DEC 23 2010

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
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November 30, 2010

Katherine Kealoha, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

FINAL ENVIRONMENTAL ASSESSMENT AND FONSI
KONA OCEAN VIEW PROPERTIES SUBDIVISION WATER SYSTEM IMPROVEMENTS
NORTH KONA, COUNTY OF HAWAI'I
TAX MAP KEY 7-2-009:041

The Department of Water Supply, County of Hawai'i, has reviewed the Final EA, including the comments that were received on the draft environmental assessment for the subject project, the comment period for which ended on September 22, 2010. The Department of Water Supply has determined that the project will not have significant environmental effects and has issued a Finding of No Significant Impact (FONSI). Please publish notice of the FONSI and the availability of the Final EA in the next available edition of the Environmental Notice. We have enclosed the following:

- One paper copy of the Final EA
- A CD containing the .pdf file for the EA and WORD file with the OEQC transmittal documents, including OEQC Environmental Notice Publication Form, project summary, the distribution list for the Final EA, and a sample "Dear Participant" letter
- Hardcopies of the OEQC transmittal material

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at 961-8070, extension 256.

Sincerely yours,

Milton D. Pavao, P.E.
Manager-Chief Engineer

RQ:dfg

Attach: One (1) hardcopy of Final EA
One (1) CD with OEQC Publication Material and EA
OEQC Transmittal Material

copy - Ron Terry, Ph.D, Project Environmental Consultant

FINAL ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Puʻukala, North Kona District, Hawaiʻi Island, State of Hawaiʻi

December 2010

County of Hawaiʻi
Department of Water Supply

FINAL ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision Water System Improvements

TMK (3rd) 7-2-008: 1-38 and 7-2-009:1-042

Puʻukala, North Kona District, Hawaiʻi Island, State of Hawaiʻi

PROPOSING/APPROVING AGENCY:

County of Hawaiʻi
Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, Hawaiʻi 96720

CONSULTANT:

Geometrician Associates LLC
PO Box 396
Hilo, Hawaiʻi 96721

CLASS OF ACTION:

Use of County Funds
Use of State Land

This document is prepared pursuant to:

The Hawaiʻi Environmental Protection Act,
Chapter 343, Hawaiʻi Revised Statutes (HRS), and
Title 11, Chapter 200, Hawaiʻi Department of Health Administrative Rules (HAR).

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SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The property owners of Kona Ocean View Properties propose to install a County-dedicable water system meeting the Water System Standards of the Hawai‘i County Department of Water Supply (DWS) and providing reliable and safe water service and adequate fire protection for 81 residential lots. Water pipelines will be installed through trenching within the existing paved roadway and adjacent disturbed right-of-way on the subdivision’s roads. The project includes the installation of a 5/8-inch meter for each lot, repaving and providing traffic control during construction.

The project will be funded through an Improvement District process initiated by the Hawai‘i County Council. Funding assistance is also expected to be provided by the U.S. Department of Agriculture through its Rural Development, Rural Utilities Service (RD/RUS) loan and grant programs.

Because the installed waterlines will be placed within the existing paved roadway and adjacent disturbed right-of-way on various roads within the subdivision, and because no undisturbed ground is involved, no valuable biological, historic or cultural resources will be affected. The contractor will coordinate trench excavation, delivery of material to the work site, and water line installation to minimize inconvenience to the public and subdivision residents. Professional traffic control will be used to ensure access to properties and safe and efficient traffic flow.

PART 1.0 PROJECT DESCRIPTION AND PURPOSE AND NEED

1.1 Project Description

The property owners of Kona Ocean View Properties propose to install a County-dedicable water system that meets the Water System Standards of the Hawai‘i County Department of Water Supply (DWS) and provides reliable and safe water service and adequate fire protection. The agricultural subdivision is located in Kalaoa, approximately six miles north of Kailua-Kona along Highway 190, also known as Mamalahoa Highway (Figures 1-2). The project will be funded through an Improvement District process initiated by the Hawai‘i County Council. Funding assistance is also expected to be provided by the U.S. Department of Agriculture through its Rural Development, Rural Utilities Water and Waste Disposal (RD/RUS) loan and grant program.

The project involves construction of a permanent water system meeting current DWS standards by connecting to a water main at the intersection of the subdivision road with the highway. Water pipelines will be installed through trenching within the existing paved roadway and adjacent disturbed right-of-way on the subdivision’s roads (Figures 3-4). The Kona Ocean View Properties subdivision contains 82 lots (one lot consists of the subdivision’s roadways, where the proposed action will occur), which range in size from 3,454 to 22,403 square feet, 67 of which currently contain residences. Its roads are 30 to 40 feet wide and privately owned by the homeowners’ association. No County water service was available for the subdivision when it was developed in 1959, and water for individual residences was initially provided by individual rainwater catchment systems. After the water main along Mamalahoa Highway was extended to the vicinity of the subdivision in the mid-1990s, twenty 5/8-inch meters were installed within the right-of-way to serve some of the homes in the subdivision.

The project includes the installation of a 5/8-inch meter for each lot. That includes relocating 20 meters from their current placement in the highway right-of-way and the installation of 47 additional meters for lots with existing residences currently lacking direct DWS service. In addition, service laterals will be installed for the remaining vacant lots. The project also includes repaving and providing traffic control during construction.

The source for the water will be the DWS’ Kalaoa well, which is located approximately 1.23 miles southeast of the subdivision. The water is pumped to the Pu‘ukala tank, which is located approximately one mile southeast of the subdivision and has an overflow elevation of 2,070 feet. Because the subdivision extends between the 1,520-foot and 1,860-foot elevations, the project will include installation of a pressure-reducing valve station at an approximate elevation of 1,728 feet. Owners connecting to the system at lower elevations will be advised to install individual pressure reducing valves. The project includes the installation of approximately 1,400 linear feet of 8-inch ductile iron water main, 3,200 linear feet of 6-inch diameter ductile iron water main, 81 service laterals, eight fire hydrants and associated appurtenances. The new system will connect to an 8-inch

water main stubbed out to the Pu‘ukala Loop Road within the highway right-of-way and fed by an existing 12-inch main from the Pu‘ukala tank. Based on an average daily water usage of 400 gallons per day (gpd) per home and a maximum daily usage of 600 gpd per home (per County water system standards), the maximum daily demand for the system is estimated at 48,600 gallons per day, and the anticipated average daily flow is 32,400 gpd. The peak hour demand is estimated at 162,000 gpd or 112.5 gallons per minute (gpm), while the fire flow is estimated at 1,000 gpm.

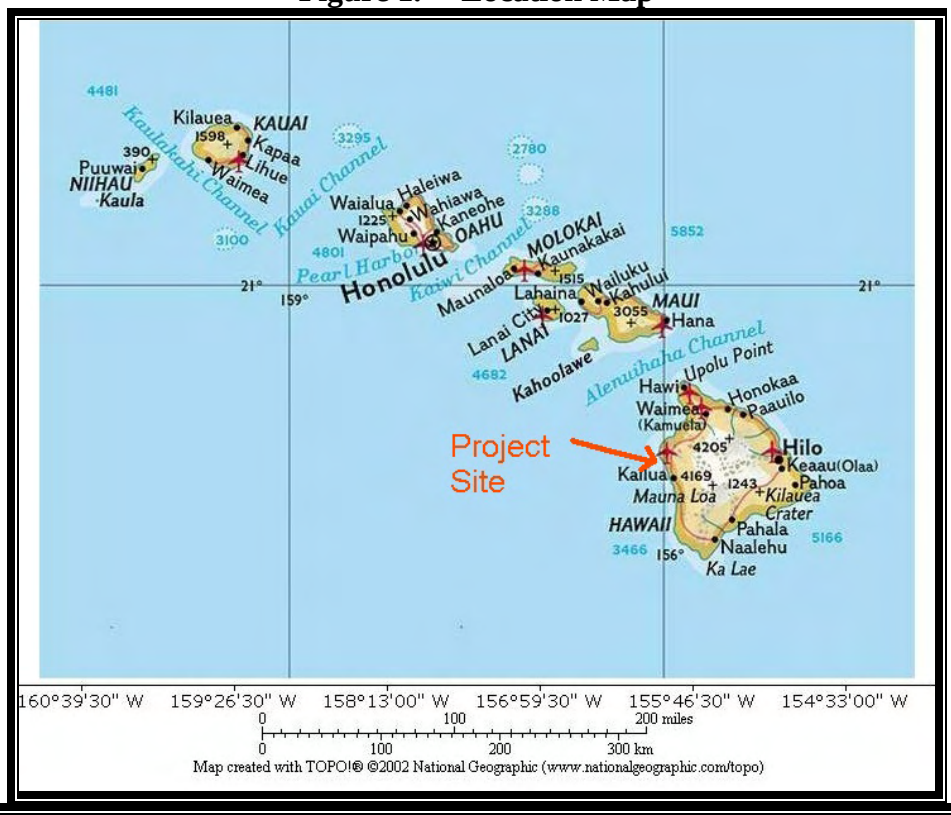
In order to minimize the potential to disrupt traffic and pose a hazard during trenching and emplacement of the distribution lines on existing asphalt, contractors will utilize a “cut and cover” method, in which asphalt pavement will be saw cut, and base course and underlying material will be removed by a backhoe. This material will be hauled to a stockpile site. The water line will be placed in a nominal 24-inch wide trench at a nominal depth of four feet along its length. The contractor will coordinate trench excavation, delivery of material to the work site, and water line installation to minimize inconvenience to the public.

Solid waste generated from clearing the corridor will be hauled for disposal. Approximately one-half of the excavated material will be used for backfilling the trench. Any surplus material will become the property of the contractor for disposal as required by the County contract documents.

After a water line segment is installed, it will be pressure-tested and disinfected per DWS standards. Assuming there are no leaks, the line will then be drained, the hydro-testing water disposed of, and the trench backfilled with engineered fill. A minimum of 24 inches of cover consisting of engineered fill, base course, and asphalt paving will be used. This process will be repeated until the entire water line is installed and tested. The entire line will be disinfected with a chlorine solution prior to being brought on-line. Hydro-testing and disinfection water will be properly discharged along the roadside to percolate into the ground per the National Pollutant Discharge Elimination System (NPDES) expected permit conditions. Excavated areas will then be restored to pre-construction conditions or better. The service area would become part of Public Water System 131, DWS North Kona.

Because the installed waterlines will be placed within the existing paved roadway and adjacent disturbed right-of-way on various roads within the subdivision, and because no undisturbed ground is involved, no valuable biological, historic or cultural resources are present or will be affected. Professional traffic control will be used during construction to ensure access to properties and safe and efficient traffic flow.

Figure 1. Location Map



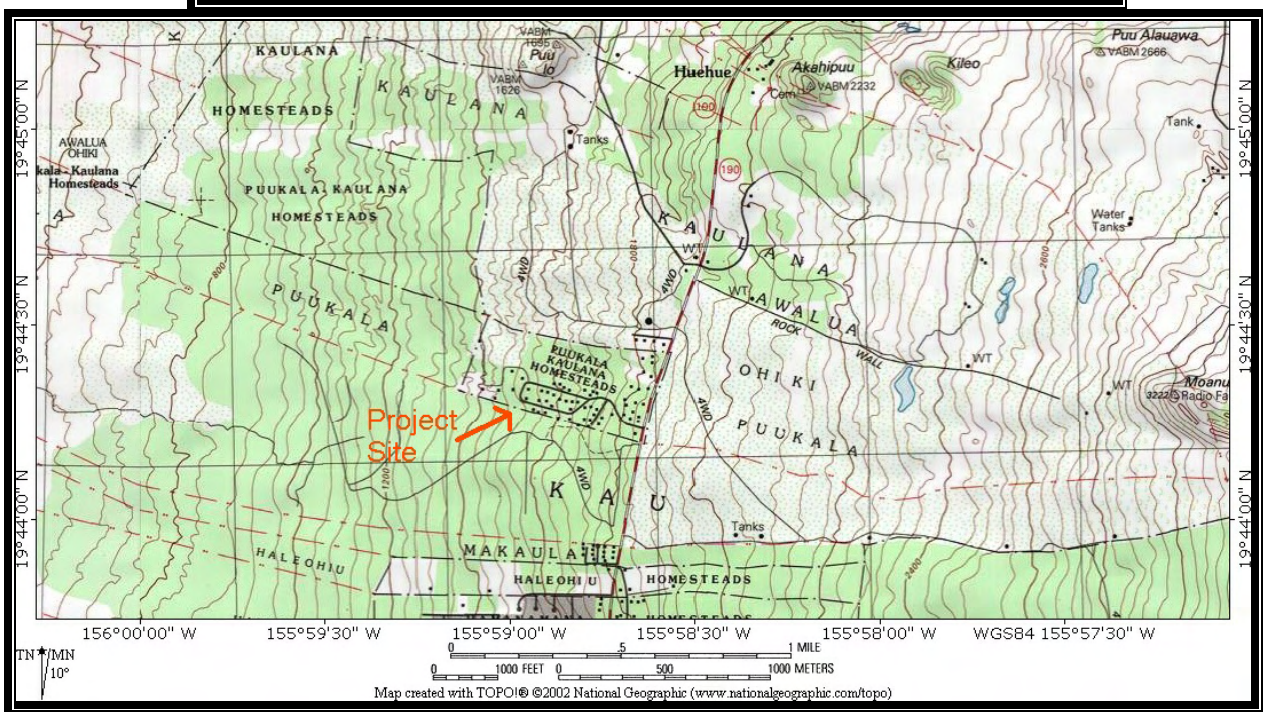
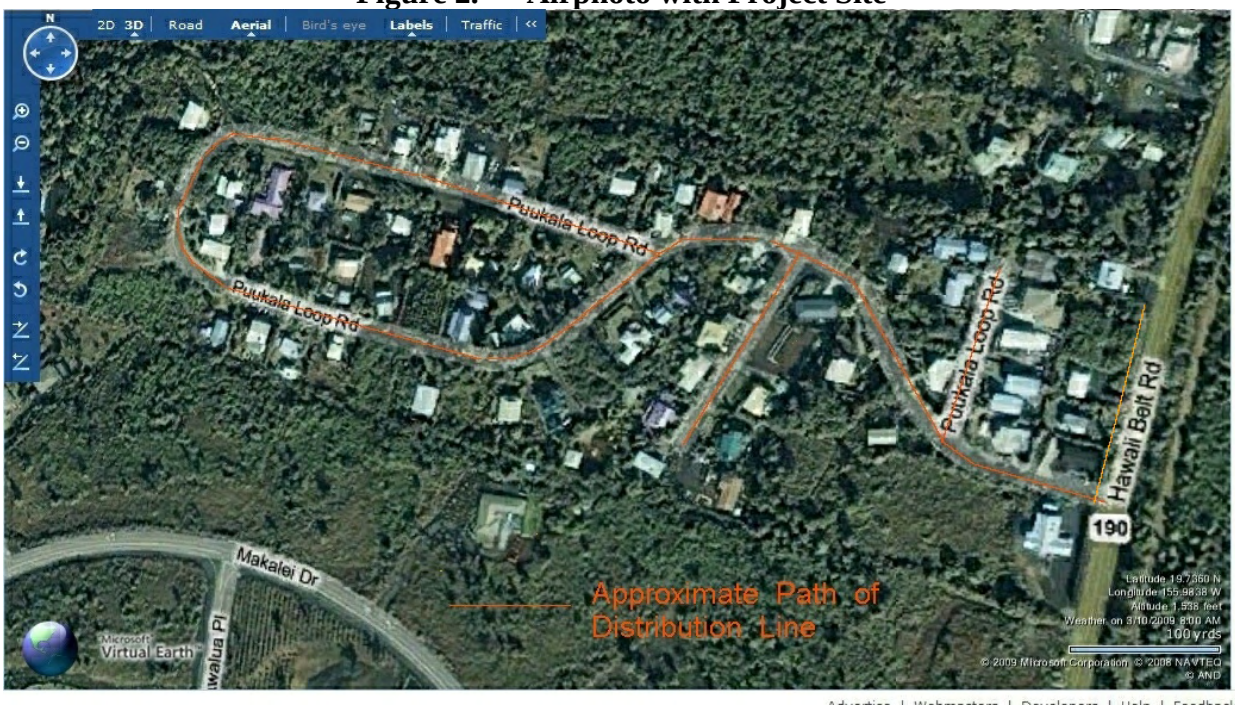
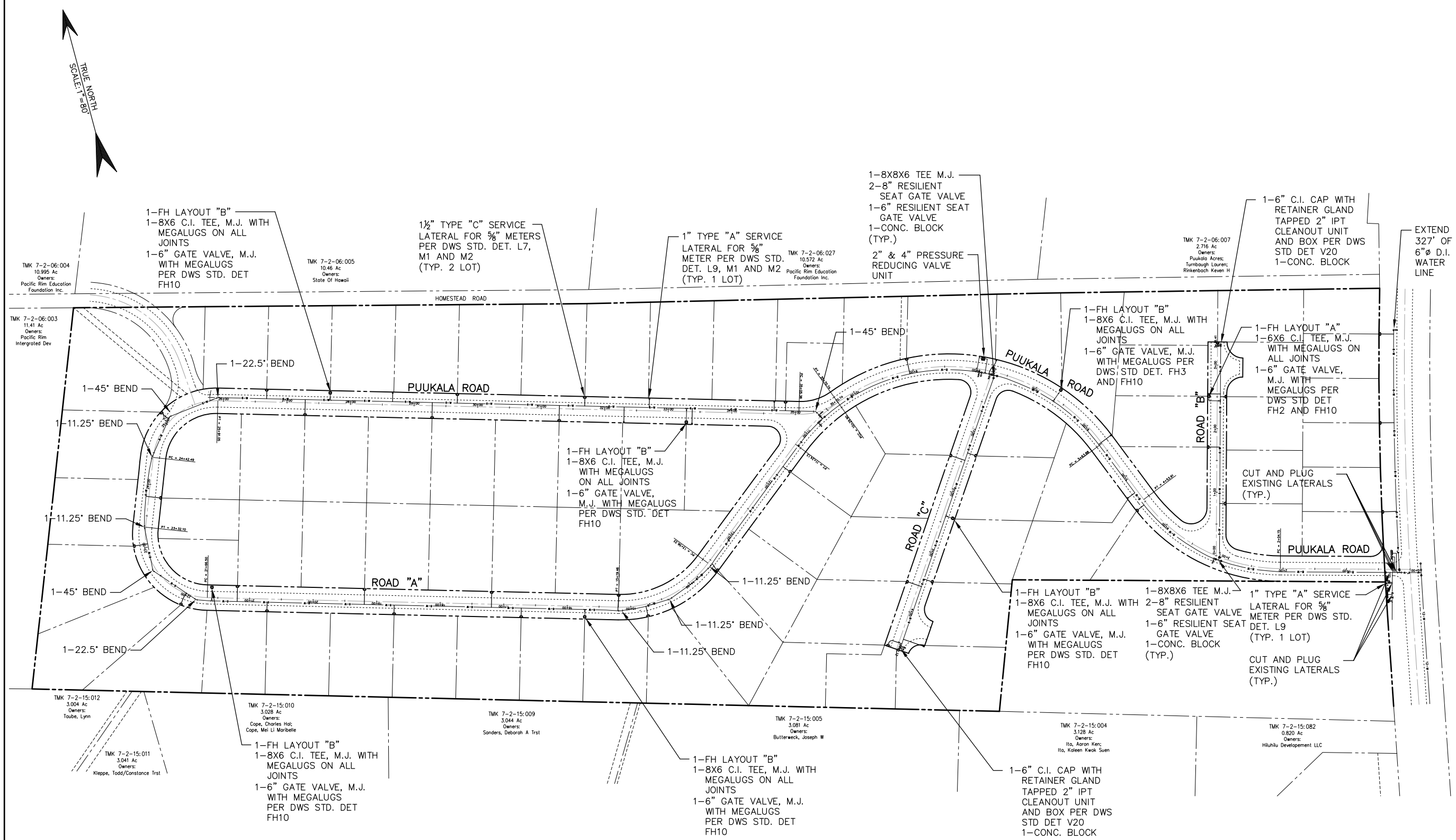


Figure 2. Airphoto with Project Site



Source: Microsoft Virtual Earth ©

Figure 3. Typical Street Photo



WATER SYSTEM SCHEMATIC PLAN

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

NANCY E. BURNS, P.E., LLC

73-1487 Hao Street
Kailua-Kona, HI 96740
Tel. (808) 325-3182

NANCY E BURNS
LICENSED PROFESSIONAL ENGINEER
No. 6812-C
HAWAII, U.S.A.

The work was prepared by me or under my supervision and construction of this project will be under my observation

Signature

4/30/10

Expiration Date of the License

Revision	Date	Approved

Project

PUUKALA WATER SYTEM IMPROVEMENTS

Title

WATER SYSTEM SCHEMATIC PLAN

Project No.	.
Date	MAY, 2009
Drawn By	ACE CADD Services
Designed By	NEB
Checked By	NEB
CAD File	OWNERS MAP.DWG

1

Sheet 1 of 1 Sheets

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1.2 Cost and Schedule

Item	Expected or Actual Completion Date
RD Pre-Application/Preliminary Engineering Report	July 2010
RD Application and Supporting Documents	July 2010
RD Letter of Conditions	July 2010
Resolution Proposing Improvement District	March 2011
Public Hearing	April 2011
Construction Documents	August 2011
Bid	September 2011
Assessment Ordinance	September 2011
Issue Improvement District Bond	October 2011
Start Construction	November 2011
Substantial Completion	November 2012
Hookup	November 2012

The latest preliminary cost estimates for the project are as follows:

Construction Cost	$1,318,600
Land Acquisition Costs	not required
Other costs	$250,750

Exhibit B of Appendix 1 presents the operating budget and cash flow for the project once constructed.

1.3 Purpose and Need of Project

The purpose of the water line is to upgrade the water system to provide reliable and safe water service to all lots and water for adequate fire protection in the Kona Ocean View Properties subdivision. There was no water service available to the Kona Ocean View Properties subdivision when it was being built out in the early 1960s. Water for the residences was provided by individual rain water catchment systems. The water main within the Mamalahoa Highway was extended to the subdivision in mid 1990s and 5/8-inch meters were installed within the Mamalahoa Highway right-of-way to serve some of the homes. Residents of the subdivision currently receive water from one of two sources: from the DWS system through above-ground polyvinyl chloride (PVC) lateral lines (also known as “spaghetti lines”) connected to DWS meters in the highway right-of-way, or from

individual rainwater catchment systems. In some cases, homes are supplied with water from neighboring properties connected to meters. The existing PVC laterals are subject to leaks and potential contamination should infiltration occur at breaks in the lines, some of which extend up to 2,000 feet from the meters. Because of the length of the lines, leaks are often difficult to detect or locate. The catchment systems, which typically consist of a cistern to collect rainwater from the roof of residences, are subject to microbial and other contamination, and they also serve as breeding sites for mosquitoes. They are also subject to an inconsistent supply, as the area receives approximately 45 inches of rain annually, which is less than the County of Hawai‘i’s current standard requirement of at least 60 inches for approval of catchment systems. The project would also remedy the current lack of fire hydrants in the subdivision that hampers fire suppression efforts.

1.4 Environmental Assessment Process

The Environmental Assessment (EA) has been prepared in conformance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). Chapter 343, HRS, along with its implementing regulations, Title 11, Chapter 200, of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai‘i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria.

In compliance with Chapter 343, HRS, Part 5 of the EA states the finding (anticipated finding, in the Draft EA) that no significant impacts are expected to occur, and includes a discussion of significance by criterion and presents the findings (preliminary, for the Draft EA) for each made by the Hawai‘i County Department of Water Supply, the proposing/approving agency. If, after considering comments to the Draft EA, the agency concludes that, as anticipated, no significant impacts would be expected to occur, then the agency issues a Finding of No Significant Impact (FONSI), and the action is permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) is prepared.

It should be noted that this EA has been prepared in parallel with a separate Environmental Report (ER) in conjunction with the application for a loan and grant to be submitted by the County of Hawai‘i Department of Water Supply to the United States Department of Agriculture (USDA), Rural Development (RD), Rural Utilities Water and Waste Disposal Loan And Grant Program.
The parallel process is being conducted in accordance with both Federal requirements, including the National Environmental Policy Act (NEPA), the USDA environmental policies and procedures (7 CFR 1794).

1.5 Public Involvement and Agency Coordination

The following agencies and organizations were consulted in development of the environmental assessment:

Federal:

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
National Park Service, Kaloko-Honokōhau National Historic Park,

State:

Department of Health
Department of Transportation
Office of Hawaiian Affairs,
Honolulu and Kailua-Kona offices
Department of Land and Natural Resources,
Director
State Historic Preservation Division
Hawai‘i Island Burial Council

County:

Police Department
Fire Department
Planning Department
Public Works Department
Environmental Management Department
County Council

Private:

Kona Hawaiian Civic Club
Royal Order of Kamehameha I
Association of Hawaiian Civic Clubs
Ike ‘Aina Native Hawaiian Trust
Sierra Club
Kona Outdoor Circle
Kona Ocean View Properties Subdivision,
Property owners
Road Maintenance Organization
Adjacent property owners

Correspondence from agencies and organizations in response to early consultation is contained in Appendix 2A and 2B. Appendix 2C contains written comments on the Draft EA and the responses to these comments. Various places in the EA have been modified to reflect input received in the comment letters; additional or modified non-procedural text is denoted by double underlines, as in this paragraph.

PART 2.0 ALTERNATIVES TO THE PROJECT ACTION

2.1 No Action

Under the No Action Alternative, the development of the Kona Ocean View Properties Water System Upgrade would not be undertaken. The public and subdivision residents would not benefit from the improved service by the DWS. Because of health and safety and other concerns associated with the current water supply system, including the lack of fire hydrants and use of catchment systems, DWS considers the No Action Alternative undesirable.

2.2 Alternative Locations or Strategies

An alternative considered was to install a master meter at the subdivision entrance. This would require that the subdivision's homeowners' association find independent funding to construct improvements beyond the meter and be responsible for its upkeep and maintenance. This alternative was rejected because the homeowners in 1996 attempted to construct their own system but were unable to obtain funding.

As there do not appear to be any environmental or other disadvantages associated with the particular proposed project, and the road right-of-ways are well suited to the proposed use, no other alternatives to the project have been advanced in this Environmental Review and Assessment.

Table 1. Evaluating Alternatives

Alternative	Evaluation
Upgrade existing water system	Meets County standards for providing safe and ample water supply; enhances safety through installation of fire hydrants; funding availability
No action	Does not resolve safety concerns for supply of water for residential and fire-fighting uses
Create private system	Funding not available

PART 3.0 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

Basic Geographic Setting

The Kona Ocean View Properties subdivision area, including the adjacent Mamalahoa Highway right-of-way and the subdivision road lot (TMK 7-2-009:041) in which the construction associated with the upgraded water system would occur, is referred to throughout this EA as the *project site*. The term *project area* is used to describe the general environs of this part of North Kona.

3.1 Land Use/Important Farmland/Formally Classified Lands

3.1.1 Affected Environment

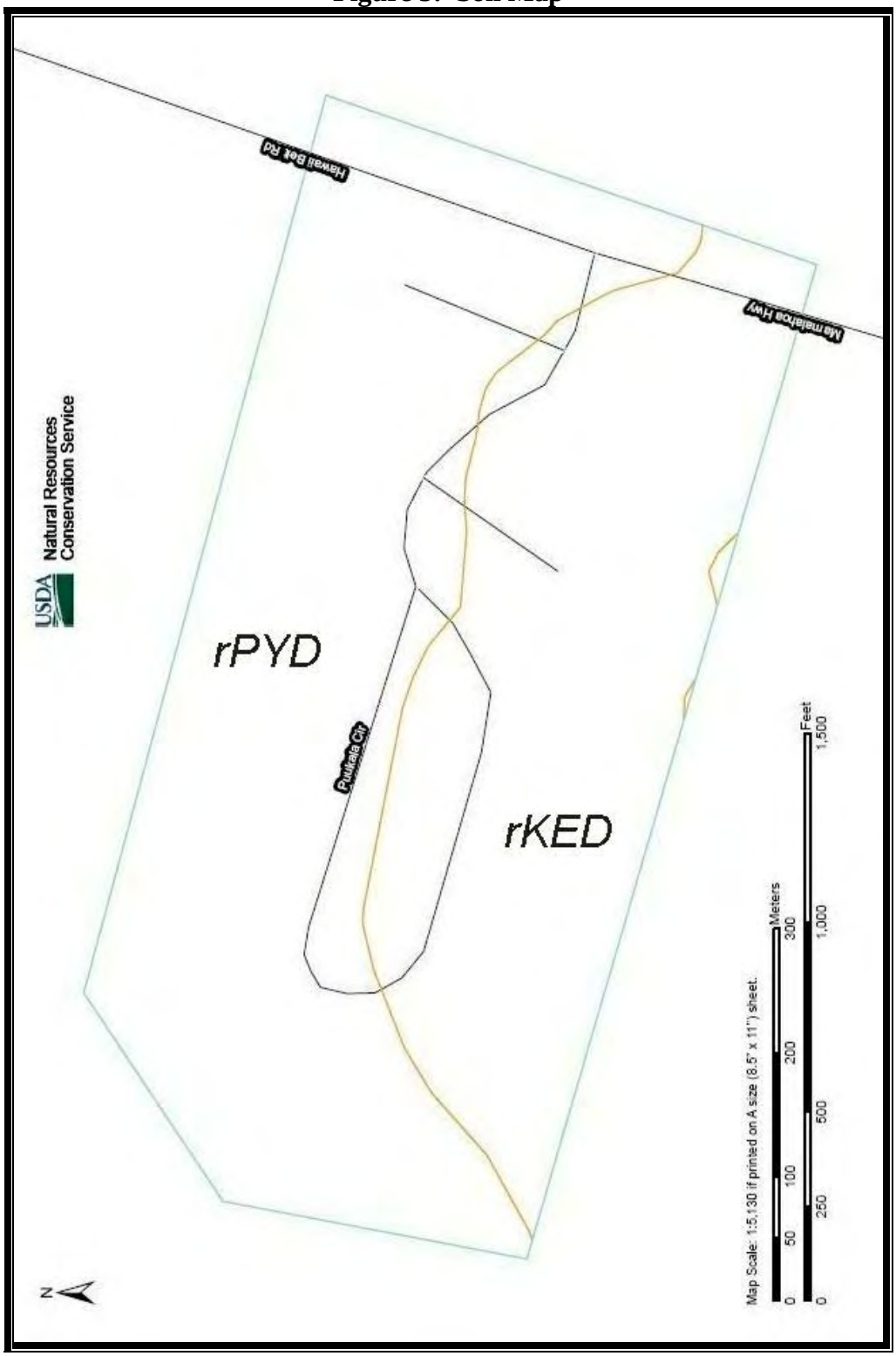
The project site is fully developed as a suburban single-family home residential subdivision. Of the 81 developable lots, County of Hawai‘i tax records indicate that 67, or roughly 85 percent, are currently occupied by homes. Some of the undeveloped lots will likely have single-family homes in the future, but others are part of multiple properties owned by homeowners and are used as buffers or landscape lots, which may continue indefinitely. The project is within the State Land Use Agricultural District, and County zoning for the project site is Ag-5a (Agricultural, minimum lot size 5-acres), although the lots are non-conforming, as the creation of the subdivision in 1959 predates the enactment of the State Land Use Law. Although the zoning is agricultural, a variety of factors preclude significant agriculture use including the size of the lots in the subdivision, their residential use, and the type and depth of soil. The *Hawai‘i County General Plan Land Use Pattern Allocation Guide (LUPAG)* designation for the project site is Low Density Urban.

Adjacent properties are undeveloped or contain single-family homes. They may be developed for agriculture in conformance with their zoning or they may be rezoned to support residential use matching much of the neighborhood.

The soil on the northern portion of the project site is classified by the U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) as Punalu‘u extremely rocky peat (rPYD), a well-drained, medium-acidic soil usually found on slopes of 6 to 20 percent, with a typical profile of peat up to four inches deep and bedrock below (Figure 5). The soil on the southern portion is Kaimu extremely stony peat (rKED), which like rPYD is a well-drained, thin organic soil. It typically consists of extremely stony peat three inches deep with extremely cobbly material below. The capability subclass for both types of soil is VIIs. Soils in the capability class of VII have very severe limitations that make them generally unsuitable for cultivation and limit their use to pasture, woodland or wildlife purposes. The subclass “s” indicates that the soil is limited because it is shallow, prone to drought or stony.

According to maps on file at the U.S. Natural Resources Conservation Service, the southern portion of the project, where the Kaimu extremely stony peat soil is present, is classified within the

Figure 5: Soil Map



Agricultural Lands of Importance to the State of Hawai‘i (ALISH) system as “Other Important Agricultural Land.” The remainder of the project area is unclassified.

There are no Prime Rangelands as classified by the U.S. Forest Service within the State of Hawai‘i. Consultation of maps prepared by the Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife, in consultation with the U.S. Department of Agriculture, Forest Service (Conry et al 2008), determined that the project site lies within one category of Prime Forest Land. According to a letter from Kathleen S. Friday of the U.S. Forest Service of April 27, 2009 (see Appendix 2):

> “However, maps of Prime Forest Land are based on biological potential to grow timber based on the combination of soils, slope, rainfall and elevation. Current vegetation and land use are not considered in the mapping process. In the case of your proposed project, it appears that the area has already been subdivided and urbanized, and the nature of the project is not detrimental to any potential for timber production, so the designation of Prime Forest Land is irrelevant.”

Other types of formally classified land include:

- National natural landmarks;
- National battlefield park sites;
- National historic sites and parks;
- Wilderness areas;
- Wild and scenic and recreational rivers;
- Wildlife refuges;
- National seashores, lake shores, and trails;
- State parks;
- Bureau of Land Management (BLM) administered lands;
- National forests and grasslands;
- Native American owned lands and leases administered by the Bureau of Indian Affairs (BIA).

No such classified lands are present within or near the project site. The project site is located approximately 4 miles *mauka* and north of the shoreline and the water resources at Kaloko-Honokōhau National Historical Park (“the National Park”). Interposed between the National Park and the subdivision are a number of other residential subdivisions, large scale industrial parks, and resort development. In response to Land Use Boundary Amendment applications and Environmental Impact Statements over the last five years, the National Park has expressed concerns about whether the sum of development in the surrounding area – which is the anchor area identified in the General Plan for most of the planned growth in North Kona, and which has a substantial number of new planned

projects – could harm the ponds and coastal waters that form the National Park's resources (the National Park was consulted in regard to this project but has not responded to date). Of particular importance are three issues: polluted runoff, inadequately treated wastewater, and groundwater withdrawal.

Notable resources at the National Park include Kaloko Fishpond, which is being restored for traditional and productive aquaculture use for human consumption; 'Ai'opio fishtrap, which is intensely utilized for fishing and traditional and customary cultural practices; 'Aimakapa fishpond and wetland, which is an important foraging and nesting habitat for the endangered Hawaiian Stilt and the endangered Hawaiian Coot, and overall important habitat for migratory waterfowl; and the general coastal waters, which are used by juvenile threatened green sea turtles and the endangered hawksbill sea turtle. The endangered Hawaiian monk seal is an occasional visitor to the National Park waters and rests on the shoreline. Endangered humpback whales are also seasonally seen. Brackish and saltwater ecosystems within and adjacent to the National Park are therefore important for the cultural landscape and cultural practices as well as habitat for native species, including endangered species.

3.1.2 Environmental Consequences

Existing land uses within and adjacent to the Kona Ocean View Properties subdivision will not be adversely affected. The proposed project is consistent with the land use designations. The subdivision is a legal, nonconforming use, and water lines are allowed in all districts, according to Section 25-4-11(a) of the Hawai'i County Zoning Code, which states: "Communication, transmission, and power lines of public and private utilities and governmental agencies are permitted uses within any district." The subdivision to be served and the proposed improvements are both consistent with the LUPAG designation of Low Density Urban.

Although the project site is partly within land classified as Other Important Agricultural Land, there will be no adverse direct effects, as the water system will be contained entirely within a transportation right-of-way. The subdivision properties that are served are too small for farming, but gardening uses will be encouraged by the availability of water.

Formally classified lands will not be adversely affected. Of theoretical relevance to the discussion of impacts to the National Park, which is over four miles away, are cumulative impacts of storm water and wastewater treatment and the use of potable water that is withdrawn from local aquifers, and thus not available to recharge aquifers that furnish fresh water to the coastal ponds of the National Park. No aspect of the project would produce additional impacts that would accumulate with regional impacts. The subdivision already exists and the lots are 85 percent occupied, and no change to wastewater or storm water volumes or quality is expected. Potable water from local wells will replace catchment water derived from rainfall that would otherwise penetrate the ground surface and recharge the aquifer, leading to no net differences.

3.1.3 Mitigation

There are no mitigation measures warranted.

3.2 Floodplains and Drainage

3.2.1 Affected Environment

The lack of a Federal Emergency Management Agency's Flood Insurance Rate Map for the area indicates that the project site is in Flood Zone X, outside of the 500-year floodplain. No unmapped flood channels or floodplains are known to exist in the area.

3.2.2 Environmental Consequences

Because of the limited scale of construction on rights-of-way containing existing water lines, and because the property is not within a FIRM flood zone and no sensitive water resources are located nearby, including areas of local (non-stream related) flooding, there are no additional risks for flooding or impacts to water quality. This project will not convert a floodplain. The project will not be increasing pavement, and there will no increase in runoff.

3.2.3 Mitigation

The project will conform to Chapter 27 of the Hawai‘i County Code, which is related to drainage, to ensure that runoff is appropriately handled.

3.3 Wetlands

3.3.1 Affected Environment

The nearest coastal waters are located more than four miles away. The project site has no nearby surface water bodies or sensitive water resources such as streams, wetlands, anchialine pools or coastal resources. This finding was concurred with by the U.S. Army Corps of Engineers in a letter of March 25, 2009 (see Appendix 2), which further found that the project consists entirely of uplands without jurisdictional waters and will therefore not require a Department of the Army permit.

3.3.2 Environmental Consequences

Because no wetlands or other sensitive water resources are located on or near the project site, and there are no indirect risks, wetlands will not be affected.

3.3.3 Mitigation

The project will conform to Chapter 27 of the Hawai‘i County Code, which is related to drainage.

3.4 Historic Properties

3.4.1 Affected Environment

There are no properties in the project area listed on either the National Register of Historic Places or the Hawai‘i Register of Historic Places. A report on historic properties in conformance with Section 106 of the National Historic Preservation Act (NHPA) was done for the project by Rechtman Consulting, LLC. This report, submitted to the Department of Land and Natural Resources-State Historic Preservation Division (SHPD), is included in Appendix 3 and summarized below.

Given the nature of the proposed project, it was determined that an appropriate Area of Potential Effect (APE) would be the paved roadways and their immediate shoulders (an area slightly less than four acres). Records on file SHPD the indicated that the APE had never been surveyed for historic properties. Given the results of prior nearby archaeological studies, there was at least some possibility that historic properties could be present. Accordingly, as the undertaking might affect historic properties, the process of identifying historic properties was initiated pursuant to 36 CFR§800.4 and included both an examination of past studies (archaeological, archival, and oral-historical) and an archaeological survey of the entire APE.

On March 2, 2009, the archaeologists conducted an intensive walking survey of the entire project area. Field surveyors thoroughly inspected the paved roadway and the disturbed shoulders on either side of the roadway. There were no archaeological resources observed within the study area and given the nature of the substrate and the past disturbances (a developed subdivision since 1959) it is highly unlikely that any such resources are present in a subsurface context.

3.4.2 Environmental Consequences

As no archaeological resources were identified within the APE during the survey, the archaeologist determined that no historic properties would be affected as a result of the proposed undertaking. The report, including these findings, was submitted to SHPD and a number of Native Hawaiian organizations including the Honolulu and West Hawai‘i offices of the Office of Hawaiian Affairs (OHA), the Hawai‘i Island Burial Council, the Royal Order of Kamehameha, the Ike ‘Aina Native Hawaiian Trust, the Kona Hawaiian Civic Club, and the Association of Hawaiian Civic Clubs (see Appendix 2 for letters to and from these organizations). By letter dated April 7, 2009, SHPD concurred with this finding and requested the construction-phase mitigation measure specified below. OHA concurred by letter April 14, 2009, and recommended coordinating with local residents with ties to the area as part of the cultural impact assessment. This is discussed in Section 3.5.2, below.

3.4.3 Mitigation

A condition of the construction contract will dictate that in the unlikely event that lava tube caves, archaeological resources or human remains are encountered during construction of the water lines, work in the immediate area of the discovery will be halted and SHPD contacted as outlined in Hawai‘i Administrative Rules 13§13-275-12.

3.5 Cultural Impact Assessment

3.5.1 Affected Environment

According to archaeologists and historians, the settlement of Hawai‘i was underway by A.D. 300, with the first inhabitants arriving from Kahiki, the ancestral homeland of the Hawaiian gods and people. It is generally agreed that the source of these early settlers was the Marquesas and Society Islands. The new communities initially favored the windward or *ko‘olau* shores of the islands for agriculture and fishing because of the streams and abundant rainfall found there. There is no archaeological evidence for occupation of the Kona region during this initial stage of island occupation, but long distance voyages occurred fairly regularly through at least the thirteenth century, with some subsequent voyagers settling in Kona.

After a period of several centuries, with the areas with the richest natural resources becoming populated and perhaps crowded, the growing population began expanding to the leeward or *kona* side of the islands for at least the extraction of resources. Permanent habitation of Kona began by about A.D. 900 to 1100. Initially, the communities that shared extended familial ties were concentrated on the lowland slopes and along the shoreline of sheltered bays where there was easy access to fresh water and marine resources. It is believed informal agriculture fields were established in areas with higher rainfall and more abundant soil.

By the fourteenth century, inland elevations of Kona up to around the 3,000-foot elevation were being turned into a complex system of dryland agriculture fields that today are known as the Kona Field System. In the next century the fields had spread across the slopes of Hualālai and much of the coastline was utilized for habitation purposes. This population expansion, which included permanent habitation in upland areas, meant increased pressure on farming efforts.

A distinction between the ruling class and common people grew during the fifteenth century, and through alliances and warfare, the amount of land certain chiefs controlled continued to grow. By the time ‘Umi-a-Liloa took over as the chief ruler in 1525, Hawai‘i Island was divided into six districts or *moku-o-loko*, which included Kona. Like the other districts, Kona was controlled by a regional chief and was further subdivided in units of land known as *‘okana* and *kalana*. The northernmost

portion of North Kona, where the current project is located, was called Kekaha and its residents called their home *Kekaha-wai-ʻole o na Kona*, or Waterless Kekaha of the Kona District, also known simply as *ʻaina kaha*.

During the period from A.D. 1600-1800, Hawaiian society had reached its maximum carrying capacity. The resulting social stress between neighboring groups was accompanied by internal rebellion and territorial annexation, and Kekaha was not spared the effects of the turmoil. By the early eighteenth century, following the death of his father, Keawe, Alapaʻinui had secured all of Hawaiʻi Island under his control, but around 1740 his forces were attacked by warriors led by his brother-in-law, Kekaulike of Maui. Alapaʻinui died in 1754 and was succeeded by his son, Keaweʻopala, but his reign was short-lived. Keaweʻopala was defeated and killed that year by Kalaniopuʻu, who was the ruler of the island when British explorer Captain James Cook ushered in a new chapter of Hawaiʻi's history with his visit to Kealakekua Bay on January 18, 1778. Kalaniopuʻu exchanged gifts with Cook in January 1779 at the bay, and also was present when Cook was killed at the bay the following month, after his return to repair a mast damaged in a storm off the coast of Kohala.

Around 1780, Kalaniopuʻu named his son, Kiwalaʻo, his successor, and gave the guardianship of the war god Kukaʻilimoku to Kamehameha. However, Kamehameha and several other chiefs were concerned that Kiwalaʻo was not honoring their land claims. At about that time Kalaniopu'u presented "Kekaha and the lands of that section" to the twin brothers Kameʻeiamoku and Kamanawa in recognition of their valor and counsel during battles against Kahekili several years earlier. But when civil war broke out after Kalaniopuʻu's death in 1782, Kiwalaʻo was killed and Kamehameha become ruler of Hawaiʻi Island. He later would rule all of the Hawaiian Islands.

By the late part of the eighteenth century, war and disease had taken a toll on population in some areas, while growth occurred in others. However, the trend toward craft and status specialization continued with an increase in the intensification of agriculture, *aliʻi*-controlled aquaculture, upland habitation and the enhancement of traditional oral history. The Ku cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence on Hawaiian culture was increasing. The foreign concept of trade for profit had been introduced and a market-system economy was already visible by the time Kamehameha I conquered Oʻahu. By 1795, Hawaiʻi was seeing the beginnings of a market system economy, which helped mark the end of the Proto-History Period and the era of uniquely Hawaiian culture.

Before the 1800s, the environment and landscape of Kekaha and the Puʻukala Ahupuaʻa in which the project site is located appeared much different than it does today. The *ahupuaʻa* crosses several environmental zones typically called *wao* in the Hawaiian language. These zones include nearshore fisheries and shoreline strand (*kahakai*), the shoreward plains (*kula kai*), and the inland plains (*kula uka*). The project site falls within the upper *kula* zone. While now appearing more as a volcanic desert or shrubland, and still used for grazing cattle, it was once covered by groves of native hardwood shrubs and trees. This upper kula zone receives approximately 30-40 inches of rain annually, and it is in this zone that taller forest growth occurred. The *kula uka* is further broken down

into the subzones *wao kanaka* (region of man; roughly 1,200 to 2,200 feet above sea level) to the *wao nahele* (forest region; above the 2,200-foot elevation). This region once provided a wide range of natural resources important for religious, domestic and economic purposes. It was also where most of Kekaha's agriculture was conducted, although the *kula uka* did not provide all of the resources needed for survival. As described by Maly and Maly:

> "The ancient Hawaiians saw (as do many Hawaiians today) all things within their environment as being interrelated. That which was in the uplands shared a relationship with that which was in the lowlands, coastal region, and even in the sea. This relationship and identity with place worked in reverse as well, and the ahupuaʻa as a land unit was the thread which bound all things together in Hawaiian life."

In Kekaha this relationship was most obvious during the dry season, when the people would move from the uplands to the coast where water could be found. Kihe's account describes this migration:

> *"…ʻOia ka wā e neʻe ana ka lā iā Kona, hele a maloʻo ka ʻāina i ka ʻai kupakupa ʻia e ka lā, a o nā kānaka, nā liʻi o Kona, pūheʻe aku la a noho i kahakai kāhi o ka wai e ola ai nā kānaka* – It was during the season, when the sun moved over Kona, drying and devouring the land, that the chiefs and people fled from the uplands to dwell along the shore where water could be found to give life to the people."

The landscape underwent even more dramatic change in 1800-1801 from lava flows from the eruptions of the Kaʻupulehu and Puhi a Pele vents on the slopes of Hualālai. The flows from the latter vent passed north and west of the project site and covered the *makai* areas of the Puʻukala ahupuaʻa. The flows consumed native settlements, agricultural fields, sheltered coves, fresh water sources and other features including the great fishpond of Paʻaiea, which once extended from Kaʻelehuluhulu in the Kaulana Ahupuaʻa located north of Puʻukala Ahupuaʻa to near the border of the Kalaoa and ʻOʻoma Ahupuaʻa to the south.

Around 1812, King Kamehameha I returned to Hawaiʻi Island to spend his final days in Kona. He ordered men to cut sandalwood in the mountains and carry it to the coast, paying them in cloth, tapa material, fish and other food. But with farmers and fishermen spending most of their time logging, food shortages and famine soon prevailed, adding to the breakdown of the traditional subsistence system. Kamakau wrote: "this rush of labor to the mountains brought about a scarcity of cultivated food .... The people were forced to eat herbs and tree ferns, thus the famine [was] called Hi-laulele, Haha-pilau, Laulele, Pualele, ʻAmauʻu or Hapuʻu, from the wild plants resorted to ...." To reduce his people's suffering, Kamehameha "declared all the sandalwood the property of the government and ordered the people to devote only part of their time to its cutting and return to the cultivation of the land." In the lands above Kailua a vast plantation named Kuahewa was established, and Kamehameha himself was among the farmers. He also enacted a law that required anyone who harvested a taro plant or stalk of sugar cane to plant a cutting of the same in its place. Kamehameha's residence while in Kailua was at Kamakahonu.

By the mid-1800s, the expanding population of Westerners prompted socioeconomic and demographic changes, including the establishment of a Euro-American style of land ownership. In 1848, the Mahele ʻAina, or Great Mahele, became the vehicle for determining ownership of native lands. This change in land tenure was promoted mostly by missionaries and Western businessmen, who were typically hesitant to enter into business deals on leasehold land. The Mahele defined the land interests of Kamehameha III (the King), the high-ranking chiefs and the *konohiki* or overseers. It placed all lands in the Kingdom of Hawaiʻi into three categories: Crown Lands for the occupant of the thrown, Government Lands, and Konohiki Lands. Chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards from Kamehameha III, and were required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that ancient boundaries would prevail until the land could be surveyed. All three types of land were subject to the rights of existing native tenants.

Following the Mahele, Puʻukala Ahupuaʻa was retained as Government Land. Only one *kuleana* (award of house lot or farm lot to commoner) was issued, LCAw. 9164 to Kaupuu, which was located *mauka* of the Upper Government Road (near the present-day Mamalahoa Highway). Kaupuu, who was konohiki of Puʻukala at the time, claimed a house lot in ʻOhiki Ahupuaʻa and ten *kalo* (taro) *kihapai* in Puʻukala, but only the taro lands were awarded. Kaupuu had initially received the lands from Kekuhaupio in the time of Kamehameha I.

During the middle to late eighteenth century, many of the remaining native tenants of the Kekaha region still lived much as did their ancestors. But things were quickly changing with the sale of grant parcels and the introduction of cattle and goats and growth of the ranching industry. According to Maly and Maly, the native tenants of Kekaha "traveled the trails between the uplands and the coast, cultivated crops, fished [but] found themselves being drawn into the need to control introduced ungulates – primarily goats – that were invading their lands." Wall-building flourished during this period as Kekaha residents struggled to keep cattle and goats out of their houses and gardens.

Ranching was flourishing in Kekaha by the late 1800s, with the lands around the project site becoming part of Huʻehuʻe Ranch. The establishment of this ranch is attributed to John Avery Maguire (1848-1919), a half-Hawaiian who moved to North Kona from Kohala in 1886. Maguire, his wife Luka Hopulaau Maguire (granddaughter of Hopulaau, Grant No. 2112) and members of her family spent decades consolidating property in Kekaha under their names to create the ranch. Maguire and his wife eventually settled in the Awakeʻe Ahupuaʻa, located north and *mauka* of the project area.

Despite the Mahele and grant programs in the middle 1800s, many native tenants remained on lands for which they held no title. As a result, the Hawaiian Kingdom established the Homestead Act of 1884 to provide more Hawaiian tenants with fee-simple property. The law allowed applications for lots of up to 20 acres in size as long as the applicant owned no other property. Because the Act was designed to provide land for cultivation of crops or grazing, most of the lots were located in the upper *kula* area in the vicinity of the Upper Government Road. The current project site is a portion of the

Pu‘ukala and Kaulana Homesteads, made up of two former land grants, Grant 3772 to Maianu and Grant 3786 to Mrs. Kaaikaula, issued in 1895. By 1930 these parcels were once again consolidated under the ownership of Dang Bros. Inc. and in that year the current Kona Ocean View Properties subdivision was created.

3.5.2 Environmental Consequences

Several Kona residents and Native Hawaiians knowledgeable about the plan to upgrade the water system for Kona Ocean View Properties were contacted at the request of the Office of Hawaiian Affairs to determine whether they had any concerns about the project’s impact on cultural matters.

Karin Haleamau, who was born and raised in Kona, works at the Natural Energy Lab of Hawai‘i at Keahole Point, and whose family previously owned a lot in the project’s subdivision, said he was not aware of the existence of any cultural sites nor gathering activities that might be affected by the project. Haleamau said he believed the project to be worthwhile. “I think it’s good for the people,” he said. Hannah Springer, a local resident expert in many aspects of traditional Hawaiian uses and history, was contacted but did not return phone calls.

In addition, as discussed above in Section 3.4.2, the archaeological report, which dealt with Native Hawaiian remains that are considered cultural resources, was distributed to a number of Native Hawaiian organizations including the Honolulu and West Hawai‘i offices of the Office of Hawaiian Affairs (OHA), the Hawai‘i Island Burial Council, the Royal Order of Kamehameha, the Ike ‘Aina Native Hawaiian Trust, the Kona Hawaiian Civic Club, and the Association of Hawaiian Civic Clubs. Aside from the OHA recommendation for consultation with local residents, no additional information on potential cultural resources, such as gathering practices or culturally important places, was received.

As the previously cleared and mostly paved rights-of-way in this residential neighborhood appear to contain no resources of a potential traditional cultural nature (i.e., landform, vegetation, etc.), and no evidence of any traditional gathering uses or other cultural practices, the proposed installation of water lines would not likely impact any culturally valued resources or cultural practices. The Office of Hawaiian Affairs, the State Historic Preservation Division, and various other parties specified in Appendix 2 were supplied a copy of the Draft EA for their comment on these findings. No party reviewing the Draft EA supplied any information concerning this subject.

3.5.3 Mitigation

As Native Hawaiian cultural remains, including structures, artifacts, and *iwi kupuna* (bones of the ancestors) are considered cultural resources, the precautionary mitigation measures discussed in Section 3.4.3, above, are applicable.

3.6 Biological Resources

3.6.1 Affected Environment

The project site consists of the road right-of-way for a subdivision that was largely bulldozed when developed in 1959. Remaining areas are covered primarily by introduced grasses and shrubs (Figure 3 is a photograph of a typical segment).

In 2008, Dr. Patrick Hart of the Biology Department of the University of Hawai‘i at Hilo and Dr. Ron Terry conducted a botanical survey of the corridor and found only low-stature vegetation within the right-of-way, primarily grasses and common alien herbs. Common introduced plants included guava (*Psidium guajava*), Christmas berry (*Schinus terebinthifolia*), lantana (*Lantana camara*), Guinea grass (*Panicum maximum*), octopus plant (*Schefflera actinophylla*), *kukui* (*Aleurites moluccana*), and jacaranda (*Jacaranda mimosifolia*). The only native species observed were *‘uhaloa* (*Waltheria indica*) and *popolo* (*Solanum americanum*), two very common indigenous herbaceous plants that are frequently found on roadsides. No threatened or endangered plants species are present.

The project site does not offer habitat for endangered plants. The bird fauna of the area is almost wholly alien, and no threatened or endangered birds are present. No removal of trees or large, shrubby vegetation is required. The project does not involve any lighting, either permanent or temporary.

The U.S. Fish and Wildlife Service was consulted by letter and replied by letter of May 1, 2009, that no federally listed species or critical habitat occur within the project footprint (see Appendix 2).

3.6.2 Environmental Consequences

Because of the lack of native ecosystems, threatened or endangered plant species, and native animal habitat, no adverse direct impacts to biological resources would occur as a result of upgrading the water system. As the subdivision lots are 85 percent occupied and already have catchment water systems or DWS lines, no indirect biological effects related to occupancy or use of the lots is expected.

3.6.3 Mitigation

There are no mitigation measures warranted.

3.7 Water Quality

3.7.1 Affected Environment

The project involves installation of an upgraded, closed supply system of potable water in a subdivision already served by water.

3.7.2 Environmental Consequences

The project will have a negligible direct effect on the area's water quality. There are no streams or other waterways in the area used as water sources that would be affected. Because the project will disturb more than one acre of soil and will involve discharge of hydrotesting and disinfection water (see discussion in Subsection 1.1 above), a National Pollutant Discharge Elimination System (NPDES) permit must be obtained by the contractor before the project commences. This permit requires the completion of a Storm Water Pollution Prevention Plan (SWPPP) and will include consideration of flooding potential during construction. In order to properly manage storm water runoff, the SWPPP will describe the emplacement of a number of best management practices (BMPs) for the project. These BMPs may include, but will not be limited to, the following:

- For any work off paved surface, minimization of soil loss and erosion by revegetation and stabilization of slopes and disturbed areas of soil, possibly using hydromulch, geotextiles, or binding substances, as soon as possible after working;
- Minimization of sediment loss by emplacement of structural controls possibly including silt fences, gravel bags, sediment ponds, check dams, and other barriers in order to retard and prevent the loss of sediment from the site;
- Minimizing disturbance of soil during periods of heavy rain;
- Phasing of the project in order to disturb a minimum necessary area of soil at a particular time;
- Application of protective covers to soil and material stockpiles;
- Use of drip pans beneath vehicles not in use in order to trap vehicle fluids;
- Routine maintenance of BMPs by adequately trained personnel; and
- Cleanup of significant leaks or spills and disposal at an approved site, if they occur.

As discussed in Section 3.1, Kaloko-Honokōhau National Historical Park, which is four miles away from Kona Ocean View Properties, has concerns about all development in this part of North Kona. No aspect of the project would produce additional water quality impacts. The subdivision already exists and there will be no change to wastewater or storm water volumes or quality. Potable water from local wells will replace catchment water derived from rainfall that would otherwise penetrate the ground surface and recharge the aquifer, leading to no net differences in aquifer conditions.

3.7.3 Mitigation

Other than conditions of an NPDES permit and the accompanying Storm Water Pollution Prevention Plan (SWPPP), there are no mitigation measures warranted.

3.8 Socio-Economic/Environmental Justice Issues

3.8.1 Affected Environment

Table 2 provides information on the socioeconomic characteristics of the Kalaoa Census Designated Place (which includes the Kona Ocean View Properties subdivision) along with those of Hawai‘i County as a whole for comparison, from the United States 2000 Census of Population. Kalaoa has a diverse population of about 7,000, and Hawai‘i County is among the 100 fastest-growing counties in the U.S.

Table 2. Selected Socioeconomic Characteristics

Characteristic	Hawai‘i County	Kalaoa	Characteristic	Hawai‘i County	Kalaoa
Total Population	148,677	6,794	21 to 64 Years, Disabled (%)	19.2	14.5
Median Age	38.6	38.8	Employed and Disabled, 21 to 65 Years, (%)	51.8	66.6
65 Years and Older (%)	13.5	8.9	65 Years of Older, Disabled (%)	40.3	38.2
Race (%)			Employment in:		
White	31.5	49.3	Management	30.2	26.1
Asian	26.7	13.4	Service	22.2	23.7
Hawaiian	9.7	8.7	Sales and Office	25.1	26.5
Other Pacific Islander	1.5	1.3	Farming, Fishing and Forestry	9.9	1.5
Two or More Races	28.4	25.3	Construction	13.0	13.1
Hispanic (Any Race)	9.5	5.9	Production, Transportation	8.9	9.0
Family Households (%)	69.6	71.8	Families Below Poverty Line (%)	11.0	3.0
Households with Female Householder, no Husband, With Children (%)	7.7	6.0	Households with Female Householder, no Husband, With Children, Below Poverty Line (%)	28.1	0.0
Householder Lives Alone (%)	23.1	19.4	Individuals Below Poverty Line (%)	15.7	6.2
Average Household Size	2.75	2.83	Over 65 Below Poverty Line	7.2	5.1
Average Family Size	3.24	3.19	Median Household Income ($)	39,805	53,024
Over 25 Years Old With High School Diploma (%)	84.6	89.3	Housing Owner-Occupied (%)	64.5	67.1
Married Now (%)	52.0	58.8	Housing Rented (%)	34.5	32.9
Widowed (%)	6.3	2.8	Housing Vacant (%)	15.5	90
Divorced Now (%)	10.7	10.9	Median Home Value, 1999 ($)	153,700	233,800
Veterans (%)	14.5	14.6	Median Rent, 1999 ($)	645	1,022
Over 16 in Labor Market (%)	61.7	63.9	Rent is 25% or More of Income (%)	46.0	51.3
Residence 5 Years Ago (%)			Poverty by Race (1999):		
Same Home	57.7	54.5	White	14.5	3.3
Different Home, Same County	26.5	23.7	Asian	7.3	6.5
Different County in Hawai‘i	4.8	3.7	Native Hawaiian/Pacific Islander	26.4	18.8
Different State/Country	11.0	18.1	Two or More Races	20.4	6.8

Source: U.S. Bureau of the Census, May 2001. *Profiles of General Demographic Characteristics, 2000 Census of Population and Housing, Hawai‘i.* (U.S. Census Bureau Web Page).

3.8.2 Environmental Consequences

The proposed action would not involve any relocation of businesses or homes or any other social impacts. Except for temporary construction impacts of the installation of new underground water lines (which would primarily affect the same community that is benefitted by the project), there would be no disruption of local traffic patterns or effects to neighborhood character or integrity.

The proposed action would benefit public welfare for the subdivision's residents and in this area of North Kona by upgrading the water supply service in Kona Ocean View Properties to provide a steady and safe supply of water for residential use. In addition, the installation of fire hydrants where none now exist will enhance fire-fighting capabilities that will benefit the subdivision's residents as well as residents and property owners of surrounding areas and State and County agencies that provide fire-fighting services and protect public land and facilities.

The benefits of a standard water system may not be apparent to those who have not lived on catchment. Rainfall catchment is used in many parts of Hawai‘i County, and in fact is the common water system for residents of parts of Puna, South Kona and Ka‘u where County water service is not available. Although catchment does provide a potable water source of last resort, it has many drawbacks, including high maintenance costs and susceptibility to microbiological and chemical contamination. Sources of these contaminants vary from dead animals in the storage tank to materials eroded or leached from roofs, gutters and paint. The State Department of Health (DOH) recommends using catchment water for non-consumptive needs and obtaining drinking or cooking water from regulated public water systems and/or purchased bottled drinking water. Communications from local residents contacted as part of early consultation (see Appendix 2) indicate that concern over the public health effects of catchments, including mosquitoes, is an important concern and large perceived benefit of the project.

Executive Order 12898 directs every federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations. Like all parts of the State of Hawai‘i, the project area (Kalaoa CDP) contains high proportions of minority populations, with 50.3 percent of the population identified as other than white. However, as shown in Table 2, this proportion is considerably less than the Hawai‘i County average of 68.5 percent. Similarly, the proportion of the population below the poverty line is 6.2 percent in Kalaoa versus 15.7 percent for the County. Although the Kona Ocean View Properties subdivision is too small to determine its racial or income characteristics, based on discussions with residents, the averages for the subdivision are probably similar to those of Kalaoa as a whole.

The project has virtually no adverse impacts and would provide substantial benefits for the residents, as they would achieve County-standard water service, improving water quality and reliability, hygiene, and fire protection. The project would not produce disproportionately high and adverse human health or environmental effects on any population, including low-income and minority populations.

The No Action Alternative would continue the condition in which 81 residential lots are not served by County-standard water system, which leaves them at a disadvantage with respect to water supply, water quality, fire protection, and public health.

3.8.3 Mitigation

No mitigation measures are warranted.

3.9 Climate and Air Quality

3.9.1 Affected Environment

The average maximum daily temperature is approximately 77 degrees F, with an average minimum of 64 degrees and an average annual rainfall of about 45 inches (U.H. Hilo-Geography 1998:57). Air pollution in West Hawaiʻi is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that persistently blankets North and South Kona.

3.9.2 Environmental Consequences

Operationally, the project will have no impacts on air quality. During construction, the project has at least some potential to generate dust that affects neighboring properties.

The No Action Alternative would have no effect on air quality.

3.9.3 Mitigation

In order to minimize impacts from dust during construction activities, the contractor will be required to consult with the Department of Health (DOH) and, if required by DOH, will prepare a dust control plan compliant with provisions of Hawaiʻi Administrative Rules, Chapter 11-60.1, “Air Pollution Control,” Section 11-60.1-33, “Fugitive Dust.”

3.10.2 Transportation

3.10.1 Affected Environment

Kona Ocean View Properties, which is accessed from Mamalahoa Highway (State Highway 190), contains roads owned by the subdivision’s homeowners’ association that vary from 30 to 40 feet in right-of-way width, with pavement varying from 14 to 26 feet wide.

3.10.2 Environmental Consequences

The proposed water line will be enclosed underground in the affected roadways' rights-of-ways. The surface of those areas will be restored to at least the existing condition once installation is complete, and no permanent adverse effects are expected. The project will also include connection to a water main in the Mamalahoa Highway right-of-way as well as approximately 400 linear feet of water main to serve five lots that front the highway.

3.10.3 Mitigation

After construction plans, traffic control plans, and the NPDES permits are complete, the project engineer will coordinate with the Hawai‘i Department of Transportation, Highways Division, to obtain permits and meet this agency's requirements.

Traffic impacts will be mitigated by instituting a traffic control plan approved by the State Department of Transportation. Construction road work and material deliveries will be scheduled to minimize disruption to traffic. Other measures to be used include traffic cones and/or directional devices to guide vehicles around work areas, posting of flagmen for traffic control, backfilling and/or covering trenches daily, posting adequate safety barricades and devices for the duration of construction and coordinating driveway crossings with affected homeowners. Access to properties will be maintained at all times, although brief waits may be necessary. These impacts would be construction phase only and are unavoidable, and temporary in nature.

3.11 Noise

3.11.1 Affected Environment

Noise on the project site is moderate and derived mainly from nearby residential activities and motor vehicles, with occasional noise from road use and maintenance activities.

3.11.2 Environmental Consequences

The proposed action will not measurably affect noise levels except minimally during construction activities. Trenching and waterline installation would entail limited excavation, compressors and jackhammers, and vehicle and equipment engine operation. These activities may generate noise exceeding 95 decibels at times, which can exceed the DOH "maximum permissible" property-line noise levels.

3.11.3 Mitigation

The contractor will be required to coordinate with the State Department of Health (DOH) prior to construction to determine whether construction noise has the potential to exceed the DOH "maximum permissible" property-line noise level. If so, the contractor will obtain a permit per Title 11, Chapter

46, HAR (Community Noise Control) prior to construction. DOH reviews the proposed activity, location, equipment, project purpose, and timetable in order to decide upon conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours and portable noise barriers.

3.12 Geologic Hazards

3.12.1 Affected Environment

The project site is located at an elevation ranging from approximately 1,520 feet on its western, *makai* end to 1,860 feet on its eastern, *mauka* end) above sea level on the flanks of the Hualālai Volcano. The surface of the northernmost portion of the subdivision consists of flows 3,000 to 5,000 years before the present; on the southern portion the surface consists of lava flows from 1,500 to 3,000 years before the present (Wolfe and Morris 1996).

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The project site is rated Lava Flow Hazard Zone 4 on a scale of ascending risk 9 to 1 (Heliker 1990:23). The Zone 4 area consists of all of Hualālai, a dormant volcano with a lower frequency of eruption than Kilauea and Mauna Loa. Less than 15 percent of this hazard zone area has been covered in the past 750 years, with roughly 5 percent of the area covered since 1800.

In terms of seismic risk, the entire Island of Hawai‘i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude quake of October 15, 2006, demonstrated. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

3.12.2 Environmental Consequences

Impacts and Mitigation Measures

In general, geologic conditions impose no constraints on the proposed action, and the proposed project is not imprudent to construct.

3.12.3 Mitigation

All design is required to account for the soil’s physical and chemical characteristics, and the water lines will be designed in accordance with regulations related to its seismic setting.

3.13 Hazardous Materials, Toxic Substances and Hazardous Conditions

3.13.1 Affected Environment

No professional evaluation such as a Phase I Environmental Site Assessment (ESA) was performed for the project site. To DWS officials' knowledge, there have been no spills or other incidents involving hazardous or toxic substances, and no such materials are stored within the road rights-of-way where the water line will be installed. Project site inspection determined that no Above Ground Storage tanks are present in the area.

3.13.2 Environmental Consequences

The installation of additional water lines does not appear to pose any unreasonable risk in terms of worker or public exposure to hazardous materials or toxic substances.

3.13.3 Mitigation

If evidence of suspicious materials or conditions appears during construction, the County may undertake a systematic assessment of the area in question to determine if remediation is required.

3.14 Scenic Resources

3.14.1 Affected Environment

No scenic resources, including important viewplanes or scenic sites recognized in the Hawai‘i County General Plan, are present at the project site.

3.14.2 Environmental Consequences

No scenic resources would be affected by the project, which involves no above-ground structures.

3.14.3 Mitigation

No mitigation measures are warranted.

3.15 Utility Infrastructure

3.15.1 Affected Environment

Electrical power, telephone service, and cable television service to the subdivision is supplied via poles and overhead lines by Hawai‘i Electric Light Company (HELCO), Hawaiian Telcom, and Oceanic Time Warner Cable, respectively, which are a privately owned utility companies. No municipal sewer service is available, and residents rely on cesspools or septic tanks.

As discussed in Section 1.1, the water system will be incorporated within and maintained by the Hawai‘i County Department of Water Supply. The Hawai‘i State Commission on Water Resources Management in a memo of March 30, 2009 (see Appendix 2) recommended that the project be incorporated in the Hawai‘i County Water Use and Development Plan. They further recommended that water efficient fixtures and water efficient practices be implemented.

3.15.2 Environmental Consequences

The project will not affect telephone or cable service. The project will not increase electricity requirements for residents who currently require electric pumps for their catchment systems. Although DWS requires electricity for wells, monitoring systems, and administration, such use is far more efficient than the pumps used in individual systems, and net electricity use will decrease. Cesspools and septic tanks may have slightly higher loads but within their capacity to dispose.

3.15.3 Mitigation

The Department of Water Supply will include the project in the Hawai‘i County Water Use and Development Plan at a future date and will provide information to its new customers in this system providing information on water efficient fixtures and practices. No other mitigation measures are warranted.

3.16 Secondary and Cumulative Impacts

Because the purpose of the project is an upgrade of an existing water system rather than substantial expansion of water service, the proposed project would not involve major secondary impacts, such as population changes or effects on public facilities. Although 14 of the subdivision’s lots are currently vacant, homes would likely have been constructed on those lots using existing catchment water sources regardless of the project, and the water requirements for those new homes are negligible and do not affect the service capabilities of the North Kona system of the Department of Water Supply. While the project would provide a few short-term construction jobs, these would probably be filled by local residents and would not induce in-migration.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. The adverse effects of the project – minor and temporary disturbance to air quality, noise or visual quality during construction – are very limited in severity, nature and geographic scale. There are no construction or other projects known to be occurring nearby that have impacts with which these very minor and temporary effects could accumulate, and no cumulative impacts are foreseen.

3.17 Required Permits and Approvals

The following permits and approvals are expected to be required:

- State of Hawai‘i, Department of Health, National Pollutant Discharge Elimination System Permit
- State of Hawai‘i, Department of Health, Community Noise Control Permit, Approval of Dust Control Plan (to be determined)
- State of Hawai‘i, Department of Transportation, Permit for Work in State ROW

3.18 Consistency With Government Plans and Policies

3.18.1 Hawai‘i State Plan

Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State's long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The project would promote these goals by enhancing water service on the Island of Hawai‘i, improving quality-of-life and community and social well-being.

3.18.2 Hawai‘i County General Plan

The *General Plan* for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai‘i County Planning Department). The *General Plan* itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai‘i. Most relevant to the proposed project are the following Goals, Policies, and Standards:

PUBLIC UTILITIES – GOALS

- Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.
- Maximize efficiency and economy in the provision of public utility services.
- Design public utility facilities to fit into their surroundings or concealed from public view.

PUBLIC UTILITIES – POLICIES

- Public utility facilities shall be designed to complement adjacent land uses and shall be operated to minimize pollution or disturbance.
- Provide utilities and service facilities that minimize total cost to the public and effectively service the needs of the community.
- Utility facilities shall be designed to minimize conflict with the natural environment and natural resources.
- Improvement of existing utility services shall be encouraged to meet the needs of users.
- Develop short and long range capital improvement programs and plans for public utilities within its jurisdiction that are consistent with the General Plan.

WATER – POLICIES

- Water system improvements shall correlate with the County's desired land use development pattern.
- All water systems shall be designed and built to Department of Water Supply standards.
- Improve and replace inadequate systems.
- Water system improvements should first be installed in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for urban expansion.

WATER – STANDARDS

- Public and private water systems shall meet the requirements of the Department of Water Supply and the Subdivision Control Code.

PUBLIC LANDS – GOALS

- Utilize publicly owned lands in the best public interest and to the maximum benefit.

PUBLIC LANDS – POLICIES

- Encourage uses of public lands that will satisfy specific public needs.

Discussion: The General Plan notes that properly regulated, adequate, efficient and dependable water supply is vital to the well-being of the public. It notes that land use, population density and development shifts usually generate changes in the supply and demand utilities. The proposed action is designed to alleviate a shortage of water lines for existing development. The proposed action will benefit the public.

3.18.3 Kona Community Development Plan

The Kona Community Development Plan (CDP) encompasses the judicial districts of North and South Kona and was developed under the framework of the February 2005 County of Hawai‘i General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area. The General Plan now requires that a Community Development Plan shall be adopted by the County Council as an "ordinance," giving the CDP the force of law. This is in contrast to plans created over past years, adopted by "resolution" that served only as guidelines or reference documents to decision-makers. In September 2008, the Kona CDP was adopted by the County Council. The version referenced is this Environmental Assessment is at: http://www.hcrc.info/community-planning/community-development-plans/kona/cdp-final-drafts/KCDP_Final_Draft_Vol1_May2008_rev1.pdf.

The Plan has many elements and wide-ranging implications, but there are several major strategies that embody the guiding principles related to land use, housing, public facilities, infrastructure and services, and transportation. These are most relevant to the proposed action, which will provide an upgraded water system for a North Kona subdivision. Chief among these is the concept of Transit-Oriented Development, or compact, mixed-use villages that integrate housing, employment, shopping, and recreation opportunities. The project site is located in the Kona Urban Area, one of several types of TODs.

The following objective, policy and actions from the Kona CDP related to water systems:

- Objective PUB-4: Growth Management. To prioritize and locate growth-supporting infrastructure (water, sewer, drainage) to support the TODs and infill development and to minimize the environmental impacts of such growth.
- Policy PUB–4.1: Water for TODs. To encourage and direct development to the TODs, a priority shall be to provide an appropriately sized water transmission line within the Keohokālole Highway Corridor, and to flexibly enable water allocation policies to support the Kona CDP land use policy to concentrate growth within the TODs, in lieu of sprawl.
- Action PUB–4.1a: Update, as necessary, DWS's master plan for Kona to support future growth in the TODs (DWS, 2-3).
- Action PUB–4.1b: Amend DWS's Rules, as necessary, to support the Kona CDP land use policies (DWS, 3-5).

Also, as noted in the Plan's Section 4.5 regarding housing: "The availability of safe and decent housing for all segments of our community is at the center of what it takes to sustain a healthy community."

<u>Discussion:</u> The proposed project is consistent with providing existing residential areas in Kona with appropriate infrastructure and ensuring safe and decent housing.

PART 4.0 SUMMARY OF MITIGATION

Table 3. Summary of Mitigation Measures

Subject (Reference)	**Mitigation**	**Enforcement Responsibility**
Land Use (3.1)	None warranted	
Floodplains and Drainage (3.2)	Conform to Chapter 27, County Code	County Dept. of Public Works (DPW)
Wetlands (3.3)	None warranted	
Historic Properties (3.4)	In case of inadvertent finds of archaeological resources, caves, or human remains, cease work and contact SHPD per HAR 13§13-275-12	State Historic Preservation Division (SHPD)
Cultural Resources (3.5)	Same as above	
Biological Resources (3.6)	None warranted	
Water Quality (3.7)	Conditions of NPDES permit, SWPPP	State Department of Health (DOH)
CZM Concerns (3.8)	None warranted	
Socio-Economic/ Environmental Justice (3.9)	None warranted	
Climate and Air Quality (3.10)	After final design, consultation with State DOH pursuant to Title 11, Chapter 60, HAR; permit with mitigation if required	State Department of Health (DOH)
Transportation (3.11)	Professional traffic control; as part of final design, consult with Dept. of Transportation for permit	State Dept. of Transportation
Noise (3.12)	After final design, consultation with State DOH pursuant to Title 11, Chapter 46, HAR; permit with mitigation if required	State DOH
Geologic Hazards (3.13)	None warranted	
Hazardous (3.14)	None warranted	
Scenic Resources (3.15)	None warranted	
Utility Infrastructure (3.16)	The Department of Water Supply will provide information to its new customers in this system on water efficient fixtures and practices.	County DWS
Secondary and Cumulative (3.17)	None warranted	

PART 5.0 CHAPTER 343, HRS, DETERMINATION, FINDINGS AND REASONS

Determination

Based on the findings below, and upon consideration of comments to the Draft EA, the Hawai‘i County Department of Water Supply has determined that the Proposed Action will not significantly alter the environment, as impacts will be minimal, and has therefore issued a Finding of No Significant Impact (FONSI).

Findings and Reasons

Chapter 11-200-12, Hawai‘i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost. The project site is a subdivision already served by water. The surrounding area supports residential development and will not be negatively affected by the installation of an upgraded water system.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The proposed project expands and in no way curtails beneficial uses of the environment.
3. *The proposed project will not conflict with the State's long-term environmental policies*. The State’s long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and fulfills aspects of these policies calling for an improved social and economic environment. It is thus consistent with the State’s long-term environmental policies.
4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project will benefit the economic and social welfare of the community by enhancing the County’s water supply and therefore improving its public utilities system.
5. *The proposed project does not substantially affect public health in any detrimental way.* The proposed project will benefit public health by improving the supply of water.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities*. No adverse secondary effects are expected to result from the proposed action. This project, in and of itself, will not enable any substantial level of development, but will instead primarily ensure improved and safer water supply.
7. *The proposed project will not involve a substantial degradation of environmental quality*. The implementation of best management practices for construction will ensure that the project will not degrade the environment in any substantial way.
8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* No endangered species of flora or fauna are present on the project site or would be affected in any way by the project.

9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The project is not related to additional activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No adverse effects on these resources would occur. Mitigation of construction-phase impacts will preserve water quality. Ambient noise impacts due to construction will be temporary and restricted to reasonable daytime hours.
11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* Although the project is located in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk. The project is not imprudent to construct and would employ design and construction standards appropriate to the seismic zone.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No scenic vistas or viewplanes identified in the Hawai‘i County General Plan will be adversely affected by the project.
13. *The project will not require substantial energy consumption*. The project involves only minor energy use and no adverse effects are expected.

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ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Pu‘ukala, North Kona District, Hawai‘i Island, State of Hawai‘i

APPENDIX 1
Preliminary Engineering Report

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PRELIMINARY ENGINEERING REPORT

FOR

KONA OCEAN VIEW PROPERTIES WATER SYSTEM IMPROVEMENTS

Puukala, North Kona
Island of Hawaii
State of Hawaii

November 2009
Revised July 14, 2010

Prepared For:
Department of Water Supply
County of Hawaii
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Prepared By:
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Kailua Kona, Hawaii 96740

1. GENERAL

This preliminary engineering report is in support of a proposal to construct permanent water system improvements within the Kona Ocean View Properties subdivision funded through the United States Department of Agriculture (USDA), Rural Development (RD), Rural Utilities Water and Waste Disposal Loan and Grant Program. Under the RD program a portion of the funding would be from a loan which would be repaid by the applicant and a portion would be through a grant which does not have to be repaid. As part of the process, the Hawai‘i County Council would initiate an Improvement District (ID) which would ensure the repayment of the loan. The “Project” is to consist of a new water system conforming to current Department of Water Supply (DWS) standards. The Project is intended to provide adequate fire protection and reliable and safe water service to the residents of the subdivision.

The Kona Ocean View Properties subdivision is an agricultural subdivision located at Pu‘ukala, North Kona, Hawai‘i. The subdivision was created in 1959 and currently consists of 81 residential lots ranging in size from 7,526 to 22,403 square feet. The 30 and 40 foot wide subdivision roads are privately owned by the homeowners association. Elevations within the subdivision range from approximately 1,520 feet on the makai (west) portion of the subdivision to approximately 1,860 feet on the mauka (east) portion of the subdivision where the access road intersects the Mamalahoa Highway. The average slope is approximately 14%. The County of Hawaii Department of Water Supply is currently providing water service to some of the homes within the subdivision via twenty (20) 5/8” water meters located along the Mamalahoa Highway. Small diameter PVC pipes run overland cross country through lots to service homes within the subdivision. The distance from the meters along the Mamalahoa Highway to the most makai (westerly) lots is approximately 2,000 feet. Homes not served by the water meters either use water catchment systems or are provided water from the extension of services from neighboring properties that have water meters. There are no fire hydrants located within the subdivision. The nearest fire hydrant is located along the Mamalahoa Highway near the Pu‘ukala Loop Road intersection.

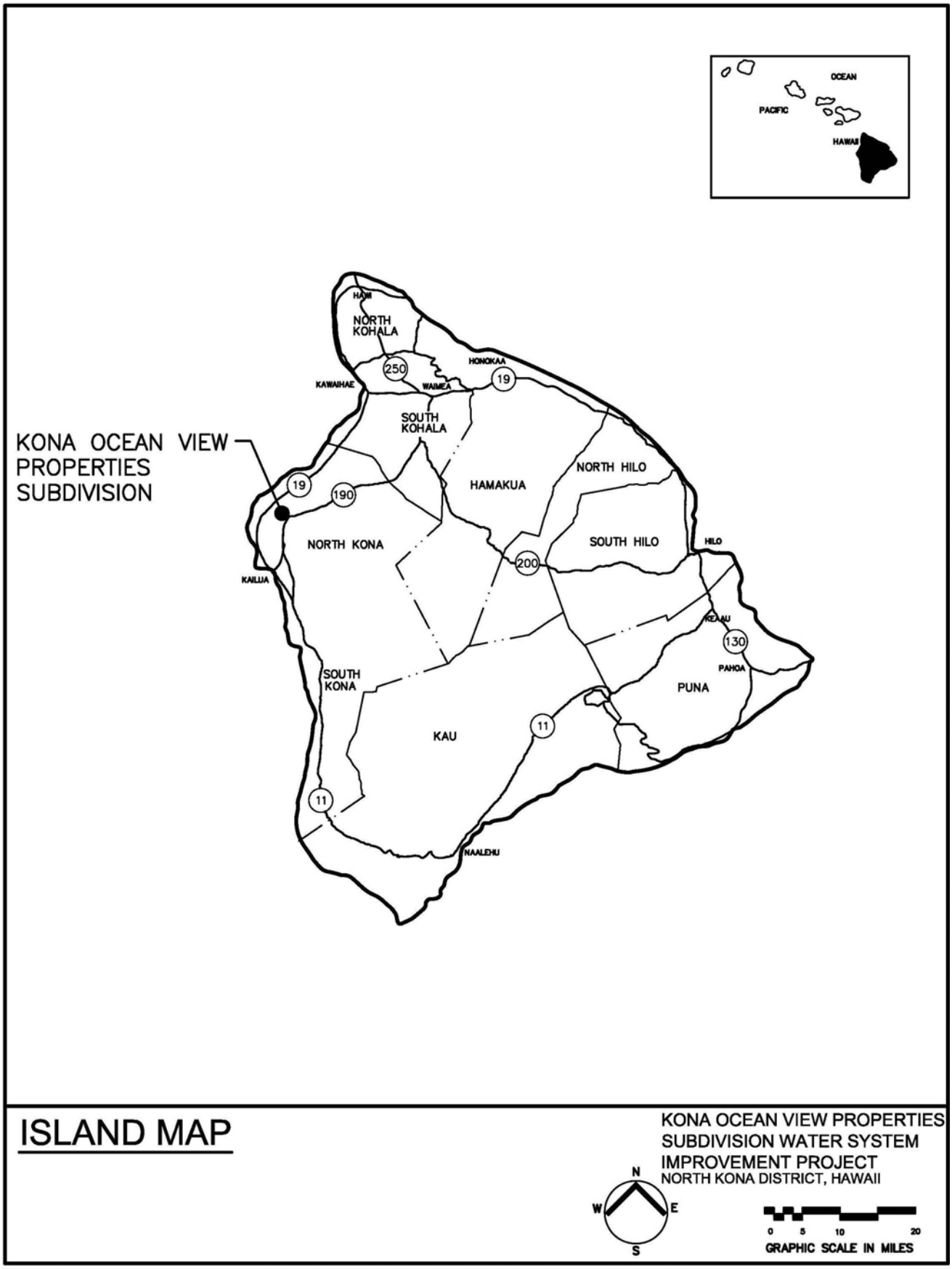
The source for the existing and proposed water system is the Department of Water Supply’s Kalaoa well located approximately 1.23 miles south-east of the subdivision. Water is pumped from the well to the Pu‘ukala 0.3 million gallon water tank located mauka of the Kona Ocean View subdivision. There is an existing 12 inch main from the tank that feeds an 8 inch main stubbed out to the Pu‘ukala Loop Road within the Mamalahoa Highway right-of-way. The overflow elevation at the tank is 2,070 feet. A pressure reducing valve station located at approximately elevation 1,728 will be required as part of the Kona Ocean View Properties subdivision water system improvements. Individual pressure reducing valves will need to be installed by home owners prior to connecting to the water system at high pressure areas.

The proposed water system improvements consist of approximately 4,711 linear feet of new 6 inch or 8 inch water main, individual 5/8 inch meters for each lot, fire hydrants located in accordance with current Department of Water Supply standards, and a pressure reducing valve station. The project will include connecting existing house laterals to the new meters and removal of the banks of meters located within the Mamalahoa Highway right-of-way. The scope of the project will include re-paving of the portion of the road impacted by trenching and providing traffic control during construction.

2. PROJECT PLANNING AREA

a. Location

The Kona Ocean View Properties subdivision water system improvement project is located within the Puʻukala ahupuaʻa in the North Kona District on the Island of Hawaiʻi, State of Hawaiʻi. It is located on the makai (west) side of the Mamalahoa Highway and is on the west slopes of Hualālai volcano. The State Land Use Designation is Agricultural, and the County General Plan Land Use Pattern Allocation Guide Map (LUPAG Map) designation is Low Density Urban and the Zoning is A-5a. The project is outside of the Special Management Area. The project location is shown on the following Island and Location Maps.


OCEAN
PACIFIC
HAWAII
HAWI
NORTH KOHALA
250
HONOKAA
19
KAWAIHAE
WAIMEA
SOUTH KOHALA
KONA OCEAN VIEW PROPERTIES SUBDIVISION
19
190
HAMAKUA
NORTH HILO
NORTH KONA
SOUTH HILO
HILO
200
KAILUA
PAUAU
130
PAHOA
SOUTH KONA
PUNA
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NAALEHU
ISLAND MAP
KONA OCEAN VIEW PROPERTIES
SUBDIVISION WATER SYSTEM
IMPROVEMENT PROJECT
NORTH KONA DISTRICT, HAWAII
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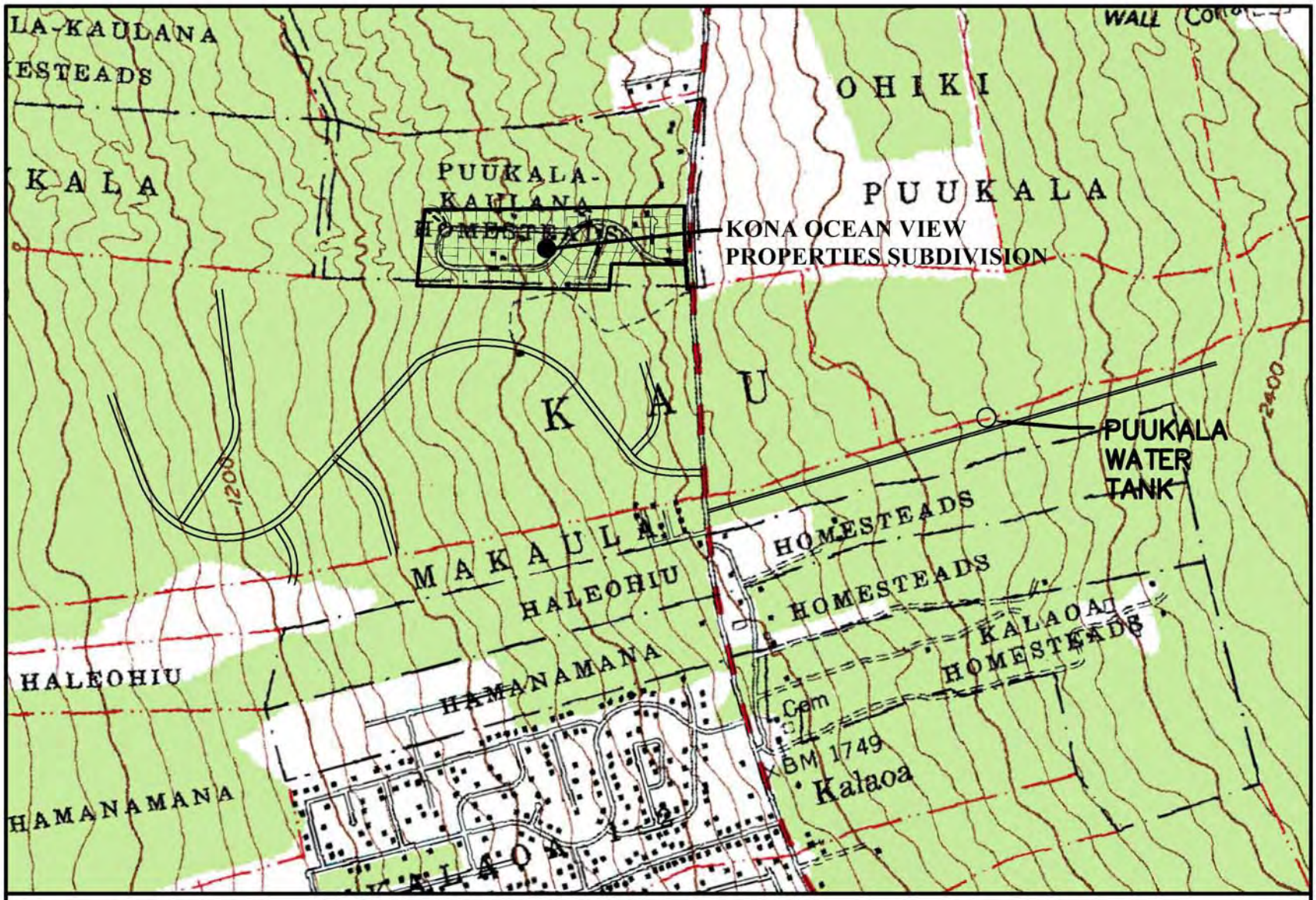
GRAPHIC SCALE IN MILES



LOCATION MAP

KONA OCEAN VIEW PROPERTIES SUBDIVISION

0 500 1000 2000

SCALE: 1 INCH = 1000 FEET

b. Environmental Resources Present

A State of Hawai‘i Environmental Assessment and Federal Environmental Review is being prepared pursuant to: The Hawai‘i Environmental Protection Act, Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200, Hawai‘i Department of Health Administrative Rules (HAR) and the National Environmental Policy Act (42 U.S.C. 4332 (2)(c)), CEQ implementing regulations 40 CFR 1500-1508, and USDA regulations at 7 CFR 1780.33 (c) and will be submitted separately.

The average annual rainfall in the project area is approximately 30 inches. A flood insurance rate map (FIRM) panel was not printed for this area. The entire subdivision is located in FEMA Zone X, areas determined to be outside the 500-year flood plain. There are no wetlands within the project area.

According to the Soil Conservation Service’s 1973 Soil Survey of Island of Hawai‘i, State of Hawai‘i, soils within the subdivision consist of both Punaluu and Kaimu series soil types. The Punaluu series consists of an extremely rocky peat approximately 4 inches thick underlain by pahoehoe lava bedrock. The Kaimu soils consist of very dark brown extremely stony peat about 3 inches thick underlain by fragmental a‘a lava.

There are nine (9) Lava Flow Hazard zones on the Island of Hawai‘i with Zone 1 being the most hazardous and Zone 9 posing the least danger. The Project is located in Lava Flow Hazard Zone 4. The area is designated Zone 4 because due to the steep slopes flows could rapidly cover the distance between potential vent sites and the coast.

Archaeology

On March 2, 2009 Robert B. Rechtman, Ph.D. and Lizabeth A. Hauani‘o, B.A., conducted an intensive pedestrian survey of the entire project area. There were no archaeological resources observed within the study area. Given the nature of the substrate and the past disturbance that has occurred in constructing the subdivision roadways and lots, it is highly unlikely that any archaeological resources are present in the subsurface stratum.

On April 7, 2009 the State of Hawaii Department of Land and Natural Resources, State Historic Preservation Division (SHPD) concurred with the conclusion that no historic properties will be affected by the proposed project. The SHPD has requested that measures for the inadvertent discovery of historic properties during trenching be included in the Environmental Assessment (EA). The EA and construction specifications will include requirements to cease all work in the immediate vicinity of a find, protect the find from additional disturbance, and immediately contact SHPD, Hawaii Section at (808) 933-7653.

Flora and Fauna

The project site consists of the road right-of-way that was graded in 1959 when the subdivision was constructed. Dr. Patrick Hart of the Biology Department of the University of Hawaii at Hilo and Dr. Ron Terry conducted a botanical survey of the road corridor in 2008 and found only low-stature vegetation within the right-of-way, primarily grasses and common alien herbs. Common introduced plants include guava, Christmas berry, lantana, Guinea grass, octopus plant, kukui, and jacaranda. The only native species observed were ‘uhaloa and popolo, two very common indigenous herbaceous plants that are frequently found on roadsides. No threatened or endangered plant species were found.

The avian fauna of the area is almost wholly alien, and no threatened or endangered birds are present. The U.S. Fish and Wildlife Service was consulted by letter and replied by letter on May 1, 2009, that no federally listed species or critical habitat occur within the project footprint.

c. Growth Area and Population Trends

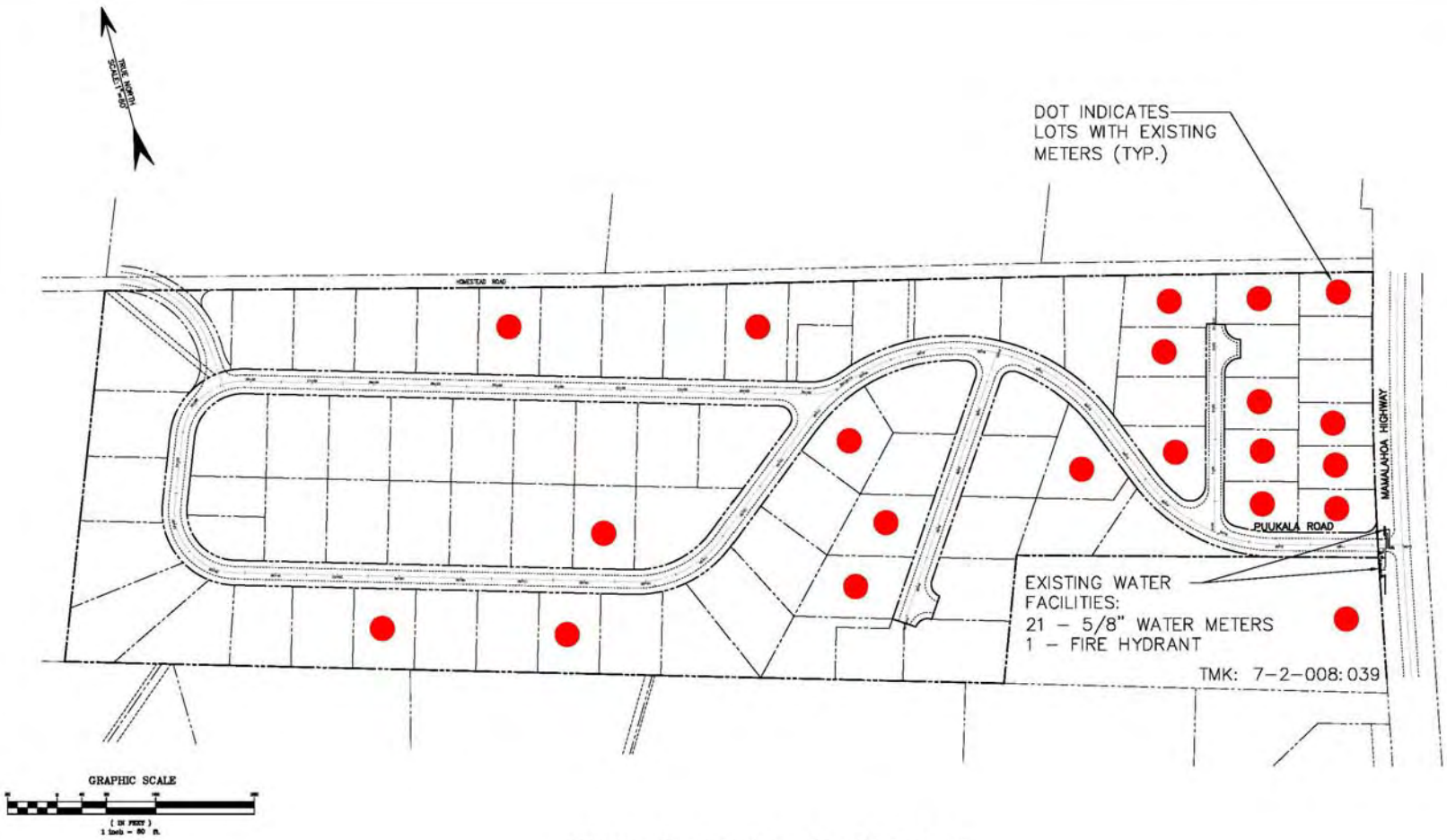
According to the U.S. Census Bureau, Census 2000, the resident population of Kalaoa in the North Kona district was 6,794 within a land area of 39.48 square miles. There is no information available as to the number of residents within the Kona Ocean View Properties subdivision. The resident population of the North Kona District in 2000 was 28,543. The Hawaii County General Plan 2005 projects the resident population of North Kona to increase to 42,275 by the year 2020.

The population in the Kona Ocean View Properties subdivision is estimated at approximately 134 persons based 2 persons per home. According to the County of Hawaii Real Property Tax site there are 67 residences within the subdivision. The Department of Water Supply currently provides water to 20 lots. The Project will provide a 5/8" meter to each lot of record or a total of 81 meters.

3. EXISTING FACILITIES

a. Location Map

The following "Kona Ocean View Properties, Plan Showing Existing Water Meters and Lots Currently Served" map shows the location of the water meters along Mamalahoa Highway. There are 20 lots within the subdivision and one lot outside the Kona Ocean View Properties subdivision that are currently being served from meters located along the Mamalahoa Highway near the intersection of the Pu‘ukala Loop Road and the Mamalahoa Highway. The project will involve cutting and plugging the existing water laterals. New water lines will be provided within the subdivision roads and along the Mamalahoa Highway and water meters will be relocated to areas fronting the lots. In addition, an individual water lateral will be installed for TMK 7-2-008:039 which is not a part of the Kona Ocean View Properties subdivision but which is currently being served from a common water lateral which also serves lots from the Kona Ocean View Properties subdivision.



KONA OCEAN VIEW PROPOERTIES
PLAN SHOWING EXISTING WATER METERS AND LOTS CURRENTLY SERVED

b. History
There was no water service available to the Kona Ocean View Properties subdivision when it was developed in the early 1960's. Water for the residences was provided by individual rain water catchment systems. When the water main within the Mamalahoa Highway was extended to the subdivision 5/8" meters were installed within the Mamalahoa Highway right-of-way to serve some of the homes. PVC lateral lines run cross country from the highway to the residences some of which are up to 2,000 feet from the meters.

c. Condition of Facilities
The existing PVC laterals from the meters at the highway run overland to homes through neighboring properties. These laterals are subject to leaks and potential contamination should infiltration occur at breaks in the lines. It is often difficult to locate the source of leaks due to the extraordinarily long overland lateral lines. There are no fire hydrants within the subdivision. The Department of Water Supply standards require fire hydrants every 600 feet. In addition, current County of Hawaii laws would not allow the use of catchment for this subdivision.

D. Financial Status
The Department of Water Supply's Financial Statements are attached as an Exhibit A. There is no site specific operation and income data available.

4. NEED FOR THE PROJECT
a. Health and Safety
The health and safety of the residents of the Kona Ocean View Properties subdivision is jeopardized by the current sub-standard water system. Potential contamination problems exist due to existing catchment systems and the long overland water laterals from the meters. Leakage is also a problem and leaks are hard to locate due to the excessive length of the water lines. County standards call for fire hydrants every 600 feet according to the existing lot sizes. There are currently no fire hydrants within the subdivision.

According to the State of Hawaii Department of Health "Water catchment systems are not recognized as potable water, and there is no government agency oversight of these systems in Hawaii. Because they are private systems, their maintenance and proper usage is the responsibility of the system's owners or users. For health and safety reasons, homeowners should not use rainwater catchment water for direct consumption or food preparation. Additional precautions should be taken by rainwater catchment users during periods of increased volcanic activity." The only water source available to homes that are not connected to the existing meters is catchment. Catchments systems pose health risks from various sources such as fecal contamination and the leaching of lead and copper from plumbing fixtures due to acidic catchment water.

It should be noted that the County of Hawaii Subdivision Code has required public water systems for subdivisions since 1967. The Kona Ocean View Properties subdivision is thus not compliant with current county standards.

b. System Operation and Maintenance
The proposed water system will become part of the North Kona water system which consists of wells and pumping stations. Additional water lines, fire hydrants, meters and a pressure

reducing station will be installed within the subdivision. Exhibit B includes the Operating Budget and Projected Cash Flow for the project.

c. Growth

The proposed water system improvements are intended to provide water service and fire protection to the 67 homes that currently exist. Twenty (20) of the homes currently have water service via the water meters located along the highway. It is anticipated that these twenty (20) meters will be relocated and forty-seven (47) additional water meters will be installed with the project. Water laterals for fourteen (14) vacant lots will be installed and meters will be installed in the future when homes are constructed on these lots. The proposed water system improvements will be designed to provide water meters and fire protection to all lots within the existing subdivision. To date the majority of property owners contacted have shown support for the project.

5. ALTERNATIVES CONSIDERED

Alternatives considered included 1) no action, 2) construction of a water system funded by lot owners, 3) constructing a water system to be dedicated to the County of Hawaii within the existing private subdivision roadways and along the Mamalahoa Highway with an easement over the roads to be dedicated to the Department of Water Supply. The proposed funding source is the USDA RD Rural Utilities Water and Waste Disposal Loan and Grant Program with loan repayment insured through a County Council initiated Improvement District.

The alternative of taking no action would not fulfill the purpose and need of the project which is to provide the community with a safe source of drinking water as well as fire protection.

The alternative of constructing a water system funded by lot owners is not feasible as residents are not able to finance the improvements on their own. It should be noted that the homeowners sought to construct the water system improvements on their own in 1996 but failed as funding could not be obtained.

The only practicable alternative is to extend the existing County Department of Water Supply's system to serve the lot owners with individual meters with funding from the USDA Loan/Grant program. The following describes this alternative.

a. Description

The preferred alternative is to install a water system meeting DWS standards within the Kona Ocean View Properties subdivision and along the Mamalahoa Highway. This would include providing water mains within the existing roads, service laterals to each lot, fire hydrants in accordance with current Department of Water Supply standards and a pressure reducing valve station.

b. Design Criteria

The water system will be designed in accordance with the County of Hawaii Department of Water Supply standards found in the *Water System Standards*, State of Hawaii 2002, as amended. Road repair and traffic control will be in accordance with County of Hawaii Department of Public Works standards including *Standard Specifications for Public Works Construction*, September 1986 as amended.

The water source for the project will be the Kalaoa well. The average daily water usage per the *Water System Standards* is 400 gallons per day per home and the maximum daily usage is 600 gallons per day per home. Peak hour flow is five time the average daily flow. Flows for the 81 lot subdivision are estimated as follows:

Average Daily Flow: 400 gpd x 81 = 32,400 gpd
Maximum Daily Demand: 600 x 81 = 48,600 gpd or 33.8 gpm
Peak Hour Demand: 5 x 32,400gpd = 162,000 gpd or 112.5 gpm
Fire Flow = 1,000 gpm

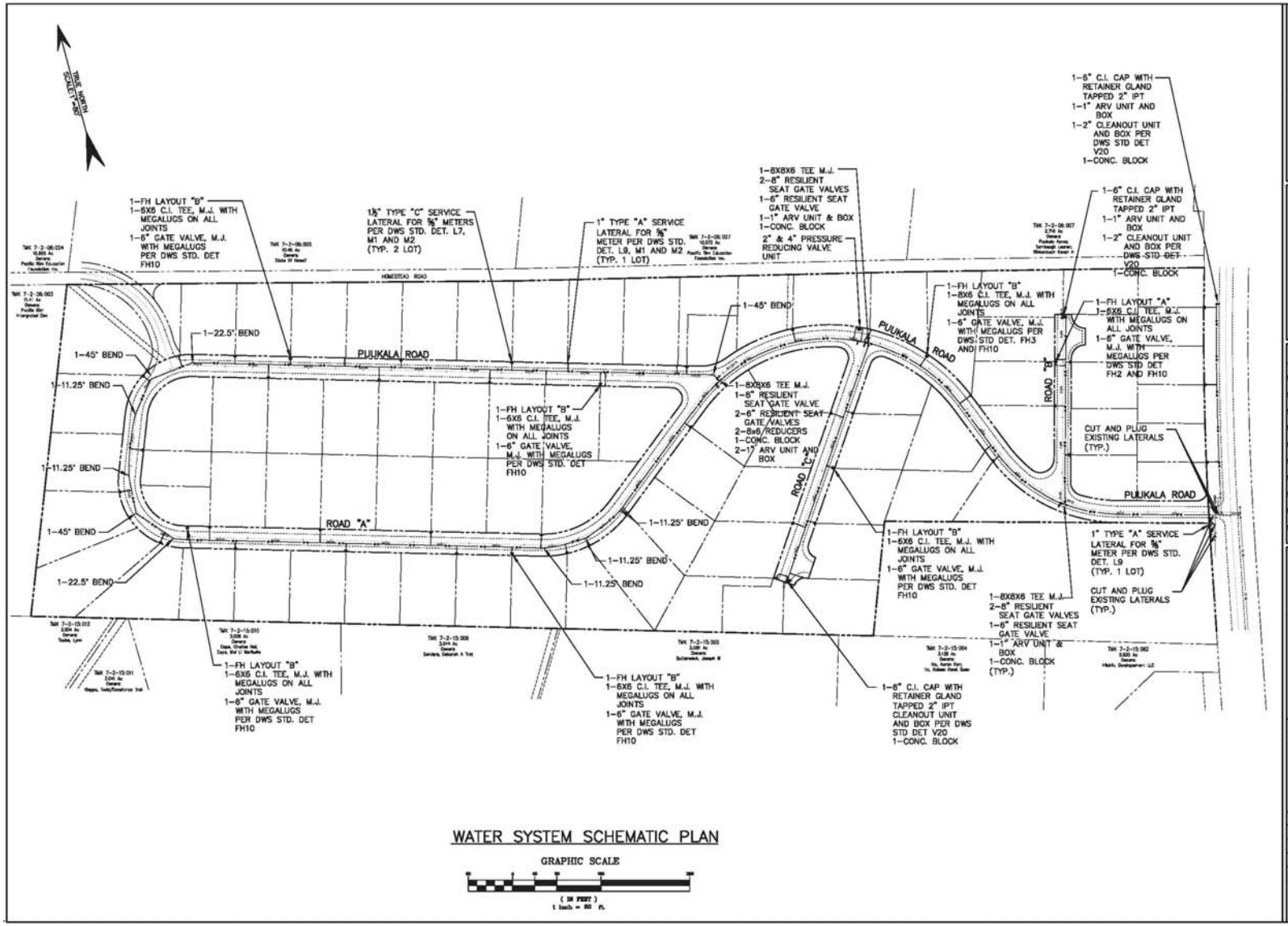
Pipelines are to be sized for maximum daily flow plus fire flow with a residual pressure of 20 psi at the critical fire hydrant and peak hour flow with a residual pressure of 40 psi. For six inch diameter pipe a "C" value of 100 is to be used. For eight and 12 inch diameter pipe a "C" value of 110 is to be used.

Design Flow = Maximum Daily Flow Plus Fire Flow = 1033.8 gpm (use 1034 gpm) at 20 psi residual pressure
Peak Hour Flow = 112.5 gpm at 40 psi residual pressure
Maximum velocity in distribution mains (without fire flow) is 6 feet per second.
Maximum velocity in distribution mains with fire flow is 10 feet per second.

Elevation at Pu'ukala Tank: 2,070 Feet
Elevation at Subdivision Entrance: 1,875 Feet
Static Head at Subdivision Entrance: 195 Feet (84.23 psi)
Elevation at Bottom of Subdivision: 1,520 Feet
Static Head at Bottom of Subdivision: 237.58 > 125 therefore a pressure reducing valve is required.

c. Map

The following "Water System Schematic Plan" shows the proposed water system design. The proposed project includes the installation of approximately 1,022 linear feet of eight inch ductile iron water main, 3,620 linear feet of six inch diameter ductile iron water main, seven (7) fire hydrants, a pressure reducing valve (PRV) station, 47 service laterals, 81 water meter boxes and associated appurtenances.



NANCY E. BURNS, P.E., LLC

73-1487 Hao Street
Kailua-Kona, HI 96740
Tel. (808) 325-3182

NANCY E. BURNS
LICENSED PROFESSIONAL ENGINEER
No. 6612-C
HAWAII, U.S.A.

Signature

4/30/19

Expiration Date of the License

	Revision	Date	Approved
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Project

KONA OCEAN VIEW PROPERTIES SUBDIVISION WATER SYTEM IMPROVEMENTS

Title

WATER SYSTEM SCHEMATIC PLAN

Project No. .

Date MAY, 2009

Drawn By ACE CADD Services

Designed By NEB

Checked By NEB

CAD File OWNERS MAP.DWG

1

Sheet 1 of 1 Sheets

d. Environmental Impacts
The water system will be constructed within existing roadways. No environmental impacts to wetlands, floodplains, endangered species, historical or archaeological resources or other important land resources are anticipated.

e. Land Requirements
The proposed water system is to be constructed within existing roadway corridors. The roads within the subdivision are private. The property owners within the subdivision will be required to grant an easement to the Department of Water Supply for construction and maintenance of the water system. A portion of the water line will be constructed within the State right-of-way. An easement from the State will be required. Costs for the easement within the State right-of-way will be determined once plans have been prepared and an appraisal is completed.

f. Construction Problems
The existing subdivision roadway right-of-ways are narrow, 30 to 40 feet in width and in many cases there are steep cuts or fills within the right-of-way which will require careful location of meters to avoid the need for rock walls. The existing pavement is narrow and closure of one lane of traffic will most likely be required. Access to existing driveways will need to be maintained so that residents can get in and out of their properties. It is very likely that the underlying subgrade consists of lava rock which may make trenching difficult. There are at least two culverts that will need to be protected during the construction of the water line.

g. Cost Estimates
Preliminary cost estimates for the project are as follows:

Construction Cost:	$1,318,600 (includes 15% contingency)
Other Costs:	250,750
	$1,569,350

Exhibit B includes the estimated annual operations and maintenance costs.

h. Advantages/Disadvantages
There is no advantage in taking no action for this project as the purpose for the project would not be met. Disadvantages include the continuation of leaking pipes, the potential for cross contamination and fire hazards.

The possible alternative of lot owners funding the construction of the water system has already been attempted but funding could not be obtained.

The alternative of constructing a water system with financial assistance from the USDA RUS Loan/Grant Program will achieve the goal of providing safe, affordable sanitary water to the residents of the Kona Ocean View Properties subdivision. The proposed water system will meet the County of Hawaii Department of Water Supply Standards including providing fire hydrants for fire protection. Revenues from the sale of water will be used to maintain the system.

Existing land uses within and adjacent to the Kona Ocean View Properties subdivision will not be adversely affected. The proposed project is consistent with the land use designations. The subdivision is a legal, nonconforming use, and water lines are allowed in all districts. The

subdivision to be served and the proposed improvements are both consistent with the LUPAG designation of Low Density Urban.

Although the project site is partly within land classified as Other Important Agricultural Land, there will be no adverse direct effects, as the water system will be contained entirely within a transportation right-of-way. The subdivision properties that are served are too small for farming, but gardening uses will be encouraged by the availability of water.

Several Kona residents and Native Hawaiians knowledgeable about the plan to upgrade the water system for Kona Ocean View Properties were interviewed at the request of the Office of Hawaiian Affairs to determine whether they had any concerns about the project's impact on cultural matters.

Karin Haleamau, who was born and raised in Kona, works at the Natural Energy Lab of Hawai‘i at Keahole Point, and whose family previously owned a lot in the project's subdivision, said he was not aware of the existence of any cultural sites nor gathering activities that might be affected by the project. Haleamau said he believed the project to be worthwhile. "I think it's good for the people," he said.

The proposed action would not involve any relocation of businesses or homes or any other social impacts. Except for temporary construction impacts of the installation of new underground water lines, there would be no disruption of local traffic patterns or effects to neighborhood character or integrity.

The proposed action would benefit public welfare for the subdivision's residents and in this area of North Kona by upgrading the water supply service in Kona Ocean View Properties to provide a steady and safe supply of water for residential use. In addition, the installation of fire hydrants where there now are none will enhance fire-fighting capabilities that will benefit the subdivision's residents as well as residents and property owners of surrounding areas and State and County agencies that provide fire-fighting services and protect public land and facilities.

The project is consistent with the Hawai‘i State Plan which was adopted in 1978 and revised in 1991. This plan establishes goals, objectives and policies that are meant to guide the State's long term growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The project would promote these goals by enhancing water service on the Island of Hawai‘i, improving quality-of-life and community and social well-being.

The *General Plan* for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai‘i County Planning Department). The *General Plan* is organized into thirteen elements, with policies, objectives, standards, and principles for each. The project fits the *General Plan* water policies of insuring all water systems are designed and built to Department of Water Supply standards and that the replacement and inadequate systems are improved and replaced. In addition, the *General Plan's* water policy is that water system improvements should first be installed in areas that have established needs and characteristics, such as occupied dwellings.

The project has virtually no adverse impacts and would provide substantial benefits for the residents, as they would achieve County-standard water service, improving water quality and reliability, hygiene, and fire protection. The project would not produce disproportionately high and adverse human health or environmental effects on any population, including low-income and minority populations.

The No Action Alternative would continue the condition in which over 80 residential lots are not served by County-standard water system, which leaves them at a disadvantage with respect to water supply, water quality, fire protection, and public health.

6. SELECTION OF AN ALTERNATIVE

The only practicable alternative for supplying the Kona Ocean View Properties Subdivision with a safe and reliable source of water is the construction of water lines, laterals, fire hydrants and appurtenances within the existing subdivision roads and along the Mamalahoa Highway with funding assistance provided by the USDA RUS Loan/Grant Program. Payment of the loan would be assured by a County Council approved Improvement District in accordance with Chapter 12, Improvements by Assessments of the Hawaii County Code.

7. PROPOPSED PROJECT

a. Project Design

The proposed project consists of water lines, laterals, a pressure reducing valve station, fire hydrants and associated appurtenances. The system will be designed to the County of Hawaii Department of Water Supply Standards and will be dedicated to the County upon completion. The water system will be constructed within existing roadways. Pavement restoration will be required in the location of the water line trenches.

The work will generally include but not be limited to:

1,022 linear feet of 8-inch ductile iron waterline
3,620 linear feet of 6-inch ductile iron waterline
Seven fire hydrants
Eleven Type “A” service laterals
Thirty-five Type “C” service laterals
One pressure reducing valve station
Demolition of existing service laterals and meter boxes
Pavement restoration
Miscellaneous valves and fittings

The new water system will be connected to an existing 8-inch waterline located within the intersection of the Puʻukala Loop Road and the Mamalahoa Highway. The water system will be installed within existing roadways. Water system utility easements will be granted to the Department of Water Supply.

b. Total Project Costs

The construction of the project is expected to take 12-18 months. Itemized cost estimate based on the preliminary design is as follows:

PROJECT: CONSTRUCTION OF THE KONA OCEAN VIEW PROPERTIES SUBDIVISION WATER SYSTEM IMPROVEMENTS					
LOCATION: NORTH KONA, HAWAII					
DEPARTMENT OF WATER SUPPLY					
JOB NO.					
PRELIMINARY COST ESTIMATE					
ITEM NO.	ESTIMATED QUANTITY	UNIT	DESCRIPTION	UNIT COST	ITEM COST
WATER SYSTEM					
1	L.S.	LS	Lump Sum for mobilization; demobilization; field investigations; traffic control; measurements and testing; delivery hauling and removal of heavy equipment; anc	$50,000.00	$50,000.00
2	1,022	LF	8" Ductile Iron Pipe	$143.00	$146,146.00
3	3,620	LF	6" Ductile Iron Pipe	$133.00	$481,460.00
4	5	EA	6"x6"x6" DI Tee, MJ	$1,100.00	$5,500.00
5	4	EA	8"x8"x6" DI Tee, MJ	$1,300.00	$5,200.00
6	2	EA	8"x6" DI Reducer, MJ	$860.00	$1,720.00
7	3	EA	6" 45 Deg DI Bend, MJ	$860.00	$2,580.00
8	3	EA	6" 22.5 Deg DI Bend, MJ	$860.00	$2,580.00
9	5	EA	6" 11.25 Deg DI Bend, MJ	$860.00	$4,300.00
10	3	EA	6" DI Cap, MJ, Tapped 2" IPT	$690.00	$2,070.00
11	5	EA	8" Gate Valve, MJ, w/Box & Cover	$1,880.00	$9,400.00
12	4	EA	6" Gate Valve, MJ, w/Box & Cover	$1,610.00	$6,440.00
13	6	EA	1" Air Relief Valve Unit w/Box & Cover	$2,500.00	$15,000.00
14	3	EA	2" Clean Out Unit w/Box & Cover	$2,500.00	$7,500.00
15	1	EA	Fire Hydrant Unit Layout "A'	$5,360.00	$5,360.00
16	6	EA	Fire Hydrant Unit Layout "B'	$6,500.00	$39,000.00
17	7	EA	Fire Hydrant Concrete Slab, 4'x4' with Flexible Markers	$535.00	$3,745.00
18	1	EA	4" & 2" Pressure Reducing Valve Unit w/Box and Cover	$35,000.00	$35,000.00
19	11	EA	1" Type A Service Lateral	$2,400.00	$26,400.00
20	35	EA	1 1/2" Type C Service Lateral	$3,100.00	$108,500.00
21	6	EA	Cut and Plug Existing Service Lateral at main	$900.00	$5,400.00
22	1	LS	Connect to existing 8" waterline at Mamalahoa Highway and Puukala Road Station 0+06+/– including but not limited to 1-8" Solid Body Sleeve, MJ, JR, nipples and DWS charges	$9,390.00	$9,390.00
23	4,785	LF	Warning Tape	$0.75	$3,588.75
24	1	LS	Chlorination and Testing of Water System	$15,000.00	$15,000.00
25	1	LS	Provide a construction log listing dates and changes to plans. Submit "As Built" plan drawings on reproducible mylar showing all changes, revisions, corrections and the entire project as actually constructed. Deliver to the Department of Water Supply	$8,000.00	$8,000.00
26	1	LS	Obtain National Pollution Discharge Elimination System (NPDES) permit for General Permit Coverage Authorizing Discharges of Storm Water Associated With Construction Activities from State of Hawaii, Department of Health, Clean Water Branch.	$6,000.00	$6,000.00
SUBTOTAL FOR WATER SYSTEM					**$1,005,279.75**
WATER LINE TRENCH PATCHING					
27	73	SY	12-Inch Minimum Compacted Thickness Subbase Course (State ROW), including; laying, spreading, rolling, compacting and all work preparatory to Laying the base course.	$47.00	$3,431.00
28	1,118	SY	6-Inch Minimum Compacted Thickness Subbase Course Site), including; laying, spreading, rolling, compacting and all work preparatory to Laying the base course	$26.00	$29,068.00
29	73	SY	8-Inch Minimum Compacted Thickness Aggregate Base Course (State ROW), including laying, spreading, rolling, compacting and all work preparatory to laying the asphalt concrete. (In Site)	$39.00	$2,847.00
30	1,118	SY	4-Inch Minimum Compacted Thickness Aggregate Base Course (Site), including laying, spreading, rolling, compacting and all work preparatory to laying the asphalt concrete. (In Site)	$25.00	$27,950.00
31	73	SY	2-1/2-Inch Minimum Compacted Thickness AC Mix III, including; spreading, laying, rolling, compacting and all incidental work. (In Site and State ROW	$60.00	$4,380.00
32	1,118	SY	2-Inch Minimum Compacted Thickness AC Mix 3, including; spreading, laying, rolling, compacting and all incidental work. (In Site and State ROW	$65.00	$72,670.00
33	20	SY	Patching five Concrete Driveways within State ROW	$50.00	$1,000.00
SUBTOTAL - WATER LINE TRENCH PATCHING					**$141,346.00**
SUMMARY					
WATER SYSTEM					$1,005,279.75
WATER LINE TRENCH PATCHING					$141,346.00
CONTINGENCY (15%)					$171,993.86
TOTAL CONSTRUCTION COST ESTIMATE					**$1,318,619.61**
OTHER COSTS					
Design and Survey					$125,350.00
State Highway Easement					$20,000.00
Environmental Assessment					$26,400.00
Legal Fees					$39,500.00
Miscellaneous Costs					$39,500.00
TOTAL OTHER COST ESTIMATE					**$250,750.00**
TOTAL PROJECT ESTIMATE					**$1,569,369.61**

c. Annual Operating Budget

Financial statements for the County of Hawaii Department of Water Supply can be found in Exhibit A. Operations and maintenance cost estimates can be found in Exhibit B. Water rate schedules are found in Exhibit C. Financial assistance for this project is expected to be provided by the (USDA) United States Department of Agriculture Rural Utility Services (RUS) agency. Loan repayment will be through a Hawaii County Council initiated Improvement District process.

8. CONCLUSIONS AND RECOMMENDATIONS

The Kona Ocean View Properties is currently served by a substandard water system which creates health and safety concerns for the residents. This project will provide safe and reliable water for consumption and fire protection. Any negative impacts will be temporary and short term during the construction of the system.

The residents of the Kona Ocean View Properties have been trying to find a way to construct the much needed water system improvements since 1996. Preliminary engineering plans were done but the project was never constructed due to lack of funding. Funding provided by the USDA loan and grant program will facilitate the construction of this much needed water system improvement.

It is recommended that the County and the Department of Water Supply move forward with the Improvement District requirements and apply to the USDA for the grant and loan.

EXHIBIT A

Department of Water Supply
County of Hawaii

Financial Statements

KPMG

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I

(A Component Unit of the County of Hawai'i, State of Hawai'i)

Financial Statements

June 30, 2008 and 2007

(With Independent Auditors' Report Thereon)

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I
(A Component Unit of the County of Hawai'i, State of Hawai'i)

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Statements of Cash Flows	9
Notes to Financial Statements	10

KPMG LLP
P.O. Box 4150
Honolulu, HI 96812-4150

Independent Auditors' Report

The Water Board
County of Hawai'i:

We have audited the accompanying financial statements of the Department of Water Supply, County of Hawai'i (the Department), a component unit of the County of Hawai'i, State of Hawai'i (the County), as of and for the years ended June 30, 2008 and 2007, as listed in the table of contents. These financial statements are the responsibility of the Department's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Department's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in note 2, the financial statements of the Department are intended to present the financial position, and the changes in financial position and, where applicable, cash flows of only that portion of component unit information of the County that is attributable to the transactions of the Department. They do not purport to, and do not present fairly the financial position of the County as of June 30, 2008, the changes in its financial position, or, where applicable, its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Department of Water Supply, County of Hawai'i as of June 30, 2008 and 2007, and the changes in its financial position and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

Management's discussion and analysis on pages 2 through 5 is not a required part of the basic financial statements but is supplementary information required by U.S. generally accepted accounting principles. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the required supplementary information. However, we did not audit the information and express no opinion on it.

KPMG LLP, a U.S. limited liability partnership, is the U.S. member firm of KPMG International, a Swiss cooperative

As discussed in note 2, the Department adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as of July 1, 2007.

KPMG LLP

February 13, 2009

Management's Discussion and Analysis

The Department of Water Supply, County of Hawai'i (the Department) operates as a semiautonomous agency charged with the responsibility of operating and maintaining the County of Hawai'i's public water systems. The Department is a utility enterprise and presents its financial statements using the economic resources measurement focus and the full accrual basis of accounting. This discussion and analysis is designed to assist the reader in focusing on the significant financial issues and activities and to identify any significant changes in financial position. We encourage readers to consider the information presented here in conjunction with the financial statements as a whole.

Financial Statements

The financial statements are designed to provide readers with a broad overview of the Department's finances in a manner similar to a private-sector business.

The balance sheets present information on all of the Department's assets and liabilities, with the difference between the two reported as net assets. Over time, increases or decreases in net assets may serve as a useful indicator of whether the financial position of the Department is improving or deteriorating. Net assets increase when revenues exceed expenses. Increases in assets, without a corresponding increase in liabilities, results in increased net assets, which indicate an improved financial position.

The statements of revenues, expenses, and changes in net assets present information showing how an entity's net assets changed during the fiscal year. All changes in net assets are reported as soon as the underlying event occurs, regardless of timing of related cash flows. Thus, revenues and expenses are reported in these statements for some items that will result in cash flows in future fiscal periods.

Notes to Financial Statements

The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the financial statements.

Other Information

In addition to the financial statements and accompanying notes, this report also presents certain supplementary information concerning the Department's changes in net assets. In the case of the Department, assets exceeded liabilities by $215.1 million at the close of the most recent fiscal year. This represents an increase of $1.5 million, or 1% above the previous year. At June 30, 2008, $186.2 million of the Department's net assets were invested in capital assets (net of related debt), and $28.9 million were unrestricted.

Condensed Financial Information

The following are summaries from the Department's financial statements as of and for the years ended June 30, 2008, 2007, and 2006:

		2008	2007	2006
Assets:				
Capital assets, net	$	204,980,889	198,146,445	196,418,116
Other assets		79,738,743	81,435,224	74,344,720
Total assets		284,719,632	279,581,669	270,762,836
Liabilities:				
Long-term debt		41,247,094	42,308,135	41,549,919
Customers' deposits payable from restricted assets		19,739,823	16,207,996	14,403,033
Other liabilities		8,607,005	7,460,133	7,343,872
Total liabilities		69,593,922	65,976,264	63,296,824
Net assets:				
Invested in capital assets, net of related debt		186,215,025	179,984,628	180,181,457
Unrestricted		28,910,685	33,620,777	27,284,555
Total net assets	$	215,125,710	213,605,405	207,466,012
Changes in net assets:				
Operating revenues – water sales	$	37,724,830	37,642,805	33,291,676
Total operating expenses		42,966,607	38,251,318	37,534,821
Operating loss		(5,241,777)	(608,513)	(4,243,145)
Total nonoperating revenues		8,896,067	8,965,423	8,760,782
Total nonoperating expenses		(2,133,985)	(2,217,517)	(1,669,152)
Change in net assets		1,520,305	6,139,393	2,848,485
Net assets at beginning of year		213,605,405	207,466,012	204,617,527
Net assets at end of year	$	215,125,710	213,605,405	207,466,012

Financial Analysis

Capital assets, net increased by $6.8 million, or 3%, in the fiscal year ending June 30, 2008 (FY2008), due primarily to increases in construction work in progress of $11.7 million and utility plant in service of $3.0 million, offset by depreciation of $8.2 million. In the fiscal year ending June 30, 2007 (FY2007), capital assets increased by $1.7 million, or 1%, due primarily to increases in construction work in progress of $8.8 million and utility plant in service of $1.7 million, offset by depreciation of $8.7 million.

Other assets decreased by $1.7 million, or 2%, in FY2008, due primarily to a $5.2 million decrease in current assets, offset by a $3.5 million increase in restricted investments. In FY2007, other assets increased by $7.1 million, or 10%, due primarily to a $3.2 million increase in investments, a $1.9 million increase in deferred charges, and a $0.7 million increase in trade receivables.

Long-term debt decreased by $1.1 million, or 3%, in FY2008, due primarily to $1.3 million in payments made on long-term debt obligations. In FY2007 long-term debt increased by $0.8 million, or 2%, due primarily to the receipt of $8.4 million in new long-term debt, offset by $7.7 million in payments made on long-term debt obligations.

Net assets increased by $1.5 million, or 1%, in FY2008, and by $6.1 million, or 3%, in FY2007, due primarily to the results of current years' operations.

Operating revenues stayed relatively flat in FY2008 as a 7% increase in the power cost rate and a 1% increase in services were offset by a 4% decrease in water consumption. In FY2007, operating revenues increased by $4.4 million, or 13%, due primarily to a 4% increase in water consumption, a 3% increase in services, and a 29% increase in the power cost rate.

Operating expenses increased by $4.7 million, or 12%, in FY2008, due primarily to increases in power and pumping expenses of $3.3 million, due to an increase in the cost of electricity, and general and administrative expenses of $1.4 million. In FY2007, operating expenses increased by $0.7 million, or 2%, due primarily to increases in power and pumping expenses of $1.1 million, due to an increase in the cost of electricity, offset by a decrease in general and administrative expenses of $0.3 million.

Nonoperating revenues stayed relatively flat in FY2008 as a $0.3 million increase in interest income was offset by a $0.3 million decrease in miscellaneous income. In FY2007, nonoperating revenues increased by $0.2 million, or 2%, due primarily to a $0.6 million increase in interest income and a $0.1 million increase in miscellaneous income, offset by a $0.6 million decrease in contributions in aid of construction income.

Nonoperating expenses stayed relatively flat in FY2008 due to nominal changes in interest on long-term debt and miscellaneous expenses. In FY2007, nonoperating expenses increased by $0.5 million, or 33%, due primarily to a $0.6 million increase in interest on long-term debt.

Capital Assets and Debt Administration

As of June 30, 2008 and 2007, the Department had $205.0 million and $198.1 million, respectively, invested in capital assets and $41.2 million and $42.3 million, respectively, of long-term debt outstanding.

During 2008, major capital asset additions included:

- $2.0 million for the Keopu-Puuhonua production well.
- $1.5 million for the Wainani Estates reservoir.
- $0.9 million for Mamalahoa Highway water line improvements.

During 2007, major capital asset additions included:

- $2.1 million for Mamalahoa Highway waterline improvements.
- $2.1 million for the Ahualoa reservoir.
- $1.7 million for the Keaau-Pahoa waterline extension.

More detailed information about the Department's capital assets is provided in note 6 to the financial statements.

Long-term debt decreased by $1.1 million, or 3%, in FY2008, due primarily to $1.3 million in payments made on long-term debt obligations. In FY2007, long-term debt increased by $0.8 million, or 2%, due primarily to the receipt of $8.4 million in new public improvement bond proceeds, offset by $7.7 million in payments made on long-term obligations. At June 30, 2008, the Department had $35.8 million in public improvement bonds and $5.4 million in a State revolving fund loan. At June 30, 2007, the Department had $36.7 million in public improvement bonds and $5.6 million in a State revolving fund loan. More detailed information about the Department's long-term debt is provided in note 7 to the financial statements.

Other Data

Other statistics relating to the Department's operations are as follows:

	2008	2007	2006
Consumption (thousands of gallons)	9,529,866	9,913,746	9,567,323
Services (number of meters)	41,089	40,681	39,585

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I
(A Component Unit of the County of Hawai'i, State of Hawai'i)

Balance Sheets

June 30, 2008 and 2007

Assets		**2008**	**2007**
Current assets:			
Cash and cash equivalents (note 3)	$	3,855,521	3,806,266
Investments (note 3)		42,226,609	47,091,515
Trade receivables, less allowance for doubtful accounts of $1,403,000 and $2,121,300 in 2008 and 2007, respectively		4,327,402	4,290,835
Interest receivable on investments		762,435	1,277,610
Loans receivable, current portion (note 4)		9,000	8,700
Inventories of materials and supplies		1,290,752	1,201,276
Prepaid expenses		213,535	248,691
Total current assets		52,685,254	57,924,893
Restricted investments – customer deposits (note 3)		19,739,823	16,207,996
Loans receivable, excluding current portion (note 4)		278,028	384,544
Capital assets (note 6):			
Utility plant in service		298,638,467	295,675,414
Less accumulated depreciation		(148,973,775)	(140,834,013)
		149,664,692	154,841,401
Land and rights		1,116,933	815,962
Construction work in progress		54,199,264	42,489,082
Net capital assets		204,980,889	198,146,445
Deferred charges		7,035,638	6,917,791
Total assets	$	284,719,632	279,581,669
Liabilities			
Current liabilities:			
Accounts and construction contracts payable, including retainages	$	3,159,012	3,568,169
Long-term debt, current portion (note 7)		2,236,000	2,200,000
Accrued compensation		1,044,303	1,123,663
Customers' deposits for service connections		632,885	748,395
Accrued vacation, current portion (note 5)		402,816	392,478
Accrued interest payable		1,157,436	395,883
Accrued workers' compensation, current portion (note 8)		25,949	45,187
Postretirement liability (note 5)		948,077	—
Total current liabilities		9,606,478	8,473,775
Accrued workers' compensation, excluding current portion (note 8)		90,051	156,813
Accrued vacation, excluding current portion (note 5)		1,146,476	1,029,545
Customers' deposits payable from restricted assets (note 3)		19,739,823	16,207,996
Long-term debt, excluding current portion (note 7)		39,011,094	40,108,135
Total liabilities		69,593,922	65,976,264
Net Assets			
Invested in capital assets, net of related debt		186,215,025	179,984,628
Unrestricted		28,910,685	33,620,777
Total net assets		215,125,710	213,605,405
Commitments and contingencies (notes 2, 5, and 8)			
Total liabilities and net assets	$	284,719,632	279,581,669

See accompanying notes to financial statements.

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I
(A Component Unit of the County of Hawai'i, State of Hawai'i)

Statements of Revenues, Expenses, and Changes in Net Assets

Years ended June 30, 2008 and 2007

	2008	2007
Operating revenues – water sales	$ 37,724,830	37,642,805
Operating expenses (notes 5 and 8):		
Power and pumping	19,558,920	16,245,852
Depreciation (note 6)	8,231,643	8,749,113
General and administrative	5,841,087	4,467,499
Transmission and distribution	5,019,615	4,732,383
Purification	1,843,873	1,733,757
Customers' accounting and collecting	1,389,345	1,271,220
Maintenance and repairs	1,076,176	1,051,080
Source of supply	5,948	414
Total operating expenses	42,966,607	38,251,318
Operating loss	(5,241,777)	(608,513)
Nonoperating revenues:		
Contributions in aid of construction (note 2)	5,673,845	5,730,506
Interest (notes 3 and 4)	2,539,130	2,251,239
Gain on disposal of property	66,437	101,518
Other	616,655	882,160
Total nonoperating revenues	8,896,067	8,965,423
Nonoperating expenses:		
Interest on long-term debt (note 7)	(1,817,975)	(1,911,165)
Other	(316,010)	(306,352)
Total nonoperating expenses, net	(2,133,985)	(2,217,517)
Change in net assets	1,520,305	6,139,393
Net assets at beginning of year	213,605,405	207,466,012
Net assets at end of year	$ 215,125,710	213,605,405

See accompanying notes to financial statements.

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I
(A Component Unit of the County of Hawai'i, State of Hawai'i)

Statements of Cash Flows

Years ended June 30, 2008 and 2007

		2008	2007
Cash flows from operating activities:			
Cash received from customers	$	41,210,796	39,117,138
Cash payments to suppliers for goods and services		(25,575,993)	(22,211,509)
Cash payments to employees for services		(8,778,899)	(7,617,081)
Net cash provided by operating activities		6,855,904	9,288,548
Cash flows from capital and related financing activities:			
Principal paid on long-term debt		(1,278,357)	(7,678,458)
Debt and bond proceeds		217,316	8,436,674
Interest paid on long-term debt		(1,056,422)	(1,595,799)
Proceeds on sale of capital assets		70,450	139,900
Acquisition and construction of capital assets		(12,658,251)	(10,885,153)
Contributions in aid of construction		3,511,229	4,862,472
Net cash used in capital and related financing activities		(11,194,035)	(6,720,364)
Cash flows from investing activities:			
Purchase of investments		(159,878,682)	(139,120,272)
Proceeds from sale and maturities of investments		161,211,763	135,913,827
Interest on investments		3,054,305	1,774,762
Net cash provided by (used in) investing activities		4,387,386	(1,431,683)
Net increase in cash and cash equivalents		49,255	1,136,501
Cash and cash equivalents at beginning of year		3,806,266	2,669,765
Cash and cash equivalents at end of year	$	3,855,521	3,806,266
Reconciliation of operating loss to net cash provided by operating activities:			
Operating loss	$	(5,241,777)	(608,513)
Depreciation		8,231,643	8,749,113
Gain on disposal of property		(66,437)	(101,518)
Decrease (increase) in assets:			
Trade receivables, net		(36,567)	(665,632)
Loans receivable		106,216	290,806
Inventories of materials and supplies		(89,476)	12,725
Prepaid expenses		35,156	5,709
Increase (decrease) in liabilities:			
Accounts and construction contracts payable, including retainages		(409,157)	(316,571)
Postretirement liability		948,077	—
Customers' deposits payable from restricted assets		3,531,827	1,804,963
Other liabilities		(153,601)	117,466
Net cash provided by operating activities	$	6,855,904	9,288,548

Noncash capital activities:
The Department received $2,162,616 and $868,034 of infrastructure as contributions in aid of construction in fiscal 2008 and 2007, respectively.

See accompanying notes to financial statements.

(1) Administration

The Department of Water Supply, County of Hawai'i (the Department) is administered by the Water Board, which consists of nine members who serve staggered terms of five years in length. Board members are appointed by the Mayor of the County of Hawai'i, State of Hawai'i (the County) and are confirmed by the County Council, as required by the County Charter.

(2) Summary of Significant Accounting Policies

This summary of significant accounting policies is presented to assist the reader in understanding the financial statements. These policies are considered essential and should be read in conjunction with the financial statements.

(a) Financial Statement Presentation

The Department is a component unit of the County (the primary government). The accompanying financial statements present only the activities of the Department and do not include other organizations, activities, and functions of the County.

(b) Measurement Focus and Basis of Accounting

The accounting policies of the Department conform to U.S. generally accepted accounting principles as applicable to enterprise activities of governmental units as promulgated by the Governmental Accounting Standards Board (GASB). The Department's operations are accounted for on the flow of economic resources measurement focus, and the accrual basis of accounting is utilized. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred. Restricted assets are recorded at fair value.

In accordance with GASB Statement No. 20, *Accounting and Financial Reporting for Proprietary Funds and Other Governmental Entities That Use Proprietary Fund Accounting*, the Department applies all applicable GASB pronouncements, as well as the following pronouncements issued on or before November 30, 1989, unless those pronouncements conflict with or contradict GASB pronouncements, Financial Accounting Standards Board statements and interpretations, Accounting Principles Board opinions, and Accounting Research Bulletins of the Committee on Accounting Procedures.

(c) Capital Assets

Capital assets in service as of January 1, 1950, date of inception of the Department, was recorded at cost of the assets acquired by the County for its water system from January 1, 1924 to December 31, 1949, less accumulated depreciation to December 31, 1949 as determined by the Department. Assets purchased prior to 1924 and property acquired by gift or grant prior to 1950 are not included in capital assets. Additions to capital assets since January 1, 1950 are stated at cost and include contributions by governmental agencies, private subdividers, and customers at their cost or estimated cost. Construction costs include amounts for contract work, engineering supervision, and other direct

costs and overhead costs. Construction period interest is capitalized on capital assets constructed with tax-exempt debt and amounted to $45,712 and $11,923 at June 30, 2008 and 2007, respectively.

Maintenance and repairs and minor replacements are charged to operations. Major replacements, renewals, and betterments are capitalized to capital asset accounts.

Provision for depreciation is computed using the straight-line method. Annual depreciation rates are applied to costs of the various classes of depreciable assets on the group basis or, as to transportation equipment, to the cost of individual units of property.

Gains or losses resulting from the sale, retirement, or disposal of capital assets in service are charged or credited to operations in the year realized.

(d) Cash and Cash Equivalents

For purposes of the statements of cash flows, the Department considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. Cash equivalents amounted to $2,744,000 and $1,614,896 at June 30, 2008 and 2007, respectively.

(e) Trade Receivables

Trade receivables are recorded at the invoiced amount and do not bear interest. The allowance for doubtful accounts is the Department's best estimate of the amount of probable credit losses in the Department's existing trade receivables. The Company determines the allowance based on historical write-off experience. The Company reviews its allowance for doubtful accounts monthly. Past-due balances over 90 days and over a specified amount are reviewed individually for collectibility. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

(f) Investments

GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*, establishes fair value standards for certain types of financial instruments. All of the Department's investments fall into categories that can be valued by cost-based measures. Investments comprise repurchase agreements, certificates of deposit, and a discounted note. These investments are stated at cost and amortized cost.

(g) Inventories of Materials and Supplies

Materials and supplies are stated at cost on an average-cost basis.

(h) Restricted Assets

Funds received by the Department, which are refundable or restricted as to use, are recorded as restricted assets.

(i) Deferred Charges

Deferred charges consist of preliminary survey and investigation charges.

(j) Compensated Absences

Employees earn vacation credits at the rate of either one or one and three-quarter working days for each month of service. Up to 90 days of vacation leave credits can be accumulated per employee. In addition, employees who work overtime can elect to take compensatory time off instead of overtime pay. The time off is earned at the rate of one and a half hours for each hour of overtime worked. Both compensatory time off and vacation credits are converted to pay upon termination of employment.

Sick leave accumulates without limit. Sick leave can be taken only in the event of illness and is not convertible to pay upon termination of employment. Accumulated sick leave at June 30, 2008 and 2007 amounted to $5,358,000 and $4,894,000, respectively.

(k) Contributions in Aid of Construction

GASB Statement No. 33, *Accounting and Financial Reporting for Nonexchange Transactions*, requires the Department to recognize contributions in aid of construction as nonoperating revenues. The Department recognized $5,673,845 and $5,730,506 of contributions in aid of construction as nonoperating revenues for the fiscal years ended June 30, 2008 and 2007, respectively.

(l) Operating Revenues and Expenses

Revenues and expenses are distinguished between operating and nonoperating items. Operating revenues generally result from providing services in connection with the Department's principal ongoing operations. The principal operating revenues of the Department are fees charged to residents for providing water services. Operating expenses include the costs associated with providing water services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting these definitions are reported as nonoperating revenues and expenses.

(m) Use of Estimates

The preparation of the financial statements in accordance with U.S. generally accepted accounting principles requires management to make a number of estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include the carrying amount of capital assets, valuation allowances for trade and loans receivables, and accrued workers' compensation. Actual results could differ from those estimates.

(n) Recently Adopted Governmental Accounting Pronouncements

Effective July 1, 2007, the Department adopted the provisions of GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. This statement addresses how state and local governments should account for and report their costs and obligations related to postemployment benefits, healthcare, and other nonpension benefits.

(o) Reclassifications

Certain reclassifications have been made to the 2007 financial statements to conform to the 2008 presentation. Such reclassifications had no effect on previously reported change in net assets.

(3) Deposits and Investments

Cash collected by the Department is deposited in separate accounts maintained with the County's Treasury. At June 30, 2008, information relating to the insurance and collateral of the Department's cash deposits was not available, since such information is determined on a county-wide basis and not for individual departments or divisions. Complete information on a county-wide basis is contained in the County's Comprehensive Annual Financial Report. Hawai'i Revised Statutes (HRS) authorize the County to invest, with certain restrictions, in obligations of the State of Hawai'i or the United States, federally insured savings accounts, and time certificates of deposits with federally insured banks and savings and loans associations authorized to do business in the State of Hawai'i, provided that all deposits are fully insured or collateralized.

At June 30, 2008 and 2007, deposits and investments amounted to $65,821,953 and $67,105,777, respectively, and consisted of the following:

		2008	2007
Cash and cash equivalents	$	3,855,521	3,806,266
Investments		61,966,432	63,299,511
	$	65,821,953	67,105,777

(a) Custodial Credit Risk for Deposits

Custodial credit risk for deposits is the risk that the Department will not be able to recover deposits or will not be able to recover collateral securities that are in possession of an outside party. The HRS does not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits, other than the provision that a financial institution must secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law. This risk is mitigated in that the Department's deposits are maintained at financial institutions that are fully insured or collateralized as required by state law.

At June 30, 2008 and 2007, the carrying amount of deposits (cash, time certificates of deposit, and money market funds) of $3,855,521 and $3,806,266, respectively, with bank balances of $2,003,194 and $6,148,016, respectively, were held by the County on behalf of the Department. These balances were fully insured or collateralized with securities held by the County's agent in the County's name.

(b) Investments

At June 30, 2008 and 2007, the Department's investment portfolio consists of repurchase agreements, certificates of deposit, and a discounted note held by the County on behalf of the Department.

(c) Investment Policy

State law and regulations require that surplus moneys of the Department must be invested. The primary objective of the Department's investment policy is to safeguard the principal. The secondary objective is to meet the liquidity needs of the Department. The third objective is to return an acceptable yield. In general, the Department's investment policy permits investments in obligations of the U.S. Treasury, agencies and instrumentalities, time certificates of deposit, bank repurchase agreements, and certain other investment instruments.

(d) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. One of the ways that the Department manages its exposure to interest rate risk is by purchasing a combination of short- and mid-term investments and by timing cash flows from maturities so that a portion of the portfolio is maturing or nearing maturity evenly over time as necessary to provide the cash flow and liquidity needed for operations. The Department monitors the interest rate risk inherent in its portfolio by measuring the weighted average maturity of its portfolio. The weighted average maturity of the Department's investment portfolio for each investment type as of June 30, 2008 is presented in the next page.

(e) Credit Risk

Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization.

The following table presents the weighted average maturity and actual rating by investment type of the Department's investment portfolio as of June 30, 2008 and 2007:

Investment type	Fair value	Weighted average maturity (in years)	Rating as of year-end AAA	Rating as of year-end Not rated
2008:				
Repurchase agreements	$ 50,585,822	0.6	$ —	50,585,822
Certificates of deposit	11,380,610	9.0	—	11,380,610
Total	$ 61,966,432		$ —	61,966,432
2007:				
Repurchase agreements	$ 41,602,031	0.6	$ —	41,602,031
Certificates of deposit	19,077,223	0.5	—	19,077,223
Discounted note	2,620,257	0.5	2,620,257	—
Total	$ 63,299,511		$ 2,620,257	60,679,254

(e) Concentration of Credit Risk

The Department's investment policy contains no limitations on the amount that can be invested in any one issuer beyond that stipulated by the HRS. As of June 30, 2008 and 2007, the Department's entire investment portfolio is invested in repurchase agreements, certificates of deposit, and a discounted note.

(f) Custodial Credit Risk for Investments

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The HRS does not contain legal or policy requirements that would limit the exposure to custodial credit risk for investments. All securities owned by the Department are deposited in trust for safekeeping with a custodial bank. Securities are not held in broker-dealer accounts.

At June 30, 2008 and 2007, the Department held customer deposits of $19,739,823 and $16,207,996, respectively. These customer deposits are recorded as restricted investments and customers' deposits payable in the Department's balance sheets. Changes in customers' deposits payable are as follows:

		2008	2007
Beginning liability	$	16,207,996	14,403,033
Collections		3,673,341	2,149,824
Payments		(141,514)	(344,861)
Ending liability	$	19,739,823	16,207,996

(4) Loans Receivable

At June 30, 2008 and 2007, loans receivable from various community associations for water system improvements consisted of the following:

		2008	2007
Paauilo Camp Community Association – interest at 4.5%, due in semiannual installments of $9,323 through 2033	$	277,700	283,600
Ookala Community Association – interest at 4.5%, due in semiannual installments of $3,373 through 2033		9,328	109,644
		287,028	393,244
Less current portion		(9,000)	(8,700)
Loans receivable, excluding current portion	$	278,028	384,544

(5) Employee Benefits

(a) Employees' Retirement System of the State of Hawai'i

All eligible employees of the Department are required by Chapter 88, HRS, to become members of the Employees' Retirement System of the State of Hawai'i (the ERS), a cost-sharing, multiple-employer public employee retirement plan. The ERS provides retirement, survivor, and disability benefits with multiple benefit structures known as the contributory, hybrid, and noncontributory plans. All contributions, benefits, and eligibility requirements are established by Chapter 88, HRS, and can be amended by legislative action.

Employees covered by Social Security on June 30, 1984 were given the option of joining the noncontributory plan or remaining in the contributory plan. All new employees hired after June 30, 1984 and before July 1, 2006, who are covered by Social Security, were generally required to join the noncontributory plan. Qualified employees in the contributory and noncontributory plan were given the option of joining the hybrid plan effective July 1, 2006, or remaining in their existing plan.

Starting July 1, 2006, all new employees covered by Social Security are required to join the hybrid plan.

The three plans provide a monthly retirement allowance equal to the benefit multiplier percentage (1.25% or 2.00%) multiplied by the average final compensation (AFC) multiplied by years of credited service. The AFC is the average salary earned during the five highest paid years of service, including the payment of salary in lieu of vacation, or three highest paid years of service, excluding the payment of salary in lieu of vacation, if the employee became a member prior to January 1, 1971. The AFC for members hired on or after this date is based on the three highest paid years of service, excluding the payment of salary in lieu of vacation.

For postretirement increases, every retiree's original retirement allowance is increased by 2.5% on each July 1 following the calendar year of retirement. This cumulative benefit is not compounded and increases each year by 2.5% of the original retirement allowance without a ceiling (2.5% of the original retirement allowance the first year, 5.0% the second year, 7.5% the third year, etc.).

The following summarizes the three plan provisions relevant to the general employees of the respective plan:

Contributory Plan

Employees in the contributory plan are required to contribute 7.8% of their salary and are fully vested for benefits upon receiving 5 years of credited service. The Department may also make contributions for these members. Under the contributory plan, employees may retire with full benefits at age 55 and 5 years of credited service, or may retire early at any age with at least 25 years of credited service and reduced benefits. The benefit multiplier is 2.0% for employees covered by Social Security.

Hybrid Plan

Employees in the hybrid plan are required to contribute 6.0% of their salary and are fully vested for benefits upon receiving 5 years of credited service. The Department may also make contributions for these members. Employees may retire with full benefits at age 62 and 5 years of credited service or at age 55 and 30 years of credited service, or may retire at age 55 and 20 years of credited service with reduced benefits. The benefit multiplier used to calculate retirement benefits is 2.0%.

Noncontributory Plan

Employees in the noncontributory plan are fully vested upon receiving 10 years of credited service. The Department is required to make all contributions for these members. Employees may retire with full benefits at age 62 years and 10 years of credited service or age 55 and 30 years of credited services or age 55 years and 20 years of credited service with reduced benefits. The benefit multiplier used to calculate retirement benefits is 1.25%.

The ERS funding policy provides for periodic employer contributions at actuarially determined rates, expressed as a percentage of annual covered payroll, such that the employer contributions, along with employee contributions and an actuarially determined rate of investment return, are adequate to accumulate sufficient assets to pay benefits when due. The funding method used to calculate the total employer contribution required is the entry age normal actuarial cost method. Effective July 1, 2005, employer contribution rates are a fixed percentage of compensation, including the normal cost plus amounts required to pay for the unfunded actuarial accrued liability. Employers contribute 15.75% for police officers and firefighters, and 13.75% for all other employees. These rates increase, as of July 1, 2008, to 19.70% for police officers and firefighters, and 15.00% for all other employees. Employer rates are set by statute based on the recommendation of the ERS actuary resulting from an experience study conducted every five years.

The required pension contributions by the Department for the years ended June 30, 2008, 2007, and 2006 were $1,183,202, $1,051,260, and $989,852, respectively, which equal the required contributions for each year. Measurement of assets and actuarial valuations are made for the ERS as a whole and are not separately computed for individual participating employers such as the Department.

The ERS issues a CAFR that includes financial statements and required supplementary information, which may be obtained from the following address:

Employees' Retirement System of the State of Hawai'i
201 Merchant Street, Suite 1400
Honolulu, Hawai'i 96813

(b) Deferred Compensation Plan

All full-time employees are eligible to participate in the County's Public Employees' Deferred Compensation Plan, adopted pursuant to Internal Revenue Code Section 457. The plan permits eligible employees to defer a portion of their salary until future years by contributing to a fund managed by a plan administrator. The deferred compensation amounts are not available to employees until termination, retirement, death, or unforeseeable emergency.

All plan assets are held in a trust fund to protect them from claims of general creditors and from diversion to any uses other than paying benefits to participants and beneficiaries. The County has no responsibility for loss due to the investment or failure of investment of funds and assets in the plans, but does have the duty of due care that would be required of an ordinary prudent investor.

(c) Postretirement Healthcare and Life Insurance Benefits

In addition to providing pension benefits, the Department, pursuant to HRS Chapter 87A, is a participating employer in an agent, multiple-employer defined benefit plan providing certain healthcare and life insurance benefits to all qualified employees and retirees. The Employer-Union Health Benefits Trust Fund (EUTF) was established on July 1, 2003 to design, provide, and administer medical, prescription, drug, dental, vision, chiropractic, dual-coverage medical and prescription, and group life benefits.

For employees hired before July 1, 1996, the Department pays the entire monthly healthcare premium for employees retiring with 10 or more years of credited service, and 50% of the monthly premium for employees retiring with fewer than 10 years of credited service.

For employees hired after June 30, 1996, and who retire with fewer than 10 years of service, the Department makes no contributions. For those retiring with at least 10 years but fewer than 15 years of service, the Department pays 50% of the retired employees' monthly Medicare or non-Medicare premium. For employees hired after June 30, 1996, and who retire with at least 15 years but fewer than 25 years of service, the Department pays 75% of the retired employees' monthly Medicare or non-Medicare premium. For those retiring with over 25 years of service, the Department pays the entire healthcare premium.

For employees hired after June 30, 2001, and who retire with fewer than 10 years of service, the Department makes no contributions. For those retiring with at least 10 years but fewer than 15 years of service, the Department pays 50% of the retired employees' monthly Medicare or non-Medicare premium based on the self plan. For employees hired after June 30, 2001, and who retire with at least 15 years but fewer than 25 years of service, the Department pays 75% of the retired employees' monthly Medicare or non-Medicare premium; for those retiring with over 25 years of service, the Department pays the entire healthcare premium.

For active employees, the employee's contributions are based upon negotiated collective bargaining agreements. Employer contributions for employees not covered by collective bargaining agreements and for retirees are prescribed by the HRS.

The Department's annual other postemployment benefit (OPEB) cost is calculated based on the annual required contribution (ARC) of the employer, an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed 30 years. The current ARC rate is 17.2% of annual covered payroll. The following table presents the components of the Department's annual OPEB cost for the year ended June 30, 2008, the amount actually contributed to the plan, and changes in the net OPEB obligation:

Annual required contribution	$	1,493,000
Interest on net OPEB obligation		—
Adjustment to annual required contribution		—
Annual OPEB cost		1,493,000
Contributions made		(544,923)
Increase in net OPEB obligation		948,077
Net OPEB obligation at beginning of the year		—
Net OPEB obligation at end of year (reported as postretirement liability in the accompanying balance sheets)		948,077
Less current portion		(948,077)
	$	—

The annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation for the year ended June 30, 2008 were as follows:

Annual OPEB cost	$	1,493,000
Percentage of annual OPEB cost contributed		36.5%
Net OPEB obligation	$	948,077

The schedule of funding progress as of June 30, 2008 is as follows:

Actuarial accrued liability	$	17,236,000
Actuarial value of plan assets		—
Unfunded actuarial accrued liability (UAAL)	$	17,236,000
Funded ratio		—%
Covered payroll (active plan members)	$	8,689,000
UAAL as a percentage of covered payroll		198.4%

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the July 1, 2007 actuarial valuation, the most recent actuarial valuation date, the entry age normal cost method was used. The actuarial assumptions included an 8.0% discount rate, which is based on the Department's anticipated funding level, and an annual healthcare cost trend rate of 9.5% initially, reduced by decrements to an ultimate rate of 5.0% after six years. The UAAL is being amortized as a level percentage of projected payroll on an open basis. The remaining amortization period at July 1, 2007 was 30 years.

The EUTF issues a financial report that included financial statements and required supplementary information, which may be obtained from the following address:

Hawai'i Employer-Union Health Benefits Trust Fund
P.O. Box 2121
Honolulu, Hawai'i 96805-2121

(d) Accrued Vacation

The following is a summary of changes in accrued vacation payable during the fiscal years ended June 30, 2008 and 2007:

		2008	2007
Balance at beginning of year	$	1,422,023	1,385,272
Additions		626,703	575,228
Deletions		(499,434)	(538,477)
Balance at end of year		1,549,292	1,422,023
Less current portion		(402,816)	(392,478)
	$	1,146,476	1,029,545

(6) Capital Assets

The following summarizes the Department's capital assets at June 30, 2008 and 2007:

	2008	2007
In service:		
Distribution mains and accessories	$ 114,310,438	113,732,208
Structures and improvements	86,347,131	85,211,507
Electric and hydraulic pumping equipment	25,486,523	25,425,222
Services	24,116,974	23,646,884
Transmission mains and accessories	17,828,336	17,828,336
Hydrants	7,488,651	7,424,069
Purification system	6,749,701	6,749,701
Meters	6,422,987	6,273,284
Transportation equipment	3,348,620	3,000,081
Communication equipment	2,317,674	2,315,124
Office equipment and furniture	1,852,990	1,777,554
Other equipment	1,147,643	1,139,028
Tools and work equipment	1,201,212	1,132,829
Other fire protection plant	19,587	19,587
Total in service	298,638,467	295,675,414
Less accumulated depreciation	(148,973,775)	(140,834,013)
	149,664,692	154,841,401
Land and rights	1,116,933	815,962
Construction work in progress	54,199,264	42,489,082
Net capital assets	$ 204,980,889	198,146,445

The following is a summary of changes in capital assets during the fiscal years ended June 30, 2008 and 2007:

	In service	Land and rights	Construction work in progress	Less accumulated depreciation	Net capital assets
Balance at June 30, 2006	$ 286,168,480	815,962	42,106,718	(132,673,044)	196,418,116
Additions	10,196,949	—	8,833,334	(8,749,113)	10,281,170
Deductions	(690,015)	—	(8,450,970)	588,144	(8,552,841)
Balance at June 30, 2007	295,675,414	815,962	42,489,082	(140,834,013)	198,146,445
Additions	3,059,642	300,996	11,789,322	(8,231,643)	6,918,317
Deductions	(96,589)	(25)	(79,140)	91,881	(83,873)
Balance at June 30, 2008	$ 298,638,467	1,116,933	54,199,264	(148,973,775)	204,980,889

(7) Long-Term Debt

At June 30, 2008 and 2007, long-term debt consisted of the following:

		2008	2007
Public Improvement bonds ($8,000,000 issued) payable to the County, interest at 4% to 5.5%, due in annual installments through 2010	$	1,080,000	1,080,000
Public Improvement bonds ($10,000,000 issued) payable to the County, interest at 5.05% to 5.6%, due in annual installments through 2013		3,755,000	4,395,000
Public Improvement Refunding bonds ($424,860 issued) payable to the County, interest at 5%, due in annual installments through 2015		309,624	309,624
Public Improvement Refunding bonds ($5,752,612 issued) payable to the County, interest at 4% to 5%, due in annual installments through 2021		5,752,612	5,752,612
Public Improvement bonds ($25,000,000 issued) payable to the County, interest at 4% to 5%, due in annual installments through 2026		24,242,500	24,242,500
Public Improvement bonds ($775,600 authorized) payable to the County, interest at 4.5%, due in annual installments through 2033		381,495	672,800
Public Improvement bonds ($259,200 issued) payable to the County, interest at 4.5%, due in semiannual installments through 2039		252,312	255,832
Public Improvement bonds ($147,000 issued) payable to the County, interest at 4.125%, due in semiannual installments through 2043		50,000	—
State Revolving Fund loan ($7,203,563 loaned) payable to the State of Hawai'i, interest at 0.41% to 1.37%, due in semiannual installments through 2027		5,423,551	5,599,767
Total long-term debt		41,247,094	42,308,135
Less current portion		(2,236,000)	(2,200,000)
Long-term debt, excluding current portion	$	39,011,094	40,108,135

On April 28, 2008, the County of Hawai'i issued $147,000 in 2008 Series A general obligation bonds. The interest rate is 4.125% with principal due beginning in 2011 through 2043. Payments for these bonds will be reimbursed to the County by the Department. The bonds were sold to the United States Department of Agriculture (USDA) as collateral for a loan from the USDA to the Department to make water system improvements at Andrade Camp in Pepeekeo, County of Hawai'i.

The following is a summary of changes in long-term debt during the fiscal years ended June 30, 2008 and 2007:

		2008	2007
Beginning balance	$	42,308,135	41,549,919
Additions		217,316	8,436,674
Repayments		(1,278,357)	(7,678,458)
Ending balance	$	41,247,094	42,308,135

At June 30, 2008, future principal payments for long-term debt are scheduled as follows:

Year ending June 30:		
2009	$	2,236,000
2010		2,337,000
2011		2,446,000
2012		2,586,000
2013		2,701,000
2014 – 2018		10,332,000
2019 – 2023		11,164,000
2024 – 2028		7,225,000
2029 – 2033		131,000
2034 – 2038		60,000
Thereafter		29,094
Total	$	41,247,094

(8) Commitments and Contingent Liabilities

(a) Risk Management

The Department is exposed to various risks of loss from torts; theft of, damage to, and destruction of assets; employee injuries and illnesses, and natural disasters. The Department maintains property, auto liability, and general liability insurance policies. The Department remains self-insured for workers' compensation liability.

Liabilities are recorded when it is probable that a loss has occurred and the amount of that loss can be reasonably estimated. These losses include an estimate of claims that have been incurred but not reported (IBNR). Claim liabilities, including IBNR, are based on the estimated ultimate cost of settling the claims, and include incremental costs for the hiring of special counsel and expert witnesses. Claims liabilities are estimated by a case-by-case review of all claims and the application of historical experience to outstanding claims. Estimates of IBNR are based on historical experience. Accrued workers' compensation amounted to $116,000 and $202,000 at June 30, 2008 and 2007, respectively. Changes in the reported liability are as follows:

		2008	2007
Beginning liability	$	202,000	272,000
Current year claims		16,560	29,214
Claim payments		(102,560)	(99,214)
Ending liability		116,000	202,000
Less current portion		(25,949)	(45,187)
	$	90,051	156,813

(b) Construction Contracts

The Department is obligated under construction contracts for the utility plant and other projects. Such commitments approximated $24,071,000 and $17,659,000, respectively, at June 30, 2008 and 2007.

(c) Litigation

The Department is involved in various legal proceedings arising in the ordinary course of business. The Department provides for losses that, in the opinion of management, are both probable of being incurred and that can be reasonably estimated. In management's opinion, losses, if any, would not materially affect the Department's financial position or results of operations.

EXHIBIT B

Operating Budget
and
Projected Cash Flow

Dept of Water Supply		
Kona Ocean View Water System	Proposed	
Projected Operating Budget	81 Connections	
Operating Income	$	53,509
Operating Expenses:		
Power & Pumping	$	25,765
General & Admin	$	1,781
Maint & Repairs	$	1,238
Customer Acctg	$	278
Purification	$	95
Fuel & Oil	$	173
Depreciation	$	2,000
Taxes	$	136
Total Operating Expenses	$	31,467
Net Operating Income (Loss)	**$**	**22,042**
USDA Loan Annual Debt Service		$92,062.44
81 Assessees @ $94.72 per month		$92,067.84
Net		($5.40)
Estimate of Improvement District Costs		$1,569,350
Estimate of Monthly Assessment		
RD Loan		$1,569,350
Annual Debt Service on Loan		
(35 year term @ 4.75%)		$92,062.44
Monthly Debt Service		$7,671.87
Number of Assessees		81
Monthly Assessment		$94.72
Facilities Charge for Improvement District Assessees		
Existing customers of DWS		$0
or		
Facilities Charge/ new customer		$1,190
Credit Deposit/new customer		$50
Drop in meter fee/customer		$75
Total/ customer		$1,315

EXHIBIT C

Department of Water Supply
County of Hawaii

Water Rate Schedule

A. MONTHLY STANDBY CHARGES*

All meter connections shall be subject to a monthly standby charge as follows:

Meter Size (inches)	Effective July 1, 2005	July 1, 2006	July 1, 2007	July 1, 2008
5/8"	$ 12	$ 12	$ 12	$ 12
1"	23	23	23	23
1-1/2"	40	40	40	40
2"	65	65	65	65
3"	115	115	115	115
4"	180	180	180	180
6"	370	370	370	370
8"	740	740	740	740
10"	1,090	1,090	1,090	1,090
12"	1,955	1,955	1,955	1,955

*Standby charge is a minimum monthly charge.

B. GENERAL USE RATES (per 1,000 gallons)

In addition to the monthly standby charges, consumption & power charges will be applied to all general use customers as follows:

	Effective July 1, 2005	July 1, 2006	July 1, 2007	July 1, 2008
1st Block	$ 0.75	$ 0.75	$ 0.75	$ 0.75
2nd Block	1.55	1.55	1.55	1.55
3rd Block	2.75	2.75	2.75	2.75
4th Block	3.65	3.65	3.65	3.65

	Effective July 1, 2006	July 1, 2007	July 1, 2008	January 1, 2009
Power Cost Charge	$ 1.50	$ 1.60	$ 1.70	$ 2.38

BLOCK THRESHOLDS (gallons per month)

The threshold for the rate blocks vary with the size of the water meter as follows:

Meter Size (inches)	1st Block	2nd Block	3rd Block	4th Block
5/8"	5,000	**5,001 - 15,000**	15,001 - 40,000	**> 40,000**
1"	5,000	**5,001 - 100,000**	100,001 - 300,000	**> 300,000**
1-1/2"	5,000	**5,001 - 400,000**	400,001 - 1,000,000	**> 1,000,000**
2"	5,000	**5,001 - 900,000**	900,001 - 2,000,000	**> 2,000,000**
3"	5,000	**5,001 - 2,000,000**	2,000,001 - 5,000,000	**> 5,000,000**
4"	5,000	**5,001 - 4,700,000**	4,700,001 - 10,000,000	**> 10,000,000**
6"	5,000	**5,001 - 10,000,000**	10,000,001 - 25,000,000	**> 25,000,000**
8"	5,000	**5,001 - 20,000,000**	20,000,001 - 50,000,000	**> 50,000,000**
10"	5,000	**5,001 - 40,000,000**	40,000,001 - 100,000,000	**>100,000,000**
12"	5,000	**5,001 - 60,000,000**	60,000,001 - 150,000,000	**>150,000,000**

C. AGRICULTURAL USE RATES (per 1,000 gallons)

In addition to the monthly standby charges, consumption and power charges will be applied to all agricultural use customers as follows:

	Effective July 1, 2006	July 1, 2007	July 1, 2008	January 1, 2009
All Usage	$ 0.85	$ 0.85	$ 0.85	$ 0.85
Power Cost Charge	1.50	1.60	1.70	2.38

In order to qualify for agricultural rates, applicants shall file annually with the Department, a written application and furnish upon request, satisfactory proof (as determined by the Department), of engagement in agriculture, stock raising or dairy farming on a commercial basis. The Department reserves the right to limit or restrict water flow to agricultural users in the event of water shortage or in the event water service to domestic users is disrupted or lowered because of agricultural water use. Applicants shall install backflow preventers which shall be inspected and approved by the Department before water service is granted. Agricultural rates are not applicable to canneries, mills or markets or other establishments engaged in the conversion or treatment or packaging of agricultural products.

D. FIRE PROTECTION - MONTHLY STANDBY CHARGES

For each connection of automatic fire sprinklers or other private fire protection, there shall be a charge per month based on the size of the connection as follows:

Size of Service (inches)	Effective April 1, 2001	Effective July 1, 2003
2"	$ 12	$ 14
3"	24	28
4"	34	39
6"	63	73
8"	94	109

E. FIRE LINE OR FIRE SERVICE METERS - MONTHLY STANDBY CHARGES

For each connection of combined fire & domestic services, there shall be a charge per month based on the larger size of the connection as follows:

Size of Service (inches)	Effective April 1, 2001	Effective July 1, 2003
3"	$ 100	$ 115
4"	160	180
6"	320	370
8"	640	740
10"	950	1,090

F. SHIPPING RATES

Applicable to all foreign, coastwise, government, inter-island and fishing vessels for shipping water:

	Effective April 1, 2001	Effective July 1, 2003
Per 1,000 gallons	$ 3.35	$ 3.85
Minimum Charge	35.00	40.00
Opening/Closing Charges		
Regular Hours	49.00	57.00
Outside Regular Hours	112.00	129.00

G. SERVICE LATERAL INSTALLATION CHARGES

Installation charge for service lateral connection with a 5/8-inch meter:

		Effective April 1, 2001	Effective July 1, 2003
County	Right-of-Way	$ 2,250	$ 2,600
State	Right-of-Way	4,000	4,600

CONDITIONS:

1) For special conditions such as concrete sidewalks, compaction tests, large cut or fill areas where additional work is required, additional charges, as determined by the Department, shall be added to the installation charges listed above.

2) Deduct $40 if no meter is required.

H. FACILITIES CHARGES

A facilities charge will be applicable to all new service connections based on the maximum size of the meter and type of service the service lateral can support or by the number of lots, dwelling units or equivalent units in the development, whichever cost is larger. The unit cost in determination of the facilities charges shall be $4,350 for each additional lot, dwelling unit or equivalent unit starting April 1, 2001 and $5,500 starting July 1, 2003. The facilities charge is in addition to the service lateral installation charge. The schedule of facilities charges is as follows:

Meter Size (inches)		Effective April 1, 2001	July 1, 2003
5/8"	First Connection	$ 940	$ 1,190
	Additional Connection	4,350	5,500
1"	Each Connection	10,875	13,750
1-1/2"	Each Connection	21,750	27,500
2"	Each Connection	34,800	44,000
3"	Each Connection	65,250	82,500
4"	Each Connection	108,750	137,500
6"	Each Connection	217,500	275,000
8"	Each Connection	391,500	495,000
10"	Each Connection	630,750	797,500
12"	Each Connection	935,250	1,182,500

I. STANDPIPE CHARGES

Applicants for water service from Department standpipe facilities shall be charged an initial payment and on a monthly basis for the proportional cost of the standpipe facility. These charges, listed below, are in addition to the monthly standby and general use rates.

Meter Size (inches)	Initial Payment	Amortized Installation Cost (Monthly)
5/8"	$ 120.00	$ 8.00
1"	240.00	16.00
1-1/2"	300.00	20.00
2"	360.00	24.00

J. TEMPORARY SERVICE ON HYDRANT CHARGES

Each applicant for a temporary connection of a meter to a fire hydrant shall be charged an initial payment, as determined by the Department, in addition to general use rates and standby charges. Service shall be limited to a period not longer than 180 calendar days. After 180 calendar days, service may continue with another application for temporary service. The Department reserves the right to deny any application or remove any temporary connection at any time.

K. COST OF POWER ADJUSTMENT CLAUSE

All water use shall be subject to the imposition of a Power Cost Charge in addition to monthly standby and water consumption charges. Actual Power Cost Charges are assessed per 1,000 gallons. Historic charges are as follows:

Actual Power Cost Charges (per 1,000 gallons)

Effective Date	Actual Power Cost Charges
July 1, 2006	$1.50
July 1, 2007	$1.60
July 1, 2008	$1.70
January 1, 2009	$2.38

The Department will review the actual costs of power every two months, when necessary. The Department shall calculate the Power Cost Charge based on the actual cost of power for that two-month period, or for the period since the last revision to the Power Cost Charge. The formula used to calculate the Power Cost Charge is as follows:

$$\text{Power Cost Charge} = \frac{\text{Actual Power Cost}}{\text{Water Consumed (per 1,000 gallons)}}$$

Revised Power Cost Charges will be implemented the month following the Water Board approval of the change.

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ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Puʻukala, North Kona District, Hawaiʻi Island, State of Hawaiʻi

APPENDIX 2
Correspondence
Part A: Letters to Agencies, Organizations and Individuals

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GENERAL CONSULTATION LETTER TO RESIDENTS

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 9, 2009

Dear Agency/Organization Official:

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai‘i County Department of Water Supply to prepare a State of Hawai‘i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of the Kona Ocean View Properties subdivision at Pu‘ukala in Kona to County standards (see attached location and TMK maps for area). The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision. No undisturbed ground is involved. This letter is to share information about the project and request your input on site conditions, issues that you wish to be addressed in the EA, and any other concerns you may have.

The areas of investigation in the EA will include but not be limited to the following: water quality assurance; wastewater treatment; flora, fauna, and ecosystems; traffic impacts; geology, soils, and hazards; flooding and drainage impacts; social, cultural and community impacts; historic sites; and economic impacts. I would appreciate your comments on any special environmental conditions or impacts related to the development. Please contact me at (808) 969-7090 (Big Island) if you have any questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days.**

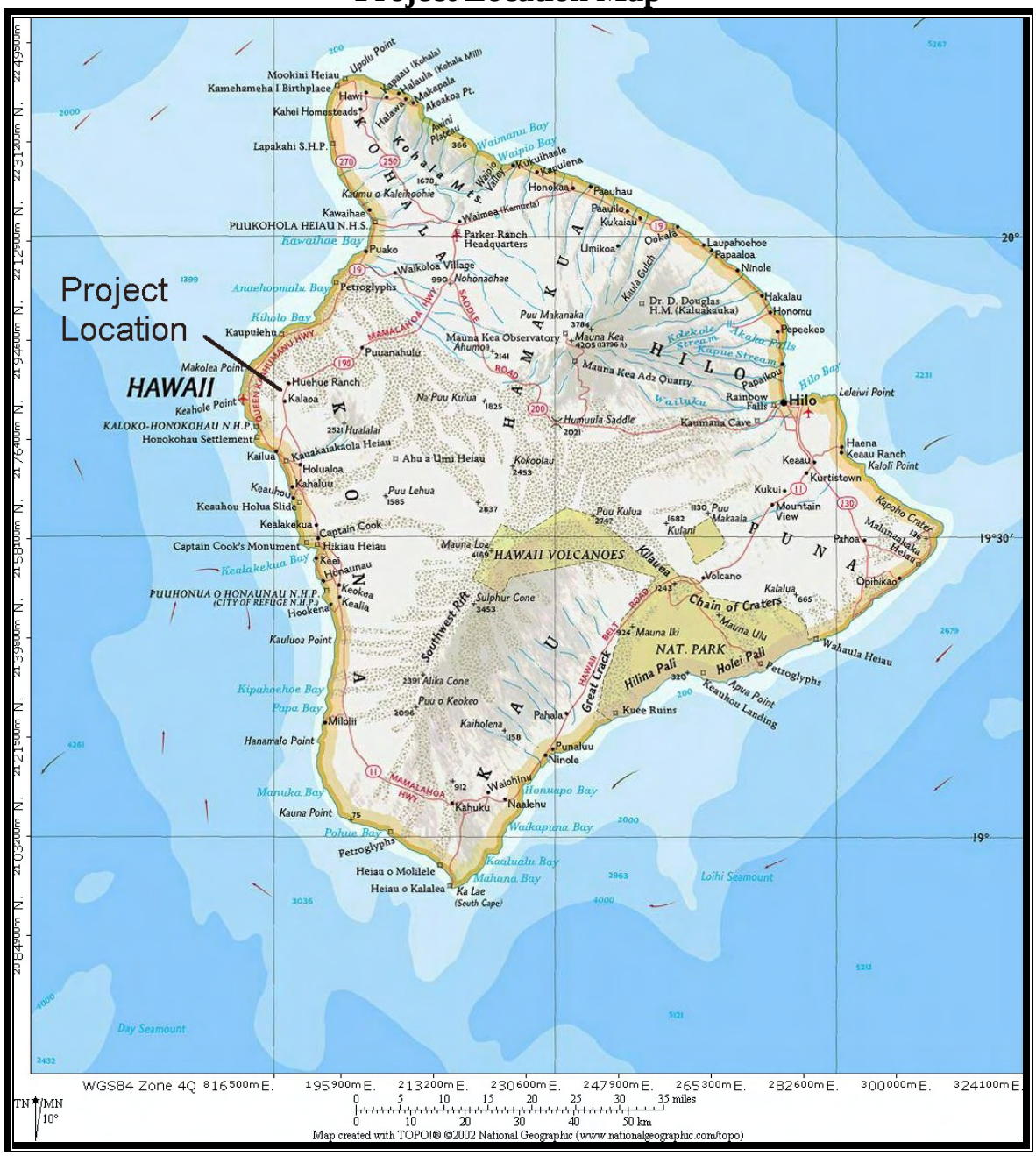
Sincerely,

Ron Terry

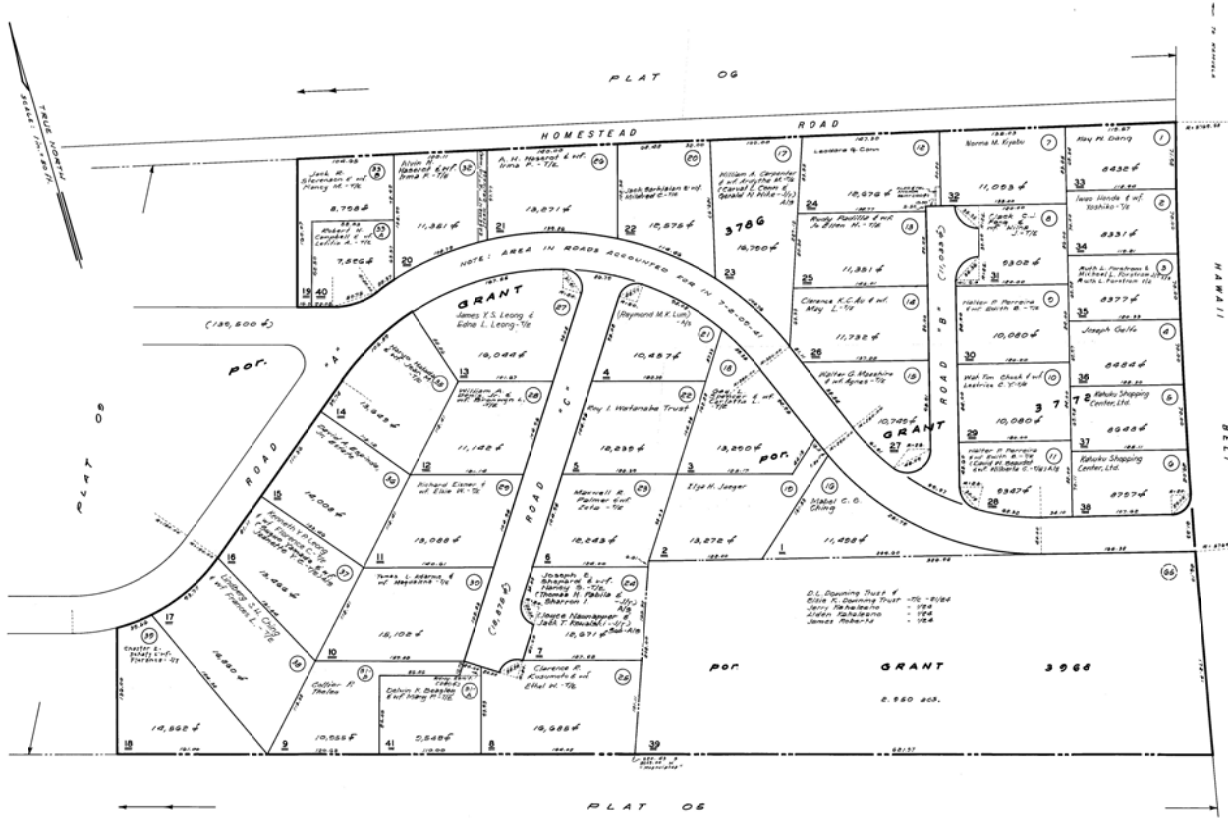
Ron Terry, Principal
Geometrician Associates

FIGURES USED IN LETTERS

Project Location Map



7-2-08 3RD DIV



NOTE: All lots owned by Howard Pung Dang, Allan Nee Dang & Edward Ann Dang - Tte. unless otherwise noted.

SUBJECT TO CHANGE

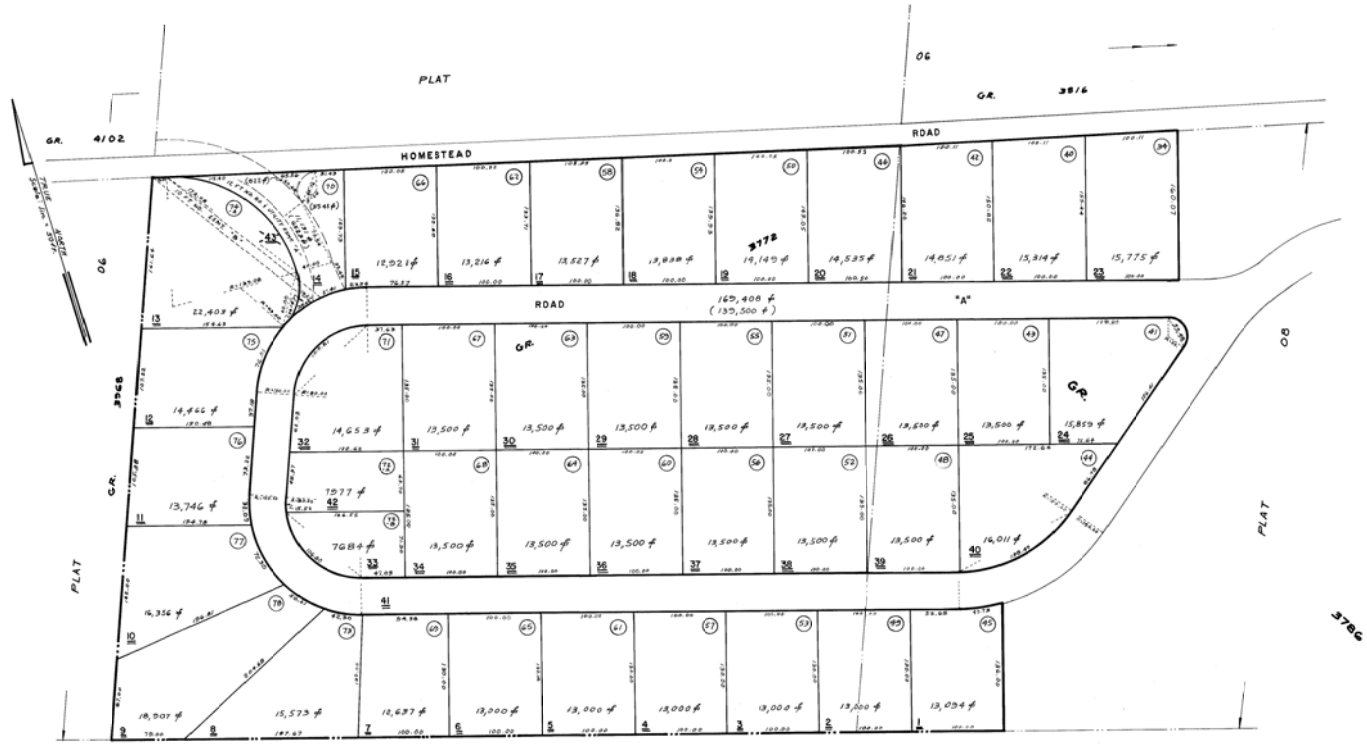
DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
STATE OF HAWAII
TAX MAP

ZONE	SEC.	PLAT
7	2	08

CONTAINING PARCELS
SCALE: 1 IN. = 50 FT.

DWG NO. 4881 (DIRECT TRACING)
SOURCE: FILE PLAN 637
BY: [illegible] AUGUST 26, 1985

por. KONA OCEAN VIEW PROPERTIES, PUUKALA, NORTH KONA, HAWAII. FILE PLAN 637 (formerly por. 7-2-06-2)



Owners, lessees, & vendees name recorded on this tax map print may not be current. Please refer to computer and history sheets for current owners.

DEPARTMENT OF FINANCE
PROPERTY ASSESSMENT DIVISION
MAPPING BRANCH
STATE OF HAWAII
TAX MAP

COUNTY OF HAWAII

ZONE	SECTION	PLAT
7	2	09

SCALE: 1 IN. = 50 FT.

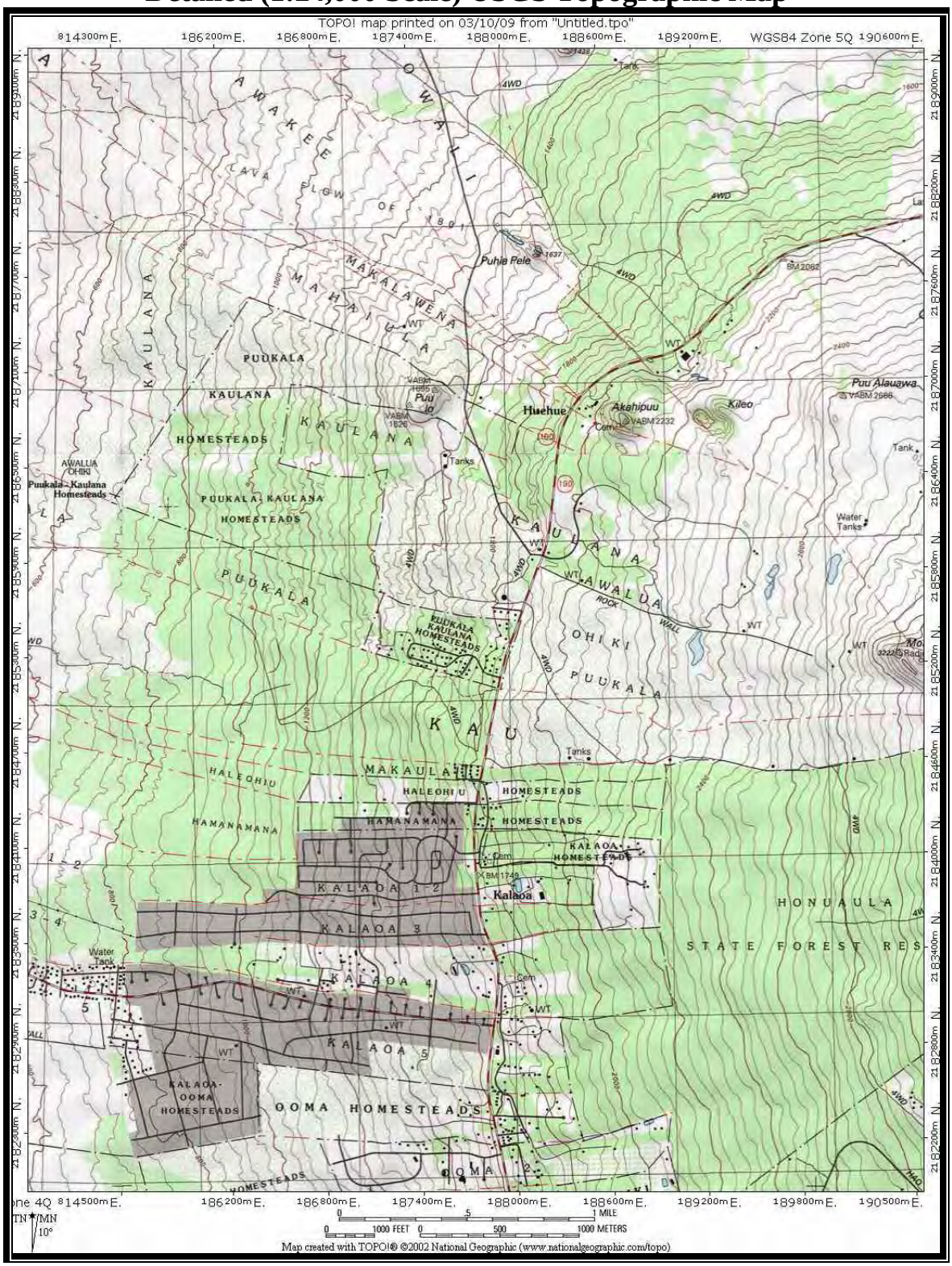
PRINTED: .....

por. "KONA OCEAN VIEW PROPERTIES," F.P. 637 (Formerly por. 7-2-05-2), PUUKALA, NORTH KONA, HAWAII

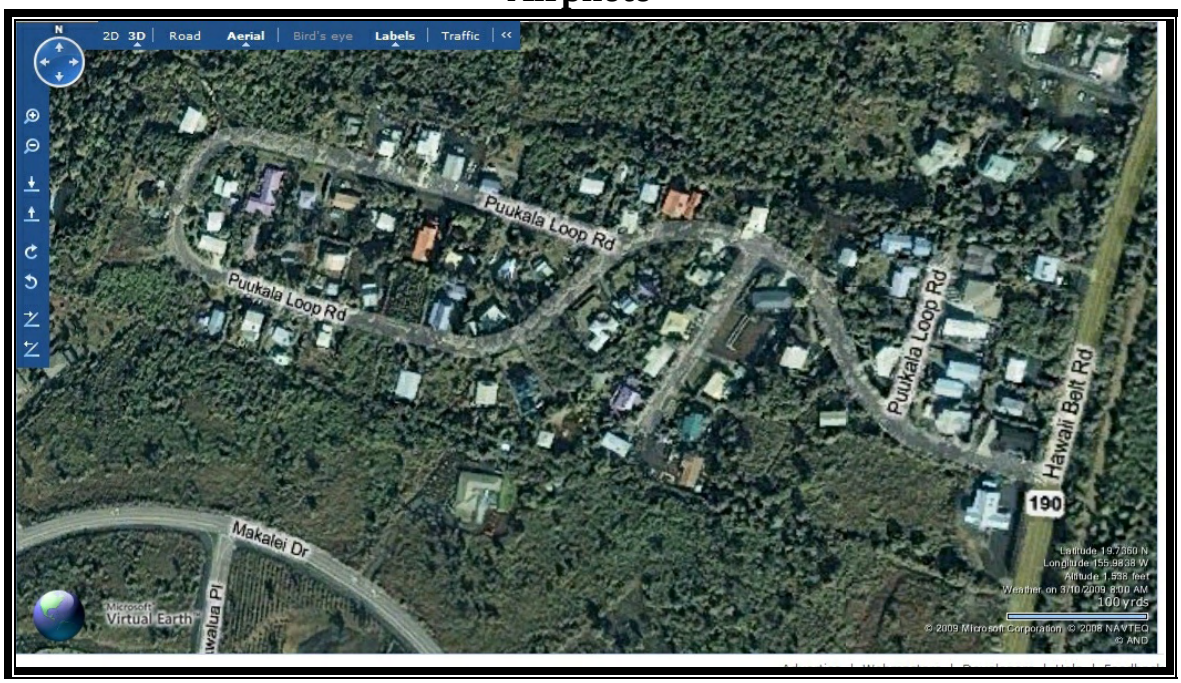
FOR PROPERTY ASSESSMENT PURPOSES – SUBJECT TO CHANGE

Retraced September 19, 1956
TMK NO. 4592 (DIRECT TRACING) DATE August 26, 1959
A.K./J.F. BY: R.Y.K./Y.K.
SOURCE T.M.R. F.P. 637

Detailed (1:24,000 Scale) USGS Topographic Map



Airphoto



Source: Microsoft Virtual Earth ©

Typical Subdivision Street Photo

Note black water lines on left shoulder

LETTER TO U.S. ARMY CORPS OF ENGINEER CONCERNING WATERS OF U.S

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 10, 2009

George P. Young, P.E.
Chief, Regulatory Branch
U.S. Army Engineer District,
Ft. Shafter, HI 96858-5440

Dear Mr. Young:

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County of Hawai'i TMK: 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai'i County Department of Water Supply to prepare a State of Hawai'i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of the Kona Ocean View Properties subdivision at Pu'ukala in Kona to County standards (see attached photos and location and TMK maps for area). The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision, connecting to a water main at the intersection of the subdivision road with the highway. No undisturbed ground is involved.

This letter is to share information about the project, request your concurrence that no waters of the U.S. are present on the project site, and inquire if there are any other issues that you wish to see addressed in the EA. I have inspected the project site on several occasions and am familiar with its characteristics. To better explain the project site, I have attached a USGS topographic map portion, two TMK maps, a photo of the typical streetscape, and an airphoto. The project site consists of the private streets and adjacent unpaved right-of-way within the subdivision. It is located at an elevation of approximately 1,530 to 1,860 feet above sea level just off Mamalahoa Highway near the Kaloko area of Kona. The substrate is rocky, with very shallow soil. The climate is warm, with about 45 inches of annual rainfall concentrated in the summer. As shown in the attached 1:24,000-scale topographic map, no blue-line USGS permanent or intermittent streams are located in the area. No drainage courses are evident. The project

site is in Flood Zone X, outside the 100-year floodplain. There are no known areas of local (non-stream related) flooding. No water features of any kind, such as wetlands or ponds, appear to be present on or near the site.

Please contact me at (808) 969-7090 (Big Island) if you have any questions, require clarification, or would like a site visit. Also, please indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days if at all possible.**

Sincerely,

Ron Terry, Principal
Geometrician Associates

LETTER TO U.S. FISH AND WILDLIFE SERVICE CONCERNING ENDANGERED SPECIES ACT AND RELATED LAWS

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 10, 2009

Patrick Leonard
Division of Ecological Services
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, HI 96850

Dear Mr. Leonard:

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County of Hawai'i TMK: 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai'i County Department of Water Supply to prepare a State of Hawai'i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of the Kona Ocean View Properties subdivision at Pu'ukala in Kona to County standards (see attached photos and location and TMK maps for area).

The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision, connecting to a water main at the intersection of the subdivision road with the highway. No undisturbed ground is involved.

This letter is to share information about the project, request your concurrence that no threatened or endangered species or critical habitat would be affected by the undertaking, and inquire if there are any other issues that you wish to see addressed in the EA. I have inspected the project site on several occasions and am familiar with its characteristics. To better explain the project site, I have attached a USGS topographic map portion, two TMKs map, a photo of the typical streetscape, and an airphoto. The project site consists of the private streets and adjacent unpaved right-of-way within the subdivision. It is located at an elevation of approximately 1,530 to 1,860 feet above sea level just off Mamalahoa Highway near the Kaloko area of Kona. The substrate is rocky, with very shallow soil. The climate is warm, with about 45 inches of annual rainfall concentrated in the summer. As shown in the attached 1:24,000-scale topographic map, no blue-line

USGS permanent or intermittent streams are located in the area. No drainage courses are evident. The project site is in Flood Zone X, outside the 100-year floodplain. No water features of any kind, such as wetlands or ponds, appear to be present on or near the site.

Dr. Patrick Hart of the Biology Department of the University of Hawai‘i at Hilo and I conducted a botanical survey of the corridor and found only low-stature vegetation within the right-of-way, primarily grasses and common alien herbs. The only native species observed were ‘uhaloa (*Waltheria indica*) and popolo (*Solanum americanum*), two very common indigenous plants that are frequently found on roadsides. No threatened or endangered plants species are involved. No removal of trees or large, shrubby vegetation is required. The project does not involve any lighting, either permanent or temporary.

Please contact me at (808) 969-7090 (Big Island) if you have any questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days.**

Sincerely,

Ron Terry, Principal
Geometrician Associates

LETTER TO NATIONAL PARK SERVICE, KALOKO-HONOKOHAU NATIONAL HISTORICAL PARK

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 9, 2009

Ms. Geraldine K. Bell, Superintedent
Kaloko-Honokohau Nat. Historical Park
73-4786 Kanalani Street, #14
Kailua-Kona, Hawai‘i 96740

Dear Ms. Bell:

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County of Hawai‘i TMK: 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai‘i County Department of Water Supply to prepare a State of Hawai‘i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of about 80 existing homeowners of Kona Ocean View Properties subdivision at Pu‘ukala in Kona to County standards (see attached photos and location and TMK maps for area). The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision. No undisturbed ground is involved. Currently, about 20 of the homes have County water meters and PVC "spaghetti" lines. The remainder are on catchment, which involves a number of health issues related to bacteria, dead animals, and acid rain leaching chemicals.

This letter is to share information about the project, request your input on site conditions, and inquire if there are issues that you wish to see addressed in the EA. The areas of investigation in the EA will include but not be limited to the following: water quality assurance; wastewater treatment; flora, fauna, and ecosystems; traffic impacts; geology, soils, and hazards; flooding and drainage impacts; social, cultural and community impacts; historic sites; and economic impacts.

Please contact me at (808) 969-7090 (Big Island) if you have any questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days.**

Sincerely,

Ron Terry, Principal
Geometrician Associates

LETTER TO STATE HISTORIC PRESERVATION DIVISION . CONCERNING SECTION 106 OF NATIONAL HISTORIC PRESERVATION ACT

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 18, 2009

Nancy McMahon, Deputy SHPO
State Historic Pres. Div.
601 Kamokila Blvd., Rm. 555
Kapolei HI 96707

Dear Ms. McMahon:

Subject: Request for Concurrence on Determination of No Historic Properties Affected and Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County of Hawai'i TMK: 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai'i County Department of Water Supply to prepare a State of Hawai'i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of the Kona Ocean View Properties subdivision at Pu'ukala in Kona to County standards (see attached photos and location and TMK maps for area). The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision. No undisturbed ground is involved.

As part of the research for the EA, an archaeological report entitled "Request for SHPO Concurrence with a Determination of No Historic Properties Affected Pursuant to the National Environmental Policy Act and in Compliance with Section 106of the National Historic Preservation Act, Kona Ocean View Subdivision Water System Upgrade" has been prepared, and is attached. The archaeologists concluded after documentary research and field inspection that the entire Area of Potential Effect was bulldozed in 1959 to build a road, road shoulders, and driveways to adjacent residences, and there is no potential for historic properties. We request your concurrence with the findings of this report and/or any comment you may have on the report or the potential for the project to affect historic properties.

The areas of investigation in the EA will include but not be limited to the following: water quality assurance; wastewater treatment; flora, fauna, and ecosystems; traffic impacts; geology, soils, and hazards; flooding and drainage impacts; social, cultural and community impacts; historic sites; and economic impacts. I would appreciate your comments on any special environmental conditions or impacts related to the development. Please contact me at (808) 969-7090 (Big Island) if you have any questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days.**

Sincerely,

Ron Terry, Principal
Geometrician Associates

LETTER TO ADDITIONAL SECTION 106 CONSULTEES

LIST OF PARTIES RECEIVING LETTER

Clyde Nāmuʻo, Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 1250
Honolulu HI 96813

Ruby McDonald
Office of Hawaiian Affairs
75-5706 Hanama Place, Ste. 107
Kailua-Kona HI 96740

Kona Hawaiian Civic Club
PO Box 4098
Kailua-Kona HI 96745

Aliʻi ʻAimoku Paul K. Neves, Chairperson
Royal Order of Kamehameha I
1162 Kalanianaole Ave
Hilo HI 96720

Chairperson
Association of Hawaiian Civic Clubs
P.O. Box 1135
Honolulu HI 96807

Hawaiʻi Island Burial Council
74-383 Kealakehe Parkway
Kailua-Kona HI 96740-

Ike ʻAina Native Hawaiian Trust
P.O. Box 4192
Honolulu HI 96812

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hawai'i 96721 rterry@hawaii.rr.com

March 18, 2009

Dear Agency or Organization:

Subject: Request for Concurrence on Determination of No Historic Properties Affected and Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County of Hawai‘i TMK: 7-2-009:041

Geometrician Associates and Nancy E. Burns, P.E., LLC, have been contracted by the Hawai‘i County Department of Water Supply to prepare a State of Hawai‘i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service's (RD/RUS) loan and grant programs. The project would upgrade the water system of the Kona Ocean View Properties subdivision at Pu‘ukala in Kona to County standards (see attached photos and location and TMK maps for area). The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision. No undisturbed ground is involved.

As part of the research for the EA, an archaeological report entitled "Request for SHPO Concurrence with a Determination of No Historic Properties Affected Pursuant to the National Environmental Policy Act and in Compliance with Section 106of the National Historic Preservation Act, Kona Ocean View Subdivision Water System Upgrade" has been prepared, and is attached. The archaeologists concluded after documentary research and field inspection that the entire Area of Potential Effect was bulldozed in 1959 to build a road, road shoulders, and driveways to adjacent residences, and there is no potential for historic properties. We request your concurrence with the findings of this report and/or any comment you may have on the report or the potential for the project to affect historic properties.

The areas of investigation in the EA will include but not be limited to the following: water quality assurance; wastewater treatment; flora, fauna, and ecosystems; traffic impacts; geology, soils, and hazards; flooding and drainage impacts; social, cultural and community impacts; historic sites; and economic impacts. I would appreciate your comments on any special environmental conditions or impacts related to the development. Please contact me at (808) 969-7090 (Big Island) if you have any

questions or require clarification. Kindly indicate whether you wish to receive a copy of the EA when completed. **We would appreciate receipt of your comments within 30 days.**

Sincerely,

Ron Terry, Principal
Geometrician Associates

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ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Puʻukala, North Kona District, Hawaiʻi Island, State of Hawaiʻi

APPENDIX 2
Correspondence
Part B: Letters from Agencies, Organizations and Individuals

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LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAII DISTRICT
50 MAKAALA STREET
HILO, HAWAII 96720
TELEPHONE: (808) 933-8866 • FAX: (808) 933-8869

IN REPLY REFER TO:

HWY-H 09-2.0242

March 13, 2009

Mr. Ron Terry
Principal
Geometrician Associates
P.O. Box 396
Hilo, Hawai'i 96721

Dear Mr. Terry:

SUBJECT: Early Consultation on Environmental Assessment for Kona Ocean View Properties
Subdivision Water System Upgrade
Hawaii County Department of Water Supply
T.M.K. 3rd Div. 7-2-009:041
Project No. F-10(5)
Route 190, Mamalahoa Highway
Waiakea Homestead House Lots, North Kona, Island of Hawai'i, Hawai'i

The subject development is adjacent to the state highway route 190 Mamalahoa Highway. According to our records this section of highway has a posted speed limit of 55 mph which is considered a high speed highway. Please include a discussion on this issue in the environmental assessment dealing with traffic impacts.

Please send copies of the Environmental Assessment to our Department for review and comment.

Our Department will then further distribute the copies to the appropriate divisions and branches at which time we will review and provide comments. After all comments are received and coordinated, a response from the director will be sent to the County Department approving agency.

Please note that at this time we will not be able to provide comments without pre-empting the departmental response. Thank you for your advance notification of this assessment.

If you have any questions please call Mr. Clinton Yamada at 933-1951.

Very truly yours,

STANLEY M. TAMURA
Hawai'i District Engineer

William P. Kenoi
Mayor

William T. Takaba
Managing Director

Warren H. W. Lee
Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
101 Pauahi Street, Suite 7 · Hilo, Hawai'i 96720-4224
(808) 961-8321 · Fax (808) 961-8630
www.co.hawaii.hi.us

March 16, 2009

Ron Terry, Principal, Geometrician Assocoiates
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hi. 96721

Subject: Early Consultation on Environmental Assessment for Kona
Ocean View Properties Subdivision Water System Upgrade
North Kona District, Kailua Kona, Hawaii
TMK:7-2-009:041

We reviewed the subject Draft Environmental Assessment and due to the roadway being private we have no comments or objections.

If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.

Galen M. Kuba, Division Chief
Engineering Division

KE
c: ENG - HILO/KONA
Planning Director

County of Hawai'i is an Equal Opportunity Provider and Employer.

William P. Kenoi
Mayor

Lono A. Tyson
Director

Ivan M. Torigoe
Deputy Director

County of Hawai'i

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
25 Aupuni Street • Hilo, Hawai'i 96720
(808) 961-8083 · Fax (808) 961-8086
http://co.hawaii.hi.us/directory/dir_envmng.htm

March 18, 2009

Mr. Ron Terry
Principal
GEOMETRICIAN ASSOCIATES, LLC
P. O. Box 396
Hilo, HI 96721

RE: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade
North Kona, County 7-2-009:041

Dear Mr. Terry,

We have no comments to offer on this Project.

Thank you for allowing us to review and comment on this project.

Sincerely,

Lono A. Tyson
DIRECTOR

County of Hawai'i is an Equal Opportunity Provider and Employer.

11588

William P. Kenoi
Mayor

Darryl J. Oliveira
Fire Chief

Glen P. I. Honda
Deputy Fire Chief

County of Hawai'i
FIRE DEPARTMENT
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 981-8394 • Fax (808) 981-2037

March 19, 2009

Mr. Ron Terry, Principal
Geometrician Associates
P. O. Box 396
Hilo, HI 96721

SUBJECT: EARLY CONSULTATION ON ENVIRONMENTAL ASSESSMENT FOR KONA OCEAN VIEW PROPERTIES SUBDIVISION WATER SYSTEM UPGRADE
NORTH KONA, COUNTY 7-2-009:041

In response to your request for comments on the above-referenced project, we have no comments to offer at this time.

Thank you for the opportunity to provide input on this project.

Sincerely,

DARRYL OLIVEIRA
Fire Chief

JCP:lk

William P. Kenoi
Mayor

Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai'i

POLICE DEPARTMENT
349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

March 23, 2009

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade
North Kona, County 7-2-009:041

This responds to your letter dated March 9, 2009, requesting comments on the above-indicated environmental assessment.

Staff has reviewed the assessment and has no comments at this time.

Should you have any questions, please contact Captain Chad Basque, Commander of the Kona District, at 326-4646, ext. 249.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF

HENRY J. TAVARES JR.
ASSISTANT CHIEF
AREA II OPERATIONS

CB:dmv

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF:

March 25, 2009

Regulatory Branch

File No. POH-2009-95

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box # 396
Honolulu, Hawai'i 96721

Dear Mr. Terry:

This letter is in response to your request, received March 13, 2009, for early consultation comments on the preparation of the Environmental Assessment (EA) for the proposed **Kona Ocean View Properties Subdivision Water System Upgrade**. The site is located within a portion of TMK (3) 7-2-009:041 in Pu'ukala, Kona, Hawaii Island, Hawaii.

Section 10 of the Rivers and Harbors Act (RHA) of 1899 requires that a Department of Army (DA) permit be obtained for structures or work in or affecting navigable waters (e.g., Pacific Ocean) of the United States (U.S.) (33 U.S.C. 403). Section 10 waters are those subject to the ebb and flow of the tide extending shoreward to the mean high water mark. Section 404 of the Clean Water Act (CWA) requires that a DA permit be obtained for the discharge of dredge and/ or fill material into waters of the U.S., including jurisdictional wetlands. The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Based on the information furnished to our office, it appears that the subject parcels consist entirely of uplands, and the proposed project will not involve any activities occurring within navigable waters of the U.S. or the discharge (placement) of dredged and/ or fill material into jurisdictional waters of the U.S.; therefore, a **Department of Army permit will not be required.** This determination does not relieve you of any responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work.

Thank you for the opportunity to comment. If you have any questions, please contact Ms. Meris Bantilan-Smith, of my Regulatory staff at 808-438-7701 (FAX: 808-438-4060) or by electronic mail at Meris.Bantilan-Smith@usace.army.mil. Please include File No. POH-2009-95 in any future correspondence regarding this project.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 2, 2009

Geometrician Associates, LLC
Box 396
Hilo, Hawaii 96721

Attention: Mr. Ron Terry

Ladies and Gentlemen:

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Land Division-Hawaii District, Engineering Division, Commission on Water Resource Management, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Charlene E. Unoki
for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 12, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District

FROM: for Morris M. Atta
SUBJECT: Early consultation on environmental assessment for Kona Ocean View properties subdivision water system upgrade
LOCATION: North Kona, Hawaii, TMK: (3) 7-2-9:41
APPLICANT: Geometrician Associates, LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 1, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: _____
Date: 3/26/09

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/MorrisAtta
Ref.: EarlyConsultationEAKonaOceanViewWaterSystem
Hawaii.425

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood Zone X.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) _____

_____

( ) Other: _____

_____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 3/26/09

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
LAND DIVISION

2009 MAR 17 A 9:59

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 12, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office ~~of Conservation & Coastal~~ Lands
x Land Division –Hawaii District

FROM: for Morris M. Atta
SUBJECT: Early consultation on environmental assessment for Kona Ocean View properties subdivision water system upgrade
LOCATION: North Kona, Hawaii, TMK: (3) 7-2-9:41
APPLICANT: Geometrician Associates, LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 1, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: _____
Date: 3/16/09

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON

MEREDITH J. CHING
JAMES A. FRAZIER
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
DONNA FAY K. KIYOSAKI, P.E.
LAWRENCE H. MIIKE, M.D., J.D.

KEN C. KAWAHARA, P.E.
DEPUTY DIRECTOR

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

March 30, 2009

RECEIVED
LAND DIVISION
2009 APR 31 A 10: 14
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

REF: Geometrician.doc

TO: Morris Atta, Administrator
Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management

SUBJECT: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade

FILE NO.: N/A
TMK NO.: (3) 7-2-9:41

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://www.hawaii.gov/dlnr/cwrm.

Our comments related to water resources are checked off below.

☒ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☒ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EPA as having high water efficiency can be found at http://www.epa.gov/watersense/pp/index.htm.

☐ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://hawaii.gov/dbedt/czm/initiative/lid.php.

☐ 6. We recommend the use of alternative water sources, wherever practicable.

☐ 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/resources_permits.htm.

☐ 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.

☐ 9. A Well Construction Permit(s) is (are) required any well construction work begins.

☐ 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 12. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☐ 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.

☐ 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.

☐ 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If there are any questions, please contact Jeremy Kimura at 587-0269.

William P. Kenoi
Mayor

BJ Leithead Todd
Planning Director

County of Hawaii

PLANNING DEPARTMENT
Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720
Phone (808) 961-8288 • Fax (808) 961-8742

April 6, 2009

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo HI 96721

Dear Mr. Terry:

Subject: Environmental Assessment Consultation
Applicant: Hawaii County Department of Water Supply
Project: Kona Ocean View Properties Subdivision Water System Upgrade
Tax Map Key: 7-2-9:41, North Kona, Hawai'i

This is in response to your request for comments on the above-referenced project.

According to your submittal, the Department of Water Supply plans to upgrade the water system of the Kona Ocean View Properties Subdivision to County standards. The work involves trenching and installing water pipelines within the existing paved roadway and adjacent disturbed right-of-way on the various roads within the subdivision. No undisturbed ground is involved.

We note the following for this parcel and the subdivision:

1. The State Land Use designation is Agricultural.
2. It is designated Low Density Urban by the General Plan's Land Use Pattern Allocation Guide (LUPAG) Map.
3. Hawai'i County zoning is Agricultural (A-5a).
4. Hawaii County Zoning Code, Section 25-4-11 states that public and private utilities are permitted uses in any district. Therefore, no land use permits are required for the proposed project.
5. It is not located within the County's Special Management Area.
6. The Kona Community Development Plan was adopted by the County of Hawaii as Ordinance No. 08-131, effective September 25, 2008. A discussion of the proposed improvement as it relates to this plan should be included in the Environmental Assessment.

Please provide us with a copy of the Environmental Assessment for our review and file.

If you have questions, please feel free to contact Esther Imamura of this office at 961-8288, extension 253.

Sincerely,

BJ LEITHEAD TODD
Planning Director

ETI:cs
P:\Public\Wpwin60\ETI\Eadraftpre-Consul\Terry DPW Kona Ocean View 7-2-9-41.Rtf

cc: Planning Department – Kona

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 7, 2009

Mr. Ron Terry
Geometrician Associates
P. O. Box 396
Hilo, Hawaii 96721

LOG NO: 2009.1593
DOC NO: 0904TD05
Archaeology

Dear Mr. Terry:

Subject: **National Historic Preservation Act Section 106 Consultation – Request for Concurrence with a Determination of No Historic Properties Affected Draft Environmental Assessment for USDA Funded Water System Upgrade Pu`ukala Ahupua'a, North Kona District, Island of Hawai'i TMK: (3) 7-2-09: 41**

Thank you for notifying us of this proposed project, which will involve upgrades to the water system for the Kona Ocean View Properties Subdivision. We received your request for concurrence on March 19, 2009. The project includes trenching and installing new water pipelines within the existing paved roadway and adjacent disturbed right-of-way. The overall project area is approximately four acres.

We have reviewed the attached field inspection report (Rechtman, March 2009) and concur with the conclusion that no historic properties will be affected by the proposed project. The inspection consisted of a 100% pedestrian survey of the water line replacement corridor; no evidence of historic properties was encountered. As indicated in the report, the project area is fully developed and any surface evidence of historic properties has been removed.

Due to the lack of an archaeological inventory survey for this subdivision, we do not have reliable information regarding the likelihood of buried deposits or unidentified caves within the project area. We therefore request that you include language in the EA regarding measures for the inadvertent discovery of historic properties during trenching. Such measures would include ceasing all work in the immediate vicinity of the find, protecting the find from additional disturbance, and immediately contacting the State Historic Preservation Division, Hawai`i Island Section at (808) 933-7653.

If you have any questions at this time, please contact Theresa Donham at (808) 933-7653.

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager
Historic Preservation Division

Ron Terry, Principal
Geometrician Associates

Subject: Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade North Kona, County 7-2-009:041

Dear Mr. Terry,

Concerning the Environmental Assessment, I think the thing to consider is what happens if the water system is not installed. Catchment is okay as long as people take care of their tanks and there are no contaminates in the air. Every existing water tank in this subdivision becomes a potential breeding ground for mosquitoes and other forms of bacteria. Unfortunately many of the tanks are not taken care of and there are lots of mosquitoes. Not installing a "to code" County System allows for a potential environmental problem especially when you think about things like the West Nile Virus.

The other area of environmental concern deals with fire. Without hydrants this dry area of Kona will not be able to fend off a brush fire.

John E. Dawrs
936-3379

I have a property (7-2-009-017-000) in the Kona Ocean View Properties subdivision for which you are conducting an environmental report for a water project. I would like to add one thought for your consideration.

When the county water system is installed and many of the catchment systems are removed the mosquito problem would be diminished. Better health conditions for people.

Thanks.

TJ Mastros
Information Systems Manager
Los Angeles Dept. of Water & Power
Office: (213) 367-8555
Cell: (213) 792-7296

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD09/4254

April 14, 2009

Ron Terry, Principal
Geometrician Associates
P.O. Box 396
Hawaii 96721

RE: Request for Concurrence on Determination of No Historic Properties Affected and Early Consultation on Environmental Assessment for Kona Ocean View Properties Subdivision Water System Upgrade, North Kona, County of Hawai'i, TMK (3) 7-2-009: 041.

Aloha e Ron Terry,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated March 18, 2009. Geometrician Associates and Nancy E. Burns, P.E., LLC have been contracted by the Hawai'i County Department of Water Supply to prepare a State of Hawai'i Environmental Assessment (EA) and a federal Environmental Report (ER) for a project funded by the U.S. Department of Agriculture Rural Development, Rural Utilities Services loan and grant program. OHA has reviewed the project and offers the following comments.

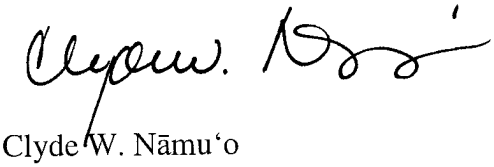
According to the submission to our office, concurrence is requested based upon the National Historic Preservation Act of 1966, as amended (NHPA) and its implementing regulations, 36 CFR 800 (Section 106). After our review, we concur with the determination that no historic properties will be affected by this proposed undertaking due to the ground disturbing activities related to the construction of the road, road shoulders, and driveways associated with the construction of the subdivision.

Furthermore, OHA looks forward to reviewing the Draft Environmental Assessment (DEA) upon completion. The DEA, in accordance with Chapter 343 of the Hawaii Revised Statues (HRS), should include a Cultural Impact Assessment (CIA). In accordance with the requirement of Act 50, Session Laws of Hawaii 2000, a CIA shall include information relating to the practices and beliefs of the Native Hawaiians who once inhabited this area, and it is

recommended that the community be involved in this assessment. Consultation including interviews with kama'āina families and individuals of the area is highly recommended by our office.

Thank you for the opportunity to comment. If you have further questions, please contact Jason Jeremiah by phone at (808) 594-1816 or e-mail him at jasonj@oha.org.

'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o
Administrator

C: OHA Kona CRC Office

Pua Aiu, Administrator
State Historic Preservation Office
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawai'i 96707

United States Department of Agriculture
Forest Service
Pacific Southwest Research Station
Institute of Pacific Islands Forestry
60 Nowelo St.
Hilo HI 96720
Tel: (808) 933-8121 ext. 120
Fax: (808) 933-8120

File Code: 3000

Date: April 27, 2009

Mr. Ron Terry
Geometrician Associates, LLC
PO Box 396
Hilo HI 96721

Dear Mr. Terry,

The proposed project (Kona Ocean View Properties Subdivision Water System Upgrade, North Kona) does fall within one category of Prime Forest Land. However, maps of Prime Forest Land are based on biological potential to grow timber based on the combination of soils, slope, rainfall and elevation. Current vegetation and land use are not considered in the mapping process.

In the case of your proposed project, it appears that the area has already been subdivided and urbanized, and the nature of the project is not detrimental to any potential for timber production, so the designation of Prime Forest Land is irrelevant.

Sincerely,

/s/ Kathleen S. Friday

Kathleen S. Friday

Cc: Ron Cannarella, DOFAW

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

TAKE PRIDE® IN AMERICA

In Reply Refer To:
2009-SL-0223

MAY 01 2009

Dr. Ron Terry
Geometrition Associates, LLC
P. O. Box 396
Hilo, Hawaii 96721

Subject: Species List for an Environmental Assessment for the Kona Ocean View Properties Subdivision Water Supply Upgrade, North Kona, County of Hawaii

Dear Dr. Terry:

Thank you for your March 10, 2009, letter requesting a species list for an Environmental Assessment for Kona Ocean View Properties Subdivision Water Supply Upgrade, North Kona, County of Hawaii (TMK: 7-2-009:041). On March 30, 2009, we requested more information regarding the proposed project. We received your reply via electronic mail on April 7, 2009. This project will be funded by the U.S. Department of Agriculture Rural Development Utilities Service's loan and grants program. The project involves trenching and installing water pipelines within the existing roadway and adjacent disturbed right-of-way. No undisturbed ground will be disturbed. No removal of trees or large shrubby vegetation will occur as part of this project. To the best of our knowledge, no federally listed species or proposed or critical habitats occur within the proposed project footprint.

If you have questions regarding this letter, please contact Dr. Jeff Zimpfer, Fish and Wildlife Biologist at (808)792-9400.

Sincerely,

for Patrick Leonard
Field Supervisor

May 04, 2009

Department of the Army, United States Army Garrison Hawaii
Department of the Navy, Naval Computer and Telecommunications Area Master Station Pacific
Advisory Council on Historic Preservation,Washington, D.C.,
State Historic Preservation Officer, State of Hawaii
Office of Hawaiian Affairs, State of Hawaii
geometrician Associates, LLC
RECHTMAN CONSULTING, LLC

Tom Lenchanko
P.O. Box 4192
Honolulu, Hawaii 96812

Colonel Matthew T. Margotta, Mark Ripperda, Reid Nelson, Kelly Fanizzo, Laura Thielen, Haunani Apoliona, Clyde Namu'o, Ron Terry, Robert B. Rechtman, applicants and others...

Re: Imminent harm due to the lack of "Substantive Consultation" and "Perfect Title" to noted Traditional Cultural Properties (TCP) and ka'anani'au, which are prior and continued historic properties that are historically and presently managed and cared for by 'Aha Kukaniloko/Koa Mana...

'ano'ai kakou:

As spokesperson for 'Aha Kukaniloko/Koa Mana, lineal descendants, Ohana, the traditions and those lineal descendants tied by tenant rights to such properties, i.e., pohakuloa and pu'ukala, Hawaii island, makua, waialua, kahuku, lihue, wahiawa, halemano and other areas of O'ahu island that the 'Aha represents; "Notice Is Posted" herein to the entities listed above, its agents, John and Jane Does... regarding the failures and disasters pertaining to processing and/or requiring protection for TCP-s and historic properties. It is obvious, due to the biased and unfair views of the usurper, the tyranny and cultural genocide of our Ohana tenant rights will not be ending soon! Our Ohana ties to these significant TCP and historic properties are at risk to desecration, damages, destruction and final extermination... We continue to petition the State of Hawaii and its agents to follow their laws and regulations that require "prior and substantive consultation" with associated persons pertinent to management of and/or affected historic properties. Therefore, any applicant public, private or by government proposal must adhere to the United States Army Field Manual 27-10. We maintain our objection to any and all processes and actions due to:
1- a dispute of perfect title for said properties in Hawaii:
2- objection to these attempts to illegally attempt to legitimize land title:
3- repetitive requests by 'Aha Kukaniloko/Koa Mana recommending "Substantive Consultation" with their spokesperson Tom Lenchanko as required by law pursuant to the United States Army FM 27-10, and paradigm laws and regulations to Section 106, Chapter 6E, Hawaii Administrative Rules (HAR) 13-300...
We thank you for this opportunity to provide substantive solutions to your plaguing issues and we shall continue to submit additional omissions in written format. We continue to request a meeting to further discuss our assistance to protect our National and World Heritage Treasures located upon your proposed project areas, Hawaiian Kingdom Land.

Please forward your written question and comments to the address noted above...

Note correspondence received for our comment:
1- April 21, 2009 EPA request Federal Facility Agreement Public comments
2- Army: April 17, 2009 SBCT Dole property, Poamoho Gluch and Wahiawa Reservior ditch
April 17, 2009 IED-D/SRAA training course
3- April 15, and 16, 2009 ACHP comment to US Army PA stamped March 23, 2009 for Makua

Valley, O'ahu, Hawaii
4- Army: April 14, 2009 Lightning Strike Raid and Cache Explotation
March 26, 2009 PARC seawall proposal
March 23, 2009 pre-final PA dated March 19, 2009 for Makua Military Reservation with revised appendices, Draft PA dated February 10, 2009
5- March 18, 2009 geometrician Associates, LLC and Rechtman Consulting, LLC request for SHPO concurrence for Pu'ukala, North Kona, Hawaii
6- Army: February 24, 2009 proposed UEPH, Schofield Barracks Military Reservation, Honouliuli, O'ahu

'a'e ku ua 'a'e lakou i luna o kahi la'a

'owau no me ka ha'aha'a

Tom Lenchanko
kahuaka'i ola ko laila waha olelo 'Aha Kukaniloko/Koa Mana mea ola kanaka mauli
808-349-9949
Hawaiian National

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
ABBEY SETH MAYER
DIRECTOR
OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

Telephone: (808) 587-2846
Fax: (808) 587-2824

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Ref. No. P-12890

January 12, 2010

Mr. Milton D. Pavao, P.E., Manager
Department of Water Supply
County of Hawaii
345 Kekuanaoa Street, Suite 20
Hilo, Hawaii 96720

Dear Mr. Pavao:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for Kona Ocean View Properties Subdivision Water System Upgrade, North Kona, Hawaii

The proposed use of funds from the U.S. Department of Agriculture Rural Utility Service to construct a permanent water system for the Kona Ocean View Properties Subdivision, has been reviewed for consistency with the Hawaii CZM Program. We concur with your certification that the activity is consistent with the enforceable policies of the Hawaii CZM Program, based on the following condition:

The project shall comply with the State Historic Preservation Division requirements of the Section 106 consultation dated April 7, 2009, and Hawaii Revised Statutes, Chapter 6E - Historic Preservation, which is a federally-approved enforceable policy of the Hawaii CZM Program.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at (808) 587-2878.

Sincerely,

Abbey Seth Mayer
Director

c: Dr. Ron Terry
State Historic Preservation Division, DLNR
Planning Department, County of Hawaii

ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Puʻukala, North Kona District, Hawaiʻi Island, State of Hawaiʻi

APPENDIX 2
Correspondence
Part C: Comments to Draft EA and Responses

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LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
SAFE DRINKING WATER BRANCH
919 Ala Moana Boulevard, Room 308
Honolulu, Hawaii 96814

In reply, please refer to:
File: SDWB

August 26, 2010

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry:

SUBJECT: HAWAII OCEAN VIEW PROPERTIES SUBDIVISION WATER SYSTEM IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
PUUKALA, NORTH DISTRICT, HAWAII
TMK: (3) 7-2-009: 041

Thank you for the opportunity to review and comment on the subject document. We have examined the DEA and have the following comments to offer:

1. Based on the project description, this project will result in the Hawaii Department of Water Supply providing direct water service to each of the eighty one (81) residential lots, via individual service laterals and 5/8-inch water meters. Based on this understanding, the Kona Ocean View Properties would become part of Public Water System No. 131, DWS North Kona

2. Hawaii Administrative Rules, Chapter 11-20, "Rules Relating to Potable Water Systems," Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director. However, as the water system will be under the jurisdiction of the County of Hawaii, the Department of Water Supply will be responsible for the review and approval of the plans.

If you have any questions concerning drinking water, please contact me at (808) 586-4258.

Sincerely,

STUART YAMADA, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

SY:cb
c: Ryan Quitoriano
Hawaii Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, HI 96720

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

November 22, 2010

Stuart Yamada, P.E., Chief
DOH Safe Drinking Water Branch
919 Ala Moana Blvd, Room 308
P.O. Box 3378
Honolulu HI 96814

Dear Mr. Yamada:

Subject: Comment to Draft Environmental Assessment, Kona Ocean View Properties Subdivision Water System Improvements, North Kona, County of Hawai‘i, TMK: 7-2-009:041

Thank you for your comment letter dated August 26, 2010, on the Draft EA. In answer to your specific comments:

1. *Public Water System 131*. Thank you for this information, which has been added to the Final EA.

2. *Responsibility for review and approval of water system plans*. DWS acknowledges this responsibility.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,

Ron Terry

Ron Terry, Principal
Geometrician Associates

Cc: Nancy Burns,
Ryan Quitoriano, Hawai‘i County Department of Water Supply

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD / CWB

09049PJF.10

September 15, 2010

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Draft Environmental Assessment (DEA) for Kona Ocean View Properties Subdivision Water System Improvements
North Kona, Island of Hawaii, Hawaii
TMK: (3) 7-2-009:041

The Department of Health, Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project.

Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for an NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

   a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   b. Hydrotesting water.

   c. Construction dewatering effluent.

   You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at:
http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

ALEC WONG, P.E., CHIEF
Clean Water Branch

JF:ml

c: DOH-EPO #I-3321 [via email only]

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

November 22, 2010

Alec Wong, P.E., Chief
DOH Clean Water Branch
919 Ala Moana Blvd, Room 308
P.O. Box 3378
Honolulu HI 96814

Dear Mr. Wong:

Subject: Comment to Draft Environmental Assessment, Kona Ocean View Properties Subdivision Water System Improvements, North Kona, County of Hawai‘i, TMK: 7-2-009:041

Thank you for your comment letter dated September 15, 2010, on the Draft EA. In answer to your specific comments:

1 and 4. *Criteria for projects.* DWS understands the obligation it has to meet these criteria and standards.

2 and 3. *NPDES.* DWS is aware of the need for an NPDES permit and will follow all appropriate procedures.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,

Ron Terry

Ron Terry, Principal
Geometrician Associates

Cc: Nancy Burns,
Ryan Quitoriano, Hawai‘i County Department of Water Supply

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801-3378

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
File:

September 20, 2010

TO: Ron Terry
Geometrician Associates

FROM: Russell S. Takata, Program Manager
Indoor and Radiological Health Branch

SUBJECT: Kona Ocean View Properties Subdivision Water System Improvements

Our comments should be printed as follows:

"Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control.

Should there be any questions, please contact me at 586-4701.

cc: Ryan G. Quitoriano, Hawaii County Department of Water Supply

geometrician
ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

November 22, 2010

Russell S. Takata, Program Manager
DOH Indoor and Radiological Health Branch
919 Ala Moana Blvd, Room 308
P.O. Box 3378
Honolulu HI 96814

Dear Mr. Takata:

Subject: Comment to Draft Environmental Assessment, Kona Ocean View Properties Subdivision Water System Improvements, North Kona, County of Hawai‘i, TMK: 7-2-009:041

Thank you for the comment letter dated September 20, 2010, indicating that the project will need to comply with Chapter 11-46, Community Noise Control. The Draft EA discusses this in Section 3.11. We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,

Ron Terry

Ron Terry, Principal
Geometrician Associates

Cc: Nancy Burns,
Ryan Quitoriano, Hawai‘i County Department of Water Supply

William P. Kenoi
Mayor

BJ Leithead Todd
Director

Margaret K. Masunaga
Deputy

County of Hawai'i

PLANNING DEPARTMENT
Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720
Phone (808) 961-8288 • Fax (808) 961-8742

September 21, 2010

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Review of Draft Environmental Assessment
Project: Kona Ocean View Properties Subdivision Water System Improvements
TMK: (3) 7-2-009:041; North Kona, Hawai'i

Thank you for your letter received August 24, 2010, requesting comments from this office regarding the Draft Environmental Assessment (DEA) for the Kona Ocean View Properties Subdivision Water System Improvements.

The project site, as defined by the DEA, within the Kona Ocean View Subdivision is zoned A-5a (Agricultural-5 acre minimum lot size). The project site is situated within the State Land Use Agricultural District. In addition, according to the County of Hawai'i General Plan 2005 (amended December 2006), the subject property is designated as Low Density Urban by the Land Use Pattern Allocation Guide. The subject area is not within the Special Management Area (SMA).

Part 3.0, Basic Geographic Setting, contains an incorrect Tax Map Key number. Please note that the correct Tax Map Key number for the subdivision road lot is (3) 7-2-009:041.

We have no further comments to offer, at this time. However, please keep us informed and provide our department with a copy of the Final Environmental Assessment for our records.

If you have any further questions or if you need further assistance, please feel free to contact Bethany Morrison of this office at 961-8138.

Sincerely,

BJ LEITHEAD TODD
Planning Director

BJM:cs
P:\wpwin60\Bethany\EA-EIS Review\draftea Kona Ocean View Water System.doc

xc: Hawai'i County Department of Water Supply

geometrician
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integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

November 22, 2010

Bobby Jean Leithead-Todd, Director
Hawai‘i County Planning Dept.
101 Pauahi Street, Suite 3
Hilo HI 96720

Dear Ms. Leithead-Todd:

Subject: Comment to Draft Environmental Assessment, Kona Ocean View Properties Subdivision Water System Improvements, North Kona, County of Hawai‘i, TMK: 7-2-009:041

Thank you for the comment letter dated September 21, 2010, confirming land use designation information and noting that one reference to TMK 7-2-009:041 in which a number sequence was inverted. That reference has been corrected in the Final EA.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,

Ron Terry, Principal
Geometrician Associates

Cc: Nancy Burns,
Ryan Quitoriano, Hawai‘i County Department of Water Supply

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ENVIRONMENTAL ASSESSMENT

Kona Ocean View Properties Subdivision
Water System Improvements

TMK (3rd) 7-2-009:041

Pu‘ukala, North Kona District, Hawai‘i Island, State of Hawai‘i

APPENDIX 3
Section 106 Historic Properties Letter Report

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RC-0498

Request for SHPO Concurrence with a Determination of No Historic Properties Affected Pursuant to the National Environmental Policy Act and in Compliance with Section 106 of the National Historic Preservation Act

Kona Ocean View Subdivision Water System Upgrade

(TMK:3-7-2-09:041)

Puʻukala Ahupuaʻa
North Kona District
Island of Hawaiʻi

DRAFT VERSION

PREPARED BY:

Robert B. Rechtman, Ph.D.

PREPARED FOR:

Ron Terry, Ph.D.
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March 2009

RECHTMAN CONSULTING, LLC
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e-mail: bob@rechtmanconsulting.com
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

Request for SHPO Concurrence with a Determination of No Historic Properties Affected Pursuant to the National Environmental Policy Act and in Compliance with Section 106 of the National Historic Preservation Act

Kona Ocean View Subdivision Water System Upgrade (TMK:3-7-2-09:041)

Puʻukala Ahupuaʻa
North Kona District
Island of Hawaiʻi

RECHTMAN CONSULTING

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INTRODUCTION

At the request of Ron Terry, Ph.D. of Geometrician Associates, LLC, on behalf of his client (Hawai‘i County Department of Water Supply), Rechtman Consulting, LLC conducted an assessment of potential effects to historic properties that might result from the proposed Kona Ocean View Subdivision Water System Upgrade project on approximately 4 acres (TMK:3-7-2-09:041) in Pu‘ukala Ahupua‘a, North Kona District, Island of Hawai‘i (Figure 1). The project is receiving funding from U.S. Department of Agriculture (UDSA) Rural Development, Rural Utilities Service’s (RD/RUS) loan and grant programs, thus is considered a federal undertaking, and is subject to (among other regulations) the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. Section 106 provides for coordination of efforts (36 CFR §800.3(b)) with respect to these authorities. However, while it is possible under 36 CFR §800.8 for the NEPA process to subsume (and replace) the Section 106 process, the current study is being prepared in compliance with Section 106 in coordination with NEPA with respect to the consultation and public involvement. As the property is County of Hawai‘i land, environmental documentation is also being prepared in compliance with Chapter 343 Hawai‘i Revised Statues and the rules of the County of Hawai‘i Planning Department.

For this project, the area of potential effects is the entire Tax Map Parcel (Figure 2); which is coterminous with the road right-of-way with its asphalt pavement and disturbed shoulders. The project area is located at an elevation ranging from 1520 feet (463.3 meters) to 1850 feet (563.9 meters) above sea level. The soils in the study area are classified as Kaimu extremely stony peat (rKED) and Punaluu extremely rock peat (rPYD), both are well-drained, thin organic soils found on six to twenty percent slopes. Kaimu extremely stony peat consists of very dark brown peat about 3 inches thick that overlies *‘a‘ā* lava. Punaluu extremely rocky peat consists of black peat about 4 inches thick that overlies *pāhoehoe* lava (Sato et al. 1973). These soils have formed over Hualālai lava flows that are between 5,000-1,500 years old (Wolfe and Morris 1996). Vegetation in the study area is spare and consists of non-native grasses and ornamental plantings (Figures 3 and 4). The existing vegetation pattern reflects the developed and disturbed nature of the study area.

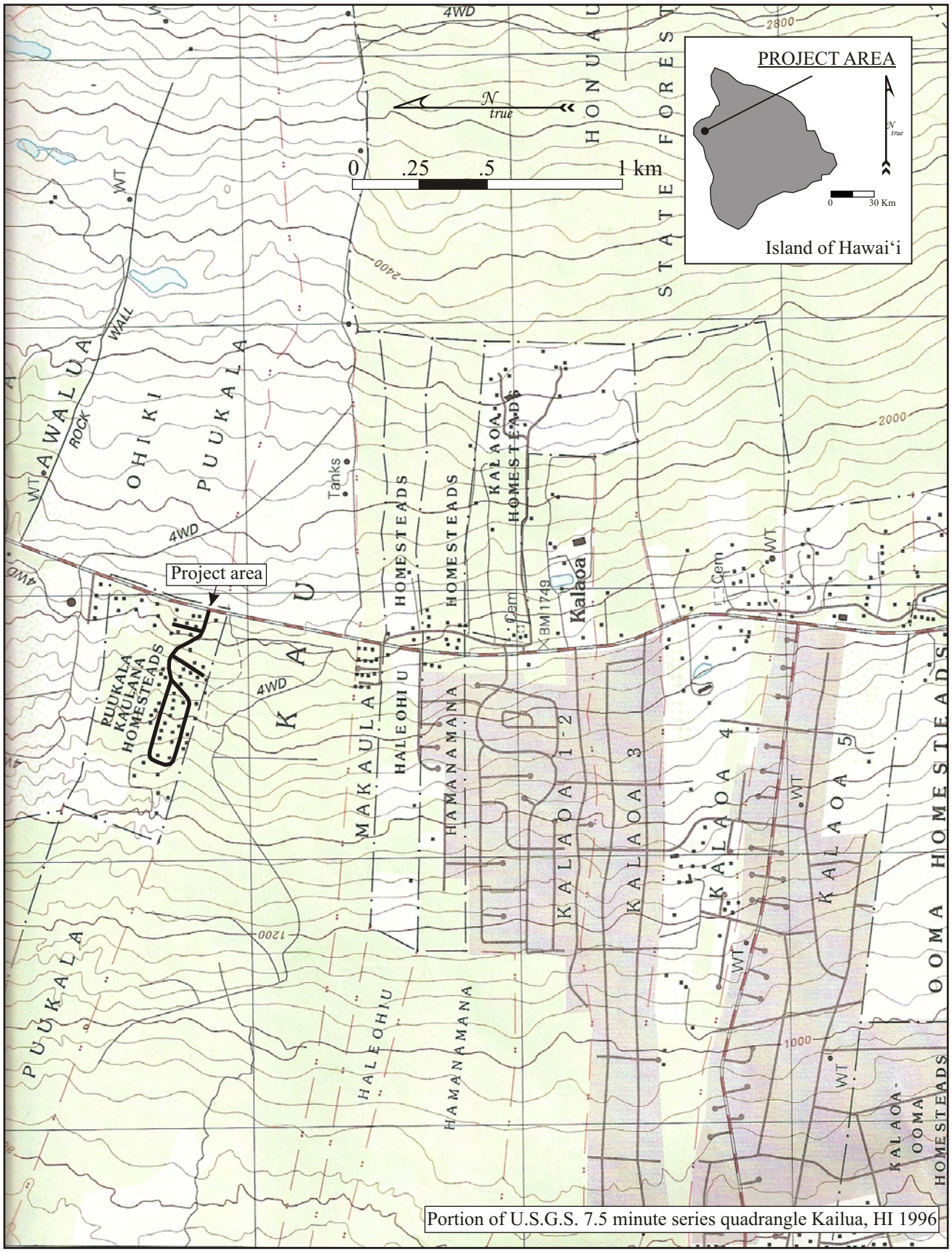


Figure 1. Project area location.

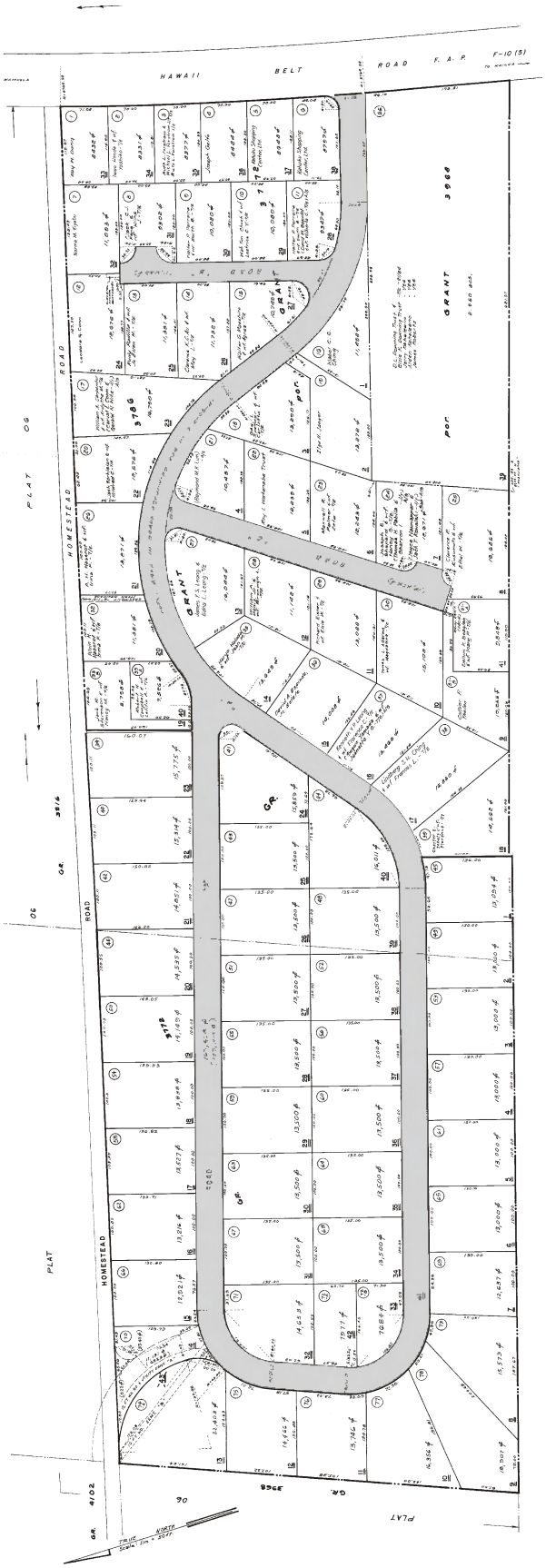


Figure 2. Tax Map Key (TMK):3-7-2-09 and 08 showing current study area (Parcel 09:41, shaded).

Figure 3. Typical vegetation in the central portion of the project area.

Figure 4. Vegetation in the extreme western portion of the project area (note existing surface water lines in roadway shoulder).

BACKGROUND STUDIES

This section of the report describes and synthesizes prior archaeological, cultural, and historical studies that are relevant to the current project area; and provides a brief culture-historical background.

Previous Archaeology in Nearby Areas

The current project area has never been subject to archaeological study. And, while there have been numerous archaeological studies conducted in this portion of North Kona, there have been three conducted in the proximity of the current project area. In 2003 and 2006, PHRI conducted archaeological inventory surveys of a 100-ft wide access road corridor (Corbin 2003) and two adjacent lots within the Puʻukala-Kaulana Homesteads (TMKs: 3-7-2-06:06 and 27) comprising 13.78 acres (Corbin 2006). These study areas are both located within Puʻukala Ahupuaʻa at elevations ranging from 1,630 and 1,880 feet (500 to 570 meters) above sea level to the north of the current project area. As a result of the 2003 access road survey along the northern edge of the later surveyed parcels, seven sites were identified including four historic core-filled walls, a complex of two mounds, one terrace, and one stacked wall segment. The mounds, terrace, and stacked wall were interpreted as traditional Hawaiian dryland agricultural features, while the core-filled walls were interpreted as boundary markers. As a result of the Corbin (2006) study, conducted after the access road had been grubbed, eighteen sites were identified, three of which (all historic boundary walls) had been previously recorded by Corbin (2003). The fifteen newly recorded sites included two additional boundary walls interpreted as having been used for agricultural and ranching purposes, an agricultural terrace complex, a temporary habitation platform, a temporary habitation/agricultural complex, five isolated agricultural terraces, two agricultural clearing mounds, a *kuaiwi*, a temporary habitation enclosure, and a historic burial platform (Site 24836 identified by Corbin (2006) as the grave of Maryann Kunewa, the wife of the original landowner Herman Kunewa).

The third study, an archaeological inventory survey (Haun et al. 2006), was conducted *mauka* of Māmalahoa Highway and the current study area. Haun et al. (2006) surveyed a 989-acre parcel (TMK: 3-7-2-07:001) in the *ahupuaʻa* of Kaulana, Awalua, ʻŌhiki, Puʻukala, and Kaū. As a result of that study, thirty-four sites containing a total of fifty-six features were recorded. This included twelve habitation sites, seven ranching sites (associated with Huʻehuʻe Ranch operations), four agricultural sites, four marker sites, two burial sites, one ceremonial site, one transportation site, one site interpreted as foundations for a radio antenna facility, and two sites whose functions were undetermined (the first being the remnant of a wall and the second being two modified outcrops located on top of Moanuiahea). The sites were distributed throughout the project area at elevations ranging from 1,800 to 3,180 feet (550 to 970 meters) above sea level. Feature types at the recorded sites included enclosures, lava tubes and blisters, mounds, walls, cairns, modified outcrops, concrete slabs, alignments, a retaining wall, a terrace, a pipeline, and a water tank foundation. According to Haun et al. (2006), the ceremonial site may be a small *heiau*, potentially representing a men's house, based on the presence of branch coral.

Culture-Historical Background

It has been proposed that the first inhabitants of Hawaiʻi Island arrived from Kahiki (the ancestral homelands of the Hawaiian gods and people)—likely the Marquesas and Society Islands (Cordy 2000; Emory in Tatar 1982)—by at least A.D. 300, and focused initial habitation and subsistence activity on the windward side of the island (Burtchard 1995; Kirch 1985; Hommon 1986). For generations following initial settlement, communities were clustered along the watered, windward (*koʻolau*) shores of the Hawaiian Islands where streams flowed and rainfall was abundant. In these early times, Hawaiʻi's inhabitants were primarily engaged in subsistence level agriculture and fishing (Handy et al. 1991). There is no archaeological evidence for occupation of the Kona region during this initial stage of island occupation, but long distance voyages occurred fairly regularly through at least the thirteenth century, with some subsequent voyagers settling in Kona (Rechtman and Maly 2003).

Following the initial settlement of Hawaiʻi Island the population expanded. Over the next several centuries (A.D. 300-900), areas with the richest natural resources became populated and perhaps crowded (Rechtman and Maly 2003). Permanent habitation was still concentrated on the windward side of the island, but it is likely that windward residents traveled to the leeward Kona coast for resource extraction purposes (Cordy 1995). By about A.D. 900 to 1100, permanent habitation had begun in Kona (Cordy 2000). Communities were initially

concentrated along the shoreline of sheltered bays, and on the lowland slopes, where there was easy access to fresh water and marine resources (Cordy 1981; 1995; Schilt 1984). The communities shared extended familial relations, and there was an occupational focus on the collection of marine resources (Rechtman and Maly 2003). Informal agricultural fields were probably established at areas with higher rainfall and more available soil.

By the fourteenth century, inland elevations of Kona (to around the 3,000 feet above level) were being turned into a complex system of dry land agricultural fields (today referred to as the Kona Field System; Rechtman and Maly 2003). By A.D. 1400 agricultural fields had spread across the slopes of Hualālai, and much of the coastline was utilized for habitation purposes (Burtchard 1995; Cordy 1995). The earliest agricultural fields may have been located in the southern portion of the system (Schilt 1984), with new fields expanding northward over time (Haun et al. 1998). Radiocarbon data indicates that the population in Kona increased dramatically around A.D. 1400-1600 (Burtchard 1995; Haun et al. 1998; Schilt 1984). It was the pressures of the growing population on the food supply that demanded the growth of the agricultural fields. With the increase in population and agriculture, residency in the uplands was also becoming permanent (Rechtman and Maly 2003).

During the fifteenth century there was a growing separation of the chiefly class from the common people (Rechtman and Maly 2003). Through alliance and warfare certain chiefs came to control larger and larger portions of the island. By the time ʻUmi-a-Līloa became ruler of Hawaiʻi Island (ca. 1525) it was already divided into six districts (*moku-o-loko*), of which Kona was one (Fornander 1996). The District of Kona, like the other districts was controlled by a regional chief, and was further subdivided into smaller units of land (*ʻokana* and *kalana*). The northern-most portion of North Kona, which the current project area is part, was called Kekaha. Maly and Maly relate that, "Native residents of the region affectionately referred to their home as *Kekaha-wai-ʻole o nā Kona* (Waterless Kekaha of the Kona District), or simply as the *ʻāina kaha* (2006:5).

By the sixteenth century the Hawaiian population had stabilized and the *ahupuaʻa* land management system became established as the socioeconomic unit that provided the people with most of the resources they needed for survival (Rechtman and Maly 2003; see Ellis 1963; Handy et al. 1991; Kamakau 1992; Kelly 1983; and Tomonari-Tuggle 1985). Maly and Maly (2006) relate that *ahupuaʻa* were perhaps the most important sustainable Hawaiian resources management unit.

By A.D. 1600-1800 the Hawaiian environment may have reached its maximum carrying capacity, resulting in social stress between neighboring groups (Haun et al. 1998). This volatile period was accompanied by internal rebellion and territorial annexation (Hommon 1986; Kirch 1985). During this period, Kekaha too felt the effects of the turmoil. By the early eighteenth century, following the death of his father Keawe, Alapaʻinui had secured all of Hawaiʻi Island under his rule (Kamakau 1992). Around 1740 his forces were attacked at Kona by the forces of his brother-in-law, Kekaulike of Maui (Maly and Maly 2006).

In 1754 Alapaʻinui died and his son, Keaweʻōpala, succeeded him, but he was defeated and killed that same year by Kalaniōpuʻu, who then became the ruler of Hawaiʻi Island. Kalaniōpuʻu was the reigning chief on January 18, 1778 when British explorer Captain James Cook and his crew became the first Europeans to reach the Hawaiian Islands, ushering in a new chapter in Hawaiʻi's history. Kalaniopuʻu exchanged gifts with Cook the following January [1779] at Kealakekua Bay, and was present in February when Cook, having damaged a mast in a severe storm off the coast of Kohala, returned to Kealakekua Bay and was killed (Kamakau 1992).

Around 1780, Kalaniopuʻu proclaimed that his son Kiwalaʻo would be his successor, and he gave the guardianship of the war god Kukaʻilimoku to Kamehameha. Kamehameha and a few other chiefs, however, were concerned about their land claims, which Kiwalao did not seem to honor (Fornander 1996; Kamakau 1992). Following battles against Kahekili in 1777 and 1779, Kalaniopuʻu gave (ca. 1780), as a result of their valor and consul, "Kekaha and the lands of that section" to the twin brothers Kameʻeiamoku and Kamanawa (Kamakau 1992:310). After Kalaniʻopuʻu died in 1782 civil war broke out. Kiwalaʻo was killed and Kamehameha became the ruler of Hawaiʻi Island, and eventually of all the Hawaiian Islands.

Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increased in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *aliʻi* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu*

system were at their peaks, although western influence was already altering the cultural fabric of the islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered Oʻahu, Maui and Molokaʻi, in 1795, Hawaiʻi saw the beginnings of a market system economy (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

Prior to the nineteenth century, the environment and landscape of Kekaha and the study *ahupuaʻa* appeared much different than they do today. The study *ahupuaʻa* crosses several environmental zones that are generally called *wao* in the Hawaiian language. These environmental zones include the near-shore fisheries and shoreline strand (*kahakai*), the shoreward plains (*kula kai*), and the inland plains (*kula uka*) (Maly and Rechtman 2003). The current project area falls within the upper *kula* zone. While this region is now likened to a volcanic desert, used primarily by grazing cattle, it was once filled with groves of native hardwood shrubs and trees such as *ʻūlei* (*Osteomeles anthyllidifolia*), *ēlama* (*Diospyros ferrea*), *uhiuhi* (*Caesalpina kavaiensis*), *ohe* (*Reynoldsia sandwicensis*) and *koʻokoʻolau* (*Bidens* spp.) (Maly and Maly 2006). The upper *kula* recieves 30 to 40 inches of rainfall annually, and it is in this zone that taller forest growth occurs. Within the *kula uka* the environment changes from the *wao kanaka* (region of man; roughly 1,200 to 2,200 feet above sea level) to the *wao nahele* (forest region; above 2,200 feet elevation). This region once provided native residents with a wide range of natural resources that were of importance for religious, domestic, and economic purposes (Maly and Maly 2006). It was also where most of the agriculture of Kekaha was conducted, but the *kula uka* did not provide all that was needed for survival. As described by Maly and Maly:

> The ancient Hawaiians saw (as do many Hawaiians today) all things within their environment as being interrelated. That which was in the uplands shared a relationship with that which was in the lowlands, coastal region, and even in the sea. This relationship and identity with place worked in reverse as well, and the *ahupuaʻa* as a land unit was the thread which bound all things together in Hawaiian life. (2006:7)

In Kekaha this relationship was especially apparent during the dry season, when the people would move from the uplands to the coast where water could be found. An account written by Kihe (in *Ka Hōkū o Hawaiʻi*, 1914-1917, with contributions by John Wise and Steven Desha Sr.; translated by Kepā Maly) describes this migration:

> *…ʻOia ka wā e neʻe ana ka lā iā Kona, hele a maloʻo ka ʻāina i ka ʻai kupakupa ʻia e ka lā, a o nā kānaka, nā liʻi o Kona, pūheʻe aku la a noho i kahakai kāhi o ka wai e ola ai nā kānaka* – It was during the season, when the sun moved over Kona, drying and devouring the land, that the chiefs and people fled from the uplands to dwell along the shore where water could be found to give life to the people. (April 5, 1917 in Maly and Maly 2006:7)

The landscape of Kekaha and the current study *ahupuaʻa* changed drastically in 1800-1801 when lava flows from the eruptions of Kaʻūpūlehu and and Puhi a Pele on the slopes of Hualālai swept across the land. The lava flow from Puhi a Pele passed north and west of the current project area covering the *makai* portions of Puʻukala Ahupuaʻa. The lava flows consumed native settlements, agricultural field systems, sheltered coves, fresh water sources, and numerous features of the natural environment including the great fishpond of Paʻaiea (Maly and Maly 2006). This pond once extended from Kaʻelehuluhulu in Kaulana Ahupuaʻa south to near the border of Kalaoa and ʻOʻoma *ahupuaʻa*.

Around 1812, King Kamehameha I decided to return to his home island of Hawaiʻi to spend the rest of his years in Kona (Iʻi 1959). Upon returning to Kailua, Kamehameha ordered men into the mountains of Kona to cut sandalwood and carry it to the coast, paying them in cloth, tapa material, food and fish (Kamakau 1992). This new burden added to the breakdown of the traditional subsistence system. Farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine. Kamakau wrote that, "this rush of labor to the mountains brought about a scarcity of cultivated food . . . The people were forced to eat herbs and tree ferns, thus the famine [was] called Hi-laulele, Haha-pilau, Laulele, Pualele, ʻAmaʻu, or Hapuʻu, from the wild plants resorted to" (1992:204). Once Kamehemeha realized that his people were suffering, he "declared all the sandalwood the property of the government and ordered the people to devote only part of their time to its cutting and return to the cultivation of the land" (ibid.:204). In the uplands of Kailua a vast plantation

named Kuahewa was established where Kamehameha himself worked as a farmer. Kamehameha enacted the law that anyone who took one taro or one stalk of sugar cane must plant one cutting of the same in its place (Handy et al. 1991). While in Kailua, Kamehameha resided at Kamakahonu in Kailua.

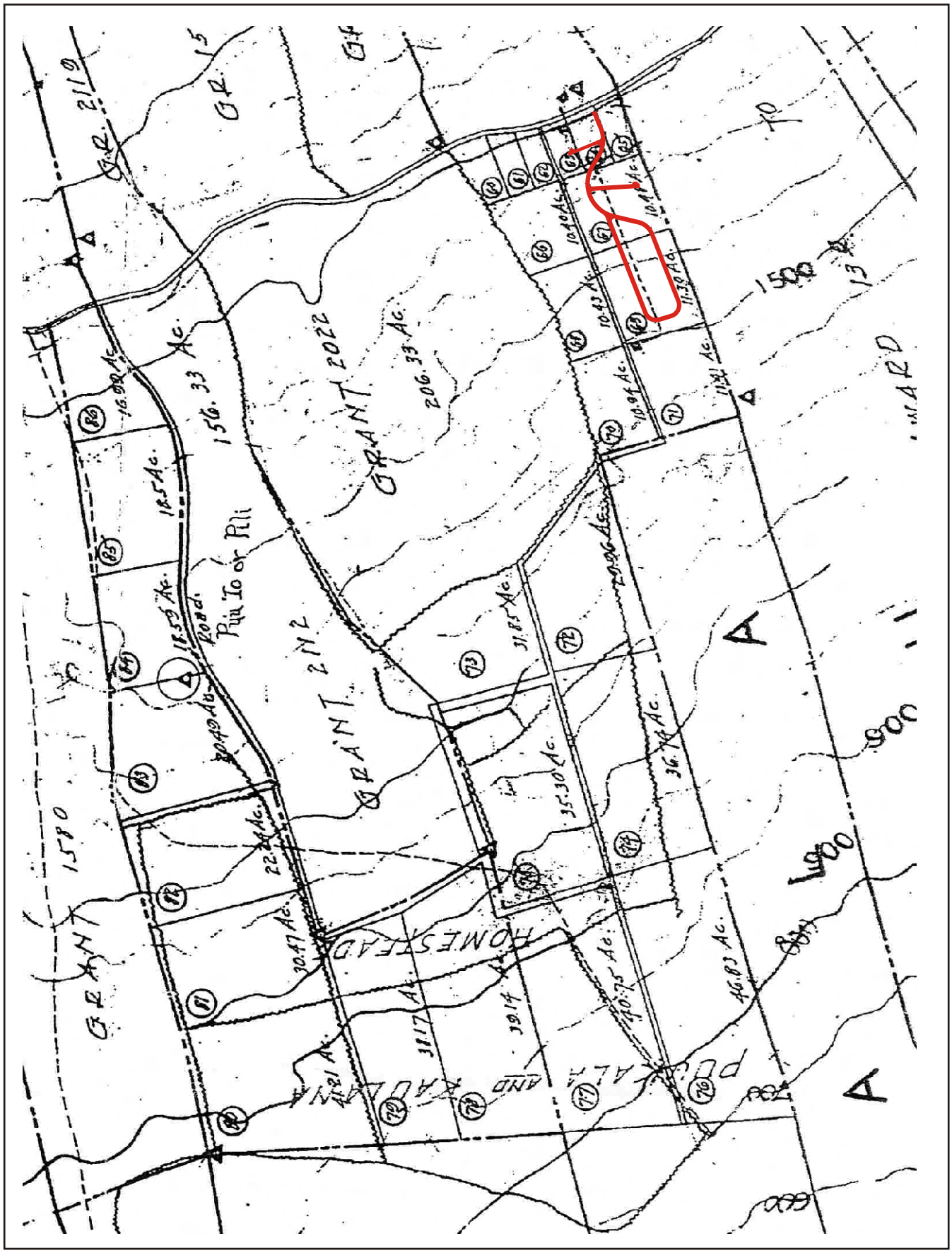
By the mid-nineteenth century, the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership, and in 1848 the *Māhele ʻĀina* became the vehicle for determining ownership of native lands. This change in land tenure was promoted primarily by the missionaries and Western businessmen in the island kingdom. Generally these individuals were hesitant to enter business deals on leasehold land. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. During the *Māhele*, all lands in the Kingdom of Hawaiʻi were placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) *Konohiki* Lands (Chinen 1958:vii and Chinen 1961:13). The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission (Maly and Maly 2006). All three types of land were subject to the rights of the native tenants therein.

As a result of the *Māhele*, Puʻukala Ahupuaʻa was retained as Government Land. Only one *kuleana* was awarded, LCAw. 9164 to Kaupuu. This award is located *mauka* of the Upper Government Road. Kaupuu, who was the *konohiki* of Puʻukala at the time, actually claimed a house lot in ʻŌhiki Ahupuaʻa and ten *kalo* (taro) *kihapai* in Pu'ukala Ahupuaʻa, but only the taro lands were awarded (Haun et al. 2006). Kaupuu had received the lands from Kekuhaupio in the time of Kamehameha I.

During the middle to late eighteenth century many of the remaining native tenants of the Kekaha region still lived much as their ancestors did (Maly and Maly 2006). However, with the introduction of cattle and goats, the sale of grant parcels, and the growth of the ranching industry in the area, things were quickly changing. Maly and Maly write that the native tenants of Kekaha at this time, "traveled the trails between the uplands and the coast, cultivated crops, fished, [but] found themselves being drawn into the need to control introduced ungulates—primarily goats—that were invading their lands" (2006:117). Wall building flourished during this period as the residents of Kekaha struggled to keep cattle and goats out of their houses and gardens.

By the late 1800s ranching had become an established industry in Kekaha. The lands in the vicinity of the current project area became part of the Huʻehu'e Ranch. The formation of this ranch is attributed to John Avery Maguire (1848-1919), a half-Hawaiian who moved to North Kona from Kohala in 1886 (Maly and Maly 2006). During the latter part of the nineteenth century, and into the early twentieth century, Maguire, his wife Luka Hopulaau Maguire (granddaughter of Hopulaau, Grant No. 2112), and members of her family, consolidated many lands in the Kekaha region under their names, creating the Huʻehuʻe Ranch. Maguire and his wife eventually settled in Awakeʻe Ahupuaʻa, north and *mauka* of the current project area.

Despite the *Māhele* and Grant programs of the middle 1800s, many of the native tenants still remained on lands for which they held no title (Rechtman and Maly 2003). For this reason, in 1884 the Hawaiian Kingdom initiated a program to create homestead lots on Government lands. According to the Homestead Act of 1884, one of the primary goals of this program was to get more Hawaiian tenants in possession of fee-simple property. The Homestead Act allowed applicants to apply for lots of up to 20 acres in size, but required that they own no other land. As the intent of the act was to provide residents with land upon which they could cultivate crops or graze animals, most of the lots in Kekaha were situated in the vicinity of the Upper Government Road (near the present-day Māmalahoa Highway; Rechtman and Maly 2003). The current project area is a portion of the Puʻukala and Kaulana Homesteads, and is made up of two former land grants (Grant 3772 to Maianu and Grant 3786 to Mrs. Kaaikaula) that were issued in 1895. These grants appear to have been further subdivided by 1930 (Figure 5) into Kaulana Homestead Parcels 63, 64, 67, and 69. By 1959, these parcels were once again consolidated under the ownership of Dang Bros. Inc. and in that year the current Kona Ocean View Subdivision was created.


GRANT 2119
GRANT 2022
GRANT 2112
GRANT 1580
HOMESTEAD
Road
Pua To or Pili
1500
1300
900
1100
800
1300
1500
1500
1500

CURRENT PROJECT EXPECTATIONS

Based on the results of prior archaeological studies in the immediate project area vicinity (Corbin 2003, 2006; Haun et al. 2006), the archaeological expectations for the current project area would include Precontact agricultural features and habitation sites, and possible Historic Period features. However, given the specific history of roadway construction and residential development, the expectations for discovering archaeological features within the APE are considered to be low; much, if not all, of the APE was mechanically disturbed when the Kona Ocean View subdivision and roadway was build beginning in 1959.

THE AREA OF POTENTIAL EFFECTS AND THE IDENTIFICATION OF HISTORIC PROPERTIES

Given the nature of the proposed project, it was determined that an appropriate Area of Potential Effects (APE) would be the paved roadways and their immediate shoulders (an area slightly less than 4 acres). Records on file at the Department of Land and Natural Resources-State Historic Preservation Division indicate that the APE has never been surveyed for historic properties, and given the results of prior nearby archaeological studies (Corbin 2003, 2006; Haun et al. 2006) the possibility, although remote, exists that historic properties could be present within the APE. With the possibility that the undertaking might affect historic properties, the process of identifying historic properties was initiated pursuant to 36 CFR§800.4 and included both an examination of past studies (archaeological, archival, and oral-historical) and an archaeological survey of the entire APE.

Study Results

On March 2, 2009 Robert B. Rechtman, Ph.D. and Lizabeth A. Hauani‘o, B.A., conducted an intensive pedestrian survey of the entire project area. Field surveyors thoroughly inspected the paved roadway and the disturbed shoulders on either side of the roadway (see Figures 3 and 4). There were no archaeological resources observed within the study area and given the nature of the substrate and the past disturbances (a developed subdivision since 1959) it is highly unlikely that any such resources are present in a subsurface context.

DETERMINATION OF EFFECTS

As no archaeological resources were identified within the APE during the current investigation, our determination is that no historic properties will be affected as a result of the proposed undertaking. These findings, as documented in this report, will be made available to any consulted parties and the public as part of the Environmental Assessment documentation prepared in compliance with the National Environmental Policy Act. It is requested that the Hawai‘i SHPO provide concurrence with the no historic properties affected determination within thirty days of receipt of this document as specified in 36 CFR Part 800.4(d)(1)(i).

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