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DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

August 28, 2008
Honolulu, Hawaii

Request to Enter into a Cooperative Agreement with U.S. Geological Survey
For Statewide Hydrologic Data Collection and
Water Resource Investigations for Fiscal Year (FY) 2009

Each year the Commission on Water Resource Management (CWRM) enters into a cooperative agreement with the U.S. Geological Survey (USGS) for the inventory and investigation of Hawaii's water resources.

BACKGROUND

The cooperative agreement between the USGS and the State officially began in 1909 when the USGS entered into an agreement with the Territory of Hawaii. At first only 12 streams were being gaged continuously. By 1914 there were 87 continuous-record stations. The program continued to grow, reaching its peak in 1966 when 197 gages were operational under the agreement (Exhibit 1). Over the years, some gages were discontinued for variety of reasons, which include shifting fiscal priority, changing economic landscape, completed data acquisition objectives, and dwindling partnership engagement in monitoring and data collection. Over 140 (37%) of the 376 perennial streams in Hawaii have been gaged since the inception of the cooperative program. However, the steady decline of the number of monitored streams has diminished the ability of water resource managers to understand and appropriately manage the State's surface waters.

The current agreement now includes ground water data collection, which began in 1972 to gather baseline data throughout the State starting with 170 wells. Beginning in 1998, CWRM streamlined the cooperative agreement by transferring the crest-stage stream-gaging program to civil defense agencies where these data (e.g. flooding issues) are more relevant, and by eliminating duplication of ground water data collection efforts in wells. Meanwhile, governmental and private water system purveyors were notified to provide water-level data to the CWRM as required by law. The Division of Forestry and Wildlife's (DOFW) Watershed Management Grant Program (WMGP) funded the operation of 16 gaging stations on Watershed Partnership Lands in FY 2008. Currently, DOFW through its Watershed Partnerships Program

sharply cut down its support to gaging operations in watershed management areas, reducing the number of gages to four in FY 2009 and disengaging the Watershed Partnerships in the outyears from CWRM and USGS efforts in monitoring the watershed areas' water resources. Exhibit 2 provides a summary of changes to the program, including the operational cost, since 1995.

CURRENT AGREEMENT

Although the nature of the agreement and the relationship of the parties involved are basically unchanged, the fiscal situation of the FY 2009 agreement is conspicuously different from the FY 2008 cooperative agreement. The USGS operational costs have increased by approximately 10%, while the cost-share of USGS and DOFW WMGP has decreased. The table below summarizes the annual changes in funding requirements for this cooperative agreement.

COST	FY2007	FY2008	FY2009
Total Joint Funding Requirement	\$851,143	\$919,800	\$816,334
Expected CWRM cost-share	\$459,085	\$526,600	\$504,000
Percentage CWRM cost-share	54%	57%	60%
DOFW Watershed Management Grant	\$132,000	\$118,175	\$48,896
Ground water well continuous monitoring	\$4,950	\$5,400	\$5,730
Rain gage continuous recording	\$6,600	\$7,200	\$9,168
Continuous recording stream gage	\$16,500	\$18,000	\$19,100

The Commission's share of the cooperative program will not exceed \$410,000 in general and supplementary funds under the Department's LNR 404 Water Resources Program. In addition to the general fund, the DOFW grant of \$48,896 and Waiahole Trust Fund will be used to cost-share the maintenance of gages and monitoring of water resources in the watershed management areas and Waiahole ditch system coverage, respectively.

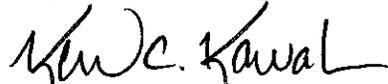
Under the Joint Funding Cooperative Agreement for Federal FY 2009 (Exhibit 3), the USGS collects basic hydrologic data and conducts area resource investigations. However, the change in the budget scenario has corresponding implication in the number of gaging stations that can be sustained in FY2009 data collection program. Thus, the USGS proposal for the continuation of the Cooperative Program to FY 2009 highlighted the reduction in the number of gages in which nineteen monitoring sites in FY 2008 Cooperative Agreement have to be discontinued for the current agreement (Exhibit 4).

Staff continues to confer with the USGS on a regular basis to review and evaluate a comprehensive statewide ground and surface-water monitoring program. Staff is committed to remain vigilant to identify duplication of efforts, assess relevance of data collection, and prioritize the need for monitoring information in a geographical area.

RECOMMENDATION

Staff recommends that the Commission authorize the Chairperson to enter into a cooperative agreement between the Commission and the U.S. Geological Survey to undertake the specified monitoring activities. The terms of this agreement will be subject to the approval of the Chairperson and the Department's Deputy Attorney General. Contract execution will be done in accordance with Chapter 103D, HRS, and Chapter 3-122, Hawaii Administrative Rules.

Respectfully submitted,



KEN C. KAWAHARA
Deputy Director

- Exhibits 1 Number of Continuous-Record Gages Operated Since 1909
- 2 Summary of Changes to the Cooperative Program: 1995-2009
- 3 Cooperative Agreement for Federal FY 2009
- 4 USGS Letter of Proposal for the Continuation of Cooperative Water Program to Federal FY 2009

APPROVED FOR SUBMITTAL:



LAURA H. THIELEN
Chairperson

EXHIBIT 1: NUMBER OF CONTINUOUS-RECORD GAGES OPERATED SINCE 1909

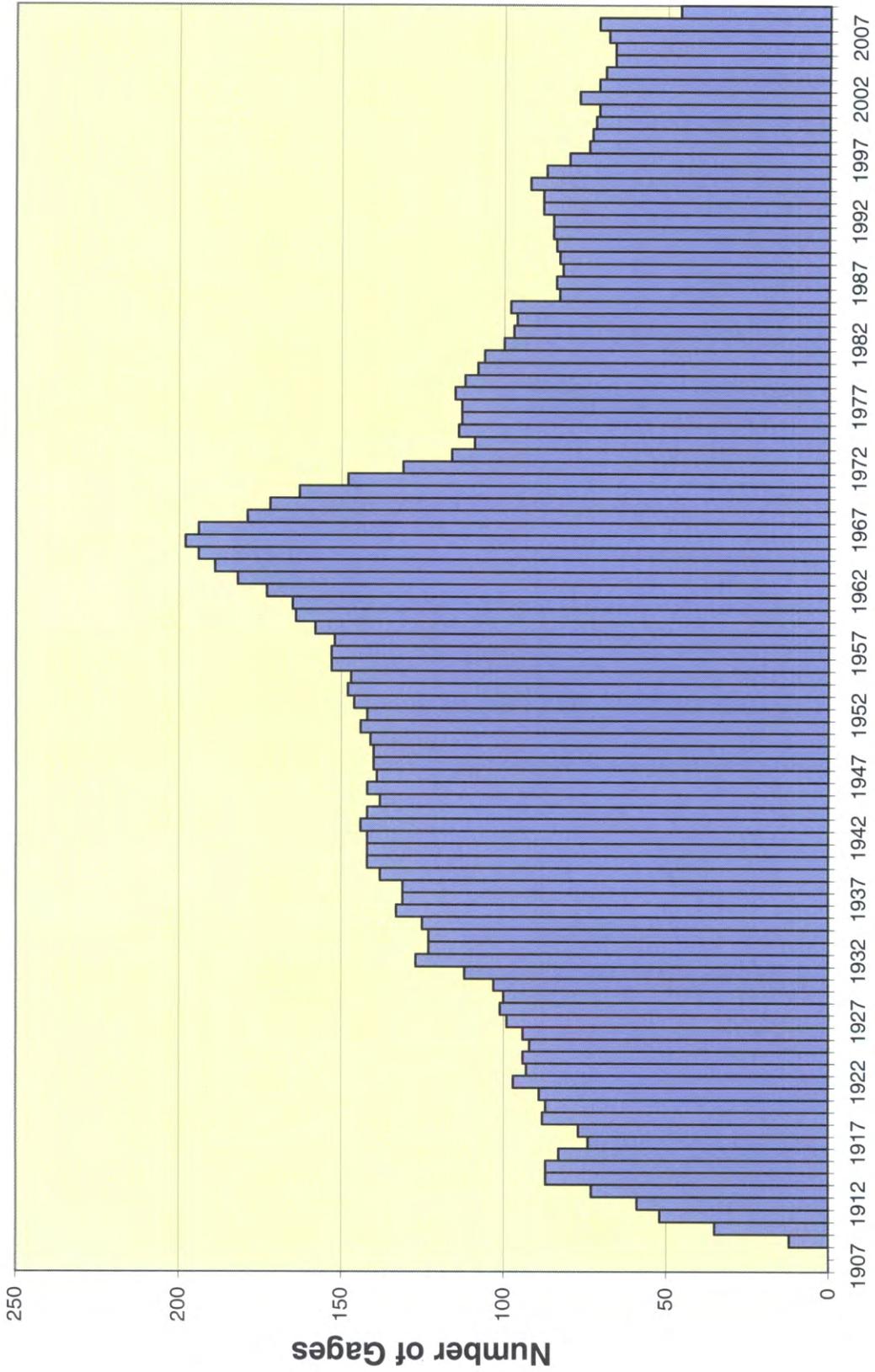


EXHIBIT 2: SUMMARY OF CHANGES TO THE COOPERATIVE PROGRAM: 1995 to 2009

Fiscal Year	No. of Continuous Stream Gages	No. of Crest-Stage Stream Gages	No. of Low-Flow Stream Gages	No. of Wells Ground Water Levels & Water Quality	No. of Rain Gages	CWRM Contribution \$	Comments
1995	43	62	6	187	36	\$448,000	
1996	40	59	-	160	36	\$407,500	Reductions made to program due to budgetary restraints.
1997	40	59	-	160	36	\$407,500	No changes.
1998	41	48	-	160	33	\$415,175	FY 1998 Changes: 1. Deleted one continuous stream gage (Pelekuuu Valley) and added two continuous stream gages (in Punaluu Valley) which the Hon. BWS previously funded. Net cost increase to program = \$7,675. 2. Savings from the reduction of crest-stage gages and rain gages are used to offset relocation costs for the Hanalei and Hilea Gulch continuous stream gages.
1999	41	47	-	158	32	\$415,175	FY 1999 Changes: 1. Discontinued two monitoring wells (BWS, Kahe Point and DOWALD, Moanalua deep observation wells) 2. Discontinued Kalihi raingage. Funding from COE adequate. 3. Savings from reduction of monitor wells and raingage were used to replace and/or relocate existing stations.
2000	40	47	-	157	32	\$415,175	FY 2000 Changes: Refer to Staff Submittal dated December 14, 1999.
2001	42	47	-	120	32	\$440,000	FY 2001 Changes: Refer to Staff Submittal dated January 24, 2001

Fiscal Year	No. of Continuous Stream Gages	No. of Crest-Stage Stream Gages	No. of Low-Flow Stream Gages	No. of Wells Ground Water Levels & Water Quality	No. of Rain Gages	CWRM Contribution \$	Comments
2002	42	-	12	120	30	\$415,000	<p>FY 2002 Changes:</p> <ol style="list-style-type: none"> 1. Discontinue two rain gages. 2. Discontinue one continuous-record stream gage. 3. Add a continuous-record stream gage on Hakipuu Stream, Oahu. 4. Add low-flow measurements and seepage runs on selected Windward Oahu Streams.
2003	43	-	12	81	30	\$415,000	<p>FY 2003 Changes:</p> <ol style="list-style-type: none"> 1. Begin operating Hakipuu continuous stream gage. 2. Discontinue all chloride sampling at pumping wells to avoid duplication with the legal reporting requirements of well users and water purveyors.
2004	39	-	-	71	25*	\$373,000	<p>FY 2004 Changes:</p> <ol style="list-style-type: none"> 1. Eliminate 4 continuous stream gages, 11 wells for collecting water level data, and 4 rain gages.* 2. Use low-flow streamflow data collected in FY03 to analyze pre-diversion flows in the Waiahole Stream area. <p>*Reduction of 5 rain gages (4 built, 1 not built).</p>
2005	25	-	-	70	21	\$356,000	<p>FY 2005 Changes:</p> <ol style="list-style-type: none"> 1. \$42,000 budgetary reduction, though \$25,000 provided by DAR LNR 401 funds for Waiahole related gages. 2. DOFAW (NARS) funds 13 stream gages and 4 rain gages.

Fiscal Year	No. of Continuous Stream Gages	No. of Crest-Stage Stream Gages	No. of Low-Flow Stream Gages	No. of Wells Ground Water Levels & Water Quality	No. of Rain Gages	CWRM Contribution \$	Comments
2006	25	-	-	56	21	\$342,740	<p>FY 2006 Changes:</p> <ol style="list-style-type: none"> DAR LNR 401 funds for \$25,000 to provide data analysis of stream flow statistics statewide. Waiahole Trust Fund provided \$35,000 for Waiahole stream-gages, and stream statistic in Waiahole. Kauai County to enter into their own cooperative agreement with USGS for wells owned by them.
2007	32	-	-	31	22	\$459,020	<p>FY 2007 Changes:</p> <ol style="list-style-type: none"> Prices increased by 31%. \$132,000 from the Watershed Management Grant Program. Waiahole Trust Fund provided \$42,713 for Waiahole gages.
2008	32	-	-	34	21	\$526,600	<p>FY 2008 Changes:</p> <ol style="list-style-type: none"> Prices increased by 7.5 %. \$118,175 from the Watershed Management Grant Program. Waiahole Trust Fund provided \$41,040 for Waiahole gages
2009	27	-	-	26	18	\$504,000	<p>FY 2009 Changes:</p> <ol style="list-style-type: none"> Prices increased by 10.3%. \$48,896 from the Watershed Management Grant Program. Waiahole Trust Fund to provide \$48,000 for Waiahole gages Data program sustained a budget cut in the General Fund amounting to \$45,547

[EXHIBIT 3]

JOINT FUNDING AGREEMENT

THIS JOINT FUNDING AGREEMENT made and entered this ___ day of October, 2008, by and between the STATE OF HAWAII, through its Department of Land and Natural Resources, Commission on Water Resource Management, hereinafter referred to as the "STATE", and GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, hereinafter referred to as "USGS".

WHEREAS, for and in consideration of mutual promises, the parties agree, subject to the availability of State and Federal funding and in accordance with their respective authorizations, to undertake a cooperative Joint Funding Agreement for the collection of hydrologic data in the State of Hawaii, hereinafter referred to as the "PROGRAM".

WHEREAS, USGS's authority to act under this agreement is 43 USC 36C, 43 USC 50, and 43 USC 50.

WHEREAS, the State, in consideration thereof, agrees to pay the USGS such amount as is hereinafter specified.

NOW THEREFORE, in consideration of the mutual promises forth in this JOINT FUNDING AGREEMENT, the parties mutually agree to the following:

1. USGS agrees to perform the program according to the scope of work provided in Attachment 1.
2. The agreement period for the Joint Funding Agreement is provided in Attachment 2. Time is of the essence in this agreement. Any delay in the progress of the work, which may adversely affect the completion of the work under the agreement within the required time shall be promptly reported in writing by the USGS to the State. The parties may agree to an extension of any deadline set forth in Attachment 2 provided that such agreement is in writing and signed by both parties.
3. The following amounts shall be contributed to cover all the cost of the necessary field and analytical work directly related to the program.
 - a) \$333,344 by the USGS during the period October 1, 2007 to September 30, 2008.
 - b) \$504,000 by the STATE during the period October 1, 2007 to September 30, 2008.
 - c) Any addition or reduction of the agreement amount during the agreement period may be determined by a mutual agreement of the parties. Any additional work beyond that required under the agreement shall be done only upon a mutual agreement of the parties

evidenced in writing. The State will not be liable for the payment of any additional work that is not mutually agreed upon in writing by the parties.

4. The Chairperson of the Department of Land and Natural Resources, through the Deputy Director to the Commission on Water Resource Management, acting either directly or through their duly authorized representatives or subordinates, hereinafter referred to as "Chairperson", and the Director of the USGS Pacific Islands Water Science Center, United States Department of the Interior, acting either directly or through his duly authorized representatives or subordinates, hereinafter referred to as "Center Director", shall mutually resolve all questions regarding the manner of performance and progress of work in compliance with the agreement provisions, compensation, and any other questions which may arise under this agreement.
5. If the work under this Joint Funding Agreement is not being carried out in a mutually satisfactory manner, either party may terminate this Joint Funding Agreement upon 60-calendar days written notice to the other party. Both parties shall use their best efforts to resolve agreement disputes cooperatively, including, if both parties agree, the use of alternative dispute resolution, prior to any notice of termination. If the State terminates the agreement, the USGS shall immediately comply and suspend all work under the Joint Funding Agreement within 60-calendar days after receiving written notice from the State. Upon termination of the Joint Funding Agreement, the USGS shall, within 60-calendar days after the effective date of such termination, compile and submit in an orderly manner to the State an accounting of the work performed up to the effective date of termination. The USGS shall be paid for the work performed or services rendered as of the effective date of termination in the ratio that the amount of work completed as of the effective date of termination bears to the total amount of work provided herein.
6. The parties shall permit the review and inspection all field and analytical work done pursuant to this Joint Funding Agreement. The original records resulting from this program will reside in the office of origin for those records. Upon request, and at no charge to the other party, copies of the original records will be provided to the office of the other party.
7. The maps, records, or test results and reports resulting from this program shall be made available as promptly as possible. The maps, records, or test results and reports normally will be published by USGS. However, the State reserves the right to publish the results of the program and, if already published by the USGS, USGS shall, upon request of the State, furnish to the State, at cost, impressions suitable for purposes of reproduction similar to that from

which the original copy was prepared. The maps, records, or test results and reports published by either party shall contain a statement of the cooperative relations between the parties.

8. Payment and compensation schedule is set forth in Attachment 3.
9. This Joint Funding Agreement may be amended only in writing, which must be signed by both parties.

IN WITNESS WHEREOF, the parties hereto have caused this Joint Funding Agreement to be executed as of the day and year first above written.

STATE OF HAWAII

By: _____
Laura H. Thielen
Chairperson, Department of Land and
Natural Resources

GEOLOGICAL SURVEY
U.S. DEPARTMENT OF THE INTERIOR

By: _____
Gordon Tribble, Center Director

APPROVED AS TO FORM:

By: _____
Deputy Attorney General

SCOPE OF SERVICES

1. The Joint Funding Agreement is a continuation of the joint funding agreement for the collection of hydrological data in the State of Hawaii between the U.S. Geological Survey, United States Department of the Interior and the Commission on Water Resource Management, Department of Land and Natural Resources, State of Hawaii.
2. The scope of services involves the collection and computation of data on water resources collected in multiple locations throughout the State of Hawaii.
3. U.S. Geological Survey shall collect data at an agreed upon list of surface water stations, ground water monitoring stations, and rainfall stations (Exhibit 4 of 8/28/2008 Staff Submittal).
4. U.S. Geological Survey shall provide additional water resource investigations and data analysis as mutually agreeable to the parties which may include but, not be limited to stream seepage runs, numeric hydrograph-separation analysis, review of historical data sets, and geomorphic stream analysis.
5. U.S. Geological Survey shall compile a published report entitled Water Resources Data Hawaii, Water Year 2008 in a format similar to its previous publications of Water Resources Data for Hawaii, and shall provide internet access to acquire, download, or transfer the data and report from USGS computer server. A draft shall be submitted to the Commission on Water Resource Management at least ninety days prior to publication of the final product or at a time mutually agreeable to the parties. Comments by the Commission on Water Resource Management shall be considered for incorporation into the final report. The parties shall use good faith efforts to resolve any disagreements to the draft document.
6. At least quarterly and upon request by the Commission on Water Resource Management, the U.S. Geological Survey will update the Commission on the progress of its work on this Joint Funding Agreement.
7. The Commission on Water Resource Management shall assist the U.S. Geological Survey in its work under the Joint Funding Agreement to the extent feasible and practicable under existing resources of the Commission.

TIME OF PERFORMANCE

1. The data collection program will be conducted October 1, 2008 to September 30, 2009. The final report is due on or before April 1, 2010.

COMPENSATION AND PAYMENT SCHEDULE

1. Payment shall be made quarterly upon satisfactory completion of a quarterly progress report and billing by the USGS. Billing shall be based upon the State's share of the total program cost. The State's share is 60% (\$504,000) of the total program cost. Payment shall be made within sixty days after the billing date unless otherwise mutually agreed to by the parties.
2. State shall retain 5% of the total amount of the State's share of the total program cost until delivery of the final report - Water Resources Data Hawaii for the Water Year 2008. The final report shall be completed no later than April 1, 2010.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Pacific Islands Water Science Center
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

August 20, 2008

Mr. Ken C. Kawahara, Deputy Director
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Kawahara:

Subject: Cooperative hydrologic data-collection and analysis program, Federal fiscal year 2009

This letter proposes the continuation of the CWRM-USGS Cooperative Water Program to collect hydrologic data in the State of Hawaii during Federal fiscal year 2009 (October 1, 2008 through September 30, 2009). The total cost of the program will be \$837,344, of which \$504,000 will be provided by the State Commission on Water Resource Management (CWRM) and \$333,344 will be provided by the U.S. Geological Survey (USGS). The number of stations and associated costs for the program in Federal fiscal year 2009 are provided below:

Station Type	Number	Unit cost	Total
Surface water gages	27	19,100	515,700
Pearl Harbor Spring flow	23 sites		43,930
Well water level - periodic	19	3,820	72,580
Well level - continuous	4	5,730	22,920
Well level (periodic) & QW	3	5,730	17,190
Rain	18	9,168	165,024
TOTAL			\$837,344

A complete list of the stations is attached. The number of stations is significantly reduced from that operated in fiscal year 2008 due to reductions in both State and Federal funds. Fully funding the stations operated in fiscal year 2008 would require a total of \$1,025,288, including \$633,088 in State funds. It is my hope that funds from either other local agencies or Federal sources can be found to prevent at least some of these stations from being discontinued.

The list of stations to be removed from the CWRM-USGS Cooperative Water Program includes the following sites:

<u>Type</u>	<u>Island</u>	<u>USGS Station Name</u>	<u>USGS Station No.</u>	<u>Cost</u>
Well - WL Cont.	Kauai	0044-14 Kaunalewa	220019159444801	5,730
Well - WL Cont.	Kauai	0124-01 NE Kilohana Monitor	220133159242001	5,730
Well - WL Cont.	Kauai	5534-06 Upper Eleele Reservoir	215509159340401	5,730
Well - WL & QW	Oahu	3410-08 Kawaihapai, Mokuleia	213446158104901	5,730
Well - WL	Oahu	1851-22 Ala Moana Blvd.	211828157515801	3,820
Well - WL	Maui	5330-09 Mokuhaui Pump 2	205329156305502	3,820
Well - WL Cont.	Maui	5840-01 Alaeloa	205856156400101	5,730
Well - WL	Big Island	4708-02 Kaieie Mauka	194731155080401	3,820
Well - WL	Big Island	0632-01 Honuapo W-2	190602155325901	3,820
Rain	Kauai	1068.0 Left Branch Opaekaa near Kapaa	220443159235601	9,168
Rain	Molokai	551.5 Kakaako near Mauna Loa	211039157123101	9,168
Rain	Oahu	884.4 Punaluu at alt. 240 ft.	213335157540601	9,168
Stream	Kauai	Left Branch Opaekaa Stream near Kapaa	16071500	19,100
Stream	Kauai	Makaweli River near Waimea	16036000	19,100
Stream	Kauai	Wainiha River near Hanalei	16108000	19,100
Stream	Oahu	Punaluu Stream near Punaluu	16303000	19,100
Ditch	Oahu	Punaluu Ditch near Punaluu	16302000	17,190
Stream	Oahu	Hakipuu Stream near Waikane	16295300	19,100
Spring	Molokai	spring measurements		3,820

I note that this reduction accelerates a long-term decline in the number of stations where water resource information is collected in Hawaii. Although the reduction in the program is a consequence of current economic conditions, it must be noted that we have reached the point where we are losing our ability to assess hydrologic conditions and provide essential water resource information for the State. This is particularly troubling in light of the anticipated reduction of approximately \$50,000 in Watershed Grant funds in FY 2010. Unless alternate sources of funding can be identified to reverse this trend, within a few years the State will find itself without adequate hydrologic information to address the complex issues of a growing population, changing climate, and conflicts over water allocation.

The legal authority for the USGS to enter into this program is 43 USC 36C, 43 USC 50, and 43 USC 50b. Work performed with funds from this program will be conducted on a fixed-price basis.

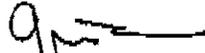
This means that invoices will be based on the agreed-upon amount, rather than actual itemized expenses. Your agency will be billed using Form DI-1040. The results of all work under this program will be available for publication by the USGS.

Mr. Ken C. Kawahara, Deputy Director

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If you are in agreement with this program, please submit an updated Memorandum of Agreement by September 30, 2008, or at your earliest convenience. If you have any questions concerning this program, please feel free to contact me at 587-2405.

Sincerely,



Gordon Tribble
Center Director

Enclosures

Attachment – Stations proposed to be operated by USGS as part of the Federal Fiscal Year 2009 cooperative data program between CWRM and USGS.

<u>USGS Station Number</u>	<u>Island</u>	<u>USGS Station Name</u>	<u>Station Type</u>
215434159263301	Kauai	5426-03 Koloa	GW WL
215901159235301	Kauai	5923-01 Kilohana W-A	GW WL
220057159210301	Kauai	0021-01 Kalepa Ridge	GW WL
215607159344301	Kauai	5634-01 Hanapepe Ridge	GW WL-RT
215950159231601	Kauai	5923-08 Hanamaulu Monitor	GW WL-Cont
213242157510201	Oahu	3251-02 Kaaawa Shaft	GW WL
212154158015201	Oahu	2101-03 Honouliuli	GW WL
212738158034301	Oahu	2703-02 Kunia Basal Monitor	GW WL
213430158071601	Oahu	3407-37 Kiiikii	GW WL
213438158091101	Oahu	3409-16 Mokuleia	GW WL
211832157515501; 2	Oahu	1851-19 Halekauwila Street, Pipe A; B	GW WL+QW
212238157561101	Oahu	2256-10 Aiea US Navy, (187-B)	GW WL-Cont
210402156495801	Molokai	0449-01 Ualapue Shaft	GW WL
210419156570501	Molokai	0457-01 Kawela Shaft	GW WL
210825157004301	Molokai	0800-01 Kualapuu Deep Monitor	QW profile/GW WL
204827156242201	Maui	4824-01 Kihei Exploratory	GW WL
205140156304501	Maui	5130-01 Waikapu 1	GW WL
205154156303801	Maui	5130-02 Waikapu 2	GW WL
205312156321402	Maui	5332-04 Kepaniwai Observation	GW WL
205617156311101	Maui	5631-01 TH-A1 Waihee	GW WL
205433156184101	Maui	5418-01 EMWDP Monitor	GW WL
205437156310501	Maui	5431-01 TH-B Waiehu	GW WL-Cont
205405156305401	Maui	5430-05 Waiehu Deep Monitor	QW profile/GW WL
190423155371501	Hawaii	0437-01 Waiohinu	GW WL
193251155072101	Hawaii	3207-04 Mt. View	GW WL
200132155471101	Hawaii	6147-01 Kawaihae W-3	GW WL
220356159281401	Kauai	1051.0 N. Wailua Ditch near Lihue	RF-rec.
220504159321401	Kauai	1045.0 Waialeale Trail near Lihue	RF-rec.
220703159351201	Kauai	1085.0 Mohihi-Koaie Divide	RF-rec.
220713159361201	Kauai	1083.0 Mohihi Crossing near Waimea	RF-RT
220739159373001	Kauai	1082.0 Waiakoali near Waimea	RF-rec.
220927159355001	Kauai	1084.0 Kilohana near Hanalei	RF-rec.
212359157502601	Oahu	772.3 Moanalua No.1 at alt. 1,000 ft	RF-rec.
212855157504501	Oahu	837.0 Waiahole at Kamehameha Hwy.	RF-rec.
213215157552800	Oahu	883.12 Poamoho No. 1 near Wahiawa	RF-RT
213237157530701	Oahu	886.4 Kahana at alt. 95 ft.	RF-rec.
213608158011101	Oahu	897.9 Pupukea Road at alt. 1,160 ft.	RF-rec.
213732158010201	Oahu	397.11 Kamananui at alt. 720 ft.	RF-rec.
203721156151601	Maui	255.0 Kepuni Gulch	RF-RT
204923156371501	Maui	297.0 Clowalu	RF-RT
194117155174801	Hawaii	83.0 Quarry at Saddle Road	RF-rec.
194945155534402	Hawaii	92.5 Kiholo	RF-rec.
200518155405801	Hawaii	185.7 Kawainui near Kamuela	RF-rec.
16010000	Kauai	Kawaikoi Stream near Waimea	SW RT-Cont
16060000	Kauai	South Fork Wailua River near Lihue	SW RT-Cont
16068000	Kauai	East Branch of North Fork Wailua River near Lihue	SW RT-Cont

16097500	Kauai	Halaulani Stream at alt. 400 ft. near Kilauea	SW RT-Cont
16103000	Kauai	Hanalei River near Hanalei	SW RT-Cont
16049000	Kauai	Hanapepe River below Manuahi Stream near Eleele	SW RT-Cont
16345000	Oahu	Opaeha Stream near Wahiawa	SW Cont
16229000	Oahu	Kalihi Stream near Honolulu	SW RT-Cont
16240500	Oahu	Waiakeakua Stream at Honolulu	SW RT-Cont
16294900	Oahu	Waikane Stream at alt 75 ft. at Waikane	SW Cont
16200000	Oahu	North Fork Kaukonahua Stream above Right Branch	SW RT-Cont
16213000	Oahu	Waikale Stream at Waipahu	SW RT-Cont
16296500	Oahu	Kahana Str at alt. 30 ft. near Kahana	SW RT-Cont
16304200	Oahu	Kaluanui Str near Punaluu	SW RT-Cont
16294100	Oahu	Waiahole Stream above Kamehameha Hwy.	SW RT-Cont
16254000	Oahu	Makawao Stream near Kailua	SW RT-Cont
16604500	Maui	Iao Stream at Kepaniwai Park near Wailuku	SW RT-Cont
16508000	Maui	Hanawi Stream near Nahiku	SW RT-Cont
16614000	Maui	Waihee River above Waihee Ditch Intake near Waihee	SW RT-Cont
16620000	Maui	Honokohau Stream near Honokohau	SW RT-Cont
16518000	Maui	West Wailuaiki Stream near Keanae	SW RT-Cont
16587000	Maui	Honopou Stream near Huelo	SW RT-Cont
16720000	Hawaii	Kawainui Stream near Kamuela	SW Cont
16717000	Hawaii	Honolii Stream near Papaikou	SW RT-Cont
16770500	Hawaii	Paauau Gulch at Pahala	SW RT-Cont
16704000	Hawaii	Wailuku River at Piiponua	SW Cont
16725000	Hawaii	Alakahi Stream near Kamuela	SW RT-Cont