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STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
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STAFF SUBMITTAL

for the meeting of the  
COMMISSION ON WATER RESOURCE MANAGEMENT

August 28, 2008  
Honolulu, Hawaii

Approval of the Scopes of Work for the North Shore and Ko'olaupoko Watershed Management Plans

SUMMARY OF REQUEST:

Staff is requesting that the Commission approve the scopes of work for the North Shore and Ko'olaupoko watershed management plans, which will be completed by the City and County of Honolulu, Board of Water Supply.

BACKGROUND:

The State Water Code, Chapter 174C, HRS, requires that the Commission on Water Resource Management (Commission) implement and utilize comprehensive water resources planning in its regulation and management of our State's water resources. The water code sets forth the requirement for initial development and updating of the Hawaii Water Plan (HWP) to guide the Commission in executing its general powers, duties, and responsibilities assuring economic development, good municipal services, agricultural stability, and environmental protection.

The HWP is intended to serve as a continuing long-range guide for water resource management. The HWP currently consists of five major components (plans) identified as the: 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 (WUDP). 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. The initial HWP adopted by the Commission in 1990, provided the means in which to address many issues, including but not limited to, estimates of sustainable ground water yields by island, aquifer sectors/aquifer systems, as well as an initial evaluation of current and projected water needs for the State and the Counties.

An updated HWP is considered essential to effective coordination and integration of State and County actions related to sustainable water resource development and enables the Commission to

more effectively implement the statutory objectives of the State Water Code. Absence of updated information can lead to preparation and implementation of inadequate or unrealistic plans for development of existing and alternative water resources, and may result in conflicting objectives or uses that threaten our State's limited water resources. The lack of up-to-date demand projections and proposed strategies to meet such demands limit the State's and Counties' ability to address future water development and resource protection issues.

In updating the HWP components, there is consensus agreement among State and County agencies that a comprehensive water resource planning process is needed to address the problems of supply, demand, and conservation of water. Accordingly, the required updates/revisions to the HWP should follow and utilize an evaluation and assessment process that emphasizes the consideration of various planning scenarios incorporating uncertainties, environmental externalities, and public needs into a strategic decision-making process.

Under a comprehensive resource planning approach, all types of resources would be assessed and weighed in the context of new/existing supply-side resources, alternative source development such as wastewater reuse, conservation, alternative rate structures, as well as other demand-side management methods. In this process, the concept of least-cost planning can be pursued while balancing supply-side and demand-side management issues. A major outcome of this effort will be the development of coordinated strategies to meet future water demands, including greater use of alternative water sources, wherever possible.

#### STATEWIDE FRAMEWORK:

Updating the various components of the Hawaii Water Plan should take into consideration current statutory objectives which include, but are not limited to, obtaining maximum reasonable-beneficial uses of water; protection of existing water rights and traditional and customary Hawaiian practices; protection and procreation of fish and wildlife; and the maintenance of proper ecological balance, scenic beauty, and recreation.

In addition, the updating process should lead to refinement of current projections, planning principles, and strategies associated with water resource planning and development. Such efforts should result in: identification and assessment of potential new sources; more realistic demand projections/forecasts; improvements in the operation of existing systems; application of various screening criteria/analyses; more effective integration between demand- and supply-side resource options; and overall improved coordination between State and County water use and development plans.

Another element of the updating process should include a facilitated public participation process involving the community, public interest groups, and government agencies involved in the preparation of the County WUDPs. Under such a process, it is envisioned that stakeholder and/or community groups may be formed to scope issues and address water-related concerns using a collaborative (as opposed to an adversarial) process.

The planning objectives described above are clearly set forth and established within "The Statewide Framework for Updating the Hawaii Water Plan" adopted by the Commission in February 2000. Required planning elements for each component of the HWP are prescribed in the adopted framework document, including issues that should be addressed as part a comprehensive updating process.

DISCUSSION/ANALYSIS:

In addition to the statutory requirements set forth in the State Water Code, key elements of the statewide framework pertaining to the update of the County Water Use and Development Plans include, but are not limited to:

- Submission of a County-Specific WUDP Project Description for review and approval by the Commission. The Project Description should include:
  - Identification of specific issues relating to land use, water use and resource development, and the relative priority of the issues to be addressed in the WUDP update;
  - An outline of the County's plan for establishment of planning objectives and evaluation criteria;
  - A description of its public/stakeholder participation and public information program;
  - A description of its plans for identification of: water demand forecasts (and the consideration of future uncertainties) within the aquifer systems identified by the Commission, conservation and demand-side management programs, source development options and any potential impacts to the resource, and the development and integration of resource development strategies;
  - A schedule for the County's updating of the WUDP, which shall:
    - ❖ Outline the different stages and activities of the County's planning effort;
    - ❖ Indicate the approximate times and anticipated duration for public participation activities;
    - ❖ Indicate the approximate timeframe for County approval of the WUDP and submission of the WUDP to the Commission for adoption;
  - A description on how information from the State Water Projects Plan and the Agricultural Water Use and Development Plan will be integrated and used in updating the WUDP.
- Each County shall brief the Commission and its staff regarding any planned updates of the County WUDP; and
- Lastly, periodic milestone briefings to the Commission by the County shall also be required as part of the WUDP updating process.

Key statutory requirements that should be addressed as part of the WUDP update include:

- Consistency with:
  - The Water Resource Protection Plan and Water Quality Plan;
  - County land use plans and policies; and
  - State land use classification and policies.
- The status of water and related land development including an inventory of existing water uses;
- Future land uses and related water needs;
- Regional plans for water developments including recommended and alternative plans, costs, and adequacy of plans;
- Consultation and careful evaluation of recommendations of concerned Federal, State and County agencies;
- Incorporation of the current and foreseeable development and use needs of the Department of Hawaiian Home Lands; and
- Lastly, updating and modification of the WUDP as necessary to maintain consistency with its zoning and land use policies.

The statutory and framework provisions described above set forth the minimum requirements for updating the WUDP component of the HWP, including the overall-planning framework that should be followed by the Counties in updating their respective WUDPs. The required elements are consistent with the goals and policy of the State Water Code and the Commission's mandate to manage and protect the State's water resources. The envisioned outcomes, benefits, and products are directly supportive of the Commission's duties and responsibilities set forth in Section 174C-5, HRS, and the requirements of the Hawaii Water Plan described in Section 174C-31, HRS.

#### OAHU WATER MANAGEMENT PLAN / PROJECT DESCRIPTION:

In accordance with these established provisions, the City and County of Honolulu, Board of Water Supply proposed an Oahu Water Management Plan (OWMP) framework. The OWMP framework was presented to and approved by the Commission on March 17, 2004. According to the OWMP framework, the OWMP will be updated based on Oahu's land use planning regions. These regions are: Waianae, Ko'olaupoko, Ko'olaupoko, North Shore, Ewa, Central Oahu, East Honolulu and the Primary Urban Center. The OWMP framework calls for regional watershed management plans to be developed for each of these land use planning regions. These watershed management plans will be consolidated into an overall WUDP for the County.

On March 17<sup>th</sup>, 2004, the Commission approved the Scopes of Work for the Waianae and Ko'olaupoko watershed management plans. These plans are currently being finalized and will be submitted for adoption by the Honolulu City Council and the Commission.

To continue the process established in the OWMP framework, the City and County of Honolulu, Board of Water Supply, has submitted to the Commission for review and approval, the attached "Scope of Work for the North Shore and Ko'olaupoko Watershed Management Plans" dated March 3<sup>rd</sup>, 2008 and April 7<sup>th</sup>, 2008 respectively.

Staff has evaluated the submitted scopes of work (i.e., WUDP "Project Description") and the planning elements described therein and have determined that the proposed WUDP updating process for the North Shore and Ko'olaupoko Watershed Planning Areas meets with the provisions and guidelines set forth in the State Water Code and the Commission's Statewide Framework for Updating the Hawaii Water Plan.

Based on the scopes of work for the North Shore and Ko'olaupoko watershed management plans and the draft reports for the Ko'olaupoko and Waianae watershed management plans, which followed the same scope, staff is expectant that the efforts of the City and County of Honolulu, Board of Water Supply, will result in development of a robust evaluation and assessment process, emphasizing the integration of various planning scenarios, and incorporating uncertainties, environmental externalities, and public needs into a strategic decision-making process. We also note and concur with the County's incorporation of a facilitated public participation/education process involving the community, public interest groups, and government agencies.

Staff looks forward to the Board of Water Supply's implementation of a comprehensive planning approach, which facilitates the development and regular updating of a WUDP that conforms to the intentions of the county land use plans. The WUDP should provide guidance for decision-making on water allocation requests, as well as guidance for the formulation of recommended and alternative strategies for resource development to meet future demand scenarios.

In accordance with the Oahu Water Management Plan Framework, each watershed management plan will be submitted as separate documents, closely supporting each respective land use plan (e.g., Development Plan or Sustainable Community Plan), to the County Council for adoption by ordinance. Each regional plan will also be submitted to the Commission for adoption. At the completion of the first iteration of all the watershed management plans, a consolidation/integration process will be used to address inter-regional issues, culminating in an overall island-wide plan and perspective.

RECOMMENDATION:

Staff recommends that the Commission:

1. Approve the City and County of Honolulu, Board of Water Supply's Scope of Work for the North Shore and Ko'olaupoko Watershed Management Plans;
2. Require that the Board of Water Supply, prior to the commencement of the other watershed plans for South Oahu (Ewa, Central Oahu, Primary Urban Center, and East Honolulu), submit proposed scopes of work (i.e., "Project Descriptions") for those regional areas to the Commission for review and approval; and
3. Authorize staff to participate in meetings and/or workshops, as necessary, with pertinent State and County agencies to facilitate implementation of statutory and framework provisions for updating Oahu's County Water Use and Development Plan.

Respectfully submitted,



KEN C. KAWAHARA, P.E.  
Deputy Director

- Exhibit (s):
- |   |                                       |
|---|---------------------------------------|
| 1 | North Shore Watershed Management Plan |
| 2 | Ko'olaupoko Watershed Management Plan |
| 3 | Oahu Water Management Plan Framework  |

APPROVED FOR SUBMITTAL:



LAURA H. THIELEN  
Chairperson

**NORTH SHORE WATERSHED MANAGEMENT PLAN**  
 City and County of Honolulu, Board of Water Supply  
 Consultant: Group 70 International, Inc.

**DRAFT - SCOPE OF WORK & WORK PROGRAM**

**March 21, 2008**

*The overall goal of the North Shore Watershed Management Plan is to develop a community-based, environmentally holistic, action-orientated plan for the watersheds of the North Shore District that will be in alignment with the State of Hawaii Water Code, Act 152 SLH 2000 Relating to Watershed Protection, the Hawaii Water Plan, the Statewide Framework for Updating the Hawaii Water Plan, the Hawaii Supreme Court Decision on the Waiahole Ditch Contested Case applying the Public Trust Doctrine and the Precautionary Principle to water resource management, the Oahu Water Management Plan Ordinance 90-62, the North Shore Sustainable Communities Plan, and the Honolulu Board of Water Supply's vision of "sustainability through stewardship," and that will also reflect the ahupua'a management values and principles of the people of the North Shore.*

*The North Shore Watershed Management Plan will be **community-based** through extensive and intensive discussions and consultations with community leaders, community organizations, landowners, public agencies and officials, and other stakeholders. The Plan will be **environmentally holistic** through an inventory and analysis of data on the many natural processes and resources that interact within the stream watersheds of the North Shore District, including climate, geology, topography, soils, surface water, groundwater, nearshore ocean waters, plants, animals, and ecological communities, as well as human uses and impacts. The Plan will be **action-oriented** by defining and describing projects and programs that can be implemented by the Board of Water Supply, and also by other federal, state, and city agencies and by community groups and organizations.*

**Note: Refer to the attached Gantt chart for the anticipated project delivery timetable.**

**1. Project Organization**

- 1.1 Confirm goals and objectives of the Plan with BWS, CWRM, DPP and stakeholder groups. The planning process includes Monthly Meetings (assume 18) with BWS, CWRM, DPP, and **Presentation Meetings** to CWRM and City Council.
- 1.2 Develop detailed Work Plan and Schedule
- 1.3 Organize the planning team
- 1.4 Develop client communications plan
- 1.5 Design stakeholders/community consultation plan, including a consideration of the objectives and schedule for other current planning initiatives for North Shore.
- 1.6 Request/receive access to current City GIS files.
- 1.7 Agree on procedures for posting project information on BWS web site.

## 2. Preliminary Watershed Analysis

- 2.1 Gather, organize and analyze available data and reports on North Shore water resources and systems from Federal, State, City and other sources, including but not limited to information on regional hydrology, stream flow, stream biota, groundwater, wells and well yields, existing water supply reservoirs and transmission lines, existing water reuse and conservation programs, drought planning issues, riparian lands, near shore waters, coral reefs, water quality. Data on groundwater hydrologic units and surface water hydrographic units will be researched and documented, in accordance with the State's Water Resource Protection Plan. The work will include field reconnaissance of critical watershed areas that may be identified by public agencies and by community members.
- 2.2 Gather, organize and analyze available data and reports on other critical environmental resources, including geology, soils, climate, vegetation, biota, and ecological communities.
- 2.3 Gather, organize and analyze available critical data on human use of water in the North Shore District: historical uses; cultural and traditional water uses; including ahupua'a boundaries, values, and protocols; current uses and major users – domestic, commercial, industrial, agricultural, institutional, and governmental; potential future uses, including information on any major planned projects in the district.
- 2.4 Review existing plans, policies, rules and laws regulating land and water use in the North Shore District, including but not limited to relevant federal regulations, State of Hawaii Water Code, the Hawaii Water Plan, the Statewide Framework for Updating the Hawaii Water Plan, the State Water Projects Plan (SWPP), the State Water Resources Protection Plan, the State Water Quality Plan, the Agricultural Water Use and Development Plan (AWUDP) (if available), State Land Use Classifications and policies, the O'ahu Water Management Plan Ordinance 90-62, the O'ahu Water Management Plan, the County General Plan and the North Shore Sustainable Communities Plan. Issues relating to public water rights, the "Public Trust" doctrine, and the "Precautionary Principle" for water resources management will also be reviewed.
- 2.5 Develop forecasts of future water demands for State, City and private sector users, in five-year increments, to at least the planning year 2025. The "base case scenario" for future water use will be based on the DPP's population projections and the policies and guidelines of the North Shore Sustainable Communities Plan, which was approved by City Council in July 2000. One or two additional future demand scenarios will be developed based on development proposals and/or events that have occurred subsequent to the 1999 land use analysis that provided the basis for

## EXHIBIT 1

the North Shore Sustainable Communities Plan. These future water use scenarios will include the most recent SWPP and AWUDP forecasts of water requirements, as well as forecasts for Federal and private sector water users.

- 2.6 Undertake a preliminary analysis of water resources management options that may be needed to provide for future water needs. These options will include use of groundwater, surface water, recycled water, desalination and water conservation programs.
  - 2.7 Develop a working paper of 30 to 40 pages and 5 to 10 color maps that presents a succinct profile of the North Shore Watershed areas and the important watershed issues, problems and needs that were identified by the foregoing technical analysis. The working paper will include a preliminary forecast of future land use, population growth and associated water demand scenarios.
3. **Preliminary Stakeholders Consultations and Identification of Watershed Issues  
(in tandem with the Preliminary Watershed Analysis)**
- 3.1 Develop a list of stakeholder organizations and individuals, including federal agencies, state agencies, city agencies, non-profit organizations, social service organizations, community associations, ahupua'a, Hawaiian cultural program providers, and major land owners.
  - 3.2 Set up a schedule for individual and "small group" meetings with stakeholders.
  - 3.3 Conduct and record a series of stakeholder meetings of 15 to 20 individual or "small group" meetings. Invite stakeholders to send a representative to the "North Shore Watershed Management Working Group" (NSWMWG) meetings.
  - 3.4 Conduct **Public Information Meeting No. 1** to inform the North Shore communities about the scope and schedule for the planning project, and to solicit comments on watershed and water resources issues, problems and needs. This first community meeting will provide BWS an opportunity to share its vision of "sustainability through stewardship."
  - 3.5 Develop a list of potential NSWMWG members: names, addresses, phones and email.
  - 3.6 Write a working paper of 20 to 30 pages that summarizes the ideas and issues that were discussed in the stakeholders' meetings and in the public informational meeting, and also **preliminarily define critical watershed values and planning principles** that were expressed in these consultations.

#### 4. Preliminary Watershed Management Strategies

- 4.1 Based on the watershed analysis, the several scenarios for future water demands, and the stakeholder consultations, refine and the statement of project objectives and articulate a set of evaluation criteria that will be used to shape the Watershed Management Plan. These criteria will include, but not be limited to, considerations of the following important variables: operational requirements, institutional capabilities, water rights, capital costs, environmental impacts, cultural impacts, and community support.
- 4.2 Based on these objectives and criteria, and in accordance with community values as well as Federal, State, and County policies and regulations for land and water use, develop a preliminary list and short description of watershed and water resources restoration, preservation and management projects, programs and strategies that would be appropriate for the North Shore Watershed areas and that will meet the long-range demands for potable and non-potable water. Incorporate and adapt ahupua'a management concepts into these project descriptions. Note: these projects and programs will not be limited to those that can be implemented by BWS, but will include projects that may be implemented by other Federal, State and City agencies as well as those that could be implemented by private sector land owners and community organizations.
- 4.3 Send the list of watershed strategies to the NSWMMWG members for their review and comment.
- 4.4 Convene **NSWMMWG Meeting No. 1** and discuss watershed issues and the list of preliminary watershed strategies. The NSWMMWG will develop guidelines for public participation in these meetings.
- 4.5 Revise and refine the list of strategies as appropriate, and develop draft two-page project descriptions for each of the important projects, programs and strategies. The project descriptions will include material on specific project objectives, background, outline scope, cost, and description of participating agencies.
- 4.6 Perform supplemental research and stakeholder consultations to fill in the various project descriptions.
- 4.7 Conduct **Public Information Meeting No. 2** to inform the North Shore community about preliminary planning findings to date.
- 4.8 Organize the project descriptions in three sets: short-range projects (1 to 5 years), mid-range projects (6 to 10 years) and long-range projects (10+ years).

- 4.9 Send the project descriptions to the NSWMWG members for their review and comment.
  - 4.10 Convene **NSWMWG Meeting No. 2** to discuss the proposed project descriptions.
  - 4.11 Convene **Agency Meeting** of Federal, State, and City agencies that may have an interest in the various North Shore watershed management projects and programs.
  - 4.12 Revise the project descriptions as needed. Send copies of the revised project descriptions to NSWMWG members for their information and review.
5. **North Shore Water Use and Development Plan (\*\* initial task under two-phase funding)**

This element of the planning process will address the requirements of CWRM and of the City's Water Management Ordinance No. 90-62.

- 5.1 Within the context of the North Shore Watershed Management Plan, revise and refine the scenarios for future water use and identify future water demands and requirements for both potable and non-potable water.
- 5.2 In consultation with BWS staff, CWRM staff, and other water resource agencies, assess the feasibility of groundwater and alternative water resource development for future potable and non-potable water supply. Options or alternatives will include inter-basin transfers, recycled water and desalination of brackish and sea water. Impacts of surface water and groundwater withdrawal on stream flow and nearshore water quality will be considered.
- 5.3 Organize options/alternatives and define water source and infrastructure strategies that could meet future requirements; short range (1 to 5 years), mid range (6 to 10 years) and long range (10+ years). Provide guidelines for the allocation of water to future public and private facilities and land uses. The short range plan will contain the most details on costs and quantities of water and water supply infrastructure.
- 5.5 Review and incorporate BWS CP plans and cost estimates into the overall water resources management and infrastructure strategies.
- 5.6 Research, describe and incorporate consumer water conservation programs, including recycling water at the home, business and small farm levels, as well as approaches such as pricing, public information, education, water saving devices and use restrictions and allocations.
- 5.7 Convene a separate review meeting of Federal, State, and City agencies that have an interest in the water use and development strategies that are under consideration.

## EXHIBIT 1

- 5.8 Organize the material from this study in a narrative and graphic form, including a summary of overall watershed and community context, water demand scenarios and projections, analysis of existing water resources, strategies for meeting future water demands through various water resources management and infrastructure strategies, and an implementation plan for specific water resource development projects and programs: short, mid and long range. This material will constitute the North Shore Water Use and Development Plan.
- 5.9 Convene **NSWMWG Meeting No. 3** to review and discuss the draft North Shore Water Use and Development Plan.
- 5.10 Incorporate NSWMWG comments into draft North Shore Water Use and Development Plan.
- 6. North Shore Watershed Implementation Plan**
- 6.1 Further refine the description of "Short Range" projects, and develop a draft North Shore Watershed Management Implementation Plan that sets forth:
- **What** needs to be done: projects, programs, actions.
  - **Who** – define the implementing agencies and organizations.
  - **When** – define a realistic schedule of actions and events.
  - **How** – provide information on methods, strategies and techniques.
  - **How Much** – provide cost estimates and information on sources of funds.
- 6.2 Send the draft Implementation Plan to the NSWMWG members for their review and comment.
- 6.3 Convene **NSWMWG Meeting No. 4** to discuss the draft Implementation Plan.
- 6.4 Revise and Finalize the Five Year North Shore Watershed Implementation Plan.
- 7. Draft Report**
- 7.1 Compile material from work elements 1 through 6 into a preliminary Draft Report for the North Shore Watershed Management Plan.
- 7.2 Print 20 copies of the preliminary Draft Report and submit to BWS for internal review. Also submit copies to and consult with CWRM, DPP and stakeholder.
- 7.3 Incorporate review comments and finalize the official Draft Report. Print 50 copies of the report and send to the BWS, DPP, CWRM, and the NSWMPAG members. Also post a pdf copy of the report on the BWS web site.

- 7.4 Schedule, advertise and conduct **Public Information Meeting No. 3** to present the Draft Report to the North Shore community.
  - 7.5 Compile comments received from the NSWMMWG members and from the general community, and revise the Draft Report as appropriate.
- 8. Final Report**
- 8.1 Print 20 copies of a Pre-Final Report and submit to BWS, CWRM, DPP and stakeholders for review and comment.
  - 8.2 Incorporate review comments and finalize the Report.
  - 8.3 Print 50 copies of the Final Report and send to the BWS, DPP, CWRM, and the NSWMMWG members. Also post a pdf copy of the report on the BWS web site.
- 9. Plan Approval**
- 9.1 Assist BWS in a **Presentation Meeting** of the North Shore Watershed Management Plan to the North Shore Neighborhood Board No. 27 for endorsement.
  - 9.2 Assist BWS in two **Presentation Meetings** of the North Shore Watershed Management Plan to City Council and to the State Commission on Water Resource Management.
  - 9.3 Assist BWS in developing a MS PowerPoint slideshow summarizing the findings and recommendations of the North Shore Watershed Management Plan, and developing presentation graphics and handouts.

# NORTH SHORE WATERSHED MANAGEMENT PLAN

## Project Schedule - Scenario 2: Phased Funding

Task	2008												2009												2010					
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN				
1. PROJECT ORGANIZATION	20 MONTHS TO FINAL REPORT																													
2. PRELIMINARY WATERSHED ANALYSIS																														
3. PRELIMINARY STAKEHOLDER CONSULTATION																														
4. WATERSHED MANAGEMENT STRATEGIES																														
5. WATER USE & DEVELOPMENT PLAN																														
6. WATERSHED IMPLEMENTATION PLAN																														
7. DRAFT REPORT & REVIEW																														
8. FINAL REPORT																														
9. PLAN APPROVAL	26+ MONTHS TO PLAN APPROVAL MID-2010																													

Key Themes for the North Shore Watershed Management Plan:

- Community-based
- Environmentally-holistic
- Action-Oriented

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## City and County of Honolulu – Board of Water Supply KO'OLAU POKO WATERSHED MANAGEMENT PLAN

### SCOPE OF WORK

March 3, 2008

*The overall goal of the Ko'olau Poko Watershed Management Plan (KPWMP) is to develop a community-based, environmentally holistic, action-oriented plan for the watersheds of the Ko'olau Poko District that will be in alignment with the State of Hawaii Water Code, Act 152 SLH 2000 Relating to Watershed Protection, the Hawaii Water Plan, the Statewide Framework for Updating the Hawaii Water Plan, the Hawaii Supreme Court Decision on the Waiahole Ditch Contested Case applying the Public Trust Doctrine and the Precautionary Principle to water resource management, the Oahu Water Management Plan Ordinance 90-62, the Ko'olau Poko Sustainable Communities Plan, the Honolulu Board of Water Supply's vision of "sustainability through stewardship," and other relevant Plans and Principles, and that will also reflect the ahupua'a management values and principles of the people of the Ko'olau Poko region.*

*The Ko'olau Poko Watershed Management Plan will be **community-based** through extensive and intensive discussions and consultations with community leaders, community organizations, ahupua'a councils, landowners, public agencies and officials, and other stakeholders. The Plan will be **environmentally holistic** through an inventory and analysis of data on the many natural processes and resources that interact within the stream watersheds of the Ko'olau Poko District, including climate, geology, topography, soils, surface water, groundwater, nearshore ocean waters, plants, animals, and ecological communities, as well as human uses and impacts. The Plan will be **action-oriented** by defining and describing projects and programs that can be implemented by the Board of Water Supply, and also by other federal, state, and city agencies and by community groups and organizations.*

*There are three phases for this plan. The first phase will provide a Water Use and Development Analysis. This will be a technical analysis of water sources and uses, with a preliminary forecast of future water needs and options for meeting these needs. The second phase will provide a Holistic Watershed Analysis. This analysis will include research on watershed resources and ecology, as well as ideas and watershed issues from community stakeholders. The third phase will then be the development of the Watershed Management Plan, providing water use and watershed management strategies for sustainable water development for Ko'olau Poko. The Third and last phase will also include tasks needed for Plan approval.*

## **PHASE 1: WATER USE AND DEVELOPMENT ANALYSIS (8 months)**

### **1.0 Monthly Coordination Meetings with BWS, DPP, and CWRM.**

#### **1.1 Project Organization (Month 1)**

- 1.1.1 Confirm goals and objectives of the Plan with BWS, CWRM, DPP.
- 1.1.2 Develop detailed Work Plan and Schedule for Phase 1
- 1.1.3 Organize the planning team
- 1.1.4 Develop client communications plan
- 1.1.5 Request/receive access to current BWS, CWRM and DPP GIS files and other relevant data

#### **1.2 Gather, Review and Analyze Existing Data (Months 2-3)**

- 1.2.1 Gather, review and analyze available data and reports on Ko'olau Poko water resources and systems, both historical and contemporary, from federal, state, city and other sources.
- 1.2.2 Gather, review and analyze available critical data on historical, current and potential future human use of water in the Ko'olau Poko District, including data on stream diversions from existing CWRM files.
- 1.2.3 Review existing plans, policies, rules and laws regulating land and water use in the Ko'olau Poko District.

#### **1.3 Develop Forecasts of Future Water Demands (Months 4-5)**

- 1.3.1 Using available data, develop forecasts of future water needs and demands for State, City and private sector users, in 5 year increments, to at least the planning year 2030.
- 1.3.2 Develop three future water demand scenarios.
- 1.3.3 Identify a "probable future water demand scenario."
- 1.3.4 Prepare a progress memo and submit to BWS, CWRM and DPP.

#### **1.4 Develop Preliminary Water Use and Development Options (Months 6-8)**

- 1.4.1 Compare current sustainable yields, instream flow standards, and water system capacities with the probable future demand scenario. Identify future deficiencies in water supply by location, water provider, water type (potable vs. non-potable) and volume.
- 1.4.2 Identify additional facilities and programs (options) that may be needed to provide for future potable and non-potable water needs.
- 1.4.3 Consult with BWS, CWRM and DPP staff to identify additional ground water and alternative water resource development options.
- 1.4.4 **Working Paper # 1 - Water Use and Development Analysis:** Develop a working paper of 20 to 30 pages and 4 to 6 color maps that presents a profile of water sources, preliminary forecast of future land use and population growth, associated water demand scenarios, and preliminary water management options.  
NOTE: Preferred water use and development strategies will not be selected until

after the watershed analysis and stakeholder consultations have identified other important issues that may affect the selection.

## **PHASE 2: HOLISTIC WATERSHED ANALYSIS (8 months)**

*Note re: community and agency meetings: Phases 2 and 3 include 40 individual / small group meetings, 16 Neighborhood Board briefings, 5 advisory group meetings, 3 public informational meetings, 20 public agency meetings, 1 Interagency meeting, 2 progress briefings to CWRM, 1 briefing on the Draft Plan to the BWS Chief Engineer, to the Planning Director, and to the Council Member for Ko'olau Poko (3 separate briefings), 2 City Council public hearings, 1 CWRM public hearing, and 1 CWRM "Plan adoption" meeting = **grand total of 94** community, agency, and stakeholder meetings, large and small – not including monthly coordination meetings with BWS, DPP, and CWRM.*

**2.0 Monthly coordination meetings with BWS, DPP, and CWRM.** Also: frequent working meetings with BWS staff to identify and articulate critical watershed values and planning principles.

### **2.1 Project Organization (Month 9)**

- 2.1.1 Confirm goals and objectives of the Plan with BWS, CWRM, DPP.
- 2.1.2 Develop detailed Work Plan and Schedule for Phase 2 and 3
- 2.1.3 Organize the planning team
- 2.1.4 Update the client communications plan
- 2.1.5 Agree on procedures for posting project information on BWS web site.
- 2.1.6 Design stakeholders/community consultation plan, including a consideration of the objectives and schedule for other current planning initiatives for Ko'olau Poko, including the DPP "Ko'olau Poko Sustainable Communities Plan" update.

### **2.2 Preliminary Watershed Analysis (Months 10-16)**

- 2.2.1 Gather, organize and analyze data and reports not previously reviewed on Ko'olau Poko watershed resources and ecology.
- 2.2.2 **Working Paper #2 – Preliminary Watershed Analysis:** Develop a working paper of 30 to 40 pages and 4 to 6 color maps that presents a succinct profile of the Ko'olau Poko Watershed and the important watershed issues that were identified by the foregoing technical analysis.

### **2.3 Preliminary Stakeholders Consultations and Identification of Watershed Issues (Months 10-16 – i.e., in tandem with the Preliminary Watershed Analysis)**

- 2.3.1 Develop a list of stakeholder organizations and individuals.
- 2.3.2 Set up a schedule for individual and "small group" meetings with stakeholders.
- 2.3.3 Attend 4 Neighborhood Board Meetings (Waimanalo, Kailua, Kane'ohe, Kahalu'u) to brief the NBs on the scope and schedule of the KPWMP.
- 2.3.4 Conduct and record a series of 30 individual and "small group" stakeholder meetings. Invite all stakeholders to send a representative to the "Ko'olau Poko Watershed Management Plan Advisory Group" (KPWMPAG) meetings.

- 2.3.5 Meet with 10 key City, State, and Federal agencies that have jurisdiction over and/or a stake in watershed management initiatives for Ko'olau Poko.
- 2.3.6 Organize and conduct general Public Informational Meeting #1 to inform the Ko'olau Poko community about the scope and schedule for the planning project, and to solicit comments on community values, planning principles, and watershed issues, problems and needs.
- 2.3.7 Develop a list of potential KPWMPAG members: names, addresses, phone and email numbers.
- 2.3.8 Convene Meeting No. 1 of the KPWMPAG and discuss water use and watershed analysis, presenting key findings.
- 2.3.9 **Working Paper #3 – Community and Stakeholders' Issues:** Write a working paper of 20 to 30 pages that summarizes the ideas and issues that were discussed in the stakeholders' meetings and in the public informational meeting, and also **preliminarily define critical watershed values and planning principles** that were expressed in these consultations.

### **PHASE 3: WATERSHED MANAGEMENT PLAN (8 months)**

- 3.0 **Monthly coordination meetings with BWS, DPP, and CWRM.** Also: frequent working meetings with BWS staff as the Plan is being developed.
- 3.1 **Preliminary Watershed Management Projects and Programs (Months 17-19)**
  - 3.1.1 Based on the watershed analysis, the several scenarios for future water demands, and the stakeholder consultations, refine the statement of project objectives that will be used to shape the Watershed Management Plan.
  - 3.1.2 Based on these objectives, and in accordance with community values as well as federal, state, and County policies and regulations for land and water use, and the water use analysis that was developed in Phase 1, develop a preliminary list and short description of watershed and water resources restoration, preservation and management projects, programs and strategies that would be appropriate for the Ko'olau Poko Watershed and that will meet the long-range demands for potable and non-potable water. Some projects will be "district-wide" in scope, while others will be place-specific. Send the list of water use and watershed management projects and programs to the KPWMPAG members, and to key public agencies for their review and comment.
  - 3.1.3 Convene Meeting No. 2 of the KPWMPAG and discuss watershed issues and the list of preliminary water use and watershed management projects and programs.
  - 3.1.4 Revise and refine the list of projects and programs as appropriate, and develop draft 2-page project descriptions for each of the important projects, programs and strategies.
  - 3.1.5 Perform supplemental research and stakeholder consultations to fill in the various project descriptions, including 10 individual and small group meetings, and 10 public agency meetings.

- 3.1.6 Convene a separate "interagency" meeting of federal, state, and city agencies that may have an interest in the various watershed management projects and programs.
- 3.1.7 Attend 4 Neighborhood Board Meetings (Waimanalo, Kailua, Kane`ohe, Kahalu`u) to brief the NBs on the draft water use and watershed management projects and programs, and to announce the Public Informational Meeting.
- 3.1.8 Conduct Public Informational Meeting #2 to inform the Ko`olau Poko community about preliminary planning findings to date.
- 3.1.9 Organize the project descriptions in three sets: short-range projects (1 to 5 years), mid-range projects (6 to 10 years) and long-range projects (10+ years). The short-range projects should be projects that BWS could realistically organize and fund. "Action Plan" details will be developed for the short-range projects.
- 3.1.10 Send the project descriptions to the KPWMPAG members for their review and comment.
- 3.1.11 Convene Meeting No. 3 of the KPWMPAG and discuss the project descriptions and project priorities for each of the 4 sub-districts.
- 3.1.12 Revise the project descriptions as needed.
- 3.1.13 **Working Paper #4 – Preliminary Watershed Management Strategies:** Send copies of the revised project descriptions to BWS, CWRM, DPP, interested agencies, and KPWMPAG members for their information and review.

### **3.2 Preliminary Draft and Public Review Draft Reports (Months 20-23)**

- 3.2.1 Compile material from work completed to date into a Preliminary Draft Report for the Ko`olau Poko Watershed Management Plan.
- 3.2.2 Print 50 copies of the Preliminary Draft Report and submit to the BWS for internal review. Also submit copies to and consult with CWRM, DPP and the KPWMPAG. This report will be a "full report" totaling 300 or more pages, including critical technical appendices.
- 3.2.3 Convene Meeting No. 4 of the KPWMPAG to discuss and address comments on the Preliminary Draft Report.
- 3.2.4 Incorporate review comments and finalize a Public Review Draft Report. Print 150 copies of the report and send to the BWS, DPP, CWRM, and the KPWMPAG members. Also post a pdf copy of the report on the BWS web site. This report will be a "Summary Report" that provides the highlights of the Plan. The full text of the Draft Plan will be posted on the BWS web site.
- 3.2.5 Attend 4 Neighborhood Board Meetings (Waimanalo, Kailua, Kaneohe, Kahalu`u) to brief the NBs on the Draft Report and programs, and to announce the Public Informational Meeting.
- 3.2.6 Schedule, advertise and conduct a final general Public Informational Meeting #3 to present the Draft Report to the Ko`olau Poko community.
- 3.2.7 Compile comments received from the general community, and revise the Draft Report as appropriate.
- 3.2.8 Convene Meeting No. 5 of the KPWMPAG to discuss public comments on the Public Review Draft, and the process for plan approval.

3.2.9 Provide a briefing on the Draft Plan to the BWS Chief Engineer, to the Planning Director, and to the City Council person representing the Ko`olau Poko District.

**3.3 Final Plan (Month 24)**

3.3.1 Do final edits and revisions, and print 50 copies of the Final Plan and send to the BWS, DPP, CWRM, and the KPWMPAG members. Also post a pdf copy of the report on the BWS web site.

**3.4 Plan Approvals (Months 25-30+)**

The consultant will assist BWS during the Plan Approval process. Work will include the following briefings, presentations, and public hearings:

3.4.1 Briefing the Final Plan to the 4 Neighborhood Boards

3.4.2 Presentations as needed at 2 City Council public hearings

3.4.3 Presentation at one CWRM public hearing

3.4.4 Attend CWRM "Plan adoption" meeting.



# Honolulu Board of Water Supply

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## Oahu Water Management Plan Framework And Scope of Work for Wai`anae and Ko`olauloa Watershed Management Plans

Submitted to the State Commission on Water Resource Management  
in Compliance with the Statewide Framework for Updating the Hawaii  
Water Plan, Oahu County Water Use and Development Plan.

Attachment to BWS Transmittal Letter to CWRM, Dated February 20, 2004.

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OWMP Framework Summary

The OWMP consists of policies and strategies, which guide the activities of the City and County of Honolulu and advises the State Commission on Water Resource Management (CWRM) in the areas of planning, management, water development and use and allocation of Oahu's natural water resources. The OWMP framework proposes regional plans entitled "watershed management plans" and shall be consistent with the following:

1. State Water Resource Protection Plan, State Water Quality Plan, State Water Projects Plan, State Agricultural Water Use and Development Plan and Department of Hawaiian Home Lands water plans as listed in Chapter 174C-31, Hawaii Water Plan, State Water Code.
2. The Statewide Framework for Updating the Hawaii Water Plan (Statewide Framework)
3. The General Plan for the City and County of Honolulu. The General Plan is a comprehensive statement of objectives and policies, which sets forth the long range aspirations of Oahu's residents and the strategies of actions to achieve them. It is the focal point of a comprehensive planning process that addresses physical, social, economic and environmental concerns affecting Oahu. This planning process serves as the coordinative means by which the City provides for the future growth of the metropolitan area of Honolulu. <http://www.honolulu.gov/Planning/OahuGenPlan.asp>
4. 8 Development Plan (DP) and Sustainable Community Plan (SCP) land use planning regions of Oahu. Each community oriented land use plan is intended to help guide public policy, investment, and decision making over the next 20 years. Each plan responds to specific conditions and community values of each region. Ewa and Primary Urban Center are "development plan" areas where growth and supporting facilities will be directed and be the policy guide for development decisions and actions needed to support that growth. The remaining 6 land use areas are "sustainable communities" plans, which are envisioned as relatively stable regions in which public programs will focus on supporting existing populations. The following table lists the 8 land use planning reports with links.

Oahu's Land Use Planning Regions	Web Page Links to the Plans
Waianae	<a href="http://www.honolulu.gov/Planning/DevSust_Waianae.asp">http://www.honolulu.gov/Planning/DevSust_Waianae.asp</a>
Ko'olaupoko	<a href="http://www.honolulu.gov/Planning/DevSust_Koolauloa.asp">http://www.honolulu.gov/Planning/DevSust_Koolauloa.asp</a>
Ko'olaupoko	<a href="http://www.honolulu.gov/Planning/DevSust_Koolaupoko.asp">http://www.honolulu.gov/Planning/DevSust_Koolaupoko.asp</a>
North Shore	<a href="http://www.honolulu.gov/Planning/DevSust_NorthShore.asp">http://www.honolulu.gov/Planning/DevSust_NorthShore.asp</a>
Ewa	<a href="http://www.honolulu.gov/Planning/DevSust_Ewa.asp">http://www.honolulu.gov/Planning/DevSust_Ewa.asp</a>
Central Oahu	<a href="http://www.honolulu.gov/Planning/DevSust_CentralOahu.asp">http://www.honolulu.gov/Planning/DevSust_CentralOahu.asp</a>
East Honolulu	<a href="http://www.honolulu.gov/Planning/DevSust_EastHonolulu.asp">http://www.honolulu.gov/Planning/DevSust_EastHonolulu.asp</a>

Primary Urban Center	<a href="http://www.honoluludpp.org/Planning/DevSust_PrimaryUrbanCenter.asp">http://www.honoluludpp.org/Planning/DevSust_PrimaryUrbanCenter.asp</a>
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5. City and County of Honolulu Ordinance 90-62, Water Management establishing the Oahu Water Management Plan establishing water management policies and strategies “for water use and development within each development plan area.”
6. Annual Report to the Twenty-First Legislature 2001 Regular Session on Act 152, SLH 2000, Relating to Watershed Protection. The annual report set forth the development of a watershed master plan, including identifying protected watersheds areas, enhancement projects and an implementation plan.
7. Supreme Court Decision on Waiahole Ditch Contested Case applying the Public Trust Doctrine and the Precautionary Principle to water resource management.
8. BWS Sustainability Vision and Mission of “Water for Life” to enhance the quality of life of our community by providing world-class water services. Protecting the environment and supporting Oahu’s economy while involving the community achieve BWS goals of sustainable water supplies for future generations. BWS accomplishes these goals with our watershed protection and water conservation partnership programs and diversifying our water supplies, both natural and alternative technologies, such as recycled water, seawater desalination and ocean resource development.

Background:

The Commission in 1990 formally adopted the initial Hawaii Water Plan, prepared by various state and county agencies. Further updates in 1992 were deferred pending additional refinement of plan components. In 1994, the City and County of Honolulu began their initial revision to the Oahu Water Management Plan. The draft OWMP update was completed in January 1998 and is the most current reference document. However, it was not submitted for adoption because Oahu’s water situation was in a state of flux, with major changes in the agriculture industry, including the closing of the Oahu Sugar Company and the Waialua Sugar Company.

In 1999, the Honolulu Board of Water Supply (BWS) initiated the integrated resource planning process to update the Oahu Water Management Plan, Oahu’s County Water Use and Development Plan. The integrated islandwide water planning effort was met with significant opposition, which surfaced in our public participation process. After almost two years of effort, we did not move beyond the public participation process and so before we started the water planning stage, we decided to stop and re-evaluate our approach. We summarize the main lessons learned as follows:

1. It is important to have equal focus on resource protection, conservation and restoration as on water use and development. There needs to be a reassurance that our natural resources are protected and our water supplies are sustainable before planning on water use and development can successfully occur.

2. It is important to elevate the community's knowledge about water related issues so the interested community can actively participate in a community-based planning process. It is equally important that the planning document is written so that it is easily understood.
3. The islandwide integrated approach elevated community concerns on growth limits and regional water transport. The integrated approach is more complex on Oahu because approximately  $\frac{3}{4}$ 's of Oahu's water systems are interconnected. The communities needed assurance that there were sufficient water resources within their watersheds before islandwide regional water needs were discussed.

In February 2000, CWRM adopted a framework for updating the Hawaii Water Plan to provide focus and additional guidance to each agency responsible for updating specific plan components. CWRM recognized the complexities in addressing water resource planning and views the plans as "living documents which over several plan iterations will result in a truly comprehensive water plan" (Statewide Framework page 1-2)

In August 2000, the Hawaii Supreme Court's decision on the Waiahole Ditch Contested Case, and the remand hearings, provided additional guidance for water resources planning, like the precautionary principle. In addition, three public trust uses of water were identified; domestic use, instream use and water for traditional and cultural practices. Commercial and agricultural water uses are in a lower category.

In 2001, BWS broadened its mission to "Water for Life", which strives for sustainability of all water supplies and to enhance the quality of life of our community by providing world-class water services.

The 2000 Act 152 Watershed Protection required the development of a watershed protection master plan that identified priority watersheds and protection projects for implementation. Act 152 renewed BWS investment in watershed protection recognizing the importance of watersheds for the sustainability of our groundwater supplies and streams. To date, about \$1 million has been invested by BWS into Oahu's watersheds and aquifers. Noteworthy watershed protection projects are as follows:

- Ka'ala Bog Fencing to prevent feral animals from destroying the Mt. Ka'ala native habitat.
- Grant to the Oahu Invasive Species Committee to control invasive plant species within the Ko'olau watersheds
- Ala Wai Mauka Restoration Project for the Ko'olau Mountain Watershed Partnership
- BWS and Kamehameha Schools funded a USGS study to assess the hydrological and biological features and also funded the Punalu'u Agricultural Lands and Irrigation System Assessment to help set the in-stream flow standard for Punalu'u Stream.
- Waihe'e Valley Make a Difference Day invasive species removal
- Malama O Manoa "Kuleana Project" to change the residential practices of the Manoa Ahupua'a to increase awareness of water conservation and polluted runoff control.
- Watershed protection studies in Ala Wai, West Honolulu and Central Oahu.
- Ka'ala Farms and Mohala I Ka Wai educational awareness program
- Makaha Valley Restoration project
- Wai'anae and Ko'olauloa Watershed Management Plans

From 2001 to the present, several mountain and urban watershed partnerships have been established among BWS, agencies, organizations and community groups. Together, these partnerships have identified watershed protection projects and plans have been developed and funded. The following partnerships have been developed:

- Ko'olau Mountain Watershed Partnership
- Mohala I Ka Wai in Wai'anae
- Punalu'u Watershed Partnership
- Waihe'e Ahupua'a Initiative
- Ahupua'a Restoration Council of He'eia
- Malama O Manoa
- Wai'anae Kai Watershed Partnership
- University of Hawaii Manoa / BWS Water Conservation Partnership
- Hawaiian Electric Co. / BWS Energy and Water Conservation Partnership

#### Watershed Planning Approach:

The OWMP Framework proposes individual planning documents referred to as regional watershed management plans, which collectively will be the Oahu Water Management Plan. The regional watershed management plans will address the water needs, both present and future, for the 8 land use districts on Oahu. Rather than an islandwide approach brought down to each watershed, the watershed planning approach will start from the basic planning unit, each watershed or "ahupua'a" and expand it to the region or "moku". It is important that this watershed management plan allow equal focus on resource protection, conservation and restoration as well as on water use and development. The watershed approach is supported by the following references:

- The planning regions will be consistent with and support each of the 8 DP/SCP land use planning regions established in the General Plan. The State Water Code, Chapter 174C-31(b)(2), requires that "Each water use and development plan shall be consistent with the respective county land use plans and policies, including general plan and zoning".
- The Statewide Framework for Updating the Hawaii Water Plan, Page 3-26, Need for Flexibility, recognizes the need for appropriate flexibility in the county plans due to institutional and /or funding constraints, to encourage innovation as well as to accommodate unique and county-specific concerns.
- The Statewide Framework Page 3-19 also requires the preparation of "regional plans for water development including recommended and alternative plans, costs, adequacy of plans and relationship to water resource protection and quality plan." (Emphasis added).

The watershed management plans will have the following key themes:

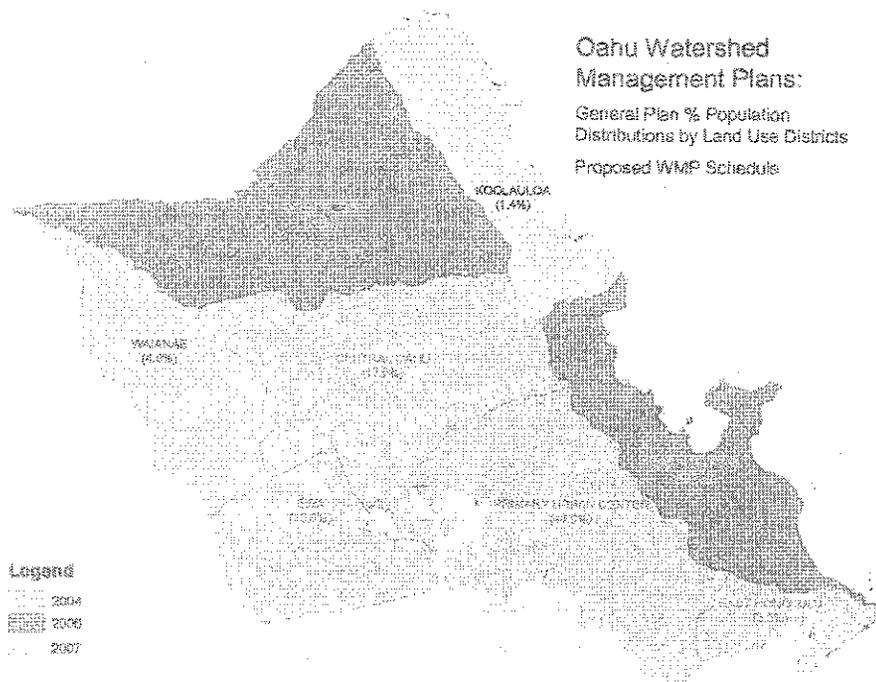
- Community-Based: In addition to public meetings, there will be many small group meetings with the community to educate, understand and apply the community's thinking and values about water resources. A wide-range of community meetings will be conducted including regional organizations such as Mohala I Ka Wai, Malama Ohana and the Neighborhood

Boards, to local councils and associations, down to key individual meetings. The BWS watershed partnerships will be asked to provide representation for the community and key stakeholder groups.

- **Environmentally Holistic:** The watershed approach from mountains to the coral reefs recognizes the inter-dependence of water and land. The watershed management planning approach will not only address water use and development in the urban and agricultural zoned lands, but also describe protection strategies and enhancement projects for the forest reserves, conservation districts, streams and near-shore waters.
- **Action-Oriented:** The plan will describe specific watershed protection projects as well as natural and alternative water supply facilities that can be implemented by federal, state and city agencies and programs. The projects will be presented in a budgetary level format with information specific enough to support grant funding requests or an agency's capital improvement program.
- **Alignment with State and County Water and Land Use Policies** as stated above.
- **Reflects Ahupua`a Management Principles:** The watershed management plans will incorporate Ahupua`a principles in the plans. The community's help will be needed to identify their thinking and values about water. Living with Ahupua`a values and protocols is very important to culturally intact communities, like Wai`anae and Ko`olauloa. Ahupua`a principles are not major factors in all districts, such as the urban metropolitan districts, however, these principles can still be used to guide water resource planning.

Proposed Schedule of Funding and Plan Approval:

The Oahu graphic below, shows the 8 land use areas on Oahu and the proposed funding schedule for the watershed management plans.



The following table lists the proposed funding schedules and anticipated target dates for submittal to CWRM for plan approval. The approval dates are based on an 18-month planning time frame and are only estimates and therefore subject to change.

Watershed Planning Areas	BWS Funding Schedule Fiscal Year	Target Dates for Submittal to CWRM for Plan Approval
Wai'anae, Ko'olaupoko	FY 2004	1 <sup>st</sup> Qtr FY 2006
North Shore, Ko'olaupoko	FY 2006	2 <sup>nd</sup> Qtr FY 2007
South Oahu: (Ewa, Central Oahu, Primary Urban Center, East Honolulu)	FY 2007	2 <sup>nd</sup> Qtr FY 2008

\* BWS Fiscal Year is July 1 to June 30.

The four-year funding schedule is proposed due to the following reasons:

1. The Statewide Framework recognizes that implementation of the requirements and recommendations will need to be phased over the next several years and possibly over successive iterations of the updating process for the Hawaii Water Plan. (Statewide Framework Implementation Plan, Page 4-1)
2. BWS budgetary and staffing constraints.
3. As this watershed approach is new and unique, we are proposing an 18-month planning process to develop a baseline format and obtain the necessary approvals.

4. Wai`anae, Ko`olauloa, North Shore and Ko`olaupoko are designated as low growth, sustainable communities in the General Plan. The water demand projections for these areas show only marginal water demand increases through the planning horizon, currently 2025.
5. BWS is participating in active watershed partnerships in the Wai`anae and Ko`olauloa areas among others and these partnerships could assist in the public participation process.
6. South Oahu will be funded after the 4 rural districts for the following reasons:
  - To allow time for progress on the Section IV Framework Implementation Plan; Phase I Framework Adoption and Initial Updates to Hawaii Water Plan components, Phase II Development and Funding of New Framework Initiatives and Phase III Component Integration Phase of the Statewide Framework.
  - To allow time to complete the on-going products of the CWRM led Pearl Harbor Monitoring Group as part of the Milestone Framework for the Revised Pearl Harbor Sustainable Yields. Since 1998, BWS has funded over \$4 million for the construction of deep monitor wells throughout Oahu and have committed staffing resources for the monitoring of these wells on a quarterly basis. These wells will be essential in the groundwater monitoring and modeling efforts currently underway to increase our understanding of the groundwater supply in the Pearl Harbor and Honolulu aquifers.
  - To allow time to complete the Board of Water Supply's 3-dimensional groundwater model of the Honolulu aquifers.
  - To allow time to incorporate state projects water demands and agricultural water needs. We understand that the State Water Projects Plan was recently completed and the State Agricultural Water Use and Development plan is now underway.
  - The watershed management plans for South Oahu will be funded in the same fiscal year and may be combined into a single plan to more easily address the integration of water resources.

In calendar year 2000, South Oahu consumed about 78% of the islandwide municipal source pumpage of 154.6 mgd. We anticipate that the South Oahu watershed management plan(s) will fully utilize the IRP decision tools as described in the Statewide Framework for Updating the Hawaii Water Plan. The scope of work contemplated for the South Oahu regional watershed plan(s) will provide for compiling and developing water demand projections for domestic, commercial, industrial, agricultural, and nonpotable uses of municipal, state, federal and private water systems. It will also include assessment of environmental factors as part of the project objectives and evaluation criteria to be developed for the purpose of evaluating resource options and water management strategies.

#### Commitment for Agency Coordination:

As each watershed management plan moves forward and in addition to the public participation process, we anticipate several staff meetings with CWRM, City Department of Planning & Permitting and BWS to update our planning progress and obtain feedback and guidance. At key milestones, as coordinated with CWRM staff, we will present updates to the CWRM, tentatively mid-way through the planning process, after the public review draft is available, during plan approval and as otherwise requested by the CWRM. A schedule will be developed.

Each watershed management plan will be submitted for approval as separate documents, closely supporting each respective DP/SCP land use plan. At the completion of the first iteration of all planning regions, there will be a consolidating process to provide an islandwide perspective and to resolve any remaining inter-regional issues.

#### Proposed Scope of Work, Major Project Elements:

As each planning region is funded, their scopes of work will be submitted to the CWRM for review and approval. The proposed scopes of work for the Wai`anae and Ko`olauloa sustainable community plan areas are being submitted for CWRM review and approval (see attached). The draft scopes and planning approach were discussed with some of the community leaders and organizations in Wai`anae and Ko`olaupoko, and their feedback incorporated. The major project elements for the FY 2004 watershed management plans for Wai`anae and Ko`olauloa are:

1. Project Organization
2. Preliminary Watershed Analysis
3. Preliminary Stakeholders Consultations
4. Preliminary Watershed Management Strategies
5. 5-year Watershed Action Plan
6. Water Use and Development Plan
7. Draft Report
8. Final Report
9. Watershed Management Plan Approval

#### Summary of Current Water Distribution:

As part of the process of initiating the update of the OWMP and consistent with the guidelines set forth in the Statewide Framework for Updating the Hawaii Water Plan, we have compiled information on existing and projected water demands and sources of supply for the municipal system. BWS has evaluated the adequacy of the supply to meet the potable and nonpotable needs through ground water and recycled water sources. Water demand will be met with existing and funded source projects beyond the estimated 5-year planning period during the completion of all of the regional watershed management plans for Oahu.

The sustainable communities of Wai`anae, North Shore, Ko`olauloa and Ko`olaupoko have essentially the same water demand throughout the planning period. The existing sources and infrastructure in these areas are adequate to provide potable water service through the planning horizon and therefore, additional integration of water supplies between these regions will be limited.

In South Oahu, the water supplies, both natural and alternative, will be fully integrated and described in a future scope of work that once funded in FY 2007, will be submitted to CWRM for their review and approval. The following summarizes the main land use and water planning highlights in South Oahu.

- The City's General Plan directs the majority of the growth to South Oahu.

- Based on the City's growth forecast evaluating population, visitors, housing and employment factors, we forecast an increase in potable water demand for Oahu averaging about 1.1 million gallons per day per year, most of which will occur in South Oahu. In 5 years the BWS system demand is expected to increase by about 5.5 mgd, from 156 mgd in 2003 to 161.5 in 2008. New sources in the Waipahu-Waiiawa Water Management Area, as identified in the City DP and SCP land use plans, will be able to provide adequate water supply.
- In addition, in that time period, recycled water facilities in Ewa and Central Oahu will be expanded to continue to off-set additional groundwater development.
  - In 2000, BWS acquired and now operates the 12 mgd Honouliuli Water Recycling Facility supplying irrigation and industrial process water for Ewa.
  - BWS has also funded the design of a delivery system to utilize approximately 3.0 mgd of Wahiawa recycled water in Central Oahu.
- The Kalaheoa seawater desalination plant is currently under design and will bring an additional 5.0 mgd of potable water supply to the second city of Kapolei.

For your information, a summary of Oahu's estimated population distribution based on the 2000 census, BWS potable water demand in calendar year 2000 and water distribution is provided among the 8 land use regions. This is essentially the base case of existing water demand and distribution in the BWS system that will be referenced in establishing future watershed management plans scenarios. As we have stated above, the future water demand and distribution in the Waianae, North Shore and Windward regions will not change significantly.

