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for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

December 19, 2012
Honolulu, Oahu

**Request to Authorize the Chairperson to Enter Into a Contract
Agreement to Update the Water Resource Protection Plan**

SUMMARY OF REQUEST:

The Commission staff requests that the Commission authorize the Chairperson to enter into a contract agreement to update the Water Resource Protection Plan.

BACKGROUND:

The State Water Code, Hawaii Revised Statutes ("Haw. Rev. Stat.") Chapter 174C, requires the Commission on Water Resource Management ("Commission") to implement and use comprehensive water resources planning in its regulation and management of our state's water resources. The Water Code requires both the initial development and regular updating of the Hawaii Water Plan ("HWP") to guide the Commission in executing its general powers, duties, and responsibilities to assure economic development, good municipal services, agricultural stability, and environmental protection.

The HWP serves as a continuing long-range guide for water resource management. The HWP currently consists of five major components (plans):

- 1) Water Resource Protection Plan,
- 2) Water Quality Plan,
- 3) State Water Projects Plan,
- 4) Agricultural Water Use and Development Plan, and
- 5) County Water Use and Development Plans.

The Water Code mandates that these individual plans be prepared and integrated into a comprehensive "master plan" to provide for effective coordination and long-range planning between state and county agencies.

To fulfill this mandate, the components of the HWP must be reviewed and updated on a regular basis. Regular updating of the statewide components of the HWP facilitates the counties' integration of updated information from the Water Resource Protection Plan, Water Quality Plan, State Water Projects Plan, and Agricultural Water Use and Development Plan into their respective Water Use and Development Plans. Without such information, the Counties' plans will be inadequate or unrealistic and may result in conflicting objectives for the use and protection of water. Exhibit 1 summarizes the agencies responsible for preparing each of the components, the primary objectives, and the current status of each of the HWP components.

WATER RESOURCE PROTECTION PLAN ("WRPP")

The Commission is responsible for preparing and updating the WRPP component of the HWP. The WRPP's major objective is to protect and sustain statewide ground and surface water resources, watersheds, and natural stream environments. This protection is established through a comprehensive study of occurrence, sustainability, conservation, augmentation, and other resource management measures.

To accomplish this objective, the Water Code, Haw. Rev. Stat. § 174C-31, requires the Commission to:

- 1) Study and inventory the existing water resources of the State and means and methods of conserving and augmenting such water resources.
- 2) Review existing and contemplated needs and uses of water including state and county land use plans and policies and study their effect on the environment, procreation of fish and wildlife, and water quality.
- 3) Study the quantity and quality of water needed for existing and contemplated uses, including irrigation, power development, geothermal power, and municipal uses.
- 4) Identify rivers and streams, or a portion of a river or stream, which appropriately may be placed within a wild and scenic rivers system, to be preserved and protected as part of the public trust.
- 5) Study 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.

The Water Code identifies the minimum requirements to be addressed in the WRPP:

- 1) Nature and occurrence of water resources in the State;
- 2) Hydrologic units and their characteristics, including the quantity and quality of available resource, requirements for beneficial instream uses and environmental protection, desirable uses worthy of preservation by permit and undesirable uses for which permits may be denied;

- 3) Existing and contemplated uses of water, identified in the water use and development plans of the State and the counties, their impact on the resource, and their consistency with objectives and policies established in the WRPP;
- 4) Programs to conserve, augment and protect the water resource; and
- 5) Other elements necessary or desirable for inclusion in the WRPP.

WRPP UPDATE BACKGROUND

The Commission completed and adopted the initial WRPP in 1990. The 1990 WRPP addressed many issues, including estimated sustainable groundwater yields by island, description of aquifer sectors and aquifer systems, and an initial evaluation of current and projected water needs for the State and the counties.

In 2008, the Commission completed the first WRPP update. It reflected many changes that had occurred since 1990, including new resource protection policies, the availability of new and better hydrologic information, the addition and expansion of resource protection programs, and changing trends in land and water use that affect resource availability.

The 2008 update also identified three general areas within the Commission that need development and expansion: 1) further development of an integrated data collection and resource monitoring program; 2) refining and improving the estimates of water resource availability; and 3) developing a statewide water conservation and water shortage program to explore water resource augmentation options. The 2008 WRPP also emphasized that the timely revision and update of the WRPP is critical to provide county and state decision makers with well-formulated options and strategies to address future water resource management and development issues.

Since the 2008 WRPP update, the Commission has accomplished many tasks in line with the implementation recommendations that were identified in the plan, including but not limited to:

- 1) An update of the Rainfall Atlas of Hawaii;
- 2) A comprehensive analysis of evapotranspiration (to be completed in June 2013);
- 3) Establishing a process for determining and quantifying appurtenant rights;
- 4) Setting interim instream flow standards for parts of Maui;
- 5) Assessing methods and means for measuring diverted surface water flows;
- 6) Verifying stream channel diversions and inventorying stream channel alterations statewide;
- 7) Investigating new recharge estimates for Maui, Oahu, and Hawaii;
- 8) Updating the GIS-based model for determining reasonable irrigation water demands;
- 9) Developing a statewide water conservation plan;

- 10) Investigating opportunities for reclamation and reuse of stormwater statewide;
- 11) Updating a survey of wastewater reuse activities and opportunities statewide;
- 12) Initiating an online water use reporting system;
- 13) Updating county drought mitigation strategies;
- 14) Collaborating with the Department of Health to identify abandoned wells to be sealed; and
- 15) Developing a sustainable funding plan to support Commission activities and further research.

2013 WRPP UPDATE

The WRPP is a “living document” that needs to be updated every 5 years. The HWP component plans are set forth in the Commission’s *Statewide Framework for Updating the Hawaii Water Plan*. On schedule, the staff proposes to update the 2008 WRPP in 2013.

This update will incorporate new information obtained over the last five years and integrate the results of recent Commission program activities with existing protection measures and management strategies. Based on this analysis, new recommendations for priority program areas will be identified to guide Commission activities over the next five years. Emerging issues such as climate change need to be better addressed. This update will also attempt to create a more holistic management document by integrating various sections to recognize the interrelationship of the resources we strive to manage.

In addition, a number of activities carried out by other entities in the last few years that support or inform water resource planning and management should be integrated into the Commission’s overall protection strategies:

1. Department of Land and Natural Resources (DLNR) *Rain Follows the Forest* priority initiative for restoring watershed health and improving aquifer recharge and surface water quality;
2. DLNR Engineering Division’s dam safety program;
3. Department of Health’s expanded ground water monitoring and protection program and establishment of Total Maximum Daily Loads for selected streams; and
4. Updated estimates of water demand for various water use sectors based on the county water use and development plan updates since 2008.
5. Numerous other activities spearheaded or coordinated by other federal, state, county, and non-governmental agencies that contribute to the overall protection and management of our State’s water resources. These should be identified and integrated into a master protection strategy and plan to leverage available resources, avoid duplication of efforts, and identify gaps in water resource protection.

The Commission will employ consultants where necessary to aid the staff in scoping and researching issues, drafting new sections, integrating plan components (as appropriate), facilitating stakeholder outreach and education on the WRPP update, evaluating and recommending short- and long-range protection measures, recommending new policies to protect and manage water resources, identifying gaps in resource planning and management, preparing and submitting

interim progress reports, preparing a draft and final WRPP, and facilitating required statewide public hearings on the updated WRPP.

A draft scope of work is attached (Exhibit 2).

The Commission staff requests that the Commission approve up to \$250,000 in funding to update the WRPP. Funds will come from the Commission’s general fund, special fund, or a combination of both, subject to available funding.

ENVIRONMENTAL REVIEW (Haw. Rev. Stat. Chapter 343)

The planning study described here is exempt from Hawaii’s environmental review process under Hawaii Administrative Rules, § 11-200-5(d). This planning study will identify possible future projects which have not been approved, adopted, or funded. No testing or other actions which may have a significant effect on the environment are involved. Therefore, the proposed action is exempt from Hawaii Revised Statutes, Chapter 343.

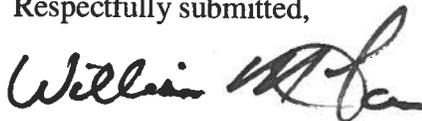
RECOMMENDATION:

Staff recommends that the Commission:

1. Authorize the Chairperson to enter into a contract agreement and to approve funding not to exceed \$250,000 to update the Water Resource Protection Plan.
2. Authorize the Chairperson to make such further amendments or modifications to the contract agreement as may be necessary to accomplish the goals described herein, provided that any amendment or modification does not require additional Commission funding.

The terms of this agreement will be subject to the approval of the Chairperson and the Attorney General.

Respectfully submitted,



WILLIAM M. TAM
Deputy Director

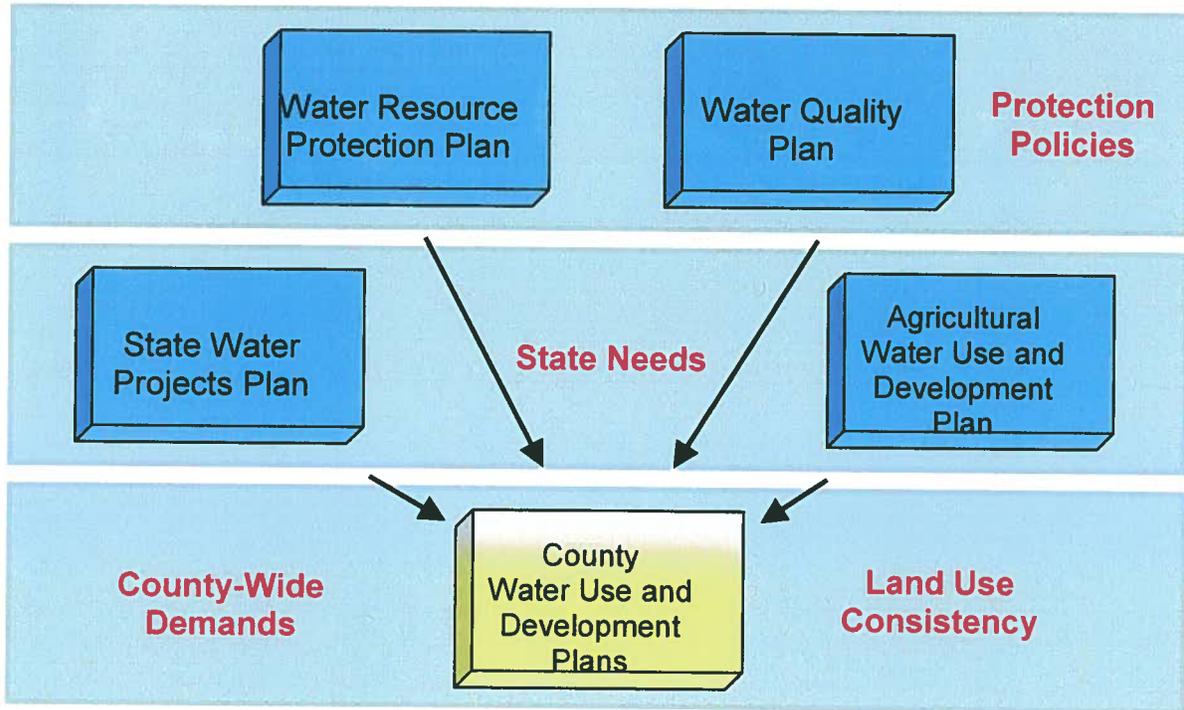
- Exhibit(s):
1. Hawaii Water Plan Components
 2. Draft Scope of Work

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.
Chairperson

HAWAII WATER PLAN COMPONENTS



Water Resource Protection Plan:

- Prepared by the Commission on Water Resource Management
- Protects and sustains statewide ground- and surface-water resources, watersheds, and natural stream environments
- Last update in 2008; next update planned for 2013

Water Quality Plan:

- Prepared by the Department of Health
- Protects the public health and sensitive ecological systems by preserving, protecting, restoring and enhancing the quality of ground- and surface-waters throughout the State
- Last update in 1990; partial update underway for groundwater quality protection only

State Water Projects Plan:

- Prepared by the Department of Land and Natural Resource's Engineering Division
- Provides a framework for planning and implementation of water development programs to meet projected water demands for State projects
- Last update in 2003; partial update underway for Department of Hawaiian Home Lands only

Agricultural Water Use and Development Plan

- Prepared by the Hawaii Department of Agriculture

Exhibit 1

- Develops a long-range management plan that assess state and private agricultural water use, supply, and irrigation water systems
- Last update in 2008, draft is under review by DOA

County WUDPs:

- Prepared by each County's Planning and/or Water Department
- Sets forth the allocation of water to land use in each county

- County of Hawaii
 - Adopted by the Commission in 2011

- County of Maui
 - Lanai Water Use and Development Plan adopted by the Commission in 2012
 - Maui Island update underway

- City and County of Honolulu
 - Koolauloa and Waianae Watershed Management Plans adopted by the Commission in 2011
 - Koolau Poko Watershed Management Plan adopted by the Commission in 2012
 - North Shore Watershed Management Plan underway
 - Ewa Watershed Management Plan underway

Water Resources Protection Plan Update– Scope of Work (DRAFT)

1. The CONTRACTOR shall perform, complete, and provide, in a satisfactory manner as determined by the Commission on Water Resource Management, professional services described below related to the planning, development, and preparation of an updated Water Resources Protection Plan (WRPP).
2. SCOPE OF WORK
 - a. Conduct scoping meetings with CWRM staff to obtain required input for the WRPP update.
 - b. Coordinate and facilitate the update process with CWRM staff on a monthly basis throughout the duration of the contract.
 - c. Facilitate seven (7) public hearings on the WRPP update including six on the neighbor islands.
 - d. Conduct community and stakeholder outreach as part of the WRPP update.
 - e. Conduct three briefings of the Commission on Water Resource Management, at the start, midway, and conclusion of the project.
 - f. Review, update, and integrate existing sections in the WRPP to create a more holistic planning document, complete the following tasks and incorporate new information described below. For each section, provide recommendations to focus future efforts and identify planning gaps and research needs. Identify priority recommendations and an implementation plan.
 - g. Prepare a public review draft and final report in both electronic and hard copies.
3. TASKS
 - a. Review and update the existing inventory of ground water resources.
 - i. Re-evaluate ground water sustainable yields based on new recharge information developed for the islands of Oahu, Maui, and Hawaii. Facilitate in reconvening the Water Professionals Group to share information and develop recommendations for updating sustainable yield estimates.
 - ii. Incorporate the recent findings of deep well drilling projects on the island of Hawaii and discuss impacts on estimated basal sustainable yields. Include a discussion of vertically-extensive fresh water lens systems found on the islands of Kauai and Maui. Expand discussion of Kona high-level aquifer based on findings from well drilling projects and the U.S. Geological Survey's isotope study in the Kona area.
 - iii. Describe findings from ground water submarine discharge studies conducted by the University of Hawaii and its relationship to recharge, sustainable yields and impacts on coastal resources.

Exhibit 2

- iv. Expand on the discussion of the CWRM's Ground Water Model Documentation Guide and identify any needed revisions.
 - v. Describe the Waiahole Ditch system and CWRM's management approach.
- b. Review and update the existing inventory of surface water resources.
- i. Document and discuss the CWRM's designation of Na Wai Eha as a surface water management area and the adoption of measurable interim instream flow standards (IIFS) for Na Wai Eha and East Maui. Describe the CWRM's strategy for implementation and enforcement of the IIFS.
 - ii. Identify problem areas and recommend priority areas for future IIFS amendments.
 - iii. Document CWRM's stream channel alteration survey and stream diversion verification studies. Recommend follow-on studies and activities to aid in the management of surface water resources.
 - iv. Conduct meetings with DLNR's Engineering Division and document the dam safety program. Discuss the complex nature and role of dams and reservoirs as they relate to the protection, conservation, quantity, and quality of water.
 - v. Discuss the various means and methods for measuring diverted surface water flows and recommend reasonable measures that are not unduly burdensome on diverters.
- c. Review and update ground and surface water monitoring.
- i. Interview federal, state, and county agencies that engage in water resource monitoring activities and update the maps and lists of current monitoring sites and data collection activities.
 - ii. Analyze monitoring data and identify trends and potential problem areas.
 - iii. Discuss with CWRM staff and engage other federal, state, county, and private hydrologists to identify priority sites for the construction of new deep monitor wells.
 - iv. Identify gaps in water resource monitoring and make recommendations for future monitoring activities.
 - v. Describe the CWRM's online water use reporting system.
- d. Review and update information on current and projected water demands.
- i. Utilize the CWRM water use reporting database, information from the water use and development plans of the State and counties, and other available sources of information to assess current demands for various water use sectors.

- ii. Incorporate future demand projections for various water use sectors and the quality of water needed to meet demands as determined from the State and county water use and development plans.
 - iii. Incorporate the reservations for Department of Hawaiian Home Lands (DHHL) and coordinate with the Engineering Division to obtain updated estimates for DHHL water needs statewide, as may become available through the ongoing efforts to update the State Water Projects Plan.
 - iv. Describe the process adopted by the CWRM for determining and quantifying appurtenant water rights.
 - v. Review and document existing studies and reports related to taro water needs, kuleana lands, and claims for appurtenant water rights.
 - vi. Describe the updated Irrigation Water Requirement Estimation Decision Support System (IWREDSS) and its application to CWRM's planning and regulatory programs.
- e. Review and update resource augmentation and drought and water conservation planning.
- i. Describe and incorporate the CWRM's Statewide Water Conservation Plan, including recommended priority activities to be undertaken by CWRM staff and identification of best management practices for various water use sectors.
 - ii. Incorporate the 2008 Appraisal of Hawaii Stormwater Reclamation and Reuse.
 - iii. Incorporate the updated survey of wastewater reclamation and reuse in Hawaii. Describe opportunities for expanded reuse, current barriers to expansion, and recommendations to overcome barriers.
 - iv. Discuss the concept of conjunctive use and the role of aquifer storage and recovery (ASR). Review current literature and describe the conditions that favor ASR and potential opportunities in Hawaii.
 - v. Incorporate updates to the county drought mitigation strategies and mitigation project implementation.
- f. Review the best available information on climate change and potential impacts to ground and surface water resources. Recommend adaptive strategies, policies and management measures to address potential impacts. Recommend future research and study needs to address the present uncertainties related to climate change.
- i. Incorporate the findings from the updated *Rainfall Atlas of Hawaii* and comprehensive analysis of evapotranspiration, discuss climatological trends and potential impacts on water resource availability and demand

- g. Describe DLNR's *Rain Follows the Forest* initiative to protect and sustain watershed areas and efforts to fund and implement watershed protection.
- h. Conduct outreach to the Department of Health to update the water quality section of the WRPP. Incorporate new policies for water quality protection and update current program goals, status, and recommended activities. Integrate water quality and quantity protection sections.
- i. Identify and recommend means to fund CWRM program activities through leveraging of resources, partnerships, and the development of sustainable funding sources - including a reevaluation of CWRM fees and the adoption of a public goods charge.

Project Completion Schedule

The project duration is expected to not exceed 24 months.