

STATE WATER PROJECTS PLAN

Hawaii Water Plan

VOLUME 3

SWPP for Island of Kauai



For the:
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii

February 2003

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TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	
1.1 BACKGROUND	1-1
1.1.1 Legislative History	1-1
1.1.2 State Water Code	1-1
1.1.3 Hawaii Water Plan	1-1
1.2 OBJECTIVE OF THE SWPP	1-2
1.3 SWPP DOCUMENT FORMAT	1-3
1.4 ELEMENTS OF STUDY – Volume 3: SWPP Island of Kauai	1-3
1.4.1 Inventory of Existing Water Resources	1-3
1.4.2 Inventory of Proposed State Projects	1-3
1.4.3 Assessment of Future Water Requirements	1-3
1.4.4 SWPP Water Development Strategy	1-4
2. EXISTING STATE WATER RESOURCES	
2.1 GENERAL	2-1
2.2 STATE WATER RESOURCES	2-1
2.2.1 Wells	2-1
2.2.2 Stream Diversions	2-1
2.2.3 State Owned and/or Operated Water Systems	2-2
2.3 WATER SYSTEMS OWNED AND/OR OPERATED BY THE STATE	2-9
2.3.1 Evaluation of Water System Source Capacity	2-9
2.3.1.1 Determine the Existing Average Day and Maximum Day Consumption	2-10
2.3.1.2 Determine the Source Capacity	2-10
2.3.1.3 Determine Surplus Source Capacity	2-11
2.3.1.4 Determine Irrigation System Source and Storage Capacity	2-11
2.3.1.5 Evaluation of Future Project Water Demand	2-11

2.4	DESCRIPTION AND EVALUATION OF STATE WATER SYSTEMS	2-11
2.4.1	Department of Agriculture Water Systems	2-11
2.4.1.1	Kekaha Irrigation System	2-12
2.4.2	Department of Hawaiian Home Lands	2-13
2.4.2.1	Anahola Water System	2-13
2.4.3	Department of Land and Natural Resources	2-13
2.4.3.1	Haena State Park Water System	2-13
2.4.3.2	Kokee State Park Water System	2-14
2.4.3.3	Na Pali Coast State Park Water System	2-14
2.4.3.4	Polihale State Park Water System	2-15
2.4.3.5	Wailua River State Park Water System	2-15
2.4.3.6	Waimea Canyon State Park Water System	2-15
2.5	STATE WATER SYSTEMS WITH SURPLUS CAPACITY	2-16
3.	PROPOSED WATER RELATED STATE PROJECTS	
3.1	GENERAL	3-1
3.2	EVALUATION AND METHODOLOGY OF SWPP WATER DEMAND	3-1
3.2.1	Evaluation of SWPP Project Information	3-1
3.2.2	Project Water Demand Calculation Methodology	3-4
3.2.2.1	Non-Standard Guidelines and Methods	3-4
3.3	SWPP PROJECT WATER DEMAND	3-5
3.3.1	SWPP Project Water Demand for the Island of Kauai	3-5
3.3.2	Issues, Concerns and Uncertainties Related to Project Demands	3-8

4.	SWPP STATE WATER DEVELOPMENT STRATEGY	
4.1	WATER DEVELOPMENT STRATEGY – ISLAND OF KAUAI	4-1
4.2	SWPP PROJECT DEMAND OVERVIEW	4-1
4.3	EVALUATION OF WATER DEVELOPMENT STRATEGY OPTIONS	4-6
4.3.1	Existing State Water Systems (EXSWS)	4-6
4.3.1.1	Anahola Water System (EXSWS)	4-6
4.3.1.2	Haena State Park Water System (EXSWS)	4-6
4.3.2	Existing Master Plan (MASTERPLAN)	4-6
4.3.3	Existing State or Private Sources (EXSS)	4-6
4.3.4	County and Private Water Agreements (COUNTY)	4-6
4.3.5	County and Private Water Agreements – Use of Water Allocation Credits (COUNTY-BWSWALL)	4-6
4.3.6	New/Planned State Wells (NEWSS)	4-6
4.3.7	New State Water Systems (NEWSWS)	4-7
4.3.8	Planned Private Sources (PLANPS)	4-7
4.3.9	Coordination of Unmet SWPP Project Demand w/ County Water Department	4-7
4.3.10	Other Strategy Considerations	4-7
4.4	RECOMMENDED WATER DEVELOPMENT STRATEGY ACTIONS	4-9

APPENDICES

APPENDIX A	WELLS; STREAM DIVERSIONS; STATE WATER SYSTEM DIAGRAMS
APPENDIX B	SWPP DEMAND TABLE BY DEPARTMENT
APPENDIX C	SWPP DEMAND TABLE BY ISLAND
APPENDIX D	SWPP DEMAND TABLE BY AQUIFER

LIST OF FIGURES

Figure 2.1	Existing Registered State Wells - Kauai	2-3
Figure 2.2	Existing State Stream Diversions - Kauai	2-5
Figure 2.3	Existing State Water Systems - Kauai	2-7
Figure 3.1	Hydrologic Units –Kauai	3-9
Figure 4.1	Total Yearly Cumulative Remaining Demand for Kauai	4-5

LIST OF TABLES

Table 1.1	Scheduled Updates To the Hawaii Water Plan	1-2
Table 2.1	Water Systems Owned or Operated By The State	2-2
Table 2.2	State Irrigation Systems	2-12
Table 2.3	State Water Systems with Surplus Capacity	2-16
Table 3.1	Domestic Consumption Guideline Average Daily Demand	3-2
Table 3.2	Department Specific Unit Rates	3-3
Table 3.3	Total Projected Demands on the Island of Kauai by State Department	3-6
Table 3.4	Summary of SWPP Projected Water Demands, Sustainable Yield, and Permitted Water Use by Aquifer System	3-7
Table 4.1	SWPP Update – Kauai Water Development Strategy	4-2
Table 4.2	Water Development Strategy Summary - Kauai	4-1
Table 4.3	SWPP Projects with Significant Water Demands (>0.10 mgd) - Kauai	4-5
Table 4.4	Water Development Strategy Remaining of Unmet SWPP Project Demand - Hydrologic Sector Kauai	4-8

ABBREVIATIONS

AWUDP	Agriculture Water Use and Development Plan
BWS	Board of Water Supply
CIP	Capital Improvements Project
Commission	Commission on Water Resource Management
CWRM	Commission on Water Resource Management
DBEDT	Department of Business Economic Development & Tourism
DHHL	Department of Hawaiian Home Lands
DHS	Department of Human Services
DLNR	Department of Land and Natural Resources
DOA	Department of Agriculture
DOH	Department of Health
DOT	Department of Transportation
DPS	Department of Public Safety
DWS	Department of Water
EXSS	Existing State or Private Sources
EXSWS	Existing State Water Systems
gpd	gallons per day
gpm	gallons per minute
HOST	Hawaii Ocean, Science and Technology Park
HRS	Hawaii Revised Statutes
KSBE	Kamehameha Schools Bishop Estate
HWP	Hawaii Water Plan
LHD	Lower Hamakua Ditch
MOU	Memorandum of Understanding
NELHA	Natural Energy Laboratory of Hawaii Authority
NEWSS	New/Planned State Wells
NEWSWS	New State Water Systems
OWMP	Oahu Water Management Plan
PLANPS	Planned Private Sources
SWAP	Source Water Assessment Program
SWPP	State Water Projects Plan
UH	University of Hawaii
UHD	Upper Hamakua Ditch
USEPA	United States Environmental Protection Agency
WIS	Waimea Irrigation System
WQP	Water Quality Plan
WRPP	Water Resource Protection Plan
WUDP	Water Use and Development Plans

CHAPTER 1

INTRODUCTION

1.1. BACKGROUND

1.1.1. Legislative History

The State Constitution, Article XI Section 7, mandates that the State of Hawaii is responsible to protect, control, and regulate the use of Hawaii's water resources for the benefit of its people. Pursuant to this mandate, Act 45, the Fourteenth Legislature signed the State Water Code, into law on July 1, 1987. The Act is now codified as Chapter 174C, Hawaii Revised Statutes (HRS).

1.1.2. State Water Code

The State Water Code as described in Chapter 174C, HRS, is divided into nine parts. The code outlines administration structure, regulation of water use, water resources planning and water rights. The State Water Code policies insure the maximum beneficial uses of State water for Hawaii residents. The code mandates a program of comprehensive water resource planning to maintain the supply, conservation, and quality of State waters. The State Water Code calls for the establishment of a six member Commission on Water Resource Management (CWRM) to have exclusive jurisdiction and final authority relating to the implementation and administration of the Code. To guide the Commission in executing its general powers, duties, and responsibilities, the Code requires the formulation of a Hawaii Water Plan.

1.1.3. Hawaii Water Plan

The Hawaii Water Plan serves as a continuing long-range guide for water resource management. The plan consists of five component parts:

- 1) Water Resources Protection Plan (WRPP)
- 2) Water Quality Plan (WQP)
- 3) State Water Projects Plan (SWPP)
- 4) State Agriculture Water Use and Development Plan (AWUDP) (Per modification of Section 174-31, HRS, Act 101)
- 5) Water Use and Development Plans (WUDP) for each County

The Hawaii Water Plan objectives include:

- 1) The attainment of maximum reasonable-beneficial use of water of the State;
- 2) The proper conservation and development of the waters of the State;
- 3) The control of the waters of the State for such purposes as navigation, drainage, sanitation, and flood control;
- 4) The attainment of adequate water quality as expressed in the State Water Resources Protection Plan and Water Quality Plan;
- 5) The implementation of water resource policies of the State Water Code, as expressed in section 174C-2.

By statute, Section 174C-32, HRS, the Hawaii Water Plan was completed and adopted by the commission in 1990. The maintenance and coordination of current water related information requires the CWRM to periodically update components of the plan. The status and schedules for the individual plans are shown on **Table 1.1**.

Table 1.1
Scheduled Updates to the Hawaii Water Plan

Hawaii Water Plan	Scheduled Completion Date	Comments
State Water Projects Plan	2003	SWPP Update Complete
State Water Master Plan for Oahu	2004	In Progress
Water Resources Protection Plan	2004	In Progress
Water Quality Plan	No Date Scheduled	Plan Update not Scheduled
Water Use and Development Plan - Maui	No Date Provided	Plan Update Scheduled
Water Use and Development Plan - Kauai	No Date Scheduled	Plan Update not Scheduled
Water Use and Development Plan - Hawaii	No Date Scheduled	Plan Update not Scheduled
Oahu Water Management Plan – Oahu	No Date Provided	Plan Update Scheduled
State Agriculture Water Use and Development Plan	2004	In Progress

1.2. OBJECTIVE OF THE SWPP

The primary objective of the SWPP is to provide a framework for the planning and implementation of Water Development Strategy for future State projects. Other objectives include:

- 1) Inventory State water resources including State wells, stream diversions, and State water systems;
- 2) Inventory State Projects and their water requirements. The State project demands to be incorporated within respective County Water Use and Development Plans for comprehensive water planning. State projects on Oahu to be used to justify source development and water use permits or water reservations from CRWM;
- 3) Inventory State department water conservation programs;
- 4) Develop a Water Development Strategy to meet the needs of proposed State projects;
- 5) Incorporation of the Agricultural Water Use and Development Plans; and
- 6) Consistency with the Water Resources Protection Plan and the Water Quality Plan, and coordination with the Counties' Water Use and Development Plans.

1.3. SWPP DOCUMENT FORMAT

The SWPP has been organized into five separate volume reports. The five volumes include: SWPP technical document and four individual island SWPP reports. The SWPP technical document contains statewide department project water planning, methodology, procedures, project demand summaries and water development strategies. Individual island SWPP reports focus on island project demands and strategies to meet project demands. The SWPP volume structure includes:

Volume 1: State Water Projects Plan, Technical Document

Volume 2: State Water Projects Plan, Island of Hawaii

Volume 3: State Water Projects Plan, Island of Kauai

Volume 4: State Water Projects Plan, Island of Lanai/Maui/Molokai

Volume 5: State Water Projects Plan, Island of Oahu

1.4. ELEMENTS OF STUDY – Volume 3: SWPP Island of Kauai

1.4.1. Inventory of Existing Water Resources

A compilation of available information of existing State wells, stream diversions and water systems owned and/or operated by the State of Hawaii on the island of Kauai was performed. An inventory of existing State water resources were taken to assess the extent of the State's current water-related operations.

1.4.2. Inventory of Proposed State Projects

Each State department was surveyed to inventory future water requirements associated with proposed State sponsored projects. Using a 20-year planning horizon, future State projects were identified by State departments for the period between 2001 and 2020 based on estimated construction schedules. Water demand requirements were tabulated for 2001 and in one-year increments to 2005, then in five-year increments until the year 2020.

1.4.3. Assessment of Future Water Requirements

Upon completion of the State project inventory, an assessment of the future water requirements was performed. Estimated water demands were determined using the best available information. It should be noted that these demands are based on the projected future water requirements and the values derived herein should be reevaluated as the specific projects become better defined.

1.4.4. SWPP Water Development Strategy

The SWPP Water Development Strategy was developed to identify, evaluate and recommend source development options to meet the forecasted State project water demands. Strategy options and recommendations were organized into two periods: Short-term (2001 to 2010) and the Long-term (2011 to 2020). The strategy objective was to provide more effective planning, coordination and development of water resources to meet projected State water demands. The strategy utilized several source development options including, but not limited to, existing and/or planned State water sources/systems, county/private water agreements, and existing master plans, all of which were prioritized and assigned to individual SWPP projects. These strategy options, however, are preliminary in nature and must be further evaluated with regard to scheduling, funding, system reliability, requirements for infrastructure improvements, and other planning considerations. DLNR will initiate discussions with County of Kauai, Department of Water on the availability and feasibility of County water systems accommodating SWPP project demands. In the event County water systems are unable to supply SWPP project demands, DLNR will assist to develop additional source or system capacity.

CHAPTER 2

EXISTING STATE WATER RESOURCES

2.1. GENERAL

The vast majority of existing State facilities including schools, office buildings, airports, harbors, housing projects and institutions are served by water systems owned and operated by the respective Counties. The County water departments are specifically organized to manage, maintain and operate water systems and are usually more capable of efficiently providing water service. However, in areas where the Counties do not have distribution systems, other purveyors, including State, Federal or private agencies, must provide water service to their respective facilities.

An inventory of existing State owned and operated water systems was conducted to assess the extent of the State's current water-related operations, and are discussed in Section 2.4 below. Information on existing water uses and sources registered by the State were also compiled and are presented herein.

2.2. STATE WATER RESOURCES

2.2.1. Wells

A "Well" is defined as "any excavation or opening in the ground, or an artificial enlargement of a natural opening drilled, tunneled, dug, or otherwise constructed for the location, exploration, development, injection, or recharge of ground water and by which ground water is drawn or is capable of being withdrawn or made to flow." The State currently owns 195 existing wells. There are 27 existing State wells located on the island of Kauai, shown on **Figure 2.1**. A listing of the State owned wells located on the island of Kauai is included in **Appendix B**. State well data and location was referenced from CWRM databases.

Water from the State wells is used for various applications. Principal uses include potable water supply and irrigation. Miscellaneous uses include cooling water, landscaping, aquaculture, and wetland maintenance.

2.2.2. Stream Diversions

A "Stream Diversion" is defined as "the act of diverting, pumping or otherwise removing water from a stream into a channel, ditch, pipeline, or other conduit." Based on registered stream diversion records with CWRM, the State of Hawaii currently owns and/or operates 54 stream diversions. There are 9 existing stream diversions located on the island of Kauai, shown in **Figures 2.2**. A listing of the State owned/operated diversions is included in **Appendix B**. The water collected from existing State diversion works is used primarily for agricultural operations. Other uses include potable water supply, generally for remote areas, e.g. parks and recreation areas. Since diversion works involve surface water sources, the collected water generally requires treatment before it is considered safe for human consumption.

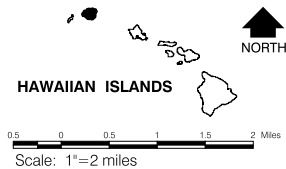
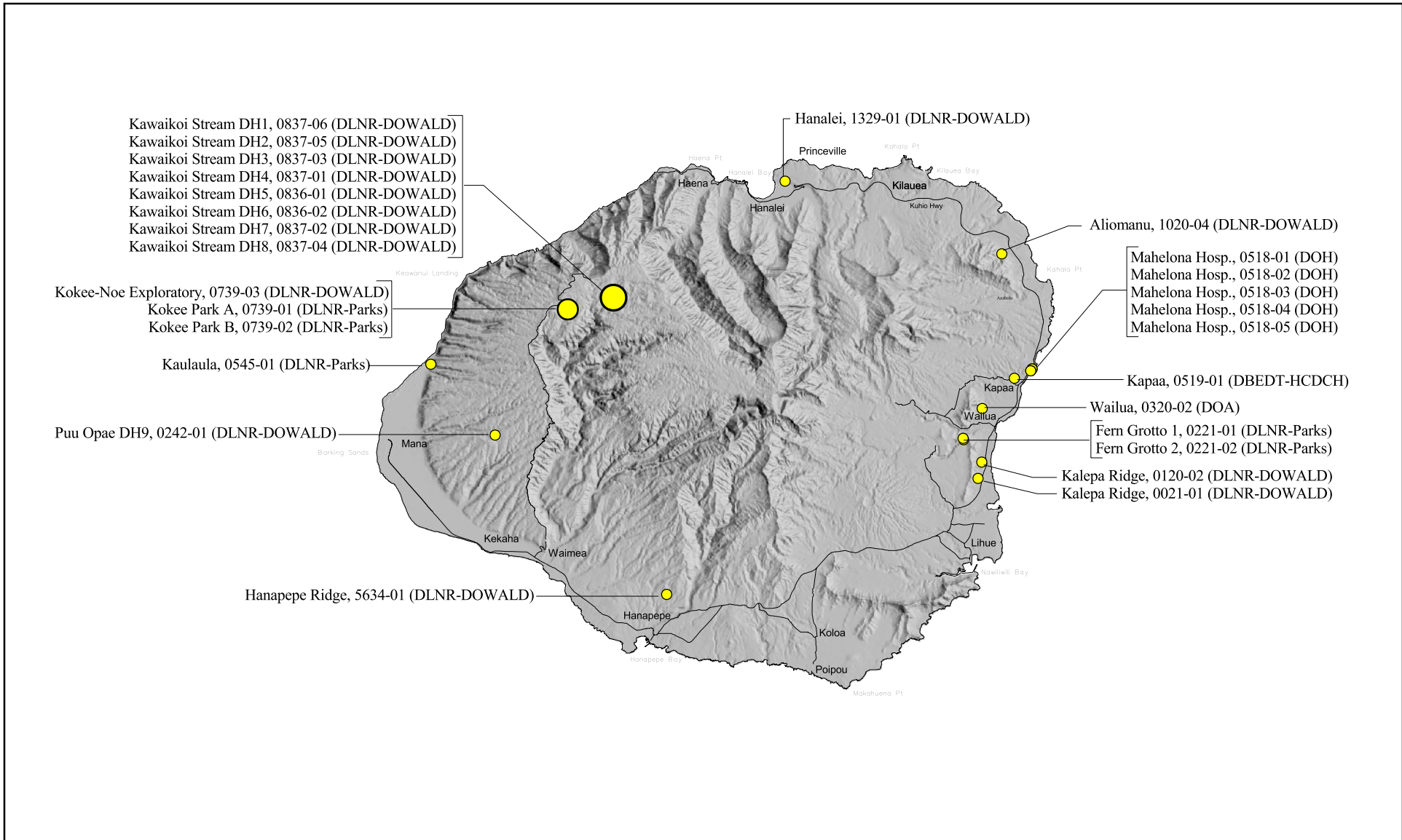
2.2.3. State Owned and/or Operated Water Systems

A State water system is defined as a water system owned and/or operated by the State that provides water service to State projects or facilities; provides source water and treatment of source water; stores water in storage reservoirs; provides booster pump capacity; conveys water through a distribution system and distributes water to service connections. A State water system is also defined when a County or private source supplies a State owned and/or operated water service serving State facilities. The State water systems are listed in **Table 2.1** by State department. Location map of State water systems on the island of Kauai is shown in **Figures 2.3**. Schematic line diagrams showing water systems components, end users and existing/future water demands are provided in **Appendix B**.

Table 2.1
Water Systems Owned or Operated by the State

Water System Name	State Agency	Island	Primary Use	State Owned	State Operated
Kekaha Irrigation System	DOA	Kauai	Irrigation	Yes, Source owned by Kekaha Sugar Plantation	Yes *
Anahola Water System	DHHL	Kauai	Potable	Yes	Yes
Haena SP	DLNR	Kauai	Nonpotable	Yes	Yes
Kokee SP	DLNR	Kauai	Potable	Yes	Yes
Na Pali Coast SP	DLNR	Kauai	Nonpotable	Yes	Yes
Polihale SP	DLNR	Kauai	Potable	Yes	Yes
Wailua River SP	DLNR	Kauai	Nonpotable	Yes	Yes
Waimea Canyon SP	DLNR	Kauai	Nonpotable	Yes	Yes

Note: * State water system operated by private contractor, managed by the State



LEGEND:

- State Wells, State Well No., (State Dept.)
- Major Highways/Roads

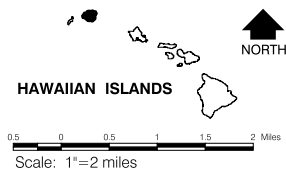
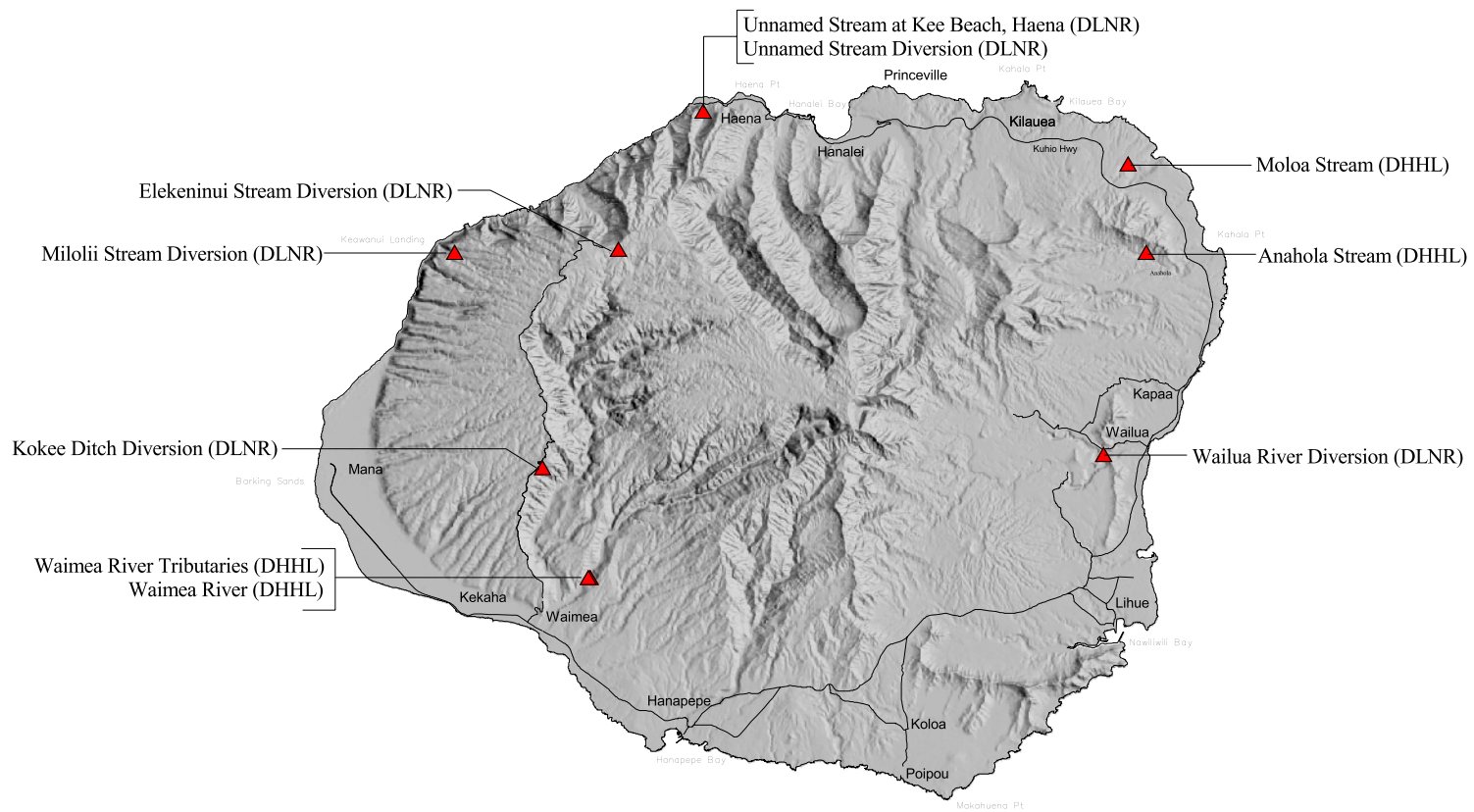
State Water Projects Plan
EXISTING REGISTERED STATE WELLS - KAUAI
FIGURE 2.1

Date: February 2003

1388 Kapiolani Boulevard

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LEGEND:
 ▲ State Stream Diversions (State Dept.)
 — Major Highways/Roads

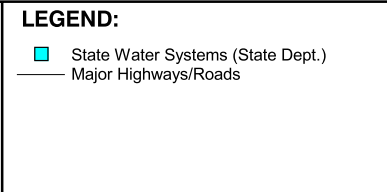
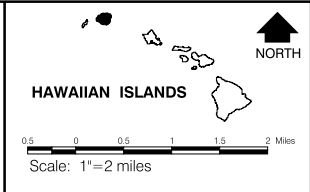
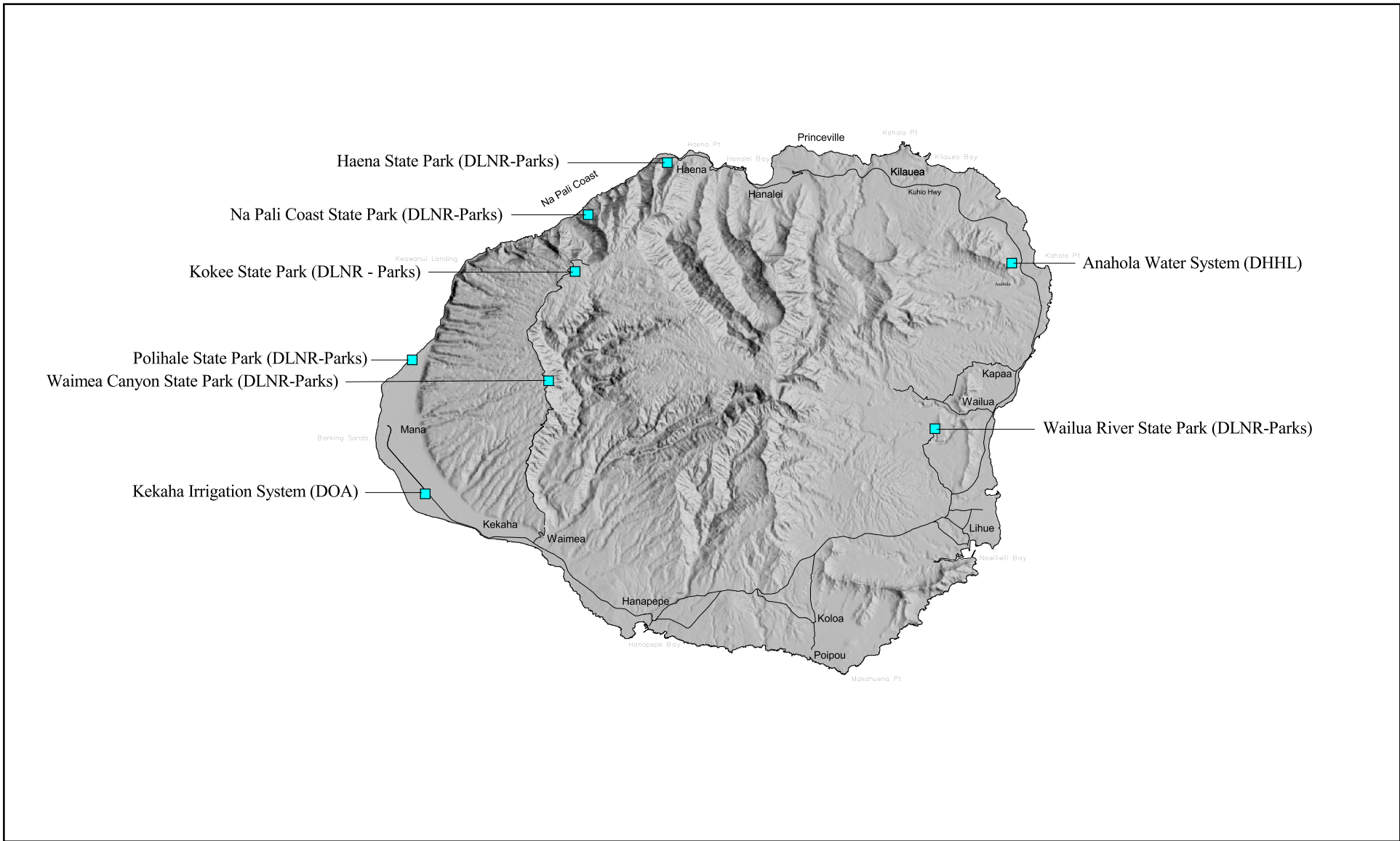
State Water Projects Plan
EXISTING STATE STREAM DIVERSIONS - KAUAI
FIGURE 2.2

Date: February 2003

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2.3. WATER SYSTEMS OWNED AND/OR OPERATED BY THE STATE

An inventory of State owned and/or operated water systems were compiled as part of the SWPP data survey. Department of Health, “Sanitary Survey Forms” for public water systems were referenced for system information. CWRM “Registration of Stream Diversion Works and Declaration of Water Use” were also used as system information references. Water System field operators were contacted to obtain and verify current system data.

The objectives of the State water system inventory was to provide:

- 1) A comprehensive list of State water systems;
- 2) Description of water system components and service areas including: source, storage, booster, pump, distribution, service connections, service area, primary water use, existing consumption and future water demand, schematic diagram for each water system and GIS mapping;
- 3) Identify water system, which contain surplus source capacity. Surplus source capacity was determined by comparing water source capacity (groundwater wells, catchment systems and/or stream diversions) against existing average day and maximum day consumption;
- 4) Determine whether water systems with surplus capacity could accommodate future State project water demands.

2.3.1. Evaluation Of Water System Source Capacity

Water system sources range from single source (groundwater well, stream diversion) to multiple combination of sources. A standardized approach to evaluate water system source capacity was based on the following methodology:

- 1) Identify water system source and source capacity;
- 2) If a system is supplied by a groundwater well, the pump capacity of the well was used;
- 3) If a system is supplied by a stream diversion, the design capacity of the diversion was used, if the diversion capacity information was available;
- 4) Systems served by stream diversions and wells, the combined source capacity of the diversion and well was used;

- 5) If the stream diversion design capacity was not known, the intake capacity into the reservoir was used. (Note: Design stream diversion capacity was not available on many stream diversions. Stream diversion flows are rarely measured in the field.) For water systems supplied by stream diversions with no information concerning the stream diversion capacity, the evaluation of source capacity adequacy could not be performed.

The following procedure documents the criteria and methods used to determine the existing average and maximum day consumption, source capacity and water system surplus source capacity.

2.3.1.1. Determine the Existing Average Day and Maximum Day Consumption

Existing metered consumption records were obtained from State agencies. An estimation of water consumption was performed for water systems, which do not meter existing consumption. Water System Standard Domestic Consumption Guidelines average daily demand unit rates and land use type units/areas along with other unit rates provided by State departments were used to calculate estimated water demands. The maximum day demand was then calculated by multiplying the average day demand by a demand factor of 1.5. Primary use of the water was also identified.

2.3.1.2. Determine the Source Capacity

- 1) For water systems served by a single groundwater well, the safe source capacity was based on a well pump operating time of 16 hours a day, allowing for 8 hours of down time per average day. The safe source capacity is calculated by multiplying the well capacity by a factor of 16 hours/24 hours/day.
- 2) For water systems served by a single stream diversion, the source capacity was based on the design stream diversion capacity, if available.
- 3) For water systems served by multiple groundwater wells, the cumulative safe source capacity was based on the cumulative well capacities, well pump operating time of 16 hours a day with the largest well pump on stand-by.
- 4) For water systems served by multiple stream diversions, the source capacity was based on the cumulative design stream diversion capacities, if available.
- 5) For water systems served by both multiple groundwater wells and stream diversions, the cumulative safe source capacity was based on the cumulative well capacities and design stream diversion capacities, well pump operating time of 16 hours a day with the largest well pump on stand-by.

- 6) If the design stream diversion capacity was not known, the average intake capacity was used as the water system source capacity.
- 7) For water systems supplied by stream diversions with no information concerning the stream diversion capacity, the evaluation of source capacity adequacy could not be performed.

2.3.1.3. Determine Surplus Source Capacity

A comparison of the water system cumulative safe source capacity against existing maximum day consumption or estimation of maximum day demand was performed to evaluate source capacity adequacy. Water systems with source capacity greater than existing maximum day demand were identified as water system with surplus source capacity.

2.3.1.4. Determine Irrigation System Source and Storage Capacity

Existing State irrigation system source and storage capacities were referenced using engineering design reports and water budget computations. The design reports identify the irrigation system inflow source capacity, required storage volume, and the design irrigation area based on system demands. Water budget computations evaluate storage requirements based on the inflow and outflow of the irrigation system. The inflow into the system is based on source capacity and rainfall. Outflow from the system is based on irrigation demand requirements (crop requirements, planting schedules), system loss and evapotranspiration.

2.3.1.5. Evaluation of Future Project Water Demand

Future projects to be served by existing State water systems were identified. The future project water demand was added to the existing consumption and evaluated against the source capacity of the water system. For irrigation systems, detailed information of the irrigation requirements was not available. New water budget calculations are recommended for irrigation systems with planned expansions.

2.4. DESCRIPTION AND EVALUATION OF STATE WATER SYSTEMS

2.4.1. Department Of Agriculture Water Systems

The Department of Agriculture (DOA) owns one agricultural irrigation water system:

Kekaha Irrigation System (Kauai)

2.4.1.1. Kekaha Irrigation System

The Kekaha Irrigation System is located in Kekaha, Waimea on the island of Kauai. The system is located in the Waimea hydrological sector, and Kekaha system. The irrigation system is owned by the State of Hawaii and managed by the Department of Agriculture. The system is operated and maintained by Aqua Engineers, a private contractor. The source water for the Kekaha Irrigation System comes from the Kekaha Sugar Plantation ditch system, which is owned and operated by the Kekaha Sugar Plantation. The ditch system water originates through diversions from the Waimea River. The Kekaha Irrigation System obtains water from the plantation ditch system through two intake pumps, with pump capacities of 1.22 mgd for each pump. The safe source capacity is 0.81 mgd. The water is pumped into a 0.75 MG steel reservoir tank. From the reservoir tank, two irrigation pumps maintain pressure to the individual farm lots. The irrigation system was designed to serve 19 farm lots with 150 usable acres for irrigation purposes. All 19-farm lots have metered connections. Currently, there is no existing irrigation consumption from the irrigation system because none of the farm lots are leased or occupied. The estimated water demand from the 19 farm lots and 150 acres is 0.75 mgd. One or two lots in the agriculture park may be leased and occupied by the end of 1999. Aquaculture farmers will lease the remaining lots. The aquaculture farmers have plans on drilling their own well to produce salt water for their water needs. Future expansion to the agriculture park water demand may include the sale of irrigation water to neighboring seed corn growers. The future water demand of the seed corn growers has not been estimated. The cumulative safe capacity from the two intake pumps are adequate to meet the water demands of the two farm lots anticipated to be in service by the end of 1999 and the estimated water demand of the 19 farm lots.

**Table 2.2
State Irrigation Systems**

Fiscal Year	Molokai Irrigation System		Waimanalo Irrigation System		Kekaha Irrigation System	
	Water Sold (MG)/ (mgd)	Acreage Served (Acres)	Water Sold (MG)/ (mgd)	Acreage Served (Acres)	Water Sold (MG)/ (mgd)	Acreage Served (Acres)
94-95	1,811.85/ 4.96	3,343	94.42/ 0.26	1,083		
95-96	1,529.78/ 4.19	3,395	124.35/ 0.34	1,085		
96-97	1,176.53/ 3.22	3,382	140.07/ 0.38	1,085		
97-98	1,626.31/ 4.46	3,298	128.28/ 0.35	583	0/ 0	43

Note: The Kahuku Irrigation System Water Sold and Acreage Served Information were not available.

2.4.2. Department of Hawaiian Home Lands

The Department of Hawaiian Home Lands (DHHL) owns one water system:

Anahola Water System (Kauai),

2.4.2.1. Anahola Water System

The Anahola water system is located in Anahola, Kauai. The system is located in the Lihue hydrological sector, and Anahola system. The water system is owned by the State of Hawaii and managed by the DHHL, Homestead Services Kauai District Office. DHHL has contracted Aqua Engineers Inc. to operate the water system. Anahola water system is DOH public water system 432. The source is a groundwater well, State well number 0919-03, with a pump capacity of 1.01 mgd. The safe source capacity is 0.67 mgd. Well water is chlorinated with chorine gas. A 0.5 MG steel storage tank is located at the well site, at elevation 344. The water system has an interconnection with the adjacent County of Kauai water system, which provides emergency backup storage capacity for both DHHL and the County of Kauai water systems. The distribution system consists of 6-inch and 8-inch water lines. The Anahola water system serves 47 farm lots and 27 residential lots. The existing metered consumption is 0.122 mgd. The existing maximum day demand is 0.18 mgd. DHHL anticipates an additional residential and farm lots to be served by the water system in the future, with a projected average day demand of 0.29 mgd. The maximum day demand of the projected expansion is 0.44 mgd. The Anahola water system has adequate safe source capacity to support current consumption and future maximum day demands.

2.4.3. Department Of Land And Natural Resources

The Department of Land and Natural Resources (DLNR), Division of State Parks owns and operates six State Park water systems:

Haena State Park Water System (Kauai),
Kokee State Park Water System (Kauai),
Na Pali Coast State Park Water System (Kauai),
Polihale State Park Water System (Kauai),
Wailua River State Park Water System (Kauai),
Waimea Canyon State Park Water System (Kauai).

2.4.3.1. Haena State Park Water System

The Haena State Park water system is located at the end of Kuhio Highway in Haena on the island of Kauai. The system is located in the Hanalei hydrological sector, Wainiha and system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The water system serves two dwelling units within the park. The source for the water system is a stream diversion from an unnamed stream. Stream water

is diverted through a 2-inch pipe and flows by gravity to the dwelling units. The current consumption is estimated at 0.002 mgd. The future park expansion includes 13.6 acres of landscaping and three new restrooms. The estimated increased future irrigation demand is 0.034 mgd and 0.02 mgd for three new restrooms for a total demand of 0.054 mgd. Information to determine the stream diversion capacity is not available and flow measurements are not recorded. System source capacity adequacy could not be determined.

2.4.3.2. Kokee State Park Water System

The Kokee State Park water system is located in Waimea Canyon 15 miles North of Kekaha on Kokee Road on the island of Kauai. The system is located in the Waimea hydrological sector, and Waimea system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The Kokee State Park water system is DOH public water system 425. The primary source is a groundwater well, State well number 0739-01, with a pumping capacity of 0.058 mgd. The safe source capacity is 0.04 mgd. A gas chlorinator is located at the well site to disinfect the well water. The Elekeniui Stream Intake, a surface water source is used as an emergency source for fire protection. A new well is proposed to replace the Elekeniui Stream Intake. The water is boosted and stored in three storage reservoir tanks: a 200,000 gallon steel tank at elevation 3760; Makaha 50,000 gallon redwood tank at elevation 3580; and the Puuhinahina 5,000 gallon steel tank at elevation 3500. Distribution from the three reservoirs services approximately 2,000 people and 130 service connections with an estimated average day demand of 0.036 mgd and a maximum day demand of 0.054 mgd. The water system services leasehold residences, Kokee Lodge restaurant, Kokee Museum, Navy Makaha Ridge facility and the Kokee State Park. The safe source capacity is not adequate to meet the existing maximum day demand. An increase to the system source capacity is recommended to meet the existing maximum day consumption and future uses. Future water demands for the park were not reported.

2.4.3.3. Na Pali Coast State Park Water System

The Na Pali Coast State Park water system is located at the end of Kuhio Highway in Haena State Park on the island of Kauai. The system is located in the Hanalei hydrological sector, and Napali system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The water system serves maintenance and campground facilities within the park. The nonpotable source for the water system is a stream diversion from the Milolii stream. Stream water is diverted through a 2-inch pipe and flows by gravity to the park facilities. The estimated existing water demand is 0.002 mgd. Information to determine the stream diversion capacity is not available and flow measurements are not recorded. System source capacity adequacy could not be determined. Future water demands for the park were not reported.

2.4.3.4. Polihale State Park Water System

The Polihale State Park water system is located at the end of a 5 mile dirt road off Kaunualii Highway past the Pacific Missile Range Facility on the island of Kauai. The system is located in the Waimea hydrological sector, and Kekaha system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The Polihale State Park water system is DOH public water system 426. The water system serves park comfort stations and outdoor shower facilities, accommodating approximately 300 transient park visitors a day. The source water is obtained from the Polihale (Kaulaula) well, State well number 0545-01, with a pumping capacity of 0.50 mgd. The safe source capacity is 0.33 mgd. The water is disinfected by gas chlorination at the well. Well water is pumped to a 10,000 gallon fiberglass reservoir at elevation 110 and into the distribution system. The estimated average day demand from the seasonal park visitors is 0.024 mgd, with a maximum day demand of 0.036 mgd. The source capacity is adequate to meet the existing maximum day demand. Future water demands for the park were not reported.

2.4.3.5. Wailua River State Park Water System

The Wailua River State Park water system is located off Kuhio Highway along Wailua River, outside Wailua on the island of Kauai. The system is located in the Lihue hydrological sector, and Wailua system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The water system serves a comfort station within the park. The nonpotable water source for the water system is currently being pumped from the Wailua River by a 0.03 mgd pump to the comfort station. The safe source capacity is 0.02 mgd. The estimated average day demand is 0.008 mgd and maximum day demand is 0.012 mgd. The average day demand from future park irrigation expansion is 0.003 mgd and a maximum day demand of 0.005 mgd. The safe source capacity is adequate to meet the estimated existing and future maximum day demands. The future potable demand projected by State Parks is 0.003 mgd. The County of Kauai DWS water system is anticipated to serve both existing and future potable demands.

2.4.3.6. Waimea Canyon State Park Water System

The Waimea Canyon State Park water system is located 11.1 miles North of Kekaha on Kokee Road within Waimea Canyon on the island of Kauai. The system is located in the Waimea hydrological sector, and Waimea system. The water system is owned and operated by the State of Hawaii and managed by the DLNR-State Parks. The water system serves a comfort station within the park. The nonpotable source for the water system is a stream diversion from the Kokee Ditch. Stream water is pumped to the comfort station using a 0.04 mgd pump. The safe source capacity is 0.03 mgd. The estimated water average day demand is 0.008 mgd and maximum day demand is 0.012 mgd. The source capacity is adequate to meet current maximum day demand. Future water demands for the park were not reported.

2.5. STATE WATER SYSTEMS WITH SURPLUS CAPACITY

Based on the evaluation of source capacity and existing maximum day consumption, a summary of State water systems with surplus source capacity is presented in **Table 2.3**. Existing State irrigation systems with major planned expansions should conduct design reports and water balance calculations to reevaluate system source and storage capacities. State Parks water systems supplied by surface water were not evaluated for surplus source capacity because source capacity could not be determined. The stream flows supplying the State Parks systems are not gauged or measured.

Table 2.3
State Water Systems with Surplus Capacity

Water System Name	State Agency	Surplus Source Capacity (Excess Source Capacity in mgd)	Future Ave. Day Demand (mgd)
Kekaha Irrigation System	DOA	Yes (0.81)	0.750
Anahola Water System	DHHL	Yes (0.49)	0.29
Haena SP	DLNR	a ¹	0.054
Na Pali Coast SP	DLNR	a ¹	0.000
Waimea Canyon SP	DLNR	Yes (0.02)	0.000
Kokee SP	DLNR	No	0.000
Polihale SP	DLNR	Yes (0.29)	0.000
Wailua River SP	DLNR	Yes (0.01)	0.003

a¹ Stream flow not gauged, unable to determine source capacity adequacy.

a² Updated water budget recommended. Water budget to determine source capacity adequacy.

a³ Source obtained from County Water Department, source analysis to be performed in WUDP/OWMP.

CHAPTER 3

PROPOSED WATER-RELATED STATE PROJECTS

3.1. GENERAL

The State of Hawaii, in its effort to satisfy the many needs of the public, has numerous projects scheduled for implementation by the various State departments. In order to anticipate the future water requirements of proposed State projects, an inventory of State projects requiring water was compiled. State departments were contacted for their proposed project listings and schedules. The collected data was reviewed and sorted to obtain a listing of future projects. The project data was used as the basis for water resource planning, water system improvements and source development. In general, projects involving new housing developments, agriculture/irrigation projects, major facilities or major expansions were considered as having significant impact on water resources.

3.2. EVALUATION AND METHODOLOGY OF SWPP WATER DEMAND

3.2.1. Evaluation of SWPP Project Information

The status of State projects and water requirement information submitted for the SWPP varied from the planning stage, engineering stage to the final design stage. Project information in the planning stage remained conceptual and schematic, with water demand units or areas grossly estimated. Project information in the engineering stage was based on the project design. Project information in the final design stage had water demand requirements based on construction documents, typically plumbing fixture units, and known units or areas.

Project information received through the SWPP survey forms were reviewed for completeness and accuracy. Generally, project water demand calculations were made to conform to Water System Standards domestic consumption guidelines (refer to **Table 3.1**) to determine average day water demands. The use of standard guidelines to compute water demands allows consistency of projected water demands among all State departments and other components of the Hawaii Water Plan.

However some State projects specified primary water uses not classified by Water System Standards. Project water demands were calculated using unit rates from other reference sources such as: DOH Wastewater Standards, American Society of Heating and Refrigeration and Air Condition, engineering studies and historical consumption records. These unit rates are shown on **Table 3.2**.

**Table 3.1
Domestic Consumption Guideline
Average Daily Demand***

Zone	Hawaii	Kauai	Maui	Oahu
RESIDENTIAL:				
Single Family or Duplex	400 gal/unit	500 gal/unit	600 gal/unit or 3000 gal/acre	500 gal/unit or 2500 gal/acre
Multi-Family Low Rise	400 gal/unit	350 gal/unit	560 gal/unit or 5000 gal/acre	400 gal/unit or 4000 gal/acre
Multi-Family High Rise	400 gal/unit	350 gal/unit	560 gal/unit	300 gal/unit
COMMERCIAL:	3000 gal/acre	3000 gal/acre	6000 gal/acre	3000 gal/acre
Commercial/Industry Mix	--	500 gal/acre	140 gal/1000 sq. ft.	100 gal/ 1000 sq. ft.
Commercial/Residential Mix	--	3000 gal/acre	140 gal/1000 sq. ft.	120 gal/1000 sq. ft.
RESORT (To include hotel for Maui only):	400 gal/unit	350 gal/unit	350 gal/unit or 17000 gal/acre	350 gal/unit or 4000 gal/acre
LIGHT INDUSTRY:	4000 gal/acre	4000 gal/acre	6000 gal/acre	4000 gal/acre
SCHOOLS, PARKS:	4000 gal/acre or 60 gal/student	2500 gal/acre plus 20 gal/student	1700 gal/acre or 60 gal/student	4000 gal/acre or 60 gal/student
HOSPITAL:			1800 gal/acre	
AGRICULTURAL:			5000 gal/acre	

*Where two or more figures are listed for the same zoning, the daily demand resulting in higher consumption use shall govern the design unless specified otherwise.

Note: Table 3.1 is taken from Table 15, Domestic Consumption Guideline Average Daily Demand, Water System Standards, State of Hawaii, 1985, Volume I.

**Table 3.2
Department Specific Unit Rates**

State Department	Zone	Primary Use	Consumption Guideline Average Daily Demand	Remarks	Source
DOA	Agriculture	Nonpotable Irrigation	5000 gals/acre	Planning Level	DOA
DOE	New Cafeteria	Potable	3 gals/meal	Design Level	American Society of Heating, Refrigeration, and Air Conditioning
	New Gymnasium	Potable	20 gals/student	Planning Level Assumed 200 students	DOE
DLNR-BOATING	Harbor Ships/Piers	Potable	50 gals/boat	Non-Live In	DLNR-Boating
			250 gals/boat	Live In	DLNR-Boating
DLNR-PARKS	Parks- Restroom Facility	Potable or Nonpotable	5 gals/park user	w/out showers Assumed 1000 park users/day	DOH
			10 gals/park user	w/ showers Assumed 1000 park users/day	DOH
DPS	Correctional Facility	Potable	150 gals/inmate	Planning Level	DPS
DOT-HIGHWAYS	Landscaping	Nonpotable Irrigation	6000 – 12000 gals/acre	Range for Temporary Irrigation	DOT-Highways
			8000 gals/acre	Temp. Irrig. Average	DOT-Highways
			2000 gals/acre	Permanent	DOT-Highways

3.2.2. Project Water Demand Calculation Methodology

SWPP project water demands were calculated using the following methodology:

- 1) Demands for projects that conform to the Water System Standards Land Use Types were based on project units or areas, then multiplied by the standard unit rates to determine the average day demand. Examples include: *New School*, used projected student enrollment multiplied by 60 gals/student (depending on island); *Residential Housing* on Oahu, used number of residential units multiplied by 500 gals/unit.
- 2) Other references and assumptions to determine unit rates and method of demand calculations were used for projects that do not conform to Water System Standard Land Use Types, as discussed below.

3.2.2.1. Non-Standard Guidelines and Methods

The following guidelines and methods were used to calculate and verify SWPP project average day demands for projects with land use types not specified in Water System Standards:

- 1) Agricultural Parks/Subdivisions: Use agricultural irrigation area, and then multiply by 5,000 gal/acre to determine irrigation demand.
- 2) DOE-New Classrooms at Existing School for Projected Increase in Student Enrollment: Determine the projected increased student enrollment or proposed number of new classrooms. If water demand based on the number of classrooms, multiply classrooms by 30 students per classroom. If water demand based on increased students, multiply projected number of students by 60 gal/student to determine potable demand.
- 3) DOE-New Administration Building/Library/Renovation to Classroom at Existing School: Determine the floor area, and then multiply by Water System Standard Commercial/Industrial Mix unit rate to determine the potable demand.
- 4) DOE-New Cafeteria at Existing School: Determine the total enrollment of students, and then multiply by 3 gal/student to determine potable demand.
- 5) DOE-New Gymnasium at Existing School: Determine number of students using gymnasium per day, assume fall sports season = 200 students, multiply by 20 gal/student to determine the potable demand.
- 6) Expansion of Correctional Facility: Determine the number of additional inmates, and then multiply by 150 gal/inmate to determine potable demand.

- 7) Harbor/Boat Slips and Piers: Determine number of boats, and then multiply by 50 gal/boat (non-live in situation) or 250 gal/boat (live in situation) to determine the potable demand.
- 8) Highway Landscaping: Determine the landscaped highway area, and then multiply by 8,000 gal/acre for temporary landscaping demand. The temporary landscaping period lasts for the first two years of project. Use a reduced unit rate of 2,000 gal/acre for the permanent landscaping demand.
- 9) New State Building: Determine building floor area based on number of floors in building and use Water System Standard, Commercial/Industrial Mix unit rate to determine the potable demand. Landscaping demand was determined using landscape area multiplied by Water System Standard, Parks unit rate.
- 10) Renovation to State Building/Facility: Determine renovated floor area, and then multiply by Water System Standard Commercial/Industrial Mix unit rate to determine the potable demand.
- 11) Restroom/Park Facility: Determine the projected number of park users, if park projection not available, assume 1,000 park users/day, multiply by 5 gal/park user (facility without showers) or 10 gal/park user (facility with showers) to determine park demand.

3.3. SWPP PROJECT WATER DEMAND

3.3.1. SWPP Project Water Demands for the Island of Kauai

The individual State projects and water demands located on the island of Kauai are listed in tabular form separated by Department in **Appendix B**, by Island in **Appendix C** and by Aquifer Sector/System in **Appendix D**.

SWPP project data was updated by DLNR in September 2002 through coordination of each State department. Project water demands were revised based department input and current project status. SWPP project data will be updated every two years by DLNR.

The total project water demands were sorted and summarized to report the yearly cumulative average day demands throughout the 20-year planning period. **Table 3.3** reports the projected water demand for SWPP projects by State department. **Table 3.4** summarizes the sustainable yields, permitted water use (if applicable) and SWPP projected 2020 demands for each aquifer sector and system. The table provides an overview of future State water requirements in relation with current permitted water use and available sustainable yields. **Figure 3.1** shows the map of the island of Kauai hydrological sectors and aquifer systems.

Table 3.3
Total Projected Demands on the Island of Kauai by State Department

Department	Total Additional Yearly Projected Cumulative Average Day Demand (mgd)							
	2001	2002	2003	2004	2005	2010	2015	2020
DAGS	0.002	0.003	0.003	0.088	0.088	0.088	0.088	0.088
DOA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DBEDT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DOD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DOE	0.043	0.044	0.159	0.159	0.159	0.192	0.192	0.192
DHHL	0.136	0.136	0.276	0.276	0.276	0.907	0.921	0.921
DOH	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DHS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Judiciary	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DLNR	0.058	0.116	0.140	0.141	0.141	0.171	0.171	0.172
DPS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DOT	0.011	0.016	0.250	0.254	0.221	0.147	0.193	0.244
UH	0.010	0.010	0.010	0.020	0.020	0.020	0.020	0.020
Kauai	0.261	0.325	0.838	0.937	0.905	1.524	1.584	1.636
State Totals	12.194	18.089	25.221	26.586	33.204	69.421	76.554	80.874

Table 3.4
Summary of SWPP Projected Water Demands, Sustainable Yield, and Permitted Water Use by Aquifer System

Island	Aquifer Sector	Sector No.	Aquifer System	System No.	Sus. Yield (MGD)	Permitted Water Use (MGD)	SWPP 2018 Nonpotable Demand (MGD)	SWPP 2018 Potable Demand (MGD)	SWPP 2018 Total Demand (MGD)	
KAUAI	LIHUE	201			183	N/A	3.28737	0.60065	3.88802	
			KOLOA	20101	30		0.00755	0.03686	0.04441	
			HANAMAULU	20102	40		0.13242	0.24333	0.37575	
			WAILUA	20103	60		1.01740	0.00517	1.02257	
			ANAHOLA	20104	36		2.13000	0.31302	2.44302	
			KILAUEA	20105	17		0.00000	0.00227	0.00227	
	HANAIEI	202				95	N/A	0.02137	0.03503	0.05640
			KALIHIAWAI	20201	16		0.00000	0.00000	0.00000	
			HANAIEI	20202	35		0.00101	0.00139	0.00240	
			WAINIHA	20203	24		0.03402	0.01998	0.05400	
			NAPALI	20204	20		0.00000	0.00000	0.00000	
	WAIMEA	203				110	N/A	0.03758	0.05148	0.08906
			KEKAHA	20301	12		0.00000	0.04500	0.04500	
			WAIMEA	20302	42		0.00000	0.00150	0.00150	
			MAKAWELI	20303	30		0.03758	0.00198	0.03956	
			HANAPEPE	20304	26		0.00000	0.00300	0.00300	

NOTE: Permitted Water Use as of September 2000.

3.3.2. Issues, Concerns and Uncertainties Related to Project Demands

The issues, concerns and uncertainties raised in this section are based on discussions with departmental contacts, evaluation of SWPP survey data and calculation of SWPP project water demands. The comments and recommendations are provided for discussion purposes only and suggest ways of improving the gathering of more accurate SWPP data in the future.

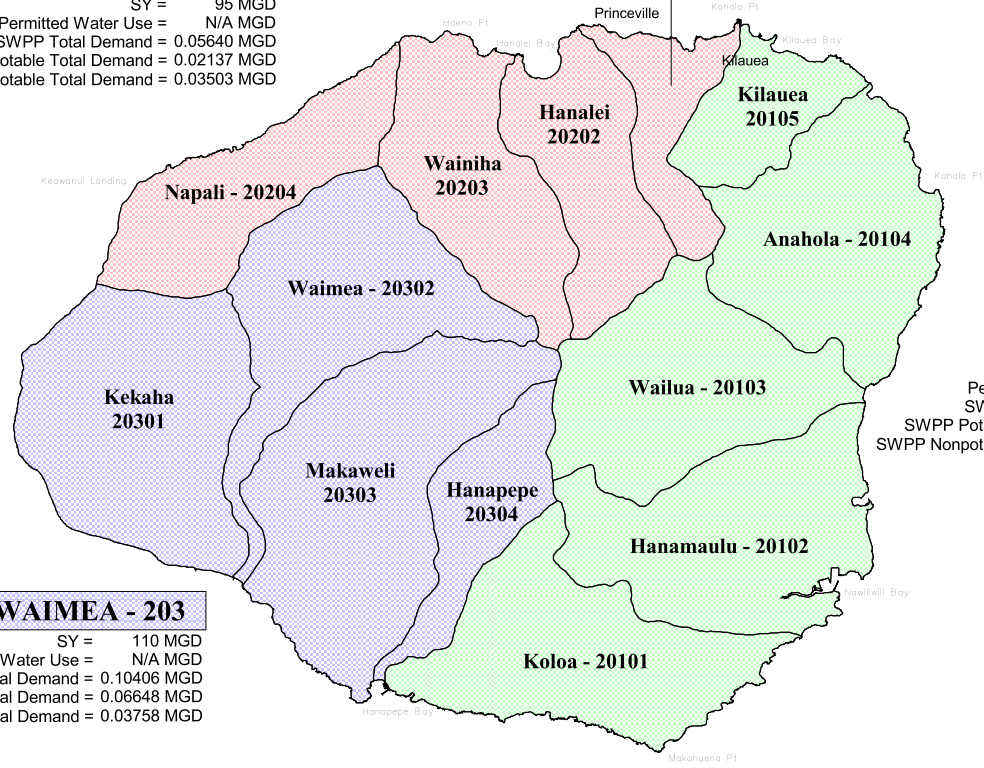
- 1) Improve the project coordination among the various divisions and branches within departments. Recommend maintaining an updated list and information of all future department projects.
- 2) Establish a uniform method of calculating projected water demand by using standard land use types of units and areas, unit rates based on either Water System Standards or other accepted references. Establish uniform consumption guidelines for State departments to follow while projecting future water demand and reviewing submitted project demands. Generally, project water demands computed from Water System Standards represent planning level demands. Project demands should be reevaluated or calculated when additional or design information becomes available.
- 3) Water demand information of projects that do not receive funding or encounter funding delays by the legislature should be maintained and kept current. Projects in the initial planning phase generally have limited data to compute project water demands.
- 4) Modifications or changes to CIP projects brought on by funding issues, project priority status, or departmental policies may affect the completion and water requirements of State projects.

Establish a uniform method of calculating project average day demand based on plumbing fixture units. Establish uniform guidelines or range of demands to convert project water demands from gallons per minute to gallon per day for various land uses. A comparison of the actual metered water consumption and estimated demand projection upon project completion is recommended.

HANALEI - 202

SY = 95 MGD
 Permitted Water Use = N/A MGD
 SWPP Total Demand = 0.05640 MGD
 SWPP Potable Total Demand = 0.02137 MGD
 SWPP Nonpotable Total Demand = 0.03503 MGD

Kalihiwai - 20201



LIHUE - 201

SY = 183 MGD
 Permitted Water Use = N/A MGD
 SWPP Total Demand = 1.47569 MGD
 SWPP Potable Total Demand = 0.68877 MGD
 SWPP Nonpotable Total Demand = 0.78691 MGD

WAIMEA - 203

SY = 110 MGD
 Permitted Water Use = N/A MGD
 SWPP Total Demand = 0.10406 MGD
 SWPP Potable Total Demand = 0.06648 MGD
 SWPP Nonpotable Total Demand = 0.03758 MGD



LEGEND:
HANALEI - 202 Hydrological Sector - No.
 Kalihiwai - 20201 Aquifer System - No.

CHAPTER 4
SWPP WATER DEVELOPMENT STRATEGY

4.1. WATER DEVELOPMENT STRATEGY – ISLAND OF KAUAI

The source options were assigned to each SWPP project on the island of Kauai as described in the SWPP Water Development Strategy. Each SWPP project was categorized into a SWPP Water Development Strategy option, detailed in **Table 4.1**. The objective of the strategy was to determine projects with source and water system options to supply project water needs and identify SWPP projects without source and water system options. SWPP projects without source or system options were classified as “remain or unmet project demand”. The unmet project demand is the basis for future planning and development of source and water system improvements.

4.2. SWPP PROJECT DEMAND OVERVIEW

The remaining balance of unmet project demand for the island of Kauai is shown on **Table 4.2**. A graph of the remaining potable and nonpotable demands is shown on **Figure 4.1**. The SWPP Water Development Strategy options account for nearly 58% of the total Kauai SWPP project demand. Strategy options supplying the majority of the projected demand include: existing State water systems, private water agreement and new State water system. The remaining unmet project demand is made up of smaller State projects involving renovations, additions and improvements to existing State facilities. A list of SWPP projects with significant demand requirements (>0.10 mgd) was compiled to identify projects with the greatest potential to impact existing water system components and require system improvements. These projects are shown on **Table 4.3**. The majority of the projects with significant demands have identified strategy source options.

Table 4.2
Water Development Strategy Summary – Kauai

State Water Demand Status	SWPP Project (Potable and Nonpotable) Water Demands (mgd)							
	2001	2002	2003	2004	2005	2010	2015	2020
Total SWPP Water Demand for Kauai	0.26	0.32	0.84	0.94	0.90	1.52	1.58	1.64
Demand Accounted for by Water Development Strategy	0.17	0.19	0.32	0.32	0.32	0.95	0.95	0.95
Remaining Water Demand Balance to be Accommodated by County Water System or State Well Development	0.09	0.13	0.52	0.62	0.59	0.58	0.64	0.69

TABLE 4.1
SWPP UPDATE - KAUAI WATER DEVELOPMENT STRATEGY

DEPT	SWPP PROJECT NAME	PRIMARY USE	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								STRATEGY OPTION	SYSTEM OR SOURCE
				SHORT-TERM				LONG-TERM					
				02001	02002	02003	02004	02005	02010	02015	02020		
	ISLAND OF KAUAI			0.26088	0.32499	0.83828	0.93690	0.90469	1.52412	1.58432	1.63614	SWPP Total Project Demand for Island of Kauai	
	SWPP Projects Within Existing State Water Systems (#1)												
DHHL	ANAHOLA - FARM LOTS UNIT 1A INCREMENT 2	POTABLE	LIHUE	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - HUNDLEY ROAD	POTABLE	LIHUE	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS BAYVIEW/G, G1	POTABLE	LIHUE	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS J & K	POTABLE	LIHUE						0.01100	0.01100	0.01100	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS M	POTABLE	LIHUE						0.02000	0.02000	0.02000	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS UNIT 3	POTABLE	LIHUE	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS UNIT 4	POTABLE	LIHUE	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA - RESIDENCE LOTS UNIT 5	POTABLE	LIHUE	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA UNIT 6	POTABLE	LIHUE			0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	EXSW-ANAHOLA WATER SYSTEM	STATE
DHHL	ANAHOLA VILLAGE RESIDENCE LOTS	POTABLE	LIHUE	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	EXSW-ANAHOLA WATER SYSTEM	STATE
DLNR-PARKS	HAENA SP	POTABLE	HANALEI	0.01258	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	EXSW-HAENA STATE PARK WATER SYSTEM	STATE
DLNR-PARKS	HAENA SP	NONPOTABLE	HANALEI	0.02142	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	EXSW-HAENA STATE PARK WATER SYSTEM	STATE
				0.17000	0.19000	0.31500	0.31500	0.31500	0.34600	0.34600	0.34600	Subtotal SWPP Projects Within Existing State Water Systems (#1)	
	SWPP Projects Within Existing Master Plans (#2)												
	No SWPP Projects												
	SWPP Projects Within Existing State or Private Sources (#3)												
	No SWPP Projects												
	SWPP Projects with County Water Department and/or Private Water Agreements (#4)												
DAGS-PM	NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	POTABLE	HANALEI	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	COUNTY-PRIVATEAGREE	PRIVATE
DAGS-PM	NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	NONPOTABLE USING POTABLE	HANALEI	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	COUNTY-PRIVATEAGREE	PRIVATE
				0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	Subtotal SWPP Projects with County Water Department and/or Private Water Agreements (#4)	
	SWPP Projects with County Water Department Water Agreements - Use of Water Allocation Credits (#5)												
	No SWPP Projects												
	SWPP Projects Assigned to New/Planned State Wells (#6)												
	No SWPP Projects												
	SWPP Projects Within New State Water Systems (#7)												
DHHL	ANAHOLA - NORTH (IRRIG)	NONPOTABLE	LIHUE						0.60000	0.60000	0.60000	NEWS	STATE
				0.00000	0.00000	0.00000	0.00000	0.00000	0.60000	0.60000	0.60000	Subtotal SWPP Projects Within New State Water Systems (#7)	

TABLE 4.1
SWPP UPDATE - KAUAI WATER DEVELOPMENT STRATEGY

DEPT	SWPP PROJECT NAME	PRIMARY USE	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								STRATEGY OPTION	SYSTEM OR SOURCE
				SHORT-TERM				LONG-TERM					
				02001	02002	02003	02004	02005	02010	02015	02020		
	ISLAND OF KAUAI			0.26088	0.32499	0.83828	0.93690	0.90469	1.52412	1.58432	1.63614	SWPP Total Project Demand for Island of Kauai	
	SWPP Projects Assigned to Planned Private Sources (#8)												
	No SWPP Projects												
	Remaining Unmet SWPP Projects to be Supplied by DWS (#9)												
DAGS-PL	KAUAI JUDICIARY COMPLEX	NONPOTABLE USING POTABLE	LIHUE				0.00799	0.00799	0.00799	0.00799	0.00799	REMAIN-DAGS-PM	PRIVATE/COUNTY
DAGS-PL	LIHUE MULTI-AGENCY MAINTENANCE FACILITY, PHASE II	POTABLE	LIHUE		0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	REMAIN-DAGS-PM	COUNTY
DAGS-PL	KAUAI JUDICIARY COMPLEX	POTABLE	LIHUE				0.07644	0.07644	0.07644	0.07644	0.07644	REMAIN-DAGS-PM	PRIVATE/COUNTY
DAGS-PL	LIHUE MMSF, PHASE 2D AND 3	POTABLE	LIHUE			0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	REMAIN-DAGS-PM	COUNTY
DHHL	MOLOAA - FARM LOTS	POTABLE	LIHUE							0.01000	0.01000	REMAIN-DHHL	COUNTY
DHHL	MOLOAA - PASTURE LOTS	POTABLE	LIHUE							0.00400	0.00400	REMAIN-DHHL	COUNTY
DHHL	KEKAHA RESIDENCE LOTS	POTABLE	WAIMEA			0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	REMAIN-DHHL	COUNTY
DLNR-BOATING	WAIKAEA BOAT HARBOR IMPROVEMENTS	POTABLE	LIHUE			0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	REMAIN-DLNR(BOATING)	COUNTY
DLNR-BOATING	NA WILIWILI BOAT HARBOR	POTABLE	LIHUE						0.00500	0.00500	0.00500	REMAIN-DLNR(BOATING)	COUNTY
DLNR-BOATING	KIKIAOLA BOAT HARBOR IMPROVEMENTS	POTABLE	WAIMEA	0.02250	0.02250	0.02250	0.02250	0.02250	0.04500	0.04500	0.04500	REMAIN-DLNR(BOATING)	COUNTY
DLNR-PARKS	MALAE HEIAU	NONPOTABLE USING POTABLE	LIHUE			0.01612	0.01612	0.01631	0.01649	0.01667	0.01740	REMAIN-DLNR(PARKS)	COUNTY
DLNR-PARKS	RUSSIAN FORT ELIZABETH SHP	NONPOTABLE USING POTABLE	WAIMEA	0.00059	0.03641	0.03660	0.03680	0.03699	0.03758	0.03758	0.03758	REMAIN-DLNR(PARKS)	COUNTY
DLNR-PARKS	AHUKINI SRP	POTABLE	LIHUE	0.00021	0.00027	0.00034	0.00041	0.00048	0.00069	0.00069	0.00069	REMAIN-DLNR(PARKS)	COUNTY
DLNR-PARKS	WAILUA RIVER SP	POTABLE	LIHUE	0.00090	0.00121	0.00151	0.00181	0.00211	0.00301	0.00301	0.00301	REMAIN-DLNR(PARKS)	COUNTY
DLNR-PARKS	MALAE HEIAU	POTABLE	LIHUE			0.00199	0.00199	0.00202	0.00204	0.00206	0.00215	REMAIN-DLNR(PARKS)	COUNTY
DLNR-PARKS	RUSSIAN FORT ELIZABETH SHP	POTABLE	WAIMEA	0.00003	0.00192	0.00193	0.00194	0.00195	0.00198	0.00198	0.00198	REMAIN-DLNR(PARKS)	COUNTY
DOE	KAPAA II ELEM SCH IST & 2ND INCREMENT	NONPOTABLE USING POTABLE	LIHUE			0.03000	0.03000	0.03000	0.03000	0.03000	0.03000	REMAIN-DOE	COUNTY
DOE	LIHUE/PUHI ELEM SCHOOL IST & 2ND INCREMENT	NONPOTABLE USING POTABLE	LIHUE			0.03000	0.03000	0.03000	0.03000	0.03000	0.03000	REMAIN-DOE	COUNTY
DOE	KOLOA ELEMENTARY NEW 6 CLASSROOM	NONPOTABLE USING POTABLE	LIHUE			0.00750	0.00750	0.00750	0.00750	0.00750	0.00750	REMAIN-DOE	COUNTY
DOE	KAPAA ELEMENTARY NEW ADMINISTRATION	POTABLE	LIHUE			0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	REMAIN-DOE	COUNTY
DOE	KAPAA ELEMENTARY NEW LIBRARY	POTABLE	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	REMAIN-DOE	COUNTY
DOE	KAPAA HIGH SCHOOL NEW ADMINISTRATION	POTABLE	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	REMAIN-DOE	COUNTY
DOE	KAPAA II ELEM SCH IST & 2ND INCREMENT	POTABLE	LIHUE			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	REMAIN-DOE	COUNTY
DOE	KAUAI INTERMEDIATE (BALANCE OF INCREMENTS)	POTABLE	LIHUE	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	REMAIN-DOE	COUNTY
DOE	KING KAUMUALII ELEM ADMIN BUILDING	POTABLE	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	REMAIN-DOE	COUNTY
DOE	LIHUE/PUHI ELEM SCHOOL IST & 2ND INCREMENT	POTABLE	LIHUE			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	REMAIN-DOE	COUNTY
DOE	KILAUEA ELEMENTARY NEW ADMINISTRATION	POTABLE	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	REMAIN-DOE	COUNTY
DOE	KILAUEA ELEMENTARY NEW CAFETERIA	POTABLE	LIHUE			0.00150	0.00150	0.00150	0.00150	0.00150	0.00150	REMAIN-DOE	COUNTY
DOE	KILAUEA ELEMENTARY NEW LIBRARY	POTABLE	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	REMAIN-DOE	COUNTY
DOE	KOLOA ELEMENTARY NEW 6 CLASSROOM	POTABLE	LIHUE			0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	REMAIN-DOE	COUNTY
DOE	KUKUIULA ELEMENTARY SCHOOL	POTABLE	LIHUE						0.03300	0.03300	0.03300	REMAIN-DOE	COUNTY
DOE	KALHEO ELEMENTARY NEW ADMINISTRATION	POTABLE	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	REMAIN-DOE	COUNTY
DOE	WAIMEA HIGH SCHOOL NEW LIBRARY	POTABLE	WAIMEA			0.00088	0.00088	0.00088	0.00088	0.00088	0.00088	REMAIN-DOE	COUNTY

TABLE 4.1
SWPP UPDATE - KAUAI WATER DEVELOPMENT STRATEGY

DEPT	SWPP PROJECT NAME	PRIMARY USE	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								STRATEGY OPTION	SYSTEM OR SOURCE
				SHORT-TERM				LONG-TERM					
				02001	02002	02003	02004	02005	02010	02015	02020		
	ISLAND OF KAUAI			0.26088	0.32499	0.83828	0.93690	0.90469	1.52412	1.58432	1.63614	SWPP Total Project Demand for Island of Kauai	
	Remaining Unmet SWPP Projects to be Supplied by DWS (#9) CONTINUED												
DOE	WAIMEA HS - RENOV BLDGS C & H 7 CLSRM	POTABLE	WAIMEA		0.00063	0.00063	0.00063	0.00063	0.00063	0.00063	0.00063	REMAIN-DOE	COUNTY
DOT-AIR	LIHUE AIRPORT MASTER PLAN	POTABLE	LIHUE	0.00800	0.01300	0.01500	0.01900	0.02400	0.05200	0.09500	0.14500	REMAIN-DOT AIRPORTS	COUNTY
DOT-AIR	PORT ALLEN AIRPORT MASTER PLAN	POTABLE	LIHUE	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00400	REMAIN-DOT AIRPORTS	COUNTY
DOT-HARBORS	KAUAI COMMERCIAL HARBORS - 2025 MASTER PLAN: COMMERCIAL/NAVY VESSEL BERTHING	POTABLE	WAIMEA							0.00300	0.00300	REMAIN-DOT HARBORS	COUNTY
DOT-HWY	KAUMUALII HWY IMPROVEMENTS, LIHUE TO WEST OF MALUHIA	NONPOTABLE USING POTABLE	LIHUE			0.23200	0.23200	0.05800	0.05800	0.05800	0.05800	REMAIN-DOT HIGHWAYS	COUNTY
DOT-HWY	KUHIHO HWY, HANAMAULU TO KAPAA	NONPOTABLE USING POTABLE	LIHUE					0.13600	0.03400	0.03400	0.03400	REMAIN-DOT HIGHWAYS	COUNTY
UH	KAUAI COMMUNITY COLLEGE - OCET FACILITIES	NONPOTABLE USING POTABLE	LIHUE				0.00202	0.00202	0.00202	0.00202	0.00202	REMAIN-UH	COUNTY
UH	KAUAI COMMUNITY COLLEGE - ADDITION TO BLDG 4463C ELECT TECH	POTABLE	LIHUE	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	REMAIN-UH	COUNTY
UH	KAUAI COMMUNITY COLLEGE - OCET FACILITIES	POTABLE	LIHUE				0.00760	0.00760	0.00760	0.00760	0.00760	REMAIN-UH	COUNTY
UH	KAUAI COMMUNITY COLLEGE - RENOV, CAMPUS CENTER FOR CULINARY ARTS	POTABLE	LIHUE	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	REMAIN-UH	COUNTY
				0.08848	0.13259	0.52088	0.61950	0.58729	0.57572	0.63592	0.68774	Remaining Unmet SWPP Projects to be Supplied by DWS (#9)	
	Other Strategy Consideration												
	Nonpotable Demand to be Met by Nonpotable Sources (by Hydrological Sector)												
	LIHUE-201	NONPOTABLE		0.00000	0.00000	0.00000	0.00000	0.00000	0.60000	0.60000	0.60000		
	HANAIEI-202	NONPOTABLE		0.02142	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402		
	WAIMEA-203	NONPOTABLE		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		
				0.02142	0.03402	0.03402	0.03402	0.03402	0.63402	0.63402	0.63402	Subtotal Nonpotable Demand to be Met by Nonpotable Sources (by Hydrological Sector)	
	Additional Nonpotable Demand to be Met by Potable Sources (by Hydrological Sector)												
	LIHUE-201	NONPOTABLE USING POTABLE		0.00000	0.00000	0.31562	0.32563	0.28782	0.18600	0.18618	0.18691		
	HANAIEI-202	NONPOTABLE USING POTABLE		0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101		
	WAIMEA-203	NONPOTABLE USING POTABLE		0.00059	0.03641	0.03660	0.03680	0.03699	0.03758	0.03758	0.03758		
				0.00160	0.03742	0.35323	0.36344	0.32582	0.22459	0.22477	0.22550	Subtotal Additional Nonpotable Demand to be Met by Potable Sources (by Hydrological Sector)	
			Total Nonpotable Demand Kauai=	0.02302	0.07144	0.38725	0.39746	0.35984	0.85861	0.85879	0.85952		

Figure 4.1
Total Yearly Cumulative Remaining Demand for Kauai

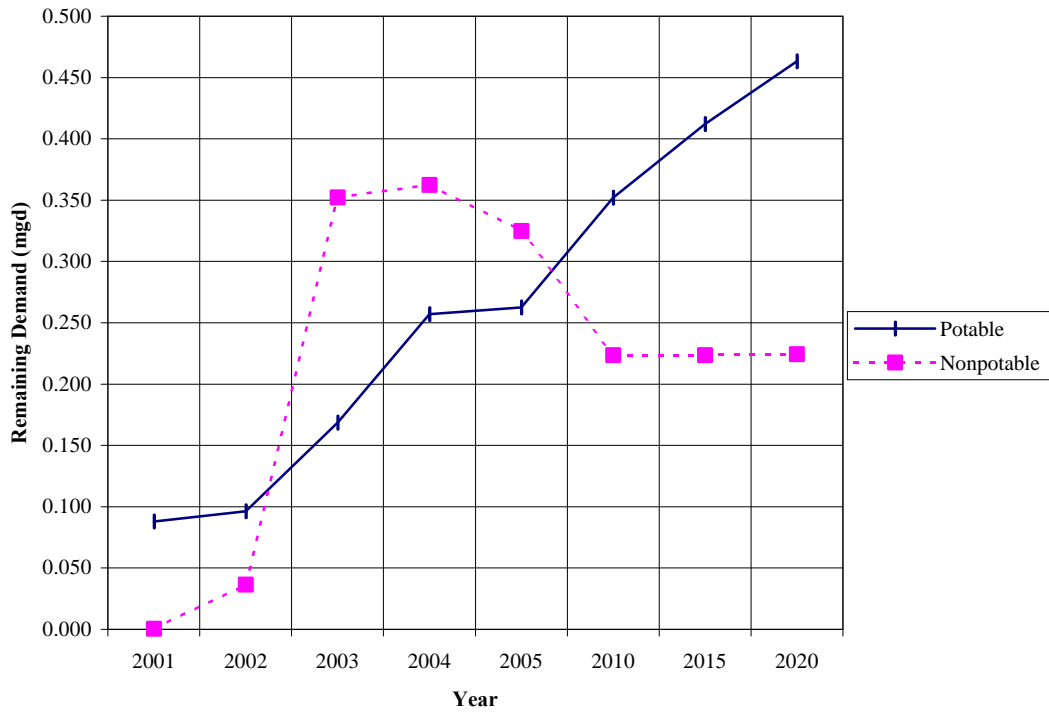


Table 4.3
SWPP Projects with Significant Water Demands (>0.10 mgd) - Kauai

SWPP Project	Primary Use	2020 Demand (mgd)	Water Development Strategy
Anahola – Various Projects	Potable	0.29	EXSWS – Anahola Water System
Anahola – North (Irrigation)	Nonpotable	0.60	NEWSS
Lihue Airport Master Plan	Potable	0.15	REMAIN-DOT Airports

4.3. EVALUATION OF WATER DEVELOPMENT STRATEGY OPTIONS

4.3.1. Existing State Water Systems (EXSWS)

4.3.1.1. Anahola Water System (EXSWS-Anahola Water System)

The Anahola water system is projected to supply 10 DHHL SWPP projects. The project potable demand is estimated at 0.29 mgd. The Anahola water system is owned and operated by DHHL. The potable source pumping capacity is 1.01 mgd with a safe source capacity of 0.67 mgd. The existing metered average day water consumption is 0.12 mgd. The total existing and future average day demand is 0.41 mgd and a maximum day demand of 0.62 mgd. The water system has adequate source capacity to accommodate the future potable demand. There are no other existing CIP projects or CIP funding reported for the system.

4.3.1.2. Haena State Park Water System (EXSWS-Haena State Park Water System)

The Haena State Park water system is planned to support the future increase at Haena State Park. The (DLNR-Parks) park expansion will require a potable demand of 0.02 mgd and nonpotable demand of 0.03 mgd. The estimated current consumption is 0.002 mgd. The total existing and future average day demand is 0.052 and a maximum day demand of 0.078 mgd. The stream diversion capacity is not available; source and system capacity will need to be investigated. A preliminary engineering report is recommended to study the existing stream diversion and water system.

4.3.2. Existing Master Plan (MASTERPLAN)

There are no existing master plans serving SWPP projects.

4.3.3. Existing State or Private Sources (EXSS)

There are no existing State or Private sources serving SWPP projects.

4.3.4. County and Private Water Agreements (COUNTY-)

The Princeville Corporation (COUNTY-PRIVATEAGREE) has agreed to provide water service from their private water system to the DAGS-Project Management, North Shore Public Library project. The project has a total demand of 0.002 mgd.

4.3.5 County and Private Water Agreements – Use of Water Allocation Credits (COUNTY-BWSWALL)

The State currently does not own water allocation from the County of Kauai, Department of Water.

4.3.6 New/Planned State Wells (NEWSS)

There are no new State wells planned for development.

4.3.7 New State Water Systems (NEWSWS)

A new State irrigation system is planned to supply the irrigation demand from the (DHHL) Anahola – North Irrigation project. The new system will remain separate from the existing Anahola water system, which supplies potable water to the Anahola area. The project proposes a new agricultural subdivision. New source development is required, however details plans have not been developed. A preliminary engineering report is recommended to study the source development and irrigation system.

4.3.8. Planned Private Sources (PLANPS)

There were no reported planned private sources available for SWPP projects.

4.3.9 Coordination of Unmet SWPP Project Demand with County Water Department (REMAIN)

The remaining balances of unmet potable and nonpotable project demands are summarized by hydrological sector in **Table 4.4**. It is anticipated that County water systems will be able to supply the unmet balance of State water demands in all hydrological sectors. DLNR will initiate discussions with the County of Kauai, Department of Water to determine the availability and feasibility of integrating State project demands into County water systems. DLNR will coordinate with the Department of Water on the development of new sources or water system improvements to supply unmet SWPP project demands, if required.

4.3.10 Other Strategy Considerations

The nonpotable project demand is approximately 53% of the total overall SWPP project water demand for the island of Kauai. Nearly all of the nonpotable demand remains in the Lihue hydrological sector. Existing State nonpotable resources will account for the majority of the nonpotable demands, however some of the remaining nonpotable demand is planned to be met by County potable water systems. There are several DOT-Highways projects involving highway landscaping, which plan on using County potable water systems to supply irrigation demands in the Lihue sector. Nonpotable source options, if available should be developed and further evaluated.

Table 4.4
Water Development Strategy Remaining Balance of Unmet SWPP Project Demand - Hydrologic Sector Kauai

Hydrologic Sector	Remaining Balance of Unmet SWPP Project Demands															
	Potable Demand (mgd)								Nonpotable Demand (mgd)							
	2001	2002	2003	2004	2005	2010	2015	2020	2001	2002	2003	2004	2005	2010	2015	2020
Hanalei																
Lihue	0.07	0.07	0.13	0.22	0.22	0.29	0.35	0.40			0.32	0.33	0.29	0.19	0.19	0.19
Waimea	0.02	0.03	0.04	0.04	0.04	0.06	0.07	0.07		0.04	0.04	0.04	0.04	0.04	0.04	0.04
TOTAL	0.09	0.10	0.17	0.26	0.26	0.35	0.42	0.47	0.00	0.04	0.36	0.37	0.33	0.23	0.23	0.23

4.4. RECOMMENDED WATER DEVELOPMENT STRATEGY ACTIONS

DLNR will coordinate the availability of water system capacity with the Department of Water Supply to meet future SWPP project demands. Based on the future SWPP project water requirements, County water systems appear able to serve project water demands because the cumulative demands per sector is < 1.0 mgd, as shown in **Table 4.4**. There are no recommendations to develop new State sources or partner in system improvements.

Additional recommendations are listed below.

A preliminary engineering report is recommended to study the existing stream diversion and water system components for the Haena State Park Water System.

A preliminary engineering report to evaluate source and irrigation system alternatives is recommended for the Anahola – North Irrigation project.

APPENDICES

**APPENDIX A
WELLS; STREAM DIVERSIONS,
STATE WATER SYSTEM DIAGRAMS**

State Water Projects Plan
Inventory of State Wells

DEPARTMENT	WELL NAME	STATE WELL NO.	ISLAND	USE	YR DRILLED
LAND & NATURAL RESOURCES	KALEPA RIDGE	0021-01	KAUAI	UNU	1967
NO STATE DEPARTMENT LISTED	KALEPA RIDGE	0120-02	KAUAI	UNU	1897
LAND & NATURAL RESOURCES	FERN GROTTTO 1	0221-01	KAUAI	UNU	1986
LAND & NATURAL RESOURCES	FERN GROTTTO 2	0221-02	KAUAI	OTH	1991
LAND & NATURAL RESOURCES	PUU OPAE DH9	0242-01	KAUAI	LOS	1963
AGRICULTURE	WAILUA	0320-02	KAUAI	UNU	1952
HEALTH	MAHELONA HOSP	0518-01	KAUAI	DIS	1973
HEALTH	MAHELONA HOSP	0518-02	KAUAI	OBS	1973
HEALTH	MAHELONA HOSP	0518-03	KAUAI	DIS	1975
HEALTH	MAHELONA HOSP	0518-04	KAUAI	DIS	1975
HEALTH	MAHELONA HOSP	0518-05	KAUAI	DIS	1975
BUSINESS ECONOMIC DEVELOPMENT & TOURISM	KAPAA	0519-01	KAUAI	UNU	1986
LAND & NATURAL RESOURCES	KAULAULA	0545-01	KAUAI	MUN	1967
LAND & NATURAL RESOURCES	KOKEE PARK A	0739-01	KAUAI	UNU	1986
LAND & NATURAL RESOURCES	KOKEE PARK B	0739-02	KAUAI	UNU	1986
LAND & NATURAL RESOURCES	KOKEE-NOE EXPL	0739-03	KAUAI	UNU	1996
LAND & NATURAL RESOURCES	KAWAIKOI STR DH5	0836-01	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH6	0836-02	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH4	0837-01	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH7	0837-02	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH3	0837-03	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH8	0837-04	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH2	0837-05	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	KAWAIKOI STR DH1	0837-06	KAUAI	LOS	1963
LAND & NATURAL RESOURCES	ALIOMANU	1020-04	KAUAI	UNU	1974
LAND & NATURAL RESOURCES	HANALEI	1329-01	KAUAI		1959
LAND & NATURAL RESOURCES	HANAPEPE RIDGE	5634-01	KAUAI	UNU	1961

State Water Projects Plan
Inventory of Stream Diversions

STREAM NAME/DIVERSION STRUCTURE	DEPT.	ISLAND	USETYPE	DIVERSION OWNER	DIVERSION OPERATOR	DIVERSION SYSTEM NAME	DIVERSION STRUCTURE NAME	TMK
ANAHOLA STREAM	DHHL	KAUAI	IRRIGATION	DHHL				
ELEKENINUI STREAM	DLNR	KAUAI	POTABLE	DLNR	DIVISION OF STATE PARKS	KOKEE STATE PARK		1-4-1:13
KOKEE DITCH	DLNR	KAUAI	POTABLE	DLNR	DIVISION OF STATE PARKS	STATE PARKS WAIMEA CANYON COMFORT STATION		1-2-1:3
MILOLII STREAM	DLNR	KAUAI	POTABLE	DLNR	DIVISION OF STATE PARKS	MILOLII		1-4-01:7
MOLOAA STREAM	DHHL	KAUAI	LIVESTOCK	DHHL				4-4-9-10
UNNAMED STREAM AT KEE BEACH HAENA	DLNR	KAUAI	POTABLE	DLNR	DIVISION OF STATE PARKS	ALLERTON HOUSE WATER SUPPLY		5-9-7:12
WAILUA RIVER	DLNR	KAUAI	POTABLE	DLNR	DIVISION OF STATE PARKS	PORTABLE PUMP FOR FERN GROTTO COMFORT STATION		3-9-2:6
WAIMEA RIVER	DHHL	KAUAI	AGRICULTURE	DLNR	KEKAHA SUGAR CO.	KOKEE/KEKAHA/PUU OPAE DITCH SYSTEM	KOKEE/KEKAHA/PUU OPAE DITCHES	4-1-2-01
WAIMEA RIVER TRIBUTARIES	DHHL	KAUAI		DLNR	LAND & NATURAL RESOURCES			

**State Water System Diagrams
have been removed for security reasons.**

**Please contact the
Commission on Water Resource Management
for more information.**

APPENDIX B
SWPP DEMAND TABLE BY DEPARTMENT

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
KAMAMALU BUILDING RENOVATIONS	POTABLE	OAHU	HONOLULU								0.00250	2-1-17:10	
PLANNING BRANCH CONT.													
LILIHA CIVIC CENTER	POTABLE	OAHU	HONOLULU						0.01007	0.01007	0.01007	NR	
LILIHA CIVIC CENTER	NONPOTABLE USING POTABLE	OAHU	HONOLULU						0.00893	0.00893	0.00893	NR	
MANOA PUBLIC LIBRARY	POTABLE	OAHU	HONOLULU	0.00067	0.00067	0.00067	0.00067	0.00067	0.00067	0.00067	0.00067	NR	
MANOA PUBLIC LIBRARY	NONPOTABLE USING POTABLE	OAHU	HONOLULU	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	0.00143	NR	
QUEEN LILIUOKALANI BLDG. EXPANSION	POTABLE	OAHU	HONOLULU			0.00160	0.00160	0.00160	0.00160	0.00160	0.00160	2-1-18:16	
STATE CAPITOL ANNEX (REPLACE DOH BUILDING)	POTABLE	OAHU	HONOLULU						0.00750	0.00750	0.00750	2-1-18: 46	
MILILANI MAUKA II ELEM SCH, FIRST INCREMENT	POTABLE	OAHU	PEARL HARBOR			0.05160	0.05160	0.05160	0.05160	0.05160	0.05160		
PEARL CITY HIGHLANDS ELEMENTARY SCHOOL, BUILDING E, SHOWER AND TOILET	POTABLE	OAHU	PEARL HARBOR	0.00005	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	9-7-36:122	
WAIPAHU ELEM SCH, DRAINAGE IMPROVEMENTS	POTABLE	OAHU	PEARL HARBOR	0.00160	0.00160	0.00160	0.00160	0.00160	0.00160	0.00160	0.00160	9-4-29:01	
NANAKULI ELEM SCHOOL, 8-CLASSROOM BLDG.	POTABLE	OAHU	WAIANAE	0.00129	0.00258	0.00258	0.00258	0.00258	0.00258	0.00258	0.00258	8-9-7:9	
NANAKULI PUBLIC LIBRARY	POTABLE	OAHU	WAIANAE						0.00151	0.00151	0.00151	NR	
NANAKULI PUBLIC LIBRARY	NONPOTABLE USING POTABLE	OAHU	WAIANAE						0.00643	0.00643	0.00643	NR	
KANEOHE CIVIC CENTER	POTABLE	OAHU	WINDWARD						0.00065	0.00065	0.00065	NR	
KANEOHE CIVIC CENTER	NONPOTABLE USING POTABLE	OAHU	WINDWARD						0.00112	0.00112	0.00112	NR	
KANEOHE DISTRICT COURT	POTABLE	OAHU	WINDWARD		0.00099	0.00099	0.00099	0.00099	0.00099	0.00099	0.00099	0.00198 NR	
KANEOHE DISTRICT COURT	NONPOTABLE USING POTABLE	OAHU	WINDWARD		0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00402 NR	
DAGS SUBTOTAL=				0.12449	0.60640	0.69071	0.77514	0.77514	0.95686	0.95686	0.99736		

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
DEPARTMENT OF AGRICULTURE													
WAIMEA IRRIGATION SYSTEM	NONPOTABLE	HAWAII	KOHALA	1.82500	1.82500	1.82500	1.82500	1.82500	1.82500	1.82500	1.82500	NR	
FUTURE SUBDIVISION IN HONOKAA	NONPOTABLE	HAWAII	WEST MAUNA KEA						7.00000	7.00000	7.00000	VARIOUS	
FUTURE SUBDIVISION IN PAAUILO	NONPOTABLE	HAWAII	WEST MAUNA KEA						1.25000	1.25000	1.25000	6-3-6	
FUTURE SUBDIVISION IN WAIMEA	NONPOTABLE	HAWAII	WEST MAUNA KEA						0.80000	0.80000	0.80000	6-3-6	
WAIMEA/PAAUILO WATERSHED PROJECT	NONPOTABLE	HAWAII	WEST MAUNA KEA						4.00000	4.00000	4.00000		
LANAI AGRICULTURAL PARK	NONPOTABLE	LANAI	CENTRAL						0.50000	0.50000	0.50000	4-9	
LOWER KULA WATERSHED PROJECT	NONPOTABLE	MAUI	CENTRAL					6.00000	6.00000	6.00000	6.00000		
UPCOUNTRY MAUI IRRIGATION PROJECT	NONPOTABLE	MAUI	CENTRAL	3.61000	3.61000	3.61000	3.61000	3.61000	3.61000	3.61000	3.61000	2-2, 2-3	
FUTURE SUBDIVISION IN PALAAU	NONPOTABLE	MOLOKAI	CENTRAL						1.50000	1.50000	1.50000	5-2-1	
MOLOKAI AGRICULTURAL PARK	NONPOTABLE	MOLOKAI	CENTRAL	1.32000	1.32000	1.32000	1.32000	1.32000	1.32000	1.32000	1.32000	5-2-1	
BARBERS POINT AGRICULTURAL PARK	POTABLE	OAHU	PEARL HARBOR								0.15500	9-1-31:01 POR, 25,26,37 POR	
FUTURE SUBDIVISION IN WAIKELE	NONPOTABLE	OAHU	PEARL HARBOR						5.50000	5.50000	5.50000	VARIOUS	
ROYAL KUNIA AGRICULTURAL PARK	POTABLE	OAHU	PEARL HARBOR			0.00999	0.00999	0.00999	0.00999	0.00999	0.00999	9-4-02	
ROYAL KUNIA AGRICULTURAL PARK	NONPOTABLE	OAHU	PEARL HARBOR			0.74997	0.74997	0.74997	0.74997	0.74997	0.74997	9-4-02	
WAIMANALO IRRIGATION SYSTEM	NONPOTABLE	OAHU	WINDWARD	0.75000	1.00000	1.25000	1.25000	1.25000	1.25000	1.25000	1.25000	NR	
DOA SUBTOTAL=				7.50500	7.75500	8.76496	8.76496	14.76496	35.31496	35.31496	35.46996		

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

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				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
DEPARTMENT OF BUSINESS ECONOMIC DEVELOPMENT & TOURISM												
ALOHA TOWER DEVELOPMENT CORPORATION												
ALOHA TOWER DEVELOPMENT	POTABLE	OAHU	HONOLULU		0.09300	0.09300	0.09300	0.09300	0.13400	0.13400	0.13400	NR
BARBERS POINT NAVAL AIR STATION REDEVELOPMENT COMMISSION												
KALAELOA COMMUNITY DEVELOPMENT DISTRICT (NONPOTABLE)	NONPOTABLE	OAHU	EWA CAPROCK						1.21	1.21	1.21	NR
KALAELOA COMMUNITY DEVELOPMENT DISTRICT (POTABLE)	POTABLE	OAHU	EWA CAPROCK						0.431	0.431	0.431	NR
CONVENTION CENTER AUTHORITY												
HAWAII CONVENTION CENTER	POTABLE	OAHU	HONOLULU	0.10000	0.15000	0.20000	0.25000	0.30000	0.30000	0.30000	0.30000	NR
HAWAII COMMUNITY DEVELOPMENT AUTHORITY												
BISHOP LEARNING SCIENCE CENTER	POTABLE	OAHU	HONOLULU				0.01000	0.01000	0.01000	0.01000	0.01000	2-1-60: 2
BISHOP LEARNING SCIENCE CENTER	NONPOTABLE USING POTABLE	OAHU	HONOLULU				0.00918	0.00918	0.00918	0.00918	0.00918	2-1-60: 2
COMMERCIAL PROJECT (LOT 1)	POTABLE	OAHU	HONOLULU				0.01385	0.01385	0.01385	0.01385	0.01385	2-1-15: POR. 9
COMMERCIAL PROJECT (LOT 1)	NONPOTABLE USING POTABLE	OAHU	HONOLULU				0.00420	0.00420	0.00420	0.00420	0.00420	2-1-15: POR. 9
COMMERCIAL PROJECT (LOT 2)	POTABLE	OAHU	HONOLULU				0.03593	0.03593	0.03593	0.03593	0.03593	2-1-15: POR. 9
COMMERCIAL PROJECT (LOT 2)	NONPOTABLE USING POTABLE	OAHU	HONOLULU				0.00440	0.00440	0.00440	0.00440	0.00440	2-1-15: POR. 9
HISTORIC PUMP STATION (LOT 5)	POTABLE	OAHU	HONOLULU			0.05273	0.05273	0.05273	0.05273	0.05273	0.05273	2-1-15: 43.44, POR. 9
HISTORIC PUMP STATION (LOT 5)	NONPOTABLE USING POTABLE	OAHU	HONOLULU			0.00328	0.00328	0.00328	0.00328	0.00328	0.00328	2-1-15: 43.44, POR. 9
JOHN A. BURNS SCHOOL OF MEDICINE	POTABLE	OAHU	HONOLULU					0.06360	0.06360	0.06360	0.06360	2-1-60: 9, 10
JOHN A. BURNS SCHOOL OF MEDICINE	NONPOTABLE USING POTABLE	OAHU	HONOLULU					0.01550	0.01550	0.01550	0.01550	2-1-60: 9, 10
KAKAAKO MAUKA PARK (QUEEN STREET)	NONPOTABLE USING POTABLE	OAHU	HONOLULU			0.00608	0.00608	0.00608	0.00608	0.00608	0.00608	2-3-07: 2
KAKAAKO WATERFRONT PARK IMPROVEMENTS	NONPOTABLE USING POTABLE	OAHU	HONOLULU				0.00916	0.00916	0.00916	0.00916	0.00916	2-1-60: POR 8, 3
KEWALO BASIN RETAIL/MARKET	POTABLE	OAHU	HONOLULU				0.02000	0.02000	0.02000	0.02000	0.02000	2-1-58: 1, 95
KEWALO BASIN RETAIL/MARKET	NONPOTABLE USING POTABLE	OAHU	HONOLULU				0.00916	0.00916	0.00916	0.00916	0.00916	2-1-58: 1, 95
PARKING STRUCTURE	NONPOTABLE USING POTABLE	OAHU	HONOLULU					0.00680	0.00680	0.00680	0.00680	2-1-60: 5, 6

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
HOUSING AND COMMUNITY & DEVELOPMENT CORPORATION OF HAWAII													
KEALAKEHE PLANNED COMMUNITY (LA'I'OPUA)	POTABLE	HAWAII	HUALALAI	0.29310	0.39080	0.48850	0.58650	0.68400	0.97700	1.46550	2.46204	7-4-20:1-06;7-4-21:1-19;7-4-8:POR56	
KEALAKEHE PLANNED COMMUNITY (LA'I'OPUA)	NONPOTABLE USING POTABLE	HAWAII	HUALALAI	0.00690	0.00920	0.01150	0.01350	0.01600	0.02300	0.03450	0.05796	7-4-20:1-06;7-4-21:1-19;7-4-8:POR56	
LAHAINA MASTER PLAN	POTABLE	MAUI	LAHAINA	0.04840	0.31240	0.61160	0.65560	0.69960	0.74360	0.87560	1.00760	4-5-21:03	
LAHAINA MASTER PLAN	NONPOTABLE USING POTABLE	MAUI	LAHAINA	0.06160	0.39760	0.77840	0.83440	0.89040	0.94641	1.00440	1.28240	4-5-21:03	
EAST KAPOLEI	POTABLE	OAHU	EWA CAPROCK					0.07500	0.47500	2.39900	3.81300	9-1-16:108,109	
VILLAGES OF KAPOLEI	POTABLE	OAHU	EWA CAPROCK		0.19300	0.51800	0.53000	0.53000	0.68000	0.68000	0.68000	9-1-16:23,25	
CIVIC CENTER RENTAL HOUSING	POTABLE	OAHU	HONOLULU	0.05490	0.05490	0.05490	0.05490	0.05490	0.05490	0.05490	0.05490	1-5-7:1	
ELDERLY RESIDENTIAL COMPLEX AT IWILEI	POTABLE	OAHU	HONOLULU					0.05100	0.05100	0.05100	0.05100	7:1.2,14,15,18,66,67,69,71,74,75,78-84	
ELDERLY RESIDENTIAL COMPLEX AT IWILEI	POTABLE	OAHU	HONOLULU					0.00900	0.00900	0.00900	0.00900	7:1.2,14,15,18,66,67,69,71,74,75,78-84	
KAM HOMES ELDERLY	POTABLE	OAHU	HONOLULU						0.02250	0.02250	0.02250	NR	
KUHIO PARK TERRACE COMMUNITY PARK CTR	POTABLE	OAHU	HONOLULU	0.00458	0.00458	0.00458	0.00458	0.00458	0.00458	0.00458	0.00458	1-3-39:01	
PALAMA ELDERLY HOUSING	POTABLE	OAHU	HONOLULU	0.01640	0.01640	0.01640	0.01640	0.01640	0.01640	0.01640	0.01640	1-7-44:94,97	
POHUKAINA MIXED USE	POTABLE	OAHU	HONOLULU						0.11500	0.11500	0.11500	2-1-51:09	
CROWN COMMERCIAL	POTABLE	OAHU	PEARL HARBOR						0.01360	0.01360	0.01360	9-4-17:53,54	
CROWN III	POTABLE	OAHU	PEARL HARBOR						0.04320	0.04320	0.04320	9-4-17:1,58	
CROWN IV	POTABLE	OAHU	PEARL HARBOR						0.02400	0.02400	0.02400	9-4-17:1,58	
WAIANA LOW INCOME HOUSING	POTABLE	OAHU	WAIANA	0.03700	0.03700	0.03700	0.03700	0.03700	0.03700	0.03700	0.03700	8-5-28:POR42	
NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY													
NATURAL ENERGY LABORATORY OF HAWAII	POTABLE	HAWAII	HUALALAI	0.40000	0.60000	0.80000	0.90000	0.90000	1.50000	1.60000	1.80000	7-3-43:POR 4, 5	
DBEDT SUBTOTAL=				1.02288	2.25888	3.67597	4.15385	4.62475	8.07506	10.78905	13.83305		

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
WAIHEE ELEM - PLAYFLD/WTR RETENTN BASIN	NONPOTABLE USING POTABLE	MAUI	WAILUKU	0.00510	0.00510	0.00510	0.00510	0.00510	0.00510	0.00510	0.00510	3-2-007:021	
WAIHEE ELEMENTARY NEW 8 CLASSROOM	POTABLE	MAUI	WAILUKU	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	3-2-007: 021	
WAIHEE ELEMENTARY NEW ADMINISTRATION	POTABLE	MAUI	WAILUKU			0.00063	0.00063	0.00063	0.00063	0.00063	0.00063	3-2-007: 021	
WAILUKU II ELEM SCHOOL 1ST & 2ND INCREMENT	POTABLE	MAUI	WAILUKU			0.06000	0.06000	0.06000	0.06000	0.06000	0.06000	NEW	
KUALAPUU ELEM SCH 6-CLASSROOM BLD	POTABLE	MOLOKAI	CENTRAL	0.00054	0.00054	0.00054	0.00054	0.00054	0.00054	0.00054	0.00054	5-2-13:27	
DEPARTMENT OF EDUCATION CONT.													
MOLOKAI HIGH SCHOOL 8-CLASSROOM BUILDING	POTABLE	MOLOKAI	CENTRAL	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	5-2-15:46, 5-2-7:01	
MOLOKAI HIGH SCHOOL CAFETERIA	POTABLE	MOLOKAI	CENTRAL			0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	5-2-15:46, 5-2-7:01	
MOLOKAI HIGH SCHOOL NEW ADMINISTRATION	POTABLE	MOLOKAI	CENTRAL			0.00093	0.00093	0.00093	0.00093	0.00093	0.00093	5-2-015: 046	
KAUNAKAKAI ELEMENTARY NEW 8 CLASSROOM	POTABLE	MOLOKAI	SOUTH EAST			0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	5-3-002: 052	
KILOHANA ELEMENTARY NEW CAFETERIA	POTABLE	MOLOKAI	SOUTH EAST			0.00057	0.00057	0.00057	0.00057	0.00057	0.00057	5-6-002: 008	
KILOHANA ELEMENTARY NEW LIBRARY	POTABLE	MOLOKAI	SOUTH EAST			0.00092	0.00092	0.00092	0.00092	0.00092	0.00092	5-6-002: 008	
MAUNALOA ELEM SCHOOL NEW 4 CLASSROOM	POTABLE	MOLOKAI	WEST			0.00720	0.00720	0.00720	0.00720	0.00720	0.00720	5-1-002: 003	
MAUNALOA ELEMENTARY NEW LIBRARY	POTABLE	MOLOKAI	WEST						0.00092	0.00092	0.00092	5-1-002: 003	
HALE KULA ELEMENTARY NEW ADMINISTRATION	POTABLE	OAHU	CENTRAL			0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	7-7-001: 003	
HALE KULA ELEMENTARY NEW LIBRARY	POTABLE	OAHU	CENTRAL			0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	7-7-001: 003	
HELEMANO ELEMENTARY NEW LIBRARY	POTABLE	OAHU	CENTRAL	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	7-1-002: 017	
LEILEHUA HIGH SCHOOL NEW 8 CLASSROOM	POTABLE	OAHU	CENTRAL		0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	0.01440	7-4-018: 001	
WHEELER ELEMENTARY 8-CLASSROOM BUILDING	POTABLE	OAHU	CENTRAL			0.00072	0.00072	0.00072	0.00072	0.00072	0.00072	7-7-01:02	
EAST KAPOLEI ELEMENTARY SCHOOL NEW SCH	POTABLE	OAHU	EWA CAPROCK	PROJECT DEMAND ACCOUNTED FOR BY EAST KAPOLEI PROJECT									NEW
EAST KAPOLEI HIGH SCHOOL	POTABLE	OAHU	EWA CAPROCK						0.06000	0.06000	0.06000	NR	
EAST KAPOLEI MIDDLE SCHOOL	POTABLE	OAHU	EWA CAPROCK	PROJECT DEMAND ACCOUNTED FOR BY EAST KAPOLEI PROJECT									NR
EWA BEACH ELEMENTARY NEW 6 CLASSROOM	POTABLE	OAHU	EWA CAPROCK			0.01080	0.01080	0.01080	0.01080	0.01080	0.01080	9-1-012: 019	
KAPOLEI HIGH SCHOOL 1ST INCREMENT	POTABLE	OAHU	EWA CAPROCK	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	NEW	
KAPOLEI HIGH SCHOOL 2ND INCREMENT	POTABLE	OAHU	EWA CAPROCK	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	NEW	
KAPOLEI HIGH SCHOOL 3RD INCREMENT	POTABLE	OAHU	EWA CAPROCK		0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	NEW	
CENTRAL INTER - RENOV BLDG A PH 1 15 CLSRM	POTABLE	OAHU	HONOLULU		0.00166	0.00166	0.00166	0.00166	0.00166	0.00166	0.00166	2-1-005:1; 2, 2-1-009: 1,2,3	
CENTRAL INTER - RENOV BLDG C 16 CLASSROOM	POTABLE	OAHU	HONOLULU		0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	0.00215	2-1-005:1; 2, 2-1-009: 1,2,3	

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
KAAWA ELEM NEW LIBRARY/ADMINISTRATION	POTABLE	OAHU	WINDWARD			0.00111	0.00111	0.00111	0.00111	0.00111	0.00111	5-1-002: 018
KAAWA ELEMENTARY NEW CAFETERIA	POTABLE	OAHU	WINDWARD			0.00054	0.00054	0.00054	0.00054	0.00054	0.00054	5-1-002: 018
KAELEPULU ELEM SCH, NEW ADMIN BLDG.	POTABLE	OAHU	WINDWARD						0.00045	0.00045	0.00045	4-2-90: 74
KAHUKU HIGH SCHOOL - ATHLETIC FIELD	NONPOTABLE USING POTABLE	OAHU	WINDWARD		0.03800	0.03800	0.03800	0.03800	0.03800	0.03800	0.03800	5-6-006:3,9,10,25
KAHUKU HIGH/INT SCH NEW PE LOCKR SHOWR	POTABLE	OAHU	WINDWARD			0.00065	0.00065	0.00065	0.00065	0.00065	0.00065	5-6-006: 003,009,010,025
KAHUKU HIGH/INTER SCHOOL NEW CAFETERIA	POTABLE	OAHU	WINDWARD			0.00660	0.00660	0.00660	0.00660	0.00660	0.00660	5-6-006: 003,009,010,025
KAHUKU HIGH/INTER SCHOOL NEW GYMNASIUM	POTABLE	OAHU	WINDWARD			0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	5-6-006: 003,009,010,025
KAILUA ELEMENTARY LIBRARY EXPANSION	POTABLE	OAHU	WINDWARD			0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	4-3-056: 003_009
DEPARTMENT OF EDUCATION CONT.												
KAINALU ELEMENTARY NEW ADMINISTRATION	POTABLE	OAHU	WINDWARD			0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	4-3-076: 015
KANEOHE ELEMENTARY NEW ADMINISTRATION	POTABLE	OAHU	WINDWARD	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	4-5-103: 011
DOE SUBTOTAL=				0.61955	0.81025	2.22742	2.24340	2.24340	2.59797	2.59797	2.59797	

STATE WATER PROJECTS PLAN
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				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
DEPARTMENT OF HAWAIIAN HOME LANDS													
LAIOPUA VILLAGE 4	POTABLE	HAWAII	HUALALAI	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000		
MAKUU - FARM LOTS (2 ACRES)	POTABLE	HAWAII	KILAUAEA						0.02000	0.02000	0.02000	NR	
MAKUU - FARM LOTS (2 ACRES) (IRRIG)	NONPOTABLE	HAWAII	KILAUAEA						0.20000	0.20000	0.20000	NR	
MAKUU - FARM LOTS (5 ACRE)	POTABLE	HAWAII	KILAUAEA						0.05080	0.05080	0.05080	NR	
MAKUU - FARM LOTS (5 ACRE) (IRRIG)	NONPOTABLE	HAWAII	KILAUAEA						1.27000	1.27000	1.27000	NR	
KAWAIHAE - MASTER PLAN AREA	POTABLE	HAWAII	KOHALA							1.40000	1.40000	NR	
KAWAIHAE - RESIDENCE LOTS (MAKAI)	POTABLE	HAWAII	KOHALA						0.00880	0.00880	0.00880	NR	
KAWAIHAE - RESIDENTIAL LOTS (MAUKA)	POTABLE	HAWAII	KOHALA						0.07800	0.07800	0.07800	NR	
HAWAII EAST SCTRD LOT	POTABLE	HAWAII	NORTH EAST MAUNA LOA	0.04400	0.04400	0.04400	0.04400	0.04400	0.04400	0.04400	0.04400	VARIOUS	
HUMUULA - PASTURE LOTS	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.00480	0.00480	0.00480	NR	
KEAUKAHA - RESIDENCE LOTS UNIT 2	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.03320	0.03320	0.03320	2-1-20,21,22,23	
PANAWEA - FARM LOTS (AUWAE ST)	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.03000	0.03000	0.03000	NR	
PANAWEA - FARM LOTS (AUWAE ST) (IRRIG)	NONPOTABLE	HAWAII	NORTH EAST MAUNA LOA						0.64000	0.64000	0.64000	NR	
PANAWEA - FARM LOTS PUNA PAPAYA	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.01000	0.01000	0.01000	2-1-25;25-40,67-71,74,77-83	
PANAWEA - FARM LOTS PUNA PAPAYA (IRRIG)	NONPOTABLE	HAWAII	NORTH EAST MAUNA LOA						0.30000	0.30000	0.30000	NR	
PANAWEA RESIDENCE LOTS	POTABLE	HAWAII	NORTH EAST MAUNA LOA	0.02400	0.02400	0.02400	0.02400	0.02400	0.02400	0.02400	0.02400		
WAIKEA - RESIDENCE LOTS UNIT 2A-5	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.00800	0.00800	0.00800	NR	
KAMAOA - PASTURE LOTS	POTABLE	HAWAII	SOUTH EAST MAUNA LOA						0.01000	0.01000	0.01000	NR	
KAMAOA - PUUEO FARM LOTS	POTABLE	HAWAII	SOUTH EAST MAUNA LOA							0.02000	0.02000	NR	
LALAMILO RESIDENCE LOTS	POTABLE	HAWAII	WEST MAUNA KEA	0.07000	0.07000	0.07000	0.07000	0.07000	0.07000	0.07000	0.07000		
PUUKAPU - FARM LOTS UNITS 2, 2A	POTABLE	HAWAII	WEST MAUNA KEA						0.03000	0.03000	0.03000	NR	
PUUKAPU - FARM LOTS UNITS 2, 2A (IRRIG)	NONPOTABLE	HAWAII	WEST MAUNA KEA						1.60000	1.60000	1.60000	NR	
PUUKAPU - PASTURE LOTS	POTABLE	HAWAII	WEST MAUNA KEA						0.07360	0.07360	0.07360	NR	
PUUKAPU - RESIDENTIAL LOTS (PUU PELEHU)	POTABLE	HAWAII	WEST MAUNA KEA						0.01320	0.01320	0.01320	NR	
ANAHOLA - FARM LOTS UNIT 1A INCREMENT 2	POTABLE	KAUAI	LIHUE	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	NR	
ANAHOLA - HUNDLEY ROAD	POTABLE	KAUAI	LIHUE	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500		
ANAHOLA - NORTH (IRRIG)	NONPOTABLE	KAUAI	LIHUE						0.60000	0.60000	0.60000	NR	

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
ANAHOLA - RESIDENCE LOTS BAYVIEW/G, G1	POTABLE	KAUAI	LIHUE	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	NR
DEPARTMENT OF HAWAIIAN HOME LANDS CONT.													
ANAHOLA - RESIDENCE LOTS J & K	POTABLE	KAUAI	LIHUE						0.01100	0.01100	0.01100	0.01100	NR
ANAHOLA - RESIDENCE LOTS M	POTABLE	KAUAI	LIHUE						0.02000	0.02000	0.02000	0.02000	NR
ANAHOLA - RESIDENCE LOTS UNIT 3	POTABLE	KAUAI	LIHUE	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	NR
ANAHOLA - RESIDENCE LOTS UNIT 4	POTABLE	KAUAI	LIHUE	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	NR
ANAHOLA - RESIDENCE LOTS UNIT 5	POTABLE	KAUAI	LIHUE	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	NR
ANAHOLA UNIT 6	POTABLE	KAUAI	LIHUE			0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	VARIOUS
ANAHOLA VILLAGE RESIDENCE LOTS	POTABLE	KAUAI	LIHUE	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	
MOLOAA - FARM LOTS	POTABLE	KAUAI	LIHUE								0.01000	0.01000	NR
MOLOAA - PASTURE LOTS	POTABLE	KAUAI	LIHUE								0.00400	0.00400	NR
KEKAHA RESIDENCE LOTS	POTABLE	KAUAI	WAIMEA			0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	
LANAI	POTABLE	LANAI	CENTRAL		0.01250	0.01250	0.01250	0.01250	0.01250	0.01250	0.01250	0.01250	
KEOKEA AGRICULTURAL LOTS (RES.)	POTABLE	MAUI	CENTRAL	0.04260	0.04260	0.04260	0.04260	0.04260	0.04260	0.04260	0.04260	0.04260	
KULA - KEOKEA AG LOTS	POTABLE	MAUI	CENTRAL							3.60000	3.60000	3.60000	NR
KULA - KEOKEA RES. AG LOTS	POTABLE	MAUI	CENTRAL							0.04000	0.04000	0.04000	NR
KULA - MASTER PLAN AREA	POTABLE	MAUI	CENTRAL								2.10000	2.10000	NR
KULA - RESIDENCE LOTS WAIHULI 1, 2	POTABLE	MAUI	CENTRAL								0.18000	0.18000	NR
KULA - RESIDENCE LOTS, UNIT 2	POTABLE	MAUI	CENTRAL	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	
WAIHULI RES LOTS UNIT 1	POTABLE	MAUI	CENTRAL			0.23040	0.23040	0.23040	0.23040	0.23040	0.23040	0.23040	2-2-02:56
KAHIKINUI - HOMESTEAD	POTABLE	MAUI	KAHIKINUI								0.00720	0.00720	1-9-01
KAHIKINUI - LIVESTOCK	POTABLE	MAUI	KAHIKINUI								0.01000	0.01000	NR
PAUKUKALO - RESIDENCE LOTS UNIT 3 PHASE 3	POTABLE	MAUI	WAILUKU							0.01980	0.01980	0.01980	NR
PAUKUKALO - RESIDENCE LOTS UNIT 4	POTABLE	MAUI	WAILUKU							0.00840	0.00840	0.00840	NR
WAIIEHU - RESIDENCE LOTS	POTABLE	MAUI	WAILUKU			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	3-2-13:18
WAIIEHU KOU	POTABLE	MAUI	WAILUKU			0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	NR
WAIIEHU KOU III	POTABLE	MAUI	WAILUKU	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	
DEPT. OF EDUCATION	POTABLE	MOLOKAI	CENTRAL			0.00270	0.00270	0.00270	0.00270	0.00270	0.00270	0.00270	5-2-13:27, 5-2-15:46

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

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				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
			SWPP Statewide Project Demand Total=	12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
UPPER NANAKULI	POTABLE	OAHU	WAIANAE								0.42500	8-9-08: 03	
VOICE OF AMERICA	POTABLE	OAHU	WAIANAE						0.25000	0.25000	0.25000	8-7-10: 07	
WAIANAE LOTS 2A-2	POTABLE	OAHU	WAIANAE			0.03100	0.03100	0.03100	0.03100	0.03100	0.03100	8-5-04: 02	
DEPARTMENT OF HAWAIIAN HOME LANDS CONT.													
KUPUNA HOUSING	POTABLE	OAHU	WINDWARD			0.04320	0.04320	0.04320	0.04320	0.04320	0.04320	4-1-19: 32	
SOUKASEN	POTABLE	OAHU	WINDWARD						0.02500	0.02500	0.02500	4-1-08-11, 4-1-23:65	
UNIT 9	POTABLE	OAHU	WINDWARD						0.02650	0.02650	0.02650	4-1-08: POR 08, 4-1-37: 68,69	
WAIHOLE SCATTERED LOTS	POTABLE	OAHU	WINDWARD						0.01100	0.01100	0.01100	NR	
WAIMANALO SCATTERED LOTS	POTABLE	OAHU	WINDWARD	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	4-1-37: 58-60	
WAIMANALO, RESIDENTIAL LOTS ALA KOA STREET	POTABLE	OAHU	WINDWARD			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	4-1-37:35	
			DHHL SUBTOTAL=	0.64760	0.66010	2.02474	2.02474	2.02474	11.65914	15.39034	15.81534		

STATE WATER PROJECTS PLAN
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PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
DEPARTMENT OF LAND AND NATURAL RESOURCES												
BOATING AND OCEAN RECREATION DIVISION												
KAWAIHAE BOAT HARBOR IMPROVEMENTS	POTABLE	HAWAII	KOHALA	0.00140	0.00140	0.00140	0.00140	0.00140	0.00140	0.00140	0.00140	6-1-03
PUAKO BOAT RAMP	POTABLE	HAWAII	NORTH WEST MAUNA LOA						0.00500	0.00500	0.00500	NR
NA WILIWILI BOAT HARBOR	POTABLE	KAUAI	LIHUE						0.00500	0.00500	0.00500	3-2-03
WAIKAEA BOAT HARBOR IMPROVEMENTS	POTABLE	KAUAI	LIHUE			0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	4-5-06
KIKIAOLA BOAT HARBOR IMPROVEMENTS	POTABLE	KAUAI	WAIMEA	0.02250	0.02250	0.02250	0.02250	0.02250	0.04500	0.04500	0.04500	1-2-06
MANELE BOAT HARBOR ELEC/TELE IMPROVEMTS.	NONPOTABLE USING POTABLE	LANAI	KANAO	0.00100	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	4-9-17:06
MANELE BOAT HARBOR ELEC/TELE IMPROVMTS.	POTABLE	LANAI	KANAO	0.00100	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	4-9-17:06
KAHULUI BOAT HARBOR	POTABLE	MAUI	CENTRAL			0.00504	0.00504	0.00504	0.00504	0.00504	0.00504	3-7-01
KAHULUI BOAT HARBOR	NONPOTABLE USING POTABLE	MAUI	CENTRAL			0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	3-7-01
MAALAEA BOAT HAR EAST MOLE IMPROVEMTS	POTABLE	MAUI	CENTRAL						0.02300	0.02300	0.02300	3-6-01, 3-8-14
MAALAEA BOAT HARBOR ADMIN BLD AND BYD	POTABLE	MAUI	CENTRAL			0.00021	0.00021	0.00021	0.00021	0.00021	0.00021	3-6-01, 3-8-14
MAALAEA BOAT HARBOR ADMIN BLD AND BYD	NONPOTABLE USING POTABLE	MAUI	CENTRAL			0.00170	0.00170	0.00170	0.00170	0.00170	0.00170	3-6-01, 3-8-14
ALA WAI BOAT HARBOR COMFORT STATION	POTABLE	OAHU	HONOLULU		0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	2-6-10,2-3-37,2-1-58
KEEHI BOAT HARBOR	POTABLE	OAHU	HONOLULU			0.01008	0.01008	0.01008	0.01008	0.01008	0.01008	1-2-23, 1-5-41
KEEHI BOAT HARBOR	NONPOTABLE USING POTABLE	OAHU	HONOLULU			0.00543	0.00543	0.00543	0.00543	0.00543	0.00543	1-2-23, 1-5-41
MAUNALUA BAY COMFORT STATION	POTABLE	OAHU	HONOLULU			0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	2-9-2,3,4,7,16,17,33
STATE PARKS DIVISION												
KALOPA SRA	POTABLE	HAWAII	EAST MAUNA KEA	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	4-4-14:1
WAILUKU RIVER SP (BOILING POTS)	POTABLE	HAWAII	EAST MAUNA KEA						0.00500	0.00500	0.00500	2-3-27:1, 2-3-29:12, 2-5-10:1
KEKAHA KAI SP (MAHAIULA)	POTABLE	HAWAII	HUALALAI			0.00336	0.00662	0.00667	0.00673	0.00678	0.00695	NR
KEKAHA KAI SP (MAHAIULA)	NONPOTABLE USING POTABLE	HAWAII	HUALALAI			0.03869	0.07612	0.07675	0.07738	0.07801	0.07990	NR
OLD KONA AIRPORT SRA	POTABLE	HAWAII	HUALALAI		0.01008	0.01008	0.01008	0.01008	0.01008	0.01008	0.01008	7-5-05:7,72,73,74,79,82,83
OLD KONA AIRPORT SRA	NONPOTABLE USING POTABLE	HAWAII	HUALALAI		0.00592	0.00592	0.00592	0.00592	0.00592	0.00592	0.00592	7-5-05:7,72,73,74,79,82,83
KOHALA HISTORICAL SITES STATE MONUMENT	POTABLE	HAWAII	KOHALA	0.00006	0.00008	0.00178	0.00180	0.00182	0.00357	0.00357	0.00357	5-5-05:6,20, 5-6-01:75
KOHALA HISTORICAL SITES STATE MONUMENT	NONPOTABLE USING POTABLE	HAWAII	KOHALA	0.00097	0.00129	0.02793	0.02825	0.02857	0.05586	0.05586	0.05586	5-5-05:6,20, 5-6-01:75

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				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
LAPAKAHI SHP	POTABLE	HAWAII	KOHALA	0.00011	0.00015	0.00179	0.00183	0.00186	0.00358	0.00358	0.00358	5-7-01:22	
STATE PARKS DIVISION CONT.													
LAPAKAHI SHP	NONPOTABLE USING POTABLE	HAWAII	KOHALA	0.00101	0.00135	0.01609	0.01643	0.01676	0.03218	0.03218	0.03218	5-7-01:22	
KEALAKEKUA BAY SHP	POTABLE	HAWAII	SOUTH WEST MAUNA LOA	0.00080	0.00080	0.00080	0.00080	0.00080	0.00081	0.00081	0.00081	8-1-07:50 & OTHERS	
KEALAKEKUA BAY SHP	NONPOTABLE USING POTABLE	HAWAII	SOUTH WEST MAUNA LOA	0.07936	0.07941	0.07946	0.07952	0.07957	0.07973	0.07973	0.07973	8-1-07:50 & OTHERS	
HAPUNA BEACH SRA	POTABLE	HAWAII	WEST MAUNA KEA		0.05270	0.05270	0.05270	0.05270	0.05270	0.05270	0.05270	6-6-01:2, 6-6-02:32,34,35,41	
HAPUNA BEACH SRA	NONPOTABLE	HAWAII	WEST MAUNA KEA						0.64995	0.64995	0.64995	6-6-01:2, 6-6-02:32,34,35,41	
HAENA SP	POTABLE	KAUAI	HANALEI	0.01258	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	5-9-6,7,8	
HAENA SP	NONPOTABLE	KAUAI	HANALEI	0.02142	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	5-9-6,7,8	
AHUKINI SRP	POTABLE	KAUAI	LIHUE	0.00021	0.00027	0.00034	0.00041	0.00048	0.00069	0.00069	0.00069	3-7-02:2,7,9,10	
WAILUA RIVER SP	POTABLE	KAUAI	LIHUE	0.00090	0.00121	0.00151	0.00181	0.00211	0.00301	0.00301	0.00301	3-9-02 & OTHERS	
MALAE HEIAU	POTABLE	KAUAI	LIHUE			0.00199	0.00199	0.00202	0.00204	0.00206	0.00215	3/9/02	
MALAE HEIAU	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.01612	0.01612	0.01631	0.01649	0.01667	0.01740	3/9/02	
RUSSIAN FORT ELIZABETH SHP	POTABLE	KAUAI	WAIMEA	0.00003	0.00192	0.00193	0.00194	0.00195	0.00198	0.00198	0.00198	1-7-05:3	
RUSSIAN FORT ELIZABETH SHP	NONPOTABLE USING POTABLE	KAUAI	WAIMEA	0.00059	0.03641	0.03660	0.03680	0.03699	0.03758	0.03758	0.03758	1-7-05:3	
MAKENA STATE PARK - COMFORT STATIONS WITH COMPOSTING TOILETS	POTABLE	MAUI	KAHIKINUI	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	2-1-06: 27 & 30	
MAKENA STATE PARK - SECURITY RESIDENCE	POTABLE	MAUI	KAHIKINUI	0.00060	0.00060	0.00060	0.00060	0.00060	0.00060	0.00060	0.00060	2-1-06: 28 & POR. 53	
HALEKII-PIHANA HEIAU SM	POTABLE	MAUI	WAILUKU	0.00003	0.00004	0.00004	0.00005	0.00006	0.00128	0.00128	0.00128	3-4-30:4	
HALEKII-PIHANA HEIAU SM	NONPOTABLE USING POTABLE	MAUI	WAILUKU	0.00035	0.00047	0.00059	0.00070	0.00082	0.01698	0.01698	0.01698	3-4-30:4	
KUKANILOKO HEIAU (NEAR WHITMORE VILLAGE)	POTABLE	OAHU	CENTRAL			0.00003	0.00004	0.00050	0.00051	0.00051	0.00099	7-1-01:4,8	
KUKANILOKO HEIAU (NEAR WHITMORE VILLAGE)	NONPOTABLE USING POTABLE	OAHU	CENTRAL	0.00028	0.00037	0.00502	0.00511	0.00511	0.01003	0.01003	0.01003	7-1-01:4,8	
DIAMOND HEAD STATE MONUMENT	POTABLE	OAHU	HONOLULU	0.02087	0.02087	0.02087	0.02087	0.02087	0.02087	0.02087	0.02087	3-1-42, 3-1-35	
DIAMOND HEAD STATE MONUMENT	NONPOTABLE	OAHU	HONOLULU	0.27733	0.27733	0.27733	0.27733	0.27733	0.27733	0.27733	0.27733	3-1-42, 3-1-35	
KAIWI SP	POTABLE	OAHU	HONOLULU			0.00164	0.00219	0.00274	0.00329	0.00384	0.00548	3-9-11:2,3,5,6,7,4-01-14:1	
KALIHI VALLEY SP	POTABLE	OAHU	HONOLULU			0.00019	0.00025	0.00031	0.00037	0.00043	0.00062	1-3-24:2	
KUULEI CLIFFS	POTABLE	OAHU	HONOLULU					0.00003	0.00005	0.00094	0.00095	3-1-42	
KUULEI CLIFFS	NONPOTABLE USING POTABLE	OAHU	HONOLULU	0.00027	0.00037	0.00758	0.00767	0.00776	0.00803	0.00803	0.00803	3-1-42	
MAKALEI PLACE	POTABLE	OAHU	HONOLULU			0.00000	0.00000	0.00040	0.00040	0.00040	0.00081	3-1-42	

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				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
MAKALEI PLACE	NONPOTABLE USING POTABLE	OAHU	HONOLULU			0.00018	0.00024	0.03990	0.03997	0.04003	0.07981	3-1-42
MAKIKI TANTALUS STATE PARK	POTABLE	OAHU	HONOLULU	0.00141	0.00187	0.00994	0.01041	0.01088	0.01229	0.01229	0.01229	2-5-19
STATE PARKS DIVISION CONT.												
MAKIKI TANTALUS STATE PARK	NONPOTABLE USING POTABLE	OAHU	HONOLULU	0.00229	0.00306	0.01622	0.01699	0.01775	0.02004	0.02004	0.02004	2-5-19
ROYAL MAUSOLEUM SM	POTABLE	OAHU	HONOLULU	0.00014	0.00019	0.00024	0.00029	0.00034	0.00048	0.00048	0.00048	2-2-20:14, 2-2-21:7,12
SAND ISLAND SRA	POTABLE	OAHU	HONOLULU	0.00001	0.00001	0.00241	0.00242	0.00242	0.00243	0.00243	0.00243	1-5-41:6
SAND ISLAND SRA	NONPOTABLE USING POTABLE	OAHU	HONOLULU	0.00081	0.00109	0.23896	0.23923	0.23950	0.24031	0.24031	0.24031	1-5-41:6
WASHINGTON PLACE	POTABLE	OAHU	HONOLULU	0.00062	0.00082	0.00103	0.00123	0.00144	0.00206	0.00206	0.00206	2-1-18:46
PUU MAHUKA HEIAU SM	POTABLE	OAHU	NORTH				0.00013	0.00017	0.00225	0.00229	0.00233	5-9-05:68
PUU MAHUKA HEIAU SM	NONPOTABLE USING POTABLE	OAHU	NORTH	0.00061	0.00082	0.01098	0.01119	0.01139	0.01201	0.01201	0.01201	5-9-05:68
AIEA BAY STATE RECREATION AREA	POTABLE	OAHU	PEARL HARBOR	0.00021	0.00027	0.00034	0.00041	0.00048	0.00069	0.00069	0.00069	9-8-19:2 & OTHERS
WAIMANO GULCH STATE PARK RESERVE	POTABLE	OAHU	PEARL HARBOR				0.00000	0.00000	0.00000	0.00000	0.00000	9-7-25
WAIMANO GULCH STATE PARK RESERVE	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR	0.00002	0.00003	0.00003	0.00004	0.00005	0.14223	0.14223	0.14223	9-7-25
KAENA POINT SP	POTABLE	OAHU	WAIANAE	0.00102	0.00136	0.00542	0.00576	0.00610	0.01084	0.01084	0.01084	6-9-01:2 & OTHERS
KAENA POINT SP	NONPOTABLE	OAHU	WAIANAE	0.00227	0.00302	0.01206	0.01282	0.01357	0.02412	0.02412	0.02412	6-9-01:2 & OTHERS
HEEIA STATE PARK	POTABLE	OAHU	WINDWARD	0.00003	0.00004	0.00006	0.00007	0.00008	0.00011	0.00011	0.00011	4-6-05:2,4,9
KAHANA VALLEY SP	POTABLE	OAHU	WINDWARD	0.00026	0.00034	0.00043	0.00051	0.00060	0.00085	0.00085	0.00085	5-2-01:1, 5-2-02:1-8, 5-2-05:1,3,20,21
LAIE POINT STATE WAYSIDE	POTABLE	OAHU	WINDWARD			0.00017	0.00022	0.00110	0.00116	0.00121	0.00138	5-5-10:2,3,22,29
LAIE POINT STATE WAYSIDE	NONPOTABLE USING POTABLE	OAHU	WINDWARD			0.00024	0.00032	0.00158	0.00166	0.00175	0.00199	5-5-10:2,3,22,29
MALAEKAHANA SRA (KAHUKU SECTION)	POTABLE	OAHU	WINDWARD			0.01000	0.01000	0.01000	0.02000	0.02000	0.02000	5-6-01:4,24,25,45,46,47,51,53-65
MALAEKAHANA SRA (KAHUKU SECTION)	NONPOTABLE	OAHU	WINDWARD			0.03000	0.03000	0.03000	0.06000	0.06000	0.06000	5-6-01:4,24,25,45,46,47,51,53-65
MALAEKAHANA SRA (KALANAI POINT SECTION)	POTABLE	OAHU	WINDWARD			0.01000	0.01000	0.01000	0.02000	0.02000	0.02000	5-6-01:4,24,25,45,46,47,49,51,53-65
MALAEKAHANA SRA (KALANAI POINT SECTION)	NONPOTABLE	OAHU	WINDWARD			0.03000	0.03000	0.03000	0.06000	0.06000	0.06000	5-6-01:4,24,25,45,46,47,49,51,53-65
NUUANU PALI SW	POTABLE	OAHU	WINDWARD				0.00164	0.00219	0.00274	0.00329	0.00384	1-9-07:1, 2-2-54:1
SACRED FALLS STATE PARK	POTABLE	OAHU	WINDWARD	0.00154	0.00206	0.00257	0.00308	0.00360	0.00514	0.00514	0.00514	5-3-11:9
ULUPO HEIAU STATE MONUMENT	POTABLE	OAHU	WINDWARD			0.00039	0.00052	0.00065	0.00078	0.00091	0.00130	4-2-13:2
DLNR SUBTOTAL=				0.46241	0.60201	1.12148	1.17029	1.22051	2.25145	2.25476	2.30154	

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
DEPARTMENT OF TRANSPORTATION												
AIRPORTS DIVISION												
KONA INTERNATIONAL AIRPORT MASTER PLAN	POTABLE	HAWAII	HUALALAI	0.12200	0.13200	0.14200	0.15200	0.16200	0.17200	0.20400	0.24200	7-3-10
HILO INTERNATIONAL AIRPORT MASTER PLAN	POTABLE	HAWAII	NORTH EAST MAUNA LOA	0.00400	0.00600	0.00800	0.01000	0.01200	0.01300	0.02000	0.02800	2-1-12
LIHUE AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	0.00800	0.01300	0.01500	0.01900	0.02400	0.05200	0.09500	0.14500	3-5-01
LANAI AIRPORT MASTER PLAN	POTABLE	LANAI	CENTRAL	0.00040	0.00060	0.00090	0.00120	0.00150	0.00190	0.00290	0.00390	4-9-02
KAHULUI AIRPORT ACCESS ROAD	POTABLE	MAUI	CENTRAL				0.10000					3-8-01
KAHULUI AIRPORT MASTER PLAN	POTABLE	MAUI	CENTRAL	0.01200	0.01700	0.02200	0.02700	0.03200	0.06700	0.11700	0.16700	3-8-01
HANA AIRPORT MASTER PLAN	POTABLE	MAUI	HANA	0.00050	0.00060	0.00070	0.00080	0.00090	0.00100	0.00200	0.00400	NR
MOLOKAI AIRPORT MASTER PLAN	POTABLE	MOLOKAI	CENTRAL	0.00020	0.00030	0.00040	0.00050	0.00060	0.00100	0.00150	0.00250	5-2-04
HONOLULU INTERNATIONAL AIRPORT	POTABLE	OAHU	HONOLULU						0.10000	0.10000	0.10000	1-1-03
DILLINGHAM FIELD - MOKULEIA	POTABLE	OAHU	NORTH	0.00200	0.00300	0.00400	0.00500	0.00600	0.01500	0.02500	0.03500	6-8-02
HARBORS DIVISION												
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: DRY BULK CARGO TERMINALS	POTABLE	HAWAII	KOHALA		0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: INTER-ISLAND CARGO TERMINAL	POTABLE	HAWAII	KOHALA						0.03300	0.06600	0.06600	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: LIQUID BULK CARGO TERMINALS	POTABLE	HAWAII	KOHALA			0.06900	0.06900	0.06900	0.06900	0.06900	0.06900	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: MILITARY CARGO TERMINAL	POTABLE	HAWAII	KOHALA		0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	0.04800	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: OVERSEAS CONTAINER TERMINAL	POTABLE	HAWAII	KOHALA					0.06300	0.06300	0.06300	0.06300	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: PASSENGER TERMINAL-KAWAIHAE HARBOR	POTABLE	HAWAII	KOHALA						0.01500	0.01500	0.01500	3-6-1:03
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: OCEAN RESEARCH STATION	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.01200	0.01200	0.01200	3-2-1:07
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: OVERSEAS CONTAINER TERMINAL	POTABLE	HAWAII	NORTH EAST MAUNA LOA				0.06000	0.06000	0.06000	0.06000	0.06000	3-2-1:09
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: PASSENGER TERMINAL-HILO HARBOR	POTABLE	HAWAII	NORTH EAST MAUNA LOA						0.01500	0.01500	0.01500	3-2-1:07
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN: INTER-ISLAND CARGO TERMINAL	POTABLE	HAWAII	NORTH EAST MAUNA LOA					0.06000	0.06000	0.06000	0.06000	3-2-1:07
PORT ALLEN AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00400	1-8-08:1
KAUAI COMMERCIAL HARBORS - 2025 MASTER PLAN: COMMERCIAL/NAVY VESSEL BERTHING	POTABLE	KAUAI	WAIMEA						0.00300	0.00300	0.00300	4-2-1:03
KAHULUI COMMERCIAL HARBOR - 2025 MASTER PLAN: CARGO YARD	POTABLE	MAUI	CENTRAL	0.05000	0.05000	0.05000	0.05000	0.05000	0.10000	0.10000	0.10000	2-3-7:8,10
KAUNAKAKAI HARBOR - 2010 MASTER PLAN	POTABLE	MOLOKAI	SOUTH EAST							0.03660	0.03660	NR

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: DRY BULK CARGO YARD	POTABLE	OAHU	EWA CAPROCK		0.11000	0.11000	0.11000	0.11000	0.11000	0.11000	0.11000	9-1-14	
HARBORS DIVISION CONT.													
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: PETROLEUM PIER	POTABLE	OAHU	EWA CAPROCK					0.02000	0.02000	0.02000	0.02000	9-1-14	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: SHIPYARD	POTABLE	OAHU	EWA CAPROCK				0.09000	0.09000	0.09000	0.09000	0.09000	9-1-14	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: COMMERCIAL FISHING BERTHS	POTABLE	OAHU	HONOLULU					0.00003	0.00003	0.00003	0.00003	2-1-01	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: EXCURSION VESSEL & FERRY TERMINAL	POTABLE	OAHU	HONOLULU		0.07000	0.07000	0.07000	0.07000	0.07000	0.07000	0.07000	1-5-38	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: FOREIGN FISHING & OIL RESPONSE LAY BERTHS	POTABLE	OAHU	HONOLULU					0.00003	0.00003	0.00003	0.00003	1-1-76	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: GENERAL/NEOBULK CARGO YARD	POTABLE	OAHU	HONOLULU		0.04000	0.08000	0.08000	0.08000	0.08000	0.08000	0.08000	1-5-36	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: KAPALAMA MILITARY RESER.CONTAINER YD	POTABLE	OAHU	HONOLULU						0.27000	0.27000	0.27000	1-2-25	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: KEEHI INDUSTRIAL PARK ASSOCIATION	POTABLE	OAHU	HONOLULU					0.05000	0.05000	0.05000	0.05000	1-2-23	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: PASSENGER TERMINAL	POTABLE	OAHU	HONOLULU			0.06000	0.06000	0.06000	0.06000	0.06000	0.06000	2-1-15	
OAHU COMMERCIAL HARBORS 2020 MASTER PLAN: PASSENGER TERMINAL & GENERAL CARGO YARD	POTABLE	OAHU	HONOLULU		0.03000	0.03000	0.06000	0.06000	0.06000	0.06000	0.06000	1-5-39	
DIVISION OF HIGHWAYS													
QUEEN KAAHUMANU HWY WIDENING, KAILUA TO KEAHOLE	NONPOTABLE USING POTABLE	HAWAII	HUALALAI			0.24000	0.24000	0.24000	0.06000	0.06000	0.06000	NR	
MAMALAOHA HWY, EMERGENCY REPLACE OF PAAUUAU STR.BRIDGE, REALIGN.OF KAMANANI ST., ETC.	NONPOTABLE USING POTABLE	HAWAII	KILAUJA	0.03200	0.03200	0.00800	0.00800	0.00800	0.00800	0.00800	0.00800	9-6-23:43, 9-6-05:46, 9-6-12:12, 9-6-02:47, 9-6-13:05	
KAUMUALII HWY IMPROVEMENTS, LIHUE TO WEST OF MALUHIA	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.23200	0.23200	0.05800	0.05800	0.05800	0.05800	NR	
KUHIO HWY, HANAMAULU TO KAPAA	NONPOTABLE USING POTABLE	KAUAI	LIHUE					0.13600	0.03400	0.03400	0.03400	NR	
HALEAKALA HWY WIDENING, PUKALANI BYPASS TO HANA HWY	NONPOTABLE USING POTABLE	MAUI	CENTRAL				0.06600	0.06600	0.01700	0.01700	0.01700	NR	
HONOAPILANI HWY WIDENING, NORTH KIHEI ROAD TO MAALAEA HARBOR	NONPOTABLE USING POTABLE	MAUI	CENTRAL		0.01800	0.01800	0.00450	0.00450	0.00450	0.00450	0.00450	NR	
NORTH-SOUTH ROAD KAPOLEI PARKWAY TO FARRINGTON HWY, PHASE 1	NONPOTABLE USING POTABLE	OAHU	EWA CAPROCK						0.04500	0.01140	0.01140	NR	
NORTH-SOUTH ROAD, FARRINGTON HIGHWAY TO INTERSTATE RTE. H-1, PHASE 2	NONPOTABLE USING POTABLE	OAHU	EWA CAPROCK				0.24000	0.24000	0.06000	0.06000	0.06000	NR	
PUULOA ROAD IMPROVEMENTS, KAMEHAMEHA HWY TO SALT LAKE BLVD (LANDSCAPING)	NONPOTABLE USING POTABLE	OAHU	HONOLULU			0.02400	0.02400	0.00600	0.00600	0.00600	0.00600	NR	
FARRINGTON HWY IMPROVEMENTS, WAIPAHU DEPOT ROAD TO ANIANI STREET	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR				0.01600	0.01600	0.00400	0.00400	0.00400	9-4-01,10,11,14,25	
FARRINGTON HWY MEDIAL STRIP, KAMEHAMEHA HWY TO FORT WEAVER ROAD	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR		0.06000	0.06000	0.06000	0.03000	0.03000	0.03000	0.03000	NR	
ROUTE H3, HALAWA INTERCHANGE FINISH CONTRACT, UNIT VII	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR		0.00650	0.00325	0.00650	0.00325	0.00325	0.00325	0.00325	NR	
KAHEKILI HWY	NONPOTABLE USING POTABLE	OAHU	WINDWARD			0.05400	0.01350	0.01350	0.01350	0.01350	0.01350	NR	
DOT SUBTOTAL=				0.23410	0.71200	1.32975	1.94400	1.97131	2.03021	2.25571	2.41671		

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY DEPARTMENT

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)									TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD		
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87		
HONOLULU COMMUNITY COLLEGE, HUMAN SERVICES LABORATORY FACILITY	POTABLE	OAHU	HONOLULU						0.01405	0.01405	0.01405	NR	
HONOLULU COMMUNITY COLLEGE, HUMAN SERVICES LABORATORY FACILITY	NONPOTABLE USING POTABLE	OAHU	HONOLULU						0.00029	0.00029	0.00029	NR	
UNIVERSITY OF HAWAII CONT.													
HONOLULU COMMUNITY COLLEGE, MARINE PROPULSION FACILITY	POTABLE	OAHU	HONOLULU						0.01072	0.01072	0.01072	1-5-41:6,130	
PEARL CITY URBAN GARDEN CENTER	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	9-7-23:3	
LEEWARD COMMUNITY COLLEGE - BUILDING L SOCIAL SCIENCES	POTABLE	OAHU	PEARL HARBOR						0.01604	0.01604	0.01604	9-6-003-048	
LEEWARD COMMUNITY COLLEGE - BUILDING L SOCIAL SCIENCES	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR						0.00016	0.00016	0.00016	9-6-003-048	
LEEWARD COMMUNITY COLLEGE - NAO PRKG LOT	NONPOTABLE USING POTABLE	OAHU	PEARL HARBOR						0.00200	0.00200	0.00200	9-6-003-048	
LEEWARD COMMUNITY COLLEGE, FOOD SERVICES PROGRAM RENOVATION	POTABLE	OAHU	PEARL HARBOR			0.00088	0.00088	0.00088	0.00088	0.00088	0.00088	9-6-003: 048	
UNIVERSITY OF HAWAII AT MANOA, WAIMANALO, FOOD AND AGRICULTURE INNOVATION CENTER	POTABLE	OAHU	WINDWARD	0.01500	0.09000	0.18500	0.18500	0.18500	0.18500	0.18500	0.18500	4-1-08: 80, PORTION OF 5, PORTION OF 74	
UNIVERSITY OF HAWAII AT MANOA, WAIMANALO, FOOD AND AGRICULTURE INNOVATION CENTER	NONPOTABLE USING POTABLE	OAHU	WINDWARD	0.08800	0.51000	1.05000	1.05000	1.05000	1.05000	1.05000	1.05000	4-1-08: 80, PORTION OF 5, PORTION OF 74	
WINDWARD COMMUNITY COLLEGE - BUILDING D CAMPUS CENTER	POTABLE	OAHU	WINDWARD		0.05961	0.05961	0.05961	0.05961	0.05961	0.05961	0.05961	NR	
WINDWARD COMMUNITY COLLEGE - BUILDING D CAMPUS CENTER	NONPOTABLE USING POTABLE	OAHU	WINDWARD		0.00381	0.00381	0.00381	0.00381	0.00381	0.00381	0.00381	NR	
WINDWARD COMMUNITY COLLEGE - BUILDING H, LEARNING RESOURCE CENTER	POTABLE	OAHU	WINDWARD				0.00482	0.00482	0.00482	0.00482	0.00482	NR	
WINDWARD COMMUNITY COLLEGE - BUILDING H, LEARNING RESOURCE CENTER	NONPOTABLE USING POTABLE	OAHU	WINDWARD				0.00054	0.00054	0.00054	0.00054	0.00054	NR	
WINDWARD COMMUNITY COLLEGE - BUILDING J HUMANITIES	POTABLE	OAHU	WINDWARD	0.05815	0.05815	0.05815	0.05815	0.05815	0.05815	0.05815	0.05815	0.05874 NR	
WINDWARD COMMUNITY COLLEGE - BUILDING J HUMANITIES	NONPOTABLE USING POTABLE	OAHU	WINDWARD	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	NR	
WINDWARD COMMUNITY COLLEGE - BUILDING K-1, MULTI-MEDIA FACILITY	POTABLE	OAHU	WINDWARD	0.00479	0.00479	0.00479	0.00479	0.00479	0.00479	0.00479	0.00479	4-5-23: 2	
WINDWARD COMMUNITY COLLEGE - BUILDING K-1, MULTI-MEDIA FACILITY	NONPOTABLE USING POTABLE	OAHU	WINDWARD	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	4-5-23: 2	
WINDWARD COMMUNITY COLLEGE - PARKING LOT @ KUHINA	NONPOTABLE USING POTABLE	OAHU	WINDWARD				0.00160	0.00160	0.00160	0.00160	0.00160	4-5-023:002	
WINDWARD COMMUNITY COLLEGE - SCIEN ANNEX	POTABLE	OAHU	WINDWARD	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	4-5-23:2	
UH SUBTOTAL=				0.66899	3.78301	4.46619	4.55429	4.62307	5.57939	6.03849	6.48598		

APPENDIX C
SWPP DEMAND TABLE BY ISLAND

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY ISLAND

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
ISLAND OF KAUAI												
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES												
PLANNING BRANCH												
KAUAI JUDICIARY COMPLEX	NONPOTABLE USING POTABLE	KAUAI	LIHUE				0.00799	0.00799	0.00799	0.00799	0.00799	3-6-02: POR 01
KAUAI JUDICIARY COMPLEX	POTABLE	KAUAI	LIHUE				0.07644	0.07644	0.07644	0.07644	0.07644	3-6-2: POR. 01
LIHUE MMSF, PHASE 2D AND 3	POTABLE	KAUAI	LIHUE			0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	NR
LIHUE MULTI-AGENCY MAINTENANCE FACILITY, PHASE II	POTABLE	KAUAI	LIHUE		0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	NR
PROJECT MANAGEMENT BRANCH												
NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	POTABLE	KAUAI	HANALEI	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	5-3-10:2
NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	NONPOTABLE USING POTABLE	KAUAI	HANALEI	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	5-3-10:2
DAGS SUBTOTAL=				0.00240	0.00281	0.00325	0.08768	0.08768	0.08768	0.08768	0.08768	
DEPARTMENT OF EDUCATION												
KALAHEO ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	2-3-002: 005
KAPAA ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE			0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	4-6-014: 031
KAPAA ELEMENTARY NEW LIBRARY	POTABLE	KAUAI	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	4-6-014: 031
KAPAA HIGH SCHOOL NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	4-6-014: 031
KAPAA II ELEM SCH IST & 2ND INCREMENT	POTABLE	KAUAI	LIHUE			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	NEW
KAPAA II ELEM SCH IST & 2ND INCREMENT	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.03000	0.03000	0.03000	0.03000	0.03000	0.03000	NEW
KAUAI INTERMEDIATE (BALANCE OF INCREMENTS)	POTABLE	KAUAI	LIHUE	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	NR
KILAUEA ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	5-2-009: 006
KILAUEA ELEMENTARY NEW CAFETERIA	POTABLE	KAUAI	LIHUE			0.00150	0.00150	0.00150	0.00150	0.00150	0.00150	5-2-009: 006
KILAUEA ELEMENTARY NEW LIBRARY	POTABLE	KAUAI	LIHUE			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	5-2-009: 006
KING KAUMUALII ELEM ADMIN BUILDING	POTABLE	KAUAI	LIHUE	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	3-7-03:06, POR 20
KOLOA ELEMENTARY NEW 6 CLASSROOM	POTABLE	KAUAI	LIHUE			0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	2-8-010: 011
KOLOA ELEMENTARY NEW 6 CLASSROOM	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.00750	0.00750	0.00750	0.00750	0.00750	0.00750	2-8-010: 011
KUKUIULA ELEMENTARY SCHOOL	POTABLE	KAUAI	LIHUE						0.03300	0.03300	0.03300	NR

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY ISLAND

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	YEARLY PROJECTED CUMULATIVE AVERAGE DAY DEMAND (MGD)								TMK
				02001 MGD	02002 MGD	02003 MGD	02004 MGD	02005 MGD	02010 MGD	02015 MGD	02020 MGD	
SWPP Statewide Project Demand Total=				12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
KIKIAOLA BOAT HARBOR IMPROVEMENTS	POTABLE	KAUAI	WAIMEA	0.02250	0.02250	0.02250	0.02250	0.02250	0.04500	0.04500	0.04500	1-2-06
STATE PARKS DIVISION												
HAENA SP	POTABLE	KAUAI	HANAIEI	0.01258	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	5-9-6,7,8
HAENA SP	NONPOTABLE	KAUAI	HANAIEI	0.02142	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	5-9-6,7,8
AHUKINI SRP	POTABLE	KAUAI	LIHUE	0.00021	0.00027	0.00034	0.00041	0.00048	0.00069	0.00069	0.00069	3-7-02;2,7,9,10
MALAE HEIAU	POTABLE	KAUAI	LIHUE			0.00199	0.00199	0.00202	0.00204	0.00206	0.00215	3/9/02
MALAE HEIAU	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.01612	0.01612	0.01631	0.01649	0.01667	0.01740	3/9/02
WAILUA RIVER SP	POTABLE	KAUAI	LIHUE	0.00090	0.00121	0.00151	0.00181	0.00211	0.00301	0.00301	0.00301	3-9-02 & OTHERS
RUSSIAN FORT ELIZABETH SHP	POTABLE	KAUAI	WAIMEA	0.00003	0.00192	0.00193	0.00194	0.00195	0.00198	0.00198	0.00198	1-7-05:3
RUSSIAN FORT ELIZABETH SHP	NONPOTABLE USING POTABLE	KAUAI	WAIMEA	0.00059	0.03641	0.03660	0.03680	0.03699	0.03758	0.03758	0.03758	1-7-05:3
DLNR SUBTOTAL=				0.05823	0.11630	0.13999	0.14057	0.14135	0.17078	0.17099	0.17181	
DEPARTMENT OF TRANSPORTATION												
AIRPORTS DIVISION												
LIHUE AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	0.00800	0.01300	0.01500	0.01900	0.02400	0.05200	0.09500	0.14500	3-5-01
HARBORS DIVISION												
PORT ALLEN AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00400	1-8-08:1
KAUAI COMMERCIAL HARBORS - 2025 MASTER PLAN: COMMERCIAL/NAVY VESSEL BERTHING	POTABLE	KAUAI	WAIMEA							0.00300	0.00300	4-2-1:03
HIGHWAYS DIVISION												
KAUMUALII HWY IMPROVEMENTS, LIHUE TO WEST OF MALUHIA	NONPOTABLE USING POTABLE	KAUAI	LIHUE			0.23200	0.23200	0.05800	0.05800	0.05800	0.05800	NR
KUHIO HWY, HANAMAULU TO KAPAA	NONPOTABLE USING POTABLE	KAUAI	LIHUE					0.13600	0.03400	0.03400	0.03400	NR
DOT SUBTOTAL=				0.01100	0.01600	0.25000	0.25400	0.22100	0.14700	0.19300	0.24400	
UNIVERSITY OF HAWAII												
KAUAI COMMUNITY COLLEGE - ADDITION TO BLDG 4463C ELECT TECH	POTABLE	KAUAI	LIHUE	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	3-4-005;006,009
KAUAI COMMUNITY COLLEGE - OCET FACILITIES	POTABLE	KAUAI	LIHUE				0.00760	0.00760	0.00760	0.00760	0.00760	3-4-005;006,009

APPENDIX D
SWPP DEMAND TABLE BY AQUIFER

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY AQUIFER SECTOR/SYSTEM

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	AQUIFER SYSTEM	02001	02002	02003	02004	02005	02010	02015	02020	TMK
					MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	
SWPP Statewide Project Demand Total=					12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
ISLAND OF KAUAI													
HYDROLOGICAL SECTOR = HANAIEI 202													
SECTOR 202 TOTAL=					0.03640	0.05640	0.05640	0.05640	0.05640	0.05640	0.05640	0.05640	
NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	POTABLE	KAUAI	HANAIEI	HANAIEI	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	0.00139	5-3-10:2
NORTH SHORE KAUAI - PRINCEVILLE PUBLIC LIBRARY	NONPOTABLE USING POTABLE	KAUAI	HANAIEI	HANAIEI	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	0.00101	5-3-10:2
AQUIFER SECTOR = HANAIEI 20202					0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	0.00240	
HAENA SP	POTABLE	KAUAI	HANAIEI	WAINIHA	0.01258	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	0.01998	5-9-6,7,8
HAENA SP	NONPOTABLE	KAUAI	HANAIEI	WAINIHA	0.02142	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	0.03402	5-9-6,7,8
AQUIFER SECTOR = WAINIHA 20203					0.03400	0.05400	0.05400	0.05400	0.05400	0.05400	0.05400	0.05400	
HYDROLOGICAL SECTOR = LIHUE 201													
SECTOR 201TOTAL=					0.20136	0.20714	0.70435	0.80277	0.77035	1.36666	1.42386	1.47569	
KAPAA ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	ANAHOLA			0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	4-6-014: 031
KAPAA ELEMENTARY NEW LIBRARY	POTABLE	KAUAI	LIHUE	ANAHOLA			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	4-6-014: 031
KAPAA HIGH SCHOOL NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	ANAHOLA			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	4-6-014: 031
KAPAA II ELEM SCH IST & 2ND INCREMENT	POTABLE	KAUAI	LIHUE	ANAHOLA			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	NEW
KAPAA II ELEM SCH IST & 2ND INCREMENT	NONPOTABLE USING POTABLE	KAUAI	LIHUE	ANAHOLA			0.03000	0.03000	0.03000	0.03000	0.03000	0.03000	NEW
ANAHOLA - FARM LOTS UNIT 1A INCREMENT 2	POTABLE	KAUAI	LIHUE	ANAHOLA	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	NR
ANAHOLA - HUNDLEY ROAD	POTABLE	KAUAI	LIHUE	ANAHOLA	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	0.01500	
ANAHOLA - NORTH (IRRIG)	NONPOTABLE	KAUAI	LIHUE	ANAHOLA						0.60000	0.60000	0.60000	NR
ANAHOLA - RESIDENCE LOTS BAYVIEW/G, G1	POTABLE	KAUAI	LIHUE	ANAHOLA	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	0.03050	NR
ANAHOLA - RESIDENCE LOTS J & K	POTABLE	KAUAI	LIHUE	ANAHOLA						0.01100	0.01100	0.01100	NR
ANAHOLA - RESIDENCE LOTS M	POTABLE	KAUAI	LIHUE	ANAHOLA						0.02000	0.02000	0.02000	NR
ANAHOLA - RESIDENCE LOTS UNIT 3	POTABLE	KAUAI	LIHUE	ANAHOLA	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	0.01800	NR
ANAHOLA - RESIDENCE LOTS UNIT 4	POTABLE	KAUAI	LIHUE	ANAHOLA	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	0.04500	NR
ANAHOLA - RESIDENCE LOTS UNIT 5	POTABLE	KAUAI	LIHUE	ANAHOLA	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	NR
ANAHOLA UNIT 6	POTABLE	KAUAI	LIHUE	ANAHOLA			0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	VARIOUS
ANAHOLA VILLAGE RESIDENCE LOTS	POTABLE	KAUAI	LIHUE	ANAHOLA	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	0.00550	
MOLOAA - FARM LOTS	POTABLE	KAUAI	LIHUE	ANAHOLA							0.01000	0.01000	NR
MOLOAA - PASTURE LOTS	POTABLE	KAUAI	LIHUE	ANAHOLA							0.00400	0.00400	NR
WAIKAEA BOAT HARBOR IMPROVEMENTS	POTABLE	KAUAI	LIHUE	ANAHOLA			0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	4-5-06
AQUIFER SECTOR = ANAHOLA 20104					0.13600	0.13600	0.31722	0.31722	0.31722	0.94822	0.96222	0.96222	

STATE WATER PROJECTS PLAN
PROJECTED WATER REQUIREMENTS BY AQUIFER SECTOR/SYSTEM

PROJECT NAME	PRIMARY USE	ISLAND	SECTOR	AQUIFER SYSTEM	02001	02002	02003	02004	02005	02010	02015	02020	TMK
					MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	
SWPP Statewide Project Demand Total=					12.19	18.10	25.22	26.59	33.20	69.42	76.55	80.87	
KAUAI JUDICIARY COMPLEX	POTABLE	KAUAI	LIHUE	HANAMAULU				0.07644	0.07644	0.07644	0.07644	0.07644	3-6-2: POR_01
LIHUE MMSF, PHASE 2D AND 3	POTABLE	KAUAI	LIHUE	HANAMAULU			0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	NR
KAUAI JUDICIARY COMPLEX	NONPOTABLE USING POTABLE	KAUAI	LIHUE	HANAMAULU				0.00799	0.00799	0.00799	0.00799	0.00799	3-6-02: POR_01
LIHUE MULTI-AGENCY MAINTENANCE FACILITY, PHASE II	POTABLE	KAUAI	LIHUE	HANAMAULU		0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	0.00041	NR
KAUAI INTERMEDIATE (BALANCE OF INCREMENTS)	POTABLE	KAUAI	LIHUE	HANAMAULU	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	NR
KING KAUMUALII ELEM ADMIN BUILDING	POTABLE	KAUAI	LIHUE	HANAMAULU	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	3-7-03:06, POR_20
LIHUE/PUHI ELEM SCHOOL IST & 2ND INCREMENT	POTABLE	KAUAI	LIHUE	HANAMAULU			0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	NEW
LIHUE/PUHI ELEM SCHOOL IST & 2ND INCREMENT	NONPOTABLE USING POTABLE	KAUAI	LIHUE	HANAMAULU			0.03000	0.03000	0.03000	0.03000	0.03000	0.03000	NEW
AHUKINI SRP	POTABLE	KAUAI	LIHUE	HANAMAULU	0.00021	0.00027	0.00034	0.00041	0.00048	0.00069	0.00069	0.00069	3-7-02:2,7,9,10
NA WILIWILI BOAT HARBOR	POTABLE	KAUAI	LIHUE	HANAMAULU						0.00500	0.00500	0.00500	3-2-03
KAUMUALII HWY IMPROVEMENTS, LIHUE TO WEST OF MALUHIA	NONPOTABLE USING POTABLE	KAUAI	LIHUE	HANAMAULU			0.23200	0.23200	0.05800	0.05800	0.05800	0.05800	NR
KUHIOW HWY, HANAMAULU TO KAPAA	NONPOTABLE USING POTABLE	KAUAI	LIHUE	HANAMAULU					0.13600	0.03400	0.03400	0.03400	NR
LIHUE AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	HANAMAULU	0.00800	0.01300	0.01500	0.01900	0.02400	0.05200	0.09500	0.14500	3-5-01
KAUAI COMMUNITY COLLEGE - OCET FACILITIES	POTABLE	KAUAI	LIHUE	HANAMAULU				0.00760	0.00760	0.00760	0.00760	0.00760	3-4-005:006,009
KAUAI COMMUNITY COLLEGE - OCET FACILITIES	NONPOTABLE USING POTABLE	KAUAI	LIHUE	HANAMAULU				0.00202	0.00202	0.00202	0.00202	0.00202	3-4-005:006,009
KAUAI COMMUNITY COLLEGE - RENOV. CAMPUS CENTER FOR CULINARY ARTS	POTABLE	KAUAI	LIHUE	HANAMAULU	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	0.00432	3-4-005:006,009
KAUAI COMMUNITY COLLEGE - ADDITION TO BLDG 4463C ELECT TECH	POTABLE	KAUAI	LIHUE	HANAMAULU	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	0.00600	3-4-005:006,009
AQUIFER SECTOR = HANAMAULU 20102					0.06084	0.06632	0.35083	0.44895	0.41601	0.34722	0.39022	0.44022	
KILAUEA ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	KILAUEA	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	5-2-009: 006
KILAUEA ELEMENTARY NEW CAFETERIA	POTABLE	KAUAI	LIHUE	KILAUEA			0.00150	0.00150	0.00150	0.00150	0.00150	0.00150	5-2-009: 006
KILAUEA ELEMENTARY NEW LIBRARY	POTABLE	KAUAI	LIHUE	KILAUEA			0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	5-2-009: 006
AQUIFER SECTOR = KILAUEA 20105					0.00031	0.00031	0.00227	0.00227	0.00227	0.00227	0.00227	0.00227	
KALAHEO ELEMENTARY NEW ADMINISTRATION	POTABLE	KAUAI	LIHUE	KOLOA	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	0.00031	2-3-002: 005
KOLOA ELEMENTARY NEW 6 CLASSROOM	POTABLE	KAUAI	LIHUE	KOLOA			0.00360	0.00360	0.00360	0.00360	0.00360	0.00360	2-8-010: 011
KOLOA ELEMENTARY NEW 6 CLASSROOM	NONPOTABLE USING POTABLE	KAUAI	LIHUE	KOLOA			0.00750	0.00750	0.00750	0.00750	0.00750	0.00750	2-8-010: 011
KUKUIULA ELEMENTARY SCHOOL	POTABLE	KAUAI	LIHUE	KOLOA						0.03300	0.03300	0.03300	NR
PORT ALLEN AIRPORT MASTER PLAN	POTABLE	KAUAI	LIHUE	KOLOA	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00300	0.00400	1-8-08:1
AQUIFER SECTOR = KOLOA 20101					0.00331	0.00331	0.01441	0.01441	0.01441	0.04741	0.04741	0.04841	

