



**Hawaii Water Plan**

# **Water Resource Protection Plan**

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**JUNE 2008**



**Prepared for:**

State of Hawaii  
Commission on  
Water Resource Management

**Prepared by:**

Wilson Okamoto Corporation



# Hawaii Water Plan

# WATER RESOURCE PROTECTION PLAN

Prepared for:



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
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## TABLE OF CONTENTS

	<u>Page</u>
<b>1. INTRODUCTION.....</b>	<b>1-1</b>
1.1. Overview of Statewide Water Resource Planning .....	1-3
1.2. Water Resource Protection Plan Objectives .....	1-6
1.3. Current Update of the Water Resource Protection Plan .....	1-7
<b>2. GENERAL WATER RESOURCE MANAGEMENT PRINCIPLES AND POLICIES.....</b>	<b>2-1</b>
2.1. General Policies .....	2-1
2.1.1. State Constitution.....	2-1
2.1.2. State Water Code.....	2-1
2.1.3. The Public Trust Doctrine, the Precautionary Principle, and Water Rights in Hawaii.....	2-2
2.1.3.1. The Public Trust Doctrine .....	2-3
2.1.3.2. The Precautionary Principle .....	2-4
2.1.3.3. Water Rights and Uses in Hawaii .....	2-5
2.1.3.4. Correlative Rights .....	2-6
2.1.3.5. Riparian Rights .....	2-6
2.1.3.6. Appurtenant Rights.....	2-7
2.1.3.7. Extinguishing Riparian or Appurtenant Rights.....	2-7
2.1.3.8. Appropriated Uses.....	2-9
2.1.3.9. Obsolete Rights: Prescriptive and Konohiki Rights .....	2-9
2.1.3.10. Native Hawaiian Water Rights.....	2-10
2.2. Water Management Policies in the Hawaii Administrative Rules .....	2-11
2.3. Goals and Objectives of the Commission on Water Resource Management .....	2-13
2.3.1. CWRM Programs .....	2-15
2.4. Summary.....	2-17
<b>3. INVENTORY AND ASSESSMENT OF RESOURCES.....</b>	<b>3-1</b>
3.1. Managing Hawaii's Water Resources for Sustainability .....	3-1
3.1.1. Evolving Issues in Water Resource Management .....	3-1
3.1.2. Applying the "Systems" Approach to Water Resource Management.....	3-5
3.2. Goals for Water Resource Inventory and Assessment .....	3-6
3.3. Nature and Occurrence of Ground Water .....	3-7
3.3.1. The Hydrologic Cycle .....	3-7
3.3.2. Ground Water Occurrence .....	3-8
3.3.2.1. Basal Water .....	3-9
3.3.2.2. Dike Water.....	3-10
3.3.2.3. Perched Water.....	3-10
3.3.2.4. Caprock Water.....	3-11
3.3.2.5. Brackish Water .....	3-11
3.3.3. Ground Water Hydrologic Units .....	3-11
3.3.3.1. Purpose of Aquifer Coding .....	3-12
3.3.3.2. Basis for Ground Water Hydrologic Unit Delineations.....	3-12
3.3.3.3. Aquifer Coding System.....	3-13

## TABLE OF CONTENTS (continued)

	<u>Page</u>
3.3.4. Determining the Availability of Ground Water Resources: Assessing Recharge, Ground Water/Surface Water Interactions, and Sustainable Yields.....	3-25
3.3.4.1. Assessing Ground Water Recharge .....	3-25
3.3.4.2. Assessing Ground and Surface Water Interactions.....	3-30
3.3.4.3. Assessing Aquifer Sustainable Yield .....	3-41
3.3.5. Establishment of the 1990 Sustainable Yield Estimates and Subsequent Updates.....	3-58
3.3.5.1. Selection of the 2008 Sustainable Yields .....	3-59
3.4. Nature and Occurrence of Surface Water .....	3-97
3.4.1. Surface Water Occurrence.....	3-97
3.4.1.1. Streams .....	3-98
3.4.1.2. Springs .....	3-99
3.4.1.3. Ditches and Canals .....	3-99
3.4.1.4. Reservoirs .....	3-100
3.4.2. Surface Water Hydrologic Units .....	3-100
3.4.2.1. Purpose of Surface Water Hydrologic Unit Coding .....	3-100
3.4.2.2. Basis for Surface Water Hydrologic Unit Delineations .....	3-101
3.4.2.3. Surface Water Hydrologic Unit Coding System.....	3-101
3.4.3. Determining the Availability of Surface Water Resources: Assessing Instream Flow Standards.....	3-153
3.4.3.1. Assessing Instream Flow Standards .....	3-153
3.4.3.2. Recommendations for Assessing Instream Flow Standards.....	3-159
3.4.4. Inventory of Surface Water Resources and Interim IFS.....	3-160
<b>4. MONITORING OF WATER RESOURCES.....</b>	<b>4-1</b>
4.1. Overview .....	4-2
4.2. Monitoring of Ground Water Resources.....	4-5
4.2.1. Existing CWRM Ground Water Monitoring Programs in Hawaii.....	4-6
4.2.1.1. CWRM Deep Monitor Well Program.....	4-7
4.2.1.2. Kona Water-Level Monitoring Program .....	4-10
4.2.1.3. Pearl Harbor Ground Water Monitoring Plan.....	4-12
4.2.1.4. CWRM-USGS Cooperative Monitoring Program.....	4-12
4.2.2. Other Ground Water Monitoring Programs .....	4-21
4.2.2.1. Honolulu BWS Ground Water Monitoring Program .....	4-21
4.2.2.2. Public and Private Observation Wells .....	4-23
4.2.3. Statewide Summary of Ground Water Monitoring Sites.....	4-30
4.2.4. CWRM Management of Ground Water Data.....	4-39
4.2.4.1. CWRM Well Index Database.....	4-39
4.2.4.2. Ground Water Well Verification .....	4-39
4.2.4.3. CWRM Water Use Reports .....	4-40
4.2.5. Gaps in Ground Water Monitoring Activities .....	4-41
4.2.6. Recommendations for Monitoring Ground Water Resources.....	4-44
4.3. Surface Water Monitoring .....	4-47
4.3.1. Existing CWRM Surface Water Monitoring Programs in Hawaii .....	4-49
4.3.1.1. CWRM-USGS Cooperative Monitoring Program.....	4-49

**TABLE OF CONTENTS (continued)**

	<u>Page</u>
4.3.2. Other Surface Water Monitoring Programs .....	4-57
4.3.2.1. USGS Cooperative Agreements with Other Entities .....	4-57
4.3.2.2. Division of Aquatic Resources Aquatic Survey Database .....	4-57
4.3.2.3. DOH Water Quality Data .....	4-58
4.3.3. CWRM Management of Surface Water Data .....	4-59
4.3.3.1. Surface Water Information Management (SWIM) System .....	4-59
4.3.3.2. Stream Diversion Verification .....	4-59
4.3.3.3. CWRM Water Use Reports .....	4-60
4.3.4. Gaps in Surface Water Monitoring Activities .....	4-60
4.3.5. Recommendations for Monitoring Surface Water Resources .....	4-61
4.4. Rainfall Monitoring Activities .....	4-62
4.4.1. Overview .....	4-62
4.4.2. Rainfall Data Collection Networks .....	4-62
4.4.3. Rainfall Data Availability .....	4-63
4.4.4. Rainfall Data Analysis .....	4-67
4.4.5. Gaps in Rainfall Data .....	4-67
4.4.6. Gaps in Rainfall Analysis .....	4-69
4.4.7. Recommendations for Rainfall Monitoring .....	4-69
4.5. Cloud Water Interception and Fog Drip Monitoring Activities .....	4-70
4.5.1. Overview .....	4-70
4.5.2. Measuring Fog Drip .....	4-70
4.5.3. Existing Programs .....	4-70
4.5.4. Analyses and Reports .....	4-70
4.5.5. Gaps .....	4-71
4.5.6. Recommendations for Cloud Water Interception and Fog Drip Monitoring .....	4-71
4.6. Evaporation Data .....	4-71
4.6.1. Overview .....	4-71
4.6.2. Data Collection .....	4-72
4.6.3. Existing Programs .....	4-72
4.6.4. Analyses and Reports .....	4-72
4.6.5. Gaps .....	4-72
4.6.6. Recommendations for Evaporation Monitoring .....	4-73
<b>5. CWRM REGULATORY PROGRAMS .....</b>	<b>5-1</b>
5.1. Regulation of Ground Water .....	5-1
5.1.1. Well Construction and Pump Installation Permits .....	5-1
5.1.2. The Hawaii Well Construction and Pump Installation Standards .....	5-2
5.1.3. Abandoned Wells .....	5-2
5.2. Designation of Ground Water Management Areas and Water Use Permitting .....	5-3
5.3. Recommendations for Ground Water Regulation .....	5-10
5.4. Regulation of Surface Water .....	5-11
5.4.1. Request for Determination .....	5-12
5.4.2. Stream Channel Alteration Permit .....	5-14
5.4.3. Stream Diversion Works Permit .....	5-18

## TABLE OF CONTENTS (continued)

	<u>Page</u>
5.4.4. Instream Flow Standards .....	5-18
5.4.4.1. Interim Instream Flow Standards.....	5-19
5.5. Designation of Surface Water Management Areas and Water Use Permitting.....	5-21
5.6. Recommendations for Surface Water Regulation.....	5-22
5.7. Complaints and Dispute Resolution .....	5-22
5.8. Water Shortage and Water Emergency Declarations .....	5-24
5.8.1. Declaration of Water Shortage .....	5-24
5.8.1.1. CWRM Water Shortage Declaration Process.....	5-25
5.8.1.2. Existing CWRM Water Shortage Plans .....	5-26
5.8.1.3. Recommendations for Implementing Water Shortage Provisions .....	5-27
5.8.2. Declaration of Water Emergency .....	5-28
5.8.2.1. Recommendations for Implementing Water Emergency Provisions ....	5-29
<b>6. EXISTING AND FUTURE DEMANDS .....</b>	<b>6-1</b>
6.1. CWRM Goals for Assessing Water Demands.....	6-1
6.2. CWRM Water Use Categories .....	6-1
6.3. CWRM Water Use Reporting Requirements.....	6-3
6.3.1. Water Use Reporting for Ground Water Sources.....	6-7
6.3.1.1. Reported Ground Water Use by Island and Category .....	6-9
6.3.1.2. Gaps in Ground Water Use Reporting.....	6-10
6.3.1.3. Recommendations for Ground Water Use Reporting .....	6-10
6.3.2. Water Use Reporting for Surface Water Sources .....	6-11
6.3.2.1. Reported Surface Water Use by Island and Category .....	6-11
6.3.2.2. Gaps in Surface Water Use Reporting .....	6-11
6.3.2.3. Recommendations for Surface Water Use Reporting .....	6-12
6.4. Assessing Existing Water Demands .....	6-13
6.4.1. CWRM Assessment of Existing Water Demands .....	6-13
6.4.1.1. Summary of Existing Ground Water Demands.....	6-13
6.4.1.2. Summary of Existing Surface Water Demands .....	6-20
6.4.2. County Assessments of Existing Water Demands.....	6-21
6.4.3. USGS Assessment of Existing Water Demands .....	6-25
6.5. Estimating Future Water Demands .....	6-25
6.5.1. Projected Future County Water Demands .....	6-26
6.6. Water Planning at the County Level.....	6-31
6.6.1. The County WUDP Update Process .....	6-31
6.6.1.1. State Water Code and Administrative Rule Requirements.....	6-31
6.6.1.2. Framework Requirements .....	6-32
6.6.2. Status of County WUDP Updates .....	6-33
6.6.2.1. County of Maui WUDP Status .....	6-34
6.6.2.2. City and County of Honolulu WUDP Status.....	6-35
6.6.2.3. County of Hawaii WUDP Status .....	6-36
6.6.2.4. County of Kauai WUDP Status.....	6-36
6.7. Recommendations for County Water Planning .....	6-36

**TABLE OF CONTENTS (continued)**

	<u>Page</u>
<b>7. RESOURCE CONSERVATION AND AUGMENTATION.....</b>	<b>7-1</b>
7.1. Goals & Objectives.....	7-2
7.2. Developing a Water Conservation Program.....	7-2
7.3. Water Conservation Measures.....	7-3
7.3.1. Resource Conservation.....	7-3
7.3.2. Water System Conservation .....	7-4
7.3.3. Consumer Conservation .....	7-5
7.3.3.1. Reduction of Commercial Water Use .....	7-6
7.3.3.2. Reduction of Industrial Water Use.....	7-6
7.3.3.3. Water Pricing .....	7-6
7.3.4. Public Information Programs.....	7-7
7.4. State and County Water Conservation Programs .....	7-7
7.4.1. DLNR Prototype Water Conservation Plan .....	7-9
7.4.2. Water Conservation Manual for State of Hawaii Facilities .....	7-11
7.4.3. County Conservation Programs .....	7-12
7.4.3.1. Maui Department of Water Supply Conservation Program .....	7-13
7.4.3.2. Honolulu Board of Water Supply Conservation Program .....	7-17
7.4.3.3. Kauai Department of Water Conservation Program .....	7-19
7.4.3.4. Hawaii County Department of Water Supply Conservation Program ...	7-20
7.4.4. Recommendations for Water Conservation Programs.....	7-20
7.5. Developing a Resource Augmentation Program.....	7-21
7.6. Water Supply Augmentation Resources .....	7-22
7.6.1. Wastewater Reclamation .....	7-23
7.6.1.1. Potential Applications for Recycled Water.....	7-24
7.6.1.2. Guidelines for Treatment and Use of Reclaimed Water .....	7-25
7.6.1.3. Recycled Water Classifications, Definitions, and Allowable Uses .....	7-25
7.6.1.4. Wastewater Reclamation Issues and Constraints .....	7-26
7.6.1.5. Evaluation of Wastewater Reclamation.....	7-33
7.6.2. Stormwater Reclamation.....	7-33
7.6.2.1. Methods for Stormwater Reclamation .....	7-34
7.6.2.2. Urban Runoff Recycling: A Model Facility .....	7-36
7.6.2.3. Stormwater Reclamation Issues and Constraints.....	7-37
7.6.2.4. Evaluation of Stormwater Reclamation Methods.....	7-40
7.6.3. Desalination .....	7-41
7.6.3.1. Methods for Desalination.....	7-41
7.6.3.2. Desalination Issues and Constraints .....	7-42
7.6.3.3. Evaluation of Desalting Methods .....	7-43
7.7. State and County Resource Augmentation Programs .....	7-44
7.7.1. CWRM Programs .....	7-44
7.7.1.1. 2004 Hawaii Water Reuse Survey and Report.....	7-44
7.7.1.2. Hawaii Stormwater Reclamation Appraisal Report.....	7-45
7.7.2. County Resource Augmentation Programs.....	7-46
7.7.2.1. County of Maui .....	7-46
7.7.2.2. City and County of Honolulu.....	7-49
7.7.2.3. County of Kauai .....	7-52
7.7.2.4. County of Hawaii .....	7-53

**TABLE OF CONTENTS (continued)**

	<u>Page</u>
7.7.3. Recommendations for Water Resource Augmentation Planning .....	7-53
7.7.3.1. Recommendations for Wastewater Reclamation in Hawaii .....	7-54
7.7.3.2. Recommendations for Stormwater Reclamation in Hawaii .....	7-55
7.7.3.3. Recommendations for Desalination Programs in Hawaii .....	7-56
7.8. Effects of Global Climate Change on Hawaii's Water Resources .....	7-56
7.8.1. Overview .....	7-56
7.8.2. Local Climate Trends .....	7-57
7.8.3. Impacts to Hawaii .....	7-58
7.8.4. Recommendations to Mitigate Impacts of Climate Trends .....	7-59
<b>8. DROUGHT PLANNING .....</b>	<b>8-1</b>
8.1. Goals and Objectives .....	8-1
8.2. Overview of Drought .....	8-2
8.2.1. Understanding Drought .....	8-2
8.2.2. Drought Impacts .....	8-3
8.2.3. Drought Response versus Mitigation .....	8-3
8.2.4. Hawaii's Need for Drought Mitigation .....	8-4
8.3. Existing Drought Planning Context .....	8-5
8.3.1. Federal Disaster Management Act .....	8-5
8.3.2. State Hazard Mitigation Planning .....	8-5
8.3.3. Hawaii State Hazard Mitigation Plan .....	8-6
8.3.4. County Hazard Mitigation Plans .....	8-6
8.3.5. Hawaii Drought Plan, Phase I .....	8-7
8.3.5.1. Drought Risk and Vulnerability Assessment and GIS Mapping Project ..	8-7
8.3.6. Hawaii Drought Plan Update .....	8-8
8.3.7. County Drought Mitigation Strategies .....	8-9
8.4. Evaluation of Current Drought Planning, Mitigation, and Response in Hawaii .....	8-10
8.4.1. Evaluation of Drought Leadership Structure .....	8-10
8.4.2. Evaluation of Drought Communication Protocol and Drought Declarations .....	8-10
8.4.3. Drought Response Actions .....	8-11
8.4.4. Drought Mitigation and Preparedness .....	8-12
8.5. Recommendations for Drought Planning .....	8-13
8.5.1. Recommendations for Future HDP Updates and Revisions .....	8-14
<b>9. WATERSHED PROTECTION .....</b>	<b>9-1</b>
9.1. Goals and Objectives .....	9-1
9.2. Summary of Traditional Hawaiian Land Management Practices, and the Ahupuaa Management Model .....	9-3
9.2.1. Traditional Native Hawaiian Land Management System .....	9-4
9.2.2. Ahupuaa Management Model .....	9-5
9.3. Federal Watershed Protection and Management Programs .....	9-6
9.3.1. Environmental Protection Agency Programs .....	9-6
9.3.1.1. EPA's Watershed Protection Approach .....	9-8
9.3.1.2. Evaluation of EPA's Statewide Watershed Management Approaches ..	9-11
9.3.2. Other Federal Watershed Protection and Management Programs .....	9-15
9.3.2.1. U.S. Army Corps of Engineers (USACE) Permitting Programs .....	9-15
9.3.2.2. USDA Natural Resource Conservation Service .....	9-17



**TABLE OF CONTENTS (continued)**

	<u>Page</u>
9.4. State of Hawaii Watershed Protection Programs.....	9-18
9.4.1. DLNR Division of Forestry and Wildlife Programs .....	9-18
9.4.1.1. The Natural Area Reserves System and the Natural Area Partnership Program.....	9-20
9.4.1.2. Watershed Management Program .....	9-21
9.4.2. DLNR Office of Conservation and Coastal Lands.....	9-26
9.4.3. DBEDT Land Use Commission.....	9-27
9.4.4. Department of Health Water Quality Programs.....	9-27
9.4.5. The Hawaii Coastal Zone Management Program .....	9-28
9.5. Watershed Protection and Conservation Partnerships .....	9-29
9.5.1. The Hawaii Association of Watershed Partnerships .....	9-29
9.5.2. Ala Wai Watershed Association .....	9-32
9.5.3. Hanalei Watershed Hui .....	9-32
9.5.4. Conservation Districts .....	9-34
9.6. Gaps In Watershed Protection .....	9-35
9.7. Recommendations .....	9-35
<b>10. WATER QUALITY .....</b>	<b>10-1</b>
10.1. Statutory Requirements for the Water Quality Plan .....	10-1
10.2. Integration of the Water Quality Plan with Other Hawaii Water Plan Components	10-2
10.3. Status of the Water Quality Plan .....	10-3
10.3.1. DOH Strategic Plan for Hawaii’s Environmental Protection Programs .....	10-3
10.4. Department of Health Programs Related to the Water Quality Plan .....	10-4
10.4.1. Water Quality Management Program.....	10-5
10.4.2. Source Water Assessment and Protection Program (SWAP).....	10-8
10.4.3. Comprehensive State Groundwater Protection Program Strategy/Plan .....	10-9
10.4.4. Underground Injection Control (UIC) Program.....	10-11
10.4.5. Groundwater Contamination Maps .....	10-13
10.4.6. Polluted Runoff Control Program .....	10-14
10.4.7. Beach Monitoring Program .....	10-15
10.4.8. Wastewater Recycling Program.....	10-16
<b>11. PRIORITY RECOMMENDATIONS AND IMPLEMENTATION PLAN.....</b>	<b>11-1</b>
11.1. WRPP Priority Recommendations .....	11-1
11.1.1. Priority Recommendation 1: Statewide Water Resource Monitoring and Data Collection Program Development .....	11-1
11.1.2. Priority Recommendation 2: Statewide Water Resource Investigation and Assessment Program Development.....	11-6
11.1.3. Priority Recommendation 3: Statewide Water Conservation and Water Shortage Program Development .....	11-10
11.2. WRPP Implementation Plan.....	11-15
<b>12. REFERENCES.....</b>	<b>12-1</b>

## TABLE OF CONTENTS (continued)

### List of Figures

	<u>Page</u>
Figure 1-1	Hawaii Water Plan Components..... 1-2
Figure 1-2	Framework for the Hawaii Water Plan..... 1-5
Figure 2-1	Generalized Process for Determining Appurtenant Water Rights ..... 2-8
Figure 2-2	CWRM Organization Chart..... 2-15
Figure 3-1	Island of Kauai Ground-Water Hydrologic Units..... 3-19
Figure 3-2	Island of Oahu Ground-Water Hydrologic Units ..... 3-20
Figure 3-3	Island of Molokai Ground-Water Hydrologic Units..... 3-21
Figure 3-4	Island of Lanai Ground-Water Hydrologic Units ..... 3-22
Figure 3-5	Island of Maui Ground-Water Hydrologic Units ..... 3-23
Figure 3-6	Island of Hawaii Ground-Water Hydrologic Units ..... 3-24
Figure 3-7	Schematic cross section showing a dike-impounded system (adapted from Oki and Brasher, 2003) ..... 3-33
Figure 3-8	Effects of pumping from a hypothetical ground-water system that discharges to a stream (Adapted from Alley and others, 1999)..... 3-34
Figure 3-9	Hydrogeologic feature of a typical Hawaiian basal aquifer..... 3-42
Figure 3-10	Conceptual formulation of the basal aquifer in the robust analytical model (RAM)..... 3-49
Figure 3-11	Basal aquifer head-draft curve derived by RAM..... 3-50
Figure 3-12	Conceptual formulation of the basal aquifer model RAM2..... 3-51
Figure 3-13	RAM2 modeling procedure..... 3-53
Figure 3-14	Sustainable Yield Confidence Ranking ..... 3-89
Figure 3-15	Island of Hawaii Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-91
Figure 3-16	Island of Kauai Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-92
Figure 3-17	Island of Lanai Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-93
Figure 3-18	Island of Maui Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-94
Figure 3-19	Island of Molokai Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-95
Figure 3-20	Island of Oahu Ground Water Hydrologic Units and 2008 Sustainable Yields ..... 3-96
Figure 3-21	Niihau Surface Water Hydrologic Units, Unit Codes 1001 to 1013 ..... 3-111
Figure 3-22	Kauai Surface Water Hydrologic Units, Unit Codes 2001 to 2074 ..... 3-112
Figure 3-22A	Kauai Surface Water Hydrologic Units, Unit Codes 2001 to 2013 ..... 3-113
Figure 3-22B	Kauai Surface Water Hydrologic Units, Unit Codes 2014 to 2026 ..... 3-114
Figure 3-22C	Kauai Surface Water Hydrologic Units, Unit Codes 2027 to 2039 ..... 3-115
Figure 3-22D	Kauai Surface Water Hydrologic Units, Unit Codes 2040 to 2052 ..... 3-116
Figure 3-22E	Kauai Surface Water Hydrologic Units, Unit Codes 2053 to 2060 ..... 3-117
Figure 3-22F	Kauai Surface Water Hydrologic Units, Unit Codes 2061 to 2074 ..... 3-118

**TABLE OF CONTENTS (continued)****List of Figures (continued)**

	<u>Page</u>
Figure 3-23	Oahu Surface Water Hydrologic Units, Unit Codes 3001 to 3087 ..... 3-119
Figure 3-23A	Oahu Surface Water Hydrologic Units, Unit Codes 3001 to 3026 ..... 3-120
Figure 3-23B	Oahu Surface Water Hydrologic Units, Unit Codes 3027 to 3046 ..... 3-121
Figure 3-23C	Oahu Surface Water Hydrologic Units, Unit Codes 3047 to 3061 ..... 3-122
Figure 3-23D	Oahu Surface Water Hydrologic Units, Unit Codes 3062 to 3070 ..... 3-123
Figure 3-23E	Oahu Surface Water Hydrologic Units, Unit Codes 3071 to 3081 ..... 3-124
Figure 3-23F	Oahu Surface Water Hydrologic Units, Unit Codes 3082 to 3087 ..... 3-125
Figure 3-24	Molokai Surface Water Hydrologic Units, Unit Codes 4001 to 4050 ..... 3-126
Figure 3-24A	Molokai Surface Water Hydrologic Units, Unit Codes 4001 to 4009 ..... 3-127
Figure 3-24B	Molokai Surface Water Hydrologic Units, Unit Codes 4010 to 4035 ..... 3-128
Figure 3-24C	Molokai Surface Water Hydrologic Units, Unit Codes 4036 to 4041 ..... 3-129
Figure 3-24D	Molokai Surface Water Hydrologic Units, Unit Codes 4042 to 4050 ..... 3-130
Figure 3-25	Lanai Surface Water Hydrologic Units, Unit Codes 5001 to 5032 ..... 3-131
Figure 3-26	Maui Surface Water Hydrologic Units, Unit Codes 6001 to 6112 ..... 3-132
Figure 3-26A	Maui Surface Water Hydrologic Units, Unit Codes 6001 to 6010 ..... 3-133
Figure 3-26B	Maui Surface Water Hydrologic Units, Unit Codes 6011 to 6024 ..... 3-134
Figure 3-26C	Maui Surface Water Hydrologic Units, Unit Codes 6025 to 6035 ..... 3-135
Figure 3-26D	Maui Surface Water Hydrologic Units, Unit Codes 6036 to 6065 ..... 3-136
Figure 3-26E	Maui Surface Water Hydrologic Units, Unit Codes 6066 to 6088 ..... 3-137
Figure 3-26F	Maui Surface Water Hydrologic Units, Unit Codes 6089 to 6104 ..... 3-138
Figure 3-26G	Maui Surface Water Hydrologic Units, Unit Codes 6105 to 6112 ..... 3-139
Figure 3-27	Kahoolawe Surface Water Hydrologic Units, Unit Codes 7001 to 7024... 3-140
Figure 3-28	Hawaii Surface Water Hydrologic Units, Unit Codes 8001 to 8166 ..... 3-141
Figure 3-28A	Hawaii Surface Water Hydrologic Units, Unit Codes 8001 to 8022 ..... 3-142
Figure 3-28B	Hawaii Surface Water Hydrologic Units, Unit Codes 8023 to 8042 ..... 3-143
Figure 3-28C	Hawaii Surface Water Hydrologic Units, Unit Codes 8043 to 8066 ..... 3-144
Figure 3-28D	Hawaii Surface Water Hydrologic Units, Unit Codes 8067 to 8083 ..... 3-145
Figure 3-28E	Hawaii Surface Water Hydrologic Units, Unit Codes 8084 to 8107 ..... 3-146
Figure 3-28F	Hawaii Surface Water Hydrologic Units, Unit Codes 8108 to 8113 ..... 3-147
Figure 3-28G	Hawaii Surface Water Hydrologic Units, Unit Codes 8114 to 8137 ..... 3-148
Figure 3-28H	Hawaii Surface Water Hydrologic Units, Unit Codes 8138 to 8147 ..... 3-149
Figure 3-28I	Hawaii Surface Water Hydrologic Units, Unit Codes 8148 to 8157 ..... 3-150
Figure 3-28J	Hawaii Surface Water Hydrologic Units, Unit Codes 8158 to 8166 ..... 3-151
Figure 3-29	Conceptual illustration of information that should be considered in assessments of instream flow standards and in the evaluation of instream and non-instream uses. .... 3-154

**TABLE OF CONTENTS (continued)****List of Figures (continued)**

	<u>Page</u>
Figure 4-1	Schematic Diagram of a Deep Monitor Well..... 4-8
Figure 4-2	Sample Graph of CTD Data from a Deep Monitor Well..... 4-9
Figure 4-3	Deep Monitor Wells in the State of Hawaii ..... 4-38
Figure 4-4	Water-Level Observation Wells in the State of Hawaii ..... 4-39
Figure 4-5	History of USGS Continuous-Recording Stream Gage Operation ..... 4-51
Figure 4-6	Locations of Streamflow Gaging Stations on Kauai (Water Year 2005)..... 4-51
Figure 4-7	Locations of Streamflow Gaging Stations on Oahu (Water Year 2005)..... 4-52
Figure 4-8	Locations of Streamflow Gaging Stations on Molokai (Water Year 2005).. 4-53
Figure 4-9	Locations of Streamflow Gaging Stations on Maui (Water Year 2005) ..... 4-53
Figure 4-10	Locations of Streamflow Gaging Stations on Hawaii (Water Year 2005) ... 4-54
Figure 4-11	NWS Hydronet Rain Gages on Kauai. .... 4-64
Figure 4-12	NWS Hydronet Rain Gages on Oahu..... 4-64
Figure 4-13	NWS Hydronet Rain Gages on Molokai and Lanai. .... 4-65
Figure 4-14	NWS Hydronet Rain Gages on Maui and Kahoolawe. .... 4-65
Figure 4-15	NWS Hydronet Rain Gages on Hawaii..... 4-66
Figure 4-16.	Current and Historic Rainfall Monitoring Stations on Kauai..... 4-68
Figure 5-1	Designated Ground Water Management Areas ..... 5-4
Figure 6-1	Water Use Categories and Sub-Categories ..... 6-2
Figure 6-2	Island of Kauai Production Wells..... 6-4
Figure 6-3	Island of Oahu Production Wells ..... 6-4
Figure 6-4	County of Maui Production Wells ..... 6-5
Figure 6-5	Island of Hawaii Production Wells ..... 6-5
Figure 6-7	Kauai County Projected Water Demand 2010 to 2030..... 6-27
Figure 6-8	City and County of Honolulu Projected Water Demand 2010 to 2030 ..... 6-28
Figure 6-9	County of Maui Projected Water Demand 2010 to 2030 ..... 6-29
Figure 6-10	County of Hawaii Projected Water Demand 2010 to 2030 ..... 6-30
Figure 8-1	Hawaii Drought Leadership Structure..... 8-11
Figure 9-1	State Forest Reserve Areas ..... 9-19
Figure 9-2	NARS Areas in Hawaii ..... 9-20
Figure 9-3	State Land Use Conservation District Lands..... 9-26
Figure 9-4	Hawaii Watershed Partnerships ..... 9-30

**TABLE OF CONTENTS (continued)****List of Tables**

	<u>Page</u>
Table 3-1	Kauai (2) Ground-Water Hydrologic Units ..... 3-14
Table 3-2	Oahu (3) Ground-Water Hydrologic Units ..... 3-15
Table 3-3	Molokai (4) Ground-Water Hydrologic Units ..... 3-16
Table 3-4	Lanai (5) Ground-Water Hydrologic Units ..... 3-16
Table 3-5	Maui (6) Ground-Water Hydrologic Units ..... 3-17
Table 3-6	Hawaii (8) Ground-Water Hydrologic Units ..... 3-18
Table 3-7	Summary of Mathematical Ground Water Flow Models Reports in Hawaii ..... 3-46
Table 3-8	Relationships Between Initial Head and Minimum Equilibrium Head of Hawaii Basal Aquifers. .... 3-52
Table 3-9	Sustainable Yield Estimation of Selected Hawaii Basal Aquifers ..... 3-54
Table 3-10	Comparison of Predicted Sustainable Yields Considered by the CWRM, Sustainable Yield (SY) in Million Gallons per Day (mgd)..... 3-63
Table 3-11	2008 Sustainable Yields for Hawaii Aquifers..... 3-77
Table 3-12	Sustainable Yield Values for Hawaii Caprock Aquifers ..... 3-88
Table 3-13	Niihau (1) Surface Water Hydrologic Units..... 3-103
Table 3-14	Kauai (2) Surface Water Hydrologic Units..... 3-103
Table 3-15	Oahu (3) Surface Water Hydrologic Units ..... 3-104
Table 3-16	Molokai (4) Surface Water Hydrologic Units ..... 3-105
Table 3-17	Lanai (5) Surface Water Hydrologic Units ..... 3-105
Table 3-18	Maui (6) Surface Water Hydrologic Units ..... 3-106
Table 3-19	Kahoolawe (7) Surface Water Hydrologic Units ..... 3-107
Table 3-20	Hawaii (8) Surface Water Hydrologic Units ..... 3-107
Table 4-1	Summary of CWRM Deep Monitor Wells ..... 4-10
Table 4-2	CWRM-USGS Cooperative Monitoring Program, Fiscal Year 2007 Cooperators..... 4-14
Table 4-3	CWRM-USGS Cooperative Monitoring Program, Fiscal Year 2007 Data Collection Station Types ..... 4-15
Table 4-4	CWRM-USGS Cooperative Monitoring Program, Fiscal Year 2007 Data Collection Stations for the State of Hawaii..... 4-16
Table 4-5	Summary of Deep Monitor Wells in the Honolulu BWS Monitoring Program..... 4-22
Table 4-6	Summary of Water Level Monitor Wells in the Honolulu BWS Monitoring Program..... 4-23
Table 4-7	Statewide Summary of Registered Observation Wells Not Included in the CWRM, CWRM-USGS, or Honolulu BWS Monitoring Programs ..... 4-24
Table 4-8	Statewide Summary of All Registered Observation Wells..... 4-30

**TABLE OF CONTENTS (continued)****List of Tables**

	<u>Page</u>
Table 5-1	Complaint and Dispute Cases Filed with CWRM ..... 5-23
Table 6-1	Status of Ground Water Use Reporting by Island ..... 6-8
Table 6-2	Percent of Wells Reporting Water Use..... 6-9
Table 6-3	Summary of 2005 Reported Ground Water Use ..... 6-10
Table 6-4	Summary of Reported Surface Water Use ..... 6-11
Table 6-5	Existing Demands by Aquifer System Area, Island of Kauai, July 2005..... 6-15
Table 6-6	Existing Demands by Aquifer System Area, Island of Oahu, July 2005 ..... 6-16
Table 6-7	Existing Demands by Aquifer System, Island of Maui, July 2005..... 6-17
Table 6-8	Existing Demands by Aquifer System Area, Island of Molokai, July 2005 . 6-18
Table 6-9	Existing Demands by Aquifer System Area, Island of Lanai, July 2005 ..... 6-18
Table 6-10	Existing Demands by Aquifer System Area, Island of Hawaii, July 2005 ... 6-19
Table 6-11	County of Kauai 2005 and 2006 Municipal Water Use (mgd) ..... 6-21
Table 6-12	City and County of Honolulu 2005 and 2006 Municipal Water Use (mgd) ..... 6-22
Table 6-13	County of Maui 2003 Municipal Water Use (mgd)..... 6-23
Table 6-14	County of Hawaii 2005 Municipal Water Use (mgd)..... 6-24
Table 6-15	2000 Freshwater Demand by Type and by County ..... 6-25
Table 6-16	Projected Water Demand for All Counties, 2010 to 2030 (mgd) ..... 6-26
Table 6-17	Kauai County Projected Water Demand, 2010 to 2030 (mgd) ..... 6-27
Table 6-18	City and County of Honolulu Projected Water Demand, 2010 to 2030 (mgd) ..... 6-28
Table 6-19	Maui County Projected Water Demand for Maui Island and Molokai Island, 2010 to 2030 (mgd) ..... 6-29
Table 6-20	Hawaii County Projected Water Demand, 2010 to 2030 (mgd)..... 6-30
Table 7-1	Stormwater Reclamation Technologies..... 7-35
Table 8-1	Associated Drought Response and Mitigation Actions..... 8-4
Table 11-1	Priority Well Sealings ..... 11-6
Table 11-2	WRPP Implementation Plan ..... 11-16

**List of Appendices**

Appendix A	Planning Context for the WRPP
Appendix B	CWRM Permit Process Diagrams
Appendix C:	1989 Declared Surface Water Use

## LIST OF ABBREVIATIONS

%	percent
12-MAV	12-month moving average
AHR	American Heritage River
AWUDP	Agricultural Water Use and Development Plan
AWWA	Ala Wai Watershed Association
BFI	base-flow index
BLNR	Board of Land and Natural Resources
CLDC(s)	County/Local Drought Committee(s)
County WUDPs	County Water Use and Development Plans
CPC	National Weather Service Climate Prediction Center
CSTRs	completely stirred tank reactors
CTAHR	College of Tropical Agriculture and Human Resources, University of Hawaii
CWRM	Commission on Water Resource Management
CZARA	Coastal Zone Reauthorization Amendments of 1990
CZM Program	Coastal Zone Management Program
DAR	DLNR Division of Aquatic Resources
DBCP	dibromochloropropane
DBEDT	Department of Business, Economic Development and Tourism
DHHL	Department of Hawaiian Home Lands
DOA	Department of Agriculture
DOFAW	DLNR Division of Forestry and Wildlife
DOH	Department of Health
DOWALD	DLNR Division of Water and Land Development
DLNR	Department of Land and Natural Resources
EDR	electrodialysis reversal
EIS	Environmental Impact Statement
ENSO	El Niño/Southern Oscillation
EPA	U.S. Environmental Protection Agency
EPO	DOH Environmental Protection Office
FEMA	Federal Emergency Management Agency
Framework	Statewide Framework for Updating the Hawaii Water Plan
FY	Fiscal Year
GAP	Gap Analysis Program
GCM	General circulation models
GIS	Geographic Information Systems
gpd	gallons per day
gpd/ac	gallons per day per acre
gpm	gallons per minute
GPS	global positioning satellite
GWPP	Groundwater Protection Program
HAR	Hawaii Administrative Rules
Hawaii DWS	Hawaii Department of Water Supply
HAWP	Hawaii Association of Watershed Partnerships
HDP	Hawaii Drought Plan

**LIST OF ABBREVIATIONS (continued)**

HECO	Hawaiian Electric Company
Honolulu BWS	Honolulu Board of Water Supply
HRS	Hawaii Revised Statutes
HSA	<i>Hawaii Stream Assessment: A Preliminary Appraisal of Hawaii's Stream Resources</i>
HWCPIS	Hawaii Well Construction and Pump Installation Standards
HWH	Hanalei Watershed Hui
HWP	Hawaii Water Plan
IFS	Instream Flow Standard(s)
in/yr	inches per year
interim IFS	interim Instream Flow Standard(s)
Kauai DOW	Kauai Department of Water
LEED standards	Leadership in Energy and Environmental Design standards
Legislature	Hawaii State Legislature
LUC	DBEDT Land Use Commission
Maui DWS	Maui Department of Water Supply
mi <sup>2</sup>	square mile(s)
mgd	million gallon(s) per day
mg/L	milligrams per liter
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPTZ	midpoint of the transition zone
NAPP	Natural Area Partnership Program
NARS	Natural Area Reserves System
NCDC	National Climatic Data Center
NDMC	National Drought Mitigation Center
NGS	National Geodetic Survey
NOAA	National Oceanic & Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPV	net present value
NRCS	Natural Resources Conservation Service
NWS	National Weather Service
OCCL	DLNR Office of Conservation and Coastal Lands
Office of Water	U.S. Environmental Protection Agency Office of Water
ORMP	Hawaii Ocean Resources Management Plan
OWMP	Oahu Water Management Plan
PDO	Pacific decadal oscillation
PHGMP	Pearl Harbor Ground Water Monitoring Plan
PHMWG	Pearl Harbor Monitoring Working Group
ppm	parts per million
R-O water	Reverse-osmosis-treated recycled water
R-1 water	tertiary-treated recycled water
R-2 water	disinfected secondary-treated recycled water
R-3 water	undisinfected secondary-treated recycled water
RAM	robust analytical model
RAM2	modified robust analytical model



**LIST OF ABBREVIATIONS (continued)**

RASA	Regional Aquifer-System Analysis
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RFD	Request for Determination
SCAP	Stream Channel Alteration Permit(s)
SCO	University of Hawaii - State Climate Office
SDWP	Stream Diversion Works Permits
SMA	Special Management Area
SMURRF	Santa Monica Urban Runoff Recycling Facility
SPAM Branch	CWRM's Stream Protection and Management Branch
State Constitution	Constitution of the State of Hawaii
State Water Code	Chapter 174C, Hawaii Revised Statutes
SWAP Program	Source Water Assessment and Protection Program
SWCD(s)	Soil and Water Conservation District(s)
SWIM System	Surface Water Information Management System
SWPP	State Water Projects Plan
SY	Sustainable Yield
The Court	Hawaii Supreme Court
TMDL	Total Maximum Daily Load
UIC Program	Underground Injection Control Program
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USNPS	U.S. National Park Service
Waihole Water Case	Waihole Ditch Contested Case, Docket No. CCH-OA95-1
WCFSP	Water Conservation Field Services Program
WMA(s)	Water Management Area(s)
WQP	Water Quality Plan
WRF	Water Recycling Facility
WRPP	Water Resource Protection Plan
WRRC	Water Resource Research Center
WUDP	Water Use and Development Plan
WWRF	Wastewater Reclamation Facility
WWTP	Wastewater Treatment Plant

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