LINDA CROCKETT LINGLE
Mayor

CHARLES JENCKS
Director

DAVID GOODE
Deputy Director

AARON SHINMOTO, P.E.
Chief Staff Engineer

RALPH NAGAMINE, L.S., P.E.
Land Use and Codes Administration

EASSIE MILLER, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

Solid Waste Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

June 12, 1996

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 S. King Street, 4th Floor
Honolulu, HI 96813

Dear Mr. Gill:

SUBJECT: NEGATIVE DECLARATION
EFFLUENT REUSE CORE DISTRIBUTION SYSTEM
KIHEI WASTEWATER RECLAMATION FACILITY
TMK 2-2-0: POR 54, 2-2-24: POR 10 AND 11
KIHEI, MAUI, HAWAII

The County of Maui, Department of Public Works and Waste Management, has reviewed the comments received during the 30-day public comment period which began on April 23, 1996. We have determined that this project has broad support and will not have significant environmental effect. We have issued a negative declaration. Please publish this notice in the July 8, 1996 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication form and four copies of the final Environmental Assessment. Please contact Mr. Ron Riska of our Wastewater Reclamation Division at (808) 243-7417 if you have any questions.

Sincerely,

Charles Jencks, Director
Department of Public Works
and Waste Management

File:RR96045

66

1996-07-08-MA-FEA-Effluent Reuse Core Distribution System
Kihei Wastewater Reclamation Facility

FINAL
ENVIRONMENTAL ASSESSMENT

EFFLUENT REUSE SYSTEM
KIHEI WASTEWATER RECLAMATION FACILITY

WASTEWATER RECLAMATION DIVISION
DEPARTMENT OF PUBLIC WORKS & WASTE MANAGEMENT
COUNTY OF MAUI

Prepared by:

Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard
Second Floor
Honolulu, Hawaii 96814

June 1996

FINAL
ENVIRONMENTAL ASSESSMENT

EFFLUENT REUSE SYSTEM
KIHEI WASTEWATER RECLAMATION FACILITY

T.M.K. 2-2-02: por. 54, 2-2-24: por. 10 and por. 11
Kihei, Maui, Hawaii

PROPOSING AGENCY:

Wastewater Reclamation Division
Department of Public Works & Waste Management
County of Maui

Submitted Pursuant to Chapter 343, HRS

Responsible Official: _____ Date: 6/13/96
Charles Jencks
Director

Prepared by:

Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard
Second Floor
Honolulu, Hawaii 96814

June 1996

Table of Contents

I. PROJECT DESCRIPTION

A. Purpose of the Project

Preservation of the natural environment, especially Kihei-Makena's coastal waters and groundwater resources, is a significant concern of the Kihei-Makena community (see Figure I-1 Location Map). The County of Maui is fully aware of this concern and has been actively involved in investigating the situation. In the 1993 Update of the Kihei-Makena Community Plan, the County identified the need to implement programs to reduce the reliance on injection wells for wastewater disposal, and to enhance water conservation and reuse by encouraging the use of non-potable water for irrigation purposes and water features. Accordingly, the County has committed to a policy of wastewater reclamation whenever feasible. The County of Maui is proposing the development of a wastewater reclamation system for South Maui that will maximize the beneficial use of the high quality effluent currently being produced by the Kihei Wastewater Reclamation Facility (WWRF). Phase I of the proposed project involves the renovation of the existing effluent storage basin, and the construction of a new effluent storage reservoir and transmission system to support future connections to the Reuse System. In addition, this phase will improve storage capacity and delivery reliability for current effluent users.

B. Existing Wastewater System

The Kihei WWRF is owned and operated by the County of Maui, Department of Public Works and Waste Management, Wastewater Reclamation Division. The facility serves the South Maui area from Kihei to Wailea, and currently has an average flow capacity of 6.0 million gallons per day (MGD).

The WWRF recently has undergone significant upgrades to its treatment capability. The resulting effluent quality has greatly improved and meets the State Department of Health (DOH) requirements for R-1 Water, the highest class of reclaimed water. Future expansion to increase capacity to 8.0 MGD (maximum monthly basis) has been planned to serve additional growth in the South Maui area.

Effluent from the Kihei WWRF that is not currently reclaimed is disposed of through three on-site injection wells. These injection wells are the primary means of effluent disposal for the facility. However, a significant portion has long been pumped to the

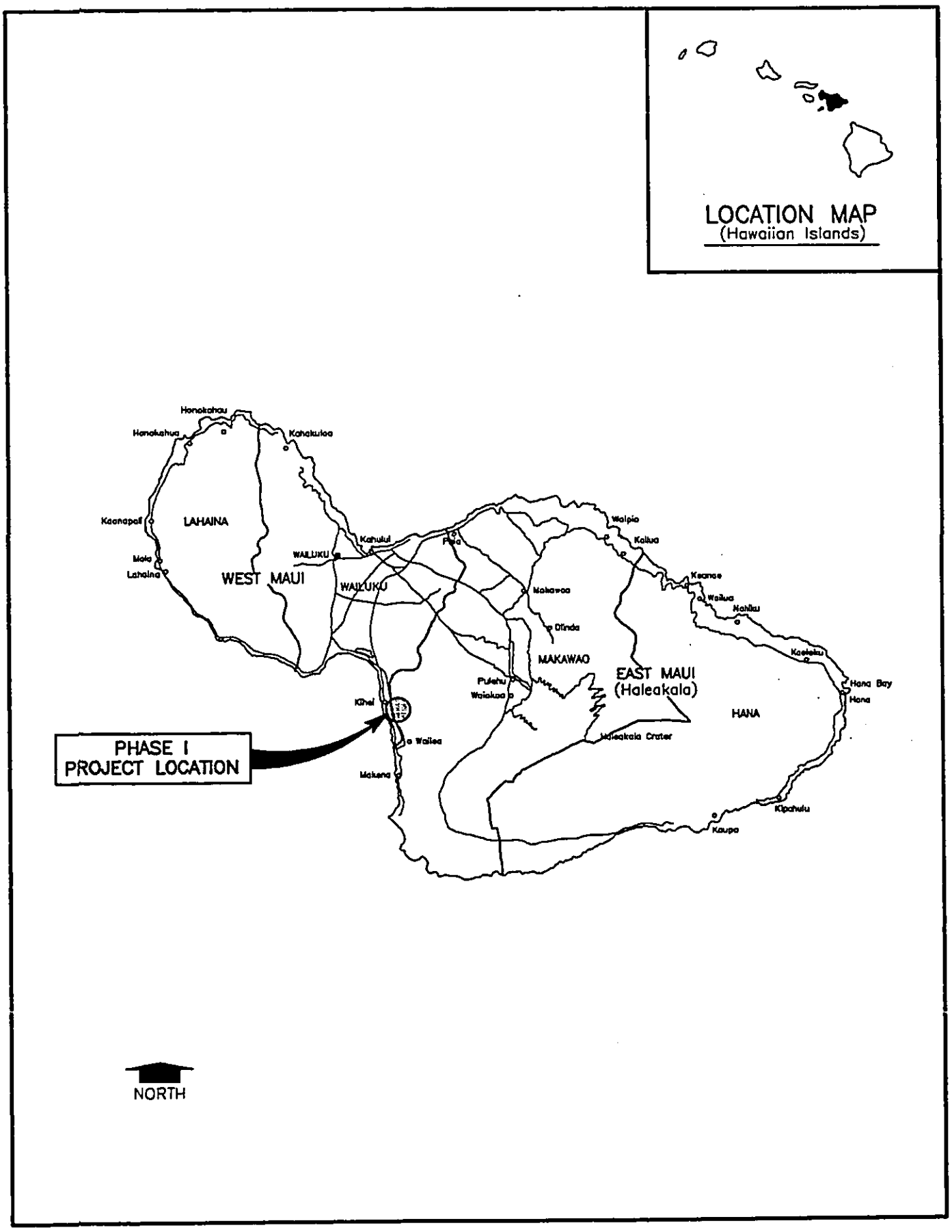

FIGURE I–1
LOCATION MAP – ISLAND OF MAUI

adjacent Silversword Golf Course for irrigation use and smaller portions are consumed for in-plant irrigation and facility operation.

C. Proposed Project

The proposed Kihei Effluent Reuse System includes facilities which will store and transport reclaimed water from the Kihei WWRF to nearby users situated to the north and south of the WWRF. The ultimate capacity of the Reuse System is limited by the capacity of the ultraviolet disinfection system which is sized for a peak flow of 9 MGD. Approximately 6.2 MGD are expected to be available for the Reuse System, and an additional 0.5 MGD would be available for in-plant use.

1. Special System Provisions

The "Guidelines for the Treatment and Use of Reclaimed Water," by the Hawaii State Department of Health, dated November 22, 1993 (DOH Reuse Guidelines), was used as the primary basis of design for this project. Other design considerations were referenced from such publications as the "Water System Standards," by the Maui Department of Water Supply, the "Design Standards," by the City & County of Honolulu, Department of Wastewater Management, "Dual Water Systems," by the American Water Works Association and the "Guidelines for Water Reuse," by the U. S. Environmental Protection Agency.

The Effluent Reuse System will be designed as a "closed" system, similar to a potable water system. This will avoid exposure of the finished water to the natural elements which could decrease the effluent quality (eg. increased suspended matter, algal growth, microorganisms, etc.).

Additional special provisions for reuse systems included in the DOH Reuse Guidelines will be followed. These provisions target the prevention of cross-connections between reclaimed water systems and potable water systems; and deal with the location, depth, mode of identification, and type of above-ground appurtenances essential to avoid cross-connections and inappropriate uses. Specific guidelines that will be implemented include:

a. Transmission Lines

i) Horizontal and Vertical Clearances - Clearances between potable water and other utilities, namely reclaimed water lines, shall conform to the "Water System Standards," Department of Water Supply, County of Maui. Minimum easement and right-of-way widths, and minimum cover and other requirements for reclaimed water lines shall also conform to the "Water System Standards."

ii) Identification of Reclaimed Water Lines - All new, buried transmission piping in the reclaimed water system, including service lines, valves, and other appurtenances shall be colored purple (suggested color is Pantone 522 or equal), and embossed or be integrally stamped or marked "CAUTION: RECLAIMED WATER - DO NOT DRINK," or be installed with purple identification tape, or a purple polyethylene wrap (suggested color index 77742 violet #16, Pantone 512, or equal). Identification tape shall be prepared with white or black printing on a purple field (suggested color index 77742 violet #16, Pantone 512, or equal), having the words "CAUTION: RECLAIMED WATER - DO NOT DRINK." The overall width of the tape shall be at least three (3) inches. Identification tapes shall be installed on top of the transmission pipe longitudinally and shall be centered. The tape shall be continuous in their coverage on the pipe and shall be fastened to each pipe length no more than ten feet apart.

iii) Identification of Reclaimed Water Valve Boxes - All valve boxes shall be provided with a special triangular, heavy-duty cover. All valve covers on reclaimed water transmission lines shall be of a non-interchangeable shape with potable water valve box covers and shall have a recognizable inscription cast on the top surface to distinguish it as part of the non-potable system.

iv) Identification of Above Ground Facilities - All above ground facilities shall be marked to differentiate reclaimed water appurtenances from potable water or wastewater facilities.

v) Blow-off Assemblies - Either in-line or end-of-line drain or blow-off assemblies shall be installed for removing water or sediment from the pipeline. The line tap for the assembly shall be no closer than 18 inches to a valve, coupling, joint, or fitting unless it is at the end of the line. Since there are restrictions on runoff and ponding for reclaimed water, there may be restrictions on infiltration; the method for disposal or the drain water shall be presented to DOH for approval.

b. Pumping Facilities

i) Identification of Above Ground Facilities - All above ground piping, fittings, pumps, valves and other appurtenances shall be consistently color-coded purple. In addition, all piping shall be identified using an acceptable means of labeling reading "CAUTION: RECLAIMED WATER - DO NOT DRINK." In a fenced in or secured pumping facility, at least one warning sign identifying the site as a reclaimed water facility shall be provided.

ii) Protection of Potable Water - Any potable water used at the pumping facility shall be protected from backflow, using approved backflow prevention techniques.

It should be understood that design and construction of the project will support connections to the reuse source, and the individual irrigation systems will be the responsibility of the specific user.

2. Projected Operating Conditions

Based on the "South Maui Water Reuse Feasibility Study," by Brown and Caldwell, dated September 1992, there is considerable interest in the use of reclaimed water in the South Maui area. Potential major users of the reclaimed water include ranches, golf courses, and resorts. At present, the existing and planned golf courses (excluding Silversword Golf Course) primarily rely on brackish water sources for irrigation. Some golf courses have experienced

problems with high salinity which has killed trees; and concern has been expressed regarding the possibility of further increasing salinity by continual extraction of brackish water. Therefore, the need for an alternative water source of high quality is evident.

There are other smaller potential users, primarily County-owned park facilities and County landscaping. The County's Kihei-Makena Community Plan has identified the Piilani Highway corridor as a landscaped parkway, with landscaping providing a buffer to mitigate highway noise and to reduce the visual impact of development. This corridor is within close proximity to the Kihei WWRF, and could utilize a substantial amount of reclaimed water for landscape irrigation.

The possible system operating conditions are significantly affected by the potential users which may come on-line to the system. Since many of the proposed developments are indefinite at this time, Phase I of this project will focus on service to the more definite users.

As stated earlier, the County currently utilizes three on-site injection wells as its primary method of treated effluent disposal. The injection wells will continue to operate and function as the primary disposal method until sufficient users of the reclaimed water system are connected and capable of accepting the treated effluent. At that time, the injection wells will serve as the backup disposal system.

3. Phase I Project

Phase I of the proposed Kihei Effluent Reuse System includes facilities which will support initial users of the reclaimed effluent. The initial project also will be expandable to accommodate potential future users of the system. Phase I proposes the renovation of the existing effluent storage basin, a new 1.0 MG reservoir, a control/monitoring system, connecting transmission line, and access road. The preliminary site plan for the proposed storage reservoir and proposed access road and pipeline easement are shown on Figure I-2.

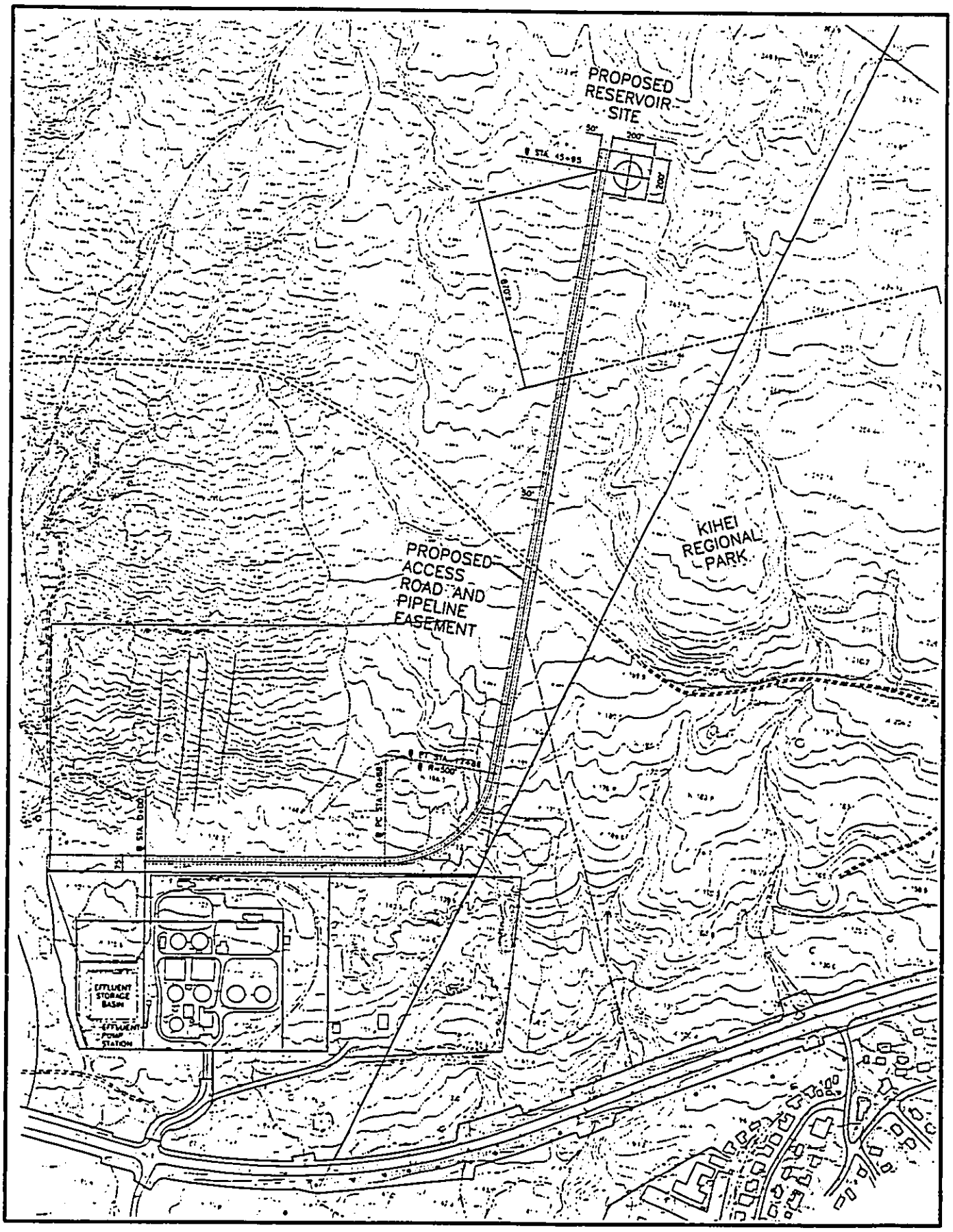

FIGURE I-2
PRELIMINARY SITE PLAN

Renovation of the existing effluent storage basin is required to accommodate the new Reuse System. Phase I involves converting the existing storage basin into a "closed" storage basin using a polypropylene cover.

The new 1.0 MG reservoir will be at an elevation to maintain constant, fairly stable system pressures, so that the Effluent Reuse System functions like a water distribution system. The treated effluent will be available and pressurized for direct use by permitted users, and not dependent on the system pumping units for delivery of the water. This will result in greater flexibility in use of the effluent, as well as more stable operation.

Site selection for the reservoir involved the consideration of several key factors, including elevation, location, terrain, constructability, and land ownership. Several potential sites were evaluated to accommodate the 1.0 MG reservoir and also providing the desired elevation. The site selected, shown in Figure I-2, is about 900 feet mauka (east) of the proposed Kihei Regional Park. This site meets all required criteria and has been approved by the land owner, Haleakala Ranch.

4. Estimated Construction Costs for Phase I Project

A preliminary construction cost estimate was prepared for the Phase I Project; the cost breakdown is presented in Table I-1. The proposed reservoir accounts for almost half of the total project cost. Costs not included in the estimate are engineering/design and administrative costs, and land acquisition cost for the reservoir site and access/pipeline easement. The County proposes to use the State Revolving Funds for this project pending approval by the State Department of Health.

Table I-1 Preliminary Cost Estimate for Phase I Project

Improvements to existing effluent storage basin	$435,000
Access roadway	$370,000
20-inch effluent pipeline	$1,036,500
1.0 MG effluent storage reservoir	$1,860,000
Miscellaneous costs	$85,000
Estimated Construction Cost	**$3,786,500**

5. Future Projects

Future expansion of the Effluent Reuse System will require modifications which are discussed below.

In order to accommodate future expanded effluent reuse conditions, higher capacity pumps will be required. Other provisions may include increasing pumping head requirements which would increase power requirements for the facility and potentially major improvements to the Kihei WWRF electrical power systems. The future pump station requirements will become evident as the effluent need is more defined.

Future demands also may require an additional reservoir depending upon the timing of the demand. If demand can be managed so that it is relatively constant throughout the day, less storage would be needed; however, if demand is concentrated in a short period of time, storage requirements would vary depending upon the flows required, the proximity of the point of application, and user storage facilities.

The extent of the transmission system cannot be defined at this time. However, the route of the transmission system will probably be situated along Piilani Highway. To satisfy future operating conditions, a booster pump station along Piilani Highway may be required near the south limit of the system at the entrance to the Wailea Resorts, to transport the reclaimed effluent to the areas in South Kihei.

II. PROJECT SETTING

A. Project Location

The Phase I Project area is situated in South Maui, mauka of the Kihei WWRF. The service area of the Kihei WWRF extends from Kihei south towards Wailea (see Figure I-1).

B. Land Use Plans, Policies, and Controls

1. State Land Use Designation

The State Land Use Commission establishes and designates "general planned" boundaries for land districts or areas classified for Agriculture, Conservation, Rural, or Urban uses. The State Land Use designations for the Kihei area are shown on Figure II-1 (General Information Map). The Phase I Project area is designated for Agriculture.

2. Kihei-Makena Community Plan

The 1993 Update of the Kihei-Makena Community Plan (Community Plan) "provides specific recommendations to address the goals, objectives and policies contained in the General Plan [Maui County General Plan, first adopted in 1980 and updated in 1990, sets forth goals, directions and strategies for meeting the long-termed social, economic, environmental and land use needs of the County.], while recognizing the values and unique attributes of Kihei-Makena in order to enhance the regions overall living environment."

The Community Plan states objectives and policies for the development of water conservation and wastewater effluent reuse. A primary concern is the quality of nearshore waters which are termed a "prime asset." As a result, reduction of the reliance on deep injection wells for wastewater effluent disposal is required. An alternative to disposal through injection wells is reuse. Wastewater effluent reuse also addresses the objective of water conservation.

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According to the Community Plan, the use of reclaimed effluent for irrigation of golf courses, parks and landscaped areas is required for areas where application would be safe, economical and environmentally sound.

Additional actions are encouraged to implement various County policies and objectives, and some of these policies and objectives are indirectly impacted by effluent reuse. These include landscaped buffer areas between Piilani Highway and adjacent communities which can be irrigated with non-potable effluent, and the location of the County's Kihei Regional Park adjacent to the Kihei WWRF to facilitate disposal of effluent by irrigation.

3. County Zoning

Maui County Zoning of the Phase I Project area is as future growth reserve. The Maui County Zoning within the service area includes Residential, Multi-family, Hotel, Business, Industrial, Agricultural, and Civic Improvement Districts. The County Land Use Map is shown on Figure II-2.

4. Flood/Tsunami Hazard

The Federal Emergency Management Agency's Flood Insurance Rate map (FIRM), panel 150003-0265C dated September 6, 1989, designates the Kihei shoreline as an area of 100-year coastal flood inundation with wave action (see Figure II-1).

Further inland, low-lying areas are within the 100-year flood with depths between one and three feet. These areas of 100-year flood inundation are predominantly around the five streams which collect run-off from Haleakala's slopes: Kulanihakoi, Waipuilani, Keokea, Kamaole, and Liilioholo. The majority of the Kihei area is within one of various Zone A designations which are subject to the 100-year flood.

The proposed effluent storage reservoir site is located approximately 2700 feet north of the mauka end of Kamaole Stream, and over 1500 feet south of

Keokea Stream. The elevation of the storage reservoir and easement will be above the crest of the gulches, and the distance from both gulches is considerable; therefore, impact of the Phase I Project on the flood zones are not expected.

5. Underground Injection Control and Critical Wastewater Disposal Areas

The Effluent Reuse System will support connections to the reuse source; the individual irrigation systems will be the responsibility of the specific users. This project does not alter current operations involving underground injection of wastewater; therefore, compliance with DOH Underground Injection Control (UIC) Rules are not affected. The Critical Wastewater Disposal Areas (CWDA) regulations also are not affected because the effluent is transported and stored, and not disposed. However, CWDA regulations will be addressed by the individual effluent users when necessary.

6. Special Management Area

The County of Maui has established Special Management Area (SMA) ordinances to protect the natural resources within the coastal zone of Maui. Any development or activity which impacts the SMA must apply for a permit. The coastal areas within Kihei, from the shoreline to Piilani Highway, are within the County's SMA. As illustrated on Figure II-1, the Phase I Project is not within the SMA, and does not require a permit.

C. Project Area Environment

1. Existing Land Use

The land use designation of the project area is as future growth reserve. The service area includes Residential, Multi-family, Hotel, Business, Industrial, Agricultural, and Civic Improvement Districts (see Figure II-2).

2. Land Ownership

The proposed location for the elevated effluent storage reservoir is on parcel 2-2-02:54 which is owned by Haleakala Ranch. The access road and pipeline easement would run through this parcel as well as the WWRF parcels, 2-2-24:10 and 11. Figure II-3 indicates the land ownership in the area.

3. Climate

The climate in the study area is typically sunny, semi-arid and warm with temperatures ranging from an average high of 87°F to an average low of 65°F. The area is considered to be relatively dry with a mean annual rainfall of approximately 10 inches per year.

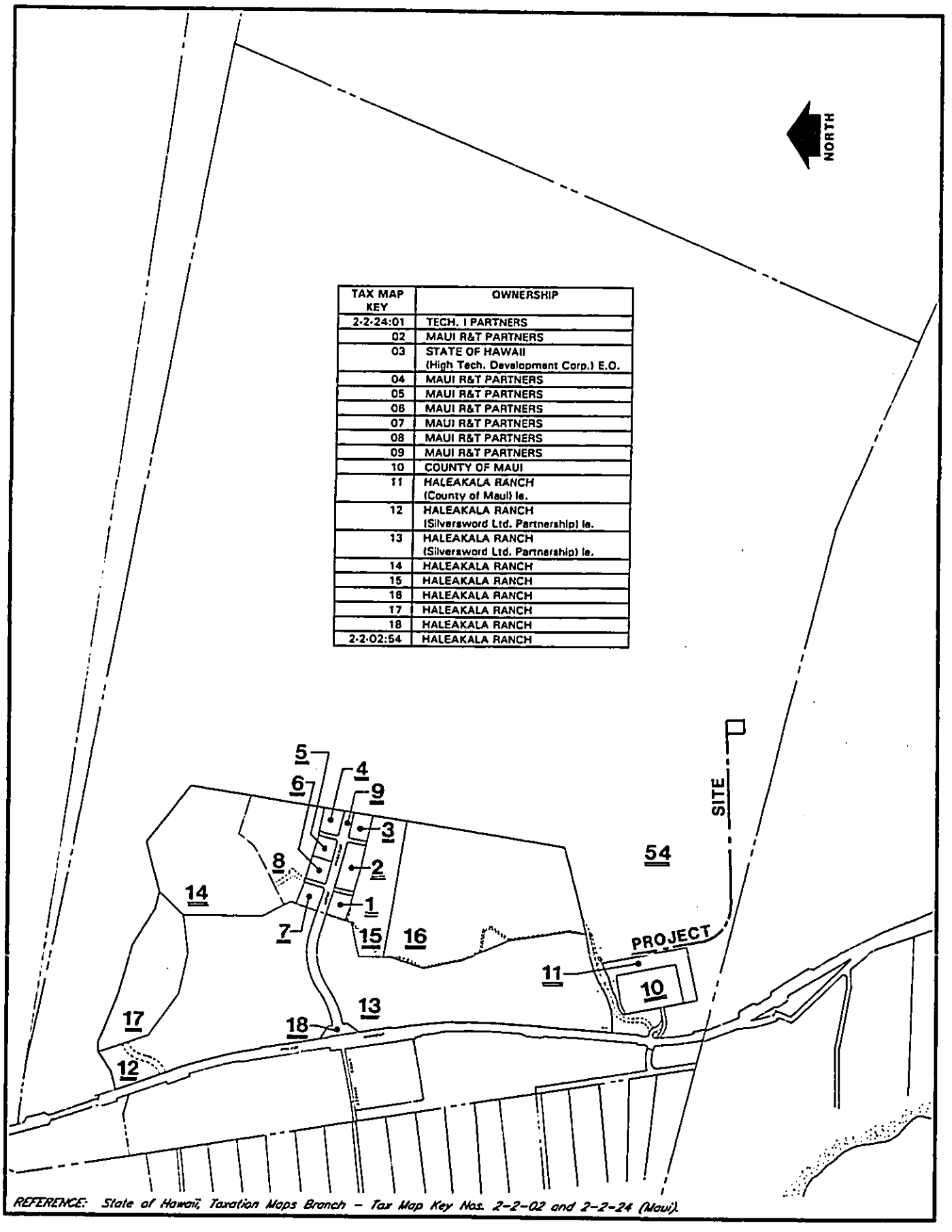
4. Flora

The zonation of plants is closely related to climatic factors. The most important climatic factor for elevations below 5000 feet is average annual precipitation.

The predominant vegetation zone within Kihei is made up of kiawe and lowland shrubs. Characteristic vegetation within this zone includes kiawe, koa haole, finger grass, and pili grass. Pili grass is a native Hawaiian species. Residential areas are planted with fruit trees, vegetable gardens, common landscaping trees, bushes, and ornamental plants.

5. Fauna

Mammals common to the island of Maui include the bat, axis deer, dog, goat, mongoose, pig, cat, mouse, and rat. Birds which are associated with the prevalent vegetation type in Kihei (xerophytic forest, shrub land and grass land) include the cardinal, barred dove, spotted dove, mockingbird, golden plover, pueo, ricebird, and white eye. Of these birds, all but the native Hawaiian pueo and the indigenous golden plover, are introduced species.



TAX MAP KEY	OWNERSHIP
2-2-24:01	TECH. I PARTNERS
02	MAUI R&T PARTNERS
03	STATE OF HAWAII (High Tech. Development Corp.) E.O.
04	MAUI R&T PARTNERS
05	MAUI R&T PARTNERS
06	MAUI R&T PARTNERS
07	MAUI R&T PARTNERS
08	MAUI R&T PARTNERS
09	MAUI R&T PARTNERS
10	COUNTY OF MAUI
11	HALEAKALA RANCH (County of Maui) le.
12	HALEAKALA RANCH (Silversword Ltd. Partnership) le.
13	HALEAKALA RANCH (Silversword Ltd. Partnership) le.
14	HALEAKALA RANCH
15	HALEAKALA RANCH
16	HALEAKALA RANCH
17	HALEAKALA RANCH
18	HALEAKALA RANCH
2-2-02:54	HALEAKALA RANCH

FIGURE II–3

COUNTY OF MAUI **LAND OWNERSHIP IN PHASE I PROJECT AREA**

6. Geology, Soil and Topography

The geology of Maui is shown on Figure II-4. Maui is made up of two volcanoes, West Maui Volcano and East Maui Volcano (Haleakala). They are connected by a saddle or isthmus formed from West Maui lava that was overlapped by lava flows from Haleakala. This area is also referred to as Central Maui.

According to the Soil Survey issued in 1972 by the U.S. Department of Agriculture Soil Conservation Service (USDA-SCS), the soil in the Phase I Project area is characterized as eroded, Waiakoa extremely stony silty clay loam with 3 to 25 percent slopes, (WID2). This soil has 3 to 15 percent stone cover at the surface. It provides medium runoff and has severe hazard erosion. See Figure II-5.

The project area slopes gently towards Piilani Highway at about 5 percent. The peripheral area north of the proposed reservoir site, surrounding the Keokea Gulch, generally slopes toward the ocean at 20 percent. The project area presently is used for cattle grazing and is covered by grass and shrubs.

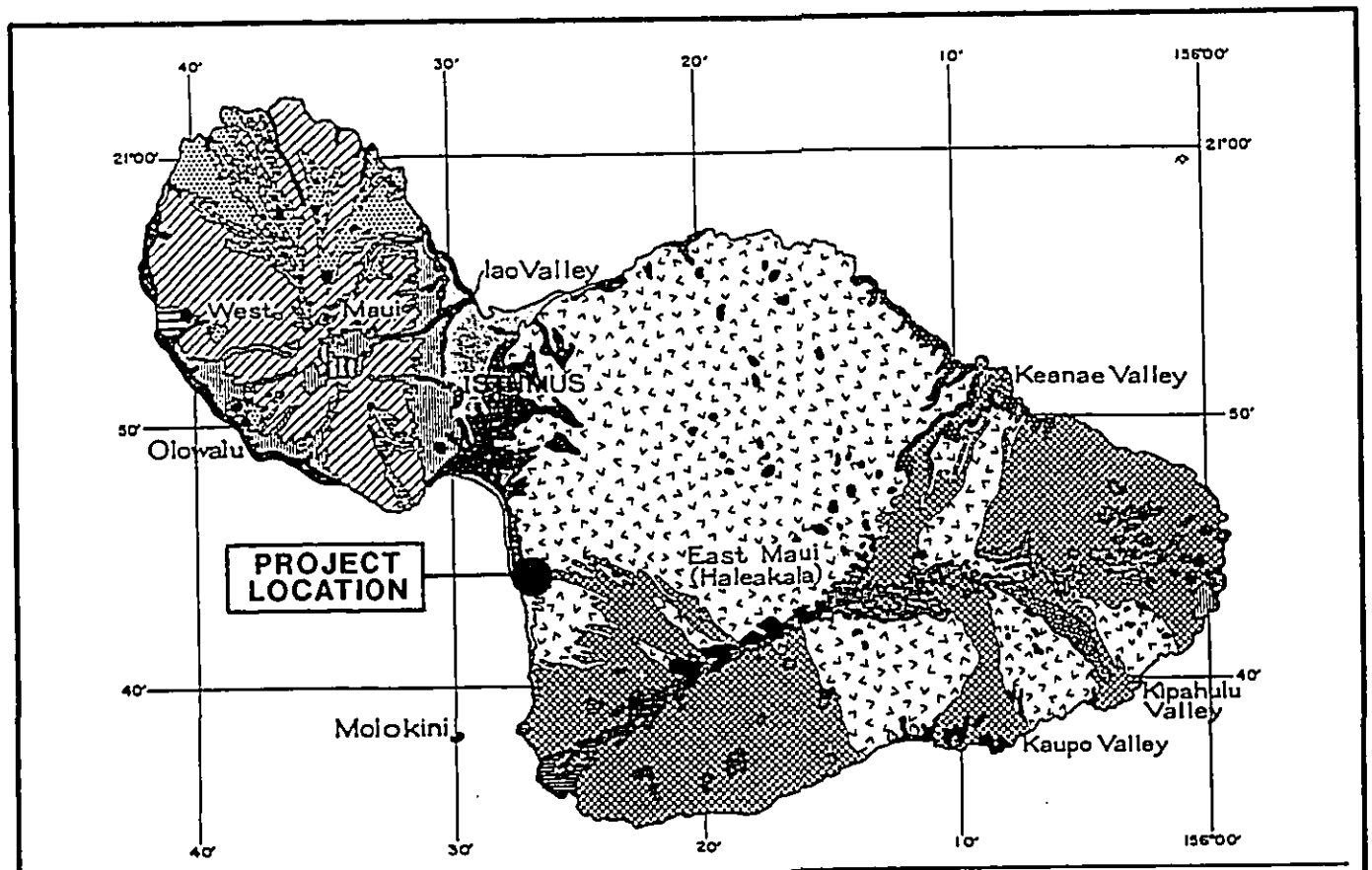
7. Hydrology

a. Wetlands

The U.S. Fish and Wildlife Service's (USFWS) "National Wetlands Inventory Map" identifies wetlands within the Kihei area. The most prominent area is the Kealia Pond near the north end of Kihei as shown on Figure II-1. Based on discussions with the Army Corps of Engineers, no wetlands are in the Phase I Project area.

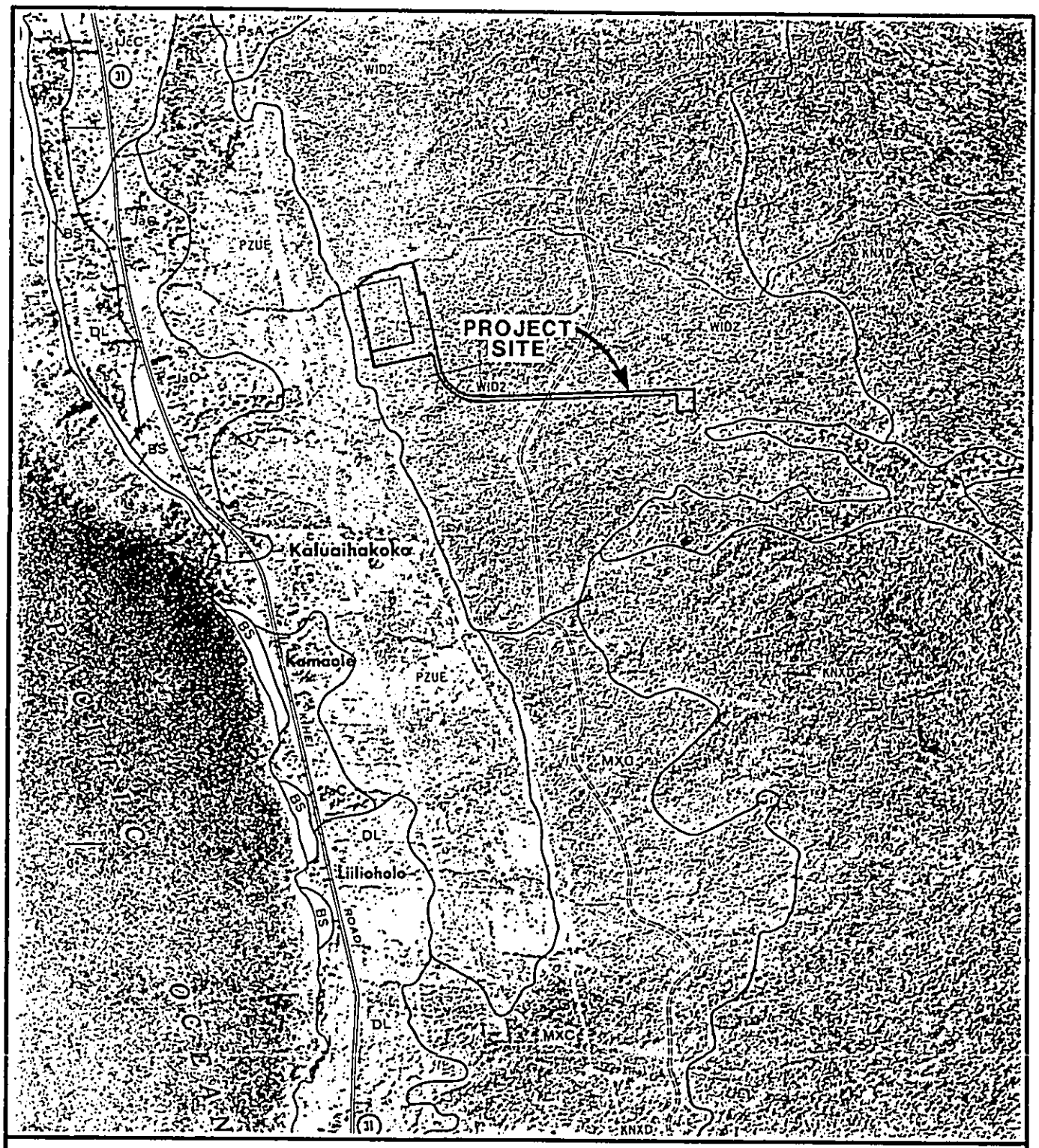
b. Groundwater

As indicated in Elements Needed in Design of a Ground-Water-Quality Monitoring Network in the Hawaiian Islands by K.J. Takasaki (1977), the types of groundwater in the Kihei area include brackish groundwater and basal groundwater floating on saline groundwater. See Figure II-6.



SOURCE: *Geology of the Hawaiian Islands, H.T. Stearns*

FIGURE II-4
GEOLOGIC MAP

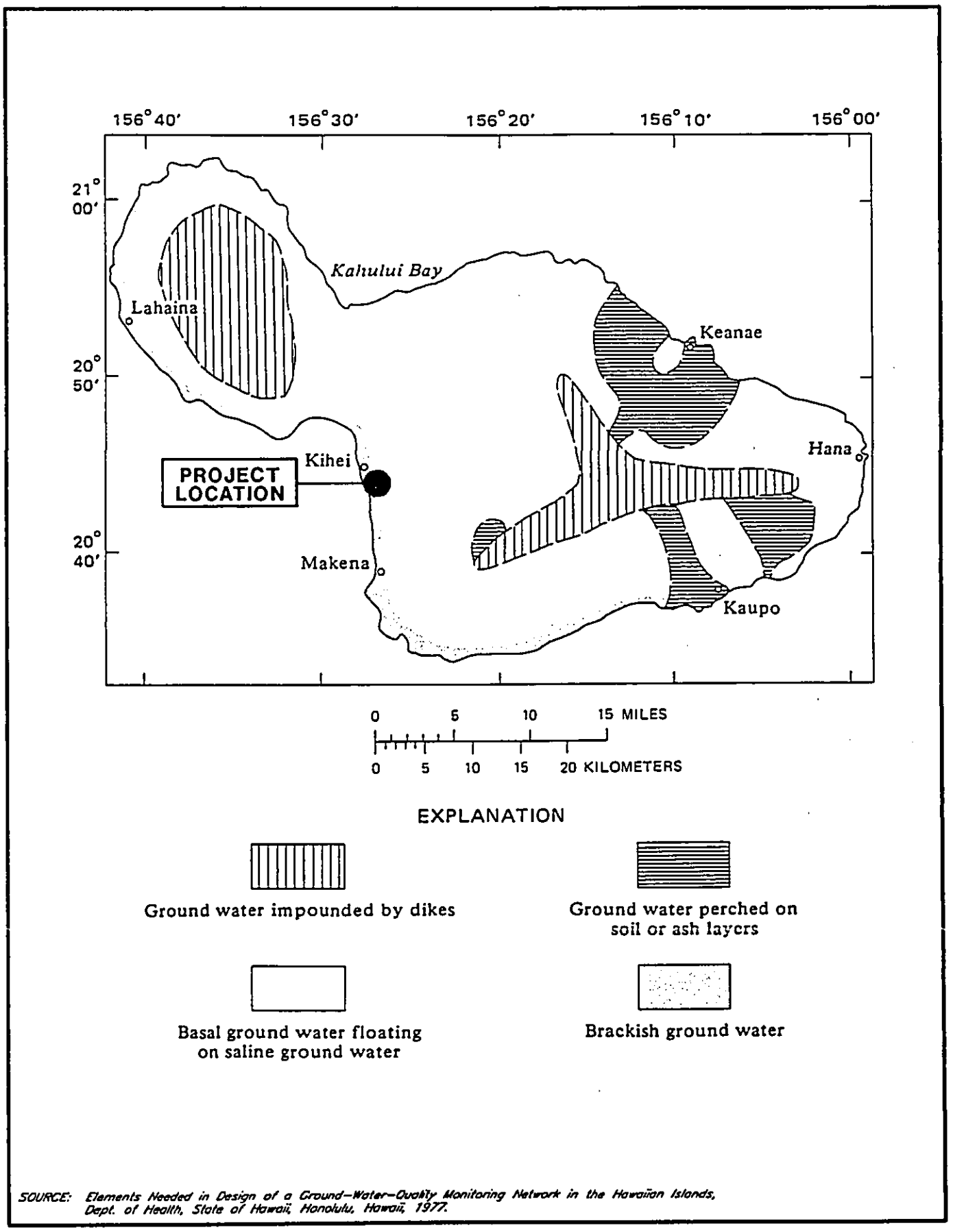


LEGEND:

BS	Beaches	MXC	Silt loam
DL	Dune land	PsA	Stratified clay loam, loam, loamy sand, fine sandy loam, and silt loam; cobbly or stony in places
JaC	Sand	PZUE	Sand
JcC	Sand	rVS	Very stony land
KNXD	Extremely stony silty clay loam	WID2	Silty clay loam; cobbly or stony in places

SOURCE: Soil Survey of Island of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii U.S. Dept. of Agriculture, Soil Conservation Service, August 1972.

FIGURE II-5
USDA/SCS SOIL MAP



SOURCE: Elements Needed in Design of a Ground-Water-Quality Monitoring Network in the Hawaiian Islands, Dept. of Health, State of Hawaii, Honolulu, Hawaii, 1977.

FIGURE II-6

PRINCIPAL GROUNDWATER RESOURCE AREAS

8. Archaeological/Historical Sites

A reconnaissance survey of the Phase I Project area was conducted in January 1996 by a staff archaeologist from the State Department of Land and Natural Resources, Historic Preservation Division, Maui Office. The archaeologist determined that the western portion of the proposed access road was previously graded, possibly during construction of the WWTP; and the remainder of the project area appears to have been impacted previously by mechanical clearing, either by bulldozer or chain-dragging. No evidence of historic sites was identified in the Phase I Project area.

D. Economic and Social Conditions

The economy of Maui is supported by sugarcane and pineapple cultivation, diversified farming, and cattle ranching; however, tourism is the primary industry of Maui. The major resort areas are in the Kihei-Wailea and Lahaina-Kaanapali areas, and to a lesser degree in the Wailuku-Kahului area. Lahaina and Kaanapali are located on the west side of Maui, and Wailuku and Kahului are on the northern coast of the isthmus.

The agricultural, ranching, and resort areas will benefit from the Effluent Reuse System either directly or indirectly with the provision of a valuable alternative water resource. Therefore, a positive socioeconomic impact is anticipated.

III. PROBABLE IMPACTS AND MITIGATIVE MEASURES

A. Short-Term Impacts

Construction of the proposed Kihei WWRF Effluent Reuse System will result in short-term environmental impacts on construction noise, air quality, traffic and access, aesthetics, and erosion. The Phase I Project will have minimal short-term impacts because the project location is isolated and primarily surrounded by undeveloped land. The WWRF will be impacted the most due to the close proximity to the project area, but provisions will be made to minimize these impacts. Once the Phase I Project is completed, the reservoir will be painted to match the surrounding environment; therefore, the aesthetic impact will not be objectionable.

The short-term impacts will be concentrated during the future projects and will affect the residents, businesses, and visitors in South Maui. These impacts are expected to result primarily from construction of the transmission lines along Piilani Highway. These short-term impacts can be mitigated by conscientious adherence to governmental regulations requiring the contractor's implementation of appropriate dust and noise control measures.

1. Construction Noise

Construction work, machinery operation and truck traffic will generate temporary noise, particularly within the immediate surrounding areas of the Phase I Project. However, there are no developments near the project area; therefore, construction noise impacts will be insignificant.

2. Air Quality

Air quality may temporarily deteriorate due to the release of fugitive dust from excavation, backfilling and grading operations, and exhaust fumes from construction machinery and vehicles. The impacts are expected to be minimal

because the contractor will be required to implement preventive measures, such as water sprinkling and proper maintenance of machinery and vehicles.

3. Traffic

Traffic along Piilani Highway will increase slightly due to construction activities. The most significant short-term impacts are expected to occur when the future transmission system (transmission line and booster pump station) is constructed, because the alignment will be within the Piilani Highway easement. Construction work to trench, install piping, construct the pump station, and repaving operations will have an impact on the nearby residents, businesses, and visitors. The increase will be temporary and will be minimized by implementation of traffic control measures. The County's traffic control ordinances will be complied with to minimize impacts. Trench excavations will be covered at the end of each work day, and flagmen or policemen will be stationed to direct traffic on the roads as deemed necessary. Effective construction schedules will be developed and the public will be informed. The potential inconveniences will be short-term. Efforts will be made by the County to assure safety, and will promptly address concerns during the construction process.

4. Erosion

During construction, excavating, grading and filling will be accomplished by the contractor. At each construction site, the work will impact local flora and fauna species, and will expose the land to the natural elements. The impacts are expected to be minimal due to the small land areas involved, temporary and short-term. Erosion control measures will be implemented as required. The County's grading, erosion, and sediment control ordinances will be complied with to minimize the potential adverse effects to coastal waters. Containment berms and silt screens will be used to control runoff and site erosion as deemed necessary. The construction work sites will be planted where applicable, and protected from erosion as soon as practicable after construction.

B. Long-Term Impacts

Long-term impacts generally are those impacts that are anticipated due to the operation of the Effluent Reuse System. These impacts will affect the environment in the project and service areas, as well as utilities in South Maui. This project, as a whole, was initiated to benefit the environment, and the most significant long-term impacts anticipated are positive. Any potential negative long-term impacts associated with the implementation of the project will be mitigated by appropriate and low profile design, and competent, efficient, and effective operations and maintenance.

1. Water Quality

Positive impacts on water quality are anticipated to result from the implementation of the Effluent Reuse System in South Maui. Two major commitments made by the County in the Community Plan will be satisfied by the system. As stated earlier, these commitments include the reduction of reliance on deep injection wells for wastewater effluent disposal and water conservation. The high quality R-1 Water produced by the WWRF is likely to be an important source of irrigation water in the South Maui area. There is limited potable water supply, and the brackish water aquifer will likely become increasingly saline if the withdrawal rate is increased to accommodate new developments in the area. Use of reclaimed water for irrigation will permit development to continue without adversely impacting the brackish water aquifer and without requiring additional importation of potable water.

In addition to avoiding waste of the resource and conserving precious groundwater, reuse provides an alternative to disposing of the effluent via deep injection wells. However, the deep injection wells are in place and represent a reliable, cost-effective means of disposal; therefore, continued use is practical and presently needed. Although there has been little evidence presented to indicate that injection wells are causing any water quality problems, concern about the impact of injection wells on ocean water quality has been expressed. Therefore, reduction of the reliance on the injection wells is regarded as a

safeguard to protect the coastal waters and minimize possible effects of effluent nutrients concentrating and causing algal blooms.

Lastly, the Phase I Project area is not within the 100-year flood zone nor wetland area, and compliance with the UIC and CWDA regulations will not be altered. Therefore, adverse impacts on water quality are not expected.

2. Air Quality

No long-term negative impacts on air quality resulting from the proposed project are anticipated.

3. Visual Impacts

The visual impacts of the proposed project, specifically the proposed reservoir, are not expected to be significant. The proposed reservoir location is approximately three-quarters of a mile mauka of Piilani Highway. The undulating terrain within the view plane from Piilani Highway is covered with scrub vegetation and scattered kiawe trees. The reservoir will be painted an earthtoned color to match the surrounding environment.

4. Archaeological/Historical Sites

No long-term negative impacts on historical and archaeological sites are anticipated. No historical sites are registered within the Phase I Project area, and most of the future construction would occur within the Piilani Highway easement. In the event that a possible historical artifact is unearthed during construction, mitigative measures will be taken to insure that no negative impacts will occur to unidentified historical sites. These include having a State archaeologist available on call, and training of construction crews about the potential of uncovering artifacts and proper procedures to follow in the event of a discovery.

5. Land Use

The Phase I Project area is designated for Agriculture by the State Land Use Commission. Land area required for the pipeline and road easement and reservoir is less than 6.5 acres; therefore, this project will not have significant negative impacts on agricultural lands. In fact, impacts will be beneficial to agricultural lands with the provision of reclaimed effluent, a valuable water resource for irrigation.

6. Flora/Fauna

The Phase I Project area is within Haleakala Ranch lands which have been bulldozed and chain-dragged in preparation for the current use as pasture for cattle grazing. Based on correspondence with the Department of the Interior, Fish and Wildlife Service, no endangered species of flora or fauna will be affected by the construction of the proposed project.

7. Public Health and Safety

Public health and safety is of the utmost importance and measures will be taken to insure protection. EPA Guidelines for Water Reuse and State DOH Reuse Guidelines will be followed; therefore, no public health or safety problems associated with the Reuse System are anticipated.

C. Secondary Impacts

1. Utilities

Increased power consumption is a secondary impact. Electricity will be a principle need in future development. Major improvements to Kihei WWRF electrical power systems will be necessary to accommodate higher capacity pumps. In addition, electrical services will be required to operate the future booster pump station. However, these needs are far outweighed by the benefits of the Reuse System. The reclamation facilities will be designed with

consideration for conserving power and water resources, and will be as energy efficient as practical.

2. Population Growth

There will not be secondary growth impacts in South Maui associated with the implementation of the Effluent Reuse System. All of the developments are independent of the system; rather, the development of the Reuse System is dependent upon the developments proposed.

D. Assessment of Environmental Impacts

Based on the analyses above, a negative declaration is anticipated. The proposed project is not anticipated to have any significant adverse impacts on the coastal water, groundwater, the local ecology, hydrology, and atmosphere. In summary, there will be short-term and temporary impacts involving noise, dust, and other aesthetics primarily due to construction operations and work. These impacts will be mitigated by adherence to governmental regulations, and implementation of appropriate control measures when necessary.

Unfavorable impacts on historical, archaeological sites, and wetlands are not anticipated. Based on available information, no such sites are expected to be affected by the project.

The disposal of the high quality reclaimed effluent via irrigation will benefit the environment by reducing the use of the deep injection wells, avoiding the waste of the valuable water resource, and conserving precious groundwater. The possibility of negative environmental impacts to the groundwater and coastal waters will be reduced. Completion of the system will provide cost-effective and environmentally safe means of disposing of the effluent generated in the service area.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

Four alternatives for effluent disposal and reclamation were developed and evaluated in the "South Maui Effluent Management Study," by Brown and Caldwell, dated July 1995. The proposed project is the alternative that was recommended. Discussion of the other alternatives and a "No Action" alternative follows.

A. No Action Alternative

The no action alternative is not sensible and therefore deemed unacceptable because the WWRF has been upgraded to produce the high quality R-1 Water conducive to disposal by irrigation. The valuable water resource would be wasted and use of the deep injection wells would not be reduced. As a result, the commitments stated in the County Community Plan would not be fulfilled. Additionally, the capital investment to upgrade the WWRF would be wasted.

B. Ocean Outfall and Reclamation

This alternative involves ocean outfall disposal combined with direct reuse of effluent for landscape irrigation of golf courses, parks, etc. This alternative appears to be the least feasible of the alternatives considered. There are no ocean outfalls on the island of Maui and no new outfalls have been built in Hawaii for several years. It may be difficult to meet State DOH water quality criteria for nitrogen even with a good outfall diffuser design because of the relatively shallow water and slow currents in the area. The estimated cost ($15 million to $25 million) is not less than the other alternatives considered and therefore presents no obvious advantages. Furthermore, the outfall alternative would become a very visible and possibly controversial project to the public.

C. Land Disposal and Reclamation

This alternative entails land disposal of effluent combined with direct reuse of effluent for landscape irrigation of golf courses, parks, etc., and would also require

injection well disposal of effluent (or storage or an alternate disposal method) during periods of high rainfall.

This alternative could be viable. The soil throughout Kihei-Makena area is generally described by the USDA-SCS as "well-drained," and can permit fairly high loading rates in land application projects. Important issues are impact on groundwater and location of the disposal area in relation to the Underground Injection Control (UIC) line. Alternate disposal methods or temporary storage for use during storm events must also be considered. The most likely disposal site is the area mauka of the treatment plant. Land disposal (high rate spray application) would replace injection wells as the disposal method. This alternative is similar to the proposed project, but would require approximately 400 acres of land and would limit the valuable water resource supply available to satisfy potential irrigation demands.

D. Groundwater Recharge for Indirect Irrigation Reuse

This alternative involves groundwater recharge of the local brackish water aquifer for indirect irrigation reuse combined with some direct reuse of effluent for landscape irrigation of golf courses, parks, etc.

Groundwater recharge for irrigation use in the Wailea Resort area south of Kihei appears to be a potentially feasible alternative. Demand for irrigation water in the area is high and growing, and the brackish groundwater aquifer appears to be deteriorating in quality because the high withdrawal is causing seawater intrusion. A groundwater recharge program could be developed to accommodate all of the effluent produced by the Kihei WWRF, and the groundwater aquifer could be used essentially as a distribution system and a storage reservoir to deliver water to existing and future irrigation sites. The recharged water could help reduce seawater intrusion and improve the water quality of the aquifer. This alternative would also require retention of existing injection wells for backup purposes, and would limit the availability of irrigation water to the other developments in South Maui. In addition to a distribution system for irrigation, a ground water recharge system would be required.

This alternative would eliminate the construction of a distribution system south to Wailea Resorts, but would require a more involved design for a groundwater recharge system. A distribution system still would be needed for direct reuse and may be as involved as in the proposed project. In addition, public resistance could be more significant due to the nature of the alternative. In evaluating these conditions, this alternative is not as economical and logical as the proposed project. Groundwater recharge, in addition to direct reuse, requires an unnecessary system to meet the same water demands.

V. POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND THE OBJECTIVES OF FEDERAL, REGIONAL, AND LOCAL LAND USE, PLANS, POLICIES, AND CONTROLS FOR THE AREA CONCERNED

The proposed project must be reviewed by State and County agencies and will be consistent with government policies concerning land use developments and effluent reuse. The Reuse System will minimize the opportunities for pollution of the coastal waters, and will produce high quality effluent which can benefit the environment. In addition, Phase I of the proposed project is not within the SMA (see Figure II-1). Therefore, no possible conflicts between the proposed Effluent Reuse System and the objectives of federal, regional, and local land use, plans, policies and controls for South Maui are anticipated.

VI. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Reclamation of wastewater effluent has become an accepted practice that is environmentally beneficial. This is a means to preserve and conserve a valuable resource.

The short-term impacts were discussed in Section III. The adverse impacts include noise and traffic in the project areas. The short-term benefits include increased economic activity due to construction expenditures related to the project.

The proposed Effluent Reuse System will be capable of serving demands within the area. Due to the limited groundwater resources in the area, it is possible that the Kihei WWRF effluent production may be fully depleted by excess demand. Although the capital and operation/maintenance costs are considerable, the Reuse System will enhance the environment and increase long-term productivity, because of the significantly decreased potentials for contamination, nuisance, and degradation of the environment. However, long-term use of a portion of the land is required to construct the reservoir and future pumping station.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are several irreversible commitments of resources including land and financial resources to construct capital improvements, and to operate and maintain the facilities. Land commitment for additional facilities to implement the Reuse System is minimal, and financial commitment for capital improvements and operations and maintenance vary with the scope of work.

The long-term commitment to reduce the reliance on deep injection wells and to conserve water supports the implementation of the environmentally safe Effluent Reuse System; therefore, the commitment of land, labor, materials, energy, equipment and financial resources that are practically irreversible and irretrievable is warranted.

VIII. AGENCIES AND ORGANIZATIONS CONSULTED

County of Maui, Department of Parks and Recreation
County of Maui, Department of Public Works and Waste Management
County of Maui, Planning Department
Kihei Community Association
State Department of Health
State Department of Health, Environmental Management Division
State Department of Health, Wastewater Branch
State Department of Land and Natural Resources
State DLNR Historic Preservation Division, Maui Office
State Department of Transportation, Highways Division, Maui Office
State Office of Environmental Quality Control
State Office of Hawaiian Affairs
University of Hawaii, Environmental Center
University of Hawaii, Water Resources Research Center
U.S. Army Corps of Engineers
U.S. Department of the Interior, Fish and Wildlife Service
Haleakala Ranch Company

IX. REFERENCES

1. Aotani & Associates, Inc., KIHEI-MAKENA COMMUNITY PLAN - TECHNICAL REPORT, County of Maui, November 1981.

2. Brown & Caldwell Consultants, SOUTH MAUI EFFLUENT MANAGEMENT STUDY, County of Maui, July 1995.

3. Brown & Caldwell Consultants, SOUTH MAUI WATER REUSE FEASIBILITY STUDY, County of Maui, September 1992.

4. County of Maui, FINAL ENVIRONMENTAL IMPACT STATEMENT - KIHEI SEWERAGE SYSTEM, June 1973.

5. County of Maui, KIHEI-MAKENA COMMUNITY PLAN, July 1985.

6. County of Maui Planning Department, PROPOSED KIHEI-MAKENA COMMUNITY PLAN - COMMUNITY PLAN UPDATE, September 1993.

7. Hawaii State Department of Health, Wastewater Branch, GUIDELINES FOR THE TREATMENT AND USE OF RECLAIMED WATER, November 1993.

8. Norman Saito Engineering Consultants, Inc., KIHEI DISTRICT WASTEWATER SYSTEM EXPANSION STUDY, County of Maui, March 1989.

9. U.S. Department of Agriculture, Soil Conservation Service, SOIL SURVEY, ISLANDS OF KAUAI, OAHU, MAUI, MOLOKAI, AND LANAI, STATE OF HAWAII, August 1972.

10. U.S. Environmental Protection Agency, GUIDELINES FOR WATER REUSE, EPA Manual EPA/625/R-92/004, September 1992.

11. University of Hawaii, Department of Geography, ATLAS OF HAWAII, SECOND EDITION, University of Hawaii Press, 1983.

APPENDIX

LINDA CROCKETT LINGLE
Mayor

DAVID W. BLANE
Director

GWEN OHASHI HIRAGA
Deputy Director

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

May 13, 1996

Mr. Jon K. Nishimura
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard
Second Floor
Honolulu, Hawaii 96814

Dear Mr. Nishimura:

RE: Draft Environmental Assessment Effluent Reuse System, Kihei Wastewater Reclamation Facility (WWRF)

Thank you for the opportunity to comment on the Draft Environmental Assessment, Effluent Reuse System Kihei Wastewater Reclamation Facility.

The proposed action is in keeping with the General Plan of the County of Maui,Objectives and Polices:

"IV. TRANSPORTATION

Objective

• • •

B. WATER

Objective

• • •

2. To make more efficient use of our ground, surface and recycled water sources.

• • •

C. LIQUID and SOLID WASTE

Objective

• • •

1. To provide efficient, safe and environmentally sound systems for the disposal and reuse of liquid and solid wastes.

E. PUBLIC UTILITIES and FACILITIES

• • •

1. To anticipate and provide public utilities which will meet community needs in a timely manner."

The proposed action is also in keeping with the Kihei-Makena Community Plan:

"Section VI. SUMMARY of RECOMMENDATIONS, SUPPORT SYSTEMS: TRANSPORTATION & PUBLIC FACILITIES

• • •

3. Liquid and Solid Waste

a. Coordinate improvements to existing sewage transmission lines and the central treatment plant to meet the needs of future population growth."

The review of the Draft Environmental Assessment for the Effluent Reuse System Kihei Wastewater Reclamation Facility has not identified any significantly adverse impacts based on the significance criteria listed in §11-200-12 of the Environmental Impact Statement Rules; therefore, the Maui Planning Department has no further comments on this project.

If additional clarification is required, please contact Staff Planner, Mr. Don Schneider, of this office at 243-7735.

Very truly yours,

DAVID W. BLANE
Planning Director

DWB:DAS:osy

xc: Colleen Suyama, Planning Program Manager, Land Use Management
Charles Jencks, Director, Department of Public Works and Waste Management
Don Schneider, Staff Planner
Project File
General File

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

LINDA CROCKETT LINGLE
Mayor
HENRY OLIVA
Director
ALLEN SHISHIDO
Deputy Director

1580-C Kaahumanu Avenue, Wailuku, Hawaii 96793
(808) 243-7230
FAX (808) 243-7934

96 MAY 10 P2:15

May 8, 1996

Mr. Charles Jencks, Director
Department of Public Works and Waste Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Jencks:

SUBJECT: Draft Environmental Assessment For Kihei Waste Water Reclamation Plant, Effluent Reuse System

We have reviewed the Draft Environmental Assessment for the above-referenced project and have no comments to submit. We are in support of the project, in as much as, the project will provide effluent irrigation for Kalama Park and the proposed Kihei Regional Park.

If you require additional information, please contact Patrick Matsui at 243-7387.

Sincerely,

HENRY OLIVA
Director

PTM

c: Patrick Matsui, Chief of Parks Planning & Development

HALEAKALA RANCH COMPANY
ESTABLISHED IN 1888

May 3, 1996

Jon K. Nishimura
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard - 2nd Floor
Honolulu, Hawaii 96814

Dear Mr. Nishimura:

Subject: Draft Environmental Assessment
Effluent Reuse System - Kihei Wastewater Reclamation Facility

I have reviewed the subject draft assessment of the effluent reuse system to be located on Haleakala Ranch lands, mauka of the Kihei WWRF. The project looks okay as drafted.

Sincerely,

Peter D. Baldwin
President

PDB:cdl

329 KEALAOLA AVENUE • MAKAWAO, HAWAII 96768 • TELEPHONE (808) 572-7326

BENJAMIN J CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P O BOX 621
HONOLULU HAWAII 96809

MICHAEL D WILSON
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

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BOATING AND OCEAN RECREATION
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CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
WATER RESOURCE MANAGEMENT

May 10, 1996

Ref.:COMKWW222.54R
LD-NAV

Mr. John K. Nishimura
Fukunaga and Associates, Inc.
1388 Kapiolani Blvd. 2nd Floor
Honolulu, Hawaii. 98614

Dear Mr. Nishimura:

SUBJECT: Draft Environmental Assessment for Effluent Reuse System-Kihei Wastewater Reclamation Facility Phase 1. Proposing Agency: County of Maui, Department of Public Works and Waste Management. Kihei, Maui, Hawaii. Tax Map Keys: 2-2-02: por. 54 and 2-2-24: por. 10 and por. 11.

We have received the Draft Environmental Assessment (DEA) for the County of Maui's proposed project. The informational material was distributed to our Divisions for their review and comments.

We are pleased to inform you that the Department of Land and Natural Resources has no comments on the County of Maui's proposed project, as submitted.

Should you have any questions, please feel free to contact Mr. Nicholas A. Vaccaro of the Land Management Division at 1-808-587-0438.

Aloha,
for MICHAEL D. WILSON

C: Colbert M. Matsumoto
William Kennison
Maui District Land Office

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813 5249
PHONE (808) 594-1888
FAX (808) 594-1865

May 16, 1996

Fukunaga & Associates, Inc.
Attn: John K. Nishimura
1388 Kapiolani Blvd. 2nd. Floor
Honolulu, HI 96814

Dear Mr. Nishimura:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for the Effluent Reuse System, Kihei Wastewater Reclamation Facility, Island of Maui. The County of Maui proposes the development of a wastewater reclamation system for South Maui that will maximize the beneficial use of the high quality effluent currently being produced by the Kihei Wastewater Reclamation Facility.

After a careful review of the DEA and supporting documentation, the Office of Hawaiian Affairs has no objections to the proposed development. Based on the information contained in the DEA, the wastewater reclamation system bears no significant long-term adverse impacts on adjacent wetland areas nor upon existing flora or fauna habitats. Furthermore, no known archaeological remains exist and the proposed facility will not significantly impact scenic resources. Please contact me, or Linda K. Delaney, the Land and Natural Resources Division Officer (594-1938), or Luis A. Manrique (594-1935), should you have any questions on this matter.

Sincerely yours,
Linda M. Colburn
Administrator

LM:lm

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

May 29, 1996

Planning and Operations Division

Mr. Jon K. Nishimura
Fukunaga and Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

Dear Mr. Nishimura:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Effluent Reuse System - Kihei Wastewater Reclamation Facility, Kihei, Maui (TMK 2-2-2: por. por. 54, and 2-2-24: por. 10 and por. 11). The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Based on the information provided, a DA permit will not be required unless work is performed in Keokea Stream or other waters of the U.S. Please contact our Regulatory Section at 438-9258 (extension 13 or 17) for further information and refer to file number 960000205.

b. The flood information provided on page 10 of the DEA is correct.

Sincerely,

Paul Mizue, P.E.
Acting Chief, Planning
and Operations Division

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

In Reply Refer To: HMM

MAR 26 1996

Lynn T. Katahara
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, HI 96814

Re: Notice of Intent to Prepare an Environmental Assessment for the Effluent Reuse System - Kihei Wastewater Reclamation Facility

Dear Ms. Katahara:

The U.S. Fish and Wildlife Service (Service) has received your February 23, 1996, letter requesting assistance in determining if there are any flora or fauna in the area of the proposed Effluent Reuse System for Kihei, Maui, that require special attention. The Service offers the following comments for your consideration.

The proposed project area is situated in developed and agricultural areas near the city of Kihei. To the best of our knowledge, no Federal trust resources, such as migratory birds, endangered or threatened species, or wetlands, will be affected by construction of the proposed facility. The Service therefore has no comment on the proposed project and does not require further notification or consultation on the project.

We appreciate your concern for Hawaii's environment. If you have any questions, please contact Biologist Heather McSharry at the above numbers.

Sincerely,

Acting Karen O. Wann
Brooks Harper
Field Supervisor
Ecological Services

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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May 8, 1996

LOG NO: 17081
DOC NO: 9605KD03

MEMORANDUM

TO: Dean Y. Uchida, Administrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Historic Preservation Review of a Draft Environmental Assessment - Kihei Wastewater Reclamation Facility Effluent Reuse System, Phase I
Keokea, Makawao District, Island of Maui
TMK: 2-2-02: 54 (por) and 2-2-24: 10 and 11 (por.)

The County of Maui Department of Public Works and Waste Management proposes to construct a new 1.0 MG reservoir for effluent storage, a water line and road to the reservoir, and a control/monitoring system. The proposed reservoir is to be located east from the existing Kihei Wastewater reclamation facility.

Our office has reviewed this project, as part of the early consultation for draft EA preparation. During our review, a field inspection was conducted of the proposed reservoir and access road (letter to Lynn Katahara February 15, 1996). The inspection found that the project area has been previously impacted by the construction of the reclamation plant and by ranch land clearing activities. On the bases of negative findings during the inspection, we indicated that the project would have "no effect" on historic sites.

According to the draft EA, "...no historical sites are registered within the Phase I Project area.." (page 23). We request that the results of the field inspection be discussed in the final EA, and that a copy of our February 15 letter to Lynn Katahara be attached. This would help to clarify how it was determined that no historic sites are present within the project site.

KD:jen

c: Jon Nishimura, Fukanaga & Associates (1388 Kapiolani Boulevard, 2nd Floor, Honolulu)

1388 KAPIOLANI BOULEVARD / 2ND FLOOR HONOLULU, HAWAII 96814 / PH: (808) 944-1621 / FAX: 808) 946-9339

June 10, 1996

Mr. Don Hibbarb, Administrator
State Historic Preservation Office
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbarb:

Subject: Final Environmental Assessment (EA) - Negative Declaration
Effluent Reuse System - Kihei Wastewater Reclamation Facility

Thank you for your review and comment on the Draft EA. Your request for discussion on the archaeological field inspection results has been included on page 21 of the Final EA; and a copy of your February 15 letter resulting from the early consultation has been incorporated. No significant environmental impacts are anticipated for this project; and the notice for the final determination of a Negative Declaration will be submitted to the Office of Environmental Quality Control. The Final EA will be mailed to you at the end of this month.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Jon K. Nishimura

FUKUNAGA&ASSOCIATES,INC

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 15, 1996

Ms. Lynn Katahara
Fukunaga & Associates
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

LOG NO: 16520
DOC NO: 9602KD14

Dear Ms. Katahara:

SUBJECT: **Historic Preservation Review of a Proposed County of Maui Water Reservoir and Access Road, Kaokea, Makawao District Island of Maui TMK: 2-2-02: 58**

Thank you for requesting review comments on a proposed water reservoir tank, to be constructed for the County of Maui Board of Water Supply. The proposed tank is to be located approximately one km (.6 mile) east of the existing Kihei sewage treatment plant, which is located at Welekahao Road and Piilani Highway in Kihei. The proposed tank site is 200 ft. square and is to be accessed via a new road from the sewage treatment plant.

Our records indicate that no prior archaeological surveys have been conducted of the project area. A reconnaissance survey has been completed for the proposed Kihei Regional Park area, located on the adjacent property to the south. A number of historic sites were identified in the regional park area; these sites consist primarily of agricultural features and temporary habitation sites.
In addition, we have records of historic sites to the west (*makai*) of the project area.

Aerial photographs of the project area indicate its use for ranching; current vegetation includes scattered *kiawe* trees and grasses. Based on known site patterns, it would be expected that historic sites representing historic ranching, precontact seasonal agriculture, or temporary habitation shelters would be present in the area of the project.

A field inspection of the project area was conducted by SHPD staff archaeologist Theresa K. Donham on January 12, 1996, in order to check the current condition of the project area, and determine the likelihood of historic sites being present.

The centerline of the proposed access road and the tank site were well marked with stakes, and the ground visibility was excellent at the time of the inspection. It was found that the western portion of the access road has been previously graded, most likely during construction of the sewage treatment plant. The remainder of the access road and tank site appears to have been previously impacted by mechanical clearing, either by bulldozer or chain-dragging. No evidence of historic sites was identified along the road corridor or within the proposed tank lot.

It appears that construction within the current road alignment and tank location area will have "no effect" on historic sites. If, however, the road alignment or tank site is shifted to the south, there may be a possibility that sites will be impacted by the project. We therefore request that any revisions in the project location be submitted to our office for additional review and comments.

Please contact Ms. Theresa K. Donham at 243-5169 if you have any questions.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

KD:jen

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

GARY GILL
DIRECTOR

May 22, 1996

Mr. Charles Jencks, Director
Department of Public Works and Waste Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Jencks:

Subject: Draft Environmental Assessment for the Kihei Wastewater Reclamation Facility - Effluent Reuse System

Thank you for the opportunity to review the subject document. We have the following questions and comments.

1. What is the capacity of the proposed effluent reuse system?

2. Please describe the measures that will be implemented to prevent cross connection problems with any existing or future potable water systems.

3. Please describe the visual impacts of the proposed reservoir. We recommend constructing and painting the reservoir with materials and colors that blend with the surroundings. We also recommend landscaping around the reservoir site to reduce the visual impacts.

4. What is the source of irrigation water for existing golf courses in the Kihei area? Does the County of Maui have any ordinances relating to the use of non-potable water for golf courses, parks, ranches, landscaping, or other activities?

Should you have any questions, please call Jeyan Thirugnanam at 586-4185. Mahalo.

Sincerely,

Gary Gill
Director

c: Fukunaga and Associates

1358 KAPIOLANI BOULEVARD / 2ND FLOOR HONOLULU, HAWAII 96814 / PH (808) 944-1621 / FAX (808) 946-9339

June 10, 1996

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Final Environmental Assessment (EA) - Negative Declaration
Effluent Reuse System - Kihei Wastewater Reclamation Facility

Thank you for your review and comments on the Draft EA. This letter is in response to the comments in your letter dated May 22, 1996 to the County of Maui, Department of Public Works and Waste Management.

1. Comment: What is the capacity of the proposed effluent reuse system?
   Response: Final EA page 3, "Approximately 6.2 MGD are expected to be available for the Reuse System, and an additional 0.5 MGD would be available for in-plant use."
2. Comment: Please describe the measures that will be implemented to prevent cross connection problems with any existing or future potable water systems.
   Response: Cross-connection provisions have been included on pages 4 & 5.
3. Comment: Please describe the visual impacts of the proposed reservoir. We recommend... the reservoir... blend with the surroundings. We also recommend landscaping around the reservoir site to reduce the visual impacts.
   Response: The visual impacts of the reservoir are discussed on page 25. The reservoir will be painted an earthtoned color; the exact color has yet to be determined. In regards to the recommendation for landscaping, due to the isolated location of the reservoir and the type of vegetation surrounding the site, i.e. scrub vegetation and numerous kiawe trees, landscaping was not deemed necessary.
4. Comment: What is the source of irrigation water for existing golf courses in the Kihei area? Does the County of Maui have any ordinances relating to the use of non-potable water...?
   Response: Final EA page 5, "At present, the existing and planned golf courses (excluding Silversword Golf Course) primarily rely on brackish water sources for irrigation." In regards to the question on non-potable water ordinances, the County of Maui does have a proposed ordinance that is pending.

We hope the responses address your comments to your satisfaction.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Jon K. Nishimura

FUKUNAGA&ASSOCIATES, INC.