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FINAL
ENVIRONMENTAL ASSESSMENT

*Hana Waterline
Replacement Project*
Phase II

Hana, Maui, Hawai'i
TMK: 1-4-05



CHRIS
HART
& PARTNERS

February 1999

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Replacement Project
Phase II**

Hana, Maui, Hawai'i
TMK: 1-4-05

Prepared for:

C. Takumi Engineering, Inc.
18 Central Avenue
Wailuku, Maui, Hawai'i 96793
Phone: 249-0411
Fax: 249-0311

Prepared by:

Chris Hart & Partners
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, Maui, Hawai'i 96793
Phone: 242-1955
Fax: 242-1956

February 1999

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FINAL
ENVIRONMENTAL ASSESSMENT
FOR
THE HANA WATERLINE REPLACEMENT PROJECT
PHASE II
AT
HANA, MAUI, HAWAII

I PROJECT OVERVIEW

District:	Hana, Maui, Hawaii
Tax Map Key Plat:	1-4-05
Project Name:	Hana Waterline Replacement Project, Phase II
Project Location:	Uakea Road starting at Waikoloa Road to Keawa Place and along Hana Highway to Hauoli Road
Project Length:	5,350 Lineal Feet
Property Owner:	Uakea Road and Hana Highway: County of Maui 250 South High Street Wailuku, Maui, Hawaii 96793

Keawa Place:

Department of Transportation
Highways Division
State of Hawai'i
650 Palapala Drive
Kahului, Maui, Hawai'i 96732

Accepting Agency:

Department of Water Supply
County of Maui
250 South High Street,
Wailuku, Hawai'i 96793

Engineering Consultant:

C. Takumi Engineering, Inc.
18 Central Avenue
Wailuku, Maui, Hawai'i 96793
Phone: 249-0411
Fax: 249-0311

Planning Consultant:

Chris Hart & Partners
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, Maui, Hawai'i 96793
Phone: 242-1955
Fax: 242-1956

Land Use Designation:

State Land Use Commission:
Urban & Agricultural

Hana Community Plan:

*Within or abutting Agricultural,
Single Family, Service
Business/Residence, Hotel, Public/
Quasi-Public, Business/Commercial
and Multi-Family Districts*

Other Designations:

Special Management Area

Existing Land Use: Public Road Right-of-Way with 3 inch and 4 inch sub-surface waterlines.

Proposed Land Use: This application involves replacing the existing 3-inch and 4-inch waterlines with a new 12-inch waterline together with fire hydrants every 350 feet within the existing road right-of-way.

Summary

The project site is located in Hana Town within the existing road right-of-ways of Uakea Road, Keawa Place and Hana Highway and covers approximately 5,350 lineal feet. Located within Hana's Urban core, the site traverses through various use areas including hotel, single-family residential, commercial and agricultural. The site is located within the *Special Management Area*.

The objective of the project is to provide improved water transmission and distribution service for the people of Hana. The existing waterlines are aged and do not meet current fire flow protection standards. Implementation of the project will improve system reliability and provide urban level fire flow protection standards for the existing uses in the area. Provision of required infrastructure improvements will result in short-term construction-related impacts, which can be mitigated through standard protection measures. The proposed action is not expected to result in significant long-term impacts to traffic, flood hazard potential, infrastructure, public services and historic or environmental resources.

II. CONSULTING AGENCIES

A. COUNTY OF MAUI

1. Department of Planning
2. Department of Public Works and Waste Management
 - Wastewater Reclamation Division
 - Engineering Division, Highways

B. STATE OF HAWAII

1. Department of Land and Natural Resources
 - Historic Preservation Division
2. Department of Transportation
 - Highways Division

III. DESCRIPTION OF THE PROPERTY

A. PROPERTY LOCATION

The project site is located within the right-of-ways of Uakea Road (starting before Waikoloa Road), Keawa Place and Hana Highway (to Mill Place), Hana, Island of Maui (TMK 1-4-03) *see Figure No. 1.*

B. EXISTING AND SURROUNDING USES

The project site, which is approximately 5,350 feet in length, transverses Hana Town passing through or adjacent to residential areas, including the Hāna Ranch Houselots, the Hotel Hana-Maui, agricultural fields and the Hana Town Center (*See Figure No. 2*). The entire project site lies within existing public right-of-ways, which are primarily used for travel purposes.

C. EXISTING LAND USE DESIGNATIONS

State Land Use Commission: *Urban & Agricultural* Districts

Hana Community Plan: *Within or abutting Agricultural, Single Family, Service Business /Residence, Hotel, Public/Quasi-Public, Business/ Commercial and Multi-Family Districts (see Figure No. 2).*

Other Designations: *Special Management Area.*

IV. DESCRIPTION OF THE PROPOSED ACTION AND NEED

The Department of Water Supply is proposing the replacement of approximately 5,350 lineal feet of 3-inch and 4-inch waterline with 12-inch waterline together with the provision of fire hydrants every 350 feet. The objective of the project is to provide better water transmission and distribution service for the people of Hana. The existing lines are aged and do not meet current fire flow protection standards. Implementation of the project will improve system reliability and provide urban level fire flow protection standards for existing properties in the area.

Pipeline sizing has been determined by fire flow standards. The fire flow standards established for Maui County are based on land uses in the project area. The standards for urban areas with commercial uses and hotels are 2000 gallons per minute (gpm) and 2500 gpm respectively. Based on Maui County's water standards, an 8 inch pipe has a capacity of 1600 gpm and therefore is insufficient to meet the required fire flow standard for the project area. The next commonly available pipe size is 12 inch. The capacity of a 12 inch line is 3,450 gpm based on Maui County standards and is therefore sufficient to meet the required fire flow standards.

The total project cost is estimated to be \$750,000. These funds will come entirely from the Maui County Board of Water Supply sources. The project is expected to take approximately six months to complete.

Pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment (EA) documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

V. ALTERNATIVES

A. NO ACTION

The "no action" alternative is not desirable since the project area would continue to be served by waterlines that are below current standards for urban areas.

B. ALTERNATIVE CORRIDORS

Alternative corridors outside of the existing right-of-ways would require crossing of private property and major disruption to existing uses. Completion of the specific section of waterline replacement would complete a key section of service lines in Hana. Alternative corridors would provide less than optimal improvements in service delivery.

C. ALTERNATIVE PIPELINE SIZES

As discussed above, the 12 inch pipeline size has been determined based on Maui County's fire flow standards. The next smaller pipeline size which is commonly available is 8 inch, however, this size would not meet the fire flow needs of the area.

VI. ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND PROPOSED MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

Existing Conditions:

The Hana region is characterized by a country atmosphere, with settlement/development consisting of single-family residential dwellings on a variety of agricultural, rural and urban lots, interspersed with a number of small ranches and farms and the large land holdings of Hana Ranch. The urban core of the region is Hana Town, located approximately 55 miles from the County seat in Wailuku.

The project site is within Hana's urban core and traverses along portions of Hana Ranch Houselots Subdivision, Hotel Hana Maui and the Hana Town commercial district (*see Figure No. 2*).

Potential Impacts and Mitigative Measures:

During the construction phase, there is a potential for short-term impacts to existing business establishments and residences. The County of Maui, Department of Water Supply (DWS) will require the contractor to notify residents and merchants of the project schedule and will seek to minimize impacts on day-to-day activities, by limiting construction to daylight hours and maintaining access to properties. With the incorporation of these mitigation measures, short-term construction impacts to surrounding land uses are considered minimal. Over the long term, surrounding uses will benefit by the improved water service.

2. **Climate**

Existing Conditions:

The climate in the Hana region is heavily influenced by the persistent north-northeasterly trade winds and is typical of windward areas in the Hawaiian Islands. Average temperatures ranges from the low 60s to high in the mid 80s. Rainfall at the project site averages approximately 75 inches per year.

3. **Topography/Landform**

Existing Conditions:

The project site traverses 5,350 feet of public roadway through an area of low rolling hills, close to the coastline.

Potential Impacts and Mitigative Measures:

The proposed project will require excavation for installation of the underground waterline. Short-term environmental impacts to the topography and landform will be limited to those associated with roadwork and excavation. As the site has been previously graded and because the roads and streets will be restored to original grade, there are no significant long-term impacts to topography and landforms.

4. **Flood and Tsunami Hazard**

Existing Conditions:

The project site is designated Zone "C" and a small portion of Zone "B" by the Flood Insurance Rate Map No. 150003 320 B for this region. Zone "C" defines an area of minimal flood hazard. Zone "B", which crosses Uakea Road at Keawa Place and abuts Keawa Place to Hana Highway, defines an area between the limits of the 100 year and 500 year flood; or certain areas subject to the 100 year flood with average depth less than one foot.

Potential Impacts and Mitigative Measures:

The proposed waterline replacement project will not have any long-term impact upon the surrounding properties in regards to flood and tsunami hazards, since there will be no permanent change in topography or surface features. Due to the project's proximity to the drainage channel along Keawa Place, the contractor should pay attention to weather forecasts while working in this area and avoid trenching and excavation activities during periods forecasted for heavy rains. All trenches should be backfilled as soon as practical and not be left open for long periods.

5. **Flora and Fauna**

Existing Conditions:

The project site passes through extensively landscaped Urban areas. Landscape improvements along the site include mature shade trees as well as various tropical plants, hedges, palms, and grasses.

Animal life in the project vicinity similarly reflects the urban character of the region. Avifauna typically found in the Hana region include the common myna, several species of dove, cardinal, house finch, and house sparrow. Mammals common to this area include cats, dogs, rodents, and mongoose.

Potential Impacts and Mitigative Measures:

There are no known significant habitats of rare, endangered or threatened species of flora and fauna located within the existing rights-of-way. The proposed waterline replacement project will have no significant impact upon the flora and fauna found along the project site.

6. **Air Quality**

Existing Conditions:

Air quality in the Hana region is considered good. There are no point sources of airborne emissions in the immediate vicinity of the project site and non-point sources of emissions (e.g., automobiles) are not significant.

Potential Impacts and Mitigative Measures:

The proposed waterline replacement project is not anticipated to be detrimental to local air quality. During construction, site work such as excavation and grading, could generate airborne particulate. Dust control measures will include regular watering as appropriate, and repaving of work areas as soon as practical. There will be no long-term impacts to air quality.

7. **Noise Characteristics**

Existing Conditions:

Surrounding noise levels in the Hana region are characteristic of its rural atmosphere and are considered relatively low. Background noise levels are attributed to natural conditions (e.g. wind) and traffic from Hana Highway.

Potential Impacts and Mitigative Measures:

There would be a temporary increase in ambient noise levels during the construction phase. To minimize construction-related impact to the surrounding property owners, the County will limit construction activities to normal daylight working hours, and adhere to the State Department of Health's noise regulations for construction equipment. After construction, there will be no significant impacts to ambient noise levels from the waterline replacement project.

8. **Visual Resources**

Existing Conditions:

There are scenic *mauka* vistas along portions of the project site along Hana Highway. Most of the *makai* views are obscured, due to existing topography and structures.

Potential Impacts and Mitigative Measures:

Due to the subsurface nature of the project, the proposed waterline replacement project will not have any impact upon the visual character of the site and its immediate environs.

9. **Historic/Cultural Resources**

Existing Conditions:

The Hana area has an extensive number of archaeological sites (most of which remain unmapped and largely unstudied) suggesting that, over time, Hana's ideal living environment led to a large pre-contact population. A Bishop Museum study surmises that the district between Ke'anae and Kaupo may once have accommodated as many as 70,000 Hawaiians (Hana Community Design Guidelines, Pg. 17).

In 1851, Hana Plantation, a sugar mill, was established by Captain George Wilfong. The last sugar was milled in 1945. The Hana Ranch and Hotel Hana-Maui has been the major economic force in Hana since 1945.

Potential Impacts and Mitigative Measures:

Scientific Consultant Services, Inc. (SCS) was contracted to provide archival research associated with the Hana Waterline Replacement Project (*see Appendix A*).

Based on project area maps, the pipeline corridor extends through several recorded LCAs and land grants (*see Figure 2*).

Given the proposed location within existing roadways, the potential of intact surface archaeological features is considered extremely low. Significant deposits may remain intact beneath the existing roadway, but no monitoring by archaeologists is required. However, construction personnel should be aware of any deposits that may occur in subsurface contexts. If any significant resources or human remains are observed, construction personnel should cease work and immediately notify Maui Island State Historic Preservation personnel.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions:

The County of Maui 1990 population was 100,374. The population of Maui Island in 1990 was 91,361, in the Hana Community Plan region 1,895. A projection of the region's population estimates an increase to 2,170 by the year 2000. By the year 2010, population in the region is anticipated to range from 2,349 to 2,452 (Community Resources, Inc., 1992).

2. Economy

Existing Conditions:

The Hana economy is based primarily upon the visitor industry and other economic activities including diversified agricultural and ranching. The Hotel Hana-Maui is the region's largest employer; in 1998, the hotel employed 206 full-time and part-time employees. The region is a popular day trip destination for tourists. The non-overnight traveler generates significant economic activity for the region.

Potential Impacts and Mitigative Measures:

On a long-term basis, the proposed project will not have a significant impact on housing or increase in employment opportunities in the Hana region. The project is intended to upgrade water surface to existing properties. On a short term basis, there will be an increase in construction related jobs.

C. PUBLIC SERVICES

1. Recreational Facilities

Existing Conditions:

Public recreation facilities in the region consist of Koki Beach Park, Hana Bay Beach Park, Hana Community Center, Hana Ball Park, Hana Tennis Courts, and the Hana High and Elementary School gymnasium.

2. Police and Fire Protection

Existing Conditions:

The Maui County Police Department is headquartered at its Wailuku Station. The Hana region is served by the Hana District Police Station, which is located about one-half mile from the project site.

Fire protection in the Hana District is provided by the Maui County Fire Department's Hana Station. The Hana Fire Station, built in 1993, is staffed by nine firefighters. There are three men on duty per shift with two trucks. The new station provides 24 hour protection, seven days a week and provides assistance in medical emergency situations.

3. **Solid Waste**

Existing Conditions:

Only two landfills are currently operating on Maui, the Central Maui Landfill in Puunene, and the Hana landfill. The Hana landfill is a County maintained facility located *makai* of Hana Highway near Kainalimo Cove and is 30 acres in size. County Public Works staff have indicated that the site is about 20 percent filled and has an estimated remaining life of 20 to 25 years.

4. **Health Care**

Existing Conditions:

Maui Memorial Medical Center is the only major medical facility on the island. Acute, general and emergency care services are provided by the 194-bed facility. In addition, the Hana Medical Center, a medical/dental clinic, is located one-half mile from project site, and serves the Hana region's residents.

5. **Schools**

Existing Conditions:

The State of Hawai'i, Department of Education, operates the Hana High and Elementary School, which serves the Hana region. Current enrollment for the schools is approximately 500.

Summary of Potential Impacts and Mitigative Measures:

The proposed waterline replacement project will not result in any significant impacts to public services, such as fire and police protection in terms of service area, nor will it result in significant impact upon recreational and educational facilities. There will be a positive impact for the fire protection with upgrade of transmission lines and the installing of new fire hydrants. Also, the proposed project will bring this section of waterline into compliance with the County Fire Flow

Standards of 2,000 gpm for commercial areas and 1,000 gpm for residential areas.

D. INFRASTRUCTURE

1. Roadways

Existing Conditions:

As in Maui, the automobile is the primary source of transportation in Hana. Hana Highway (State Highways 36 & 31) is the main roadway serving the Hana region. Hana Highway is a belt highway which circumvents Haleakala and provides access to Central Maui via Ke`anae or Kipahulu. Uakea Road provides a secondary access to Hana Town and Harbor.

Potential Impacts and Mitigative Measures:

Traffic control measures will be instituted by the contractor, including the installation of adequate signage and public notice as well as traffic control personnel (flagman). Given existing alternative roadways within this section of Hana Town, there are detour routes available if necessary. As such, construction related impacts to automobile traffic are expected to be minimal. After completion of the project, there will be no long-term traffic related impacts.

2. Wastewater

Existing Conditions:

The Hana region is not presently served by a County wastewater treatment facility. Facilities in this region must provide individual treatment systems.

Potential Impacts and Mitigative Measures:

Due to the nature of this project, there will be no impact on the surrounding properties with regards to wastewater disposal.

3. Water

Existing Conditions:

The Hana region is serviced in part by the County of Maui Department of Water Supply. The County's system is served by deep wells at Wakiu and Hamoa, located at the north and south ends of the system, respectively. The water source is basal groundwater. A series of pipelines connect these sources to Hana Town (see Figure 3).

In the proposed site area, the Department of Water Supply's Hana waterlines are presently 3-inch line under Uakea Street and Keawa Place, and 4-inch line under Hana Highway. There is a recently installed 12-inch line along the northern portion of Uakea Road from Hana Highway to the project site. These waterlines are located within the road right-of-way.

In addition to the County water system, the owners of Hana Ranch and Hotel Hana-Maui operate their own private water system to serve the potable water requirements of the hotel, its restaurant and commercial businesses, and a residential subdivision. This system has a total pump capacity of 600,000 gpd from two well sources: the Helani well drilled in 1949, and the Wananalua well drilled in 1988 (Pacific Planning & Engineering, Inc., 1991). The Helani well is used as a standby source and has a pump capacity of 173,000 gpd. The Wananalua well has a pump capacity of approximately 430,000 gpd. In 1990 the average day water demand on the Wananalua well was estimated at 135,000 gpd (Pacific Planning & Engineering, Inc., 1991).

Potential Impacts and Mitigative Measures:

The proposed project is part of the on-going efforts by DWS to upgrade service and system reliability throughout Maui county. In Hana, this project will complete transmission system improvements through the lower portion of Hana's urban core

along Uakea Road. The project will also connect to existing transmission lines on Hana Highway. The completion of this loop will add reliability and redundancy to the water system within Hana Town. The project's objective is to improve service to existing uses in the area which are served by the County's system. As noted above, Hotel Hana-Maui and the Hana Ranch are served by a separate private system.

The project will have positive benefits to the adjacent properties in terms of improved service and by bringing the system into compliance with current fire flow standards. No negative impacts to the water systems in Hana are anticipated.

4. Drainage and Soil Erosion Control

Existing Conditions:

The County of Maui, Department of Public Works & Waste Management does not have a drainage master plan for the Hana region. Hana Ranch Houselots has a storm drain system, which empties into Hana Bay. A concrete-lined culvert was recently built by the State Department of Transportation along Keawa Place to discharge stormwater into Hana Bay. Throughout the region, storm runoff typically drains into natural drainageways, which cross the proposed construction site and flow into the ocean.

Potential Impacts and Mitigation Measures:

After project completion, the project site will be restored to previous conditions and there will be no increase in impervious surfaces. Therefore will be no long-term drainage impacts from the project. During construction the contractor will be required to prevent soil, oil or petroleum by-products and other

contaminants from entering near shore waters. In order to limit the potential for soil erosion of stockpile material, the amount of open trench at any one time will be limited. This will limit the amount of exposed material and therefore limit the potential for soil erosion impacts. The contractor will be required to cover open trenches after work hours..

5. **Electrical and Telephone Systems**

Existing Conditions:

Electrical service to Hana Town is presently provided by Maui Electric Company, Ltd. (MECO) powerlines, and GTE Hawaiian Telephone Company maintains overhead telephone lines that serve Hana Town.

Potential Impacts and Mitigation Measures:

Since this project involves only an underground waterline, there will be no impact on the electrical and telephone services.

VII. RELATIONSHIP TO GOVERNMENT PLANS, POLICIES, AND CONTROLS

A. HAWAII LAND USE LAW

Chapter 205, Hawai'i Revised Statutes, relating to the Land Use Commission, establishes the four major land use districts in which all lands in the State are placed. These districts are designated *Urban*, *Rural*, *Agricultural*, and *Conservation*. The project site is within or adjacent to the State's *Urban & Agricultural* Districts.

B. GENERAL PLAN OF THE COUNTY OF MAUI

The General Plan of the County of Maui (1991 updated) provides long-term goals, objectives, and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental, and economic issues that influence future growth in Maui County. The project site's use is consistent with the following General Plan objective and policies:

Objectives: To provide an adequate supply of potable and irrigation water to meet the needs of Maui County's residents (Pg. No. 9)

Policies:

- Develop improved transmission system to provide better fire protection.

C. HANA COMMUNITY PLAN

Nine community plan regions have been established in Maui County. Each region's growth and development is guided by a Community Plan, which contains objectives and policies in accordance with the County General Plan. The purpose of the community plan is to outline a relatively detailed agenda for carrying out these objectives.

The project site is located within the Hana Community Plan. The Hana Community Plan was recently updated and adopted by ordinance No.

2347 on July 1, 1994. The project site is consistent with the following Hana Community Plan goals, objectives, and policies:

Goal: Protection and management of Hana's land, water and ocean resources to ensure that future generations can enjoy the region's exceptional environmental qualities (Pg. No. 13).

Objectives and Policy:

- Ensure that the groundwater and surface water resources are preserved and maintained at capacities and levels to meet the current and future domestic, agricultural, commercial, ecological and traditional cultural demands of each area in the Hana District (Pg. No. 14)

Goal: Timely and environmentally sensitive development and maintenance of infrastructure systems which protect and preserve the safety and health of the Hana region's residents and visitors, including the provision of domestic water, utility and waste disposal services, and an effective transportation system which meet the needs of residents and visitors while protecting the region's rural character (Pg. No. 21).

Objectives and Policy:

- Improve water sources and delivery facilities to ensure that water supplied to the region's residents and visitors is of the highest quality.

D. OTHER PERMITS

The project site is located within the Special Management Area (SMA) as defined in the State Coastal Zone Management Act, Chapter 205A, HRS. Section 205A-22 states that "development" does not include "Installation of utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors" (205A-22(13), HRS). The proposed action is not considered a "development" and there is no requirement for issuance of a SMA Permit.

E. ENVIRONMENTAL ASSESSMENT SIGNIFICANCE CRITERIA

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

The project site is within an existing right-of-way which has been previously disturbed. As previously discussed in this EA, the project will not lead to the loss or destruction any natural or cultural resource.

2. *Curtails the range of beneficial uses of the environment;*

The project will not curtail beneficial uses of the environment. Once completed, the waterline will be below grade and will allow for the continued use of the project site as a travelway and utility corridor.

3. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

As presented in this EA, the project's potential negative impacts are associated only with construction-related activities and can be mitigated through adherence to standard construction mitigation practices. The project will not conflict with the State's long-term environmental policies or goals.

4. *Substantially affects the economic or social welfare of the community or state;*

Negative impacts to the economic or social welfare of the Hana region will be insignificant. Positive benefits will accrue to property owners in the area due to improved water service and fire flow protection.

5. *Substantially affects public health;*

The project will have no impacts on public health.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities;*

Major infrastructure projects have the potential of creating secondary impacts related to land development and population changes. This could occur when an infrastructure system's capacity is expanded within under-developed areas and when the subject infrastructure system is the major factor limiting development. In the case of the proposed action, the area has been substantially developed. More importantly, the water system in this area is not the controlling factor for development, especially for Keola Hana Maui, the largest landowner in the area. The Hana Community Plan lays out a detailed plan for land uses in Hana. In addition, the project site is within the Special Management Area (SMA) as defined in the State of Hawai'i's Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes. Any future development in the area must be consistent with the Hana Community Plan as well as the criteria for issuance of a SMA permit. Probably the most important reason why this line is not considered a limiting factor on growth in Hana is that Keola Hana Maui owns their own private water system and is not necessarily dependent on the County's municipal system. The company has the option of providing their own water transmission systems as they have done with their existing commercial, hotel and residential properties. Thus, if an alternative system is available, the existing line is not viewed as a major constraint on development for Keola.

In summary, the project is intended to upgrade service to an existing developed area and controls are in place which are intended to regulate development of the area. Also, alternative sources of water are available. As such, this project is not viewed as having the potential for creating substantial secondary impacts such as population changes through the inducement of development.

7. *Involves a substantial degradation of environmental quality;*

With the incorporation of the mitigation measures during construction activities the project will not lead to a degradation of environmental quality.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;*

As noted earlier in this report, this project will complete the upgrade of transmission system improvements through lower Hana Town. It will also connect to existing transmission lines on Hana Highway. The completion of this loop will add reliability and redundancy to the water system within Hana Town. The project's cumulative effects are positive in terms of providing a more integrated system of water transmission within Hana. Completion of this phase of improvements will not necessitate a commitment for larger system improvements in the region. There are no other related projects currently planned for the Hana area.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat;*

As presented in this EA, the project will not affect a rare, threatened, or endangered species or its habitat.

10. *Detrimentially affects air or water quality or ambient noise levels;*

The project will not have a detrimental affect on air or water quality or ambient noise levels.

11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;*

Portions of the project site abut a drainageway, primarily along Keawa Place. The contractor should pay attention to weather forecasts while working in this area and avoid trenching and excavation activities during periods forecasted for heavy rains. All trenches should be backfilled as soon as practical and not be left open for long periods. With the incorporation of these measures there should be no significant negative impacts to or from environmentally sensitive areas.

12. *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or,*

Upon installation of the proposed improvements, there will be no impacts to scenic vistas or view planes in the area.

13. *Requires substantial energy consumption.*

The project will not involve a commitment to energy consumption.

VIII. FINDINGS AND CONCLUSIONS

The objective of the Hana Waterline Replacement Project is to provide improved water transmission and distribution service for the people of Hana. The existing waterlines are aged and do not meet current fire flow protection standards. Implementation of the project will improve system reliability and provide urban level fire flow protection standards for the existing uses in the area. Provision of required infrastructure improvements will result in short-term construction-related impacts, which can be mitigated through standard protection measures. The proposed action is not expected to result in significant long-term impacts to traffic, flood hazard potential, infrastructure, public services and historic or environmental resources.

Therefore, as a result of the findings of this report, the proposed project is not anticipated to have any significant environmental impacts, and therefore, a "Finding of No Significant Impact" (FONSI) is warranted.

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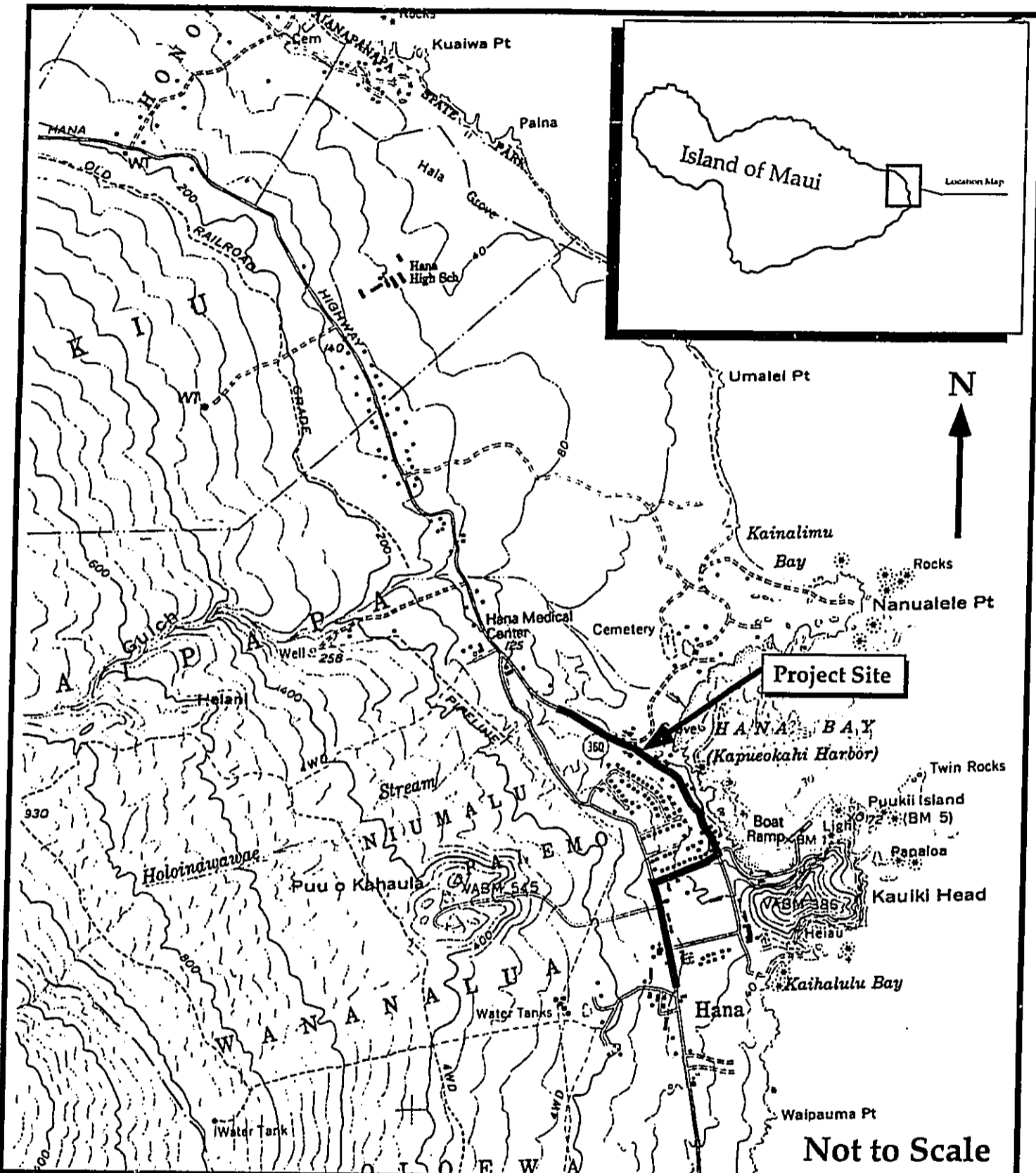
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FIGURES & APPENDIX



Location Map
 Hana Waterline Replacement Project
 Hana, Maui, Hawi'i



Figure No. 1

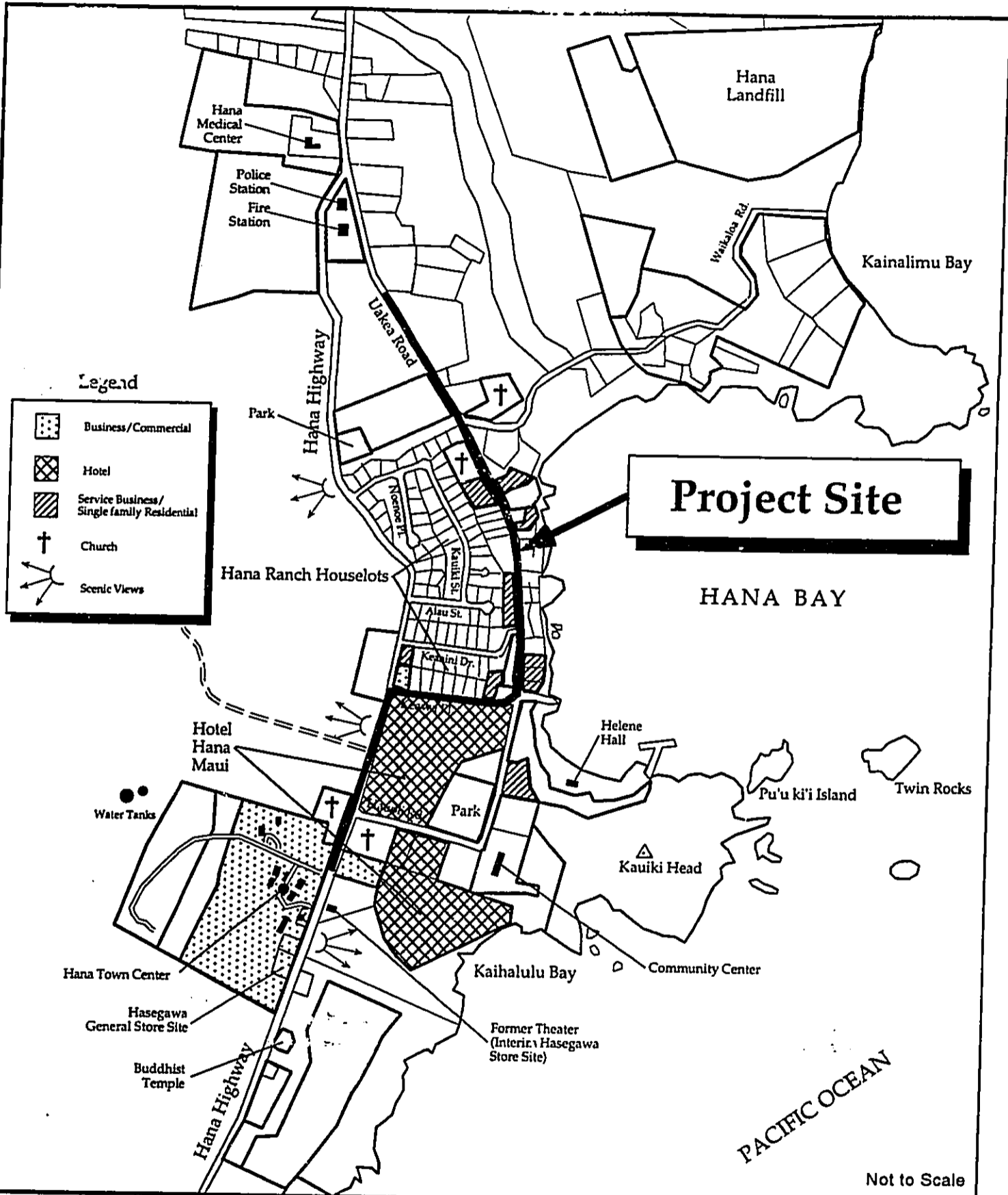


Figure 2 - Hana Town
Points of Interest



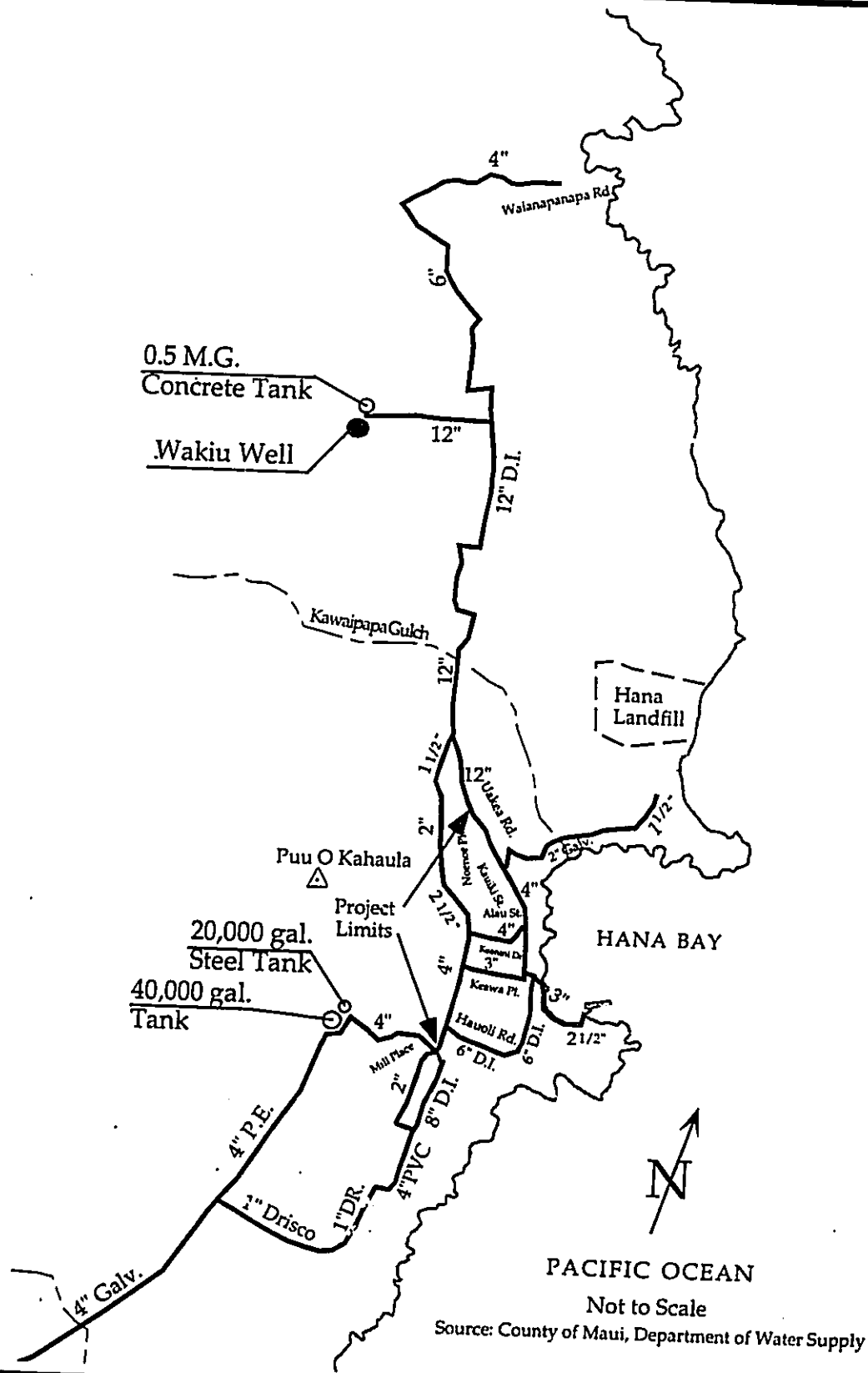


FIGURE 3 -
 Maui County
 Department of Water Supply
 Water System



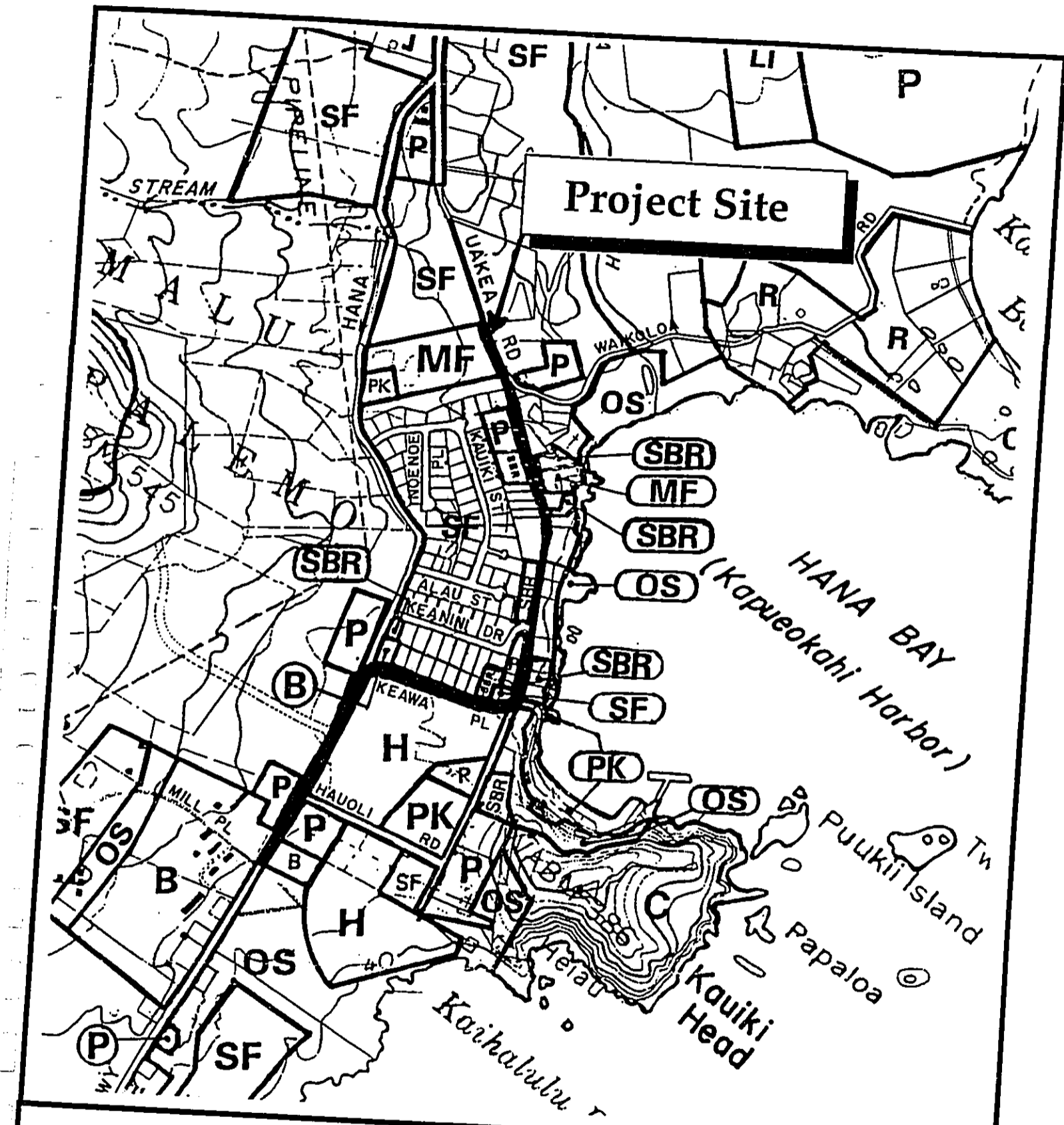


Figure No. 4
 Hana Community Plan
 Hana Town, Maui, Hawai'i



Appendix A

**ARCHIVAL RESEARCH FOR HANA WATERLINE REPLACEMENT
PROJECT, HANA, MAUI, HAWAII**

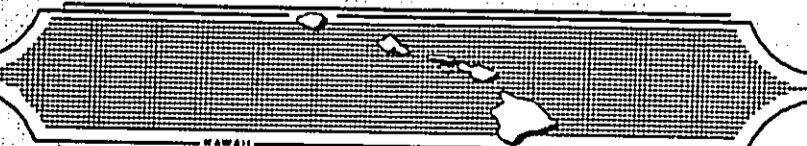
SCS Project Number 141-Mon

**ARCHIVAL RESEARCH
FOR
HANA WATERLINE REPLACEMENT PROJECT
HANA HIGHWAY THROUGH UAKEA ROAD
HANA, MAUI ISLAND, HAWAII
TMK: 1-4-03 GENERAL; 1-4-03, 04, 05, 06, 13, 14**

By
Michael F. Dega, M.A.
Revised October, 1998

Prepared for:
C. Takumi Engineering, Inc.

SCIENTIFIC CONSULTANT SERVICES Inc.



711 Kapiolani Blvd. Suite 777 Honolulu, Hawaii 96813

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INTRODUCTION

At the request of C. Takumi Engineering, Inc., Scientific Consultant Services, Inc. (SCS) has been contracted to provide archival research associated with the Hana Waterline Replacement Project. Archival research entails investigating known Land Commission Awards (LCAs) and other documents pertaining to the area to be impacted by a waterline corridor proceeding along Uakea Road and a portion of the Hana Highway (TMK: 1-4-03), Hana, Maui, State of Hawai'i. Specifically, the waterline replacement will occur along Uakea Road, Keawa Place, and a small portion of the Hana Highway which proceeds along the project's southern flank (Figure 1). This project consists of replacing waterline pipes in previously disturbed contexts, beneath an existing road where construction disturbance is likely to have exceeded one meter.

Archival research is focused on identifying LCAs and land grants located along the length of the project corridor and assessing how these properties were utilized in the past. Based on project area maps, the pipeline corridor extends near several recorded LCAs and land grants (Figure 2). Additional research includes a review of previous archaeological investigations conducted in or near the current project area and a report detailing the findings of known archaeological sites within and near the project area.

ARCHIVAL RESEARCH

Project area maps list the presence of several Land Commission Awards (LCAs) directly abutting the project area (see Figure 2). In addition, many other LCAs are available for adjacent corridor areas. A sample of these LCAs, from the Waihona 'Aina Corporation (1998), are presented below. Pointedly, a review of Native and Foreign Testimonials has revealed something of traditional land use practices near the project area. These LCAs are listed and described below:

Claim No. 387, American Mission East Maui, Hana, September 25 1846
F.R. 6-7v2

Dear Brother Castle,

I improve the present opportunity to inform you respecting our Premises and the Land claimed by the Mission in Hana. You and Brother Hall were appointed a Committee. I

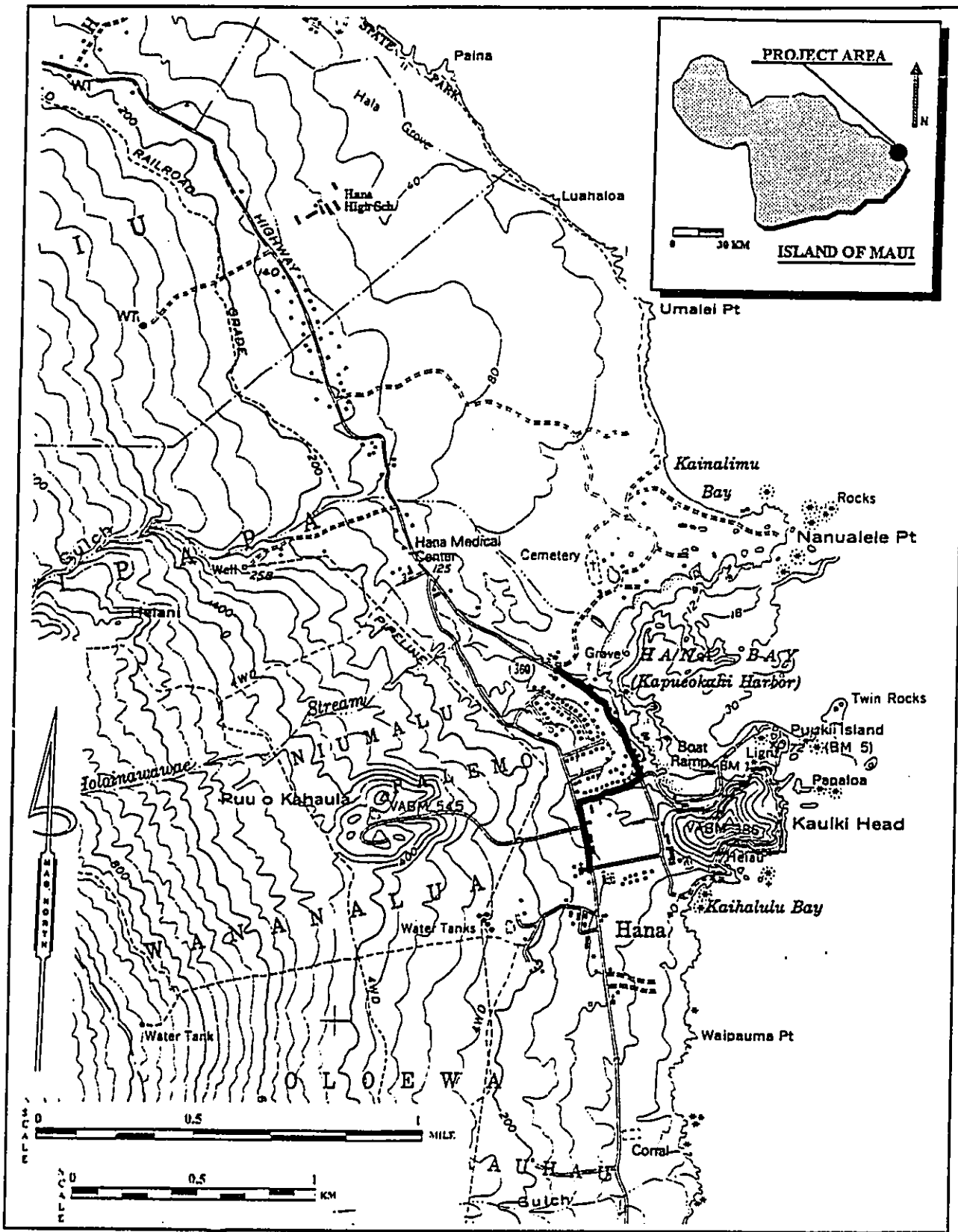


Figure 1: USGS Hana Quadrangle Showing Project Area.

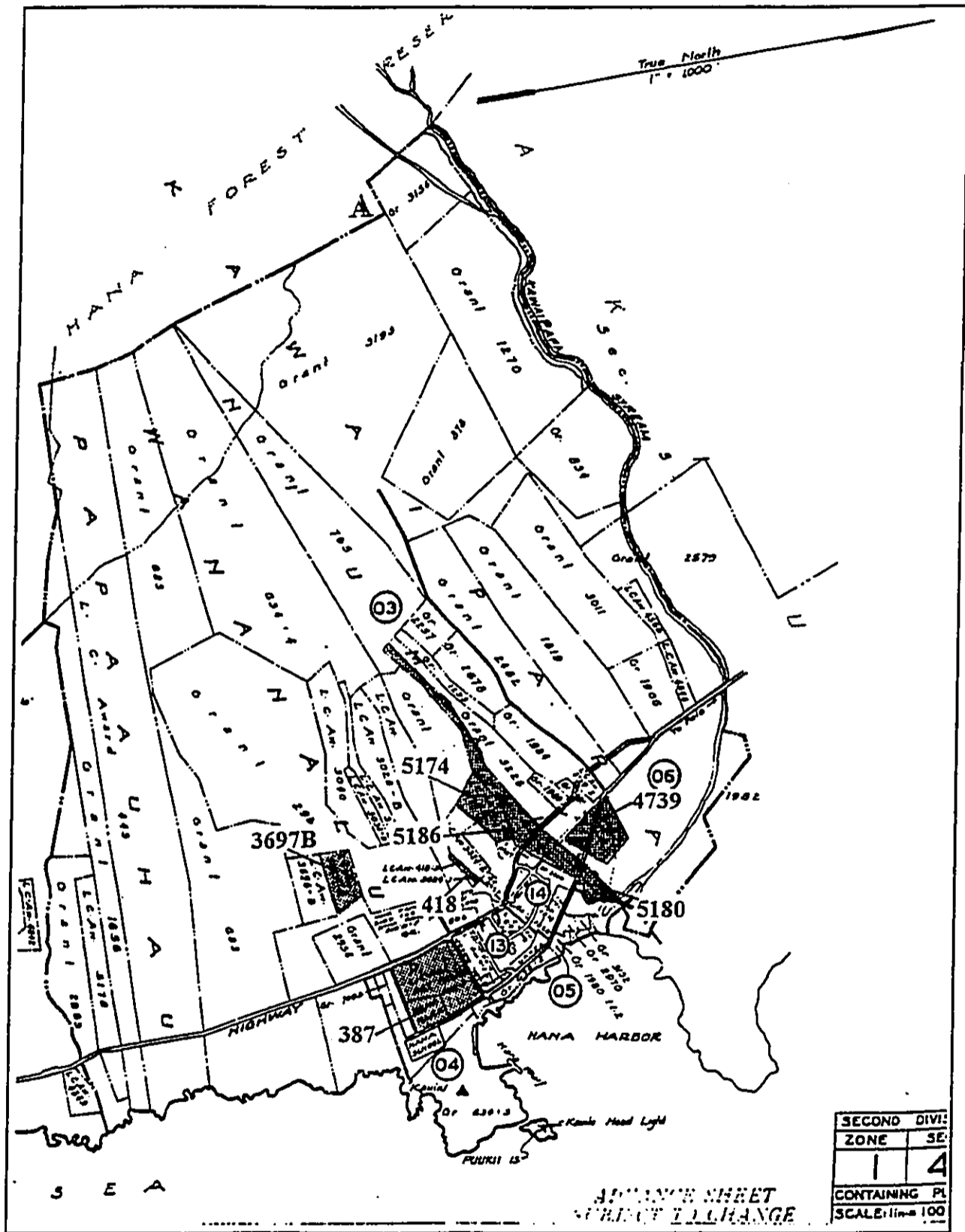


Figure 2: Planview of Project Area with LCA Locations Shown.

believe to present this subject to the proper officers of Government, whose business it is to decide as to the validity of any claims to land in these Islands held either by foreigners or natives.

The land on East Maui to which the Mission are entitled consists a part of Wananalua. It comprises all the land which is now contained between the makai & mauka roads, commencing near the line which formerly separated Hoapili's Kuakini's lands; and extending northward as far as a small piece of land formerly owned by Kaauwai, and which is in the vicinity of Waikakihi. The part now occupied by the Mission families is all enclosed in a stone wall, & comprises perhaps 15 or 20 acres. The remainder is also enclosed in a stone wall, and is occupied by two individuals, Kawainui & Ulunahale. The former took possession with my consent, promising to deliver it up to me whenever it might be needed; by the Mission. The latter took forcible possession of the lot which he now occupies, notwithstanding my repeated remonstrances. He has since confessed that he did wrong; but does not return the land.

The part occupied by those two men was selected by Mr. Van Duyer, and he actually commenced building upon it. On his leaving for the U. States, the two individuals above named took possession; or rather 2 or 3 Years after - one with and the other without my consent. All the land which we claim has always been considered by the natives generally in this region as belonging to us, by virtue of an order from Hoapili, the former Governor of Maui. Kaauwai, who was then the Governor's Secretary & Kawainui have repeatedly told me that they were acquainted with the fact of Hoapili giving said land to us as Missionaries. They are therefore our Witnesses. If Government decide in favor of Kawainui & Ulunahale, we must insist on their giving us a tract somewhere else, which shall be as serviceable to the Mission families here, as this disputed tract could be made. A piece of land somewhere else would be as acceptable as that for our herd. Hence we are willing to make an exchange if the Government wish to do so.

The lot on which our new Stone Meeting house stands joins our premises on the south. The lot formerly belonged to Kuakini of Hawaii; and was taken by the chh [church?] & Society with the Governor's knowledge. & I believe, consent. Means have already been taken to enclose with a stone wall.

Signed D.T. Conde

F.R. 26-27v2

No. 387, Mission Claims, continued from page 20, General Claim
To the Board of Commissioners for quieting Land titles.

Gentlemen:

The undersigned as Agents of the Mission of the American Board of Commissioners for Foreign Missions at the Sandwich Island beg leave to present for your examination, the accompanying documents, being statements of grants made to various individuals of the

Mission at Sundry times & places, for the purpose of affording facilities for the prosecution of the Missionary work in these Islands by the Mission of the said A.B.C.F.M. to the end, that if upon examination, they shall be found valid, the said grants may be confirmed in such manner as the laws of the Sandwich Island may require. The following is a list of claims to be considered, Viz.

Kauai - Premises & lands at Waiole, Koloa & Waimea
Oahu - Premises & lands at Honolulu, Ewa, Waialua, Kaneohe, Hauula & Punahou.
Molokai - Premises & lands at Kaaluaha & out stations - if any.
Maui - Premises & lands at Lahaina - Lahainaluna - Kanipali, Wailuku & Hana.
Hawaii - Premises & lands at Kailua, Kealakekua, Kau, Hilo, Kohala & Waimea

The lands & Premises of the above named Stations are in care of the resident Missionaries of the A.B.C.F.M. at said stations - We have thought it best to enumerate all the Stations though some of the Claims have not been received; & some have been already presented to the Board.

Honolulu, March 12th

Signed Samuel N. Castle, Edwin O Hall, agents

The Claims herewith sent are for Waialua, Honolulu, Punahou, Kaneohe, Waiole, Koloa, Waimea, Kauai, Hilo, Kealakekua, Kailua, Waimea Hawaii Kohala.

I believe Kau, Lahainaluna, Lahaina, Wailuku, Hana, & Molokai are already sent in.
Samuel N. Castle.

F.T. 145-146v3

Cl. 387, Sandwich Island Mission, Maui, Part 5, Hana, Section 3, May 8, from page 213 VII,

N.T.

D.T.

Conde, sworn, I am acquainted with the Mission lands in the district of Hana, Island of Maui. I went to reside there in January 1837 about, and was there to September 1848. These lands are mostly fenced round. I was present when the survey of Mr. Metcalf before me was made, and the bounds set forth in it are correct.

The Mission had this land from Hoapili Kane, Governor of Maui through Z. Kaauwai in 1838 or 9. Since then they have been in undisturbed possession of the land, excepting a portion, occupied by Ulumahele. But he has confessed that this land belonged to the Mission, although he has sent in a claim to the Board (See 615). Ulumahele is now dead. Beyond this, I never heard the Mission title disputed to any portion of this land. I would remark, however, that Kawainui has sent in a claim for a portion of this land on which he resides; but whatever right he had in the land, he had from me. I gave him permission to live on it until the Mission wanted it. I told him he might enclose a piece, and that he should be compensated for such improvements. He then enclosed a piece and has

occupied it on the terms I have stated. He has told me he knew this land belonged to the Mission and that it was given them by Hoapili Kane.

Continued page 337

F.T. 337-338v3

Cl. 387, Part 5, Sec 3, Sandwich Island Mission, 7 June, Hana, from Page 145, See also N.T.

Z. Kaauwai, sworn. I went by order of Hoapili Kane, I went with Mr. Armstrong & others in 1837 to select a piece of land for the Missionaries at Hana, such as should be Kupono. Before we went I sent word to Wahie who had charge of Hana at that time to build & thatch 2 houses for the Missionaries, which were ready on our arrival. They stood on the land now claimed by Kawainui. I saw him there at the time, living Makai of the Government Road. Their houses were destroyed by fire in 1837 or 8. The Missionaries were in difficulty on this acct. being obliged to live in houses of the people. They went to Hoapili at Lahaina & asked for a land held by Wahie, which he refused, because it belonged to Governor Adams. Hoapili then told me to give them a piece of his own. I found Mr. Conde & others before me, on my arrival at Hana in 1838. I went with Conde & Ives to select a place for them. They wanted some of Kuakini's land which I refused. I then pointed out the place they now occupy. Kawainui's place was on the other side of the stream. He came to Mr. Conde while I was there and said "If you get the land, then, who will I live under & Mr. Conde replied "You will live under the Chiefs." It was settled accordingly. I believe that Kawainui & Ulumalehe's claims are both good. Mr. Rice built the fence which marks the boundary of the Mission land, along the stream between that & Kawainui's.

N.T. 219-220v2

No. 387, Conede (Conde) (Conede Hana Mission), from pg. 215

Nalehu, sworn by the Word of God, I have heard that Hoapili had given that place for the missionaries from this Wananalua to Palema and those are the boundaries on the north and the south between the land sections used by the animals mauka and makai of the pathway. I have heard that Kuakaha has been given away. That is the road on the side toward the sea and leading to Palema. Those are the boundaries on the east and the west sides.

N.T. 219-220v2

No. 387, Conede (Conde) (Conede Hana Mission), from pg. 215

Nalehu, sworn by the Word of God, I have heard that Hoapili had given that place for the missionaries from this Wananalua to Palema and those are the boundaries on the north and the south between the land sections used by the animals mauka and makai of the pathway. I have heard that Kuakaha has been given away. That is the road on the side toward the sea and leading to Palema. Those are the boundaries on the east and the west sides.

[Award 387; (Maui) R.P. 1958; Wananalua Hana; 1 ap.; 27.64 Acs]

No. 418, Halualani
N.R. 145v2

To the Land Commissioners: I hereby tell you of my right. My taro patches are as follows:

Ili Paakukui, 35 taro patches

Ili Keoneoula, 17 taro patches

Ili Kaluaoneiki, 4 taro patches.

My taro patches are from Kuku and Halekua and they are also my witnesses.

Farewell to you,

HALUALANI

Wailuku, February 6, 1847

N.T. 175v2

No. 418, Kalualani

Kalehua, sworn, by the Bible, I have seen Halualani's property which is at Kapaakukui in Iao. He had lived there from my interest and I had received this from Mahune and Mahune had acquired this [land] from the King. I had given him 35 patches and 4 more at another place totaling 39 for all and no one has objected.

Huhu, sworn, by the Bible, I have seen the place which Hualani is claiming with you. I had given him some patches which I had received from Mahune and Mahune had received this land from King Kamehameha III. Kalualani has a separate place which is at Kapaakukui, and his land is at Kaluauhi; however, I do not know exactly how big the patches are there and no one has objected.

[Award 418; Kaluaoki Wailuku; 2 ap.; 2.19 Acs; Halelani Wailuku; 1 ap.; 2.7 Acs; Keoneula Wailuku; 1 ap.; 2.7 acs]

No. 3697B, Kaluahi

F.T. 390v3

Kamakahiki, sworn, says he knows the land of Kaluahi at Wananalua, Hana, Maui. It consists of one piece of kula land, in which is his house lot. Claimant cultivates this land.

It is bounded:

North by Kepoo's land

Makai by Wahie's land

South by Bete's land

Mauka by Mr. Howe's land.

Poomaikai, sworn, says the same.

F.T. 449v3

No. 3697B, Kaluahi Claimant - Testimony

Kahuuiale, sworn, claimant came to live with Mr. Conde. He had no land and I asked Wahie for some for him & he gave the land on which he lived & put in a claim for as surveyed by Mr. Alexander.

Hopu, sworn, confirmed the same.

[Award 3697B; R.P. 8007; Wananalua Hana; 1 ap.; 8.3 Acs]

No. 4739, Miki

N.R. 194-195v6

Be it known to you, the Land Commissioners, the diagram of my enclosed land and hose lot is below /not shown/. North, 50 fathoms, east, 50 fathoms, /south?/, 64 fathoms, west, 70 fathoms. It is in Niumalu and was given me by Timoteo Keaweiwi.

Here are some cultivated kihapais: at Palemo II, 1 kihapai, a Niumalu nui, 2 pauku, at Kawaipapa, 5 kihapai, at Niumalu 5, 1 kihapai. Kindly award this land to me and my heirs.

MIKI

F.T. 275v8

Cl. 4739, Miki

Ulumaialii, sworn, I know the land of the claimant lying in Niumalu 1-4 (Ahupuaa). I gave the land to him in 1844.

[It is bounded]:

Mauka by highway

Koolau by a bed of stream

Makai by the old road

Kipahulu by a bed of stream.

A land of kalo & Potato in Niumalu 5.

Mauka by Lonoaukai's land

Koolau by a bed of stream

Makai by highway

Kipahulu by "Niumalu 4."

A kalo land in Kawaipapa.

Mauka by Poupou's land

On other three sides by konohiki.

Title good.

N.T. 412v5

No. 4739, Miki, June 20, 1849

Ulumaialii, sworn, Miki's fence is in these ahnupuaa's, Niumalu 1, Niumalu 2, Niumalu 3, Niumalu 4 and Niumalu 5. Ulumaialii had given Miki these places where he (Miki) lived in 1844.

Section 1:

Mauka by road
Koolau by stream
Kipahulu by stream
Makai by old government road.

Section 2 - Taro and potato patches in Niumalu 5.

Mauka by Lonoaukai
Koolau by stream
Makai by Government road
Kipahulu by Makaila and Niumalu 4.

Section 3 - Taro kihapai at Kawaipapa.

Mauka by Poupou
Koolau, Makai and Kipahulu by konohiki.

No one has objected.

[Award 4739; R.P. 3109; Niumalu Hana; 2 ap.; 15.65 Acs]

No. 5174, Kaolulo

N.R. 246v6

To the Land Commissioners: I hereby tell you of my land. My `Ili is Puluaha and it is in Palemo and was received from Laa. My land is from the hill of Kahaula to the amaumau ferns. Let this place be awarded to me and my heirs.

KAOLULO

Hana, 16 January 1848

F.T. 252v8

Cl. 5174, Kaolulo

Kaili, sworn, I know "Fuluaha" the ili of the Claimant in Palemo which Laa gave him in the year 18839. His title has never been disputed.

Mauka by Kama's land
Koolau by Kumaihea's land
Makai by Kama's & Kaili's land
Kipahulu by Kaneniu's land.

Another piece:
Mauka by the mountain
Koolau by Kumaiahea's land
Makai by Kawaheewale's land
Kipahulu by Kawao's land.

N.T. 388v5

No. 5174, Kaolulo, June 18, 1849

Kaili, sworn, Kaolulo's land is the ili Puluoha of Palemo which he had received before 1819 from Laa.

No. 1:
Mauka by Kaina
Koolau by Kumaihea
Makai by Kaili/Kamai
Kipahulu by Kanenui.

[No. section - missing?]

No objections.

[Award 5174; R.P. 2951; Palemo Hana; 1 ap. 4.75 Acs 20 rods]

No. 5180, Kumaiahea

N.R. 249v6

To the Land Commissioners: I hereby tell you of my land. Its name is Niumalu, it is the fifth of the Niumalus. It lies from the sea to the amaumau ferns. Niumalu Four is on the north, Palemo is on the south. Let this land be awarded to me and my heirs. It was from my kupunakane /who had it from/ Polea's makuakane.

KUMALAEHEA

F.T. 217v8

Cl. 5180, Kumaiahea, June 14, 1849

Kauaawa, sworn, I know the land of claimant. It is an Ahupuaa called "Niumalu 5, in Hana. it is a family estate and has continued in their possession from the days of Kamehameha I, and was given to the claimant by his father in 1838. His title is undisputed.

Bounds:
Mauka extends to the mountain
Koolau by my land
Makai by the ahupuaa of Kawaipapa
Kipahulu by the ahupuaa of Palemo.

N.T. 349v5

No. 5180, Kumaihea, June 13, 1849

Kauaawa, sworn, he has seen Kumaihea's land, an ahupuaa named Niumalu 5 from his parents where they have lived at the time of Kamehameha I, they have all died in 1838 and Kumaihea had lived there without oppositions to the present time.

The boundaries are:

Mauka by amaumau

Koolau by Kauaawa's land

Makai by Kawaipapa's land

Kipahulu by Palemo's land.

Palemo is the konohiki of this land.

[Award 5180; Niumalu Hana; 1 ap.; 17.17 Acs]

No. 5186, Kamai

N.R. 246v6

I hereby tell you, the Land commissioners, of my land. My 'Ili is Ohia II. It adjoins Nimalu 5, mauka of the lot of Kaili, and to mauka of the hill of Kahaula. I received my land from Laa. Let this land be awarded to me and my heirs.

KAMAI

F.T. 252-253v8

Cl. 5186, Kamai

Kaili, sworn, I know the ili of the Claimant called "Ohia" in Palemo which Laa gave him in 1839. His title has never been disputed.

It is bounded:

Mauka by Kaolulo's land

Koolau by Kamaihea's land

Makai by Kawaheewale's land

Kipahulu by Kahiamoe's land.

N.T. 388v5

No. 5186, Kamai, June 18, 1849

Kaili, sworn, He has seen Kamai's land in the ili of Ohia in Palemo which he received in 1839.

Mauka by Kaolulo

Koolau by Kumaihea

Makai by Kaili

Kipahulu by Kahiamoe.

No one has objected.

[Award 5186; R.P. 2952; Palemo Hana; 1 ap. 3.50 Acs]

This sampling of LCAs along, and adjacent to, the waterline replacement corridor depict past land utilization in the area. A majority of these lands, claimed during Māhele times, were being utilized for agricultural pursuits and habitation. Many *kalo* patches occurred in the area, as well as potato patches and *kula* lands. Several LCAs depict house lots, some surrounded by large stone boundary walls. Most of the lands, particularly those occurring in more *mauka* areas, are bordered by other house lots, creating a sense of community and higher population density in the Hana Bay area. More *mauka* lands were utilized for pasture and *kula* lands. It is noted in a few LCA documents that several plots of land (e.g., LCA No. 5180) were established as house lots and taro patches "from Kamehameha I times." Presumably, Māhele land utilization represents a continuation of land practices established during pre-Contact times. Thus, the settlement pattern, as seen through the lens of awarded land parcels in 1848, consists of habitation and irrigated *lo'i* occurring in *makai* areas while pasture lands and those utilized for growing potatoes and *kula* cultivation lands were located in more *mauka* lands.

While archival research has provided some information regarding traditional land use within and near the project area, further identification of past land use practices is visible through previous archaeological studies performed near the project area.

PREVIOUSLY IDENTIFIED SITES WITHIN AND NEAR PROJECT AREA

Sterling (1998) and Cleghorn and Rogers (1987) provide a synthesis of archaeological sites previously documented within the Hana area. Sterling compiles data from a variety of resources and lists existing and formerly existing sites in the Hana area. In general, the Hana Bay area, described as a late prehistoric population center and loci of political development (Kirch 1985:136), contained a multitude of sites, specifically, *heiau*. Most of the temples are now destroyed. While most of the well-known *heiau* occur near Kalahu Head and in Honokalani Ahupua'a, just north of the project area, several did supposedly occur within Wananalua and Niumalu Ahupua'a, both areas encompassing the project parcel. Many other *heiau* were situated on Kauiki Point, east of the project area, and in areas just to the south of the project area. Not only Hawaiian temples were present though, as these lands also functioned as productive taro producing areas.

Sterling (1998:133-139) lists several project area sites previously identified by W. M. Walker (1931), these sites are also listed by Cleghorn and Rogers (1987:15):

Honuaula and Kuawalu Heiau, located at the base of Kauiki, to the east of the project area (Walker Sites 111 and 112).

Kaikaiea, Kilinui, Lanakila, and Pu`uheewale Heiau, located adjacent but to the southern flank of the southern project area boundary (Walker Sites 113-116).

Of additional importance, Sterling (1998:133-139) lists lands associated with former agricultural areas. Supposedly, taro was grown in large concentrations within Wananalua and Niunalu Ahupua`a. Sweet potato crops were being cultivated near the shoreline of Kauiki Head.

Cleghorn and Rogers (1987) list two additional sites within the area: Site 1485, composed of two rockshelters and a fishpond (further investigated by Griffin 1988), located c. 500 feet to the northeast of the project's north flank and; Site A13-12 (B.P. Bishop Museum Site Number), located c. 400 feet northeast of Site 1485 and supposedly the location of the destroyed Kaiapuni Heiau. During Griffin's (1988) survey, the author also noted a wall composed of stacked basalt cobbles and one shell trumpet (*Charonia tritonis*) representing an ornamental feature.

Other archaeological projects revealing traditional and historic land use within and near the project area include at least five studies. In 1972, Bevacqua surveyed an area just north of Hana park, an area lying just to the east and south of the proposed waterline corridor path. Bevacqua (1972:1) found that the land was formerly utilized for papaya cultivation and pasture. He recovered "several artifacts, some midden, and numerous small, water worn pebbles" that were noted as being "scattered about a low outcropping of decayed a`a lava." Bevacqua noted that the midden was composed of several fragments of cowrie shell and coral (possible `ili `ili stones) and suggested that combined with artifactual data (grinding stone), the site appeared to be a Hawaiian habitation site. The site was inferred to have been destroyed during recent cultivation times.

Bordner (1981) surveyed a portion of Wananalua Ahupua`a near the project area in 1981 and discovered a thin, undisturbed subsurface layer pertaining to agricultural use of the area. These lands were formerly planted in taro and later, in sugarcane.

In 1987, Griffin visited a parcel to the southwest of the southern flank of the current project area and identified a prehistoric burial as well as historic artifacts proliferating in the upper strata of the area.

Cleghorn (1988), a year later, further surveyed *mauka* sections of Niunalu Ahupua'a, identifying four prehistoric sites related to habitation and agriculture. These four sites included a stacked wall, one rockshelter, agricultural terraces, and an alignment.

Finally, and closer to the project area, Fredericksen *et al.* (1993) conducted archaeological investigations near the northern edge of the project corridor, between Hana Highway and Uakea Road. Investigations failed to reveal archaeological structures or subsurface deposits.

HANA HISTORICAL SEQUENCE

The long, yet not well-understood, historical sequence of the Hana area proceeds from pre-Contact through modern times, from traditional agricultural pursuits to modern building construction. The Hana area itself has been considered one of Hawai'i's legendary places (*wahi pana*) as many legendary and traditional accounts point to this mythically rich area of Maui. Hana has also been reported to have been the favored home of many of Maui's chiefs (Cleghorn and Rogers 1987:8), one example being that during the 16th or 17th century, a chief named Pi'ilani united the districts of Maui under his rule (*ibid.*:9). Many great battles also took place near Hana, one of the last of the great battles occurring during the last half of the 18th century between opposing Maui and Island of Hawai'i forces. Kamehameha I united the Hawaiian Islands in 1795, effectively ending the "warring" times in Hana. Interestingly, "Hana is also known as the birthplace of Kamehameha's favorite wife, Ka'ahumanu, daughter of Ke'eaumoku and Namahana, in 1768" (*ibid.*:10). Archaeological remains within Hana from these times are sparse, with a majority of sites being agricultural in nature.

LCA information depicts families or individuals living on small parcels of land utilized for habitation and practicing agricultural pursuits on the distinctive parcels (Sterling 1998:133-139). A search of all LCAs awarded within Hana noted that 77 LCAs were awarded and ranged in size from 2.10 to 1,093 acres (the larger awards given to companies, presumably for ranching). Testimonials revealed that the landscape was utilized for taro cultivation (wet and dry), sweet potato, sugar, and coconut cultivation, and animal husbandry (pigs were raised) (Cleghorn and Rogers 1987:11).

Historic Hana, as summarized by Cleghorn and Rogers (1987), was further tied to agricultural pursuits as well. Sugarcane production occurred extensively in the Hana area from the middle to latter portions of the 19th century. The industry faced some difficulty though as Native Hawaiians owned and worked their own lands and thus, had little incentive to work on plantations. This labor vacuum was filled by immigrants, predominantly Chinese laborers in the beginning and later, Portugese, Filipino, and Japanese laborers. By the 1940s, most of the large sugar plantations in the Hana area were closed. Cattle ranching became the primary labor utilizing activity for some time. By the late 1940s, the Hotel Hana-Maui was opened, ushering in the profitable tourist industry that, along with agricultural pursuits, continues to drive the economy of Hana today.

In brief, archival research and a synthesis of past archaeological work in the Hana area depicts traditional cultivation of taro and habitation having occurred with some frequency in the past within and near the project corridor. Thus, we may infer that structural features associated with agriculture, including terraces, mounds, and/or ditches (*auwai*), were present at some point before being destroyed or altered by modern construction activities. Additionally, walls and platforms denoting house plots once occurred within, and adjacent to, the project area. Unfortunately, as this waterline replacement project occurs within previously disturbed areas, it is unlikely that any archaeological resources (surface or subsurface deposits) remain. Because a majority of archaeological resources (*lo'i* patches, surface walls, etc.) would likely occur within upper strata (not lower than one meter below surface), it appears highly unlikely that archaeological deposits remain in the area.

CONCLUSION AND RECOMMENDATIONS

Archival research and a review of previous archaeological studies have shown that the area in which the corridor project is to occur has a considerable cultural history. However, surface structures and/or artifacts are not expected to be recovered within the waterline replacement trenches due to the massive landscape modifications that have taken place in the area during recent times. In addition, subsurface contexts are not expected to yield traces of agricultural and habitation activities and/or artifacts associated with traditional times, this also due to modern landscape modifications, including installation of the original Hana waterline and the various roads.

Based on the location of the project corridor and the expectation that no intact cultural deposits will be present, no archaeological monitoring appears to be necessary for this project.

However, in the unlikely situation that any human remains are observed within the trenches, all construction work in the area of the remains should cease and the SHPD immediately notified. These rules have been set pursuant to DLNR/SHPD (1994, 1996) rules governing archaeological monitoring studies in Hawai'i:

If human burials are encountered/disturbed, albeit considered unlikely, work will cease in the vicinity and the area will be secured from further activity. The Maui SHPD office will be immediately notified and procedures from Hawaii Revised Statutes (HRS), Chapter 6e, Section 43 shall be followed. HRS 6.E-43.6, Procedures Relating to Inadvertent Discoveries, will be followed if the remains are to be removed. If a burial is disturbed during trench excavations, materials excavated from the area will be manually screened to recover any displaced skeletal material. The burial location will be identified and marked.

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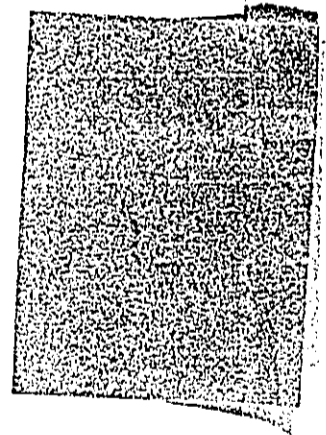
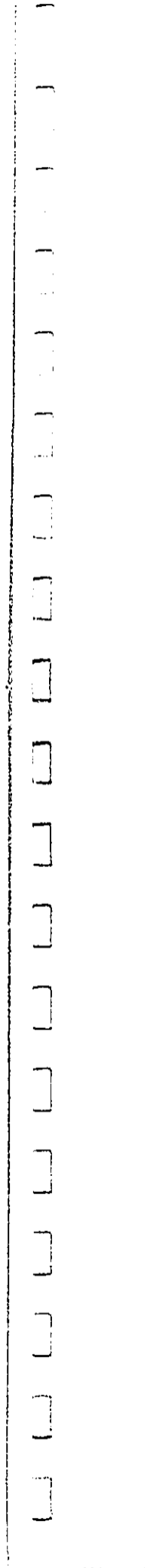
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**DRAFT EA COMMENTS &
RESPONSE LETTERS**

BENJAMIN J. CAYETANO
GOVERNOR



1.98102

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

236 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

November 20, 1998

David Craddick
Department of Water Supply
200 South High Street
Wailuku, HI 96793

Dear Mr. Craddick:

Subject: Draft Environmental Assessment (EA) for Hana Waterline Replacement Project, Phase II

In order to reduce bulk and conserve paper, we recommend printing on both sides of the pages in the final document. In addition we have the following comments to offer:

1. Facility description: The new pipeline will be 12 inches in diameter, a ten-fold volume increase over the existing 3 and 4-inch diameter lines. In the final EA indicate the source of the water supply, and describe the fire flow standards to clarify the requirement for such a large facility increase.
2. Construction impacts: Describe potential impacts and related mitigation measures regarding traffic, safety at the project site (pedestrian safety and prevention of theft or vandalism of equipment and materials), and construction runoff into the drainage channel or the ocean.
3. Segmentation: This project is entitled "Phase II." The Environmental Impact Statement law prohibits segmentation of larger projects and requires that full disclosure of impacts be made on projects in their entirety. Provide a full analysis and discussion of all phases of this project and all related projects in the area. If the project in its entirety may have significant impacts then a full EIS should be prepared.
4. Funding: The total project cost is not given. Please disclose all state or county funds involved, including any federal funds flowing through the state or county.

David Craddick
November 20, 1998
Page 2

5. Timeframe: What are the anticipated start and end dates of this project?
6. Contacts: State and county agencies contacted were listed in the draft EA, but there is no indication of community notification. Notify the community about this project, allowing sufficient time to receive and respond to comments before final EA submission. Document all contacts in the final EA and include copies of any correspondence, including correspondence from agencies during the preconsultation phase.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,



GARY GILL
Director

c: Carl Takumi



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
TELEPHONE (808) 243-7816 • FAX (808) 243-7833

February 22, 1999

Mr. Gary Gill, Interim Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Response to Comments on Draft Environmental Assessment for Hana
Waterline Replacement Project, Phase II

This letter responds to your comment letter dated November 20, 1998.

1. **Facility Description.** As noted in the Draft EA, the County water system in Hana is served by deep wells located at Hamoa and Waikiu. The water source is basal groundwater.

The fire flow standards for the project are based on land uses in the project area. For Maui County, the standards for urban areas with commercial uses and hotels are 2000 gallons per minute (gpm) and 2500 gpm respectively. Based on Maui County's water standards, an 8 inch pipe has a capacity of 1600 gpm and therefore is insufficient to meet the required fire flow standard. The next commonly available pipe size is 12 inch. The capacity of a 12 inch line is 3,450 gpm based on Maui County standards and is therefore sufficient to meet the required fire flow standards. The information regarding pipe size will be including in the Final EA.

2. **Construction Impacts.** Potential construction related impacts would include air and noise impacts from construction machinery, minor traffic disturbances and soil erosion from stockpile materials. Air and noise impacts were addressed in the Draft EA. In order to minimize traffic impacts the contractor will be required to maintain a traffic control plan which would include adequate signage and public notice as well as traffic control personnel (flagman).

In order to limit the potential for soil erosion of stockpile material, the amount of open trench at any one time will be limited. This will limit the amount of exposed material and therefore limit the potential for soil erosion impacts. The contractor will be required to cover open trenches after work hours.

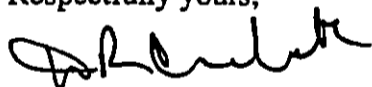
"By Water All Things Find Life"

Mr. Gary Gill, Interim Director
RE: Hana Waterline Draft EA
February 22, 1999
Page 2

3. Segmentation. As noted in the Draft EA, the project represents the completion of the Waterline Replacement Project for Hana Town. The project does not commit the Water Board to any future projects. There are no related projects currently planned for the Hana area.
4. Funding. The total project cost is estimated to be \$750,000. These funds will come entirely from the Maui County Board of Water Supply sources.
5. Timeframe. The project is expected to take six months to complete.
6. Contacts. Notice of the Draft EA was published in the Environmental Notice. A copy of the Draft EA was sent to the Hana Library as well as Ms. Lisa Hamilton, who requested a personal copy. A copy of Ms. Hamilton's comment letter and our response is included in the Final EA. Copies of preconsultation correspondence from the Maui County Planning Department will also be included. With regards to notification of the community, many of the residents of the area are aware of the need for the project since the existing waterlines have been substandard for a substantial length of time. Also, this project will result in the completion of the Hana Waterline Replacement Project, the first phase of which was completed approximately two years ago. Lastly, since the project involves establishing new service connections to existing customers, all affected customers will be notified prior to the project's initiation as well as immediately prior to their respective service hook up. Information regarding the notification of affected customers will be included in the Final EA.

If you have any questions please call the project engineer, Mr. Carl Takumi at 249-0411 or Mr. Herb Kogasaka of my staff at 243-7835.

Respectfully yours,



David Craddick, Director
Department of Water Supply

cc: Carl Takumi, C. Takumi Engineering
Rory Frampton, Chris Hart & Partners



SIERRA CLUB, HAWAII CHAPTER

P.O. Box 2577,
Honolulu, Hawai'i 96803
(808) 538-6616

November 30, 1998

David Craddick
Maui Department of Water Supply
200 S. High St.
Wailuku, HI 96793

Carl Takumi Engineering Inc.
18 Central Ave.
Wailuku, HI 96793

Dear Sirs,

The proposed dramatic expansion of the capacity of the waterline in Hana deserves more thorough discussion in your Environmental Assessment. Replacing a 3 inch water line with a 12 inch waterline is a significant expansion; it is an expansion that can serve a significantly larger population.

The EA should answer each of the following questions:

* How large do waterlines need to be to meet fire flow standards?


* Although this project may be "intended to upgrade water surface to existing properties" does it also expand capacity to new development?

* How much more capacity will this expansion allow for?

* Does the existing waterline capacity serve to limit growth de facto?

Even if the "Hana Community Plan" lays out a detailed plan for land uses in Hana, the water system may in addition serve as a de facto limit on land uses. By law, the EA needs to do a better job addressing these issues.

Sincerely,


David Kimo Frankel
Director



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
TELEPHONE (808) 243-7816 • FAX (808) 243-7833

February 22, 1999

Mr. David Kimo Frankel, Director
Sierra Club, Hawaii Chapter
P.O. Box 2577
Honolulu, Hawaii 96803

Dear Mr. Frankel:

Subject: Response to Comments on Draft Environmental Assessment for Hana
Waterline Replacement Project, Phase II

This letter responds to your comment letter dated November 30, 1998.

1. Water line size. The fire flow standards for the project are based on adjacent land uses. For Maui County, the standards for urban areas with commercial uses and hotels are 2000 gallons per minute (gpm) and 2500 gpm respectively. Based on Maui County's water standards, an 8 inch pipe has a capacity of 1600 gpm and therefore is insufficient to meet the required fire flow standard. The next commonly available pipe size is 12 inch. The capacity of a 12 inch line is 3,450 gpm based on Maui County standards and is therefore sufficient to meet the required fire flow standards. The information regarding pipe size will be including in the Final EA.
2. New Development Capacity. The project will result in the provision of increased capacity and adequate fire flow for all properties in the immediate vicinity. Most of these properties are currently developed, some are vacant or have the potential for increased densities. However, the project has not been contemplated to service any new development. Any significant development in the project area will require the preparation of and submittal of an Special Management Area Permit and must be consistent with the Hana Community Plan. In addition, it is important to note that the largest landowner in the area, Keola Hana Maui, Inc., owns and operates their own private water system which serves the potable water requirements for their hotel and commercial properties as well as a residential subdivision.
3. Line Capacity. As noted above, based on Maui County standards which allow a maximum flow of 10 feet per second, a 12 inch line has a maximum capacity of 3,450 gpm. The existing 3 and 4 inch lines have capacities of 220 gpm and 390 gpm, respectively. The actual flows through the 12 inch waterline from the Waiuku source would be in the range of 1,100 gpm to 2,700 gpm depending upon the location (elevation) of the fire hydrant.
4. De Facto Growth Control. The existing water transmission lines are not considered a limiting factor on growth in Hana since Keola Hana Maui owns their own private water system and, thus, they are not necessarily dependent on the County's municipal system. The company has the option of providing their own water

"By Water All Things Find Life"

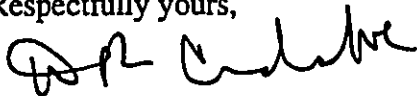
Mr. Frankel
Hana Waterline EA response
February 22, 1999
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transmission systems to service new development as they have done with their existing commercial, hotel and residential properties. Thus, if an alternative system is available, the existing line is not viewed as a major constraint on development for Keola.

In addition, any future growth in the area must conform to the Hana Community Plan and further, all abutting properties are within the Special Management Area, and thus, an SMA permit would be required for any significant project.

If you have any questions please call the project engineer, Mr. Carl Takumi at 249-0411 or Mr. Herb Kogasaka of my staff at 243-7835.

Respectfully yours,



David Craddick, Director
Department of Water Supply

cc: Carl Takumi, C. Takumi Engineering
Rory Frampton, Chris Hart & Partners

December 23, 1998

To: The Accepting Agency,
Maui Department of Water Supply
David Craddick, Director,
200 S. High Street, Wailuku, HI 96793

Attention: Herb Kogasaka, Engineer via fax number: 243-7833

Re.: Draft Environmental Assessment, Hana Waterline

Dear Sirs:

I have reviewed the Draft Environmental Assessment (EA) regarding the proposed installation of a 12 inch water main in Hana Town. With this letter I request that a more exhaustive examination of potential negative impacts be prepared based on the need for consideration of mitigation for adverse impacts.

Here are my reasons.

As has been mentioned in other comment, this EA does not address the growth inducing impact which an increased water supply will encourage along the route of the project.

As mentioned in the EA, the Hana region is not served by a wastewater treatment facility. (pg. 14).

An unavoidable but potentially serious consequence of development will be increased wastewater seeping into Hana Bay which lies close by.

Hana Bay is a major resource for the people of Hana and their children. Already concern has been expressed that the waters of Hana Bay are being degraded by effluent. Adverse health effects have become a concern.

The south side of Keawa Place where the proposed main swings down toward the bay was zoned "Hotel" by Maui County during the most recent Hana Community Plan Update process. Previously this 7+ acre area had been zoned Open Space.

Unfortunately because the county itself proposed the change in zone from Open Space to Hotel prior to August 1996, an environmental review process was not triggered. The need for analysis of the cost of wastewater treatment which was raised at the time was not considered.

and one designated "Multiple Family".

Therefore it is imperative that this environmental review process give attention to the indirect, secondary, cumulative impacts of this project will have by potentiating unexamined hotel development in Hana.

The purpose of the map which is included with this letter is to show the ownership of the parcels of land along the route of this proposed water main.

All Hotel zoned parcels; all Commercial zoned parcels; much of the Single Family zoned parcels and most of the Multiple Family zoned parcels are owned by one foreign corporation, Keola Hana Maui, Inc.

While this underscores that "positive benefits will accrue to property owners" in the immediate area, negative impacts to the economic or social welfare of the Hana region may actually be quite significant.

Thank you for this opportunity to comment.

Sincerely,

Lisa Hamilton

Lisa Hamilton

Former Hana Citizens Advisory Committee Member

S.R. Box 190, Hana, HI 96713

voice: 808-248-8385; fax: 808-248-8001

Map showing ownership along project route according to 1990 TMK data.

P.S. *Figure 2 "Hana Town" may contain an error of omission in not noting an area designated "Single Family" and one designated "Multiple Family".

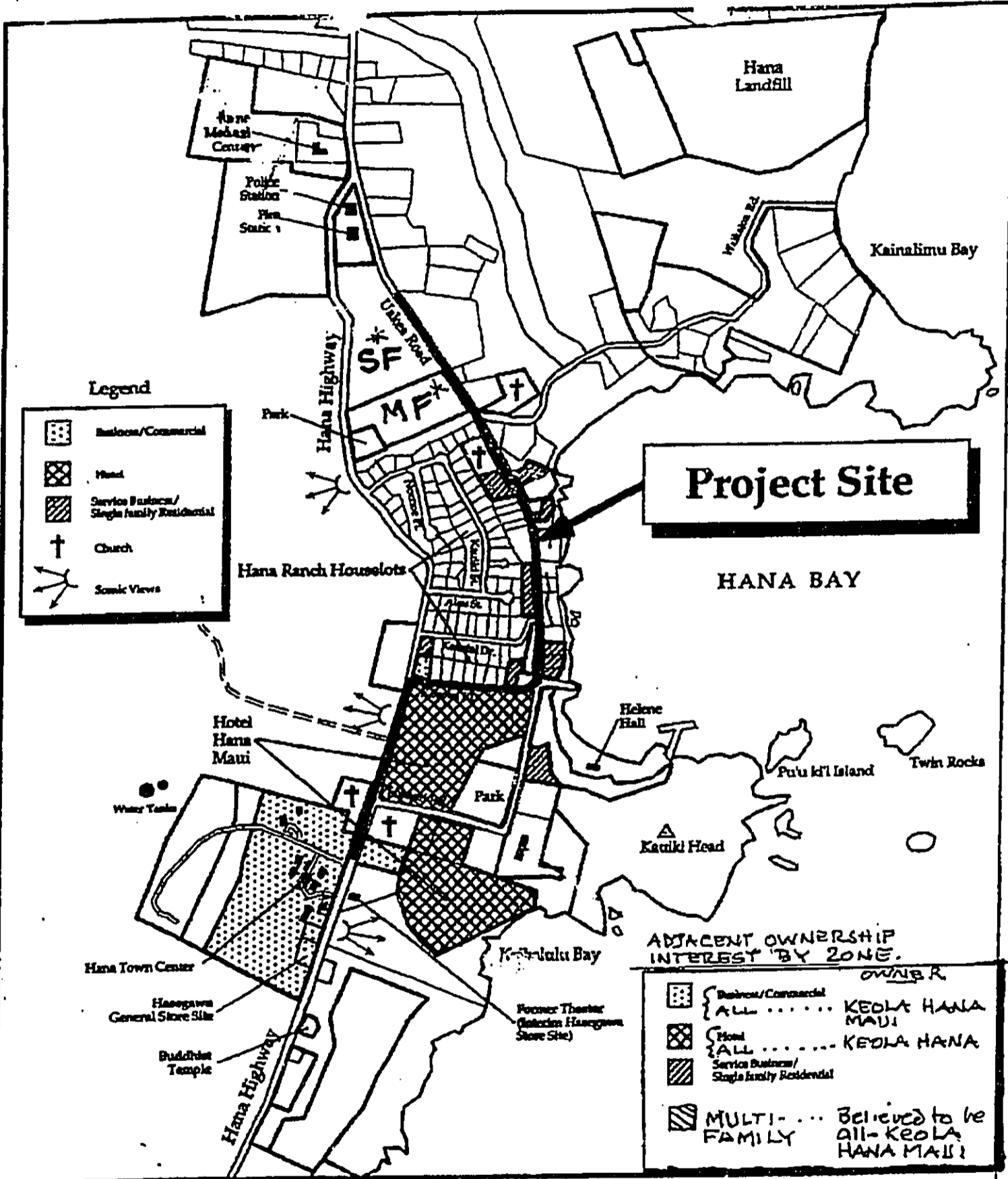


Figure 2 - Hana Town

Points of Interest & Community Plan Designations. + OWNERSHIP INTEREST
 Hana Community Design Guidelines



Dec. 23, 1998 - Comments on Hana Waterline:
 N.ICA HANA, MAUI. 248-8285



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
TELEPHONE (808) 243-7816 • FAX (808) 243-7833

February 22, 1999

Ms. Lisa Hamilton
S.R. Box 190
Hana, Hawaii 96713

Dear Ms. Hamilton:

Subject: Response to Comments on Draft Environmental Assessment for Hana
Waterline Replacement Project, Phase II

This letter responds to your comment letter dated December 23, 1998.

Growth Inducing Impacts. The existing water line is not considered to be a constraint on growth in Hana. As noted in the Draft EA, oftentimes expansion of infrastructure systems could have secondary impacts related to the inducement of development. However, in order to have that effect the system would have had to have been the limiting factor or constraint on development prior to the expansion. While it may be easier for some small residential projects (less than four) or family subdivisions (four or fewer lots) to proceed, any larger projects will require the filing of a Special Management Area Permit and must conform to the Hana Community Plan.

Probably the most important reason why this line is not considered a limiting factor on growth in Hana is that Keola Hana Maui owns their own private water system and is not necessarily dependent on the County's municipal system. The company has the option of providing their own water transmission systems as they have done with their existing commercial, hotel and residential properties. Thus, if an alternative system is available, the existing line is not viewed as a major constraint on development for Keola.

Wastewater Disposal. Your concerns regarding the impacts of increased wastewater disposal on Hana Bay are appreciated, however, we do not agree that this EA is the appropriate document to address these concerns. First, as noted above, this project is not considered to have an unleashing effect on growth in Hana. There are other controls and permits which must be received for major development to proceed. Second, an SMA application for a particular development must consider the potential effects of the proposed project on the nearshore environment. Any future project will be required to do so. Third, we are not aware of any proposed projects in the area. Also, we are not able to anticipate how these unforeseen projects would be proposing to treat their wastewater.

Hotel Development. Any new Hotel development in Hana will require the filing of an SMA application and an assessment must be included which addresses the project's affect on the environment. The completion of the proposed waterline project will not directly lead to the expansion of Hotel since many other approvals and improvements would be

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Ms. Hamilton
Hana Waterline EA response
February 22, 1999
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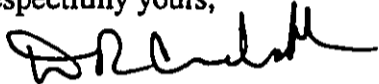
necessary. Also, it is impossible for us to predict the impacts of a project which has not been defined.

Landownership. Thank you for the information on landownership in the project vicinity. While it is true that Keola owns a significant amount of the land in the area, there are other owners as well which the Board of Water Supply must service. As noted in the Draft EA it is the goal of the project to improve water service to existing customers. At present, the existing lines do not meet fire flow standards and thus the project is important for existing customers. Your concerns regarding negative social impacts to Hana's people from Keola's future development plans should be addressed if and when these projects apply for development approvals, such as SMA permits, zoning or community plan changes.

Land Use Designations. We will clarify any confusion regarding existing Community Plan land use designations by including a copy of the existing community plan land use map for the area. Figure No. 2 will be relabled to read, Hana Town - Points of Interest.

If you have any questions please call the project engineer, Mr. Carl Takumi at 249-0411 or Mr. Herb Kogasaka of my staff at 243-7835.

Respectfully yours,



David Craddick, Director
Department of Water Supply

cc: Carl Takumi, C. Takumi Engineering
Rory Frampton, Chris Hart & Partners