$	1,153.62	2,269	$	993.83
MU 8	Information from Kauai forthcoming					
Kapaa						
Hale Hoolulu						
Hale Nana Kai O kea						
Hui O Hanamaulu						
Kalaheo						
Kawailehua						
MU 9						
Kahekili Terrace	372,483	$	91,669.26	318,764	$	93,411.19
David Malo Circle	211,552	$	48,207.87	187,185	$	50,054.92
Makani Kai Hale	34,076	$	8,799.56			
Piilani Homes	316,982	$	69,023.34	309,237	$	79,388.92
MU 40						
Kuhio Park Terrace	3,668,703	$	488,409.23	3,729,316	$	606,244.52
Kuhio Homes	52,121	$	13,910.38	319,618	$	58,857.58
MU 41	Information from Kauai forthcoming					

HAWAII PUBLIC HOUSING AUTHORITY
Energy Consumption
FY '05-'06

Eleele Homes						
Hale Hoonanea						
Home Nani						
Kawailehua						
MU 42						
Hale Po'ai	3,874	$	1,836.90	122,760	$	24,289.01
Halia Hale	209,680	$	27,892.95	208,405	$	34,626.72
MU 43						
Ka Hale Kahaluu	30,688	$	11,138.59	37,887	$	17,496.62
Hale Hookipa	125,887	$	37,235.62	130,086	$	44,456.22
Kaimalino	165,005	$	47,125.94	161,292	$	53,584.95
Kealakehe	190,715	$	60,080.30	233,014	$	81,860.22
Nani Olu						
MU 44						
Waimaha Sunflower	116,550	$	19,084.28	148,515	$	33,529.78
Kau'iokalani	114,150	$	19,677.74	38,226	$	7,710.86
Maili I	26,614	$	6,377.10	14,194	$	3,152.18
Maili II	8,561	$	1,907.95	8,836	$	2,292.84
Nanakuli Homes						
MU 45						
Koolau Village	63,387	$	11,805.91	50,671	$	11,351.09
Hookipa Kahaluu	64,556	$	13,808.24	44,702	$	12,167.83
Kaneohe Apts	13,626	$	2,807.73	8,349	$	1,916.34
Kauhale O'hana	12,993	$	2,950.77	11,865	$	2,941.28
Waimanalo Homes	870	$	259.72	446	$	215.37

HAWAII PUBLIC HOUSING AUTHORITY
Energy Consumption
FY '05-'06

MU 46						
Noelani I & II	36,685	$	11,691.24	45,395	$	15,631.40
Hale Hauoli	95,158	$	28,610.32	89,701	$	31,229.32
Ke Kumu 'Ekolu	36,997	$	12,432.96	35,297	$	13,498.65
MU 47						
Kahale Mua	18,594	$	6,735.46	19,238	$	7,716.52
MU 48						
Kamalu	440,394	$	60,863.93	469,292	$	79,405.82
Ho'olulu	574,652	$	75,498.37	561,720	$	92,200.42
MU 49						
Kauhale Nani	40,552	$	6,746.73	48,168	$	10,054.21
Laiola	530,400	$	71,223.64	536,160	$	88,814.08
Wahiawa Terrace	387,052	$	66,322.00	386,492	$	78,970.75
Kupuna Home O'Waialua	225,427	$	38,676.75	199,635	$	41,285.43
MU 80						
Palolo Valley Homes	95,332	$	17,079.60	90,004	$	19,422.54

HAWAII PUBLIC HOUSING AUTHORITY
Energy Consumption
FY '05-'06

Private Management						
Banyan Street Manor	45,120	$	7,358.46	47,680	$	9,279.90
Kulaokahua	137,440	$	18,688.38	135,200	$	22,684.03
Nakolea	152,456	$	20,474.96	143,918	$	24,055.87
Uluwehi Apts	45,613	$	8,180.72			
Weinberg Village	7,651	$	1,384.89	5,329	$	1,221.36
Weinberg Village	7,651	$	1,384.89	5,329	$	1,221.36
Wilikina Apts	134,401	$	21,506.01	126,168	$	24,628.61
Total	**20,480,548**	**$**	**3,191,054.55**	**19,705,985**	**$**	**3,684,888.91**

AIRPORTS DIVISION'S

ENERGY SAVING PROJECTS

Project Title	Completed	On-Going	Future	Comments
HNL, Green Lights Project	X			Replaced T-12 fluorescent lights w/ T-8 & electronic ballast. Got $96K rebate from HECo
HNL, Airfield Signs & Taxiway Lights Replacement		X		Replace lighted sign w/ 18-watt compact fluorescent lamps & replace 45-watt incandescent lamps twy lights w/ 7-watt LED lights
HNL, Air Conditioning System Improvements, Oahu		X		Replacing old & efficient chillers w/ energy efficient chillers
HNL, Terminal Modernization, Oahu			X	
HNL, International Arrivals Building Ceiling Replacement, Oahu		X		
HNL, Interisland Maintenance Facility Site Preparation, Oahu		X		
HNL, FIDS and PA System Improvements, Oahu		X		
HNL, 400 Hertz Replacement			X	Will replace 400 Hz converters w/ energy efficient converters
HNL, Installation of Emergency Generator			X	Working w/ HECo on installing back-up generators
HNL, Airfield Electrical Vault			X	Will provide a back-up vault for the airfield (no additional load)
Kalaeloa Airport, Facility Improvements, Oahu		X		
Kalaeloa Airport, Airport Improvements	X			Replaced 45-watt taxiway lamps w/7-watt LED lights
Kalaeloa Airport, Hangar 110 Renovations, Oahu		X		
KOA, Green Light Project	X			Replaced T-12 fluorescent lights w/ T-8 & electronic ballast. Got $10K rebate from HELCo
KOA, Terminal Modifications, Hawaii		X		
KOA, Perimeter Road, Security Fence and G.A. Lighting, Hawaii		X		
KOA, Parking Lot			X	Will intall Photovoltaic Panels as an alternate source of energy
KOA, ARFF Training Center			X	
KOA, Deep Ocean Well Water as Chilled Water for A/C System			X	
KOA, Air Traffic Control Tower			X	
ITO, Green Light Project	X			Replaced T-12 fluorescent lights w/ T-8 & electronic ballast. Got $15K rebate from HELCo
ITO, Parking Lot Improvements			X	
ITO, New ARFF Station			X	

AIRPORTS DIVISION'S

ENERGY SAVING PROJECTS

Project Title	Completed	On-Going	Future	Comments
Waimea-Kohala Airport, Part 139 Improvements, Hawaii				
Kahului Airport, Green Light Project	X			Replaced T-12 fluorescent lights w/ T-8 & electronic ballast. Got $45K rebate from MECo
Kahului Airport, Parking Lot Expansion			X	
Kahului Airport, Washrack			X	
Kahului Airport, Fuel Storage Site Preparation, Maui		X		
Kahului Airport, Heliport Improvements, Maui		X		
Hana Airport, Part 139 Improvements, Maui			X	
Molokai Airport ARFF Station Improvements, Molokai			X	
Kalaupapa Airport, part 139 Improvements, Molokai		X		
Lanai Airport ARFF Station Improvements, Lanai		X		
Lihue Airport, Green Light Project	X			Replaced T-12 fluorescent lights w/ T-8 & electronic ballast
Lihue Airport, Parking Lot			X	
Commuter Air Terminal Improvements, Statewide		X		
Loading Bridge Modernization, Statewide		X		
Miscellaneous Airport Projects, Statewide		X		
Aircraft Rescue and Fire Fighting (ARFF) Station Improvements, Statewide		X		