DRAFT ENVIRONMENTAL ASSESSMENT

WAIMEA WASTEWATER TREATMENT PLANT EXPANSION, PHASE 1

August 2008

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SUMMARY SHEET

Project: Waimea Wastewater Treatment Plant Expansion Phase 1, Waimea, Kauai, Hawaii. The purpose of this project is to construct a previously planned expansion of the existing WWTP (Wastewater Treatment Plant). The proposed expansion project would increase the capacity of the plant from an existing 300,000 GPD (gallons per day) to approximately 700,000 GPD by adding treatment processes such as a membrane bioreactor, a mixed bed biofilm reactor or other similar processes to the existing plant; adding a second backup injection well for effluent disposal in the event of need; and upgrading the effluent quality to R-1 in order to provide the greatest number of reuse applications possible, particularly for irrigation.

Short-term Effects: Short term effects will occur during construction. Such effects may include noise, odors, dust and increases in traffic due to construction and transport of materials.

Long-term Effects: There are no significant long-term adverse or cumulative impacts to geology, hydrology, flora and fauna, water quality, historic resources, traditional or cultural practices, air quality, noise quality or socio-economic resources. There are no hazardous or toxic substances at this location. The areas adjacent to the project site have been previously modified by industrial cultivation of sugar cane or other crops for about 150 years. Exposed areas will be grassed and allowed to revegetate to restore surface areas after construction. The completed project will provide for the sanitary treatment of domestic and commercial wastes generated from the disposal of residential and commercial sewage in Waimea originating in urban developments which are included in the general plan of the County of Kauai. Such urban developments include initial phases of Kikiaola. The proposed project could potentially serve Kekaha if the sewer system should be extended from the Waimea WWTP to Kekaha in the future.

This Environmental Assessment concludes that the proposed action does not constitute an action which significantly affects the quality of the human environment. Therefore, neither a Federal nor a State of Hawaii environmental impact statement is required. This environmental assessment complies with the requirements of the federal Clean Water State Revolving Fund (CWSRF) and includes a finding of no significant impact (FONSI).

Location	Waimea, Kauai, County of Kauai
Tax Map Key	4-1-2-006:036, 037
Project Site	Approximately four acres.
State Land Use District & Zoning	Agriculture Land Use District; Interior zoning.
Ownership	County of Kauai
Approving Agency	Department of Public Works, County of Kauai, 4444 Rice Street, Suite 275, Lihue, Hawai'I 96766.
Proposing Agency	Department of Public Works, County of Kauai, 4444 Rice Street, Suite 275, Lihue, Hawai'I 96766.
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Required Permits and Approvals	DOH – Underground Injection Control Permit; DOH - Possible NPDES permits for dewatering and/or construction site more than one acre stormwater; DOH - General Permit and Engineering Plan Approval; County Planning Commission Use Permit; Building/grading permits.

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CHAPTER 1 - PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343 of the Hawaii Revised Statutes. The EA considers the impacts of the Proposed Action on the environment and the community. The document states the purpose and need for the Proposed Action in Section 1.2. The Proposed Action and alternatives of the Proposed Action are described in Chapters 2 and 3. The affected environment in which the Proposed Action is situated is described in Chapter 4, while the environmental consequences of the alternatives of the Proposed Action are discussed in Chapter 5. Chapter 6 offers a summary of the environmental impacts related to the Proposed Action. Chapter 7 states the expected determination. Chapter 8 lists the agencies and persons consulted. Chapter 9 includes a list of references, a glossary of acronyms, and the EA preparers.

The Proposed Action, by the County of Kauai, is construction of a project to expand the existing Waimea Wastewater Treatment Plant (WWTP). The existing Waimea WWTP has a capacity of 300,000 GPD (gallons per day) and is presently operating at over 90 percent of its capacity. The existing capacity is insufficient to accommodate sewage flows from developments and land uses planned by the County which are identified in the Kauai General Plan.

Due to limited available WWTP capacity since the 1990's, the County Department of Public Works has restricted building permit issuance in Waimea to one residential housing unit per existing lot of record.

In order to meet the level of service required by the developments in the General Plan, an increase in capacity of the existing Waimea WWTP to 700,000 GPD is proposed as described in this Environmental Assessment.

In addition to an increase in capacity, the Proposed Action is to upgrade the quality of the treated wastewater (effluent) from its present quality of R-2 water to R-1 water, as defined in the State of Hawaii, Department of Health, *Guideline for the Treatment and Use of Recycled Water* (May 15, 2002). This upgrade will allow for greater flexibility in the reuse of the effluent, particularly for irrigation.

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is for public health and safety by adding capacity to the existing WWTP to meet the requirements of treatment of wastewater from developments approved in the Kauai General Plan.

CHAPTER 2 - DESCRIPTION OF THE PROPOSED ACTION

2.1 Project Location

The project site is on the island of Kauai in the Hawaiian Islands, central Pacific Ocean. The project is located near Waimea, Island of Kauai, State of Hawaii. TMK (Tax Map Key) 4-1-2-006:036, 037; and latitude N21 degrees, 57", 48"; longitude W159 degrees, 40', 42"; just inland (800 feet north) of Kaumualii Highway, about 0.25 miles west of Waimea (Figure 1). Two land parcels, both owned by the County of Kauai, are involved (Figure 2). They are the existing WWTP (parcel 036, 4 acres) and the combined wastewater pump station (WWPS) and backup injection well (parcel 037, 0.12 acres, approximately 800 feet south of the WWTP).

2.2 Project Features

The existing Waimea WWTP (Figures 3 and 3A) capacity of 300,000 GPD (gallons per day) would be increased to 700,000 GPD adding treatment processes such as a membrane bioreactor, a mixed bed biofilm reactor or other similar processes to the existing plant; adding a second backup injection well for effluent disposal in the event of need; and upgrading the effluent quality to R-1 in order to provide the greatest number of reuse applications possible, particularly for irrigation.[1] The quality of the effluent would be upgraded from R-2 water to R-1 water to allow for greater flexibility in reuse of the effluent.[2] These improvements require modification of parts of the existing WWTP and addition of new structures including electrical and mechanical equipment. The footprint of the proposed expansion project is shown in Figure 2. Included in the expansion is construction of a second backup injection well on the County-owned site of the existing WWPS and backup injection well where additions would include the actual well itself and its associated piping.

The proposed project expansion would be constructed on the existing county-owned parcels of land which are presently used for the same purposes, wastewater treatment and backup effluent disposal, as the proposed project components.

The existing WWTP and WWPS were constructed in 1972. The injection well including piping from the WWTP to this well was constructed in 2007. The WWTP provides “secondary” treatment to produce effluent at R-2 water quality by removal of solids, aeration, final settling, and chlorination. The chlorinated effluent is pumped to reservoirs and the sludge is routed to a holding tank for stabilization and then to a drying bed for dewatering with ultimate disposal at the landfill.

Effluent from the WWTP is pumped to the lower of Kikiaola’s two existing reservoirs where it is mixed with stored water which originates from both storm water and an irrigation ditch. This mixed water is used for irrigation in the surrounding areas. This method of effluent disposal is shifting from the above-described method to use of an effluent isolation ditch (about 600 feet to the northwest of the WWTP) which is intended to reduce the risk of discharge of the reservoir-mix into the ocean during intense rainstorm events. The effluent isolation ditch isolates effluent and forms a source for irrigation water to be used on nearby field crops.

The existing backup injection well was installed to serve as a means of effluent disposal which could be required during intense rainstorms in the event that the effluent disposal ditch is not capable of handling the effluent. The proposed second backup injection well would serve the same purpose and would be needed because of the proposed increase in the WWTP capacity.

2.3 Project Schedule and Cost

Start of construction of the proposed project may be in 2009. This proposed schedule is dependent on permitting, agency approvals, funding authorizations and successful contract awards. Construction could start later. Construction is estimated to require less than two years duration.

[1]The decision on the process design would be made during selection of a design-build contractor.

[2]R-1 water is acceptable for the greatest number of reuse applications; R-2 for a lesser number.

The cost of the proposed project is estimated to be approximately $12 million and the anticipated source of funds are County-issued general obligation bonds. The project may be eligible for, and the County may apply for, an SRF (State Revolving Fund) loan which are available per the federal Clean Water Act. This EA incorporates CWSRF (Clean Water State Revolving Fund) "cross-cutter" language and environmental assessment items to fulfill this requirement (Chapter 7).

2.4 State Revolving Fund (Clean Water Act)

This EA complies with the federal environmental authorities or "cross-cutter" regulations as they apply to the Clean Water State Revolving Fund (CWSRF) loan program. See Chapter 7 for a detailed discussion.

2.5 Required Permits and Approvals

Following is a list of formal permits and approvals required.

A. State of Hawaii Department of Health (DOH). An Underground Injection Control (UIC) Permit is required for the proposed second backup injection well. An NPDES construction activity stormwater permit for an area greater than one acre is required. An NPDES construction activity for disposal of dewatering effluent might be required if dewatering is necessary, but such discharges might take place in surround agricultural fields where there are no state or federal waters in which case such a permit would not be required. A General Permit and Engineering Plan Review and approval is required for WWTP construction. An updated NGPC (Notice of General Permit Coverage) will be required.

B. County of Kauai, Department of Public Works (possible grading and/or building permits); Planning Department/Planning Commission (possible use permit).

Coordination has been carried out or is underway[3] with:

State of Hawaii, Department of Health.

County of Kauai, Department of Public Works and Planning Department.

Office of Hawaiian Affairs.

State of Hawaii, Historic Preservation Division.

U. S. Fish and Wildlife Service.

[3]Coordination is underway via the Chapter 343 EA review process.

CHAPTER 3 - ALTERNATIVES CONSIDERED

The Kauai Department of Public Works has prepared a Wastewater Treatment Plant Facility Plan for the Waimea WWTP and this "FacPlan" is in the process of finalization. The "FacPlan" is the document which implements the requirements of the Kauai General Plan with regard to wastewater disposal for Waimea and surrounding areas. The alternatives described in this EA have their origin in the "FacPlan".

A critical conclusion of "FacPlan" was that it was not feasible to increase the capacity of the Waimea WWTP to accommodate developments and land uses in Kekaha which are included in the Kauai General Plan. This alternative was rejected because of the high costs of providing a wastewater collection system within Kekaha, including several pump stations, and a transmission line from Kekaha to the Waimea WWTP. The engineering analysis in the "FacPlan" concluded that a lesser cost alternative would be to construct a separate WWTP at Kekaha. Therefore, the present EA pertains only to the Waimea WWTP does not address wastewater treatment for Kekaha.

The alternatives considered in this EA are discussed below.

3.1 NO ACTION - The No-Action alternative is the existing condition whereby the Waimea WWTP is operating at near capacity (93 percent) and will not be able to treat wastewater from land uses and developments which have been incorporated into the Kauai General Plan.[4]

3.2 ALTERNATIVE 1 – Minimal Expansion at the Waimea WWTP. In Alternative 1, the proposed expansion project would increase capacity from 300,000 GPD to 360,000 GPD. This alternative would provide treatment for existing undeveloped parcels in Waimea. This alternative was not selected because it would not provide any treatment capacity for Kikiaola's initial phases of development as provided for in the Kauai General Plan.

3.3 ALTERNATIVE 2 - (Recommended and Preferred Alternative) Moderate Expansion at the Waimea WWTP. In Alternative 2, the proposed expansion project would increase capacity from 300,000 GPD to approximately 700,000 GPD to treat the increase in wastewater flows which can reasonably be expected to occur in the near-term future as projected by the Kauai General Plan. Such projections include initial phases of the Kikiaola development. Construction of the preferred alternative also allows and will not foreclose additional future expansion which could accommodate the ultimate build-out of proposed land uses and developments in the Kauai General Plan. Additional treatment capacity can be added to the proposed expansion project later on an as-needed basis.

3.4 ALTERNATIVE 3 - Maximum Expansion at the Waimea WWTP. In Alternative 3, the increase in capacity would be from the existing level of 300,000 GPD to 1,360,000 GPD which would reflect the total build-out of all proposed land uses and developments in the Kauai General Plan. This alternative was not selected because of the high cost of providing a large wastewater treatment capacity which might not be required for many years into the future.

Alternative 2 is the recommended alternative for this proposed project because it is the most cost-effective solution to the present problem of limited capacity remaining at the Waimea WWTP, it does not result in significant loss of environmental (natural, social or economic) values, it requires

[4]The Kauai General Plan is discussed in Chapter 4 of this environmental assessment.

no additional land be acquired other than the existing parcels presently used for wastewater treatment at Waimea, it fulfills the needs of the Kauai General Plan for the present and near-term future, and it does not foreclose installation of additional capacity at a later date if and when such capacity is required to meet the full build-out which is projected based on the Kauai General Plan.

CHAPTER 4 - AFFECTED ENVIRONMENT

This Chapter presents a description of the environment which may be impacted by the Proposed Action. The descriptions are representative of the existing (baseline) environment and are based on historical knowledge, technical studies, previous environmental studies, and site visits.

4.1 Climate

The climate of Hawaii is moderate and can be characterized into two seasons: a) summer, from May 1 to October 31; and b) winter, from November 1 to April 30. The summer months are normally warm and dry with persistent Trade winds (northeasterly winds), while the winter months are wetter and cooler interspersed with Trade winds and Kona winds (southerly winds). In Hawaii trade winds typically have a range from 4 to 12 miles per hour, and rarely exceed 24 miles per hour, though peak gusts have been recorded to 51 miles per hour.

The average annual temperature at Kekaha (nearest weather recording station to the WWTP and similar in climate) varies between 71°F (coolest month) and 79°F (warmest month). Average annual rainfall at the project site is approximately 21 inches.[5] Pan evaporation annually averages about 74 inches.

The project site is a dry, windswept area which can receive high intensity rainfall and which is subject to sheet flows overland during intense rainstorms.

4.2 Geology and Groundwater Sources; Underground Injection Control Line

Geology of the project site reflects the volcanic nature of the Island of Kauai at the eastern end of the Mana plain and is on sediments which form a caprock which is approximately 310 feet thick at the location of the WWTP. The caprock sediments have poor permeability and serve to contain the Napili aquifer beneath them.

The WWTP project site is mauka of, and the WWPS site with the injection well is makai of the underground injection control line (Figure 4) and the existing backup injection well has previously been approved by the State Department of Health.

4.3 Topography

The project site is located at an elevation about 6 feet above mean sea level on a wide and flat plain with very little relief and which is slightly sloped towards the ocean. There are no defined stream channels but there is an extensive ditch system. The entire surrounding area has been somewhat re-contoured over a 150 year period during the cultivation of sugar cane with irrigation via furrows and open ditches.

4.4 Flora

The project site (both land parcels) have only grass which is maintained about a one inch height by mowing. There are no trees or shrubs on the sites. Surrounding vegetation is largely cultivated fields of row crops including seed corn.

4.5 Fauna

No fauna were observed on the project site. There are likely to be field mice or rats, and common field birds in the area and there may be overflights by seabirds.

[5]Climate data source, State of Hawaii *Data Book 1995.* Kekaha is nearest station of record to Waimea and is similar in climate.

4.6 Endangered Species

The project area has been extensively disturbed in the past. There are no listed, threatened or endangered species at these locations and there are no critical habitats (Figure 5).

4.7 Historical and Archaeological Resources; Traditional and Cultural Practices; Public Access

There are no known historic sites or other undocumented archaeological surface remains at or near the proposed project area. There are no known pre-historic sites or burials at or near the proposed project. Roads from the highway are open and ungated allowing access, but the subject facilities are fenced and gated for security.

This area in general was probably traversed in ancient times, but may not have been a location of great activity or permanent settlement. For example, Pukui writes of people traveling from the uplands to the coast to the Keanapuka (Figure 6) Canoe Landing[6] to exchange upland products such as taro for fresh fish.[7]

The land area of the proposed project and environs has been in cultivation of sugar cane from the 1850's until recent times. The site of the proposed project is located in the eastern edge of the Mana Plain which is a low-lying coastal area subject to flooding and not a location of prime habitation in the past. Pukui and Elbert in their definition of the place-name "Mana", wrote, "Dry western end of Kauai, where an older sister of Pele, Namakaokahai (the eyes of Kahai), introduced the *kaunaoa* dodder (Pukui & Elbert, p. 144)." Neal wrote, "In the old literature of Hawaii it [*kaunaoa* or dodder, *Cuscuta sandwichiana*, a parasitical vine] is often called 'the motherless plant' because it is a parasite. 'Kaunaoa, vine, vine of Mana; how I love that orphan vine' is a proverb applied to a loved individual who has no home or family (Neal, p. 710-711)."[8]

The area between Waimea and Kekaha (location of the existing WWTP and proposed project) was described in Handy (p. 408) quoting Captain George Dixon (1789) as: "...'very dry,' and 'the soil 'light red,' mostly covered with coarse grass". Again, Handy (p. 408) referring to Portlock (1789) notes that Portlock found nothing of significance: "...walking along the westward sea plain a month or two earlier in search of a sheltered harbor on this completely exposed coast, recorded nothing of significance, being disappointed in his purpose."

No modern cultural practices were observed or reported by persons familiar with the project sites or in the vicinity of the project sites. Access to the mountains or the shoreline is not impeded by the proposed projects which are adjacent to the highway or an open dirt road.

4.8 Watershed

The proposed project is located in the Kapilimao watershed which totals 3,982 acres (Figure 7). The project site is less than one tenth of one percent of the area of the total watershed. There are no defined stream channels at or near the project site. Prior industrial agriculture grading of the landscape has re-directed stream (all non-perennial) channels originating in the uplands into irrigation ditches which served to provide water for the open furrow type of irrigation used for sugar cane cultivation in the past. These ditches exist today and are used by farms for irrigation.

4.9 Plans, Land Use and Ownership

The project site is located in the State of Hawaii, Land Use District Classification of Agriculture (Figure 8), owned by the County of Kauai which has designated the two land parcels of the existing

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[6]A Keanapuka prehistoric site complex is described as being just south of Nohili Point (about 10 miles west along the coast from the Waimea WWTP) and it is likely that the Keanapuka Canoe Landing referred to by Pukui was at this location. See: U.S. Department of Energy, *Kauai Test Facility Environmental Assessment*, p. J.3.2..

[7]Pukui, No. 2910, p. 319, 1983.

[8]An "old literature" source for this phrase is found in Pukui, No. 986, p. 106, 1983.

WWTP and pump station/back-up injection well as an "Interior" land use zone (Figure 9) which is appropriate for use as a public wastewater treatment facility. The surrounding lands are owned by Kikiaola Land Company

The Kauai General Plan incorporate's projections of the required "...basic services that will be needed to support projected economic and population growth by the year 2020 (p. 7-1)." The Plan notes that:

a) The Waimea WWTP is operating at full capacity and under existing conditions it is not able to accept additional users which and that this inability thus restricts new development in Waimea (p. 7-16);

b) New facilities are needed at the Waimea WWTP to serve new developments in Waimea and Kikiaola (p. 7-18).

The General Plan shows the project site and surrounding lands as an "Open (Figure 10)"[9] land use designation with land uses such as open space, parks, agriculture or conservation (Figure 11).[10] The nearest "heritage resource" is the "scenic roadway corridor".

The Kauai Department of Public Works has prepared a Wastewater Treatment Plant Facility Plan for the Waimea WWTP and this "FacPlan" is in the process of finalization. The "FacPlan" is the document which implements the requirements of the Kauai General Plan with regard to wastewater disposal for Waimea and surrounding areas. The proposed expansion projects as described in this EA have their origin in the "FacPlan" and the projects as described in this EA are those which are recommended in the "FacPlan". All projections of need and descriptions of alternatives and recommended plans with regard to wastewater treatment at Waimea are described in the "FacPlan" which is available for review at the Department of Public Works, Wastewater Management Division office. Also, see the following section on "Population" for more discussion of population and dwelling unit forecasts.

4.10 Wetlands

There are no wetlands shown on the national wetlands inventory maps for this location.

4.11 Population

Surrounding areas are agricultural lands and the nearest populated or residential area is at Waimea a distance of about 0.3 mile from the project site. In the year 2000 census, the population of Waimea was 1,787 which was a decrease from the 1990 population of 1,840. The downward trend of the 1990 to 2000 decade is not anticipated to continue into the future based on the overall growth which has occurred from 2000 to the present on Kauai and in the State of Hawaii overall. Between 2000 and 2006, Kauai's population increased from 58,305 to 63,004 for a total increase in that 6-year period of 8 percent, or about a 1.3 percent increase per year. The population at Waimea is likely to follow the island-wide trend of growth, though perhaps not at the same rate. In addition, residential developments proposed for the Waimea WWTP service area include the proposed projects of Kikiaola of over 250 single family homes and up to 300 transient/hotel units during the initial phase of development. The following table compares the existing and projected units in Waimea and Kikiaola which are in the service area of the Waimea WWTP.

[9]Kauai General Plan, West Side Planning District Land use Map.

[10]Kauai General Plan, West Side Planning District Heritage Resources.

TABLE Existing & Projected Dwelling & Transient/Hotel Units - Waimea WWTP[11]					
	Waimea		Kikiaola		Waimea & Kikiaola
Year	1994	2020	1994	2020	2020 Total
Single Family	469	497	--	253	750
Additional Units	--	70	--	--	70
Multi-Family	10	19	–	81	100
Transient/Hotel	47	47	--	303	350

4.12 Flood Hazard, Tsunami and Flood Classifications

The project site and surrounding areas are shown as Zone A (Figure 12) in the State geographic information system. The source of the Zone A designation is the Federal Emergency Management Office, Flood Insurance Rate Maps which define Zone A as:

> *Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.*

4.13 Hazardous and Toxic Wastes

There are no known Hazardous or Toxic Wastes disposal sites in the area. State of Hawaii Department of Health records[12] do not list any toxic or contaminated releases in this area. The State of Hawaii Department of Health also does not list any reports of problems with leaking USTs (underground storage tanks) at the project location or vicinity.[13]

4.14 Air Quality

In general, outdoor air quality at the project site meets federal and state standards because of consistent trade winds and the absence of significant industrial sources of air contamination. Odors have not been a problem at this WWTP.

4.15 Noise

Low noise levels in this location are typical of an agricultural fields where there is no commercial, industrial or residential development and with low density traffic patterns.

4.16 Water Quality

No surface water sources are present. The proposed project is seaward of the underground injection control line.

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[11] *Waimea WWTP Facilities Plan*, 2008 rev., these are the present and anticipated units which make up the service area of the Waimea WWTP.

[12] State of Hawaii, Department of Health, HEER (Hazard Evaluation and Emergency Response Office), database 1990 to present.

[13] State of Hawaii, Department of Health, Hazardous and Solid Waste web site for leaking underground storage tanks.

4.17 Coastal Zone Management

The entire State of Hawaii (including all land area and extending three miles seaward from the shore) is within the coastal zone as designated by the National Oceanic and Atmospheric Administration and the State of Hawaii Coastal Zone Management Program. However, the project site (both parcels) is not within the special management area (SMA, Figure 13)) of the County of Kauai, and there is no requirement for a permit to perform construction in the SMA.

4.18 Traffic

The Waimea WWTP generates little traffic, only employees and occasional maintenance and service vehicles.

4.19 Solid Waste

There are no solid waste facilities in the project area or watershed. The nearest sanitary landfill is at Kekaha.

4.20 Sanitary Sewer

The project is part of a sanitary sewer system serving with Waimea community. There are lines serving the developed areas in Waimea.

4.21 Stream Water

There are no streams in the project area.

CHAPTER 5 - ENVIRONMENTAL CONSEQUENCES

5.1 Climate

None of the alternatives are anticipated to have any significant impacts on climate, regional or local. The proposed project does not require major alterations of the terrain, ecosystems or biological habitat.

5.2 Geology and Groundwater Sources

None of the alternatives are anticipated to have any significant impacts on geology or groundwater sources, regional or local. However, as a precautionary measure, a monitor well was constructed in the *mauka* (mountain-ward) northeast corner of the WWTP site to monitor any change in the groundwater quality that could be attributed to disposal of effluent into the backup injection well. The proposed second backup injection well is seaward of the UIC line and would only be used in the event that the primary methods of disposal become overloaded due to emergencies such as severe rainstorms. Such occasions are very rare and infrequent. The existing backup injection well and its impact on geology and groundwater was studied and reported extensively and no significant adverse impacts were identified in either the technical studies and in the final environmental assessment.[14]

5.3 Topography

None of the alternatives are anticipated to have any significant impacts on topography, regional or local. There are no stream channels at the site and no streams or other topographical feature will be impacted because the site is quite flat.

5.4 Flora

None of the alternatives are anticipated to have any significant impacts on flora, regional or local. Flora at the site consists of mixed grasses and weeds where are mowed regularly. There are no shrubs or trees. Some of the grassed areas will be replaced by the proposed project components.

5.5 Fauna

None of the alternatives are anticipated to have any significant impacts on fauna, regional or local because there are no fauna present in the areas where construction will take place.

5.6 Endangered Species

None of the alternatives are anticipated to have any significant impacts on endangered species, regional or local because there are no such species or habit at the proposed project site.

5.7 Historical and Archaeological Resources, Traditional and Cultural Practices, Public Access

None of the alternatives are anticipated to have any significant impacts on historical or archaeological resources, regional or local. There are no historic sites at the project location (Appendix). If cultural deposits or burials are found during excavation, the State Historic Preservation Division will be immediately notified and appropriate procedures as mandated by Chapter 6E HRS and HAR Title 13 shall be instituted. Because the present WWTP facility does not impede public access to surrounding areas (such areas are all privately owned), if there are modern cultural practices taking place, they will not be impacted by the proposed project. The subject

[14] *Waimea Wastewater Treatment Plant Backup Injection Well Final Environmental Assessment*, December 6., 2000, and *Final Underground Injection Control Report for the Waimea Wastewater Treatment Plant Backup Injection Well*, December 3, 2007.

project is not anticipated to adversely impact any modern practices because if they occur, they do so outside of the APE (Area of Potential Effect, Figure 14).

5.8 Watershed

None of the alternatives are anticipated to have any significant impacts on the watershed which has been previously modified. The impacted area is less than one tenth of one percent of the entire watershed and is not a location of aquifer recharge because the site is below the UIC line and also in an area of very low rainfall and somewhat impermeable sediment geology.

5.9 Plans, Land Use and Ownership

None of the alternatives are anticipated to have any significant impacts on land use or ownership, regional or local. The proposed increase in capacity is planned in response to plans and approvals as described in the Kauai General Plan. There is no change in ownership. The proposed project will not significantly alter the vertical profile of the Waimea WWTP in such a way as to adversely affect views from the “”heritage resource scenic highway corridor”.

5.10 Wetlands

None of the alternatives are anticipated to have any significant impacts on wetlands which are not present at the proposed project site.

5.11 Population

The alternative of “No action” would not allow population growth in the Waimea WWTP area, which would be against the policies of the County of Kauai as expressed in the Kauai General Plan. The proposed project fulfills the objective of the Kauai General Plan to provide for the projected population growth.

5.12 Flood Hazard, Tsunami and Flood Classifications

None of the alternatives are anticipated to have any significant impacts on flood hazards, tsunami or flood classifications, regional or local because only a very small physical area is impacted. However, as the WWTP is in a Zone A area, all building floors and tops of treatment structures will be sufficiently raised above any potential flood level.

5.13 Hazardous and Toxic Wastes

None of the alternatives are anticipated to have any significant impacts on hazardous or toxic wastes, regional or local, the proposed project does not produce hazardous or toxic wastes.

5.14 Air Quality

None of the alternatives are anticipated to have any significant impacts on air quality, regional or local.

Short term ambient air quality, may be slightly degraded due to implementation of the proposed plan. Such conditions would be due to emissions from the construction equipment and vehicles which may slightly and temporarily impact air quality in the area. The short-term construction impacts on air quality will be mitigated by compliance with the State of Hawaii, Department of Health rules and regulation on construction activities. Such activities include limitations on hours of operation during normal working hours (see next paragraph) and requirements that all equipment be maintained and operated according to manufacturer’s specifications and in compliance with State and Federal laws. Dust control measures will include use of spot-watering, netting or screens as needed. Compliance with air quality rules are the responsibility of the contractor.

At present, odor is not a problem because there are no residences in the nearby vicinity of the WWTP. But, the development of Kikiaola (as shown in the General Plan) might have houses

adjacent to the WWTP. Therefore, the FacPlan states that, “The design of the expanded plant should include provisions for a future odor control unit, in anticipation of Kikiaola developing their land adjacent to the WWTP.” The sludge drying beds will be replaced with a mechanical dewatering unit, so the odors from the sludge should actually decrease after expansion. However, the sludge drying beds will be maintained for backup purposes if the new mechanical unit is out of operation.

5.15 Noise

Construction activities will cause short-term noise impacts in the area. However, these impacts are not expected to be significant. A noise permit could be required by the Department of Health if the proposed equipment to be used during construction would be operated outside of normal working hours (7:00 AM to 5:30 PM, weekdays) or at night. Noise impacts are mitigated by limitations on hours of operation and requirements that all equipment be maintained according to manufacturer’s specifications, including proper muffling of internal combustion engines. Compliance with noise rules are the responsibility of the contractor.

After expansion, there will be additional equipment, including perhaps a larger generator for backup power. The equipment will be housed within buildings, so the noise levels should not increase much, and would only occur during temporary operation of the generator unit during testing, maintenance, or when electrical power from the island’s system is not available.

5.16 Water Quality

The methods of construction will prevent the release of material during excavation and construction. Temporary effects during construction include that the area to be impacted will be approximately two acres and will require an NPDES construction stormwater permit, and there may be a need for disposal of dewatering effluent which could require an NPDES construction dewatering permit, although it may be possible to discharge over surrounding agricultural fields, an action which might not trigger the NPDES requirement if no discharge occurred into State or Federal waters. There would be no long-term adverse effect on water quality.

5.17 Coastal Zone Management

These alternatives are not expected to affect Coastal Zone Management Area programs, activities, plans or policies and a Special Management Area permit is not required because the location of the proposed project is outside the SMA area. The contractor will be required to have erosion controls on the site during construction.

5.18 Traffic

All alternatives except No Action require use of trucks on public roadways to transport construction materials. There would be minor adverse but temporary impacts on traffic during those periods of transport which would primarily be during normal working hours. Normal working hours are considered to be between 6:30 AM and 5 PM week-days and excluding state, federal and local holidays.

5.19 Solid Waste

There would be no effect on solid waste facilities. There is not expected to be significant excess material remaining from excavation work. Excess excavated or demolition material will be disposed of at an approved landfill site.

5.20 Sanitary Sewer

There would be no impacts on the sanitary sewer system from any of the alternatives. The sewer system can handle existing demands. New developments to be constructed are required to have sanitary sewers and to be connected to the Waimea WWTP.

5.21 Stream Water

There are no streams in the area which can be impacted by the proposed project.

CHAPTER 6 - MITIGATION

Mitigation is not required because the proposed project has no adverse environmental impacts.

Prior to construction, the Contractor shall comply with permit requirements as described in this document or others which may be imposed as part of the construction contract. Such permit requirements may include State of Hawaii Department of Health's permits such as:

a) Underground Injection Control;

b) NPDES Permit associated with Construction Activity Dewatering may be required;

c) NPDES Permit associated with stormwater discharge from Construction Activity of areas one acre or larger is likely to be required.

d) Engineering review of plans for the facility.

Cultural resource protection will require that the contractor notify the contracting office, construction manager, and the State of Hawaii, Historic Preservation Office in the event that burials or archaeological artifacts are encountered.

Construction-related traffic will operate during normal working hours and will follow existing regulations regarding road clean-up (if necessary) resulting from this traffic and utilize traffic control devices to provide safe ingress and egress to the project site.

CHAPTER 7 - EXPECTED DETERMINATION

7.1 **Finding of No Significant Impact (FONSI)**. The proposed expansion project will not have a significant effect on the environment and therefore preparation of an environmental impact statement is not required. This document constitutes a Notice of Negative Declaration/Finding of No Significant Impact for the proposed project. This determination was based on review and analysis of the "Significance Criteria" in Section 11-200-12 of the Hawaii' Administrative Rules, as documented below.

7.2 **Findings and reasons supporting the determination including justifying evidence.**

7.2.1 *No irrevocable commitment to loss or destruction of any natural or cultural resource would result.* There are no sites within the project boundaries, nor would any sites outside the project boundaries be affected.

7.2.2 *The proposed project would not curtail the range of beneficial uses of the environment.* The proposed project will not change the lack of beneficial uses at present in the affected environment.

7.2.3 *The proposed project would not conflict with the state's long-term environmental policies or goals and guidelines.* The state's environmental policies and guidelines as set forth in Chapter 343, Hawaii'I Revised Statutes, "State Environmental Policy", encompass two broad policies: conservation of natural resources, and enhancement of the quality of life. The proposed project does not take or alter natural resources, and the project enhances the quality of life by providing for public health and safety through the provision of sanitary sewer treatment and disposal.

7.2.4 *The proposed project will improve the economic and social welfare of the community and the state.* The proposed expansion project will add to the benefits available to residents by providing for economic development and social welfare of residents who will live and work in this community served by the Waimea WWTP.

7.2.5 *The proposed project would not substantially affect public health*. The proposed expansion projects will benefit public health by providing for sanitary treatment and disposal of sewage.

7.2.6 *No substantial secondary impacts, such as population changes or effects on public facilities, are expected.* The project will not alter the present use of the area. Although population in the WWTP service area has declined slightly in the from 1990 to 2000, population is projected to increase and the County of Kauai through its Kauai General Plan is providing for the growth of population in this area primarily via the Kikiaola development plans.

7.2.7 *No substantial degradation of environmental quality is expected due to the proposed project.* Construction activities would have potential short-term impacts on ambient environmental quality, although these impacts are expected to be minor. In the long term, the completed project will improve the environmental quality of the surrounding community due to the availability of a modern wastewater treatment facility.

7.2.8 *No cumulative effect on the environment or commitment to larger actions will be involved.* The proposed expansion projects affect only the existing project and are

part of the required expansion of the facility due to the objectives of the Kauai General Plan. There are cumulative effects in that the Kikiaola development (as set out in the Kauai General Plan) will be enabled through the construction of the expanded WWTP.

7.2.9 *No rare, threatened or endangered species or their habitats are affected.* No impacts are anticipated on any candidate, proposed or listed endangered species or their habitats. There are no known threatened/endangered species or their habitats within the project limits.

7.2.10 *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* Construction activities may cause short-term impacts to air, noise and water quality which will be mitigated to the extent practicable. Long-term impacts are unlikely and the proposed project includes features to minimize and avoid detrimental effects.

7.2.11 *The proposed project will not detrimentally affect environmentally sensitive areas such as flood plains, tsunami zones, beaches, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters.* There are no environmentally sensitive areas in the vicinity of the proposed project. The aquifer underlying the caprock at the project site has been discussed and evaluated in previous documents which found that there should be no adverse impacts.

7.2.12 *The proposed project will improve scenic vistas and view planes identified in county or state plans or studies.* The proposed expansion project have little or no impact on scenic vistas. The WWTP can hardly be seen from the public highway because it is comprised of low-rise structures.

7.2.13 *There will be no requirement for substantial energy consumption.* Construction of the project will not require substantial energy consumption although there will be some increases in energy requirements.

7.3 **Compliance with the State of Hawai'i's Clean Water State Revolving Fund (CWSRF) Program Requirements**. This project may be funded by Federal funds through the State of Hawai'i's Clean Water State Revolving Fund (CWSRF) program. The following sub-sections address the proposed project's relationship to Federal "cross-cutting" authorities.

5.3.1 ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT (16 U.S.C. § 469A-1) AND NATIONAL HISTORIC PRESERVATION ACT (16 U.S.C. § 470(F)). The project site is located in an area that has been used extensively for agriculture for many years and no known archaeological or historic features exist within the project site boundaries. The proposed project will be coordinated with the Office of Hawaiian Affairs (OHA) and the State of Hawai'i Historic Preservation Division, (SHPD) of the Department of Land and Natural Resources through the EA public and agency review process.

5.3.2 CLEAN AIR ACT (42 U.S.C. § 7506©). Air quality at the site of the proposed project is good. Only minor amounts of grading and excavation will be required for the project so that fugitive dust will not be a problem during construction. It is anticipated that a diesel-driven equipment will be used to during construction. Emissions from the diesels may slightly degrade air quality for the short period of time they are in operation. However, all applicable emission and ambient air quality standards will continue to be met. Consequently, no adverse health effects from this source are anticipated. Because of the

distance of the project from residential areas it is unlikely that odor from the diesel exhaust will be noticeable. Normal operation of the proposed facilities will not produce on-site air emissions, will not alter air flow in the vicinity, and will have no other measurable effect on the area's micro-climate. The electrical power consumed in the operation of the injection well will require minor additional power generation (and, therefore, fuel consumption and gaseous emissions) by electric utility producers. The increase represents such a small portion of total power use that its effect not be significant in and of itself.

5.3.3 COASTAL ZONE MANAGEMENT ACT (16 U.S.C. § 1456(c)(1)). Enacted as Chapter 205A, HRS, the Hawaii Coastal Zone Management (CZM) Program was promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972. The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. The Hawai'i Coastal Zone Management Program focuses on ten policy objectives:

Recreational Resources. To provide coastal recreational opportunities accessible to the public and protect coastal resources uniquely suited for recreational activities that cannot be provided elsewhere.

Historic Resources. To protect, preserve, and where desirable, restore those natural and manmade I historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Scenic and Open Space Resources. To protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Coastal Ecosystems. To protect valuable coastal ecosystems, including reefs, from disruption and to minimize adverse impacts on all coastal ecosystems.

Economic Uses. To provide public or private facilities and improvements important to the state's economy in suitable locations; and ensure that coastal dependent development such as harbors and ports, energy facilities, and visitor facilities, are located, designed, and constructed to minimize, adverse impacts in the coastal zone area.

Coastal Hazards. To reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Managing Development. To improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Public Participation. To stimulate public awareness, education, and participation in coastal management; and maintain a public advisory body to identify coastal management problems and provide policy advice and assistance to the CZM program.

Beach Protection. To protect beaches for public use and recreation; locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion.

Marine Resources. To implement the state's ocean resources management plan. Other key areas of the CZM program include: a permit system to control development within a Special Management Area (SMA) managed by the Counties and the Office of Planning; a Shoreline Setback Area which serves as a buffer against coastal hazards and erosion, and protects view-planes; and the Marine and Coastal Affairs. Finally, a Federal Consistency provision requires that federal activities, permits and financial assistance be consistent with the Hawaii CZM program.

The proposed project is located several miles from the coastline and is not within the County's SMA. It does not involve the placement, erection, or removal of materials near the coastline. The type and scale of the activities that it involves typically do not have the potential to significantly affect coastal resources. Finally, it is consistent with the CZM objectives that are relevant to a project of this sort, a public wastewater treatment facility which serves and benefits public health and safety.

A copy of this EA is being sent to the Office of Coastal Zone Management at the State of Hawai'i Department of Business, Economic Development, and Tourism The Department's response is expected to confirm the consistency of the project with the CZM Act.

5.3.4 ENDANGERED SPECIES ACT (16 U.S.C.1536(A)(2) AND (4). The Endangered Species Act (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984 and 1988) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. or elsewhere. The Act mandates that federal agencies seek to conserve endangered and threatened species and use their authorities in furtherance of the Act's 11 purposes. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions.

Existing biota on and near the project site are discussed in this EA. The discussion documents the fact that there are no known rare or endangered species on or immediately around the site of the proposed project. Copies of the EA are provided to the State Department of Land and Natural Resources (DLNR) for review and comment.

5.3.5 FARMLAND PROTECTION POLICY ACT (7 U.S.C. § 4202(8)). The U.S. Congress adopted the Farmland Protection Policy Act (FPPA, Public Law 97-98) on December 22, 1981. The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) has national leadership for administering the FPPA. The effective date of the FPPA, rule (part 658 of Title 7 of the Code of Federal Regulations) is August 6,1984. The stated purposes of the FPP A are to: (a) Minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses and (b) Assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland. "Farmland", as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance. "Farmland" subject to FPPA requirements does not have to be currently used for crop land. The proposed project does not take agricultural lands out of production. The WWTP and WWPS existing land areas are not increased. Consequently, the project is in substantial compliance with the FPPA.

5.3.6 FISH AND WILDLIFE COORDINATION ACT (16 U.S.C. § 662). The Fish and Wildlife Coordination Act, as amended, authorizes the Secretaries of Agriculture and Commerce to

require consultation with the Fish and Wildlife Service and the fish and wildlife agencies of States where the *"waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted. . . or otherwise controlled or modified"* by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of *"preventing loss of and damage to wildlife resources.* "

The proposed project will not result in the diversion of any water body and will not result in impacts on fish or wildlife resources. The Department of Land and Natural Resources is asked to comment on the EA.

5.3.7 FLOODPLAIN MANAGEMENT (42 U.S.C. § 4321). Based on the latest available Flood Insurance Rate Map for the area, the proposed project site lies outside a defined floodplain. The project does not involve property acquisition, management, or construction within a l00-year flood plain (Zones A or V), and it does not involve a "critical action" within a 500-year flood plain. Consequently, it is consistent with applicable regulations and guidance relating to floodplain management.

5.3.8 SAFE DRINKING WATER ACT (42 U.S.C. § 300H-3). The Safe Drinking Water Act (SDWA) is the principal federal law that ensures the quality of the nation's drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Safe Drinking Water Act requires that all public water systems meet stringent water quality standards. These standards cover a long list of potential chemical, radiological and biological contaminants. The standards distinguish between surface water and groundwater sources, with the testing and monitoring requirements for surface water and GWUDI sources being far greater than those for groundwater sources. The proposed project has no effect on drinking water sources.

5.3.9 PROTECTION OF WETLANDS (42 U.S.C. § 4321). There are no wetlands on or near the site. Neither are there food resources on the site that are important to wildlife that use wetlands elsewhere on the island. Copies of the EA are sent to the Department of Land and Natural Resources to ensure adequate consideration of this topic in the environmental review for this project.

5.3.10 WILD AND SCENIC RIVERS ACT (16 V.S.C.1271-1287). The purpose of this act, as stated in Section (b) of its preamble is as follows:

> *It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. shall be preserved in free-flowing condition. and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.*

The proposed project does not involve any streams or rivers which have been listed by the U.S. National Park Service as candidates for designation as Scenic Rivers and the project is therefore not subject to the provisions of this Act. The project does not have the potential to affect the hydrology, water quality, or aquatic resources of any streams and therefore is consistent with the provisions of the Wild and Scenic Rivers Act.

5.3.11 WILDERNESS ACT (16 U.S.C. 1131) The purpose of this legislation is stated in Section 2(a) of the Act as follows:

> *In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas" and these shall be administered for the use and enjoyment of the American people in such manner as I will leave them unimpaired for future use and enjoyment as wilderness. and so as to provide , for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this chapter or by a subsequent Act.*

There are no designated Wilderness Areas near the proposed project and therefore the project is consistent with the provisions of the Act.

CHAPTER 8 - AGENCIES AND PERSONS CONSULTED OR TO BE CONSULTED & PERMITS REQUIRED

The following agencies or groups have been or will be consulted with regard to the draft environmental assessment for the proposed project. The following permits or approvals are or may be required.

Agency or Person to be Consulted	Permit or Approval Required
State of Hawaii Department of Health	UIC Permit; an NPDES permit for construction dewatering may be required if there is a need for dewatering, although dewatering effluent might be disposed in adjacent agricultural fields where there are no state or federal waters; an NPDES permit for stormwater due to a construction impact area of greater than one acre would be required; engineering review of plans for the facility. Funding may include State Revolving Funds (SRF) and this EA discusses such requirements in Chapter 7.
State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division	Coordination required with the State Historic Preservation Officer per the Federal & State Historic Preservation Acts through circulation of the EA.
County of Kauai; Planning Department, Planning Commission (Use Permit); Department of Public Works (Building, Grading Permits)	Approval of the EA, Use, Building, Grading Permits.
Community Groups	Coordination done through circulation of the EA for public comment.
Individuals	Coordination done through circulation of the EA for public comment.

CHAPTER 9 - REFERENCES

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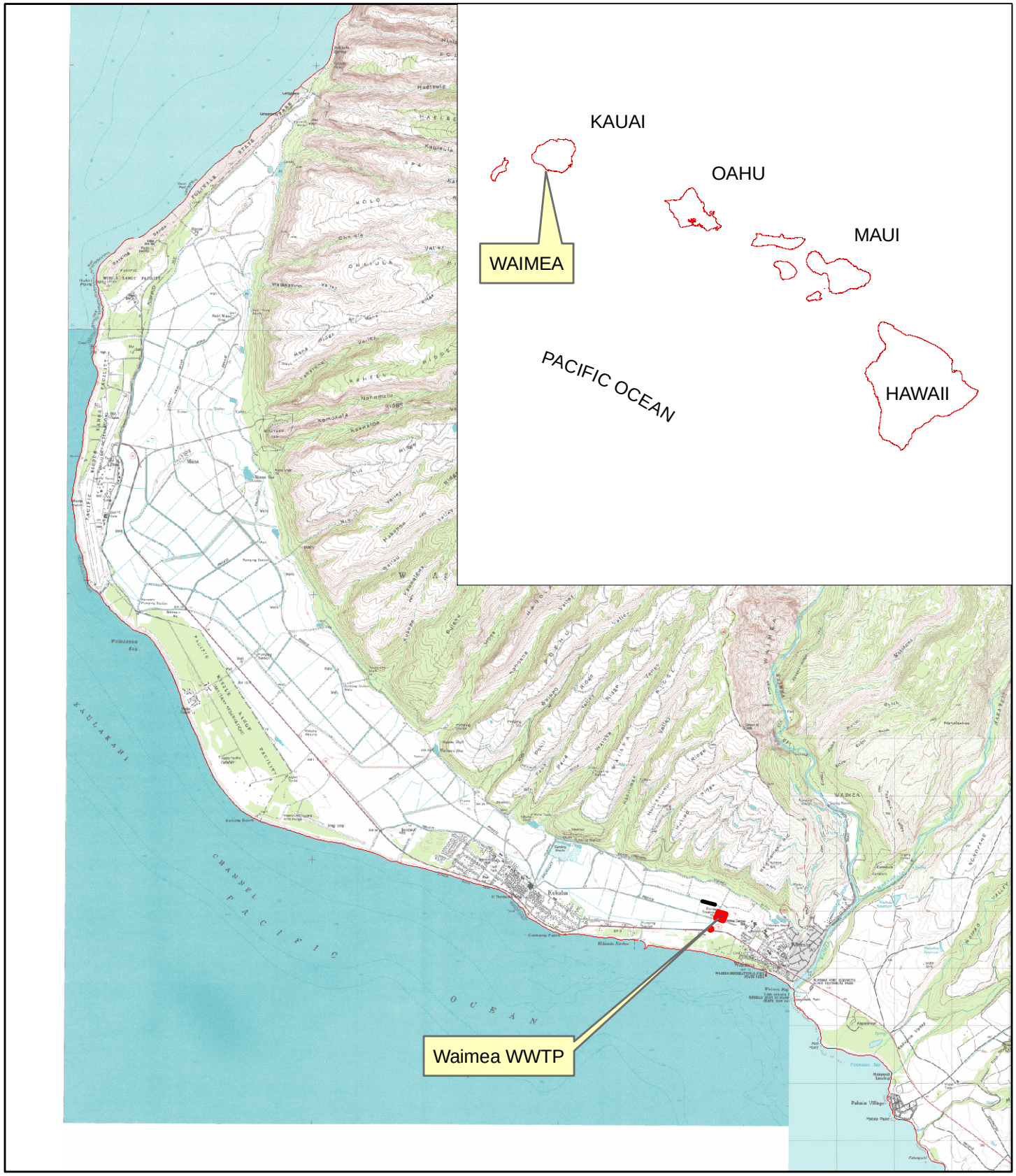
GLOSSARY

APE	Area of Potential Effect
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COE, USACE	U.S. Army Corps of Engineers
CRM	Concrete Rubble Masonry
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Fund (per federal Clean Water Act)
CZM	Coastal Zone Management
DLNR	Department of Land and Natural Resources, State of Hawaii
DOD	Department of Defense, U. S.
DOH	Department of Health, State of Hawaii
EA	Environmental Assessment
EIS	Environmental Impact Statement
FacPlan	*Waimea Wastewater Treatment Plant Facility Plan*
FIRM	Flood Insurance Rate Map
GPD	Gallons per Day
HEER	Hazard Evaluation and Emergency Response, DOH, State of Hawaii
MBR	Membrane Bioreactor
NGPC	Notice of General Permit Coverage
NMFS	National Marine Fisheries Service, U.S. Department of Commerce
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
Riprap	Rock which is rough, coarse, jagged, or angular, of an appropriate dimension
SHPO	State Historic Preservation Officer, DLNR, Historic Preservation Division
SMA	Special Management Area
SRF	State Revolving Fund (CWSRF)
TSS	Total Suspended Solids
UIC	Underground Injection Control
USFWS	U.S. Fish and Wildlife Service, Department of the Interior
WWPS	Wastewater Pumping Station
WWTP	Wastewater Treatment Plant

ENVIRONMENTAL ASSESSMENT PREPARER

CONSULTANT

Name:	Eugene P. Dashiell
Company:	Environmental Planning Services
Area of Expertise:	Environmental Planning and Analysis
Years of Experience:	35 years



0 1 2 Kilometers

0 1 2 Miles

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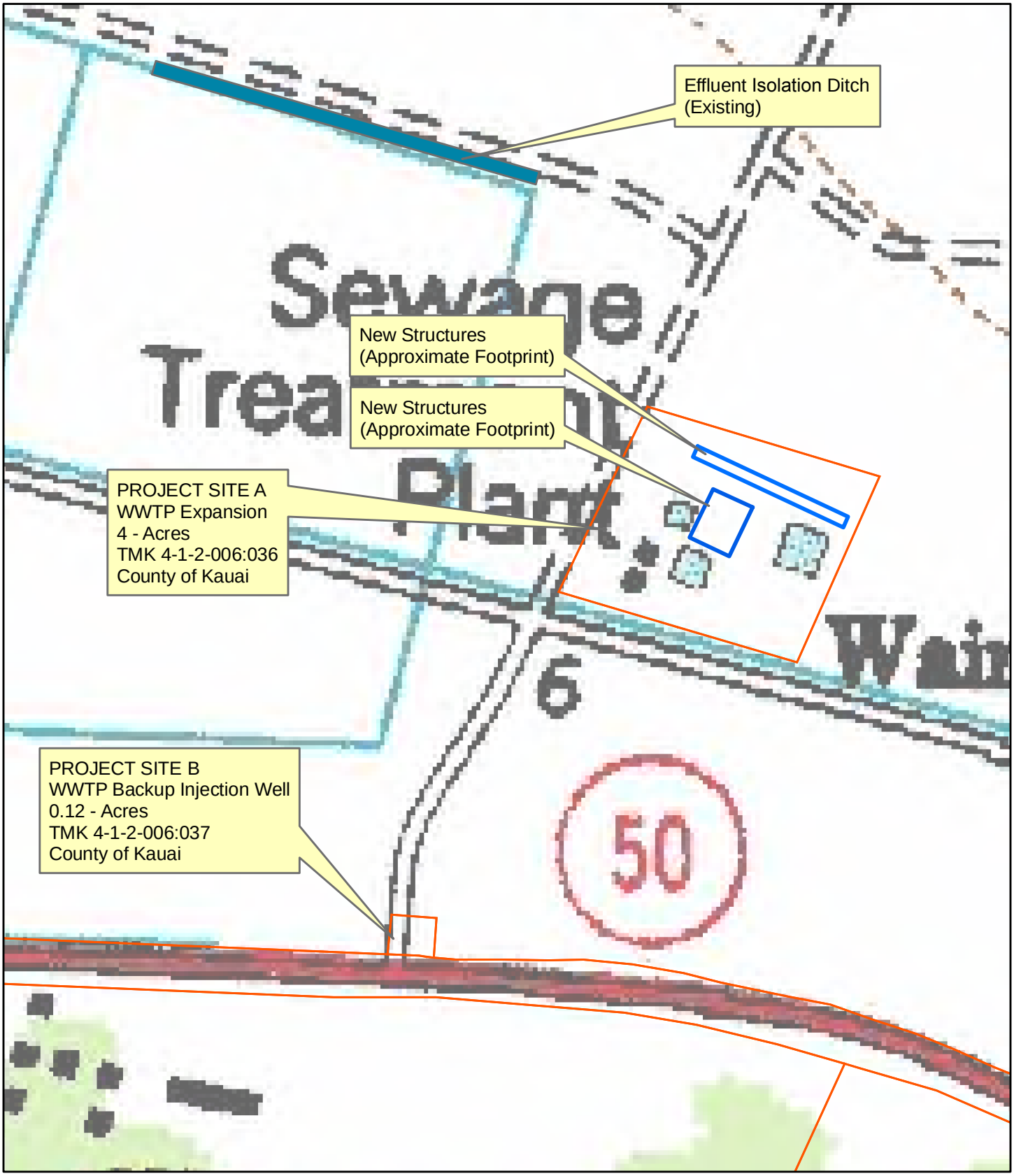
Location

Figure 1

WAIMEA WWTP EXPANSION, PHASE I

County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

Eugene P. Dashiell, AICP
Environmental Planning Services
Honolulu, Hawaii
June 2008



50 25 0 50 Meters

150 75 0 150 Feet

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Honolulu, Hawaii
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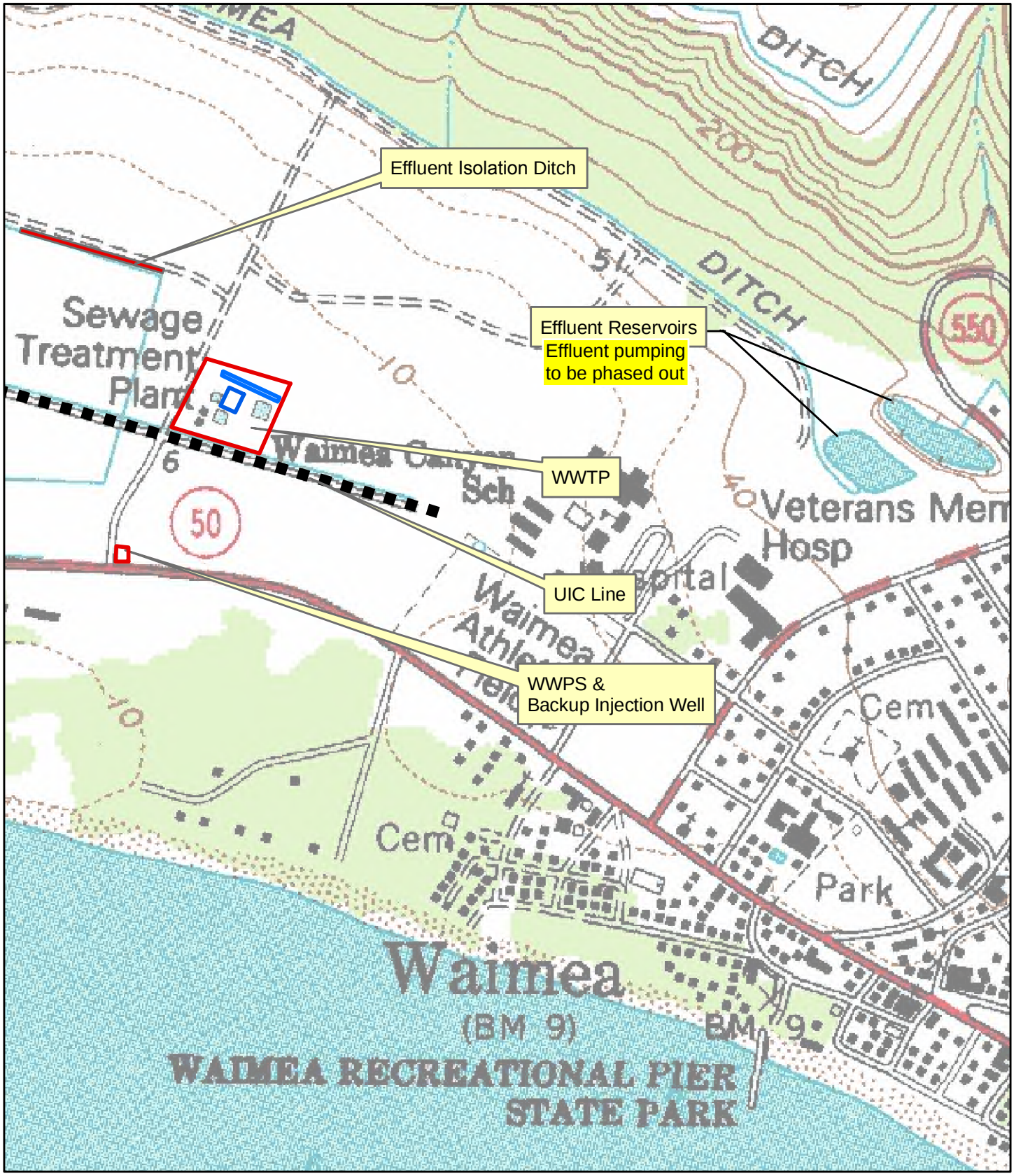
Project Land Parcels

Figure 2

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.



100 50 0 100 Meters

300 150 0 300 Feet

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Honolulu, Hawaii
June 2008

Waimea WWTP Components

Figure 3

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

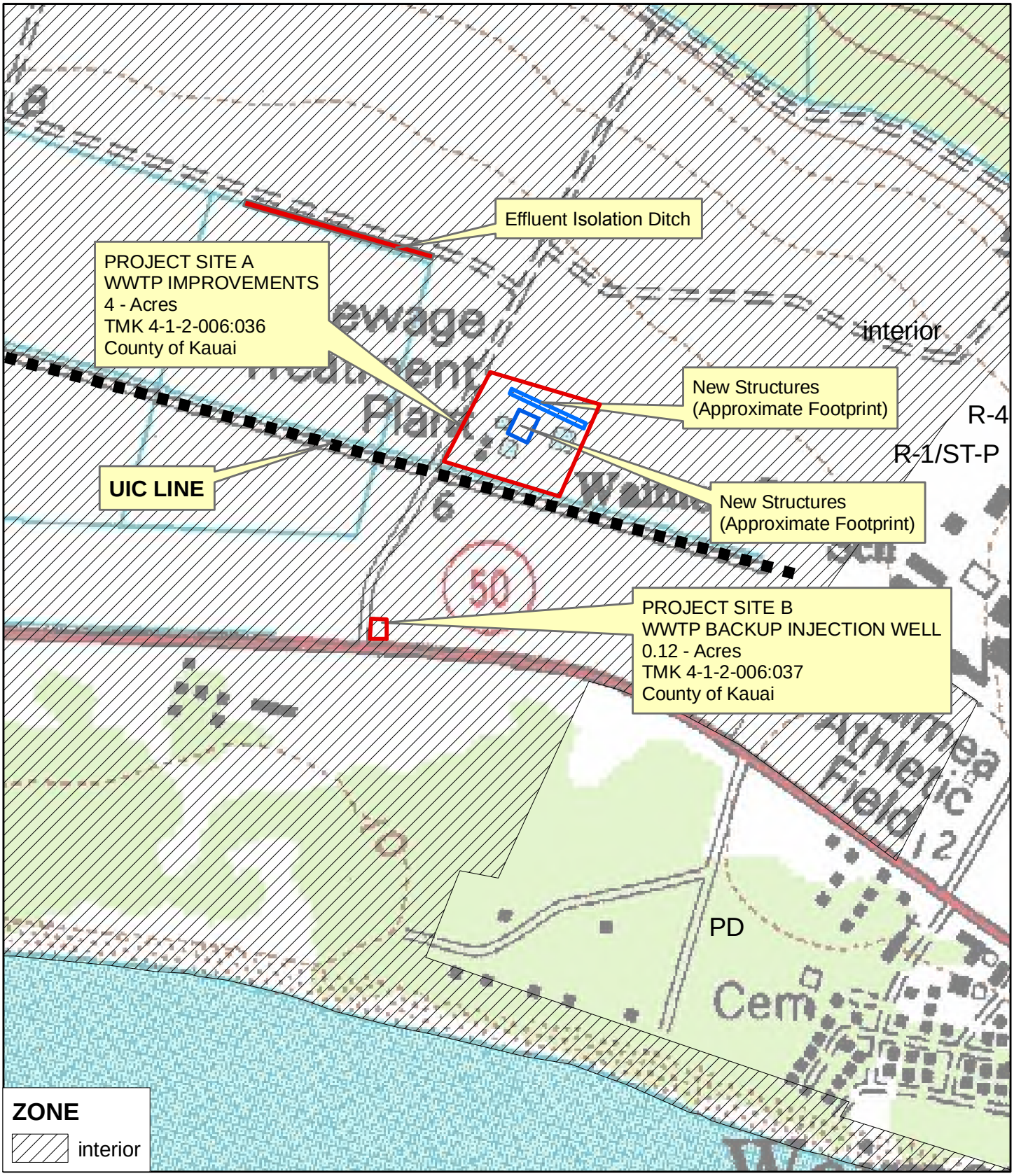
Figure 1. Effluent Isolation Ditch

Figure 2. Existing Waimea WWTP. New structures for wastewater process to be placed here.

Photographs

Figure 3A

WAIMEA WWTP EXPANSION, PHASE 1



UIC Line

Figure 4

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
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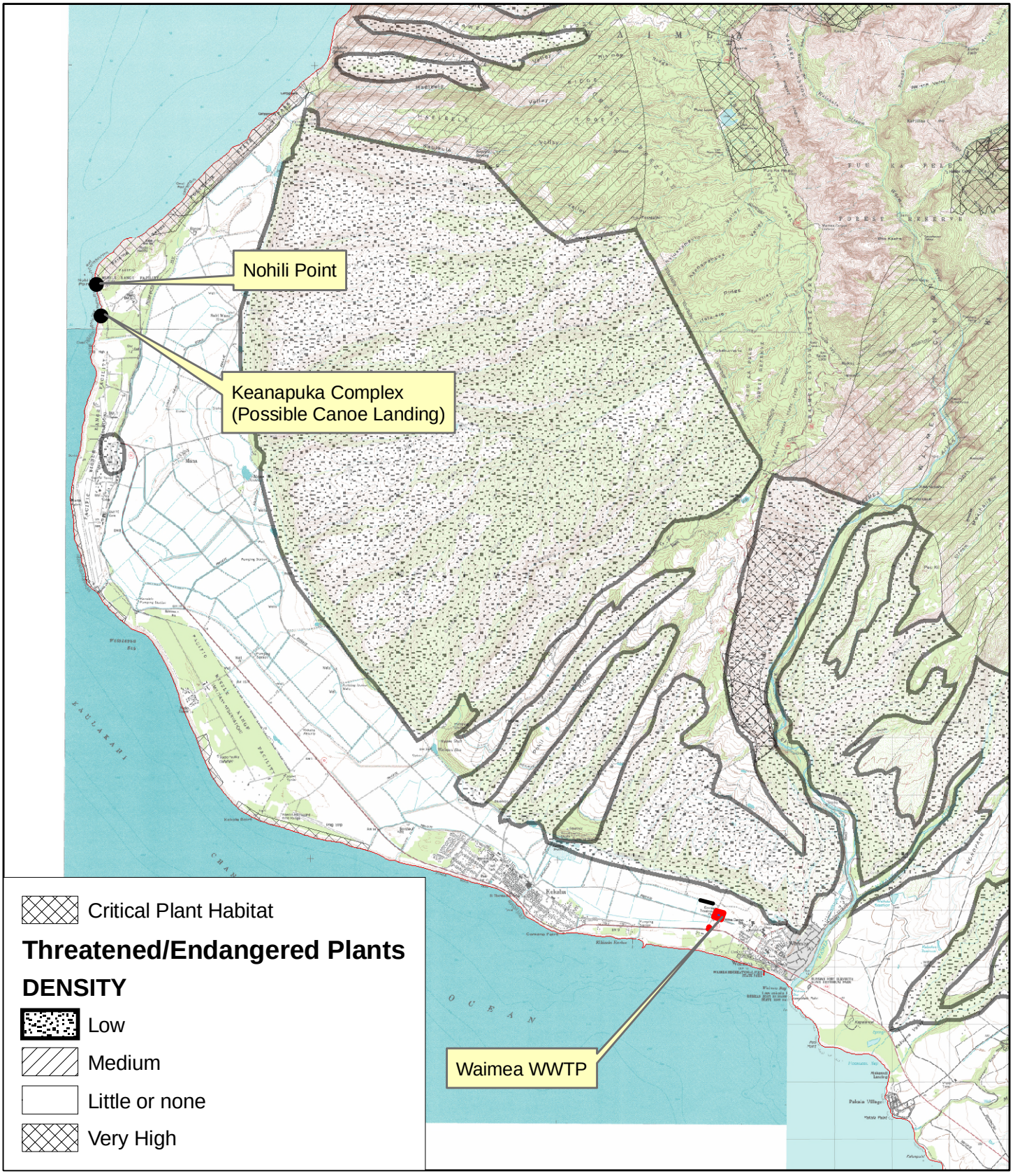
June 2008



Endangered Plants
Critical Habitat

Figure 5

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

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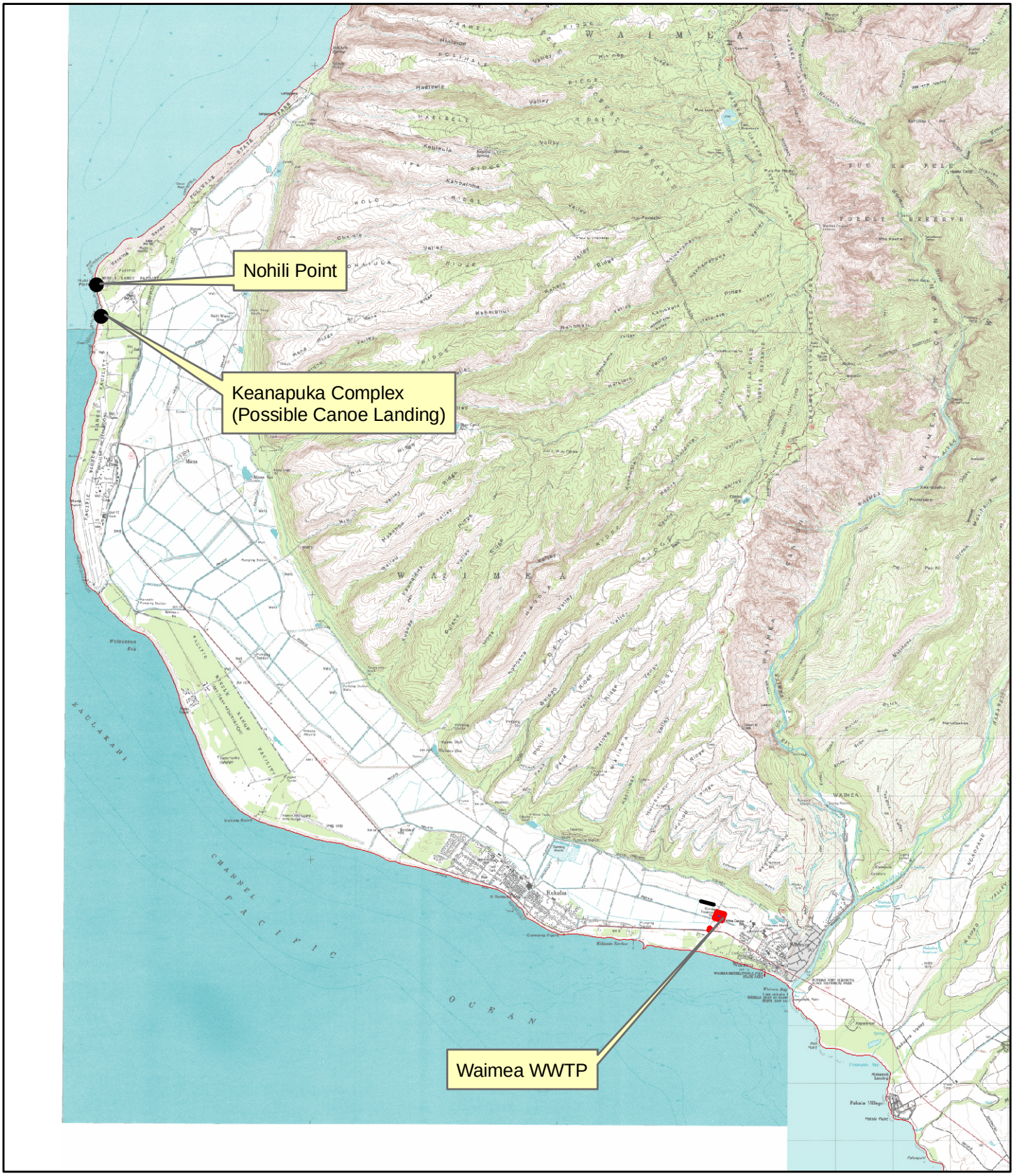
Honolulu, Hawaii
June 2008



0 1 2 Kilometers

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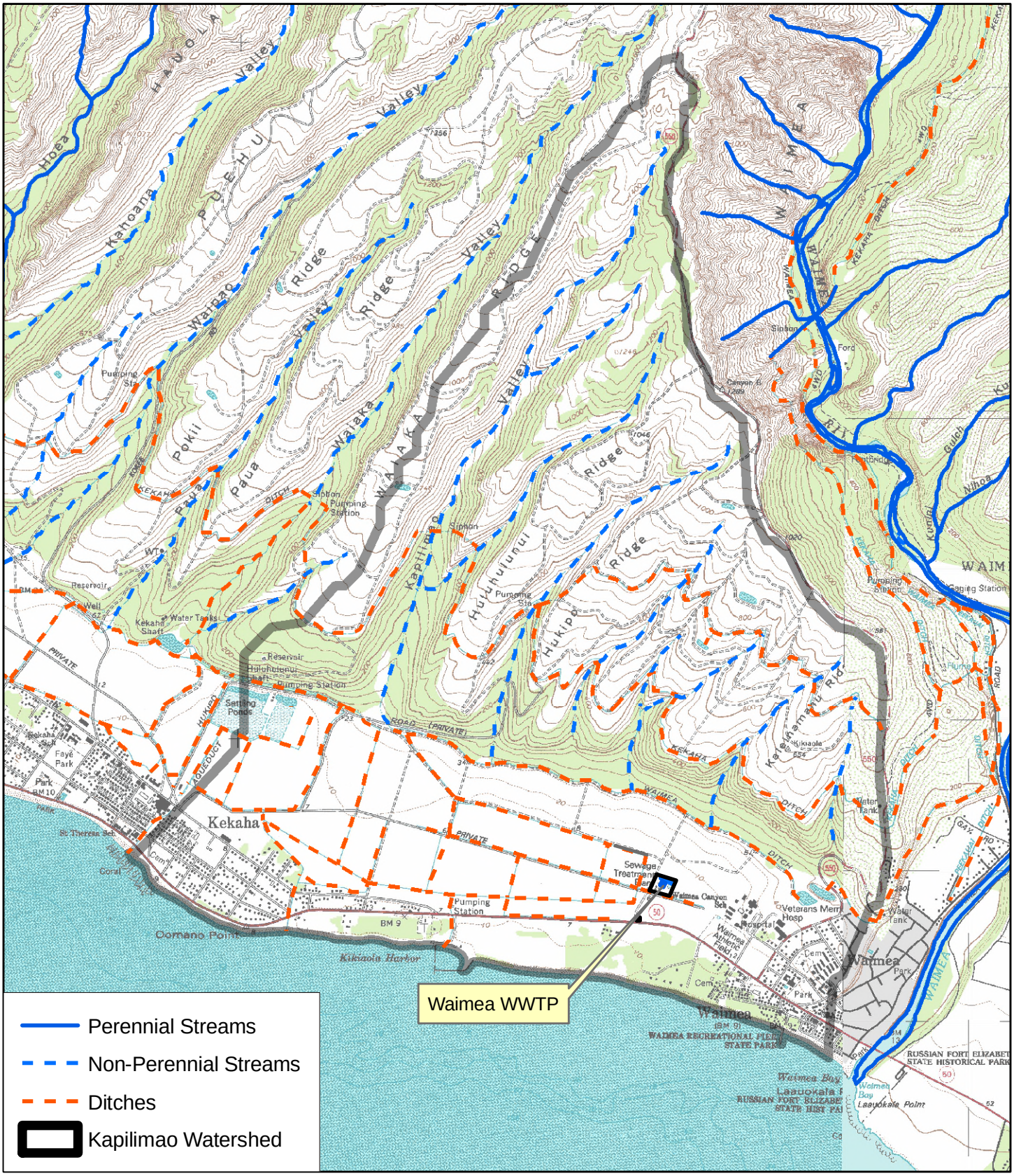
Honolulu, Hawaii
June 2008

Keanapuka Cultural Complex

Figure 6

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.



0 0.5 1 Kilometers

0 0.5 1 Miles

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Watershed, Streams, Ditches

Figure 7

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

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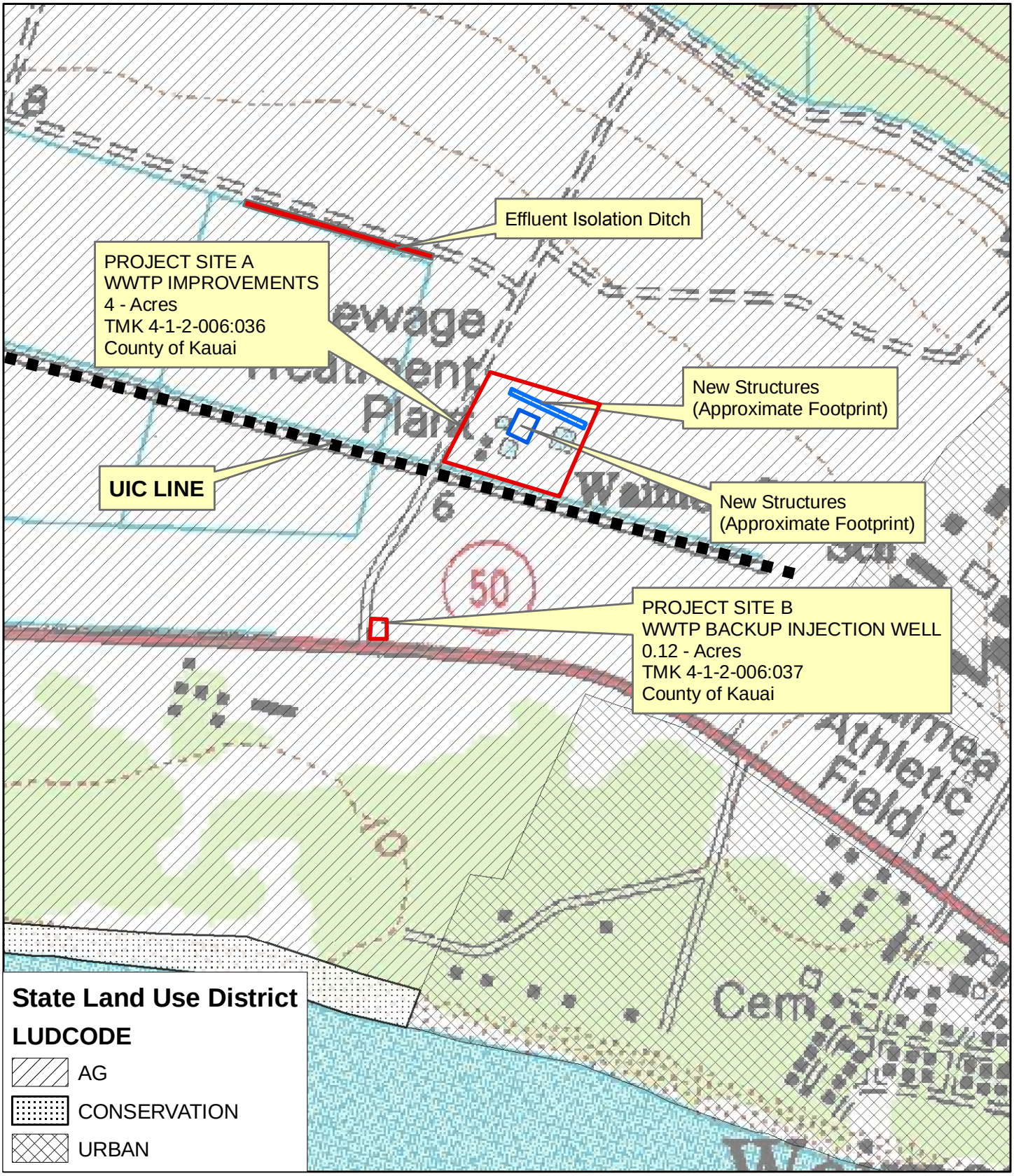
Honolulu, Hawaii
June 2008



100 50 0 100 Meters

300 150 0 300 Feet

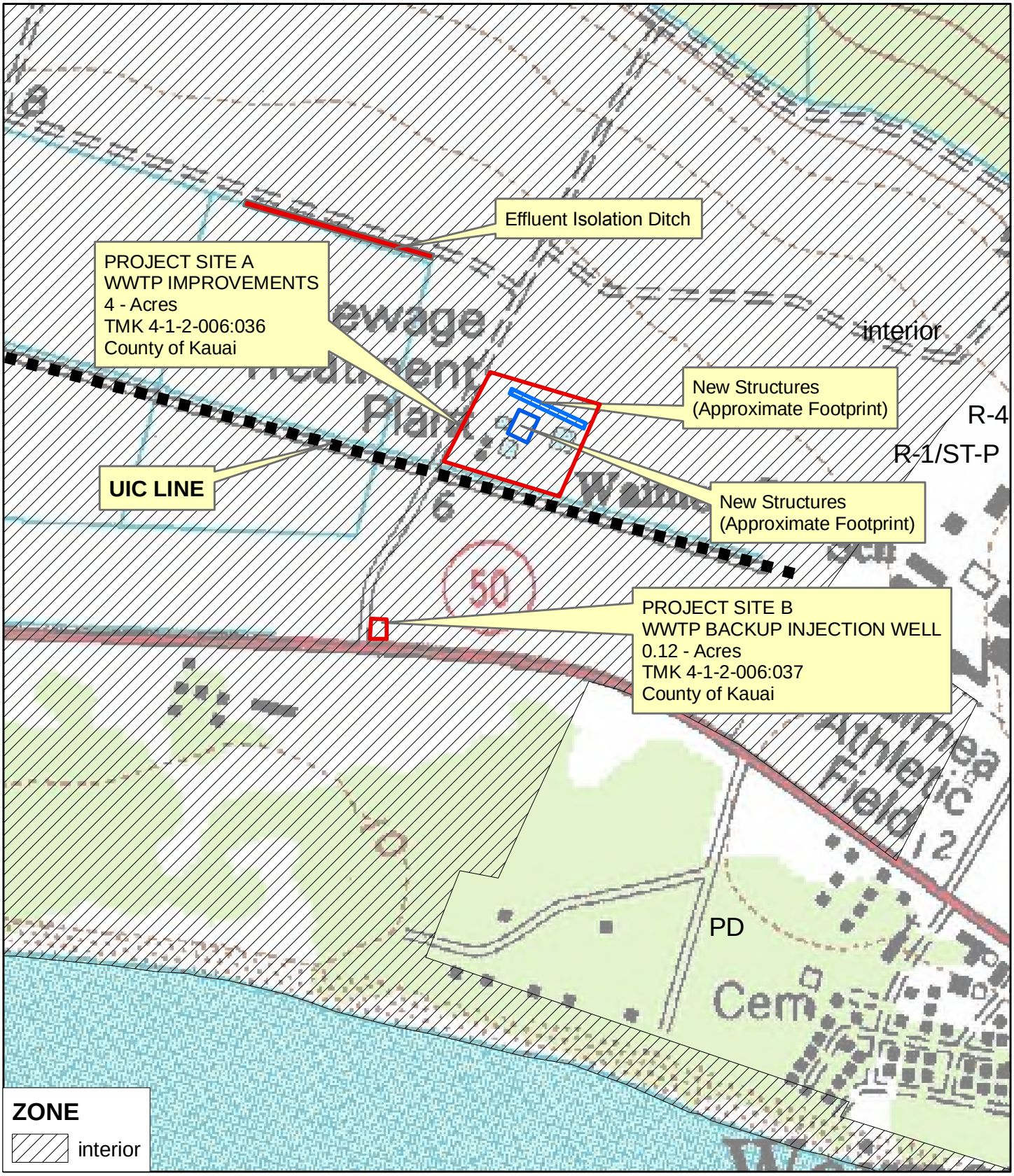
N

Eugene P. Dashiell, AICP
Environmental Planning Services
Honolulu, Hawaii
June 2008

State Land Use District

Figure 8

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.



County Zoning

Figure 9

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

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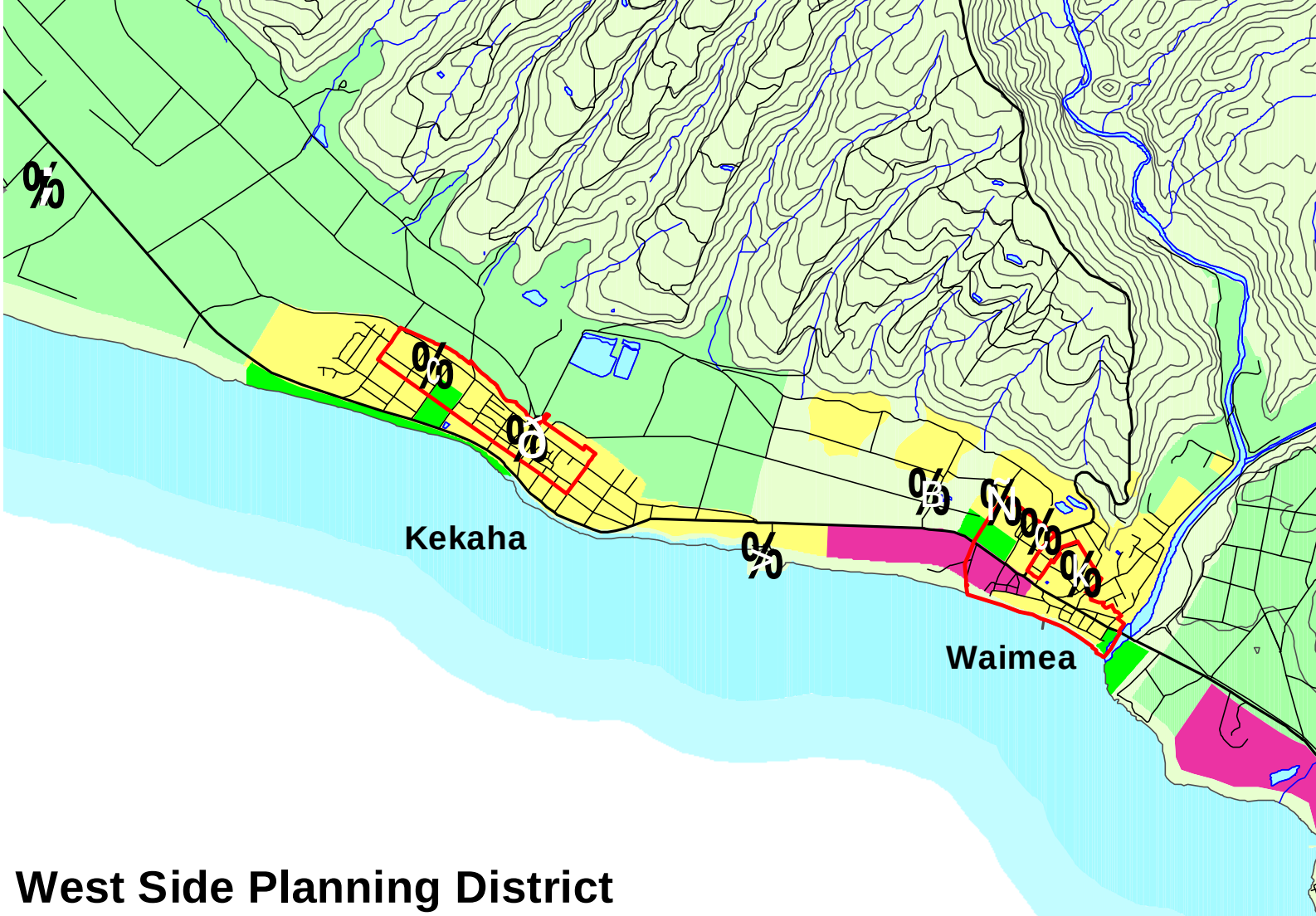
Honolulu, Hawaii
June 2008



West Side Planning District Land Use Map

Legend

Land Use Designation

- Urban Center
- Resort
- Residential Community
- Agriculture
- Open
- Park
- Transportation
- Military
- Town Centers
- Major Roads
- Minor Roads
- Planned Roads*

Public Facilities

- Airport
- Civic Center
- Commercial Harbor
- Community College
- Correctional Center
- Electric Power Plant
- Electric Power (future)
- Small Boat Harbor
- Elementary School
- Intermediate/Middle School
- High School
- Landfill
- Hospital
- Sugar Mill
- Wastewater Treatment Plant

** actual alignment to be determined*

Figure 10

WAIMEA WWTP EXPANSION, PHASE 1

Source: Kauai General Plan

N

2000 0 2000 4000 6000 8000 10000 Feet

West Side Planning District Heritage Resources

Legend

- Important Land Form
- Open Space, Parks, Agriculture, Conservation
- Residential, Urban Center, Resort, Transportation, Military
- Streams, Reservoirs, Ponds
- Scenic Roadway Corridors
- Coral Reefs
- Marshes
- Resource Parks & Sites
- Federal & State Natural Preserves
- Registered Archaeological Sites (excluding burials & lava tubes)
- S Heiau Site
- Registered Historic Buildings & Structures
- S Other Important Historic Buildings & Structures
- r Major Taro Growing Areas
- $ Other Natural, Historic, Cultural, Scenic Features
- Special Streams
- Streams
- Small Boat Harbors/Ramps

Figure 11

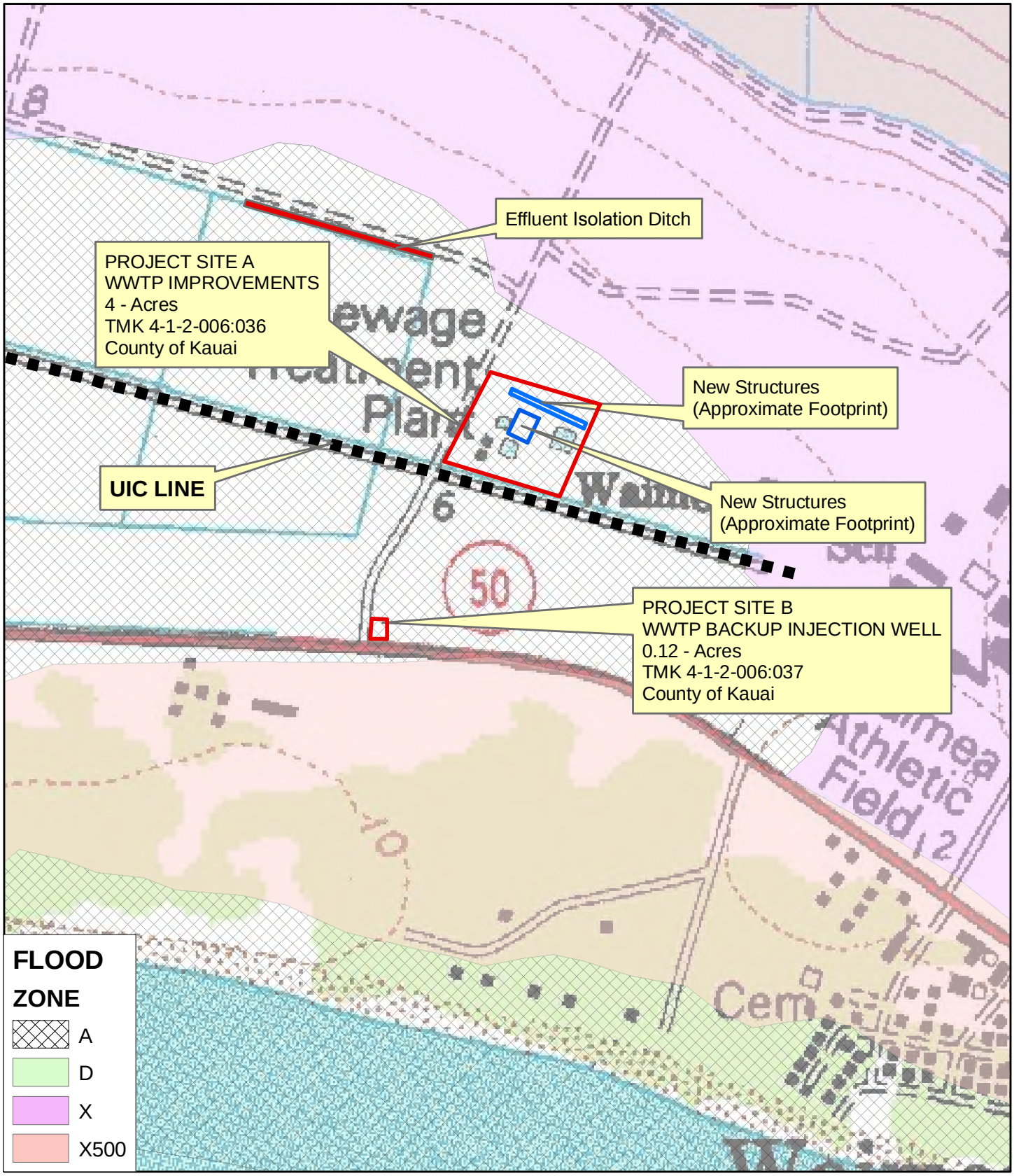
WAIMEA WWTP EXPANSION, PHASE 1

Source: Kauai General Plan

N

2000 0 2000 4000 Feet

Contour interval = 100 feet



Flood Zone

Figure 12

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
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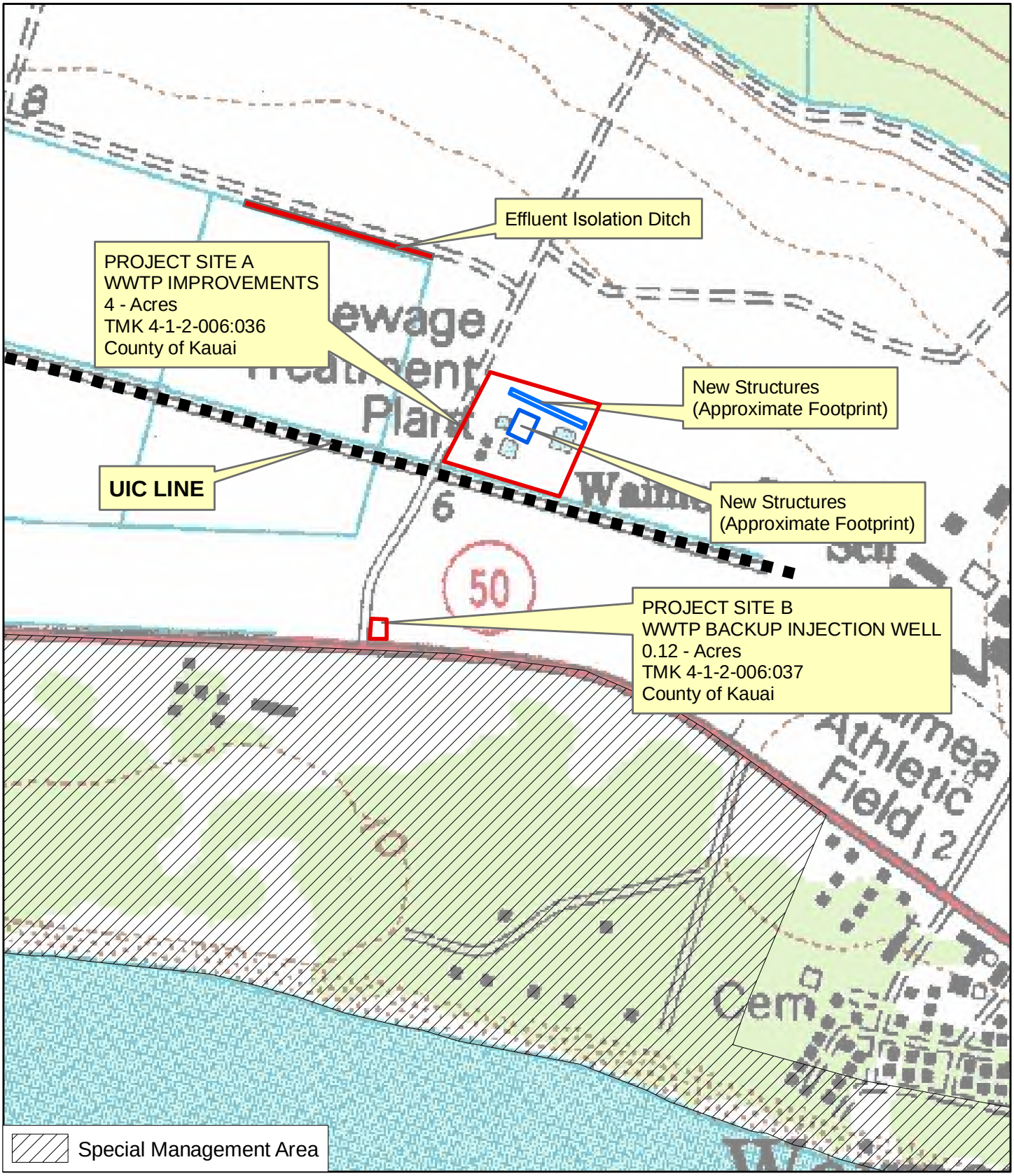

100 50 0 100 Meters

300 150 0 300 Feet

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Honolulu, Hawaii
June 2008

Special Management Area (SMA)

Figure 13

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

50 25 0 50 Meters

150 75 0 150 Feet

Area of Potential Effect (APE)

Figure 14

WAIMEA WWTP EXPANSION, PHASE I
County of Kauai
Division of Wastewater Management
Department of Public Works
Austin Tsutsumi & Assoc.

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Honolulu, Hawaii
June 2008

APPENDIX
ARCHAEOLOGICAL ASSESSMENT REPORT

ASC061108

Archaeological Assessment Report: Phase I Expansion of the Waimea Wastewater Treatment Plant Waimea, Kaua`i Island (TMK:(4)1-2-06:36 & 37)

June 2008

Aki Sinoto Consulting
2333 Kapiolani Blvd., No. 2704
Honolulu, Hawai`i 96826

ASC061108

Archaeological Assessment Report: Phase I Expansion of the Waimea Wastewater Treatment Plant Waimea, Kaua`i Island (TMK:(4)1-2-06:36 & 37)

for:

Austin Tsutsumi & Associates, Inc.
501 Sumner Street;
Honolulu, Hawai‘i 96817-5031

by:

Aki Sinoto

and

Eugene Dashiell

June 2008

Aki Sinoto Consulting
2333 Kapiolani Blvd., No. 2704
Honolulu, Hawai`i 96826

ABSTRACT

At the request of Austin Tsutsumi & Associates of Honolulu, representing the County of Kaua`i, Aki Sinoto Consulting of Honolulu, undertook an archaeological assessment survey in conjunction with the proposed Phase I Expansion of the Waimea Wastewater Treatment Plant (WWTP). The purpose of the improvement project is to expand the capacity of the WWTP to meet the future demands imposed by the Kaua`i General Plan and to upgrade the quality of the effluent from R-1 Water to R-2 Water, as defined by the State of Hawaii, Department of Health. The proposed improvements involve adding capacity to the existing WWTP and adding a second backup injection well. There are two Areas of Potential Effect; one will be a portion of the 4 acre area within the grounds of the existing WWTP bounded by a perimeter fence and the other is within a 0.12 acre area bounded by a fence located immediately north of Kuhio Highway at the junction with the access road to the existing waste water facility. The 0.12 acre area is occupied by an existing wastewater pump station (WWPS) and a backup effluent injection well.

No significant archaeological or historic remains nor other evidence of past human activities were encountered within the boundaries of the subject project area during the current field procedure. The archival search revealed no records of any previous significant findings as well. Mass grading and other ground surface alteration activities associated with the construction of the existing facility during the 1970s preceded by commercial sugar-cane cultivation would have extensively impacted the immediate project area.

Thus, based on the negative results of the current assessment, no further historic preservation-related procedures, including archaeological monitoring during construction, are recommended in conjunction with the proposed expansion project. However, should any inadvertent discoveries occur during the course of construction activities, the Kaua`i Office of the State Historic Preservation Division shall be contacted for consultation.

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LIST OF FIGURES

INTRODUCTION

At the request of Austin Tsutsumi & Associates of Honolulu, representing the County of Kaua`i, Aki Sinoto Consulting undertook an archaeological assessment survey, in conjunction with the proposed Phase I Expansion of the Waimea Wastewater Treatment Plant (WWTP). The expansion addresses public health and safety considerations by adding capacity to the existing WWTP to meet the future requirements for treatment of wastewater from developments approved in the Kaua`i General Plan. The proposed improvements involve increasing the capacity of the existing WWTP from 300,000 gallons per day (GPD) to 700,000 GPD and to upgrade the quality of the effluent from R-1 Water to R-2 Water to allow for greater flexibility in reusing the effluent. A second backup injection well will also be added. The current undertaking, in accordance with Chapter 6E and HAR Title 13-276, involved standard archaeological assessment procedures.

PROJECT AREA

The project area, comprised of two separate parcels (TMK:(4)1-2-06:36 & 37) encompassing 4.12 acres, is located north of Kuhio Highway immediately past Waimea Town, in Waimea District on the leeward southwest side of Kaua`i Island (Fig. 1). There are two Areas of Potential Effect; one is a portion of the 4.0 acre area within the grounds of the existing WWTP bounded by a perimeter fence and the other is within the 0.12 acre area occupied by an existing WWPS and injection well, bounded by a fence, located immediately north of Kuhio Highway at the junction with the access road to the existing WWTP (Figs. 2 & 3).

ENVIRONMENT

The project area occurs on the flat, low-lying coastal lands of leeward, southwestern Kaua`i. The predominant land use in the area was formerly sugar cane cultivation, and currently still agricultural. Vegetation within the project area consists of a lawn and a few exotic species commonly used for landscaping.

The annual rainfall is estimated to average 2.5 to 20 inches in Waimea, with January to April and October to December recording the higher numbers. The prevailing winds are northeasterly (tradewinds) ranging from 4 to 24 miles per hour. The generally moderate climate can be described as having two seasons; summer from May to September and winter from October to April. The winter months are generally cooler and wetter (Armstrong 1973:56-59).

Two major soil groups, fill land and Nohili Clay, are represented in the area. The fill land consists of areas filled with soils from adjacent uplands or sugar mill slurry and used for sugar cane

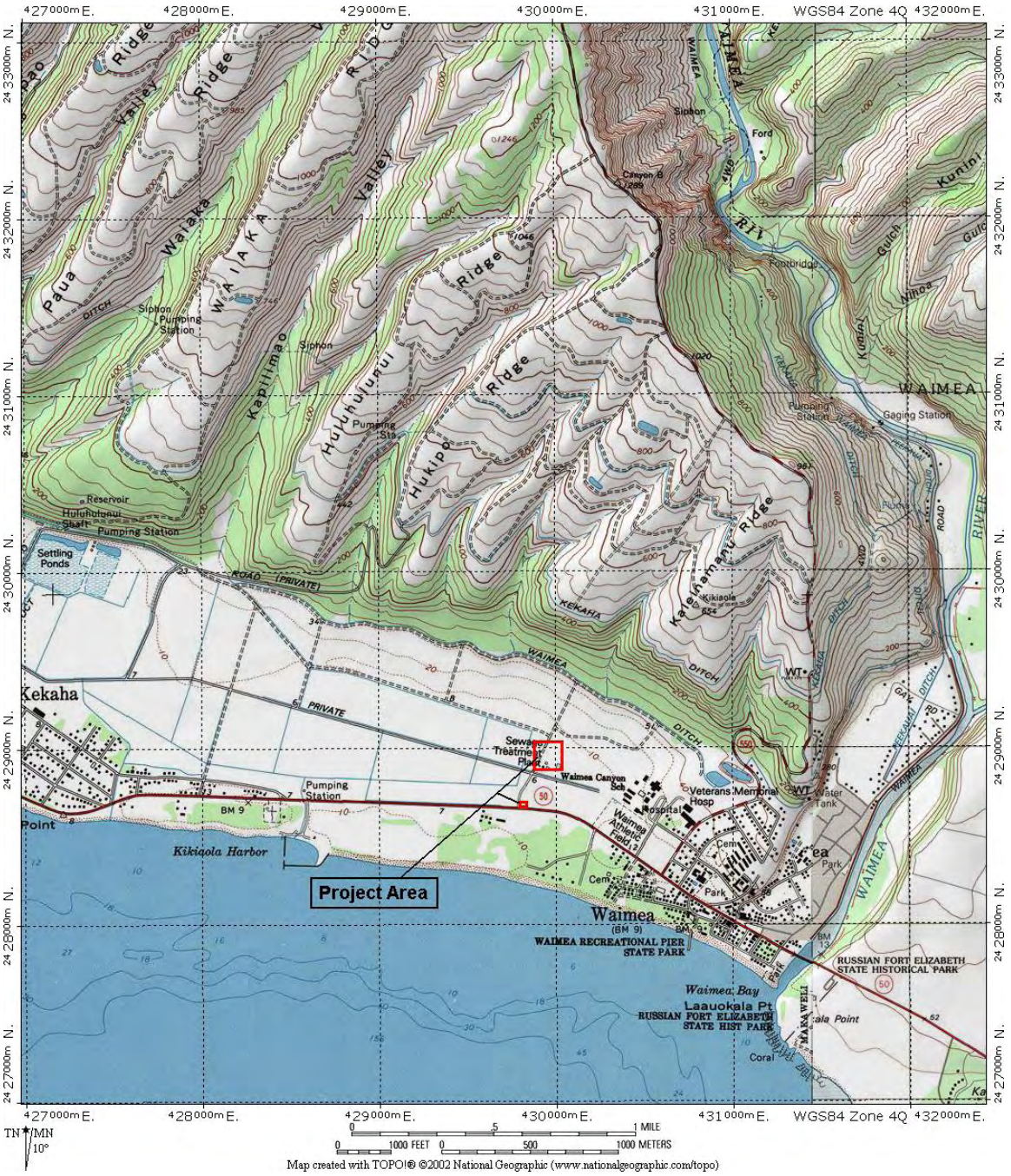

Figure 1. Location of Project Area on USGS Waimea Quadrangle

Figure 2: Overviews of the Waimea WWTP; Top: View to NE; Bottom: View to SW

Figure 3. Aerial View of the Waimea WWTP Showing Elements of the Proposed Expansion (map by Eugene P. Dashiell)

cultivation. The Nohili Clay consists of poorly drained lands that occur on coastal plains with alluvium deposited over a marly lagoon deposit. These soils are related to Kaloko soils which support irrigated sugarcane cultivation (Foote et al. 1972).

METHODS

The current assessment procedure entailed a walk-through, on-site inspection of the immediate project area as well as the surrounding areas. The area within the perimeter fence was covered on foot and inspected. Pertinent areas in the surrounding vicinity, such as sidewalls of open ditches and backdirt berms were inspected for any exposed subsurface components or features. Since the study area has previously been extensively developed, literature and archival searches were conducted to obtain pertinent information regarding previous land-use, original topographic conditions, and archaeological data. No information regarding previous archaeological studies within the boundaries or in the immediate vicinity of the current project area was available. The fieldwork component of the current undertaking was conducted on March 27, 2008. Eugene Dashiell, M.A. was the principal investigator and Aki Sinoto was the project director.

SURVEY RESULTS

No significant archaeological or historic remains or other evidence of past human activities were encountered within the boundaries or in the vicinity of the two parcels comprising the subject project area. Mass grading and other ground surface alteration activities compounded over the years in association with various agricultural endeavors, as well as the construction of the existing WWTP, WWPS, and the injection well have all extensively impacted the immediate project area and its surrounding environs. The low-lying character of the area, the shallow depth at which ground water is reached, and the occurrence of flooding may also have been a factor in the absence of past sedentary cultural activities in the area. According to Handy and Handy (1972:406-409) as chronicled by historic western seafarers, much of the permanent settlement in Waimea focused around the stream, the stream delta, and within the valley.

RECOMMENDATIONS

Based on the negative results of the current assessment procedure as well as the extensive previous modifications that took place during large-scale, historic through modern-period, agricultural endeavors and the construction of the existing WWTP complex; no further historic preservation-related procedures, including archaeological monitoring during construction, are

recommended in conjunction with the proposed first phase of the expansion project. However, should any subsurface remains be inadvertently exposed during construction, work shall be halted in the immediate vicinity of the discovery, and the Kaua`i Office of the State Historic Preservation Division shall be contacted for consultation regarding any subsequent mitigation measures that may be warranted.

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