

**PROPOSAL FOR:**

**WATER USE AND DEVELOPMENT PLAN UPDATE FOR THE ISLAND OF MOLOKA'I**

TO: MAUI COUNTY DEPARTMENT OF WATER SUPPLY (DWS)  
WATER RESOURCES & PLANNING DIVISION

BY: TOWNSCAPE, INC. – DECEMBER 30, 2020

TOWNSCAPE, INC. has prepared this proposal in response to a “REQUEST FOR PROPOSAL & SCOPE OF SERVICES” (RFP) for the WATER USE AND DEVELOPMENT PLAN (WUDP) UPDATE FOR THE ISLAND OF MOLOKA'I. Townscape received the RFP from the Maui County Department of Water Supply (DWS) via email on December 4, 2020. We have incorporated the SCOPE OF SERVICES and the SUBMITTAL REQUIREMENTS from the RFP into this proposal narrative and fee proposal.

In accordance with the RFP, We understand that “DWS requires completion of an updated WUDP to meet the requirements of the State Water Code HRS 174-C, the Statewide Framework for Updating the Hawaii Water Plan, to fulfill DWS obligations under the Maui County Charter and to comply with Maui County Code Chapter 14.02.” We also understand that the update of the Moloka'i WUDP “must address all water purveyors and water uses on Moloka'i” – i.e., the Plan will NOT be limited to Maui DWS water systems and users.

We also understand that all planning work for the update of the Moloka'i WUDP will be performed under the direction of the designated DWS Project Manager.

We have organized our proposed SCOPE OF WORK into “Work Elements” and a number of planning “Tasks” for each Work Element. The Work Elements are:

- WORK ELEMENT 1: PRELIMINARY ANALYSIS OF WATER RESOURCES ISSUES & NEEDS
- WORK ELEMENT 2: ELEMENTS OF A PRELIMINARY DRAFT MOLOKA'I WUDP
- WORK ELEMENT 3: OFFICIAL DRAFT MOLOKA'I WUDP
- WORK ELEMENT 4: REVIEW & REVISIONS AND FINAL MOLOKA'I WUDP
- WORK ELEMENT 5: FORMAL APPROVAL OF THE MOLOKA'I WATER USE AND DEVELOPMENT PLAN

For each of the Work Elements, we have noted the principal planning DELIVERABLES and have provided an estimated TIME SCHEDULE. Our proposal also provides a summary of our proposed staffing for the Moloka'i WUDP, our understanding of services to be provided by the Maui County Department of Water Supply and our Fee Proposal, in conformance with the “DAGS – Direct Salary Rates – Maximum Hourly Rates for Consultant Services Contracts July 1, 2019 to June 30, 2022” which were included in the RFP that we received from the Maui DWS.

## PROPOSAL INTRODUCTION

Before we present the details of our proposed Scope of Work for the MOLOKA‘I WATER USE AND DEVELOPMENT PLAN, we would like to share a summary of our company’s overall approach to water resources planning.

Through our work on water resources plans and watershed management plans over the past twenty years – with the U.S. Army Corps of Engineers (USACE), the Natural Resources Conservation Service (NRCS), the State Department of Land and Natural Resources (DLNR), the State Commission on Water Resources Management (CWRM) and the Honolulu Board of Water Supply (HBWS) – we have developed a water resources approach and philosophy that is built upon several core principles, which are summarized as follows:

1. **HOLISTIC UNDERSTANDING OF LAND AND WATER RESOURCES**
2. **COMMUNITY-BASED PLANNING PROCESS**
3. **RESPECT FOR NATIVE HAWAIIAN CULTURE, TRADITIONS AND PRACTICES**

We have provided a brief discussion of these core water resources planning principles below:

1. **HOLISTIC UNDERSTANDING OF LAND AND WATER RESOURCES:** Land and water resources and natural processes are inextricably linked through the complex interactions of climate, oceans and ocean dynamics, precipitation, geology, soils formation, plants and animals and biotic communities, surface and subsurface fresh water processes and resources, and human actions within the natural environment, both benign and destructive. Water Resources planning must be based on an understanding of these complex land and water processes and relationships.
2. **COMMUNITY-BASED PLANNING PROCESS AND PARTNERSHIPS:** Clearly, there are many “communities” within any particular state or island or region. By “community” we mean the people who live and work in a particular area or region or neighborhood. Water Resources planning must be of, by and for the community – for the people who live and work and recreate within the watersheds that are being planned. For the Moloka‘i Water Use and Development Plan, we will generally refer to the “Moloka‘i Community” while recognizing that there are **MANY AND DIVERSE COMMUNITIES** on the Island of Moloka‘i – some of whom are in conflict with other communities and some that can be in conflict with government entities. Land use and water use plans must strike a balance among technical requirements, economic factors, political variables and community needs and concerns.

To the extent possible within the constraints of time and budget, we propose that the planning process for the UPDATE OF THE MOLOKA‘I WATER USE AND DEVELOPMENT PLAN be a **PARTNERSHIP PROCESS** among the Moloka‘i Community, the Maui Department of Water Supply

and the consultant team. By “**PARTNERSHIP**” we mean that each partner should have an EQUAL SAY in the important decisions of the planning process.

3. **RESPECT FOR NATIVE HAWAIIAN CULTURE, TRADITIONS AND PRACTICES:** Pre-contact native Hawaiian people and communities excelled in natural resources management, agriculture, fisheries, astronomy, ocean navigation, ocean sports and athletics, legends, poetry, chants, dance, natural medicines and natural resources management. Contemporary water resources planning for Hawai‘i communities needs to recognize, respect and reflect these important native Hawaiian cultural traditions and practices.

## **UPDATE OF THE MOLOKA‘I WATER USE AND DEVELOPMENT PLAN – PROPOSED SCOPE OF WORK**

### **WORK ELEMENT 1: PRELIMINARY ANALYSIS OF MOLOKA‘I WATER RESOURCES ISSUES & NEEDS**

Task 1.1 – FIRST COORDINATION MEETING WITH MAUI COUNTY DWS: Develop and submit to DWS a draft Work Plan and Schedule for the update of the Moloka‘i WUDP. Discuss and confirm (or amend) overall project objectives, scope, methodology and schedule. Revise project WORK PLAN AND SCHEDULE as may be needed, and submit these revised documents to the Maui DWS. Discuss setting up a website or a DWS Water Resources and Planning Division “sub-site” for the Moloka‘i Water Use and Development Plan. Thereafter, schedule and hold regular monthly coordination meetings with Maui DWS Planners on XX day of YY week of the month.

Task 1.2 – INITIAL DWS DATA REVIEW: Request, receive and review initial Moloka‘i water resources data from the Maui DWS, including Maui DWS information on Moloka‘i existing potable water sources and systems, water uses, water use analysis and future water demand projections. Identify any important data gaps and request additional data from the Maui DWS. Collaborate with the Maui DWS Project Manager to develop a preliminary project website. Organize Moloka‘i WUDP data and information to be displayed on this website throughout the planning process. Refer to *Moloka‘i Water use & Development Plan Update, Project Description February 2021* for further information on demand methodology.

Task 1.3 – PRELIMINARY PLANNING AND POLICY ANALYSIS: Research and review plans and policy documents that are relevant to the Moloka‘i WUDP, including the Maui County General Plan (2010), the Maui County Policy Plan (2010), the Moloka‘i Island Community Plan (2018), the Department of Hawaiian Home Lands (DHHL) Water Policy Plan (2014), the East Moloka‘i Watershed Plan, the Mana‘e Management Plan (2016) and the DHHL Moloka‘i Regional Plan (2019).

Task 1.4 – PRELIMINARY LAND AND WATER RESOURCES ANALYSIS: Research, analyze, map and organize relevant water resources and related natural resources data for Moloka‘i, including data on coastal waters and nearshore biota, ground water and surface water, flooding and drainage, land ownership, land use, land development trends, and urban infrastructure in order to begin to formulate a holistic understanding of Moloka‘i water resources dynamics and water supply issues, past, present and future.

Include a preliminary analysis of the probable impacts of CLIMATE CHANGE on Moloka'i water resources, water infrastructure and water use.

Task 1.5 – PRELIMINARY HISTORICAL, CULTURAL AND COMMUNITY ANALYSIS: Research and analyze available information on Moloka'i Hawaiian pre-contact and contemporary culture, customs, wahi pana, ahupua'a, agriculture, fishponds and fisheries, community groups and organizations and other information that may be of special relevance to water resources planning for Moloka'i. This analysis work will provide the basis for the KA PA'AKAI analysis.

Task 1.6 – INITIAL COMMUNITY AND STAKEHOLDER CONSULTATIONS: In consultation with the Maui DWS, identify up to twenty (20) key Moloka'i individuals and public and private sector organizations that have special knowledge or standing for Moloka'i water resources, including the Moloka'i Water Advisory Group. Meet with these individuals and organizations in person and/or remotely to discuss Moloka'i water issues. Maui DWS planners should participate in these meetings. Record these discussions and share these records with the Maui DWS. Based on these initial community discussions, develop a DRAFT PLAN for partnering with the Moloka'i community throughout the development of the Updated Moloka'i Water Use and Development Plan.

Task 1.7 – GENERAL COMMUNITY MEETING: Plan, schedule and facilitate a virtual general community meeting to inform the Moloka'i community about the overall objectives, scope and schedule for the Moloka'i WUDP and to receive preliminary comments from the community on water resources issues and concerns. Document these community comments and post the meeting notes on the Moloka'i WUDP website.

Task 1.8 – DRAFT MOLOKA'I WATER ISSUES WORKING PAPER: Develop a draft "MOLOKA'I WATER ISSUES WORKING PAPER," including text, maps and graphics, that summarizes the planning team's preliminary understanding of Moloka'i water resources and issues, including regional and place-specific issues, inter-district conflicts and planning objectives. The draft WORKING PAPER will include succinct Moloka'i water system profiles, descriptions of moku and watersheds, a preliminary summary of key community water resources issues, and status of water resources, water supply systems and related land development, both existing and future. The Working Paper will also include a summary of overall GOALS AND OBJECTIVES for the Moloka'i WUDP and Moloka'i water use projections provided by the Maui DWS and the Draft Plan for partnering with the Moloka'i community. Submit this draft working paper to the Maui DWS for review and comment.

Task 1.9 – REVISED ISSUES WORKING PAPER: Meet with Maui DWS Planners to discuss the draft "MOLOKA'I WATER ISSUES WORKING PAPER." Revise the draft Working Paper as needed and submit the revised Working Paper to the Maui DWS.

Task 1.10 – INTENSIVE COMMUNITY CONSULTATIONS: Organize and facilitate a broad community consultation process to provide the general Moloka'i community with opportunities to comment on priority water use and development issues. This community consultation process will be implemented through a series of "virtual" meetings and/or through more traditional in-person community meetings,

depending on the project calendar and any health restrictions on public gatherings that may still be in effect at the time of these meetings. Record the highlights of the community consultation process and submit these records to the Maui DWS for review and comment.

Task 1.11 – DESIGN THE COMMUNITY PARTNERING PROCESS: Based on the planning team’s experience with the preliminary community consultation process outlined in Tasks 1.6, 1.7 and 1.10 above, design an overall community consultation and partnering process for the rest of the Moloka’i Water Use and Development Plan. Review a draft description of this overall community consultation and partnering process with the Maui DWS and revise/refine the design of the process as needed.

ESTIMATED TIME TO COMPLETE WORK ELEMENT 1: 6 to 8 MONTHS

WORK ELEMENT 1 DELIVERABLES:

- Project Work Plan and Schedule
- Various Maps and Memos
- Moloka’i WUDP Issues Working Paper
- Moloka’i Community Partnering Plan for the WUDP

WORK ELEMENT 2:       ELEMENTS OF A PRELIMINARY DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN

Task 2.1 – REFINE MOLOKA’I WUDP ANALYSIS: Review and critique the Moloka’i water use and development data, issues and analysis, goals and objectives that were developed through the Work Element 1 planning process and supplement that analysis as may be needed. Continue to incorporate and integrate data and forecasts provided by the Maui DWS for existing water uses and future water demand projections.

Task 2.2 – IDENTIFY PRELIMINARY NEW INFRASTRUCTURE ELEMENTS – Identify/confirm water resources and water infrastructure options, including potential new water supply systems and their order of magnitude costs, that would potentially meet the future water needs of the Moloka’i community in a manner that will be compatible with both community values and sound water system engineering.

Task 2.3 – CRITIQUE OF PRELIMINARY WUDP ELEMENTS - In collaboration with the Maui DWS, evaluate strategy options for the alternative water resource and water system development elements, including factors relating to costs and environmental impacts, consistency with Maui County land use plans and policies, including the Moloka’i Island Community Plan, consistency with state land use classifications and policies, the State Water Resources Protection and Water Quality Plans, and other relevant public plans, and overall acceptability to the Moloka’i community. In collaboration with Maui DWS staff, develop evaluation criteria to assess water resources strategies and development of policies to address critical water issues and to resolve conflicts.

Task 2.4 – ORGANIZE DRAFT WUDP ELEMENTS BY REGION - Organize the information on alternative water developments by appropriate regional areas and summarize potential regional water use and development systems, costs and benefits.

Task 2.5 – DEVELOP SUBSTANTIVE KA PA‘AKAI ANALYSIS - Through collaboration with the Maui DWS and recognized Moloka‘i cultural leaders and practitioners, develop a substantive KA PA‘AKAI ANALYSIS for important alternative future water resources facilities options. Document this analysis in the form of a working memorandum and submit the memo to the Maui DWS for review and comment.

Task 2.6 – CONTINUE THE MOLOKA‘I COMMUNITY PARTNERING PROCESS - Consult with key Moloka‘i community leaders and organizations throughout the work on the Preliminary Water Use and Development Plan, including identification and analysis of any controversial future water system elements. Document the status of the community partnering process in a progress memorandum.

ESTIMATED TIME TO COMPLETE WORK ELEMENT 2: 6 to 8 MONTHS

WORK ELEMENT 2 DELIVERABLES:

- Summary of Regional Water Use and Development – Systems, Costs, Benefits
- Substantive KA PA‘AKAI ANALYSIS for future water resources facilities options
- Community Partnering Process Progress Memorandum

WORK ELEMENT 3: OFFICIAL DRAFT MOLOKA‘I WATER USE AND DEVELOPMENT PLAN

Task 3.1 – PRELIMINARY DRAFT MOLOKA‘I WUDP - Compile and organize project data and analysis developed during Work Elements 1 and 2 above, and develop a Preliminary Draft Moloka‘i Water Use and Development Plan. Submit this Preliminary Draft Plan to the Maui DWS and to key Moloka‘i community groups and organizations for review and comment. At a minimum, this Preliminary Draft Moloka‘i WUDP will include:

- a. Description of Moloka‘i water system elements, both public and private;
- b. Description of Moloka‘i moku or watersheds;
- c. Status of Moloka‘i water resources and related land development;
- d. Identification of water resources and facilities development options, including alternatives and order of magnitude costs;
- e. Evaluation of water resources strategy options, including potential impacts of climate change;
- f. Evaluation of consistency with county land use plans and policies, including the Moloka‘i Community Plan;
- g. Evaluation of consistency with state land use classifications and policies, the State Water Resources Protection and Water Quality Plans;
- h. Summary of regional plans for water developments, including recommended and alternative plans, costs and implementation strategies;
- i. Ka Pa‘akai Analysis for priority water resources development strategies;

j. An Executive Summary

Task 3.2 – REVISE THE PRELIMINARY DRAFT MOLOKA’I WUDP - Receive and analyze verbal and written Maui DWS and Moloka’i community review comments on the Preliminary Draft Plan. Perform additional research, analysis, mapping and planning work as may be needed to respond to the Maui DWS and community comments. Meet with Maui DWS planners and with Moloka’i community groups as needed to discuss various critical water use and development details.

Task 3.3 – 90% DRAFT MOLOKA’I WUDP - Develop the official DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN and submit a 90% “Review Draft” of this Plan to the Maui DWS and to key Moloka’i community groups and organizations for review and comment.

Task 3.4 – OFFICIAL DRAFT MOLOKA’I WUDP + DRAFT SUMMARY - Receive comments on the 90% Review Draft from the Maui DWS and from key Moloka’i community organizations and develop the official DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN. Also develop a succinct SUMMARY of the Draft Moloka’i WUDP of 20 to 30 pages that can be widely distributed and reviewed throughout the Moloka’i community.

Task 3.5 – SUBMITTAL OF THE DRAFT MOLOKA’I WUDP + DRAFT SUMMARY - Submit the DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN and the companion DRAFT PLAN SUMMARY to the Maui DWS, to Moloka’i community groups and organizations and to the Maui County Council for review and comment.

ESTIMATED TIME TO COMPLETE WORK ELEMENT 3: 6 TO 8 MONTHS

WORK ELEMENT 3 DELIVERABLES:

- Preliminary Draft Moloka’i Water Use and Development Plan
- 90% Draft Moloka’i WUDP
- Official Draft Moloka’i Water Use and Development Plan and Draft Summary

WORK ELEMENT 4: REVIEW AND REVISIONS OF THE DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN

Task 4.1 – DRAFT MOLOKA’I WUDP REVIEW SCHEDULE - In consultation with the Maui DWS, prepare a detailed plan and schedule for presentations of the Draft Plan to the Moloka’i community and to County and State policy bodies, including the Maui Board of Water Supply, Maui County Council committees and the State Commission on Water Resources Management (CWRM).

Task 4.2 – DRAFT MOLOKA’I WUDP PRESENTATIONS – Assist the Maui DWS with presentations to Moloka’i community organizations and to key County and State entities. Receive and review verbal and written comments on the Draft Plan from:

- Maui Department of Water Supply

- Moloka'i community leaders and community organizations
- Other Maui public agencies
- Commission on Water Resources Management (CWRM)
- Private sector organizations
- Other interested individuals and organizations

Task 4.3 – ORGANIZE RESPONSES TO COMMENTS - Develop draft responses to comments from Moloka'i community members and organizations and from Maui County and State public agencies and review the draft responses with the Maui DWS.

Task 4.4 – RESPOND TO COMMENTS ON THE DRAFT MOLOKA'I WUDP - Respond to comments both in writing and through meetings, as appropriate, with key community leaders and community organizations, Maui County Council Members, other Maui County agencies and officials and with the CWRM staff.

Task 4.5 – PREFINAL MOLOKA'I WUDP - Incorporate edits and revisions into a PREFINAL MOLOKA'I WATER USE AND DEVELOPMENT PLAN and submit the PREFINAL PLAN to the Maui DWS for review and comment.

Task 4.6 – FINAL MOLOKA'I WUDP + SUMMARY - Incorporate the Maui DWS review comments on the Prefinal Plan. Finalize the MOLOKA'I WATER USE AND DEVELOPMENT PLAN and submit digital and hard copies of the Final Plan and the Plan Summary to the Maui Department of Water Supply.

ESTIMATED TIME FOR COMPLETION OF WORK ELEMENT 4: 6 TO 8 MONTHS

WORK ELEMENT 4 DELIVERABLES:

- Draft Moloka'i WUDP Review Schedule
- Responses to Comments on the Draft Moloka'i WUDP
- Prefinal Moloka'i WUDP + Plan Summary
- Final Moloka'i WUDP + Plan Summary

WORK ELEMENT 5 – FORMAL APPROVAL OF THE MOLOKA'I WATER USE AND DEVELOPMENT PLAN

Task 5.1 – Presentation to and approval by the Maui Department of Water Supply

Task 5.2 – Presentation to and approval by the Commission on Water Resources Management (CWRM)

Task 5.3 – Presentation to and approval by the Maui County Council

ESTIMATED TIME FOR COMPLETION OF WORK ELEMENT 5: 6 TO 8 MONTHS

WORK ELEMENT 5 DELIVERABLES: Presentation materials and memoranda.



**TOTAL ESTIMATED PROJECT TIMELINE: 30 TO 40 MONTHS.**

A NOTE on the TIME SCHEDULE for Water Resources Plans: Our company has developed approximately 20 water resources plans of various kinds over the past 20+ years. It has been our experience that there is almost always a conflict or tension between the need for an efficient project schedule and the complexity of the water resources issues and community issues/needs of the particular planning area. The result of this “tension” is usually a project schedule that extends MUCH LONGER than is expected or desirable. Our company’s project management style is to work efficiently and proactively. However, we have found that community issues, public agency issues and the politics of plan approval often cause substantial delays in completing these water resources planning projects.

PROBLEM: If Water Resources Plans take three or four or five or more years to develop, review and finalize, some of the key data, analysis, community issues and public agency priorities may change – and the Plan may become less and less timely and relevant.

**SUMMARY OF MAJOR DELIVERABLES FOR THE MOLOKA’I WATER USE AND DEVELOPMENT PLAN**

1. MOLOKA’I WATER ISSUES WORKING PAPER
2. MOLOKA’I COMMUNITY PARTNERING PLAN
3. SUMMARY OF REGIONAL WATER USE AND DEVELOPMENT
4. SUBSTANTIVE KA PA’AKAI ANALYSIS
5. PRELIMINARY DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN
6. DRAFT MOLOKA’I WATER USE AND DEVELOPMENT PLAN + SUMMARY DOCUMENT
7. PREFINAL MOLOKA’I WATER USE AND DEVELOPMENT PLAN + SUMMARY DOCUMENT
8. FINAL MOLOKA’I WATER USE AND DEVELOPMENT PLAN + SUMMARY DOCUMENT

## B. KEY PERSONNEL

We propose a project team of four Townscape (TSI) planners.

- BRUCE TSUCHIDA – TSI President and Principal Planner. Mr. Tsuchida has 50 years of planning experience, and has recently served as principal in charge and project manager for HBWS Watershed Management Plans for three of the eight planning districts of O‘ahu: the Primary Urban Center District, Ko‘olaupoko District and Wai‘anae District. He will be the Overall Project Manager for the Moloka‘i WUDP project.
- SHERRI HIRAOKA – TSI Vice President and Principal Planner. Ms. Hiraoka has 20 years of planning experience and is currently project manager for the HBWS ‘Ewa Watershed Management Plan. She recently completed work on the UPDATE OF THE STATE WATER RESOURCES PROTECTION PLAN for CWRM. She will provide technical review and assistance for the Moloka‘i WUDP project.
- LILLIE MAKAILA – TSI Staff Planner. Ms. Makaila is a graduate of Kamehameha Schools and received a BS Degree from the Hawai‘iniuikea School of the University of Hawai‘i at Mānoa and a MURP Degree from the UH Mānoa Department of Urban and Regional Planning. She will be the primary researcher, planner and community liaison staff person for this project.
- GABRIELLE SHAM – TSI Associate Planner. Ms. Sham is a graduate of Tulane University and received a MURP Degree from the UH Mānoa Department of Urban and Regional Planning. Ms. Sham will assist with community meetings and with maps and graphics for the Moloka‘i WUDP.

In addition to Townscape planners, civil engineers of the company OKAHARA AND ASSOCIATES, INC. (OAI) will provide planning level cost estimates for new and improved water supply infrastructure elements that may be included in the Moloka‘i Water Use and Development Plan. Costs for the OAI services are included in the attached FEE PROPOSAL.

## C. SERVICES TO BE PROVIDED BY MAUI DWS

We propose to develop the MOLOKA‘I WUDP through close coordination with the Water Resources & Planning Division staff of the MAUI Department of Water Supply. It is our understanding that Maui DWS staff will provide the following services for the development of this Plan:

- Regular working meetings with the consultant team throughout the development of the Moloka‘i WUDP;
- Work with TSI to set up and maintain a project website or subsite;
- Relevant background information, plans and data;
- Assistance with obtaining relevant data from other State and County agencies – including water use data for private wells and private water systems;

- Projections for probable future water demands for the Moloka'i community;
- Maps and data on the existing Moloka'i water supply system;
- Plans and descriptions of currently planned improvements for the Moloka'i water supply system;
- Timely review and comments on important memos and progress reports submitted by the consultant;
- Active participation in the community and stakeholder consultation process;
- Timely review, approval and processing of monthly progress invoices from the consultant;
- Information and guidance to the consultant on the County approval process for the Draft and Final Moloka'i Water Use and Development Plan.

#### D. TIME SCHEDULE

As we have indicated in our proposal narrative, we estimate that the TIME SCHEDULE for the Moloka'i WUDP will be approximately as follows:

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|---|------------|
| 1. Preliminary Analysis of Moloka'i Water Resources Issues and Needs: | 6-8 Months |
| 2. Elements of a Preliminary Draft Moloka'i WUDP:                     | 6-8 Months |
| 3. Official Draft Moloka'i WUDP:                                      | 6-8 Months |
| 4. Review and Revisions of the Draft Moloka'i WUDP:                   | 6-8 Months |
| 5. Formal Approval of the Moloka'i Water Use and Development Plan:    | 6-8 Months |

Our overall estimate for the TIME SCHEDULE for the Moloka'i WUDP project is thus 30 to 40 months.

## **Moloka`i Water use & Development Plan Update Project Description February 2021**

### **Identify Existing and Future Water Demand**

A primary objective of the Moloka`i Water Use & Development Plan update is to provide guidelines for the management of the island's water resources to ensure that the island's future water needs are met while preserving the integrity of the island's water resources.

Data relative to accomplishing the identification of island wide existing and future water demand will be collected and analyzed for all potable and non-potable water uses.

Current water use will be inventoried and defined by water use type, including:

- Commission on Water Resources Management (CWRM) water use categories, (Agriculture, Domestic, Industrial, Irrigation, Military and Municipal uses)
- Public and private water systems
- State Department of Hawaiian Homelands
- Data on conservation and water losses

Current water use will also be defined by water resource, including:

- Groundwater
- Surface water
- Stormwater and rainwater catchment
- Greywater and recycled wastewater
- Desalinated water

Future water demand will be estimated utilizing the population growth forecast and data on development projects provided by the Maui County Department of Planning. Incremental water needs will be forecasted for a 20-year planning horizon. As alternatives to the projected population growth baseline, low to high water use scenarios will be estimated based on potential growth variances as forecasted by the Maui County Department of Planning.

In addition to future water use needs based on population growth, the following current and foreseeable needs will be incorporated into demand projections:

- Department of Hawaiian Homelands land use plans
- State Water Projects Plan
- Agricultural irrigation

The methodology for projecting future water needs for agricultural irrigation will be further defined through consultation with community members, Moloka`i farmers, The State Department of Agriculture and other stakeholders. Projections may consider, but are not limited to the following approaches:

- Policies and actions adopted in the 2018 Moloka`i Community Plan

- Instream water needs for wetland taro cultivation
- Forecasts in the 2019 Agricultural Water Use and Development Plan update
- Irrigation needs based on crops, micro climates and ambient rainfall
- Agricultural Lands of Importance to the State of Hawaii
- Lands designated as Agriculture in the Moloka`i Community Plan, County Zoning District and State Land Use Districts.