

**FEASIBILITY STUDY FOR EAST MAUI SOURCE  
DEVELOPMENT  
For Maui County Department of Water Supply**

**REQUEST FOR PROPOSAL AND SCOPE OF SERVICES**



DWS Water Resources & Planning Division

## Contents

Introduction.....	2
Scope of Work .....	4
Project Timeframe .....	6
Project Management .....	6
Submittal Requirements.....	7
Attachments .....	7

## Introduction

The Maui County Department of Water Supply (DWS) is conducting a qualification-based selection process to retain a consultant for professional services to conduct a feasibility study for developing new source in East Maui. A Project Screening Committee will evaluate firms' qualifications and experience with similar projects to select the best qualified consultant to provide a bid.

New water source and adequate water infrastructure is needed to meet planned growth as directed in the Maui Island Plan. Analyses to date of water use, projected demand and available water source indicates the need for a multitude of sources throughout the county. The purpose of the study is to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that assures reliable potable water supply to accommodate planned growth on the Central and Upcountry water systems.

In 2013, DWS Engineering Division prepared water source development options reports for the DWS Central Maui System and the DWS Upcountry System. The report provides options for source development to meet demand in the South-Central Maui and Upcountry areas through year 2030. Costs, benefits and other analytical criteria were presented for each option. With 2010 as base year, average demand for the Central System by year 2030 was projected to 40.2 million gallons per day (mgd) and additional source capacity needed for 2030 was projected to 12.5 mgd. 2030 demand for the Upcountry System was projected to 15.0 mgd and additional source capacity of 5.3 mgd needed by 2030.

The 2019 Draft Update of the Water Use and Development Plan for Maui Island (WUDP) analyzed demand and source development needs through year 2035. Using 2014 water use as baseline, demand on the DWS Central System was projected to 25.42 mgd by year 2020 and about 34 mgd by year 2035. Actual 2020 water production of 24.12 mgd closely matches WUDP projections. It is assumed that a portion of future demand in the Wailuku/Waikapu region will be met by private purveyors and source in the Waikapu aquifer. Depending on sustainable pumpage from Iao aquifer and aggressive conservation measures, up to 8 mgd new source may be needed by 2035. Demand for the Upcountry System was projected to about 8.5 mgd and with the addition of the full Upcountry meter priority list a total of 15.8 mgd. New source development needs for Upcountry was estimated to about 6.3 mgd by year 2035.

Because demand projections in the Draft WUDP are based on 2014 water use and comprehensive infrastructure capacity studies are lacking, a holistic in-depth analysis of the Central Maui and Upcountry System infrastructure capacity and updated demand projections are essential to accurately quantify source development needs for each system.

## **Water Use and Development Plan Strategies**

Water resource availability and constraints have been characterized in the Draft WUDP for the Central and Upcountry water systems. Since March 2019, the plan is under review by the Maui County Council. Pending adoption by ordinance, the preferred conventional source strategies – groundwater and surface water development – require updated and further site-specific analysis of cost and benefits prior to source selection and development.

Preferred groundwater source for the DWS Central System include the Waihee and Haiku aquifers. Preferred groundwater source for the Upcountry System include the Haiku and Makawao aquifers. Contaminants from agricultural pesticide use render the Paia and Kahului aquifers less desirable for potable use or at a minimum entail additional treatment cost for contaminants. Kamole aquifer is primarily suited for non-potable use due to brackish quality. Limited surface water is available from East Maui streams subject to adopted Interim Instream Flow Standards and from the streams in Na Wai Eha, subject to pending Interim Instream Flow Standards and Water Use Permits.

Non-conventional water source available for potable purposes include desalinated brackish or seawater. Along with water conservation, non-conventional water source are recommended strategies in the Draft WUDP. However, analysis of these strategies are not within the scope of this project.

## **East Maui Consent Decree**

On December 23, 2003 a Consent Decree relating to groundwater development in Haiku aquifer was agreed upon between Plaintiffs the Coalition to Protect East Maui Water Resources, Hui Alanui o Makena, The Sierra Club and Mark Sheehan; and Defendants the County of Maui, the Department of Water Supply, the Board of Water Supply and Water Director George Tengan, hereinafter referred to as “the Consent Decree”. Pursuant to the Consent Decree terms and conditions, any further efforts by the County Defendants to develop groundwater in the agreed-upon portion of the East Maui Region require a rigorous cost/benefit study of the surface and groundwater resources available in the Central Maui Region, the Upcountry Maui Region and East Maui Region, including an evaluation of economic and environmental factors of developing and transmitting these water resources. This study shall address planning for stream restoration in the agreed-upon portion of the East Maui Region.

The Consent Decree further requires the County to vigorously investigate and pursue the availability of surface water from the Waikapu, Iao and/or Waihee hydrologic units which shall include a rigorous analysis of the costs and benefits of using these water resources for the DWS system.

The Consent Decree further requires the County to consult with the Plaintiffs with respect to this study. The feasibility study under this RFP must comply with all provisions of the Consent Decree.

## **Scope of Work**

### **Study Objectives**

Consistent with the Draft WUDP, DWS seeks to develop water supply in the most cost-efficient and reliable manner that provides greater resiliency and diversity to current water portfolios and considering projected impacts on groundwater recharge and streamflow from climate change. DWS seeks to develop sufficient source to meet planned growth that is well within established sustainable yields and that avoid vulnerability to contamination. Under this contract, the consultant shall conduct a holistic capacity study and cost benefit analysis to achieve the following Project Objectives:

1. Provide updated demand projections for the DWS Central System and Upcountry System based on 2020 water use and historic data;
2. Determine the existing water systems current reliable capacities;
3. Determine the portion of existing capacity utilized by current development;
4. Determine the source capacity needs for projected population growth, including the Upcountry meter priority list;
5. Conduct a rigorous cost/benefit study of the surface and groundwater resources available in the Central Maui Region, the Upcountry Maui Region and East Maui Region, including an evaluation of economic and environmental factors of developing and transmitting these water resources to the DWS Central System and Upcountry System.
6. Assess the availability of surface water from the Waikapu, Iao and/or Waihee hydrologic units and conduct a rigorous analysis of the costs and benefits of using these water resources for the DWS Central System;
7. Recommend cost effective source development options to meet projected demand and that improve water supply resiliency and reliability;
8. Recommend a plan for stream restoration in the portion of the East Maui Region outlined in Exhibit A of the Consent Decree.

### **Study Tasks**

The consultant's Proposal shall include the tasks below and any others the Consultant deems necessary to provide the deliverables and comply with provisions 4.1 - 4.6 of the Consent Decree. DWS reserves the right to add or delete a task or subtask from the final scope of work.

1. Review of Available Information, Capacity Determination, Demand Projections and Capacity Needs.

- a. For the regions served by the Central Maui System and the Upcountry System, the consultant shall review available pertinent documents that identifies the areas' characteristics, land use, water resources, population growth and development plans through year 2035.
- b. The consultant shall review projected water demand from year 2015 - 2035 in the Draft WUDP for Maui Island and adjust as needed to reflect 2020 water use, changes in land use and population growth for the regions.
- c. The consultant shall evaluate existing sources and facilities serving the Central Maui System and the Upcountry System, review raw surface water collection systems, storage and constraints and with DWS staff review available reliable capacity. The consultant shall update or further refine the findings of the 2013 DWS Engineering Division studies and recommended source options.

Deliverable: The consultant shall provide a report detailing the capacity determinations as described above, updated demand projections and system capacity/new source needs through year 2035.

2. Conduct a rigorous cost/benefit study of the surface and groundwater resources available in the Central Maui Region, the Upcountry Maui Region and East Maui Region, including an evaluation of economic and environmental factors of developing and transmitting these water resources. The consultant shall assess the availability of surface water from the Waikapu, Iao and/or Waihee hydrologic units and conduct a rigorous analysis of the costs and benefits of using these water resources for the DWS Central System.
  - a. For the water resources stated above, the consultant shall evaluate short-term and long-term water availability under various operational and projected climate scenarios.
  - b. The analysis shall consider factors that impact water supply resiliency, such as drought, fire, water quality, changes to chlorides and water levels.
  - c. The analysis shall consider legal, environmental and hydrological constraints, permitting considerations, impacts and opportunities for Native Hawaiian traditional and customary uses.
  - d. The consultant shall identify potential well field locations and assess costs and time lines to design, construct, operate and maintain.
  - e. The consultant shall assess available surface water and costs and time lines to design and construct storage and treatment works, operate and maintain facilities.
  - f. For each resource option considered in the study, the consultant shall consult with Native Hawaiian practitioners and knowledgeable individuals to assess impacts on traditional and customary practices in developing the water resource.
  - g. The consultant shall evaluate potential interconnections and the technical, regulatory and operational issues that would need to be addressed to move water supply between the Upcountry System and the Central Maui System.
  - h. The consultant shall recommend which alternative, or combination of alternatives will be most cost effective and beneficial at increasing water supply to meet projected demand, describing environmental, social and cultural impacts such as impacts on

streams, water quality, Native Hawaiian traditional and customary practices, and technical feasibility.

Deliverable: The consultant shall provide a report and maps detailing all reviewed options, costs, factors and constraints considered in the analysis, findings and recommendations.

3. Assess and recommend a plan for stream restoration in the portion of the East Maui Region outlined in Exhibit A of the Consent Decree.
  - a. The assessment shall consider legal, environmental and hydrological constraints, permitting considerations, impacts and opportunities for Native Hawaiian traditional and customary uses.
  - b. The consultant shall consult with users and Native Hawaiian practitioners in the stream restoration area to identify impacts on traditional and customary practices from stream restoration.
  - c. The consultant shall recommend a plan, including steps, time line and responsibilities to restore all or certain diverted streams in the subject area.

Deliverable: The consultant shall provide a report and maps detailing a plan for stream restoration.

4. Provide progress reports and participate in meetings with DWS staff and Consent Decree Plaintiffs, as designated by DWS.
5. Provide copies of the completed studies, analyses and reports to DWS and to the Consent Decree Plaintiffs, as designated by DWS.

The study is not a commitment to fund the design of recommended water supply.

## Project Timeframe

DWS issues RFP	February 18, 2021
RFP Closing Date	March 26 2021
Contract for Engineering Services	April 30, 2021
Draft Feasibility Study Completion	January 14, 2022
Final Report Submission	February 14, 2022

## Project Management

The selected Consultant shall perform all work under the direction of the Project Manager Eva Blumenstein, DWS Planning Program Manager.

**Point of Contact:**

Eva Blumenstein, Planning Program Manager  
County of Maui Department of Water Supply  
200 S. High Street  
Wailuku, HI 96793  
Eva.Blumenstein@co.maui.hi.us  
(808) 463-3102

**Submittal Requirements**

The proposal shall include at a minimum the following information:

- A. Scope of Work: For each task, provide detailed narrative on how work will be completed.
- B. Key Personnel: List key personnel to be utilized and how their time will be allocated for the project. List all sub-consultants to be utilized for the work and their scope of work.
- C. Services to be provided by the DWS: List all services that the consultant expects the Department of Water Supply to provide or assist the consultant in completing the work.
- D. Time Schedule: Submit a project schedule for each phase of work including proposed time of completion (contract time).
- E. Fee Proposal: Submit a fee proposal for each scope of work item together with a breakdown of man-hours for each key personnel. Submit a copy of sub consultant fee proposals.
- F. Tax Clearance: Submit tax clearance from the Hawaii State Department of Taxation and the Internal Revenue Service, using Form A-6 with the proposal.

Deadline for Proposal Submittal: **February 26, 2021 at 3:30 p.m. (Hawaii Standard Time).**

**Attachments**

Civil No. 03-1-0008(3) (Declaratory Judgement and Other Civil Action) Certificate of Service of Consent Decree