



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

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

August 18, 2020  
Honolulu, Hawai'i

Request and Delegation of Authority to Chairperson to  
Enter into a Joint Funding Agreement with U.S. Geological Survey  
For Statewide Hydrologic Data Collection and  
Water Resource Monitoring for Federal Fiscal Year (FFY) 2021

SUMMARY OF REQUEST

Staff recommends that the Commission on Water Resource Management (Commission) enter into a Joint Funding Agreement (Agreement) with the U.S. Geological Survey (USGS) for the inventory and investigation of Hawai'i's water resources.

BACKGROUND

The cooperative monitoring of Hawai'i's hydrologic resources began in 1909 when the USGS entered into an Agreement with the Territory of Hawai'i. Initially, monitoring was focused on surface water, and 12 streams were gaged continuously. By 1914, there were 87 continuous-record stations, largely serving sugarcane plantation data needs. Following statehood, the Division of Water and Land Development (DOWALD) managed the Agreement with USGS for the Department of Land and Natural Resources (DLNR) to maintain funding for many gages. The program continued to grow, reaching a peak in 1966 when 197 stream gages were operational. In 1972, ground water data collection became an integral part of the Agreement. Baseline data throughout the State covered 170 observation wells.

With the passage of the State Water Code, responsibility to coordinate monitoring programs and activities concerning water resource protection and management were transferred to the Commission. The cooperative monitoring of Hawai'i's hydrologic resources is part of the Commission's mandate to "maintain an inventory of all water uses and water resources" [Haw. Rev. Stat. §174C-5(14)]. The program also helps the Commission to assess how climate variability, changing land use, and increasing water demands affect water resources. Maintaining a long-term hydrologic monitoring program with the USGS is an essential component of the Commission's Water Resource Protection Plan, including:

...the effect on the environment, procreation of aquatic life and wildlife, and water quality; study the quantity and quality of water needed for existing and contemplated uses, including irrigation, power development, geothermal power, industrial, and municipal uses; study such other related matters as drainage, reclamation, flood hazards, floodplain zoning, dam safety, and selection of reservoir sites, as they relate to the protection, conservation, quantity, and quality of water. (HAR §13-170-21)

Over the years, stream and well observation gages were discontinued for a variety of reasons. There was a shift in fiscal priorities, economic realities, completed data acquisition objectives, and reduced plantation partnership engagement as plantations ceased operations. Beginning in 1998, the Commission streamlined the Agreement by transferring the crest-stage stream-gaging program to the City and County of Honolulu (for O‘ahu) or the Department of Transportation (for neighbor islands) where this data (e.g., flooding issues) are more relevant to disaster response rather than sustainability issues. In addition, the Waiāhole Trust Fund was established in 1997 to defray the cost of monitoring streamflow and rainfall within the region impacted by the Waiāhole Ditch.

Duplication of ground water data collection sites were eliminated in 1998. Ground water data gathering changed and expanded to incorporate data provided by water system purveyors and well owners, who were required by law and rule to report their water-use, groundwater levels, and chloride levels. Commission staff has also developed in-house capacity and expertise to take over monitoring of selected well sites. As a result, the Commission’s Survey Branch is assuming the monitoring of many wells previously monitored by the USGS.

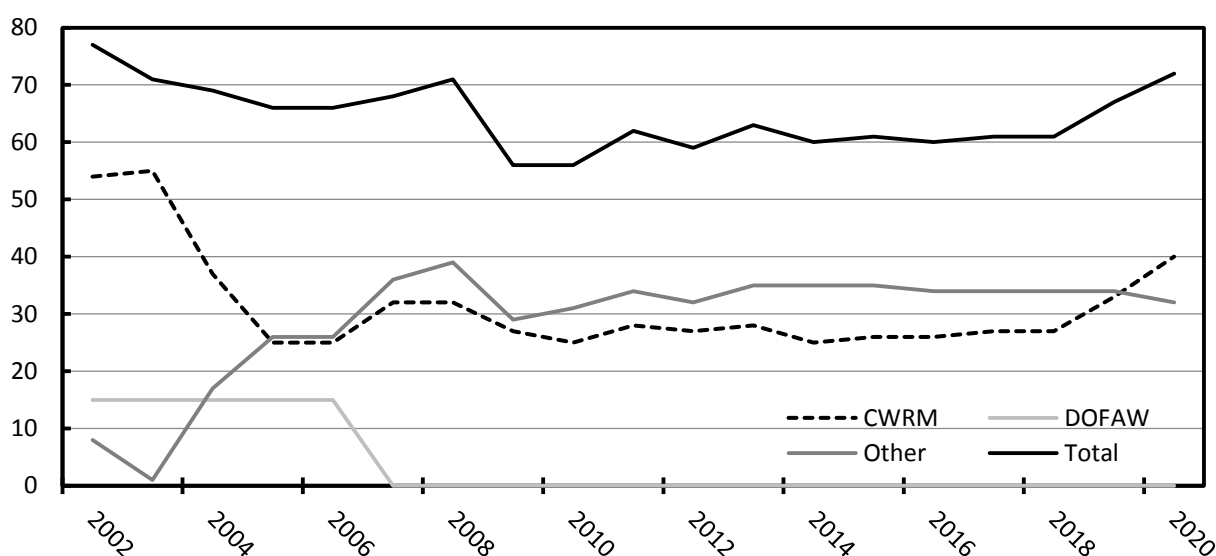
During the economic recession of the mid-2000s, watershed management grant funding through the Division of Forestry and Wildlife that supported many stream gaging stations was discontinued. In order to maintain the continuity of important monitoring records, money from the Commission budget was dedicated to the operation and maintenance costs for these stations as part of the Agreement. In 2011, the Stream Protection and Management (SPAM) Branch started monitoring interim instream flow standards (interim IFS) on the island of Maui. Since that time, additional monitoring has been needed to ensure the compliance of interim IFS throughout the State.

Commission staff has also developed the in-house capacity and expertise to install, maintain, and monitor selected surface water locations. While the overall installation cost and the operation and maintenance cost per station can be much lower when Commission staff installs and maintains these stations, staff time dedicated to this type of work takes away from the Branch’s other duties, including the development of interim IFS. In some cases, there is substantial staff effort (e.g., cost and time) to maintain a stream gaging station and the added cost to the Agreement for the station makes fiscal sense. USGS also maintains high quality assurance and quality control standards which can be challenging for the Commission to replicate with limited staffing. The overall increase in data needs and the cost/time savings of using USGS to monitor

particular locations, has led to an increase in the number of CWRM-funded USGS stream gaging stations in the last few years (Figure 1).

Currently, Commission staff monitors 35 observation wells and maintains 39 stream gaging stations, while each county’s water supply department also monitors dozens of observation wells and reports to the Commission.

**Figure 1.** Number of USGS continuous stream gaging stations by cooperative funding source over time. [CWRM = Commission on Water Resource Management; DOFAW = Division of Forestry and Wildlife; Other includes State of Hawaii Department of Civil Defense or Transportation, county departments of water supply or departments of environmental services, Office of Hawaiian Affairs, Kamehameha Schools Bishop Estate, or National Parks Service]



**Table 1.** Summary of current (FY2021) total USGS and total Commission (CWRM) staff monitoring efforts as well as the breakdown of the number of CWRM funded USGS ground water and surface water monitoring stations.

|                     | rainfall stations | observation well stations | real-time stream monitoring stations | continuous ditch monitoring stations |
|---------------------|-------------------|---------------------------|--------------------------------------|--------------------------------------|
| USGS total          | 20                | 34                        | 69                                   | 5                                    |
| CWRM-USGS co-funded | 15                | 8                         | 40                                   | 0                                    |

\*does not include temporary stations used in hydrological studies

The total cost of the Agreement, the Commission share, and the costs for operating and maintaining each type of rainfall, stream, and ground water monitoring station has been standardized across stations and the most recent years are provided in Table 2.

The 2019 Update to the Water Resource Protection Plan identified a need to monitor the hydrological consequences of climate change across the State. Further, the 2020 USGS Hydrological Monitoring Needs Assessment for the State of Hawai‘i identified the location of new streamflow monitoring stations needed to fully implement a hydrological monitoring network to characterize the consequences of climate change. Stations re-established in locations

with previous long-term streamflow monitoring can also be used to help track shifts in water availability or hydrological processes associated with climate change.

**Table 2.** Summary of annual cost requirements for various stations and the source of funds for the CWRM-USGS statewide hydrologic data collection agreement.

| <b>Cost of services or source of funds</b>         | <b>FFY 2017</b> | <b>FFY 2018</b> | <b>FFY 2019</b> | <b>FFY 2020</b> | <b>FFY 2021</b> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Total Joint Funding Requirement                    | \$756,284       | \$737,700       | \$870,842       | \$1,107,850     | \$932,770       |
| Expected (full-year) CWRM cost-share not to exceed | \$494,148       | \$495,520       | \$624,317       | \$859,139       | \$711,469       |
| Percentage CWRM cost-share                         | 65%             | 67%             | 72%             | 78%             | 76%             |
| Waiāhole Ditch Trust Fund                          | \$45,264        | \$49,080        | \$67,200        | \$91,564        | \$84,956        |
| Ground water well continuous monitoring (per site) | \$7,173         | \$6,500         | \$6,620         | \$6,740         | \$6,930         |
| Rainfall continuous monitoring (per site)          | \$9,581         | \$9,200         | \$9,400         | \$9,570         | \$9,850         |
| Streamflow continuous monitoring (per site)        | \$20,552        | \$22,000        | \$22,400        | \$22,800        | \$23,500        |

## CURRENT AGREEMENT

### **Rainfall Monitoring**

The defacto State Climate Office was originally located under DOWALD within DLNR. DOWALD acted as a repository for climate data collected by disparate entities (mostly private agricultural companies). With the passage of the State Water Code and the establishment of the Commission, the Climate Office was transferred to the University of Hawai‘i Department of Meteorology. While the University of Hawai‘i does not serve the same function as DOWALD, they continue to be a repository for climate data and field data requests. Through the Agreement, the Commission has funded the monitoring of rainfall in important locations throughout the state for the last few decades. Rainfall stations all provide real-time continuous data that are relied upon by the Commission, Federal (e.g., National Weather Service), State and County (e.g., Departments of Civil Defense, Emergency Management, Public Works) agencies, and the public to closely monitor weather conditions. In FFY 2021, the Honolulu Board of Water Supply (HBWS) will take over the co-funding responsibility for two rainfall stations on the island of O‘ahu.

### **Groundwater Monitoring**

The general nature of the FFY 2021 Agreement and relationship of the parties remains the same as FFY 2020 for ground water data collection. USGS monitors nine (9) ground water observation wells for the Commission, taking quarterly or bi-monthly depth and/or conductivity, temperature, and depth (CTD) profiles. In a few locations, ground water levels are monitored in real-time to protect aquifers from being over-pumped, including the Kualapuu Deep Monitor Well, Waiehu Deep Monitor Well, and Aiea US Navy (187-B) Well.

### **Streamflow Monitoring**

With respect to streamflow monitoring, the Agreement in FFY 2021 will cover three (3) new stations and the reconnaissance costs for a number of additional stream gaging stations to be added to future agreements (Table 3). The installation costs vary widely depending on the

location, land ownership, and accessibility. Therefore, the initial reconnaissance of these stations will provide more accurate future installation cost estimates for future agreements. In FY 2020, the Commission received an increase of \$240,000 in general funds to cover the costs of additional stream gaging related to the establishment or monitoring of interim IFS, especially in streams impacted by potential water leases. Stations re-established in locations with previous long-term streamflow monitoring can also be used to help track shifts in water availability or hydrological processes associated with climate change. In FFY 2021, the Honolulu Board of Water Supply (HBWS) took over the co-funding responsibility of four (4) streamflow stations on the island of O'ahu.

### **Temporary Reductions in Station Costs**

In 2019, the Commission approved the expenditure of new general funds to support the expansion of the Agreement to meet the Commission's hydrological monitoring needs. The increased costs associated with expansion were to fund the reconnaissance, permitting, installation and development of new streamflow monitoring stations. Due to complications relating to permitting as well as the sudden spread of SARS-CoV-2 which halted travel and thus fieldwork for USGS, much of the funds designated for these stations will not be spent by the end of FFY 2020. The extension of the FFY 2020 USGS-CWRM cooperative agreement will cover a portion of the costs associated with the fieldwork and personnel to be spent in FFY 2021. Thus, the cost to the Commission for the FFY 2021 Agreement is reduced by this offsetting amount (\$147,664) and is reflected in the Commission's total share not to exceed \$711,469.

### **Reconnaissance of Future Streamflow Monitoring Stations**

To meet the needs of the Water Resource Protection Plan approved by the Commission in 2019, additional streamflow monitoring stations were identified in the Statewide Monitoring Needs Assessment to be published in 2020. These stations, provide watershed hydrologic monitoring to assess the impacts of climate change, monitor resources that are subject to water leases, provide a natural flow index for recently established interim instream flow standards, or will be used to monitor future IIFS. The costs for FFY 2021 reflect the initial costs for reconnaissance and permitting, with installation and operation costs deferred to a future cooperative agreement.

One station will be located on Kaupuni Stream at 374 feet, in Wai'anāe on O'ahu. This station was active from 1960 to 1972. Tributaries of Kaupuni Stream originate in the Wai'anāe Kai Forest Reserve where the HBWS operates many development tunnels for drinking water supply. The Wai'anāe community is engaged in biocultural restoration of the ahupua'a and this station will provide the Commission with important information regarding the establishment and maintenance of future IFS. Gaging is also needed to monitor the consequences of IFS values for downstream water availability.

One station will be added in West Maui on Ukumehame Stream to monitor natural flow. This station was identified by USGS and CWRM staff for its location to monitor the consequences of climate change for leeward Maui as well as serve as an index station for existing interim IFS values established in Ukumehame and Olowalu streams.

Lastly, on Hawai‘i Island, station 16700000 on Waiākea Stream near Mountain View was active from 1930 to 1995 and was the longest continuously operated station on Hawai‘i Island before being discontinued.

## OTHER

### *I. Chapter 343 – Environmental Assessment (EA) Compliance*

#### **Environmental Assessment (“EA”) Triggers**

Under Hawaii Revised Statutes §343-5(a), the use of state funds triggers the need for an EA.

#### **EA Exemption**

The proposed action is exempt from an EA based on Hawaii Administrative Rule §11-200.1-15(c)(5) and the Exemption List for the Department of Land and Natural Resources approved by the Environmental Council on March 3, 2020 that states “basic data collection, research, experimental management and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource”. The exemption notification is attached as Exhibit 4.

#### **Exhibits**

Exhibit 1 provides a summary of changes to the program, including the operational cost, since FFY 2009.

Exhibit 2 outlines the proposed scope of services. The Agreement covers FFY 2021 (October 1, 2020 to September 30, 2021).

Exhibit 3 lists the stations to be funded in the FFY 2021 Agreement. The total cost of the Agreement will not exceed \$932,770. The Commission’s share will not exceed \$711,469.

Under the FFY 2021 Agreement, the USGS will collect basic hydrologic data and provide data summary reports on water resources throughout the State of Hawai‘i.

## RECOMMENDATIONS

Staff recommends that the Commission:

- 1) Authorize the Chairperson to enter into a Joint Funding Agreement with the U.S. Geological Survey for FFY 2021 to undertake the specified monitoring activities;
- 2) Delegate authority to the Chairperson to modify the list of monitoring stations, provided that there is no increase in cost to the Commission; and
- 3) Find that this Joint Funding Agreement is exempt from the preparation of an environmental assessment under Hawaii Revised Statutes §343 based on Hawaii Administrative Rules §11-200.1-15(c)(5) and the Exemption List for the Department of Land and Natural Resources approved by the Environmental Council on March 3, 2020.

The terms of this Agreement are subject to the approval of the Attorney General's Office. Contract execution will be done in accordance with Hawaii Revised Statute Chapter 103D and Hawaii Administrative Rules, Chapter 3-122.

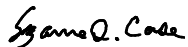
Ola i ka wai,



M. KALEO MANUEL  
Deputy Director

- Exhibit (s):
1. Summary of Changes to the Cooperative Program: 2009 to 2021
  2. Proposed Scope of Services
  3. Monitoring Stations to be funded in the FFY 2021 Agreement
  4. Chapter 343 HRS Exemption Notification

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE  
Chairperson

**SUMMARY OF CHANGES TO THE COOPERATIVE PROGRAM: 2009 to 2020**

| Federal Fiscal Year | Streamflow station | Groundwater stations | Rainfall stations | CWRM contribution | Changes and Comments  |
|---------------------|--------------------|----------------------|-------------------|-------------------|---|
| 2010                | 25                 | 17                   | 14                | \$405,500         | 1. Quarterly implementation of the agreement<br>2. Watershed Management Grant Program withdraws support<br>3. Waiāhole Trust Fund provided \$50,500 for Waiāhole stations   |
| 2011                | 28                 | 20                   | 14                | \$404,900         | 1. CWRM cost share increases to 50%<br>2. Additional Federal match used to reinstate monitoring stations<br>3. Waiāhole Trust Fund provided \$35,495 for Waiāhole stations  |
| 2012                | 27                 | 18                   | 14                | \$487,760         | 1. CWRM cost share increases to 57%<br>2. Waiāhole Trust Fund to provide \$41,850 for Waiāhole stations<br>3. USGS monitoring costs increased by about 10%  |
| 2013                | 28                 | 18                   | 14                | \$417,650         | 1. Waiāhole Trust Fund to provide \$39,850 for Waiāhole stations<br>2. Moanalua Stream station (16227500) added for Rain Follows the Forest Initiative  |
| 2014                | 25                 | 14                   | 15                | \$433,218         | 1. Waiāhole Trust Fund to provide \$41,650 for Waiāhole stations  |
| 2015                | 26                 | 14                   | 16                | \$444,700         | 1. Mt. Wai'ale'ale Rain Gage added<br>2. South Fork Kaukonahua stream gage (16208000) added<br>3. Waiāhole Trust Fund to provide \$41,650 for Waiāhole stations   |
| 2016                | 26                 | 14                   | 16                | \$486,933         | 1. CWRM cost share increases to 65%<br>2. Waiāhole Trust Fund to provide \$41,650 for Waiāhole stations   |
| 2017                | 27                 | 12                   | 17                | \$494,148         | 1. Waiāhole Trust Fund to provide \$45,264 for Waiāhole stations<br>2. Waimea River nr Waimea stream gage (16031000) added  |
| 2018                | 27                 | 9                    | 17                | \$495,520         | 1. CWRM cost share increases to 67%<br>2. CWRM staff to assume monitoring of three wells previously monitored by the USGS   |
| 2019                | 32                 | 9                    | 17                | \$624,317         | 1. Waiāhole Trust Fund to provide \$67,200 for Waiāhole stations<br>2. Five new gaging stations added to agreement (4 stream, 1 ditch): Waiahi on Kaua'i; Honomanū, Kahoma, Wailuku, Kau'aula on Maui; Kauaula Ditch (Maui)   |
| 2020                | 39                 | 9                    | 17                | \$859,139         | 1. Waiāhole Trust Fund to provide \$91,564 for Waiāhole stations<br>2. Seven new stream gaging stations added to the agreement: Waimea River, North Fork Wailua River, and Huleia Stream on Kaua'i; Kamananui Stream on O'ahu; Waikolu Stream and East Fork Kawela Stream on Moloka'i; Naili'ilaha'ele Stream on Maui.  |
| 2021                | 40                 | 9                    | 15                | \$711,469         | 1. Honolulu BWS assumes responsibility for providing cooperative funds for four streamflow gaging stations and two rainfall stations on Oahu.<br>2. CWRM will assume responsibility for providing cooperative funds for one station previously funded by HiEMA on Wainiha Stream, Kauai (USGS 16108000)<br>3. The reconnaissance costs for three future stations are provided in FY2021 |

**EXHIBIT 1**



## **PROPOSED SCOPE OF SERVICES**

1. This Joint Funding Agreement (“Agreement”) is a continuation of the joint funding agreement for the collection of hydrological data in the State of Hawai‘i 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 Hawai‘i (“Commission”).
2. The scope of services involves the collection and computation of data on water resources collected in multiple locations throughout the State of Hawai‘i.
3. U.S. Geological Survey shall collect data at an agreed upon list of surface water stations, ground water monitoring stations, and rainfall stations, as set forth in Exhibit 3 which is attached hereto and incorporated by reference.
4. U.S. Geological Survey shall provide data summary reports and review of historical data sets.
5. U.S. Geological Survey shall host the maps, data, and reports resulting from this program in a publicly-accessible website, and shall provide the Commission staff direct and easy access to acquire, download, or transfer the data and report from a USGS server. The parties shall use good faith efforts to resolve any disagreements in the scope and validation of data acquisition and the contents of the report.
6. U.S. Geological Survey shall provide a readable statement of cooperative relations and visually identifiable symbol of the Commission as a cooperator in print, digital, and online publications of the data and reports of the monitoring stations that are included in the current cooperative program, and as well as the stations that were historically supported and funded by the Commission.
7. 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.
8. 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.

**MONITORING STATIONS TO BE FUNDED IN THE FFY 2021 AGREEMENT**

Attachment 1  
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Monitoring stations to be operated or installed as part of the cooperative water-resources monitoring program between the State of Hawaii Department of Land Natural Resources Commission on Water Resource Management and the U.S. Geological Survey during the period October 1, 2020 and September 30, 2021.  
[GW, Groundwater; CTD, Conductivity, temperature and depth]

| Station Number | Station Name  | Record type | Real-time data | USGS     | CWRM     | *Total   | Footnotes |
|----------------|---|-------------|----------------|----------|----------|----------|-----------|
| 16016000       | Waimea River abv Kekaha-Waiahulu Intake, Kauai, HI      | Discharge   | Yes            | \$0      | \$13,400 | \$13,400 | 1,2       |
| 16031000       | Waimea River near Waimea, Kauai, HI                     | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16049000       | Hanapepe Riv blw Manuahi Str nr Eleele, Kauai, HI       | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16055000       | Huleia Str nr Lihue, Kauai, HI                          | Discharge   | Yes            | \$0      | \$11,750 | \$11,750 | 1         |
| 16057900       | Waiahi Str US Upper Powerhouse, Kauai, HI               | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16060000       | SF Wailua River nr Lihue, Kauai, HI                     | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16060950       | NF Wailua River abv N Wailua Ditch Intake, Kauai, HI    | Discharge   | Yes            | \$0      | \$13,400 | \$13,400 | 1,2       |
| 16068000       | EB of NF Wailua River nr Lihue, Kauai, HI               | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16071500       | Left Branch Opaekaa Str nr Kapaa, Kauai, HI             | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16097500       | Halaulani Str at alt 400 ft nr Kilauea, Kauai, HI       | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16103000       | Hanalei River nr Hanalei, Kauai, HI                     | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16108000       | Wainiha River nr Hanalei, Kauai, HI                     | Discharge   | Yes            | \$10,669 | \$17,131 | \$27,800 | 2         |
| 16211800       | Kaupuni Str at alt 374 ft nr Waianae, Oahu, HI          | Discharge   | Yes            | \$0      | \$15,500 | \$15,500 | 4         |
| 16294100       | Waiahole Stream above Kamehameha Hwy, Oahu, HI          | Discharge   | Yes            | \$0      | \$23,500 | \$23,500 |           |
| 16294900       | Waikane Str at alt 75 ft at Waikane, Oahu, HI           | Discharge   | Yes            | \$0      | \$23,500 | \$23,500 |           |
| 16296500       | Kahana Str at alt 30 ft nr Kahana, Oahu, HI             | Discharge   | Yes            | \$0      | \$23,500 | \$23,500 |           |
| 16301050       | Punaluu Str abv Punaluu Ditch Intake, Oahu, HI          | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16325000       | Kamananui Str at Pupukea Mil Rd, Oahu, HI               | Discharge   | Yes            | \$0      | \$12,100 | \$12,100 | 5         |
| 16345000       | Opaeha Str nr Wahiawa, Oahu, HI                         | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16408000       | Waikolu Str blw Pipe Cross Nr Kalaupapa, Molokai, HI    | Discharge   | Yes            | \$0      | \$9,400  | \$9,400  | 1,2,3     |
| 16415000       | EF Kawela Gulch nr Kamalo, Molokai, HI                  | Discharge   | Yes            | \$0      | \$11,750 | \$11,750 | 1,2       |
| 16508000       | Hanawi Stream near Nahiku, Maui, HI                     | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16518000       | West Wailuaiki Stream near Keanae, Maui, HI             | Discharge   | Yes            | \$0      | \$6,700  | \$6,700  | 3,6       |
| 16527500       | Honomanu Stream near Hana Hwy, Maui, HI                 | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16570000       | Nailiilhaele Stream near Huelo, Maui, HI                | Discharge   | Yes            | \$0      | \$11,750 | \$11,750 | 1         |
| 16587000       | Honopou Stream near Huelo, Maui, HI                     | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16604500       | Wailuku River at Kepaniwai Park, Maui, HI               | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16605500       | Wailuku River at Iao Valley Road, Maui, HI              | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16614000       | Waihee Rv abv Waihee Ditch Intake nr Waihee, Maui, HI   | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16620000       | Honokohau Stream near Honokohau, Maui, HI               | Discharge   | Yes            | \$9,182  | \$17,618 | \$26,800 | 2         |
| 16638500       | Kahoma Stream at Lahaina, Maui, HI                      | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16641000       | Kauaula Stream abv Ditch Diversion nr Lahaina, Maui, HI | Discharge   | Yes            | \$0      | \$23,500 | \$23,500 |           |
| 16643100       | Kauaula Stream blw Ditch Diversion nr Lahaina, Maui, HI | Discharge   | Yes            | \$0      | \$18,500 | \$18,500 |           |
| 16647000       | Ukumehame Gulch nr Olowalu, Maui, HI                    | Discharge   | Yes            | \$0      | \$15,500 | \$15,500 | 4         |
| 16700000       | Waiakea Stream nr Mountain View, HI                     | Discharge   | Yes            | \$0      | \$15,500 | \$15,500 | 4         |
| 16704000       | Wailuku River at Piihonua, HI                           | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16717000       | Honolii Stream nr Papaikou, HI                          | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |
| 16720000       | Kawainui Stream nr Kamuela, HI                          | Discharge   | Yes            | \$8,051  | \$15,449 | \$23,500 |           |
| 16725000       | Alakahi Stream near Kamuela, HI                         | Discharge   | Yes            | \$5,310  | \$10,190 | \$15,500 | 3         |

**MONITORING STATIONS TO BE FUNDED IN THE FFY 2021 AGREEMENT**

Attachment 1  
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Monitoring stations to be operated or installed as part of the cooperative water-resources monitoring program between the State of Hawaii Department of Land Natural Resources Commission on Water Resource Management and the U.S. Geological Survey during the period October 1, 2020 and September 30, 2021.  
[GW, Groundwater; CTD, Conductivity, temperature and depth]

| Station Number  | Station Name  | Record type     | Real-time data | USGS             | CWRM             | *Total           | Footnotes |
|-----------------|---|-----------------|----------------|------------------|------------------|------------------|-----------|
| 16770500        | Paaau Gulch at Pahala, HI                           | Discharge       | Yes            | \$5,310          | \$10,190         | \$15,500         | 3         |
| 215607159344301 | 2-5634-01 Hanapepe Ridge, Kauai, HI                 | GW Quarterly    | No             | \$812            | \$2,418          | \$3,230          | 7         |
| 212238157561101 | 3-2256-10 Aiea US Navy (187-B), Oahu, HI            | GW Continuous   | No             | \$3,298          | \$3,632          | \$6,930          |           |
| 211832157515501 | 3-1851-19 Halekauwila Street, Pipe A, Oahu, HI      | GW Quarterly    | No             | \$890            | \$4,540          | \$5,430          | 8         |
| 211832157515502 | 3-1851-19 Halekauwila Street, Pipe B, Oahu, HI      | GW Quarterly    | No             | \$890            | \$4,540          | \$5,430          | 8         |
| 212154158015201 | 3-2101-03 Honouliuli, Oahu, HI                      | GW Quarterly    | No             | \$1,766          | \$1,464          | \$3,230          | 7         |
| 205405156305401 | 6-5430-05 Waiehu Deep Monitor Well, Maui, HI        | GW Continuous   | Yes            | \$1,849          | \$5,081          | \$6,930          |           |
| 210825157004301 | 4-0800-01 Kualapuu Deep Monitor Well, Molokai, HI   | GW CTD Profiles | No             | \$2,184          | \$5,676          | \$7,860          |           |
| 210402156495801 | 4-0449-01 Ualapue Shaft, Molokai, HI                | GW Quarterly    | No             | \$820            | \$2,410          | \$3,230          | 7         |
| 220356159281401 | 1051.0 N Wailua Ditch Rain Gage nr Lihue, Kauai, HI | Rainfall        | Yes            | \$3,500          | \$9,650          | \$13,150         |           |
| 220427159300201 | 1047.0 Mt. Waialeale Rain Gage nr Lihue, Kauai, HI  | Rainfall        | Yes            | \$3,500          | \$9,650          | \$13,150         | 2         |
| 220523159341201 | 1042.0 Waialae Rain Gage nr Waimea, Kauai, HI       | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          | 9         |
| 220713159361201 | 1083.0 Mohihi Crsg Rain Gage nr Waimea, Kauai, HI   | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 220739159373001 | 1082.0 Waiakoali Rain Gage nr Waimea, Kauai, HI     | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 220927159355001 | 1084.0 Kilohana Rain Gage nr Hanalei, Kauai, HI     | Rainfall        | Yes            | \$3,500          | \$9,650          | \$13,150         | 2         |
| 212855157504501 | 837.0 Waiahole RG at Kamehameha Hwy., Oahu, HI      | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 213237157530701 | 886.4 Kahana Rain Gage at alt. 95 ft., Oahu, HI     | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 213608158011101 | 897.9 Pupukea Rd Rain Gage at alt 1,160 ft,Oahu,HI  | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 213732158010201 | 897.11 Kamananui Rain Gage at alt. 720 ft, Oahu,HI  | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 203721156151601 | 255.0 Kepuni Gulch Rain Gage, Maui, HI              | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 204916156083701 | 348.5 West Wailuaiki Rain Gage nr Keanae, Maui, HI  | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 194117155174801 | 83.0 Quarry Rain Gage at Saddle Rd, HI              | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 194945155534402 | 92.5 Kiholo Rain Gage, HI                           | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| 200518155405801 | 185.7 Kawainui Rain Gage near Kamuela, HI           | Rainfall        | Yes            | \$2,622          | \$7,228          | \$9,850          |           |
| <b>Total</b>    |   |                 |                | <b>\$221,301</b> | <b>\$711,469</b> | <b>\$932,770</b> |           |

**Footnotes**

1. Installation paid in Federal fiscal year 2020. Operation and maintenance begins in Federal fiscal year 2021. Assumes half-year of operation in FY21.
  2. Helicopter use surcharge included.
  3. State of Hawaii Department of Transportation contributes additional funding for peak-flow record.
  4. Permitting and reconnaissance costs in Federal fiscal year 2021. Installation and partial-year operation and maintenance costs in Federal fiscal year 2022.
  5. Office of Hawaiian Affairs contributes additional funding for real-time stage record.
  6. USGS Groundwater and Streamflow Information Program contributes additional funding.
  7. Quarterly water-level measurements.
  8. Quarterly water-level measurements and chloride samples.
  9. USGS Groundwater and Streamflow Information Program contributes additional funding for helicopter surcharge related to co-located streamgage.
- \* Total does not include contributions from other sources.

**CHAPTER 343 HRS EXEMPTION NOTIFICATION**

Regarding the preparation of an environmental assessment pursuant to Chapter 343, HRS and Chapter 11-200.1, HAR.

Project Title: FY 2021 CWRM USGS Cooperative Agreement

Project / Reference No.: Not Applicable

Project Location: Statewide

Project Description: Statewide monitoring of streamflow, groundwater, and rainfall.

Chap. 343 Trigger(s): Use of State funds.

Exemption Class No(s): In accordance with Hawaii Administrative Rule Section 11-200.1-15(c)(5), the subject request is exempt from the preparation of an environmental assessment pursuant to Exemption Class No. 5, that states, "Basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource".

Cumulative Impact of Actions in Same Place Significant?: No successive actions in the same place are anticipated.

Action May Have Significant Impact on Particularly Sensitive Environment?: No particularly sensitive environments are involved.

Analysis: Collection of data from existing monitoring stations will have a minimal impact.

Consulted Parties: DLNR Engineering Division; DLNR Land Division.

Declaration: The Commission finds that this project will probably have minimal or no significant effect on the environment and declares that this project is exempt from the preparation of an environmental assessment.

\_\_\_\_\_  
Suzanne D. Case, Chairperson

\_\_\_\_\_  
Date