ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

RECEIVED

January 13, 2004

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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

RE: Final Environmental Assessment (FEA) for the Reconstruction of the Lahaina Congregation of Jehovah's Witnesses Kingdom Hall Church and Related Improvements at 75 and 91 Puunoa Place, TMK: 4-5-004:042 and 044, Lahaina, Maui, Hawaii (EA 2003/0001)

The Maui Planning Commission at its regular meeting on January 13, 2004 accepted the Final Environmental Assessment (FEA) for the subject project, and issued a Finding of No Significant Impact (FONSI). Please publish the FEA in the February 8, 2004 Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the FEA. If you have any questions, please call Ms. Colleen Suyama, Staff Planner, of our office at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Director of Planning

MWF:CMS:lar
Enclosures
c: Wayne A. Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Colleen Suyama, Staff Planner
Michael T. Munekiyo, AICP, Munekiyo & Hiraga, Inc.
Project File
General File
(K:\WP_DOCS\PLANNING\EA\2003\0001_LahainaJehovahWitness\OEQCTransmitFEA.wpd)

Final
Environmental Assessment

LAHAINA KINGDOM HALL OF JEHOVAH'S WITNESSES

Prepared for:

November 2003

The Accepting Authority:
Maui Planning Commission
and
Lahaina Congregation
of Jehovah's Witnesses

MUNEKIYO & HIRAGA, INC.

CONTENTS

REFERENCES

LIST OF APPENDICES

LIST OF FIGURES

Preface

The Lahaina Congregation of Jehovah's Witnesses proposes to demolish an existing cottage and church structure and build a new church and parking lot at 75 and 91 Puunoa Place in Lahaina, Maui, Hawaii. The proposed project site is made up of two (2) properties identified by TMKs 4-5-04:42 and 44. The proposed project site is located within the Lahaina National Historic Landmark and is a trigger for an environmental assessment. Pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200, of Title 11, Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment (prepared for the accepting authority, Maui Planning Commission), documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

The project site is located within the County of Maui's Special Management Area (SMA) boundaries. Accordingly, a SMA Use Permit Application has been prepared for review and action by the Maui Planning Commission. The project site is County zoned R-2. Churches, together with accessory buildings, are declared special uses in the Residential district. A County Special Use Permit Application has also been prepared for review and action by the Maui Planning Commission.

I. PROJECT OVERVIEW

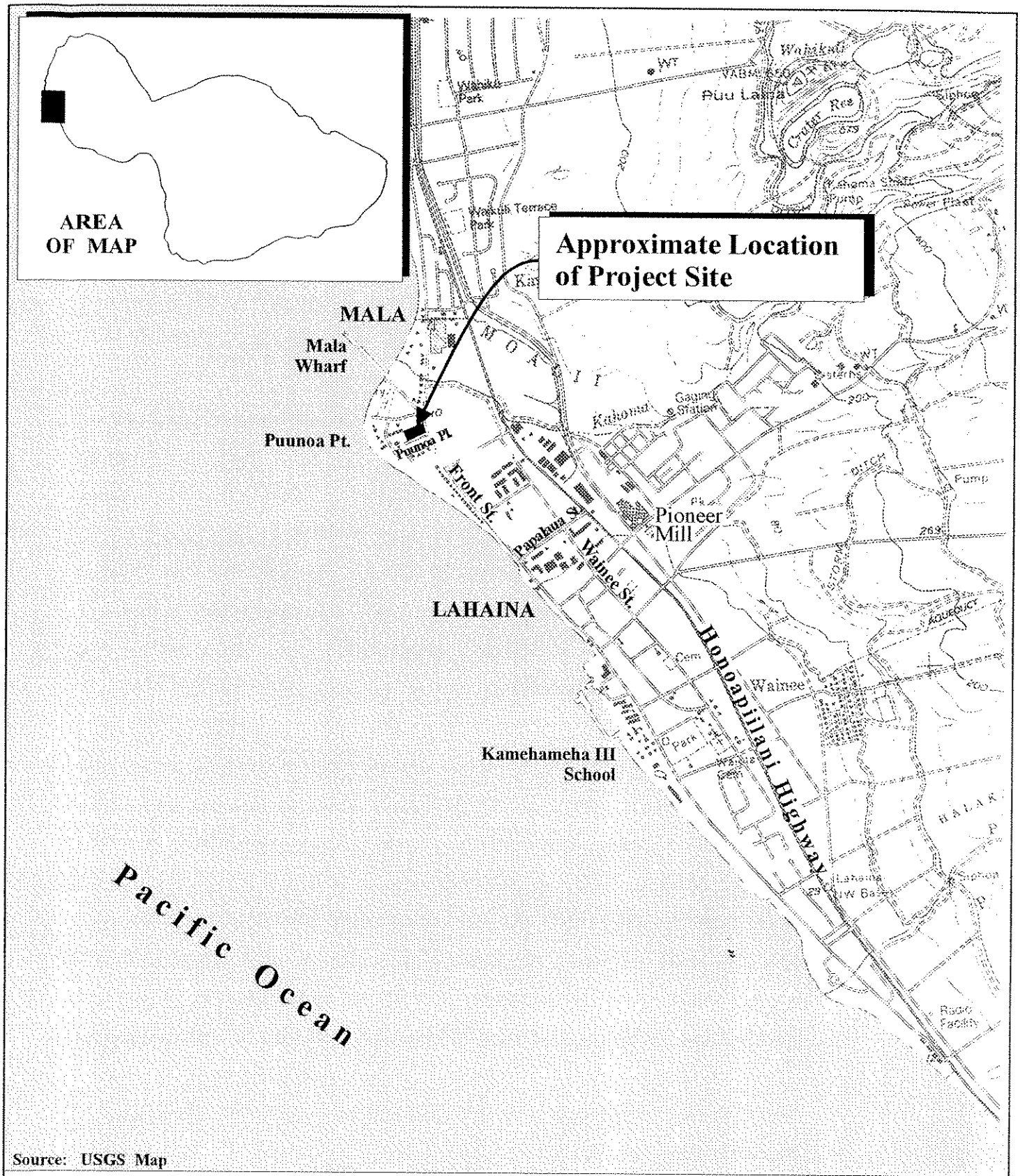
A. PROPERTY LOCATION, EXISTING USE, AND LAND OWNERSHIP

The Lahaina Congregation of Jehovah's Witnesses proposes to construct a new Kingdom Hall and onsite parking at 75 and 91 Puunoa Place, Lahaina, Maui, Hawaii. See Figure 1. The project site is defined by TMKs (2)4-5-04:42 and 44. The project site is situated on the northwest corner of Puunoa Street and Front Street. See Figure 2.

The project site is bordered by single-family residences to the north, Front Street to the east, Puunoa Place to the south, and single-family residences to the west. The subject property presently has an existing Kingdom Hall of Jehovah's Witnesses built in 1970 on TMK (2)4-5-04:42 and a 600 square foot cottage built in 1992 on TMK (2)4-5-04:44. Parcel 42 is designated for public/quasi-public use in the West Maui Community Plan and Parcel 44 is designated single-family use. Both parcels are County zoned R-2, Residential.

The proposed improvements are primarily intended to provide more onsite parking for the congregation and to replace an older building with a new Kingdom Hall facility. The existing Kingdom Hall is a two-story structure of approximately 3,750 square feet in area with a seating capacity for approximately 134 people and parking for approximately 20 cars. The new Kingdom Hall will be a single-story structure of approximately 3,500 square feet in area with a seating capacity for approximately 145 people and parking for 35 cars with an additional 13 stacked or tandem stalls.

The Lahaina Congregation of Jehovah's Witnesses is the landowner of the underlying properties.



Source: USGS Map

Figure 1

Lahaina Kingdom Hall of Jehovah's Witnesses

Regional Location Map

Prepared for: The Accepting Authority: Maui Planning Commission
and Lahaina Congregation of Jehovah's Witnesses

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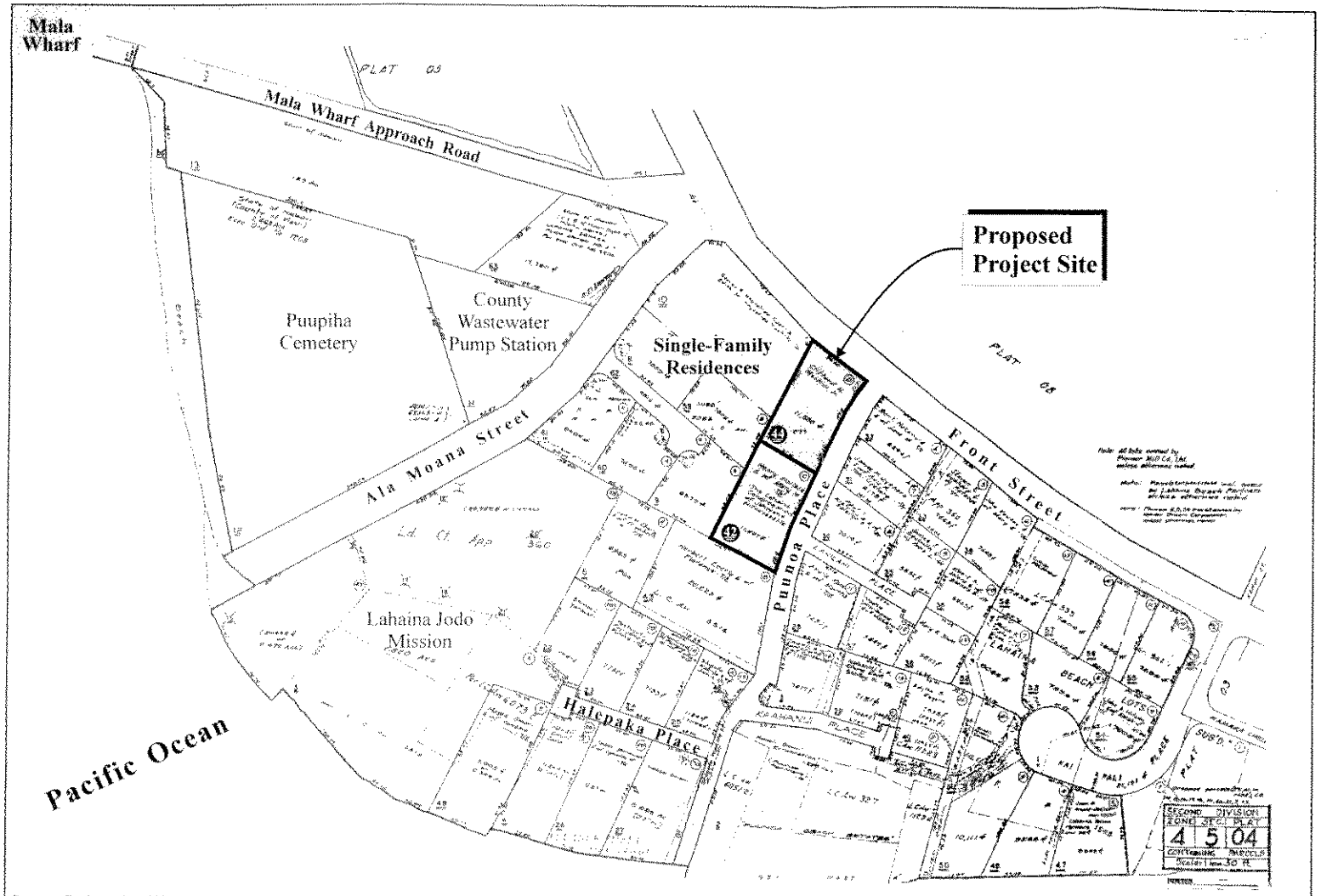

Source: Realty Atlas, 2001.

Figure 2

Lahaina Kingdom Hall of Jehovah's Witnesses

Site Location Map

NOT TO SCALE

Prepared for: The Accepting Authority: Maui Planning Commission and Lahaina Congregation of Jehovah's Witnesses

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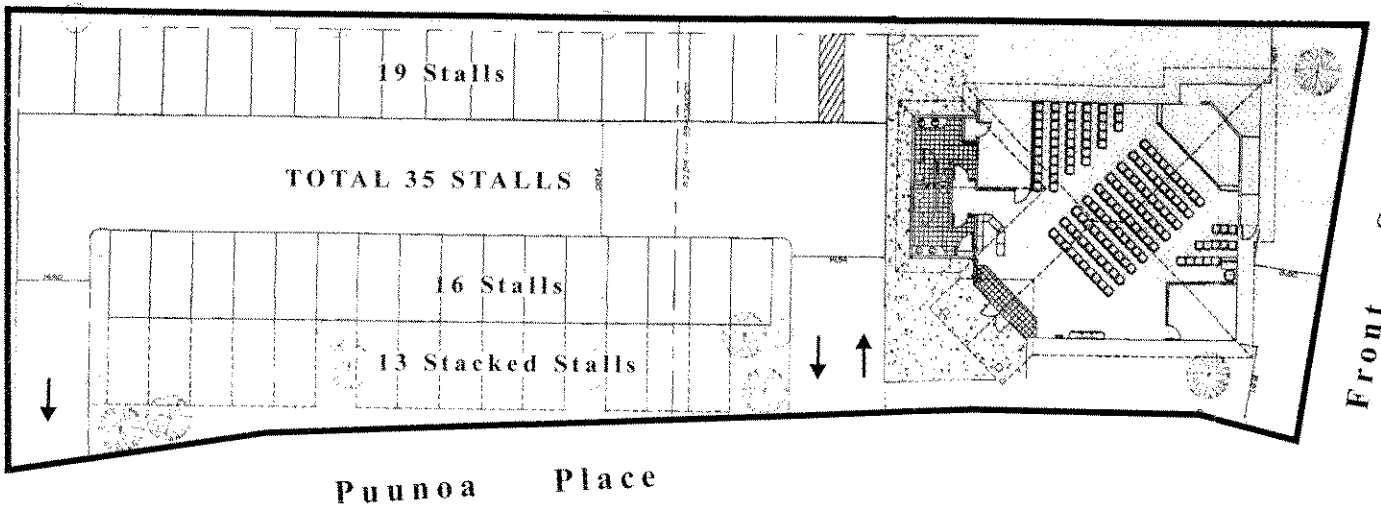
B. *PROPOSED ACTION*

The proposed project involves the demolition of the existing cottage and construction of a new 3,500 square foot Kingdom Hall on Parcel 44. Upon completion of the building, the existing Kingdom Hall on Parcel 42 will be demolished and a parking area for 35 cars will be developed. In addition to the 35 paved stalls, 13 stacked or tandem stalls will be provided. Related construction elements would include the installation of landscaping, irrigation, sewer, and water service improvements. Access to the proposed project site will be from an ingress and egress driveway and a one-way egress driveway off of and on to Puunoa Place via Front Street. See Figure 3 and Figure 4.

Construction of the proposed Kingdom Hall and parking lot is expected to take approximately eight (8) months and will be initiated upon receipt of applicable government permits and approvals. The estimated cost of the proposed project is $300,000.00.

C. *OPERATIONS OF PROPOSED USE*

The Lahaina Kingdom Hall of Jehovah's Witnesses is used three (3) times a week for regular services. The main service is held on Sunday mornings from 9:30 a.m. to 11:30 a.m. Approximately 105 to 140 members of the Lahaina congregation attend the Sunday morning service. Most members drive to the service and approximately 45 to 65 cars arrive and depart 30 minutes before and after the service. Three (3) to four (4) ushers are posted at the entrance to the Kingdom Hall directing traffic and directing cars to the parking areas. Approximately 20 parking stalls are currently provided onsite. The remaining cars park along Puunoa Place (north side) and Ala Moana Street, one block north of Puunoa Place.



Source: Stephen T. Nakai, A.I.A.

Figure 3 Lahaina Kingdom Hall of Jehovah's Witnesses
Site Plan

NOT TO SCALE

Prepared for: The Accepting Authority: Maui Planning Commission
and Lahaina Congregation of Jehovah's Witnesses

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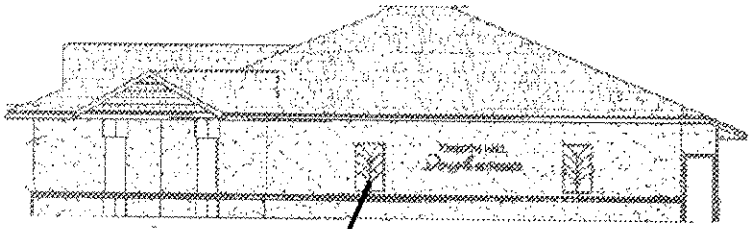
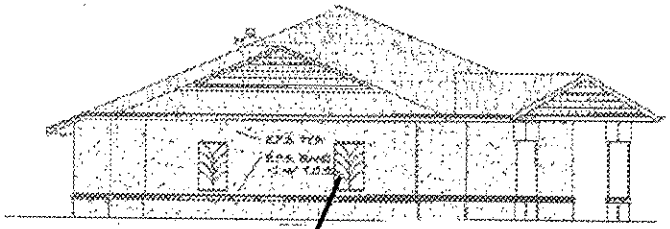
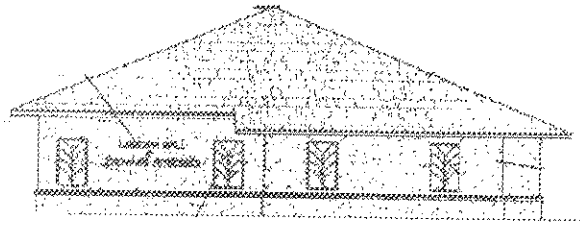


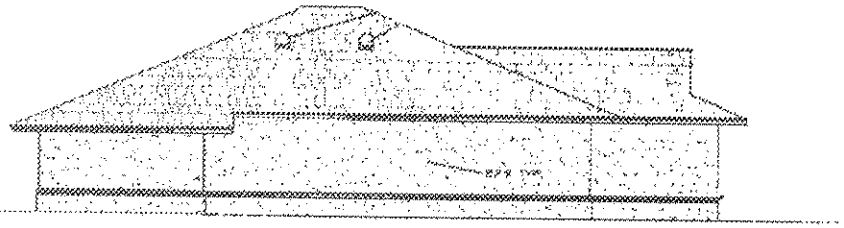
South (Puunoa Street) Elevation



West Elevation



East (Front Street) Elevation



North (Back) Elevation

Source: Stephen T. Nakai

Figure 4

Lahaina Kingdom Hall of Jehovah's Witnesses

Exterior Elevations

NOT TO SCALE

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and Lahaina Congregation of Jehovah's Witnesses

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Evening family study services are held between 7:00 p.m. to 9:00 p.m. on Tuesdays and Thursdays. These services are attended by approximately 30 to 40 members. Most members drive to these evening services in groups and approximately 15 cars arrive and depart approximately 30 minutes before and after the services.

A small group meeting is held every Wednesday evening for the Spanish service. Approximately 15 members attend the Spanish service and approximately 8 cars arrive and depart approximately 30 minutes before and after the service. The services are held from 7:00 p.m. to 8:00 p.m.

A small group of approximately 8 to 15 members meet at the Kingdom Hall for approximately 15 minutes every morning at 8:30 a.m. These members usually arrive in 8 cars and leave in groups of 2 per car to carry out their field ministries.

The Kingdom Hall of Jehovah's Witnesses is generally not used for social functions.

The redevelopment of the Kingdom Hall is proposed to provide onsite parking to alleviate the need for members to park on the side streets during services. Secondarily, the redevelopment of the property will accommodate modest growth in the congregation.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use

The project site is located on the northwest corner of Front Street and Puunoa Place. Land uses surrounding the project site include single-family residences to the south, west, and north. Project District 4 (Weinberg Property), a 24-acre site intended to provide a mixture of commercial/business and multi-family and senior citizen residential uses, is located to the east (mauka) of Front Street. The Project District 4 site is presently undeveloped and vacant. Beyond the single-family residences to the north lie the Apostolic Faith Church of Honolulu, the Lahaina Jodo Mission, Mala Wharf, and the Puupiha Cemetery. The Puunoa Beach Estates, a 10-unit multi-family residential development, is located to the west of the proposed site. The Lahaina Cannery Mall is located approximately 0.20 mile north of the project site, while the historic Lahaina Town center is located approximately 0.40 mile to the south. Residential uses are also found along Front Street, to the south of the project site.

2. Climate

Lahaina's climate is relatively uniform throughout the year due to the surrounding ocean, tropical latitude, and its position relative to storm tracts and the Pacific anticyclone. Variations in climatic conditions between the island's different regions are generally attributable to local terrain.

Based on data collected from the National Weather Service's nearby Wahikuli Station, average monthly temperatures range from

66.5 to 84.9 degrees Fahrenheit, respectively (Maui County Data Book, June 2001).

Rainfall in Lahaina is highly seasonal, with most precipitation occurring between October and April as a result of winter storms. The West Maui region receives most of its rainfall in the late afternoon and early evening. Data collected at the Wahikuli Station indicates that January is typically the wettest month, with 3.31 inches of rainfall, while June is the driest, with 0.0 inches. Average annual precipitation is approximately 15.68 inches (Maui County Data Book, June 2001).

Wind patterns in the Lahaina region are also seasonal, with tradewinds originating from the northeast occurring predominantly during the summer and approximately 50 percent of the time during the winter.

Wind patterns also vary on a daily basis, with winds blowing onshore toward the warm land mass during the day and in the opposite direction toward the warm ocean during the evening.

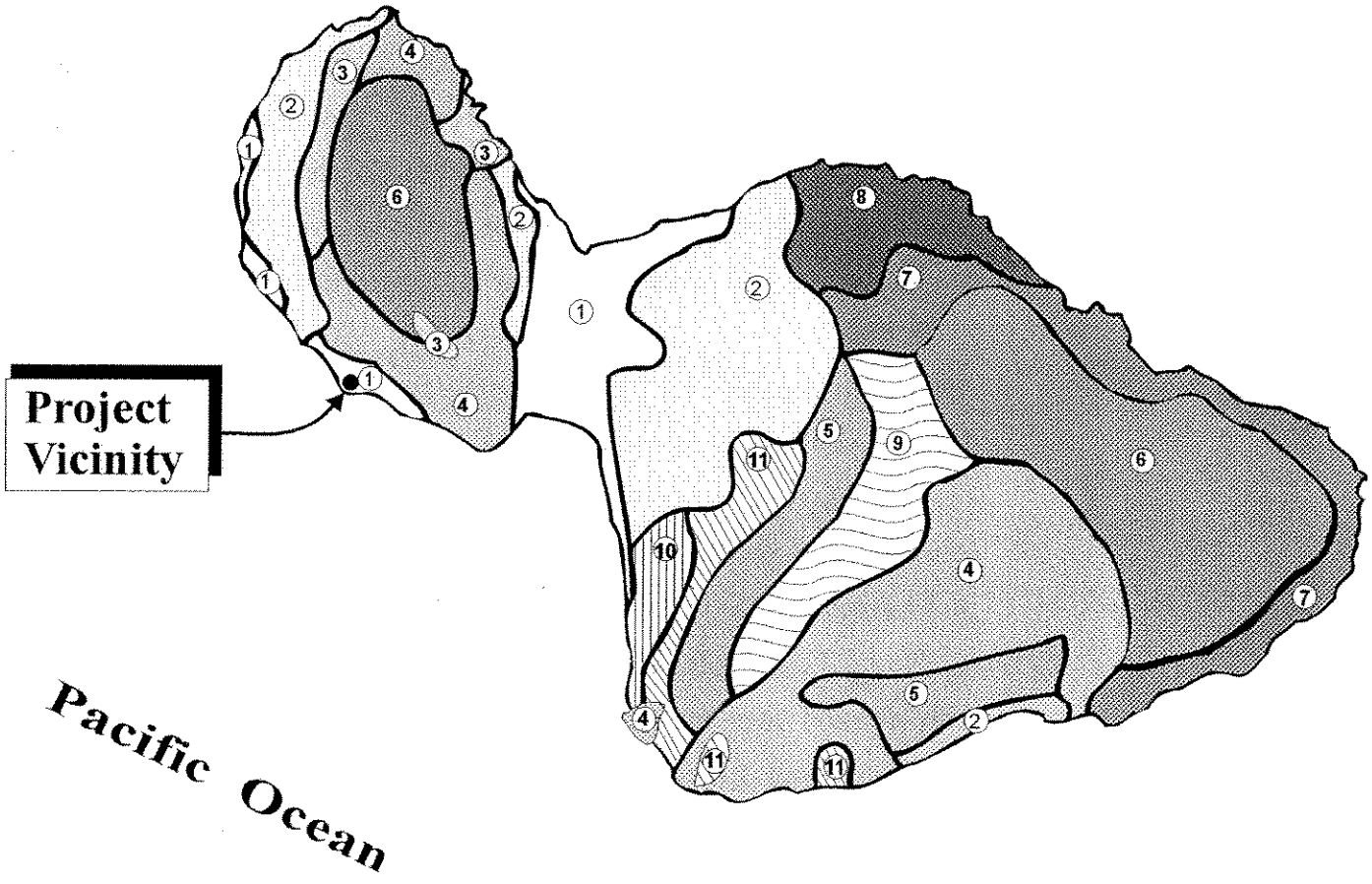
3. ***Topography and Soils***

The project site is located makai (west) of Front Street and is level. Onsite elevations range from five (5) to six (6) feet mean sea level.

Underlying the project site are the soils of the Pulehu-Ewa-Jaucas association. See Figure 5. The Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii characterizes the soils of this association as deep and nearly level to moderately sloping. These soils possess well-drained to

LEGEND

- (1) Pulehu-Ewa-Jaucas association
- (2) Waiakoa-Keahua-Molokai association
- (3) Honolua-Olelo association
- (4) Rock land-Rough mountainous land association
- (5) Puu Pa-Kula-Pane association
- (6) Hydrandepts-Tropaquods association
- (7) Hana-Makaalae-Kailua association
- (8) Pauwela-Haiku association
- (9) Laumaia-Kaipoipoi-Olinda association
- (10) Keawakapu-Makena association
- (11) Kamaole-Oanapuka association



Source: USDA Soil Conservation Service

Figure 5

Lahaina Kingdom Hall of Jehovah's Witnesses
Soil Association Map

NOT TO SCALE

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excessively drained features and are further typified by moderately fine to coarse-textured subsoils. This soil type is primarily found on alluvial fans and in basins.

Pulehu Silt Loam (PpA) is the predominant soil series specific to the project site. See Figure 6 . This series is typified by zero (0) to three (3) percent slopes, slow runoff, and slight erosion hazards. Sugar cane cultivation is generally associated with this soil type.

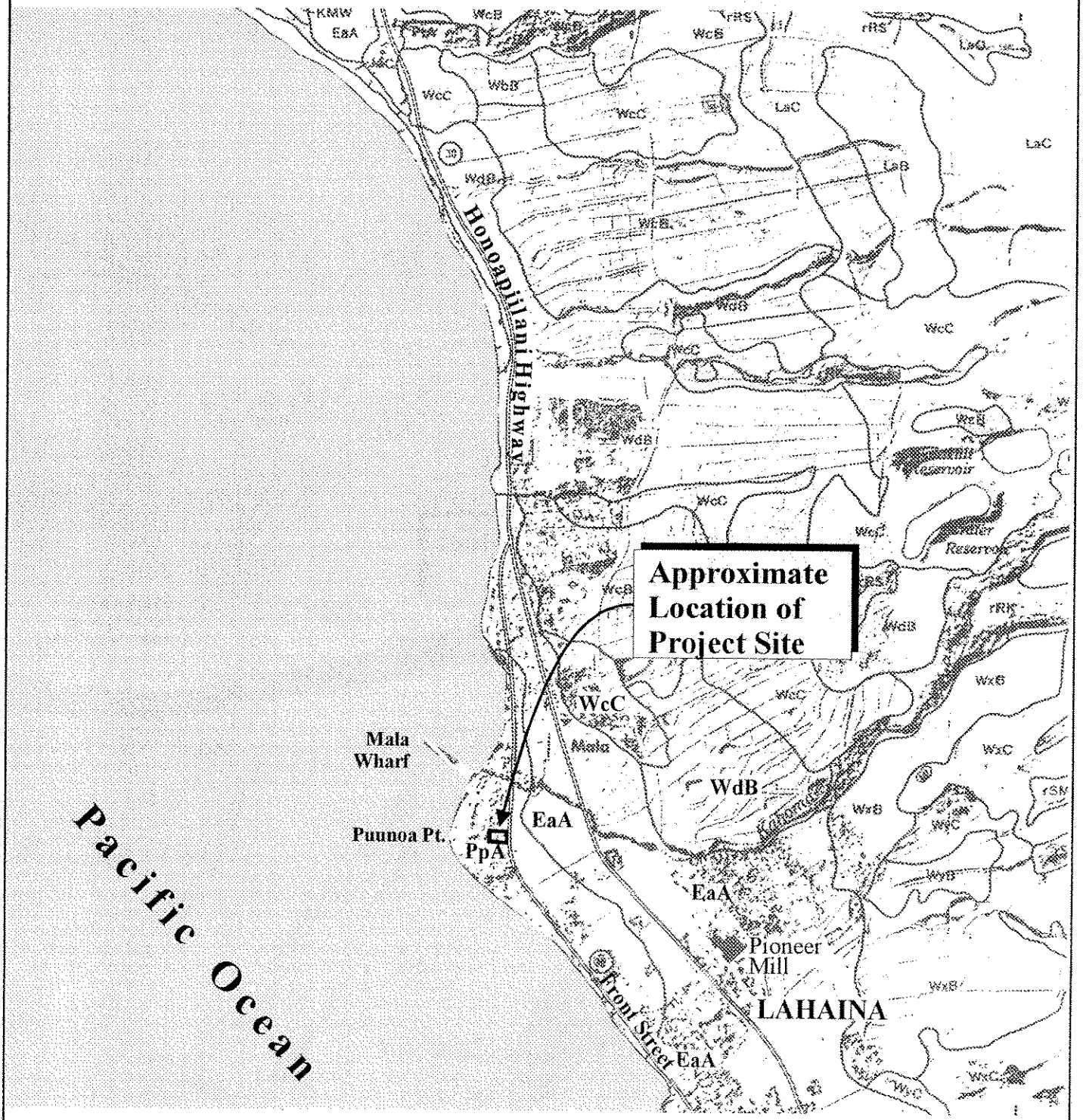
4. *Flood and Tsunami Hazards*

The subject property encompasses two (2) parcels identified by TMKs (2)4-5-4:42 and 44. As reflected by the Flood Insurance Rate Map, a portion of the subject property identified by Parcel 42 lies within Zone A4, areas of 100 year flooding with depths of seven (7) feet. The remaining area of the subject property lies within Zone C, an area of minimal flooding. See Figure 7.

5. *Flora and Fauna*

The subject site is currently developed. Located on the portion identified by Parcel 42 is the existing Kingdom Hall of Jehovah's Witnesses, a two-story wood frame building. The parcel is paved and landscaped with palm trees. Located on the portion identified by Parcel 44 is a single-family residence. The yard is landscaped with a grass lawn and palm trees. There are no rare, threatened or endangered species of plants found at or in the vicinity of the subject site. There are no known wetlands in the vicinity of the subject site.

Animal life found in this area is typical of the urbanized regions of West Maui. Domestic mammals found in the area include dogs,



Source: USDA Soil Conservation Service

Figure 6

Lahaina Kingdom Hall of Jehovah's Witnesses

Soil Classifications

0 1000 Feet
500 2000

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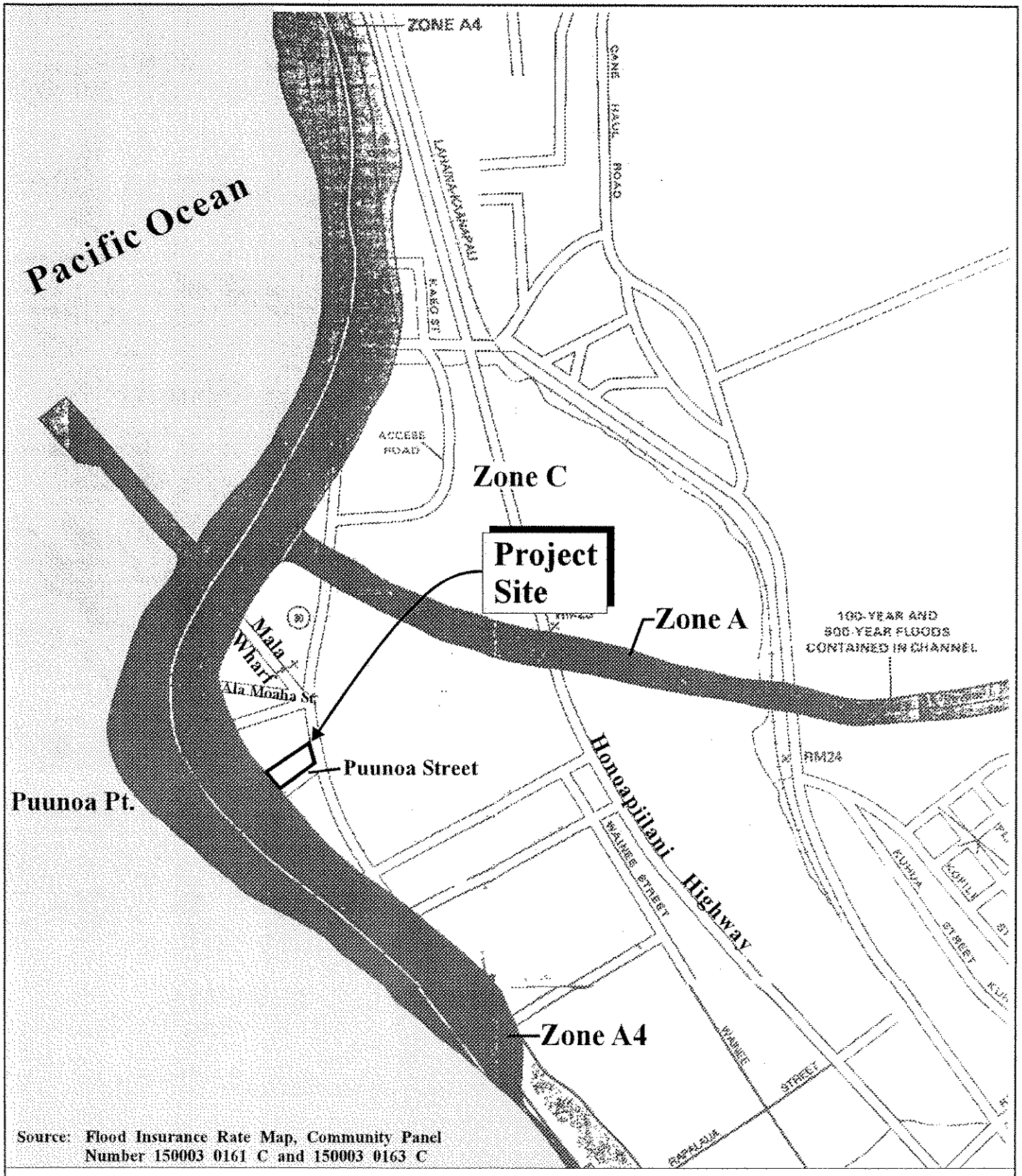

Figure 7

Lahaina Kingdom Hall of Jehovah's Witnesses

Flood Insurance Rate Map

NOT TO SCALE

Prepared for: The Accepting Authority: Maui Planning Commission and Lahaina Congregation of Jehovah's Witnesses

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cats, mice and mongoose. Avifauna commonly found in the area include the common Mynah, Japanese white-eye, Spotted Dove, Barred Dove and House Finch. There are no known endangered or rare species of animal life found in the vicinity of the project site.

6. ***Archaeological Resources***

The project site is developed with the existing Lahaina Kingdom Hall and single-family residence. Although the proposed project will be located on previously altered lands, its location within the Historic Lahaina District could yield remnant habitation deposits. An archaeological inventory survey (with subsurface testing on Parcel 44) was carried out in November 2002. See Appendix "A". The results of the archaeological inventory survey fieldwork indicated that the project area had undergone extensive surface and subsurface modification over the past 150 years. Imported fill was placed on Parcel 42 in the late 1960's when the existing Kingdom Hall was built and on Parcel 44 between 1980 and 1990 when the parking lot and cottage were built. In both parcels the fill ranges between 1.2 to 3.0 feet. No significant prehistoric or historic period cultural remains were encountered during the surface survey or the subsurface testing.

7. ***Air Quality***

The subject property does not experience adverse air quality conditions, and Department of Health data from the Lahaina sampling station indicates that the West Maui region as a whole meets State and Federal air quality standards for particulate matter concentration.

Airborne pollutants that do exist in the project vicinity can largely be attributed to automobile exhaust from Honoapiilani Highway and other secondary roadways. Other sources may include dust from fallow agricultural fields and pineapple operations. These sources are intermittent, however, and the prevailing tradewinds will disperse particulates generated by these temporary sources.

8. *Noise Characteristics*

There are no fixed noise generators in the vicinity of the project site. Background noise consists of vehicular traffic along Front Street and adjacent roadways.

9. *Scenic and Open Space Resources*

The project site is located makai of Front Street. Moving toward the shoreline, surrounding properties include single-family and multi-family residences, Puupiha Cemetery, and Mala Wharf. The project site is not considered to be within a scenic view corridor.

B. *COMMUNITY SETTING*

1. *Land Use and Community Character*

The vast majority of lands in West Maui are either State designated "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the middle ground.

"Urban" designated lands occupy the lower elevations along the coast. The communities of Kahana-Napili-Kapalua and Kaanapali contain Community Plan designations reflective of their resort nature. Lahaina, meanwhile, is more typical of a residential

community. Single-family, business, light industrial and agricultural zones prevail in Lahaina.

A key feature of the region is the town of Lahaina, which is designated a National Historic Landmark as the one-time whaling capital of Hawaii. Today, it is the visitor industry that defines Lahaina Town and other coastal resort communities of West Maui.

Part of West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by many white-sand beaches and scenic landscape. Most all of the visitor accommodations are located in Lahaina and the resort communities of Kaanapali, Kahana, Napili, and Kapalua. The State-owned and operated Kapalua-West Maui Airport at Mahinahina conveniently links the region to Oahu and other neighbor islands.

Pineapple fields and agricultural lands formerly planted with sugar cane occupy much of the land in the area. Pioneer Mill Company, Ltd. formerly cultivated much of its 6,700 acres with sugar cane and presently utilizes some of its lands for seed corn. Maui Land and Pineapple Company, Inc.'s fields spread along the slopes of the West Maui Mountains north of Kaanapali.

2. ***Population***

Just as the visitor count has grown, the resident population of the region surrounding the project limits has increased dramatically in the last two (2) decades. Population gains were especially pronounced in the 1970s as the rapidly developing visitor industry attracted many new residents. According to the 2000 Census of Population and Housing, the resident population of the Lahaina

District was 17,967 (Maui County Data Book, 2001). The projected resident population for the year 2010 is approximately 26,890 (SMS, 2002).

Growth patterns at the County level exhibit a similar pattern. The County's 1980 resident population of 71,000 has since grown to 128,241 in 2000 (U.S. Census 2000). The estimated County population for the year 2010 is 151,269 (SMS, 2002).

3. *Economy*

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which has emerged as one of the State's major resort destination areas.

Agriculture is another vital component of the West Maui economy, with cultivation operations handled by Pioneer Mill Company, Ltd. and Maui Land and Pineapple Company, Inc.

As of October 2002, the unemployment rate for both Maui County and the island of Maui was approximately 4.3 percent and 4.1 percent, respectively (State Department of Labor and Industrial Relations, December 2002).

4. *Police and Fire Protection*

The project site is within the Lahaina Police Station service area, which services all of the Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, and was built in the early 1970s. The Lahaina Patrol includes 54 full-time personnel, consisting of one (1) captain, one (1) lieutenant, seven

(7) sergeants, and 39 police officers. The remaining six (6) personnel consist of public safety aides and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District is provided by the Lahaina Fire Station, also located in the Lahaina Civic Center, and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili Fire Station consists of an engine company including fifteen (15) full-time firefighting personnel.

5. ***Medical Facilities***

The only major medical facility on the Island is Maui Memorial Hospital, located approximately twenty (20) miles from Lahaina, midway between Wailuku and Kahului. The 196-bed facility provides general, acute, and emergency care services.

In addition, regular hours are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente Medical Care Program.

6. ***Recreational Facilities***

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. Beach parks offer excellent swimming, diving, and snorkeling areas. Popular surfing spots include Launiupoko Wayside Park, Fleming Beach, Honolua Bay, and Rainbows.

In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use. Also situated within the region, the Lahaina, Kaanapali and Pacific Railroad provides recreational sightseeing opportunities for residents and visitors alike between the town of Lahaina and the Kaanapali Resort.

7. *Educational Facilities*

The State of Hawaii, Department of Education operates four (4) public schools in West Maui: Lahainaluna High School; Lahaina Intermediate School; King Kamehameha Elementary School; and Princess Nahienaena Elementary School. All of the public schools are located within the Lahaina Town area.

C. *INFRASTRUCTURE*

1. *Roadways*

The project site is served by Honoapiilani Highway, the primary arterial connecting the West Maui region with the rest of the island. With the exception of a four-lane segment between Lahaina Town and Kaanapali, this State highway (Highway 30) has a typical two-lane configuration. Access to the site is off of Puunoa Place via Front Street. Front Street is a two-lane, two-way County road with a north-south orientation which serves the commercial and historic centers of Lahaina Town. The posted speed limit is 20 miles per hour. Puunoa Place is a two-lane improved but substandard roadway with a pavement width of approximately sixteen (16) feet and no curbs, gutters or sidewalks and serves a number of residential properties. The posted speed limit is 15 miles per hour. The intersection of Puunoa Place and Front Street is unsignalized. The stop sign is on the Puunoa Place approach to Front Street. Puunoa Place provides beach access and dead ends into a parking

area for approximately two (2) cars. Street parking is permitted on the north side of Puunoa Place.

Other roadways in close proximity to the site include Ala Moana Street and Mala Wharf Approach Road to the north and Kenui Street to the southeast. Ala Moana Street is a two (2) lane roadway providing access to Puupiha Cemetery, Lahaina Jodo Mission and the shoreline. Street parking is permitted along both sides of Ala Moana Street. Mala Wharf Approach Road provides access to Mala Wharf and a boat launching ramp. Adjacent facilities include a comfort station, outdoor showers and a 5-stall parking lot. Kenui Street is a residential street servicing a residential neighborhood to the south and connects with a right-in and right-out access onto Honoapiilani Highway. Parking is permitted on Kenui Street.

2. ***Water Systems***

The West Maui region is served by the County's Department of Water Supply water system. The County water system services the coastal areas from Launiupoko to Kaanapali and from Honokowai to Napili (County of Maui, Department of Water Supply, 1990). Two (2) surface sources and nine (9) wells are used to supply the County domestic system. In addition to the County system, the West Maui region is served by private water systems, including the Kaanapali Water Corporation, a subsidiary of Duquesne Light, which services the Kaanapali Resort, and the Kapalua Water Company, which provides water service to the Kapalua Resort.

The Lahaina system storage in the vicinity of the project is provided by a 1.5 million gallon (MG) concrete tank on Wahikuli Road at an elevation of 257 feet Mean Sea Level (MSL) and a 1.0 MG concrete reservoir on Lahainaluna Road at an elevation of 237 MSL. An 8-inch water main runs under Puunoa Place and services the existing Lahaina Kingdom Hall.

3. ***Wastewater Systems***

The County's wastewater collection and transmission system and the Lahaina Wastewater Reclamation Facility (LWRF) accommodate the region's wastewater needs. The LWRF is located along Honoapiilani Highway just north of Kaanapali Resort. Currently, usage is estimated to range from 4.5 to 6.0 MGD (telephone conversation with Department of Public Works and Environmental Management employee, November 19, 2001). The County, in partnership with the Housing Community Development Corporation of Hawaii, has upgraded and expanded the LWRF to a design capacity of 9.0 MGD. The existing Kingdom Hall is serviced by a 6-inch lateral from the 18-inch main line in Front Street.

4. ***Drainage***

Runoff from the property primarily ponds within the lot and percolates into the ground. Based on a 10-year, 1-hour storm, the existing conditions currently generate a peak runoff rate of 1.8 cubic feet per second (cfs).

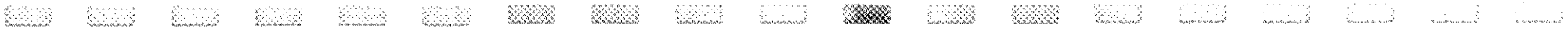
5. ***Solid Waste Disposal***

With the closing of the Olowalu Landfill, all solid wastes generated in the Lahaina region are transported to the Central Maui Landfill

located near Puunene. A refuse transfer station located at Olowalu accepts household and green wastes, as well as used oil, for transport to the Central Maui Landfill in Puunene. The disposal of commercial and institutional refuse is not permitted at the Olowalu transfer station.

6. ***Electrical and Telephone Service***

Electrical and telephone service to the West Maui region is provided by Maui Electric Company and Verizon Hawaii, respectively.



III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Surrounding Uses

The Lahaina Congregation of Jehovah's Witnesses Kingdom Hall project will not impact surrounding land use. The parcel has been in church use since 1970 and will remain in church use following project development. The subject property is located north of the commercial district of Lahaina Town and south of the Lahaina Cannery Mall. Land uses to the east of the project site mauka of Front Street include Project District 4 (Weinberg Property). This 24-acre site is intended to provide a mixture of commercial/business and multi-family and senior citizen residential uses. It is presently undeveloped. To the north of the project site are single-family residences, the Apostolic Faith Church of Honolulu, and the Lahaina Jodo Mission. To the south and west of the project site are single-family residences and the Puunoa Beach Estates, a 10-unit multi-family residential development fronting the beach and is accessed from Kai Pali Place. The Puupiha Cemetery and Mala Wharf and related facilities are located beyond the single-family residences to the northwest of the project site. Single-family residences and commercial land uses are located along Front Street. The proposed project is intended to improve off-street parking conditions, while providing a new church facility for the Lahaina Congregation. The proposed action is not anticipated to adversely impact surrounding uses.

2. Flood and Tsunami Hazard

The subject property is situated within Zone A4 and Zone C of the Flood Insurance Rate Maps. Zone A4 represents areas of 100-year flooding with depths to seven (7) feet. Zone C represents

areas of minimal flooding. As such, the design and construction of the church facilities situated in Zone A4 will be in accordance with Maui County Code, Chapter 19.62 relating to Flood Hazard Areas.

3. *Flora and Fauna*

There are no known rare, endangered, or threatened species of flora within or surrounding the project site. Landscaping will be incorporated as part of the overall design of the proposed project. The removal of existing vegetation for project construction is not anticipated to have an adverse impact to the natural features.

The proposed landscaping improvements will integrate the existing palm tree and cluster of sago palms on the southeast corner of Parcel 44 and the existing palm cluster and hibiscus hedge along the frontage of Puunoa Place on Parcel 42. New landscaping improvements will include native, indigenous and polynesian introduced plants. The hibiscus hedge will be extended on Puunoa Place to buffer the parking lot. Clusters of sago palms will be planted along Puunoa Place and Front Street. Shade trees in the parking area will be either Koa or Kukui Nut. A Podo Carpus tree will be planted in the northeastern corner of the property.

There are no known rare, endangered, or threatened species of avifauna or wildlife in the project vicinity. The project will not displace any known significant habitats and it is not anticipated to have an adverse impact to the local area's fauna and avifauna population.

The proposed project will not impact wetland areas and associated wildlife habitat.

4. ***Archaeological Resources***

An archaeological inventory survey (with subsurface testing on Parcl 44) was conducted on the subject site. Refer to Appendix "A". The results of the archaeological inventory survey determined that no significant surface remains are present within the project area. Subsurface testing on Parcel 44 did not uncover any cultural remains. Moreover, since the ground altering activities associated with the proposed development will not extend beyond the existing fill, the potential for encountering significant subsurface remains is minimal. Upon review of the inventory survey report, the State Historic Preservation Division (SHPD) concurred that no archaeological monitoring is warranted as the proposed development will not penetrate below the existing fill layer. SHPD concludes the development of the project areas will have "no effect" on significant historic sites. See Appendix "A-1".

5. ***Cultural Impact Assessment***

The Lahaina District is described as a rich agricultural oasis watered from nearby valleys (Handy and Handy, 1978). This oasis *"extended about three leagues in length (about nine miles along the coast) and one (three miles) in breadth. Beyond this, all is dry and barren"*. The name Lahaina ("cruel sun") likely refers to the droughts that affected the surrounding area from time to time (Pukui et al., 1974, p.127). In pre-contact times, Lahaina itself was apparently a garden-like area with taro lo'i, ditches ('auwai) and separating embankments creating a verdant landscape. Brackish water and fresh water ponds (loko) were also present. At lower elevations, dry land cultivation took place in areas around alluvial fans, while at higher elevations lo'i and 'auwai systems were constructed within valleys for taro production. In coastal settlement

areas, marine resources were utilized for subsistence. In Lahaina, several fishponds existed, of which two were most prominent, Loko o Mokuhinia and the smaller Loko Puako, around which intensive taro and breadfruit cultivation occurred. Scattered around the fishponds and taro loi'i, and situated on higher ground, were the homes of the laborers who worked the land.

The project site lies within the ahupua'a of Paunau. This area lies to the north of the 'ili of Pakala, which was the home of many high-ranking chiefs and later, members of the royal family. As suggested by Handy (1978), by late pre-contact times, the fairly sizable population dwelling in the region utilized coastal fishing areas and inland garden plots for subsistence, cultivating sweet potatoes near shore, or taro in terraced lo'i in the wetter valleys inland.

By the time of contact, the Lahaina region had become an important socio-political center, and the residence of several powerful chiefs, most notably Kahekili, one of the highest ranking on Maui. Lahaina was considered by high chiefs to be a favorable place due to the abundance of natural resources and its close proximity to the islands of Lana'i and Moloka'i (Handy and Handy, 1972).

In 1789, Kamehameha I invaded Maui and defeated Kahekili at the Battle of Kepaniwai O Iao (Speakman, 1978). In post-contact times, Lahaina became the center of the Hawaiian monarchy. Kamehameha I spent time there between his battles of conquest, while his son, Kamehameha III, resided in Lahaina in preference to Honolulu. Many high status individuals connected with the

monarchy lived in Lahaina, even after the official capitol of the kingdom was moved to Honolulu in 1845.

In 1820, about 40 years after Captain James Cook's discovery of the Hawaiian Islands, the islands experienced a weakening of the ancient Hawaiian social system and the sudden arrival on the scene of the first New England whaling ships and missionaries. The population of West Maui continued to decline in the second half of the 19th century followed by the collapse of the Pacific whaling industry in the 1860's which was prompted by the discovery of oil in Pennsylvania a decade or so earlier. In the Lahaina area, sugar production developed in the mid-1800s, while further north, different crops were tried, including coffee and pineapples.

With the introduction of sugar cane cultivation and the importation of foreign labor to work on the plantation, the character of Lahaina changed. Loko o Mokuhinia began to dry up as water was diverted for irrigation. Kuleana land grants changed hands as plantation workers became affluent enough to purchase land and commercial development became a driving force that would continue and intensify through the 20th century.

In order to obtain a range of cultural impact perspectives, interviews were held with three (3) Lahaina residents. Emily Kaniho and Patty Kaniho were interviewed because of their familiarity with the development of the existing Kingdom Hall, their native Hawaiian background and their connection to the Lahaina area. William Waiohu, a representative of Na Kupuna O Maui Lahaina District, was recommended by the Office of Hawaiian

Affairs. Summaries of the cultural impact assessment interviews follow.

(1) Emily Kaniho

The interview was carried out in Lahaina, Maui on June 14, 2002.

Emily Kaniho was born in Lahaina at the Pioneer Mill Hospital. Her mother is Carol Dutro. Her mother was born in Pearl City, Oahu. Her father is Sweeney Ah Siu. Her father was born in Lahaina. Emily's parents moved to Oahu to find work as things were very hard during the 30's and there was not much work on Maui. During this time, Emily and her twin sister (Ella) lived with their grandparents in Lunaville. Her step grandfather was supervisor of the Pioneer Mill garage. Emily and Ella later moved to Oahu to join their parents. She met her husband, John Kaniho Sr., in Honolulu. He was a Military Police Officer in the army at the time they met. John Sr. was also from Lahaina. After they were married they moved back to Lahaina.

As Emily was growing up, she remembers quite a few Hawaiian families lived in around the project site area. She remembers the area as primarily a fishing village close to the shoreline. At that time, the Puunoa area seemed quite far away from Lunaville. She remembers going to Mala Wharf to board the ship to go to Oahu.

Emily did not observe or recall any cultural practices on or near the project site. She mentioned that most families living in the Puunoa area were fishing families and were out in the water. She also did not recall any mountain access on or near the project site. She mentioned that her father-in-law used to work for the County during the day and hunted goats after work. He would go up to the mountains mauka of Launiupoko. He would go through the cane fields to reach the mountain trails. She stated, "during those days there were no fences around the canefields and you could walk through the fields to go to the mountains". She recalled her father-in-law also used to take the Ukumehame trail which went back to Olowalu to hunt for goats.

Emily commented that people were buried at Puupiha. In the context of cultural impact considerations she said that the proposed project would not impact cultural practices.

(2) *Patty Kaniho*

The interview was carried out in Lahaina, Maui on June 14, 2002.

Patty Kaniho is the daughter of John and Emily Kaniho. Patty has been a member of the Lahaina Congregation of Jehovah's Witnesses since 1974. She was born in Lahaina at the Pioneer Mill hospital. She attended Kamehameha III Elementary School and graduated from Lahainaluna High School. She completed the Hotel Operations program at Maui Community College. She has never left Maui and has always lived in Lahaina. Patty is a PBX operator at the Hyatt Hotel at Kaanapali.

Patty remembers the area in the vicinity of the project site as bushes when she was growing up. The Puunoa area near the beach was typically known as a fishing village area and behind the village were bushes. She normally stayed around the central Lahaina area and went to Lahaina Harbor as it was close to where her paternal grandparents lived. Patty said that Mala Wharf was considered out of the way. She recalled her mom saying that the ship that went to Honolulu docked at Mala Wharf.

Patty is not aware of any Native Hawaiian cultural practices on or in the vicinity of the proposed project site. It was more a fishing village area with houses along the shoreline. Patty mentioned that if cultural resources are found on the proposed project site during construction they would have to be taken care of in a culturally correct manner.

(3) *William Waiohu*

William Waiohu was born in West Maui at Ukumehame. William is a member of Na Kupuna O Maui Lahaina District and is on the Maui/Lanai Islands Burial Council. Na Kupuna O Maui Lahaina District is a recognized Hawaiian Organization by the Office of Hawaiian Affairs. The interview was held in Lahaina on November 19, 2003.

William mentioned there used to be a fish pond in the area of Puunoa. The pond was located behind the sand dune. The fishpond was still in existence in around 1949. The pond was eventually destroyed as a result of development in the area in the 1950's. He thought the name of the pond was "Loko Ia".

William mentioned that Puunoa was called "kahuna lands" meaning lands of the priest. These lands extended from Puunoa to where the Lahaina Cannery Mall is presently located to Kapunakea. He referred to the following excerpt from, Sites of Maui, compiled by Elsepth P. Sterling (Sterling 1998) in regards to the historic significance of the Puunoa area.

> *"The kahuna said to him (Kaulu la 'au, chief before Kamehameha) "This is the thing you should do, separate the land for the kahuna and when the kahuna lives on it to take care of the god, allot the lands for the chiefs and commoners". It was agreeable to him and he gave land to the kahuna and god. These were the lands for him to live on, the two Kapunakea, 'Alamihi and the three Pu'unoa, all together there were six lands set apart for the god. From that time Kaulu la'au set apart the lands for the god down to the time of Kamehameha I, whose kahuna was Hewahewa, these lands were in their (the kahuna's) care."*
>
> **(Emphasis added for explanation)**

Based on the history of the lands, William said "It is a good place for a church because it was chosen as the house of the gods".

William was not aware of any native Hawaiian cultural practices currently being carried out in the Puunoa area. He noted that cultural practices have not been carried out in the area since the 1950's due to housing development in the area.

William believed there may be cultural resources located beneath the ground since it was a place where Hawaiians lived. He said, if Hawaiians lived in the area, you might find "iwi" (*bones*). In the context of potential cultural impacts, William felt it was allright for the Lahaina Kingdom Hall to expand but, recommended that the Kingdom Hall be built on fill and the site not excavated. He cautioned that if cultural artifacts are uncovered, construction should stop and the State Historic Preservation Division and Maui/Lanai Islands Burial Council should be contacted to determine appropriate mitigation procedures.

Based on information obtained from the cultural interviews the proposed project is not anticipated to adversely affect cultural beliefs, practices, resources, or gathering rights. It is anticipated that the proposed Kingdom Hall building will be built on existing grade or imported fill. Should any archaeological features or human burials be inadvertently located during construction activities, appropriate stop-work, coordination, and mitigation measures will be carried out with a qualified archaeologist to ensure that proper protocol is followed, including required consultation with the State Historic Preservation Division and the Maui/Lanai Islands Burial Council. In general, the proposed project will employ appropriate management and coordination practices to ensure that impacts to cultural values and practices are appropriately mitigated.

6. ***Air Quality***

Air quality impacts attributed to the project will include dust generated by short-term, construction-related activities. Dust control measures, such as a dust fence, regular watering and sprinkling, will be implemented to minimize nuisance impacts to the adjacent businesses and residents.

Once completed, project-related vehicular traffic will generate automotive emissions. However, project-related emissions are not expected to adversely impact local and regional ambient air quality conditions.

7. ***Noise***

As with air quality, ambient noise conditions will be temporarily impacted by construction activities. Heavy construction equipment, such as bulldozers and materials-carrying trucks and trailers, would be the dominant source of noise during the site construction period. Construction activities will be limited to normal, daylight working hours and comply with Hawaii Administrative Rules, Chapter 11-416, relating to "Community Noise Control".

On a long-term basis the proposed project will not adversely impact ambient noise conditions.

8. ***Visual Impacts***

The proposed Kingdom Hall building will be a single-story structure which is compatible in height with surrounding developed properties. The site will be landscaped for visual integration with surrounding properties. In this regard, the project is not anticipated to negatively affect scenic resources.

9. ***Traditional Beach and Mountain Access***

The proposed project will not adversely impact traditional beach or mountain access.

10. Use of Chemical Fertilizers

The use of herbicides will be generally limited to the initial plant establishment periods for the landscaping of the proposed project. Pesticides are expected to be used only as a treatment and not as a preventative measure. As a treatment, application will be minimal and will be conducted by a licensed commercial service provider, as required.

Nitrogen/Phosphorus/Potash mixed-fertilizers are anticipated to be applied to landscaped areas. Utilizing proper irrigation management practices, leaching and runoff of fertilizers are expected to be minimized.

No adverse effects to surface, underground, and marine resources are anticipated.

B. IMPACTS TO COMMUNITY SETTING

1. Community Character, Population, and Local Economy

The proposed project will maintain the church use which has been a part of the neighboring community for the past 32 years. As such, the proposed project will not affect the community character nor will it affect population in the West Maui region.

From a short-term perspective, the project will support construction and construction-related employment. Over the long term, the proposed project will meet the spiritual and social needs of its congregational members, many of whom reside in the West Maui region.

2. *Public Service*

The proposed project will maintain an existing land use and will not place new demands upon existing police, fire, medical, recreational, and educational services.

Accordingly, no adverse impacts to public service systems are anticipated from the proposed project.

3. *Solid Waste*

As appropriate, a solid waste management plan will be developed in coordination with the Solid Waste Division of the County Department of Public Works and Environmental Management for the disposal of clearing and grubbing, and demolition material from the site during construction.

Once completed, the proposed project will be served by a private collection company. Solid waste generated from the project will be disposed at the County's Central Maui Landfill. The proposed project will not adversely impact the County's solid waste facility.

C. *IMPACTS TO INFRASTRUCTURE*

1. *Roadways*

The proposed project is not anticipated to adversely affect existing traffic conditions. The proposed project has been developed to create more onsite parking capacity to service the Lahaina Kingdom Hall of Jehovah's Witnesses and relieve on-street parking congestion on Puunoa Place. The proposed project would increase onsite parking from aprroximately 20 stalls to 35 single stalls with 13 additional stacked stalls (48 total parking spaces).

As previously mentioned, the Kingdom Hall is used primarily on Sunday mornings from 9:30 a.m. to 11:30 a.m., Tuesday and Thursday evenings from 7:00 p.m. to 9:00 p.m., and Wednesday evenings from 7:00 p.m. to 8:00 p.m. Table 1 provides a breakdown of the range in the number of attendees and vehicles for each service.

Table 1

SERVICE ATTENDANCE AND VEHICLE SUMMARY			
Activity	***Average***	***High***	***Low***
Sunday Services (AM)			
People	124	138	107
Cars	52	65	47
Thursday Service (PM)			
People	84	93	74
Cars	41	50	34
Wednesday Service (PM)			
People	15	20	10
Cars	8	11	6

a. ***Local Traffic***

A traffic count was carried out by congregation members on four (4) Sundays, June 30, July 7, July 21 and July 27, 2003, from 8:30 a.m. to 9:30 a.m. and from 11:30 a.m. to 12:30 p.m. The results of the traffic count on July 27th (the highest counts recorded) are presented in Table 2.

As shown from the traffic count, delays at the Front Street/Puunoa Place intersection are not long. During the

Table 2

KINGDOM HALL TRAFFIC SURVEY
AT FRONT STREET AND PUUNOA PLACE
July 27, 2003

Movements	***Peak Arrival*** *(8:30-9:30 a.m.)*		***Peak Departure*** *(11:30 a.m.-12:30 p.m.)*	
	No. of Vehicles	Delay[1]	No. of Vehicles	Delay[1]
Front Street onto Puunoa Place				
Northbound Left	32	8.1	4	8.1
Southbound Right	42	1.0	14	--
Puunoa Place onto Front Street				
Eastbound Left	22	13.5	26	14.0
Eastbound Right	10	--	24	7.0
Front Street				
Total Vehicles	NB[2] 199/SB[3] 236		NB 305/SB 377	

1 Delay is average vehicle delay in seconds per vehicle.
2 North Bound
3 South Bound

peak arrival period 32 northbound left-turn movements from Front Street onto Puunoa Place were recorded with an average delay of approximately 8.1 seconds. During the peak departure period, there were 26 eastbound left-turn movements from Puunoa Place onto Front Street with an average delay of approximately 14.0 seconds. Since the expansion of the Kingdom Hall will not significantly increase the seating capacity (11 additional seats), the proposed project is not anticipated to significantly increase traffic.

An assessment of the project related traffic conditions was carried out by Phillip Rowell and Associates. See Appendix "C". A level-of-service (LOS) analysis was performed on the

average vehicle delay at the intersection of Front Street at Puunoa Place. Level-of-service is a qualitative measure of traffic conditions. There are six (6) levels of service, A through F, which relate to driving conditions from best to worst, respectively. The results of the analysis indicate that all controlled traffic movements at the intersection of Front Street at Puunoa Place operate at LOS B or better, which implies good operating conditions. The traffic assessment concludes, no improvements are required, since traffic operates at a high level-of-service.

b. ***Street Parking***

Pursuant to County Code Chapter 19.36.010, Off-Street Parking and Loading, churches are required to provide one (1) parking space for every 100 square feet of floor area of building. However, the code states:

> *"Where authorized on-street parking spaces are available within a distance of five hundred feet from the nearest point of the church or place of worship, the required number of off-street parking spaces may be reduced by thirty-three and one-third of the total number of such on-street parking spaces within the five-hundred-foot distance. Where such on-street parking spaces fall within five hundred feet of two or more places of worship, the reduction of thirty-three and one-third shall be prorated equally among them."*

The proposed new Lahaina Kingdom Hall building will be approximately 3,500 square feet which will require provision of 35 onsite parking stalls. There are approximately 58 on-street parking spaces within a 500 foot radius (8 spaces on

the north side of Puunoa Place, 30 spaces on Ala Moana Street and 20 spaces on Mala Wharf Approach Road) of which 33-1/3 percent, or 20 spaces, can be applied to off-set the onsite requirements. However, there are also three (3) churches within this 500 foot radius; the Lahaina Jodo Mission at TMK:4-5-04:05, The Apostolic Faith Church of Honolulu at TMK:4-5-05:08, and the Lahaina Kingdom Hall. Therefore, prorating the on-street parking would decrease the onsite parking requirement from 35 to 29 stalls.

The proposed project will nevertheless provide 35 onsite single stall parking spaces and an additional 13 stacked stalls. On an average basis, the proposed additional parking will accommodate the majority of Sunday service attendees. Refer to Table 1. On a peak basis, approximately 17 vehicles will be required to park off-site. While there are 58 on-street parking space available within a 500-foot radius of the subject property, congregation members recognize the possibility that some members attending "peak" services will be required to find parking a farther distance away from the church. This situation notwithstanding, the proposed action is intended to mitigate existing on-street parking conditions in and around the Kingdom Hall.

2. ***Water***

Water for the proposed project will be provided by the domestic system servicing the area. A 8-inch waterline located along Puunoa Place presently services the existing church facilities. Current average daily water consumption for the Lahaina Kingdom Hall (based on 2002 water bills) is approximately 330 gallons per

day. The new facility is anticipated to use approximately the same amount of water. Further, the proposed project is sufficiently small in scale so as not to adversely impact water delivery and source capabilities in the region.

3. ***Wastewater***

The existing sewer connection services to the subject site will be consolidated into a new service. The connection will be to the existing 6-inch lateral which connects to an existing 18-inch sewerline under Front Street that leads directly to the nearby County of Maui Pump Station No. 4. All wastewater will be conveyed from Pump Station No. 4 to the Lahaina Wastewater Reclamation Facility (LWRF) via force mains and gravity lines for treatment and disposal. The proposed project is not anticipated to burden existing collection and transmission systems and treatment capacities at the LWRF.

4. ***Drainage and Erosion Control***

Based on a 10-year, 1-hour storm, the proposed improvements will generate a peak runoff rate of 2.2 cfs. The increase in runoff rate resulting from the proposed project is 0.4 cfs and the increase in runoff volume is 400 cubic feet. The additional runoff generated by the proposed project is small enough to be contained onsite in surface depressions located within the project's landscaped areas. The proposed project drainage is not anticipated to adversely impact surrounding or downstream properties. Refer to Appendix "B".

IV. RELATIONSHIPS TO LAND USE PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, established 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 subject property is within the "Urban" District. See Figure 8. The proposed use is consistent with the urban district classification.

B. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter, "The purpose of the General Plan is to recognize and state the major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development".

The proposed action is in keeping with the following General Plan objective and policy as they relate to the social infrastructure and to the health and family:

Objective:

To focus on the quality of family life including the young, the elderly, and the handicapped as the basic building block of community well-being.

Policy:

1. Support an expanded role for community churches and voluntarism in family support and delivery of services.

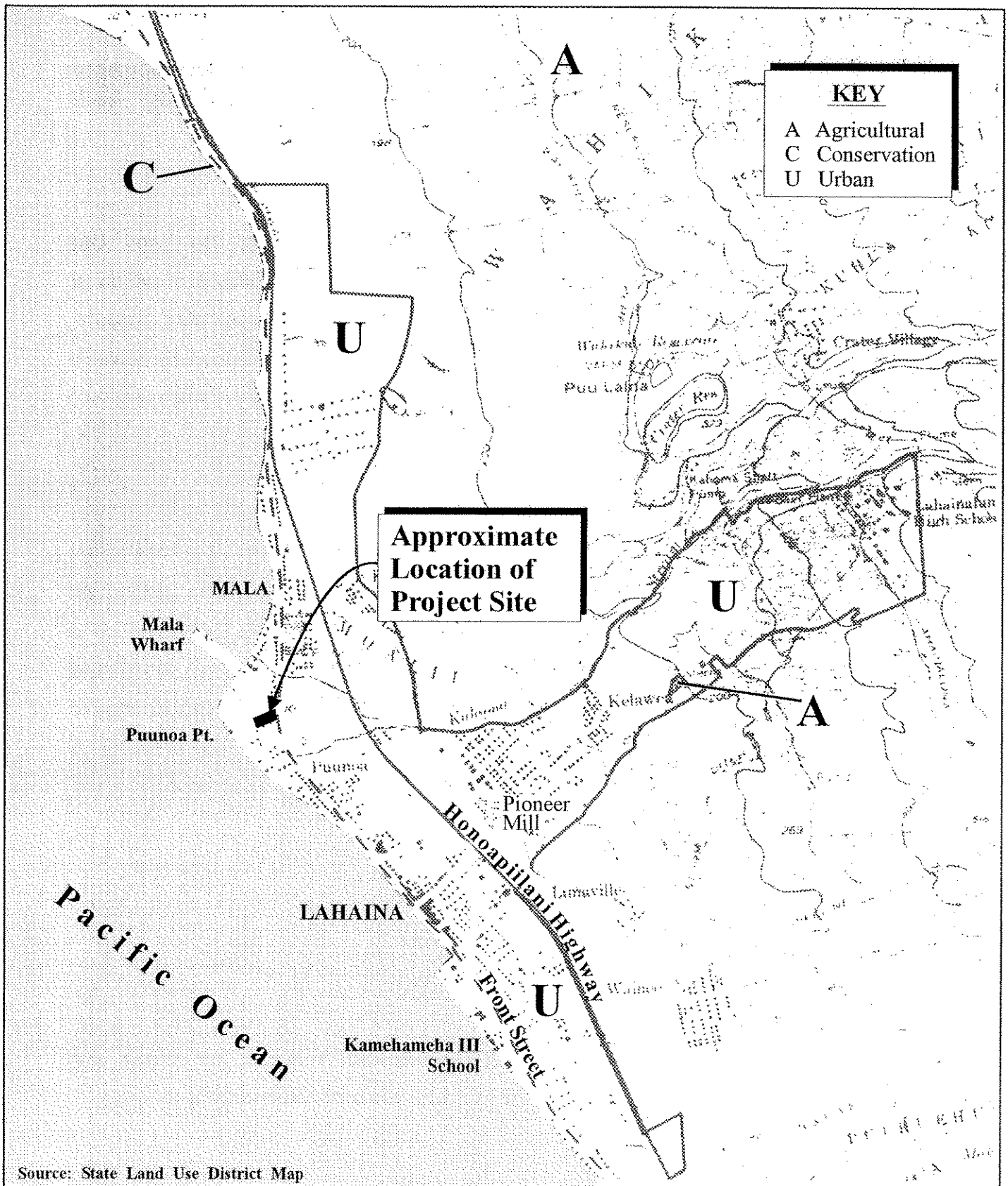


Figure 8 Lahaina Kingdom Hall of Jehovah's Witnesses

State Land Use District Classifications

1000 Feet
0 500 2000

Prepared for: The Accepting Authority: Maui Planning Commission and Lahaina Congregation of Jehovah's Witnesses

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C. WEST MAUI COMMUNITY PLAN

Nine (9) community plan regions have been established in Maui County. Each region's growth and development is guided by a Community Plan, which contain objectives and policies drafted 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.

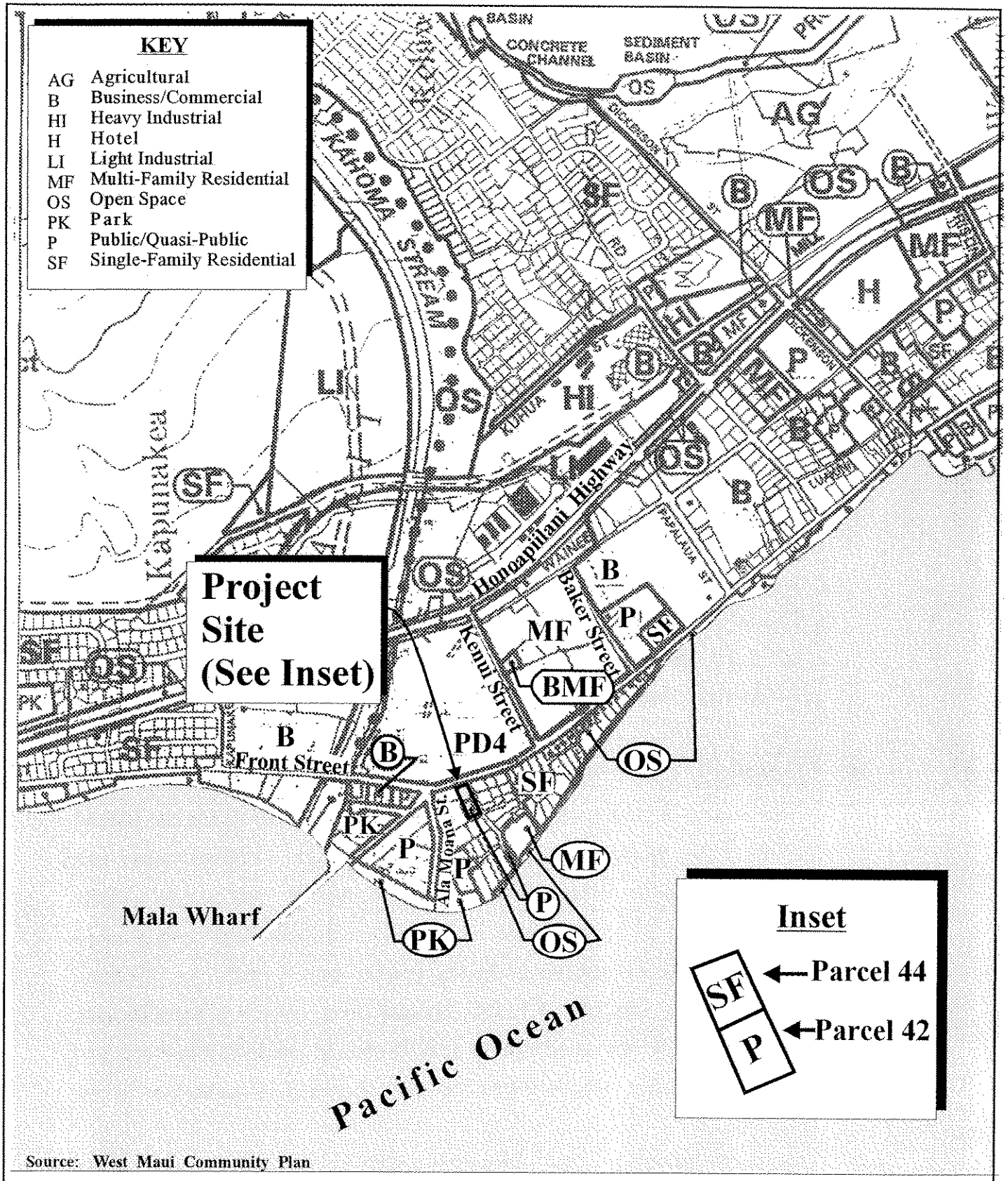
The proposed project falls within the West Maui Community Plan Region. Land use guidelines are set forth by the West Maui Community Plan Land Use Map. The project site located on Parcel 42 is designated "Public/Quasi-Public" by the Community Plan Land Use Map and is reflective of its existing Kingdom Hall of Jehovah's Witness use. The project site located on Parcel 44 is designated for single-family use. See Figure 9. Conformity with the Community Plan designation will be achieved through a County Special Use Permit for church use in a Residential District.

D. ZONING

The County of Maui zoning maps designate the site as Residential District (R-2). The existing Kingdom Hall is an existing nonconforming use established prior to the change in the Residential District that permits churches as a special use. The new Kingdom Hall and related improvements will require a County Special Use Permit. As per Maui County Code, Chapter 19.08.030 Special Uses, churches together with accessory buildings are declared special uses in residential districts and require a Special Use Permit by the Maui Planning Commission.

E. COUNTY SPECIAL USE PERMIT CRITERIA

Criteria considered for a County Special Use Permit are set forth in the Maui County Code, Section 19.510.070, Special Use Permits. The



Source: West Maui Community Plan

Figure 9

Lahaina Kingdom Hall of Jehovah's Witnesses

West Maui Community Plan Land Use Designations

0 250 500 1000 Feet

Prepared for: The Accepting Authority: Maui Planning Commission and Lahaina Congregation of Jehovah's Witnesses

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proposed project has been analyzed with respect to the criteria, as discussed below.

1. ***The proposed request meets the intent of the General Plan and the objectives and policies of the applicable community plan of the county.***

The General Plan of the County of Maui (1990 Update) provides long-term goals, objectives and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental, and economic issues which influence both the quantity and quality of growth in Maui County.

The proposed action is in keeping with Section I (B)(1) which seeks to manage growth through environmentally sensitive and effective use of land in accordance with the individual character of the various communities. By keeping the parcel in church use by the Lahaina Jehovah's Witnesses Congregation, a land use of some 32 years is preserved.

Section I(B)(1)(d) seeks to direct land use growth which encourages the redevelopment and infill of existing communities allowing for mixed land uses where appropriate. The redevelopment of the church at this site is in keeping with this policy.

Section V(C)(2)(a) supports an expanded role for community churches in family support. The Lahaina Kingdom Hall of Jehovah's Witnesses provides family support through its bible study program for families.

Section E (1)(k) seeks to restore and encourage the sense of neighborhood and community caring throughout Maui County. By maintaining a vibrant and active role in the community it serves, the Lahaina Congregation of Jehovah's Witnesses serves this policy objective.

2. ***The proposed request is consistent with the applicable community plan land use map of the county.***

The West Maui Community Plan Land Use Map designates the project site located on Parcel 42 for Public/Quasi-Public use and the portion on Parcel 44 for Single-Family Residential use. The Public/Quasi-Public designation permits church use. Conformity with the Community Plan designation will be achieved through a County Special Use Permit for church use in a Residential District.

3. ***The proposed request meets the intent and purpose of the applicable district.***

Churches are a special use permitted by the Maui Planning Commission in the Residential District. As a special use the proposed project meets the intent and purpose of the applicable district.

4. ***The proposed development will not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems or other public requirements, conveniences, and improvements.***

The proposed project represents the continuation of an existing land use. As such it will not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and

solid waste disposal, drainage, roadway and transportation systems or other public requirements, conveniences, and improvements.

5. ***The proposed development will not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the area.***

As the proposed project is a redevelopment of existing church use, there are no anticipated impacts to the social, cultural, economic, environmental, and ecological character and quality of the area.

6. ***That the public shall be protected from the deleterious effects of the proposed use.***

There are no anticipated deleterious effects of the proposed use. The additional parking spaces provided on the property are intended to reduce demand for on-street parking.

7. ***That the need for public service demands created by the proposed use shall be fulfilled.***

No public service demands will be created as a result of the proposed project as the project represents the continuation of an existing land use.

8. ***If the use is located in the State Agricultural and Rural Districts, the Maui Planning Commission shall review whether the use complies with the guidelines established in Section 15-15-95 of the Rules of the Land Use Commission of the State of Hawaii.***

As mentioned previously, the proposed use is located in the State Urban District.

F. COUNTY OF MAUI SPECIAL MANAGEMENT AREA

The subject property is located within the County of Maui's Special Management Area (SMA). Pursuant to Chapter 205A, Hawaii Revised Statues, and the Rules and Regulations of the Planning Commission of the County of Maui, projects located within the SMA are evaluated with respect to SMA objectives, policies and guidelines. This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Maui Planning Commission.

1. Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

(A) Improve coordination and funding of coastal recreational planning and management; and

(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands

and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Section 46-6, HRS.

Response: The proposed construction of a new Lahaina Kingdom Hall of Jehovah's Witnesses will not affect coastal recreational opportunities. Accessibility to shoreline areas will not be impacted by the proposed action. The 35-stall paved parking lot, plus 13 stacked stalls provided onsite, will help alleviate on-street parking congestion, thereby improving access to coastal recreational opportunities.

2. *Historic Resources*

Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

(A) Identify and analyze significant archeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: The proposed improvements will be in an area already developed and in use by the church and in an area that has been altered by previous activity. An archaeological inventory survey was carried out on the subject site. No cultural resources were located. SHPD has confirmed the proposed project will have "no effect" on significant historic or cultural resources.

3. *Scenic and Open Space Resources*

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

(A) Identify valued scenic resources in the coastal zone management area;
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
(D) Encourage those developments that are not coastal dependent to locate in inland areas.

Response: The proposed project will not adversely impact scenic or open space resources. The proposed project and related improvements will be architecturally designed and landscaped to ensure visual compatibility with the surrounding environs.

4. Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
(B) Improve the technical basis for natural resource management;
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Response: Storm runoff from the project site will be accommodated onsite in surface depressions located in the landscaped areas. Additionally, appropriate soil erosion mitigation measures will be implemented during the construction of the project. In this context, the project is not anticipated to adversely affect coastal ecosystems.

5. Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

  (i) Use of presently designated locations is not feasible;

  (ii) Adverse environmental effects are minimized; and

  (iii) The development is important to the State's economy.

Response: The proposed Lahaina Kingdom Hall of Jehovah's Witnesses improvements will not affect the economic character of the area and is in keeping with land use patterns established by the West Maui Community Plan, which sets forth the desired locations and patterns of uses for the region.

6. *Coastal Hazards*

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
(D) Prevent coastal flooding from inland projects.

Response: Current flood insurance rate maps reflect the property's location within Zones A4 and C, flooding with depths to 7 feet and an area of minimal flooding, respectively. Accordingly, the proposed church use of the property shall comply with Chapter 19.62 Maui County Code, relating to Flood Hazard Areas, as applicable. Changes in drainage patterns are not anticipated with the construction of proposed improvements and no adverse drainage impacts to surrounding properties are anticipated.

7. *Managing Development*

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
(B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: Opportunity for agency and public review of the proposed action is provided through the County's Special Management Area permitting process and Chapter 343, Hawaii Revised Statutes. Development of the proposed project will be

conducted in accordance with applicable State and County requirements.

8. *Public Participation*

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

(A) Promote public involvement in coastal zone management processes;
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: The project is subject to Chapter 343, Hawaii Revised Statutes. In this regard, information regarding project parameters and impacts will be made available through notices in the Office of Environmental Quality Control's The Environmental Notice. As noted above, opportunity to review the project scope is also afforded through the County of Maui's SMA application process and will undergo public hearing and decision by the Maui Planning Commission.

9. *Beach Protection*

Objective: Protect beaches for public use and recreation.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural

shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: The proposed project site is not a shoreline fronting property. Accordingly, the improvements are not anticipated to affect coastal processes or beach use.

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed construction of a new Lahaina Kingdom Hall of Jehovah's Witnesses and related improvements will result in unavoidable demolition and construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures.

Potential effects include noise-generated impacts occurring from demolition of the existing cottage and church, site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust emissions discharged by construction equipment. These impacts are short term and construction activity will comply with Hawaii Administrative Rules, Chapter 11-46 relating to "Community Noise Control" and incorporate Best Management Practices in construction activities in accordance with Chapter 20.08 of the Maui County Code, respectively.

The proposed project is not anticipated to create any significant, long-term adverse environmental effects.

VI. ALTERNATIVES TO PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed project involving a new 3,500 square foot Kingdom Hall, onsite parking for 35 single stalls and 13 stacked stalls with a one-way entrance and exit on Puunoa Place is the preferred alternative. Expansion of the existing Kingdom Hall of Jehovah's Witnesses in this manner will accommodate the growth in the Lahaina congregation and alleviate problems of on-street parking congestion on Puunoa Place.

B. ALTERNATE SITE ALTERNATIVE

The Lahaina Congregation of Jehovah's Witnesses spent two (2) years looking for a suitable site in the Lahaina area. Four (4) alternate sites were considered during this period. However, due to site encumbrances, potential legal compliance action, and financial considerations, the alternate sites, were rejected in favor of the preferred alternative. More specifically, the following sites were investigated by the congregation.

- ***Malo Street Site:*** The congregation considered purchasing a one-acre parcel on Malo Street in the vicinity of Fleming Road. The property is located in a residential area but also includes two (2) churches in close proximity, one of which is the Church of Jesus Christ of Latter Day Saints. The congregation had an appraisal carried out on the property. The property sold before the congregation could finalize the offer.

- ***Industrial Parcel Site:*** The congregation investigated purchasing a parcel located in the commercial/industrial subdivision east of Honoapiilani Highway. This site was proposed by the appraiser who had worked with the congregation on the Malo Street property and knew of the congregation's plans for a new church. The congregation rejected this property due to the possibility of incompatible permitted uses locating next to the church, such as an auto body repair shop or a sports bar.

- ***Wainee Street Site:*** This property is located north of Shaw Street between Wainee Street and Honoapiilani Highway. It is part of a

larger parcel which would have required a subdivision approval. Upon their due diligence, the congregation also became aware of drainage issues which needed to be addressed. The congregation rejected this site due to the required subdivision of the property and drainage issues.

- ***Adjacent Lots:*** The congregation considered purchasing two (2) adjacent lots to the north of the existing Kingdom Hall. The two (2) lots were part of a five (5) lot subdivision and the owner wanted to sell the lots as a package. Purchase of the three (3) remaining lots had to be coordinated by the congregation. Other buyers of the three lots could not be found and this alternative was rejected.

C. *ALTERNATIVE SITE LAYOUT*

In consideration to reduce traffic on Puunoa Place, an alternative layout which provided direct site access off Front Street was developed for consideration. This alternative was assessed by the County of Maui, Department of Public Works and Environmental Management and was not considered appropriate due to limited sight distance requirements with the adjacent driveway to the north and with the Puunoa Place intersection. Accordingly, this layout did not provide a viable alternative for consideration.

D. *NO ACTION ALTERNATIVE*

The existing Kingdom Hall of Jehovah's Witnesses was opened in 1971. The lack of off-street parking at the existing Kingdom Hall site has raised concerns with regard to parking congestion along Puunoa Place. The "no action" alternative does not represent a responsible option in addressing the needs of the Lahaina Congregation of Jehovah's Witnesses and the surrounding neighborhood.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed project will result in the commitment of land and capital resources for the development of the Lahaina Kingdom Hall of Jehovah's Witnesses. While this commitment is considered irretrievable, the projected need for a new, more functional Kingdom Hall and additional parking to accommodate the Lahaina congregation is considered essential.

No other significant irreversible and irretrievable commitments of resources has been identified in connection with the proposed action.

VIII. FINDINGS AND CONCLUSIONS

The proposed project will involve the construction of the Lahaina Kingdom Hall of Jehovah's Witnesses and provision for 35 single-stall and 13 stacked-stall onsite parking. Related project activities will include the demolition of the existing cottage and Kingdom Hall and installation of landscaping, irrigation and utilities. The development of a new Kingdom Hall will accommodate the spiritual needs of present and future congregation members by replacing the existing Kingdom Hall which is in poor condition and providing more onsite parking.

Every phase of the proposed action, expected consequences, both primary and secondary, and the cumulative, as well as the short-term and the long-term effects of the action have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Hawaii Administrative Rules. Based on the analysis, the proposed project will not result in any significant impacts. Discussion of project conformance to the criteria is noted as follows:

1. ***No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resources Would Occur as a Result of the Proposed Project***

   The project site has already been altered through development of the existing Kingdom Hall and cottage. There are no known rare, endangered or threatened species of flora, fauna, or avifauna within the project site.

   From an archaeological standpoint, the ground surface has already been altered by previous activities. An archaeological inventory survey on Parcels 42 and 44 was carried out in November 2002. No culturally significant resources were encountered or are likely to be encountered by the proposed development. SHPD has confirmed the proposed project will have "no effect" on significant historic sites. However, if archaeological or cultural materials are found during demolition or construction, work in the vicinity will cease and the State Historic Preservation Division and the

Maui/Lanai Islands Burial Council will be notified to ensure compliance with Chapter 6E, HRS.

2. ***The Proposed Project Would Not Curtail the Range of Beneficial Uses of the Environment***

The project site encompasses an existing Kingdom Hall and cottage. The commitment of land resources would not curtail the range of beneficial uses of the environment.

3. ***The Proposed Action Does Not Conflict With the State's Long-Term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawaii Revised Statutes***

The State Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is in consonance with the following guidelines:

Environmental Policy:

Enhance the quality of life by:

Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian.

Guideline:

Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods which reflect the culture and mores of the community.

4. ***The Economic or Social Welfare of the Community or State Would Not Be Substantially Affected***

The proposed action provides a direct economic benefit during the construction phase of the project. The proposed project is in response to the spiritual needs of a segment of the West Maui Community. In the long term, the proposed action will have a beneficial effect upon the social welfare of the community.

5. ***The Proposed Action Does Not Affect Public Health***

No negative impacts to the public's health and welfare are anticipated as a result of the proposed project.

6. ***No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities, Are Anticipated***

The proposed project is not anticipated to have an effect upon the island's population base and should not place significant new demands on the island's public services.

7. ***No Substantial Degradation of Environmental Quality is Anticipated***

As the proposed project is implemented, appropriate environmental mitigation measures and Best Management Practices will be used to ensure that adverse environmental effects are mitigated. No substantial degradation of environmental quality resulting from the proposed action is anticipated.

8. ***The Proposed Action Does Not Involve a Commitment to Larger Actions Nor Would Cumulative Impacts Result in Considerable Effects Upon the Environment***

There are no larger actions which are linked to the proposed action. The proposed action is not anticipated to create any significant long-term environmental effects.

9. ***No Rare, Threatened or Endangered Species or Their Habitats Would Be Adversely Affected by the Proposed Project***

There are no known significant habitats or rare, endangered or threatened species of flora and fauna at the project site. The removal of existing flora and displacement of fauna or avifauna from the area due to construction activities is not considered a negative impact upon these environmental features.

10. ***Air Quality, Water Quality or Ambient Noise Levels Would Not Be Detrimentally Affected By The Proposed Project***

Appropriate environmental mitigation measures will be used during construction to ensure that adverse environmental effects on air quality and noise are minimized. The proposed action should have no adverse effect upon water quality.

In the long term, the proposed project is not anticipated to have a significant impact on air quality, water quality or noise parameters.

11. ***The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters, or Coastal Waters***

The subject property is not located within or would not affect environmentally sensitive areas. The subject property is located in an area of 100 year shallow flooding to depths of seven (7) feet. The proposed project shall comply with Chapter 19.62, Maui County Code relating to Flood Hazard Areas. However, no habitable structures are proposed within this area. The subject property is not subject to tsunami inundation and the underlying soils are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the subject property.

12. ***The Proposed Action Would Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies***

The proposed project will be a single-story building. The proposed site will be fully landscaped and will complement the scenic character of the Lahaina/Puunoa area.

13. ***The Proposed Action Would Not Require Substantial Energy Consumption***

The proposed action will involve the short-term commitment of fuel for equipment, vehicles and machinery during construction activities. However, this use is not anticipated to result in substantial consumption of energy resources. In the long term, the proposed action will create an additional demand of electricity. However, this demand is not substantive or excessive within the context of the region's overall energy consumption.

Based on the foregoing finding, it is anticipated that the proposed action will result in a finding of no significant impacts (FONSI).

IX. LIST OF PERMITS AND APPROVALS

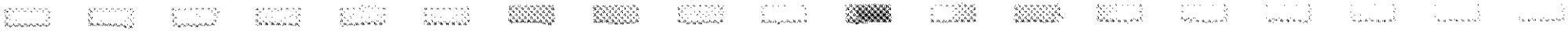
The following State and County permits and approvals are required for project implementation:

Land Use Approvals

1. County Special Use Permit by the Maui Planning Commission
2. Special Management Area Use Permit by the Maui Planning Commission

Construction Permits (as applicable)

1. Demolition Permit
2. Grading, Community Noise Permit
3. Building Permit



X. COMMUNITY CONSULTATION

The Lahaina Congregation of Jehovah's Witnesses met with their neighbors on two (2) occassions to inform them of their plans to build a new Kingdom Hall on the adjacent property. In November 2001, prior to completing the purchase of the adjacent property, representatives of the congregation went door to door to meet with the neighbors to present their plans for a new building. They showed the neighbors a plan of the two (2) properties, a site plan of the proposed development and a typical elevation plan of the building. See Appendix "D". At that time, no one objected to the proposal so the congregation completed the purchase of the property.

The congregation organized a public information meeting on December 18, 2002 at the Lahaina Civic Center. Approximately 65 owners and lessees of properties within a 500 foot radius of the subject property were notified of the public information meeting. The notification included a brief description of the project, a property location map and a preliminary site plan of the proposed development. Approximately 50 people attended the meeting. See Appendix "E". Although the majority of the people in attendance were congregation members, approximately 10 to 12 neighbors attended to receive information and to provide comments on the proposed project. The main comments were as follows.

a. The main issue raised by the neighbors was the street parking on Puunoa Place. Puunoa Place is a substandard street with no curbs, gutters or sidewalks. The crowded street parking was perceived as a safety issue for children, pedestrians and for emergency vehicles.

b. Another resident commented on the changing character of the neighborhood due to the increase in the number of short-term vacation rental accommodations. This has compounded the on-street parking problem.

c. It was mentioned that the adjacent property on Ala Moana Street, to the north of the subject property, was being developed with six (6) single-family residences each with an ohana unit. This development would add more on-street parking since the onsite parking in the subdivision was limited.

d. Another resident commented on the flooding problems at her property, which is makai of the subject property, and wanted to know how drainage will be handled by the proposed development.

e. Another resident asked how much has the congregation grown, since the Kingdom Hall was first established in Lahaina.

XI. AGENCIES CONSULTED IN THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were contacted during the preparation of the Draft Environmental Assessment. Agencies comments and any necessary responses to substantive comments are also included in this section.

1. Neal Fujiwara, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

2. William Lennan
Department of the Army
U.S. Army Engineer District, Hnl.
Attn: Operations Division
Bldg. T-1, Room 105
Fort Shafter, Hawaii 96858-5440

3. Robert P. Smith
Pacific Islands Manager
U. S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

4. David Blane, Director
State of Hawaii
Office of Planning
Department of Business, Economic Development and Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

5. Denis Lau, Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

6. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

7. Gilbert Coloma-Agaran, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

8. Don Hibbard, Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

9. Brian Minaai, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

10. Fred Cajigal, Acting Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732

11. Colin Kippen, Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

12. Clayton Ishikawa, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

13. Alice Lee, Director
County of Maui
Department of Housing and Human Concerns
200 S. High Street
Wailuku, Hawaii 96793

14. John Min, Director
County of Maui
Department of Planning
2200 Main Street, Suite 610
Wailuku, Hawaii 96793

15. Cultural Resources Commission
c/o Maui Planning Department
2200 Main Street, Suite 335
Wailuku, Hawaii 96793

16. Floyd Miyazono, Director
County of Maui
Department of Parks and Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

17. Tom Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

18. David Goode, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793

19. David Craddick , Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

20. **Maui Electric Company, Ltd.**
P. O. Box 398
Kahului, Hawaii 96732

21. Lahaina Town Action Committee
648 Wharf Street, Suite 102
Lahaina, Hawaii 96761

22. West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawaii 96761

23. Lahaina Restoration Foundation
695 Front Street, 2nd Floor
Lahaina, Hawaii 96761

APR 23 2002

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

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

April 18, 2002

LD-NAV
L-1256/1128/1270/1923
KINGDOMHALL.RCM3

Munekiyo and Hiraga, Inc.
Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT:

Review:	Pre-Consultation for the Preparation of a Draft Environmental Assessment
Applicant:	Lahaina Kingdom Hall of Jehovah's Witnesses
Project Name:	Lahaina Kingdom Hall of Jehovah's Witnesses
Proposed:	Consolidation and construct a single story building and related improvements
Consultant:	Munekiyo and Hiraga, Inc. (Mich Hirano)
Location:	75 & 01 Puunoa Place, Lahaina, Maui, Hawaii
TMK:	2nd/ 4-5-004: 042 and 044

This is a follow-up to our letters (Ref.: KINGDOMHALL.RCM and KINGDOMHALL.RCM2) to you dated March 1, 2002 and March 8, 2002, pertaining to the subject matter.

Attached herewith is a copy of the DLNR Historic Preservation Division comment. We had been informed that the DLNR Division of State Parks had recently submitted their comments directly to your office.

The Department of Land and Natural Resources has no other comment to offer at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0438.

Very truly yours,

Charlene E. Unoki

for DIERDRE S. MAMIYA
Administrator

C: Maui District Land Office

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

March 25, 2002

MEMORANDUM

LOG NO: 29495
DOC NO: 0203CD21

TO: Harry M. Yada, Acting Administrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Chapter 6E-42 Historic Preservation Review Pertaining to Pre-Consultation for the Preparation of a Draft Environmental Assessment for the Proposed Improvements to the Lahaina Kingdom Hall of the Jehovah's Witnesses
Lahaina Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-5-004: 042 & 044

Thank you for the opportunity to provide comments for pre-consultation purposes pursuant to the preparation of an Environmental Assessment for the proposed redevelopment of two parcels in Lahaina for the improvement of the Lahaina Kingdom Hall of Jehovah's Witnesses. We understand a Draft Environmental Assessment will be submitted to us for our review and comments. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject parcel.

Based on the submitted information, we understand the proposed undertaking will involve: the consolidation of the two parcels, the demolition of the existing single-family residence, the construction of a single-story Kingdom Hall – all to be conducted on parcel 44. Upon completion of the new building, the existing Kingdom Hall, located on parcel 42, will be demolished and a 33-stall parking lot, with an additional 18-stacked spaces, will be constructed. Related construction activities will include the installation of landscaping, irrigation, sewer, and water service improvements. Access to the proposed site will be from two driveways off Pu`unoa Place via Front Street.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject parcels. The general area seems likely to have once been the location of pre-Contact farming, perhaps with scattered houses. In addition, the proposed project area falls within the Historic Lahaina District (State Site 50-50-03-3001). This area comprises the port town f the 1800s, which frequently yields remnant habitation deposits. In addition, the proposed project area is located in close proximity to the historic Pu`u Piha Cemetery (State Site 50-50-03-226). Although the proposed project will be located on previously altered lands, we believe it is likely that historic sites may be present in the subsurface deposits, given the history of this area.

Given the above information, we recommend:

1. For parcel 44, an archaeological inventory survey (with subsurface testing) must be conducted prior to the commencement of any demolition activities. Then, depending on the findings, mitigation work may be needed (if significant historic sites are present and need further work). Also, when the existing structure is demolished, archaeological monitoring should occur to identify and record any historic sites that might be present, and provide any needed mitigation.

2. For parcel 42, we recommend archaeological monitoring to occur during demolition activities – to identify and document any historic sites that might be present and to provide any needed mitigation.

An acceptable monitoring plan will need to be submitted to this office for review prior to the commencement of any ground altering or demolishing of existing structures.

Please call Cathleen Dagher at 692-8023 if you have any questions.

CD:jen

APR 0 1 2002

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

March 25, 2002

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

LOG NO: 29494
DOC NO: 0203CD20

Dear Mr. Hirano,

SUBJECT: **Chapter 6E-42 Historic Preservation Review Pertaining to an Information Request Regarding the Proposed Improvements to the Lahaina Kingdom Hall of the Jehovah's Witnesses**
Lahaina Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-5-004: 042 & 044

Thank you for the opportunity to comment on the information request regarding the proposed redevelopment of town lots in Lahaina for the Lahaina Kingdom Hall of Jehovah's Witnesses. Based on the submitted document, we understand the submitted information request is part of the early consultation process pursuant to the preparation of an Environmental Assessment. We understand a Draft Environmental Assessment will be submitted to us for our review and comments. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject parcel.

Based on the submitted information request, we understand the proposed undertaking will involve: the consolidation of the two parcels, the demolition of the existing single-family residence, the construction of a single-story Kingdom Hall – all to be conducted on parcel 44. Upon completion of the new building, the existing Kingdom Hall, located on parcel 42, will be demolished and a 33-stall parking lot, with an additional 18-stacked spaces, will be constructed. Related construction activities will include the installation of landscaping, irrigation, sewer, and water service improvements. Access to the proposed site will be from two driveways off Pu`unoa Place via Front Street.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject parcels. The general area seems likely to have once been the location of pre-Contact farming, perhaps with scattered houses. In addition, the proposed project area falls within the Historic Lahaina District (State Site 50-50-03-3001). This area comprises the port town f the 1800s, which frequently yields remnant habitation deposits. In addition, the proposed project area is located in close proximity to the historic Pu`u Piha Cemetery (State Site 50-50-03-226). Although the proposed project will be located on previously altered lands, we believe it is likely that historic sites may be present in the subsurface deposits, given the history of this area.

Given the above information, we recommend:

1. For parcel 44, an archaeological inventory survey (with subsurface testing) must be conducted prior to the commencement of any demolition activities. Then, depending on the findings, mitigation work may be needed (if significant historic sites are present and need further work). Also, when the existing structure is demolished, archaeological monitoring should occur to identify and record any historic sites that might be present, and provide any needed mitigation.

2. For parcel 42, we recommend archaeological monitoring to occur during demolition activities – to identify and document any historic sites that might be present and to provide any needed mitigation.

An acceptable monitoring plan will need to be submitted to this office for review prior to the commencement of any ground altering or demolishing of existing structures.

Please call Cathleen Dagher at 692-8023 if you have any questions.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

CD:jen

c: Aki Sinoto, Aki Sinoto Consulting (fax: 941-9538)

MUNEKIYO & HIRAGA, INC.

April 21, 2003

P. Holly Mc Eldowney, Acting Administrator
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Ms. McEldowney:

Thank you for the letter dated March 25, 2002 in response to the request for early consultation on the subject project.

We acknowledge the comment regarding the need for an archaeological inventory survey with subsurface testing prior to the commencement of any demolition activities. An archaeological inventory survey was carried out on Parcels 42 and 44 in November 2002. We confirm that an archaeological inventory survey report will be submitted to the State Historic Preservation Division (SHPD) for review and approval prior to the commencement of demolition activities.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\shpd.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

MAR 2 0 2002

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7833

March 18, 2002

Ms. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street Ste 104
Wailuku HI 96793

RE Project Name: Lahaina Kingdom Hall of Jehovah's Witnesses
TMK : (2) 4-5-004 :042 & 044
ID : Environmental Assessment (Early Consultation)

Dear Ms. Hirano:

Thank you for the opportunity to provide comments in the preparation of the EA for the above-mentioned project. The Department of Water Supply provides the following information:

We understand that this project involves the demolition of existing single family residence and Kingdom Hall and the construction of a new Kingdom Hall and a 33-stall parking lot with an additional 18 stacked spaces. It would also include the installation of landscaping, irrigation, sewer, and water service improvements.

The project site is being served by an 8" waterline and two 5/8" water meters. Fire, domestic, and irrigation calculations will be reviewed during the building permit process. Domestic calculations will be required to verify meter capacity. Fire demand for structures is determined by using fire flow calculations performed by a certified engineer. The approved fire flow calculation method for use is the "Guide for Determination of Required Fire Flow"- Insurance Service Office, 1974.

The EA should include the expected potable and non-potable water usage. Based on system standard guidelines, this project would use approximately 3,200 gallons per day (gpd). Actual average consumption for this property is currently about 1,000 gpd.. Details of proposed water service improvements should likewise be included in the EA .

Brackish and/or reclaimed water sources should be used for all non-potable uses, including irrigation and dust control during construction, if such alternative sources are available. We recommend that the following water conservation measures be included in the EA and implemented in the project design:

Eliminate Single-Pass Cooling: Single-pass, water-cooled system should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air-conditioners, freezers, and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the

loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip".

Utilize Climate-adapted Plants: The project is located in the "Maui County Planting Plan" - Plant Zones 3 & 5. We encourage the applicant to utilize appropriate native and non invasive species and to avoid the use of potentially invasive plants. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. Attached is a list of appropriate plants for the zones as well as potentially invasive plants to avoid..

Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapotranspiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Limit Irrigated Turf: Limit irrigated turf by 25% or less of total landscaped area. Select turf species with low water use requirements. Low-water use shrubs and ground covers can be equally attractive and require substantially less water than turf.

The project overlies the Launipoko aquifer which has a sustainable yield of 8 MGD. The Department of Water Supply strives to protect the integrity of surface and groundwater resources by encouraging the applicant to adopt best management practices (BMPs) designed to minimize infiltration and runoff from all construction and vehicle operations. We have attached sample BMPs for principle operations for reference. Additional information can be obtained from the State Department of Health.

Should you have any questions, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,

David Craddick
Director

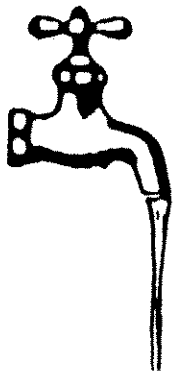
eam
c: engineering division
applicant, with attachments:
"The Costly Drip"
A Checklist for Water Conservation Ideas for Commercial Buildings
A Checklist for Water Conservation Ideas for Cooling
Maui County Planting Plan-Plant Zones 3 and 5 "Saving Water in the Yard-What and How to Plant in your Area"
Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters

"THE COSTLY DRIP"

Slowly Dripping
Spigot Wastes
15 Gallons a day.

1/32" Leak Wastes
25 Gallons a day.

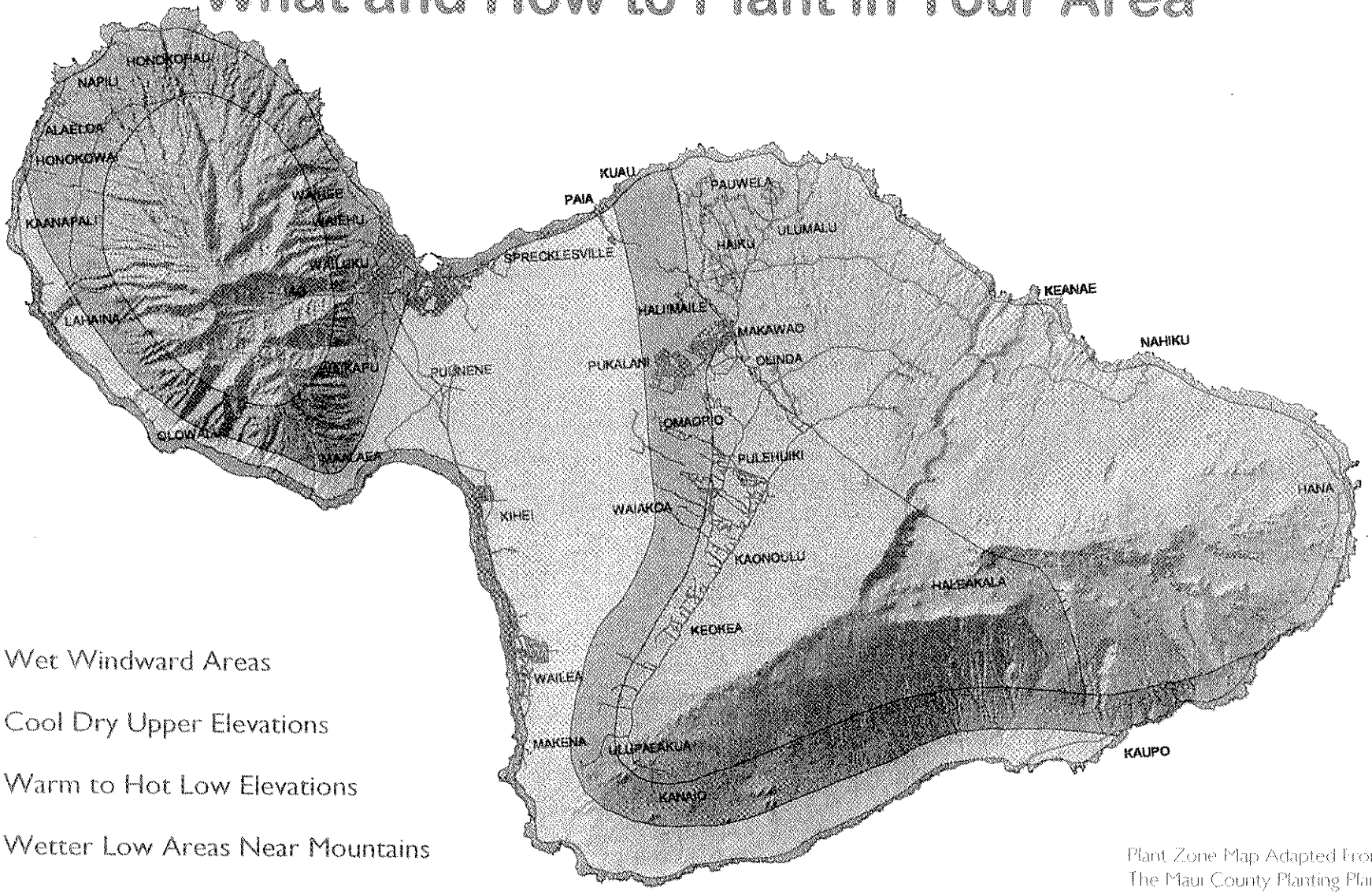
1/16" Stream Wastes
100 Gallons a Day.



1/8" Stream Wastes
400 Gallons a day.

Saving Water in The Yard

What and How to Plant in Your Area



1. Wet Windward Areas
2. Cool Dry Upper Elevations
3. Warm to Hot Low Elevations
4. Wetter Low Areas Near Mountains
5. Windward Coastal Salt Spray Zones

Plant Zone Map Adapted From
The Maui County Planting Plan

Tips From The Maui County Department of Water Supply

By Water All Things Find Life

A Checklist of Water Conservation Ideas For

Commercial Buildings

This checklist provides water conservation tips successfully implemented by industrial and commercial users. This list has been revised from the original copy first published and distributed by the Los Angeles Department of Water and Power.

☐ General suggestions

Increase employee awareness of water conservation.

Install signs encouraging water conservation in employee and customer restrooms.

When cleaning with water is necessary, use budgeted amounts.

Determine the quantity and purpose of water being used.

Read water meter weekly to monitor success of water conservation efforts.

Assign an employee to monitor water use and waste.

Seek employee suggestions on water conservation; put suggestion boxes in prominent areas.

Determine other methods of water conservation.

☐ Building maintenance

Check water supply for leaks.

Turn off any unnecessary flows.

Repair dripping faucets and showers and continuously running or leaking toilets.

Install faucet aerators where possible.

Reduce toilet water use by adjusting flush valves or installing dams and flapper mechanisms.

As appliances or fixtures wear out, replace them with water-saving models.

Shut off water supply to equipment rooms not in use.

Minimize the water used in cooling equipment in accordance with manufacturers recommendations. Shut off cooling units when not needed.

☐ Cafeteria area

Turn off continuous flow used to clean the drain trays.

Turn off dishwasher when not in use. Wash full loads only.

Use water from steam tables to wash down cooking area.

Do not use running water to melt ice or frozen foods.

Use water-conserving ice makers.

Exterior areas

Convert from water intensive lawns, trees, and shrubs to Xeriscape -- Landscape design incorporating plants that provide beautiful color and require less water.

Inventory outdoor water use for landscaped areas.

Water landscape only when needed. Two-to-three times a week is usually sufficient.

Water in the early morning or evening.

Make sure that water does not run into the streets or alleys.

Stop hosing down sidewalks, driveways, and parking lots.

Use time controllers on sprinkler systems.

Do not water on windy days.

Water in winter only during prolonged hot and dry periods. (During spring and fall, most plants need approximately half the amount they need during the summer.)

For more information, contact:

California Department of Water Resources
Water Conservation Office
1416 Ninth Street
P.O. Box 942836
Sacramento, California 94236-0001
Telephone: (916) 323-5580

A Checklist of Water Conservation Ideas For

COOLING

COOLING TOWERS

Understanding Your System

[ ] Prepare an inventory of each cooling tower you have, its cooling capacity, and the equipment or processes that it serves.

[ ] Meter and record the amount of make-up water added to each tower, and the amount of blow-down water discharged from each tower.

[ ] If you purchase chemicals for the treatment of the recirculating cooling tower water, have the chemical vendor explain the purpose and action of each chemical.

[ ] Have your chemical vendor provide a written report of each service call, and be sure that the vendor explains the meaning of each analysis performed, as well as the test results.

[ ] Tell your chemical vendor that water conservation is a priority at your facility. Ask your vendor to tell you about alternative programs that could reduce the amount of water that is bled-off from the towers.

Water Conservation Opportunities

[ ] If you are using conventional water treatment, work with your chemical vendor to increase your cycles of concentration, thereby decreasing the amount of water bled off.

[ ] Establish a performance-based specification, and have vendors make proposals for your facility's cooling tower water treatment. Require that vendors commit to a predetermined minimum level of water-efficiency. Have them provide figures showing projected annual water and chemical consumption and costs.

[ ] Consider incorporating sulfuric acid in your treatment program. This could enable you to reduce carbonate scale and achieve significantly higher cycles of concentration. If you use sulfuric acid, e sure to observe the appropriate safety precautions.

[ ] **Ozone is another alternative to consider for cooling water treatment in appropriate situations. Ozone can help remove dissolved minerals and act as a biocide. Again, observe the appropriate safety precautions.**

[ ] **If available, use reclaimed water as a source of cooling tower make-up water. Be sure to verify that the water is sufficiently clean for use in your system.**

[ ] **Re-use blow-down for lower-grade non-potable uses.**

EVAPORATIVE COOLERS

[ ] **Be sure your coolers have pumps to recirculate the water through them.**

[ ] **Check to make sure you are not bleeding off an excessive amount of water. For a typical small cooler, anything more than a few gallons per hour may be excessive.**

[ ] **Pipe the bleed-off from your coolers to help water a landscaped area.**

ONCE-THROUGH COOLING

§14.21 of The Maui County Code prohibits discharge of drainage or filter backwash from cooling systems into the public wastewater system, or private wastewater systems connected to the public wastewater system.

[ ] **Eliminate all uses of water for once-through or "single-pass" cooling, unless you reuse the water elsewhere for a beneficial purpose.**

[ ] **Many items of water-cooled equipment can be replaced by very similar air-cooled models.**

[ ] **Connect to a recirculating cooling water loop (such as the plant chilled water system) instead of using once-through cooling.**

This checklist provides water conservation tips successfully implemented by facilities which utilize cooling systems. This list has been revised from the original copy first published and distributed by the City of Phoenix Water Conservation and Resources Division. For more information, contact the Board of Water Supply's Water Resources Planning Division at 243-7835, or the Public Works Department's Wastewater Division at 243-7417.

Zone-specific Native and Polynesian plants for Maui County

Yellow

Zone 3

TYPE: **F** Fern **G** Grass **Gr** Ground Cover **Sh** Shrub **P** Palm **S** Sedge **Tr** Tree **V** Vine

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
F	Psilotum nudum	moa, moa kula	1'	1'	sea to 3,000'	Dry to Wet
G	Colubrina asiatica	'anapanapa	3'	10'	sea to 1,000'	Dry to Wet
G	Eragrostis monticola	kalamalo	1'	2'	sea to 3,000'	Dry to Medium
G	Eragrostis variabilis	'emo-loa	1'	2'	sea to 3,000'	Dry to Medium
G	Fimbristylis cymosa ssp. spathacea	mau'u'aki'aki fimbristylis	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Boerhavia repens	alena	0.5'	4'	sea to 1,000'	Dry to Medium
Gr	Chamaesyce celastroides var. laehiensis	'akoko	2'	3'	sea to 1,000'	Dry to Medium
Gr	Cressa truxillensis	cressa	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Heliotropium anomalum var. argenteum	hinahina ku kahakai	1'	2'	sea to 1,000'	Dry to Medium
Gr	Ipomoea tuboides	Hawaiian moon flower, 'uala	1'	10'	sea to 3,000'	Dry to Medium
Gr	Jacquemontia ovalifolia ssp. sandwicensis	pa'u o hi'iaka	0.5'	6'	sea to 1,000'	Dry to Medium
Gr	Lipochaeta integrifolia	nehe	1'	5'	sea to 1,00'	Dry to Medium
Gr	Peperomia leptostachya	'ala'ala-wai-nui	1'	1'	sea to 3,000'	Dry to Medium
Gr	Plumbago zeylanica	'ilie'e	1'			
Gr	Sesuvium portulacastrum	'akulikuli, sea-purslane	0.5'	2'	sea to 1,000'	Dry to Wet
Gr	Sida fallax	'ilima	0.5'	3'	sea to 1,000'	Dry to Medium
Gr	Tephrosia purpurea var. purpurea	'auhuhu	2'	2'	sea to 1,000'	Dry to Medium
Gr - Sh	Hibiscus calyphyllus	ma'o hau hele, Rock's hibiscus	3'	2'	sea to 3,000'	Dry to Medium
Gr - Sh	Lipochaeta rockii	nehe	2'	2'	sea to 3,000'	Dry to Medium
Gr - Sh	Lipochaeta succulenta	nehe	2'	5'	sea to 1,000'	Dry to Wet
Gr - Sh	Lycium sandwicense	'ohelo-kai, 'ae'ae	2'	2'	sea to 1,000'	Dry to Medium
P	Cocos nucifera	coconut, niu	100'	30'	sea to 1,000'	Dry to Wet
P	Pritchardia hillebrandii	lo'ulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	Mariscus javanicus	marsh cypress, 'ahu'awa	0.5'	0.5'	sea to 1,000'	Dry to Medium

Yellow

Zone 3

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	Argemone glauca var. decipiens	pua kala	3'	2'	sea to 3,000'	Dry to Medium
Sh	Bidens mauiensis	ko'oko'olau	1'	3'	sea to 1,000'	Dry to Medium
Sh	Bidens menziesii ssp. menziesii	ko'oko'olau	1'	3'		
Sh	Bidens micrantha ssp. micrantha	ko'oko'olau	1'	3'		
Sh	Chenopodium oahuense	'aheahea, 'aweoweo	6'		sea to higher	Dry to Medium
Sh	Dianella sandwicensis	'uki	2'	2'	1,000' to higher	Dry to Medium
Sh	Gossypium tomentosum	mao, Hawaiian cotton	5'	8'	sea to 1,000'	Dry to Medium
Sh	Hedyotis spp.	au, pilo	3'	2'	1,000' to 3,000'	Dry to Wet
Sh	Lipochaeta lavarum	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	Osteomeles anthyllidifolia	'ulei, eluehe	4'	6'	sea to 3,000'	Dry to Medium
Sh	Scaevola sericea	naupaka, naupaka-kahakai	6'	8'	sea to 1,000'	Dry to Medium
Sh	Senna gaudichaudii	kolomana	5'	5'	sea to 3,000'	Dry to Medium
Sh	Solanum nelsonii	'akia, beach solanum	3'	3'	sea to 1,00'	Dry to Medium
Sh	Styphelia tameiameiae	pukiawe	6'	6'	1,000' to higher	Dry to Medium
Sh	Vitex rotundifolia	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	Wikstroemia uva-ursi kauaiensis kauaiensis	'akia, Molokai osmanthus				
Sh - Tr	Broussonetia papyrifera	wauke, paper mulberry	8'	6'	sea to 1,000'	Dry to Medium
Sh - Tr	Myoporum sandwicense	naio, false sandalwood	10'	10'	sea to higher	Dry to Medium
Sh - Tr	Nototrichium sandwicense	kulu'i	8'	8'	sea to 3,000'	Dry to Medium
Sh-Tr	Dodonaea viscosa	'a'ali'i	6'	8'	sea to higher	Dry to Medium
Tr	Aleurites moluccana	candlenut, kukui	50'	50'	sea to 3,000'	Medium to Wet
Tr	Calophyllum inophyllum	kamani, alexandrian laurel	60'	40'	sea to 3,000'	Medium to Wet
Tr	Canthium odoratum	Alahe'e, 'ohe'e, walahe'e	12'	8'	sea to 3,000'	Dry to Medium
Tr	Cordia subcordata	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	Diospyros sandwicensis	lama	12'	15'	sea to 3,000'	Dry to Medium
Tr	Erythrina sandwicensis	wiliwili	20'	20'	sea to 1,000'	Dry
Tr	Metrosideros polymorpha var. macrophylla	ohi'a lehua	25'	25'	sea to 1,000'	Dry to Wet

Yellow

Zone 3

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Tr	Morinda citrifolia	indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet
Tr	Nesoluma polynesicum	keahi	15'	15'	sea to 3,00'	Dry
Tr	Nestegis sandwicensis	olopua	15'	15'	1,000' to 3,000'	Dry to Medium
Tr	Pandanus tectorius	hala, puhala (HALELIST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	Pleomele auwahiensis	halapepe	20'			
Tr	Rauvolfia sandwicensis	hao	20'	15'	sea to 3,000'	Dry to Medium
Tr	Reynoldsia sandwicensis	'ohe makai	20'	20'	1,000' to 3,000'	Dry
Tr	Santalum ellipticum	coastal sandalwood, 'ili-ahi	8'	8'	sea to 3,000'	Dry to Medium
Tr	Thespesia populnea	milo	30'	30'	sea to 3,000'	Dry to Wet

Purple

Zone 5

Zone-specific Native and Polynesian plants for Maui County

TYPE: F Fern G Grass Gr Ground Cover Sh Shrub P Palm S Sedge Tr Tree V Vine

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
G	Colubrina asiatica	'anapanapa	3'	10'	sea to 1,000'	Dry to Wet
G	Eragrostis variabilis	'emo-loa	1'	2'	sea to 3,000'	Dry to Medium
G	Fimbristylis cymosa ssp. spathacea	mau'u'aki'aki fimbristylis	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Boerhavia repens	alena	0.5'	4'	sea to 1,000'	Dry to Medium
Gr	Chamaesyce celastroides var. laehiensis	'akoko	2'	3'	sea to 1,000'	Dry to Medium
Gr	Cressa truxillensis	cressa	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Heliotropium anomalum var. argenteum	hinahina ku kahakai	1'	2'	sea to 1,000'	Dry to Medium
Gr	Jacquemontia ovalifolia ssp. sandwicensis	pa'u o hi'iaka	0.5'	6'	sea to 1,000'	Dry to Medium
Gr	Lipochaeta integrifolia	nehe	1'	5'	sea to 1,00'	Dry to Medium
Gr	Sesuvium portulacastrum	'akulikuli, sea-purslane	0.5'	2'	sea to 1,000'	Dry to Wet
Gr	Sida fallax	'ilima	0.5'	3'	sea to 1,000'	Dry to Medium
Gr	Tephrosia purpurea var. purpurea	'auhuhu	2'	2'	sea to 1,000'	Dry to Medium
Gr - Sh	Hibiscus calyphyllus	ma'o hau hele, Rock's hibiscus	3'	2'	sea to 3,000'	Dry to Medium
Gr - Sh	Lycium sandwicense	'ohelo-kai, 'ae'ae	2'	2'	sea to 1,000'	Dry to Medium
P	Cocos nucifera	coconut, niu	100'	30'	sea to 1,000'	Dry to Wet
P	Pritchardia hillebrandii	lo'ulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	Mariscus javanicus	marsh cypress, 'ahu'awa	0.5'	0.5'	sea to 1,000'	Dry to Medium
Sh	Argemone glauca var. decipiens	pua kala	3'	2'	sea to 3,000'	Dry to Medium
Sh	Artemisia australis	'ahinahina	2'	3'	sea to 3,000'	Dry to Medium
Sh	Bidens hillebrandiana ssp. hillebrandiana	ko'oko'olau	1'	2'	sea to 1,000'	Dry to Wet
Sh	Bidens mauiensis	ko'oko'olau	1'	3'	sea to 1,000'	Dry to Medium
Sh	Chenopodium oahuense	'aheahea, 'aweoweo	6'		sea to higher	Dry to Medium
Sh	Dianella sandwicensis	'uki	2'	2'	1,000' to higher	Dry to Medium
Sh	Gossypium tomentosum	mao, Hawaiian cotton	5'	8'	sea to 1,000'	Dry to Medium

Purple

Zone 5

Zone-specific Native and Polynesian plants for Maui County

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	Hedyotis spp.	au, pilo	3'	2'	1,000' to 3,000'	Dry to Wet
Sh	Lipochaeta lavarum	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	Osteomeles anthyllidifolia	'ulei, eluehe	4'	6'	sea to 3,000'	Dry to Medium
Sh	Scaevola sericea	naupaka, naupaka-kahakai	6'	8'	sea to 1,000'	Dry to Medium
Sh	Senna gaudichaudii	kolomana	5'	5'	sea to 3,000'	Dry to Medium
Sh	Solanum nelsonii	'akia, beach solanum	3'	3'	sea to 1,00'	Dry to Medium
Sh	Vitex rotundifolia	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	Wikstroemia uva-ursi kaualensis kaualensis	'akia, Molokai osmanthus				
Sh - Tr	Myoporum sandwicense	naio, false sandalwood	10'	10'	sea to higher	Dry to Medium
Sh-Tr	Dodonaea viscosa	'a'ali'i	6'	8'	sea to higher	Dry to Medium
Tr	Aleurites moluccana	candlenut, kukui	50'	50'	sea to 3,000'	Medium to Wet
Tr	Calophyllum inophyllum	kamani, alexandrian laurel	60'	40'	sea to 3,000'	Medium to Wet
Tr	Cordia subcordata	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	Hibiscus furcellatus	'aklohala, hau-hele	8'			
Tr	Morinda citrifolia	indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet
Tr	Pandanus tectorius	hala, puhala (HALELIST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	Thespesia populnea	milo	30'	30'	sea to 3,000'	Dry to Wet
V	Ipomoea pes-caprae	beach morning glory, pohuehue	1			

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
black wattle	Acacia mearnsii	Mimosaceae
blackberry	Rubus argutus	Rosaceae
blue gum	Eucalyptus globulus	Myrtaceae
bocconia	Bocconia frutescens	Papaveraceae
broad-leaved cordia	Cordia glabra	Boraginaceae
broomsedge, yellow bluestem	Andropogon virginicus	Poaceae
buffelgrass	Cenchrus ciliaris	Poaceae
butterfly bush, smoke bush	Buddleja madagascariensis	Buddlejaceae
cats claw, Mysore thorn, wait-a-bit	Caesalpinia decapetala	Caesalpiniaceae
common ironwood	Casuarina equisetifolia	Casuarinaceae
common velvet grass, Yorkshire fog	Holcus lanatus	Poaceae
fiddlewood	Citharexylum spinosum	Verbenaceae
fire tree, faya tree	Myrica faya	Myricaceae
glorybower	Clerodendrum laponicum	Verbenaceae
hairy cat's ear, gosmore	Hypochoeris radicata	Asteraceae
haole koa	Leucaena leucocephala	Fabaceae
ivy gourd, scarlet-fruited gourd	Coccinia grandis	Cucurbitaceae
juniper berry	Citharexylum caudatum	Verbenaceae
kahili flower	Grevillea banksii	Proteaceae
klu, popinac	Acacia farnesiana	Mimosaceae
logwood, bloodwood tree	Haematoxylon campechianum	Caesalpiniaceae
loquat	Eriobotrya japonica	Rosaceae
meadow ricegrass	Ehrharta stipoides	Poaceae
melaleuca	Melaleuca quinquenervia	Myrtaceae
miconia, velvet leaf	Miconia calvescens	Melastomataceae
narrow-leaved carpetgrass	Axonopus fissifolius	Poaceae
oleaster	Elaeagnus umbellata	Elaeagnaceae
oriental mangrove	Bruguiera gymnorrhiza	Rhizophoraceae
padang cassia	Cinnamomum burmanii	Lauraceae
palmgrass	Setaria palmifolia	Poaceae
pearl flower	Heterocentron subtriplinervium	Melastomataceae
quinine tree	Cinchona pubesens	Rubiaceae
satin leaf, caimitillo	Chrysophyllum oliviforme	Sapotaceae
silkwood, Queensland maple	Flindersia brayleyana	Rutaceae
silky oak, silver oak	Grevillea robusta	Proteaceae
strawberry guava	Psidium cattleianum	Myrtaceae
swamp oak, saltmarsh, longleaf ironwood	Casuarina glauca	Casuarinaceae
sweet vernalgrass	Anthoxanthum odoratum	Poaceae
tree of heaven	Ailanthus altissima	Simaroubaceae
trumpet tree, guarumo	Cecropia obtusifolia	Cecropiaceae
white ginger	Hedychium coronarium	Zingiberaceae
white moho	Heliocarpus popayanensis	Tiliaceae
yellow ginger	Hedychium flavescens	Zingiberaceae

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
	Jasminum fluminense	Oleaceae
	Arthrostema ciliatum	Melastomataceae
	Dissotis rotundifolia	Melastomataceae
	Erigeron karvinskianus	Asteraceae
	Eucalyptus robusta	Myrtaceae
	Hedychium gardnerianum	Zingiberaceae
	Juncus planifolius	Juncaceae
	Lophostemon confertus	Myrtaceae
	Medinilla cumingii	Melastomataceae
	Medinilla magnifica	Melastomataceae
	Medinilla venosa	Melastomataceae
	Melastoma candidum	Melastomataceae
	Melinis minutiflora	Poaceae
	Olea europaea	
	Oxyspora paniculata	Melastomataceae
	Panicum maximum	Poaceae
	Paspalum urvillei	Poaceae
	Passiflora edulis	Passifloraceae
	Phormium tenax	Agavaceae
	Pinus taeda	Pinaceae
	Prosopis pallida	Fabaceae
	Pterolepis glomerata	Melastomataceae
	Rhodomyrtus tomentosa	Myrtaceae
	Schefflera actinophylla	Araliaceae
	Syzygium jambos	Myrtaceae
Australian blackwood	Acacia melanoxylon	Mimosaceae
Australian tree fern	Cyathea cooperi	Cyatheaceae
Australian tree fern	Sphaeropteris cooperi	Cyatheaceae
Beggar's tick, Spanish needle	Bidens pilosa	Asteraceae
California grass	Brachiaria mutica	Poaceae
Chinese banyon, Maylayan banyon	Ficus mirocarpa	Moraceae
Chinese violet	Asystasia gangetica	Acanthaceae
Christmasberry, Brazilian pepper	Schinus terebinthifolius	Anacardiaceae
Formosan koa	Acacia confusa	Mimosaceae
German ivy	Senecio mikanioides	Asteraceae
Japanese honeysuckle	Lonicera japonica	Caprifoliaceae
Koster's curse	Clidemia hirta	Melastomataceae
Lantana	Lantana camara	Verbenaceae
Mauritius hemp	Furcraea foetida	Agavaceae
Mexican ash, tropical ash	Fraxinus uhdei	Oleaceae
Mexican tulip poppy	Hunnemannia fumariifolia	Papaveraceae
Mules foot, Madagascar tree fern	Angiopteris evecta	Marattiaceae
New Zealand laurel, karakaranut	Corynocarpus laevigatus	Corynocarpaceae
New Zealand tea	Leptospermum scoparium	Myrtaceae
Pampas grass	Cortaderia jubata	Poaceae
Panama rubber tree, Mexican rubber tree	Castilloa elastica	Moraceae
Shoebutton ardisia	Ardisia elliptica	Myrsinaceae
banana poka	Passiflora mollissima	Passifloraceae

Selection

As a general rule, it is best to select the largest and healthiest specimens. However, be sure to note that they are not pot-bound. Smaller, younger plants may result in a low rate of plant survival.[1] When selecting native species, consider the site they are to be planted in, and the space that you have to plant. For example: Mountain species such as koa and maile will not grow well in hot coastal areas exposed to strong ocean breezes. Lowland and coastal species such as wiliwili and Kou require abundant sunshine and porus soil. They will not grow well with frequent cloud cover, high rainfall and heavy soil.

Consider too, the size that the species will grow to be. It is not wise to plant trees that will grow too large.[2] Overplanting tends to be a big problem in the landscape due to the underestimation of a species' height, width or spread.

A large, dense canopied tree such as the kukui is a good shade tree for a lawn. However, it's canopy size and density of shade will limit what can be planted in the surrounding area. Shade cast by a koa and ohia lehua is relatively light and will not inhibit growth beneath it.

Keep seasons in mind when you are selecting your plants. Not all plants look good year round, some plants such as ilima will look scraggly after they have flowered and formed seeds. Avoid planting large areas with only one native plant. Mixing plants which naturally grow together will ensure the garden will look good all year round.[3] Looking at natural habitats helps to show how plants grow naturally in the landscape.

When planting an area with a mixed-ecosystem, keep in mind the size and ecological requirements of each plant. Start with the hardiest and most easily grown species, but allow space for fragile ones in subsequent plantings.

Acquiring natives

Plants in their wild habitat must be protected and maintained. It is best and easiest to get your plants from nurseries (see list), or friend's gardens. Obtain proper permits from landowners and make sure you follow a few common sense rules:

- collect sparingly from each plant or area.
- some plants are on the state or Federal Endangered Species list. Make sure you get permits (see app. A,B)

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[1] K. Nagata, P.6

[2] K. Nagata, P.9

[3] Nagata, P.9

Soil

Once you have selected your site and the plants you wish to establish there, you must look at the soil conditions on the site. Proper soil is necessary for the successful growth of most native plants, which preform poorly in hard pan, clay or adobe soils. If natives are to be planted in these types of soil, it would be wise to dig planting holes several times the size of the rootball and backfill with 50-75% compost.[4] A large planting hole ensures the development of a strong root system. The plant will have a headstart before the roots penetrate the surrounding poor soil.[5]

It is recommended that native plants not be planted in ground that is more dense than potting soil. If there is no alternative, dig a hole in a mound of soil mixed with volcanic cinder which encourages maximum root development. Fill the hole with water, if the water tends to puddle or drain too slowly, dig a deeper hole until the water does not puddle longer than 1 or 2 minutes.[6] Well-drained soil is one of the most important things when planting natives as you will see in the next section.

Irrigation

Most natives do very poorly in waterlogged conditions. Do not water if the soil is damp. Water when the soil is dry and the plants are wilting. Once established, a good soaking twice a week should suffice. Deep soaking encourages the development of stronger, and deeper root systems. This is better than frequent and shallow watering which encourage weaker, more shallow root systems.

The following is a watering schedule from Kenneth Nagata's Booklet, *How To Plant A Native Hawaiian Garden*:

WATER REQUIREMENT	WATERING FREQUENCY
Heavy	3x / week
Moderate	2x / week
Light	1x / week

Red clay soils hold more water for a longer period of time than sandy soils do. If your area is very sunny or near a beach, things will dry out faster. Even in the area of one garden, there are parts that will need more or less water. Soils can vary and amount of shade and wind differ. After plants are established (a month or two for most plants, up to a year for some trees), you can back off watering.

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[4] Nagata, p. 6

[5] Nagata, p. 8

[6] Nagata, p. 8

Automatic sprinkler systems are expensive to install and must be checked and adjusted regularly. Above-ground systems allow you to monitor how much water is being put out, but you lose a lot due to malfunctioning of sprinkler heads and wind. The most efficient way to save water and make sure your plants get enough water, is to hand-water. This way you are getting our precious water to the right places in the right amounts.[7]

Fertilizer

An all-purpose fertilizer 10-10-10 is adequate for most species. They should be applied at planting time, 3 months later, and 6 months thereafter. Use half the dosage recommended for ornamentals and pay special attention to native ferns which are sensitive to strong fertilizers. Use of organic composts and aged animal manures is suggested instead of chemical fertilizers. In addition, use of cinders for providing trace minerals is strongly recommended.[8]

Natives are plants which were here hundreds of years before the polynesians inhabited the Hawaiian Islands. They were brought here by birds, or survived the harsh ocean conditions to float here. They are well-adapted to Hawaii's varying soil and environmental conditions. This is why they make prime specimens for a xeriscape garden. However, natives will not thrive on their own, especially under harsh conditions. On the other hand, like any other plant, if you over-water and over-fertilize them, they will die. Follow the instructions given to you by the nursery you buy the plant from, or from this booklet. Better yet, buy a book (suggested readings can be found in the bibliography in the back of this pamphlet), read it, and learn more about native plants. I guarantee that you will be pleased with the results.

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[7] Bornhorst, p. 19-20

[8] Nagata, p. 6

Propagation

There are many ways to propagate and plant-out native Hawaiian species. One of the most thourough and helpful book is Heidi Bornhorst's book, *Growing Native Hawaiian Plants*. The easiest, and best way to obtain natives for the novice gardener is to get them from a reputable nursery (see appendix c). That way all you will have to do is know how to transplant (if necessary) and plant-out when you are ready. These are the two methods I have listed here.

Transplanting

1. Use pots that are one size bigger than the potted plant is in
2. Get your potting medium ready

Good potting medium is a ½, ½ mixture of peat moss and perlite. If the plant is from a dry or coastal area, add chunks of cinder or extra perlite. If it is a wet forest species, add more peat moss or compost. Be aware that peat moss is very acidic and certain plants react severely to acidity.

If the plant is to eventually be planted into the ground, make a mix of equal parts peat moss, perlite, and soil from the area in which the plant is to be planted. Slow-release fertilizer can be mixed into the potting medium.

3. Once pots, potting medium, fertilizer and water are ready, you can begin re-potting. Keep the plant stem at the same depth it was in the original pot. Avoid putting the plant in too large a pot, as the plant may not be able to soak up all the water in the soil and the roots may drown and rot.

Mix potting medium and add slow-release fertilizer at this time. Pre-wet the medium to keep dust down and lessen shock to the plant. Put medium in bottom of pot. Measure for the correct depth in the new pot. Make sure there is from ½ to 2 inches from the top of the pot so the plant can get adequate water. Try to stand the plant upright and center the stem in the middle of the pot.

Water the plant thoroughly after transplanting. A vitamin B-1 transplanting solution can help to lessen the transplant shock. Keep the plant in the same type of environment as it was before, sun or shade. If roots were broken, trimm off some of the leaves to compensate for the loss.[9]

Planting out

1. Plant most native Hawaiian plants in a sunny location in soil that is well-drained.
2. Make the planting hole twice as wide as the root ball or present pot, and just as deep.

If the soil is clay-like, and drains slowly, mix in some coarse red or bland cinder, coarse perlite or

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[9] Bornhorst, p.20-21

coarse compost. Place some slow-release fertilizer at the bottom of the hole.

3. Carefully remove the plant from the container and place it in the hole.

The top of the soil should be at the same level as the top of the hole, if it is too high or too low, adjust the soil level so that the plant is at the right depth.

4. Water thoroughly after you transplant.

Mulch

Most natives cannot compete with weeds, and therefore must be weeded around constantly in order to thrive. Mulch is a practical alternative, which discourages and prevents weeds from growing.

Hawaii's hot, humid climate leads to the breaking down of organic mulches. Thick organic mulches such as wood chips and leaves, may also be hiding places for pests.

Stone mulches are attractive, permanent and can help to improve soil quality. Red or black cinder, blue rock chips, smooth river rocks and coral chips are some natural choices.[10] Macadamia nut hulls are also easy to find and can make a nice mulch.[11]

Never pile up mulch right next to the stem or trunk of a plant, keep it a few inches away.

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[10] Bornhorst, p. 24

[11] Nagata, p. 7

PLACES TO SEE NATIVES ON:

The following places propagate native Hawaiian plants from seeds and/or cuttings. Their purpose is to protect and preserve these native plants. Please contact them before going to view the sites, they can provide valuable information and referral to other sources.

Maui:

1. Hoolawa Farms, P.O. Box 731, Haiku, Hawaii, 96708	572-4835
2. The Hawaiian Collection, 1127 Manu St., Kula, Hawaii, 96790	878-1701
3. Kula Botanical Gardens, RR 4, Box 228, Kula, Hawaii, 96790	878-1715
4. Maui Botanical Gardens, Kanaloa Avenue across from stadium	243-7337
5. Kula Forest Reserve, access road at the end of Waipouli Rd. Call the Maui District Forester	984-8100
6. Wailea Point, Private Condominium residence, 4000 Wailea Alanui, public access points at Four Seasons Resort or Polo Beach	875-9557
7. Kahanu Gardens, National Tropical Botanical Garden, Alau Pl, Hana, Hawaii, 96713	248-8912
9. Kahului Library Courtyard, 20 School Street, Kahului, Hawaii	873-3097

ZONES

The Maui County Planting Plan has compiled a system of 5 zones of plant growth for Maui County. The descriptions of zones and maps for these zones are as follows:

Zone 1:

Wet areas on the windward side of the island. More than 40 inches of rain per year. Higher than 3,000 feet.

Zone 2:

Cool, dry areas in higher elevations (above 1,000 feet). 20 to 40 inches of rain per year.

Zone 3:

Low, drier areas, warm to hot. Less than 20 inches of rain per year. Sea level to 1,000 feet.

Zone 4:

Lower elevations which are wetter due to proximity of mountains. 1,000 to 3,000 feet.

Zone 5:

Salt spray zones in coastal areas on the windward side.

These zones are to be used as a general guide to planting for Maui County. In addition to looking at the maps, read the descriptions of the zones and decide which zone best fits your area. Plants can be listed in more than one zone and can be planted in a variety of conditions. For best results, take notes on the rainfall, wind, sun and salt conditions of your site. Use the zones as a general guide for selection and read about the plants to decide which best fits your needs as far as care and or function.

PLACES TO BUY NATIVES ON:

Maui:

1. **Hoolawa Farms** — **575-5099**
   P O Box 731
   Haiku HI 96708
   The largest and best collection of natives in the state. They will deliver, but it's worth the drive to go and see!
   Will propagate upon request

2. **Kula True Value Nursery** — **878-2551**
   Many natives in stock
   Get most of their plants from Hoolawa Farms
   They take special requests

3. **Kihei Garden and Landscape** — **244-3804**

4. **Kihana Nursery, Kihei** — **879-1165**

5. **The Hawaiian Collection** — **878-1701**
   Specialize in Sandalwood propagation
   Will propagate special requests

United States
Environmental Protection
Agency

Office of Water
Washington, DC 20460

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EPA

Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters

Issued Under the Authority of
Section 6217(g) of the Coastal Zone Act
Reauthorization Amendments of 1990

III. CONSTRUCTION ACTIVITIES

A. Construction Site Erosion and Sediment Control Management Measure

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction, and

(2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

1. Applicability

This management measure is intended to be applied by States to all construction activities on sites less than 5 acres in areas that do not have an NPDES permit[3] in order to control erosion and sediment loss from those sites. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformity with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The goal of this management measure is to reduce the sediment loadings from construction sites in coastal areas that enter surface waterbodies. This measure requires that coastal States establish new or enhance existing State erosion and sediment control (ESC) programs and/or require ESC programs at the local level. It is intended to be part of a comprehensive land use or watershed management program, as previously detailed in the Watershed and Site Development Management Measures. It is expected that State and local programs will establish criteria determined by local conditions (e.g., soil types, climate, meteorology) that reduce erosion and sediment transport from construction sites.

Runoff from construction sites is by far the largest source of sediment in urban areas under development (York County Soil and Water Conservation District, 1990). Soil erosion removes over 90 percent of sediment by tonnage in urbanizing areas where most construction activities occur (Canning, 1988). Table 4-14 illustrates some of the

[3] On May 27, 1992, the United States Court of Appeals for the Ninth Circuit invalidated EPA's exemption of construction sites smaller than 5 acres from the storm water permit program in *Natural Resources Defense Council* v. *EPA*, 965 F.2d 759 (9th Cir. 1992). EPA is conducting further rulemaking proceedings on this issue and will not require permit applications for construction activities under 5 acres until further rulemaking has been completed.

measured sediment loading rates associated with construction activities found across the United States. As seen in Table 4-14, erosion rates from natural areas such as undisturbed forested lands are typically less than one ton/acre/year, while erosion from construction sites ranges from 7.2 to over 1,000 tons/acre/year.

Table 4-14. Erosion and Sediment Problems Associated With Construction

Location	Problem	Reference
United States	Sediment loading rates vary from 36.5 to 1,000 ton/ac/yr. These are 5 to 500 times greater than those from undeveloped land. Approximately 600 million tons of soil erodes from developed sites each year. Construction site sediment in runoff can be 10 to 20 times greater than that from agricultural lands.	York County Soil and Water Conservation District, 1990
Franklin County, FL	Sediment yield (ton/ac/yr): forest < 0.5 rangeland < 0.5 tilled 1.4 construction site 30 established urban < 0.5	Franklin County, FL
Wisconsin	Erosion rates range from 30 to 200 ton/ac/yr (10 to 20 times those of cropland).	Wisconsin Legislative Council, 1991
Washington, DC	Erosion rates range from 35 to 45 ton/ac/yr (10 to 100 times greater than agriculture and stabilized urban land uses).	MWCOG, 1987
Anacostia River Basin, VA, MD, DC	Sediment yields from portions of the Anacostia Basin have been estimated at 75,000 to 132,000 ton/yr.	U.S. Army Corps of Engineers, 1990
Washington	Erosion rates range from 50 to 500 ton/ac/yr. Natural erosion rates from forests or well-sodded prairies are 0.01 to 1.0 ton/ac/yr.	Washington Department of Ecology, 1989
Anacostia River Basin, VA, MD, DC	Erosion rates range from 7.2 to 100.8 ton/ac/yr.	USGS, 1978
Alabama North Carolina Louisiana Oklahoma Georgia Texas Tennessee Pennsylvania Ohio Kentucky	1.4 million tons eroded per year. 6.7 million tons eroded per year. 5.1 million tons eroded per year. 4.2 million tons eroded per year. 3.8 million tons eroded per year. 3.5 million tons eroded per year. 3.3 million tons eroded per year. 3.1 million tons eroded per year. 3.0 million tons eroded per year. 3.0 million tons eroded per year.	Woodward-Clyde, 1991

Eroded sediment from construction sites creates many problems in coastal areas including adverse impacts on water quality, critical habitats, submerged aquatic vegetation (SAV) beds, recreational activities, and navigation (APWA, 1991). For example, the Miami River in Florida has been severely affected by pollution associated with upland erosion. This watershed has undergone extensive urbanization, which has included the construction of many commercial and residential buildings over the past 50 years. Sediment deposited in the Miami River channel contributes to the severe water quality and navigation problems of this once-thriving waterway, as well as Biscayne Bay (SFWMD, 1988).

ESC plans are important for controlling the adverse impacts of construction and land development and have been required by many State and local governments, as shown in Table 4-13 (in the Site Development section of this chapter). An ESC plan is a document that explains and illustrates the measures to be taken to control erosion and sediment problems on construction sites (Connecticut Council on Soil and Water Conservation, 1988). It is intended that existing State and local erosion and sediment control plans may be used to fulfill the requirements of this management measure. Where existing ESC plans do not meet the management measure criteria, inadequate plans may be enhanced to meet the management measure guidelines.

Typically, an ESC plan is part of a larger site plan and includes the following elements:

- Description of predominant soil types;
- Details of site grading including existing and proposed contours;
- Design details and locations for structural controls;
- Provisions to preserve topsoil and limit disturbance;
- Details of temporary and permanent stabilization measures; and
- Description of the sequence of construction.

ESC plans ensure that provisions for control measures are incorporated into the site planning stage of development and provide for the reduction of erosion and sediment problems and accountability if a problem occurs (York County Soil and Water Conservation District, 1990). An effective plan for urban runoff management on construction sites will control erosion, retain sediments on site, to the extent practicable, and reduce the adverse effects of runoff. Climate, topography, soils, drainage patterns, and vegetation will affect how erosion and sediment should be controlled on a site (Washington State Department of Ecology, 1989). An effective ESC plan includes both structural and nonstructural controls. Nonstructural controls address erosion control by decreasing erosion potential, whereas structural controls are both preventive and mitigative because they control both erosion and sediment movement.

Typical nonstructural erosion controls include (APWA, 1991; York County Soil and Water Conservation District, 1990):

- Planning and designing the development within the natural constraints of the site;
- Minimizing the area of bare soil exposed at one time (phased grading);
- Providing for stream crossing areas for natural and man-made areas; and
- Stabilizing cut-and-fill slopes caused by construction activities.

Structural controls include:

- Perimeter controls;
- Mulching and seeding exposed areas;
- Sediment basins and traps; and
- Filter fabric, or silt fences.

Some erosion and soil loss are unavoidable during land-disturbing activities. While proper siting and design will help prevent areas prone to erosion from being developed, construction activities will invariably produce conditions where erosion may occur. To reduce the adverse impacts associated with construction, the construction management measure suggests a system of nonstructural and structural erosion and sediment controls for incorporation into an

ESC plan. Erosion controls have distinct advantages over sediment controls. Erosion controls reduce the amount of sediment transported off-site, thereby reducing the need for sediment controls. When erosion controls are used in conjunction with sediment controls, the size of the sediment control structures and associated maintenance may be reduced, decreasing the overall treatment costs (SWRPC, 1991).

3. Management Measure Selection

This management measure was selected to minimize sediment being transported outside the perimeter of a construction site through two broad performance goals: (1) **reduce** erosion and (2) **retain** sediment onsite, to the extent practicable. These performance goals were chosen to allow States and local governments flexibility in specifying practices appropriate for local conditions.

While several commentors responding to the draft (May 1991) guidance expressed the need to define "more measurable, enforceable ways" to control sediment loadings, other commentors stressed the need to draft management measures that do not conflict with existing State programs and allow States and local governments to determine appropriate practices and design standards for their communities. These management measures were selected because virtually all coastal States control construction activities to prevent erosion and sediment loss.

The measures were specifically written for the following reasons:

(1) Predevelopment loadings may vary greatly, and some sediment loss is usually inevitable;

(2) Current practice is built on the use of systems of practices selected based on site-specific conditions; and

(3) The combined effectiveness of erosion and sediment controls in systems is not easily quantified.

4. Erosion Control Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Erosion controls are used to reduce the amount of sediment that is detached during construction and to prevent sediment from entering runoff. Erosion control is based on two main concepts: (1) disturb the smallest area of land possible for the shortest period of time, and (2) stabilize disturbed soils to prevent erosion from occurring.

a. Schedule projects so clearing and grading are done during the time of minimum erosion potential.

Often a project can be scheduled during the time of year that the erosion potential of the site is relatively low. In many parts of the country, there is a certain period of the year when erosion potential is relatively low and construction scheduling could be very effective. For example, in the Pacific region if construction can be completed during the 6-month dry season (May 1 - October 31), temporary erosion and sediment controls may not be needed. In addition, in some parts of the country erosion potential is very high during certain parts of the year such as the spring thaw in northern areas. During this time of year, melting snowfall generates a constant runoff that can erode soil. In addition, construction vehicles can easily turn the soft, wet ground into mud, which is more easily washed offsite. Therefore, in the north, limitations should be placed on grading during the spring thaw (Goldman et al., 1986).

b. Stage construction.

Avoid areawide clearance of construction sites. Plan and stage land disturbance activities so that only the area currently under construction is exposed. As soon as the grading and construction in an area are complete, the area should be stabilized.

By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins. Physical markers, such as tape, signs, or barriers, indicating the limits of land disturbance, can ensure that equipment operators know the proposed limits of clearing. The area of the watershed that is exposed to construction is important for determining the net amount of erosion. Reducing the extent of the disturbed area will ultimately reduce sediment loads to surface waters. Existing or newly planted vegetation that has been planted to stabilize disturbed areas should be protected by routing construction traffic around and protecting natural vegetation with fencing, tree armoring, retaining walls, or tree wells.

c. Clear only areas essential for construction.

Often areas of a construction site are unnecessarily cleared. Only those areas essential for completing construction activities should be cleared, and other areas should remain undisturbed. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that only the required land area is cleared. Avoid disturbing vegetation on steep slopes or other critical areas.

d. Locate potential nonpoint pollutant sources away from steep slopes, waterbodies, and critical areas.

Material stockpiles, borrow areas, access roads, and other land-disturbing activities can often be located away from critical areas such as steep slopes, highly erodible soils, and areas that drain directly into sensitive waterbodies.

e. Route construction traffic to avoid existing or newly planted vegetation.

Where possible, construction traffic should travel over areas that must be disturbed for other construction activity. This practice will reduce the area that is cleared and susceptible to erosion.

f. Protect natural vegetation with fencing, tree armoring, and retaining walls or tree wells.

Tree armoring protects tree trunks from being damaged by construction equipment. Fencing can also protect tree trunks, but should be placed at the tree's drip line so that construction equipment is kept away from the tree. The tree drip line is the minimum area around a tree in which the tree's root system should not be disturbed by cut, fill, or soil compaction caused by heavy equipment. When cutting or filling must be done near a tree, a retaining wall or tree well should be used to minimize the cutting of the tree's roots or the quantity of fill placed over the tree's roots.

g. Stockpile topsoil and reapply to revegetate site.

Because of the high organic content of topsoil, it cannot be used as fill material or under pavement. After a site is cleared, the topsoil is typically removed. Since topsoil is essential to establish new vegetation, it should be stockpiled and then reapplied to the site for revegetation, if appropriate. Although topsoil salvaged from the existing site can often be used, it must meet certain standards and topsoil may need to be imported onto the site if the existing topsoil is not adequate for establishing new vegetation.

h. Cover or stabilize topsoil stockpiles.

Unprotected stockpiles are very prone to erosion and therefore stockpiles must be protected. Small stockpiles can be covered with a tarp to prevent erosion. Large stockpiles should be stabilized by erosion blankets, seeding, and/or mulching.

i. Use wind erosion controls.

Wind erosion controls limit the movement of dust from disturbed soil surfaces and include many different practices. Wind barriers block air currents and are effective in controlling soil blowing. Many different materials can be used as wind barriers, including solid board fence, snow fences, and bales of hay. Sprinkling moistens the soil surface with water and must be repeated as needed to be effective for preventing wind erosion (Delaware DNREC, 1989); however, applications must be monitored to prevent excessive runoff and erosion.

j. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drain.

Earth dikes, perimeter dikes or swales, or diversions can be used to intercept and convey runoff above disturbed areas. An earth dike is a temporary berm or ridge of compacted soil that channels water to a desired location. A perimeter dike/swale or diversion is a swale with a supporting ridge on the lower side that is constructed from the soil excavated from the adjoining swale (Delaware DNREC, 1989). These practices should be used to intercept flow from denuded areas or newly seeded areas to keep the disturbed areas from being eroded from the uphill runoff. The structures should be stabilized within 14 days of installation. A pipe slope drain, also known as a pipe drop structure, is a temporary pipe placed from the top of a slope to the bottom of the slope to convey concentrated runoff down the slope without causing erosion (Delaware DNREC, 1989).

k. On long or steep, disturbed, or man-made slopes, construct benches, terraces, or ditches at regular intervals to intercept runoff.

Benches, terraces, or ditches break up a slope by providing areas of low slope in the reverse direction. This keeps water from proceeding down the slope at increasing volume and velocity. Instead, the flow is directed to a suitable outlet, such as a sediment basin or trap. The frequency of benches, terraces, or ditches will depend on the erodibility of the soils, steepness and length of the slope, and rock outcrops. This practice should be used if there is a potential for erosion along the slope.

l. Use retaining walls.

Often retaining walls can be used to decrease the steepness of a slope. If the steepness of a slope is reduced, the runoff velocity is decreased and, therefore, the erosion potential is decreased.

m. Provide linings for urban runoff conveyance channels.

Often construction increases the velocity and volume of runoff, which causes erosion in newly constructed or existing urban runoff conveyance channels. If the runoff during or after construction will cause erosion in a channel, the channel should be lined or flow control BMPs installed. The first choice of lining should be grass or sod since this reduces runoff velocities and provides water quality benefits through filtration and infiltration. If the velocity in the channel would erode the grass or sod, then riprap, concrete, or gabions can be used.

n. Use check dams.

Check dams are small, temporary dams constructed across a swale or channel. They can be constructed using gravel or straw bales. They are used to reduce the velocity of concentrated flow and, therefore, to reduce the erosion in

a swale or channel. Check dams should be used when a swale or channel will be used for a short time and therefore it is not feasible or practical to line the channel or implement flow control BMPs (Delaware DNREC, 1989).

o. *Seed and fertilize.*

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once a dense vegetative cover has been established. However, often seeding and fertilizing do not produce as thick a vegetative cover as do seed and mulch or netting. Newly established vegetation does not have as extensive a root system as existing vegetation and therefore is more prone to erosion, especially on steep slopes. Care should be taken when fertilizing to avoid untimely or excessive application. Since the practice of seeding and fertilizing does not provide any protection during the time of vegetative establishment, it should be used only on favorable soils in very flat areas and not in sensitive areas.

p. *Use seeding and mulch/mats.*

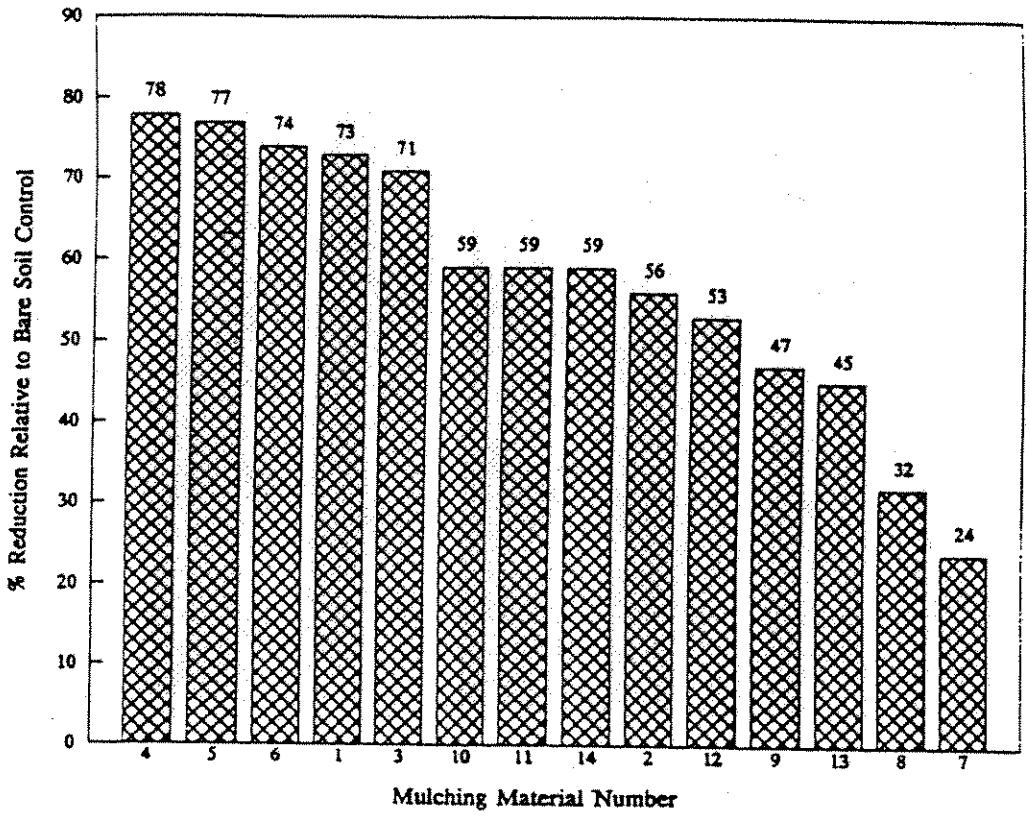
Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once the vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation becomes established.

The management of land by using ground cover reduces erosion by reducing the flow rate of runoff and the raindrop impact. Bare soils should be seeded or otherwise stabilized within 15 calendar days after final grading. Denuded areas that are inactive and will be exposed to rain for 30 days or more should also be temporarily stabilized, usually by planting seeds and establishing vegetation during favorable seasons in areas where vegetation can be established. In very flat, non-sensitive areas with favorable soils, stabilization may involve simply seeding and fertilizing. Mulching and/or sodding may be necessary as slopes become moderate to steep, as soils become more erosive, and as areas become more sensitive.

q. *Use mulch/mats.*

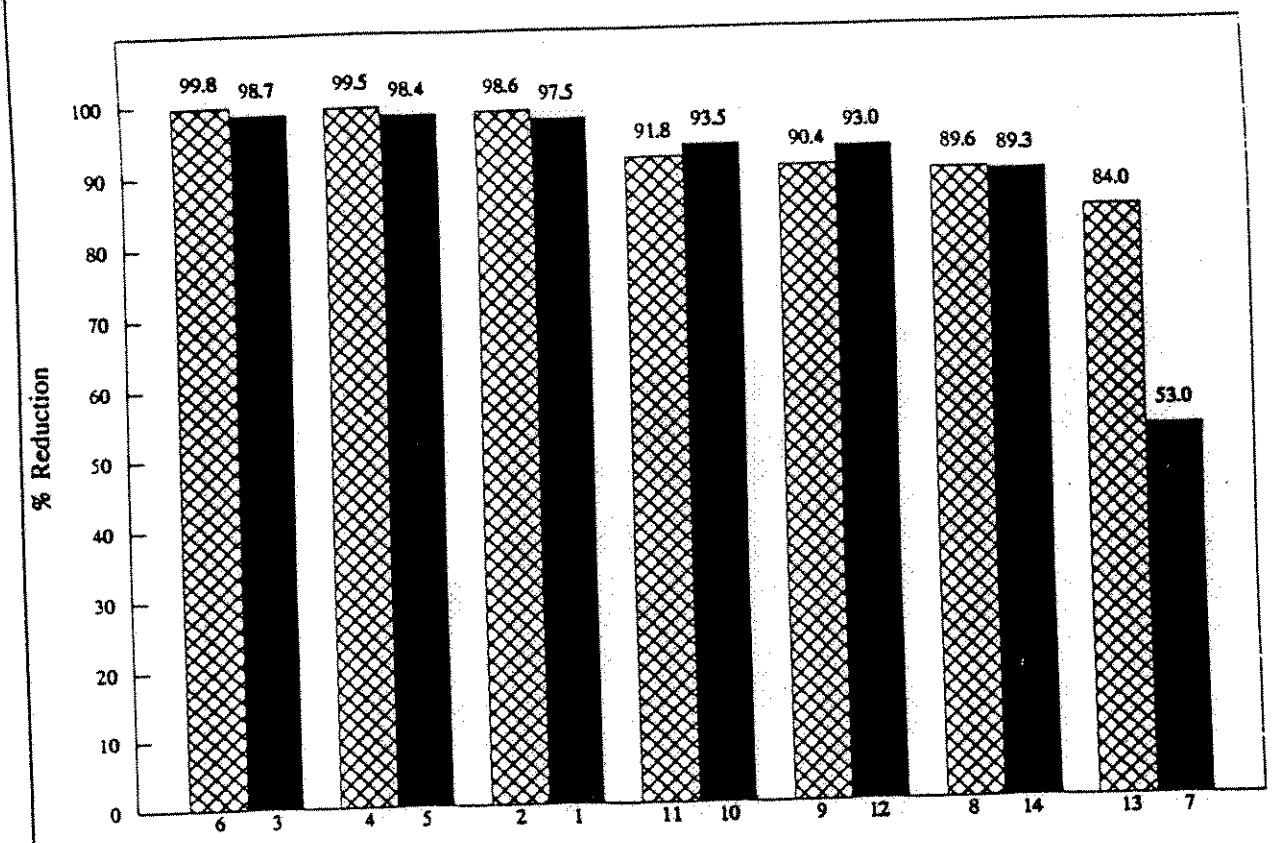
Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulchs/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone should be used only for temporary protection of the soil surface or when permanent seeding is not feasible. The useful life of mulch varies with the material used and the amount of precipitation, but is approximately 2 to 6 months. Figure 4-5 shows water velocity reductions that could be expected using various mulching techniques. Similarly, Figure 4-6 shows reductions in soil loss achievable using various mulching techniques. During times of year when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are not highly erodible. On steep slopes or highly erodible soils, multiple mulching treatments should be used. On a high-elevation or desert site where grasses cannot survive the harsh environment, native shrubs may be planted. Interlocking ceramic materials, filter fabric, and netting are available for this purpose. Before stabilizing an area, it is important to have installed all sediment controls and diverted runoff away from the area to be planted. Runoff may be diverted away from denuded areas or newly planted areas using dikes, swales, or pipe slope drains to intercept runoff and convey it to a permanent channel or storm drain. Reserved topsoil may be used to revegetate a site if the stockpile has been covered and stabilized.

Consideration should be given to maintenance when designing mulching and matting schemes. Plastic nets are often used to cover the mulch or mats; however, they can foul lawn mower blades if the area requires mowing.



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw – 2,242 kg/ha
14	Uncrimped wheat straw – 4,484 kg/ha

Figure 4-5. Water velocity reductions for different mulch treatments (adapted from Harding, 1990).



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw – 2,242 kg/ha
14	Uncrimped wheat straw – 4,484 kg/ha

Figure 4-6. Actual soil loss reductions for different mulch treatments (adapted from Harding, 1990).

r. Use sodding.

Sodding permanently stabilizes an area. Sodding provides immediate stabilization of an area and should be used in critical areas or where establishment of permanent vegetation by seeding and mulching would be difficult. Sodding is also a preferred option when there is a high erosion potential during the period of vegetative establishment from seeding.

s. Use wildflower cover.

Because of the hardy drought-resistant nature of wildflowers, they may be more beneficial as an erosion control practice than turf grass. While not as dense as turfgrass, wildflower thatches and associated grasses are expected to be as effective in erosion control and contaminant absorption. Because thatches of wildflowers do not need fertilizers, pesticides, or herbicides, and watering is minimal, implementation of this practice may result in a cost savings (Brash et al., undated). In 1987, Howard County, Maryland, spent $690.00 per acre to maintain turfgrass areas, compared to only $31.00 per acre for wildflower meadows (Wilson, 1990).

A wildflower stand requires several years to become established; maintenance requirements are minimal once the area is established (Brash et al., undated).

5. Sediment Control Practices[4]

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Sediment controls capture sediment that is transported in runoff. Filtration and detention (gravitational settling) are the main processes used to remove sediment from urban runoff.

a. Sediment Basins

Sediment basins, also known as silt basins, are engineered impoundment structures that allow sediment to settle out of the urban runoff. They are installed prior to full-scale grading and remain in place until the disturbed portions of the drainage area are fully stabilized. They are generally located at the low point of sites, away from construction traffic, where they will be able to trap sediment-laden runoff.

Sediment basins are typically used for drainage areas between 5 and 100 acres. They can be classified as either temporary or permanent structures, depending on the length of service of the structure. If they are designed to function for less than 36 months, they are classified as "temporary"; otherwise, they are considered permanent structures. Temporary sediment basins can also be converted into permanent urban runoff management ponds. When sediment basins are designed as permanent structures, they must meet all standards for wet ponds.

b. Sediment Trap

Sediment traps are small impoundments that allow sediment to settle out of runoff water. Sediment traps are typically installed in a drainageway or other point of discharge from a disturbed area. Temporary diversions can be

[4]Adapted from Goldman (1986).

used to direct runoff to the sediment trap. Sediment traps should not be used for drainage areas greater than 5 acres and typically have a useful life of approximately 18 to 24 months.

c. Filter Fabric Fence

Filter fabric fence is available from many manufacturers and in several mesh sizes. Sediment is filtered out as urban runoff flows through the fabric. Such fences should be used only where there is sheet flow (i.e., no concentrated flow), and the maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Filter fabric fences have a useful life of approximately 6 to 12 months.

d. Straw Bale Barrier

A straw bale barrier is a row of anchored straw bales that detain and filter urban runoff. Straw bales are less effective than filter fabric, which can usually be used in place of straw bales. However, straw bales have been effectively used as temporary check dams in channels. As with filter fabric fences, straw bale barriers should be used only where there is sheet flow. The maximum drainage area to the barrier should be 0.25 acre or less per 100 feet of barrier. The useful life of straw bales is approximately 3 months.

e. Inlet Protection

Inlet protection consists of a barrier placed around a storm drain drop inlet, which traps sediment before it enters the storm sewer system. Filter fabric, straw bales, gravel, or sand bags are often used for inlet protection.

f. Construction Entrance

A construction entrance is a pad of gravel over filter cloth located where traffic leaves a construction site. As vehicles drive over the gravel, mud, and sediment are collected from the vehicles' wheels and offsite transport of sediment is reduced.

g. Vegetated Filter Strips

Vegetated filter strips are low-gradient vegetated areas that filter overland sheet flow. Runoff must be evenly distributed across the filter strip. Channelized flows decrease the effectiveness of filter strips. Level spreading devices are often used to distribute the runoff evenly across the strip (Dillaha et al., 1989).

Vegetated filter strips should have relatively low slopes and adequate length and should be planted with erosion-resistant plant species. The main factors that influence the removal efficiency are the vegetation type, soil infiltration rate, and flow depth and travel time. These factors are dependent on the contributing drainage area, slope of strip, degree and type of vegetative cover, and strip length. Maintenance requirements for vegetated filter strips include sediment removal and inspections to ensure that dense, vigorous vegetation is established and concentrated flows do not occur. Maintenance of these structures is discussed in Section II.A of this chapter.

6. Effectiveness and Cost Information

a. Erosion Control Practices

The effectiveness of erosion control practices can vary based on land slope, the size of the disturbed area, rainfall frequency and intensity, wind conditions, soil type, use of heavy machinery, length of time soils are exposed and unprotected, and other factors. In general, a system of erosion and sediment control practices can more effectively reduce offsite sediment transport than can a single system. Numerous nonstructural measures such as protecting natural or newly planted vegetation, minimizing the disturbance of vegetation on steep slopes and other highly

erodible areas, maximizing the distance eroded material must travel before reaching the drainage system, and locating roads away from sensitive areas may be used to reduce erosion.

Table 4-15 contains the available cost and effectiveness data for some of the erosion controls listed above. Information on the effectiveness of individual nonstructural controls was not available. All reported effectiveness data assume that controls are properly designed, constructed, and maintained. Costs have been broken down into annual capital costs, annual maintenance costs, and total annual costs (including annualization of the capital costs).

b. Sediment Control Practices

Regular inspection and maintenance are needed for most erosion control practices to remain effective. The effectiveness of sediment controls will depend on the size of the construction site and the nature of the runoff flows. Sediment basins are most appropriate for drainage areas of 5 acres or greater. In smaller areas with concentrated flows, silt traps may suffice. Where concentrated flow leaves the site and the drainage area is less than 0.5 ac/100 ft of flow, filter fabric fences may be effective. In areas where sheet flow leaves the site and the drainage area is greater than 0.5 acre/100 ft of flow, perimeter dikes may be used to divert the flow to a sediment trap or sediment basin. Urban runoff inlets may be protected using straw bales or diversions to filter or route runoff away from the inlets.

Table 4-16 describes the general cost and effectiveness of some common sediment control practices.

c. Comparisons

Figure 4-7 illustrates the estimated TSS loading reductions from Maryland construction sites possible using a combination of erosion and sediment controls in contrast to using only sediment controls. Figure 4-8 shows a comparison of the cost and effectiveness of various erosion control practices. As can be seen in Figure 4-8, seeding or seeding and mulching provide the highest levels of control at the lowest cost.

Table 4-15. ESC Quantitative Effectiveness and Cost Summary

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sod	Immediate erosion protection where there is high erosion potential during vegetative establishment.	Average: 99% Observed range: 98% - 99% References: Minnesota Pollution Control Agency, 1989; Pennsylvania, 1983 cited in USEPA, 1991	2	Average: $0.2 per ft^2 [$11,300 per acre] Range: $0.1 - $1.1 References: SWRPC, 1991; Schueler, 1987; Virginia, 1980	Average: 5% Range: 5% Reference: SWRPC, 1991	$0.20 per ft^2 $7,500 per acre
Seed	Establish vegetation on disturbed area.	After vegetation established- Average: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: $400 per acre Range: $200 - $1000 per acre References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1980	Average: 20% Range: 15% - 25% References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991	$300 per acre
Seed and Mulch	Establish vegetation on disturbed area.	After vegetation established- Average: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: $1,500 per acre Range: $800 - $3,500 per acre References: Goldman, 1986; Washington DOT, 1990; NC State, 1990; Schueler, 1987; Virginia, 1980; SWRPC, 1991	Average: NA[b] Range: NA References: None	$1,100 per acre

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Mulch	Temporary stabilization of disturbed area.	Observed range: sand: 20% slope / 50% slope wood fiber @ 1500 lb/ac: 50-60% / 0-20% wood fiber @ 3000 lb/ac: 50-85% / 50-70% straw @ 3000 lb/ac: 90-100% / 95% Silt-loam: 20% slope / 50% slope wood fiber @ 1500 lb/ac: 20-60% / 40-60% wood fiber @ 3000 lb/ac: 60-90% / 60-70% straw @ 3000 lb/ac: 80-95% / 70-90% Silt-clay-loam: 10-30% slope / 30-50% slope wood fiber @ 1500 lb/ac: 5% / -- wood fiber @ 3000 lb/ac: 40% / -- jute netting: 30-60% / 30% straw @ 3000 lb/ac: 40-70% / 20-40% wood chips @ 10,000 lb/ac: 60-80% / 50-60% mulch blanket: 60-80% / 50-60% excelsior blanket: 60-80% / 50-60% multiple treatment (straw and jute): 90% / 90% References: Minnesota Pollution Control Agency, 1989; Kay, 1983 cited in Goldman, 1986	Straw mulch: 0.25 Wood fiber mulch: 0.33 Jute netting: 0.33 Straw and jute: 0.33	Straw mulch: Average: $1,700 per acre Range: $500 - $5,000 per acre References: Wisconsin DOT cited in SWRPC, 1991; Washington DOT, 1990; Virginia, 1980 Wood fiber mulch: Average: $1,000 per acre Range: $100 - $2,300 per acre References: Washington DOT, 1990; Virginia, 1980 Jute netting: Average: $3,700 per acre Range: $3,500-$4,100 per acre References: Washington DOT, 1990; Virginia, 1980 Straw and jute: Average: $5,400 per acre Range: $4,000-$9,100 per acre References: Washington DOT, 1990; Virginia, 1980	Average: NA[b] Range: NA References: None	Straw mulch: $7,500 per acre Wood fiber mulch: $3,500 per acre Jute netting: $12,500 per acre Straw and jute: $18,000 per acre

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Terraces	Break up long or steep slopes.	Observed range: Land Slope / Reduction in Erosion 1-12% / 70% 12-18% / 60% 18-24% / 55% Additionally, if the slope steepness is halved, while other factors are held constant, the soil loss potential decreases 2-1/2 times. If both the slope and length are halved, the soil loss potential is decreased 4 times. References: Goldman, 1986; Beasley, 1972	2	Average: $5 per lin ft Range: $1 - $12 References: SWRPC, 1991; Goldman, 1986; Virginia, 1991	Average: 20% Range: 20% Reference: SWRPC, 1991	$4 per lin ft
All Erosion Controls	Reduce amount of sediment entering runoff.	Average: 85% Observed range: 85% Reference: Schueler, 1990	--	Varies but typically low	Varies but typically low	Varies but typically low

NA - Not available.
[a] Useful life estimated as length of construction project (assumed to be 2 years).
[b] For Total Annual Cost, assume Annual Maintenance Cost = 2% of construction cost.

Table 4-16. ESC Quantitative Effectiveness and Cost Summary for Sediment Control Practices

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sediment basin	Minimum drainage area = 5 acres, maximum drainage area = 100 acres	Average: 70% Observed range: 55% - 100% References: Schueler, 1990; Engle, BW and Jarrett, AR, 1990; Baumann, 1990	2	Less than 50,000 ft^3 storage Average: \$0.60 per ft^3 storage (\$1,100 per drainage acre[c]) Range: \$0.20 - \$1.30 per ft^3 Greater than 50,000 ft^3 storage Average: \$0.3 per ft^3 storage (\$550 per drainage acre[c]) Range: \$0.10 - \$0.40 per ft^3 References: SWRPC, 1991	Average: 25% Range: 25% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	Less than 50,000 ft^3 storage \$0.40 per ft^3 storage \$700 per drainage acre[b] Greater than 50,000 ft^3 storage \$0.20 per ft^3 storage \$900 per drainage acre[c]
Sediment trap	Maximum drainage area = 5 acres	Average: 60% Observed range: (-7%) - 100% References: Schueler, et al., 1990; Tahoe Regional Planning Agency, 1989; Baumann, 1990	1.5	Average: \$0.60 per ft^3 storage (\$1,100 per drainage acre[c]) Range: \$0.20 - \$2.00 per ft^3 References: Denver COG cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986	Average: 20% Range: 20% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	\$0.70 per ft^3 storage \$1,300 per drainage acre[c]
Filter Fabric Fence	Maximum drainage area = 0.5 acre per 100 feet of fence. Not to be used in concentrated flow areas.	Average: 70% Observed range: 0% - 100% sand: 80% - 99% silt-loam: 50% - 80% silt-clay-loam: 0% - 20% References: Munson, 1991; Fisher et al., 1984; Minnesota Pollution Control Agency, 1989	0.5	Average: \$3 per lin ft (\$700 per drainage acre[c] Range: \$1 - \$8 per lin ft References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1991; NC State, 1990	Average: 100% Range: 100% References: SWRPC, 1991	\$7 per lin ft \$850 per drainage acre[c]

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Straw Bale Barrier	Maximum drainage area = 0.25 acre per 100 feet of barrier. Not to be used in concentrated flow areas.	Average: 70% Observed Range: 70% References: Virginia, 1980 cited in EPA, 1991	0.25	Average: $4 per lin ft ($1,600 per drainage acre[d] Range: $2 - $6 per lin ft References: Goldman, 1986; Virginia, 1991	Average: 100% Range: 100% References: SWRPC, 1991	$17 per lin ft $6,800 per drainage acre[d]
Inlet Protection	Protect storm drain inlet.	Average: NA Observed Range: NA References: None	1	Average: $100 per inlet Range: $50 - $150 References: SWRPC, 1991; Denver COG cited in SWRPC, 1991; Virginia, 1991; EPA cited in SWRPC, 1991	Average: 60% Range: 20% - 100% References: SWRPC, 1991; Denver COG cited in SWRPC, 1991	$150 per inlet
Construction Entrance	Removes sediment from vehicles wheels.	Average: NA Observed Range: NA References: None	2	Average: $2,000 each Range: $1,000 - $4,000 References: Goldman, 1986; NC State, 1990	Average: NA[e] Range: NA References: None	$1,500 each
				With washrack: Average: $3,000 each Range: $1,000 - $5,000 References: Virginia, 1991		$2,200 each

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Vegetative Filter Strip	Must have sheet flow.	Average: 70% Observed Range: 20% - 80% References: Hayes and Hairston, 1983 cited in Casman, 1990; Dillaha et al., 1989, cited in Glick et al., 1991; Virginia Department of Conservation, 1987; Nonpoint Source Control Task Force, 1983 cited in Minnesota PCA, 1989; Schueler, 1987	2	Established from existing vegetation- Average: $0 Range: $0 References: Schueler, 1987 Established from sod- Average: $11,300 per acre Range: $4,500 - $48,000 per acre References: Schueler, 1987; SWRPC, 1991	Average: NA Range: NA References: None	NA

NA - Not available.
[a] Useful life estimated as length of construction project (assumed to be 2 years)
[e] For Total Annual Cost, assume Annual Maintenance Cost=20% of construction cost.
[b] Assumes trap volume = 1800 cf/ac (0.5 inches runoff per acre).
[c] Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).
[d] Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).

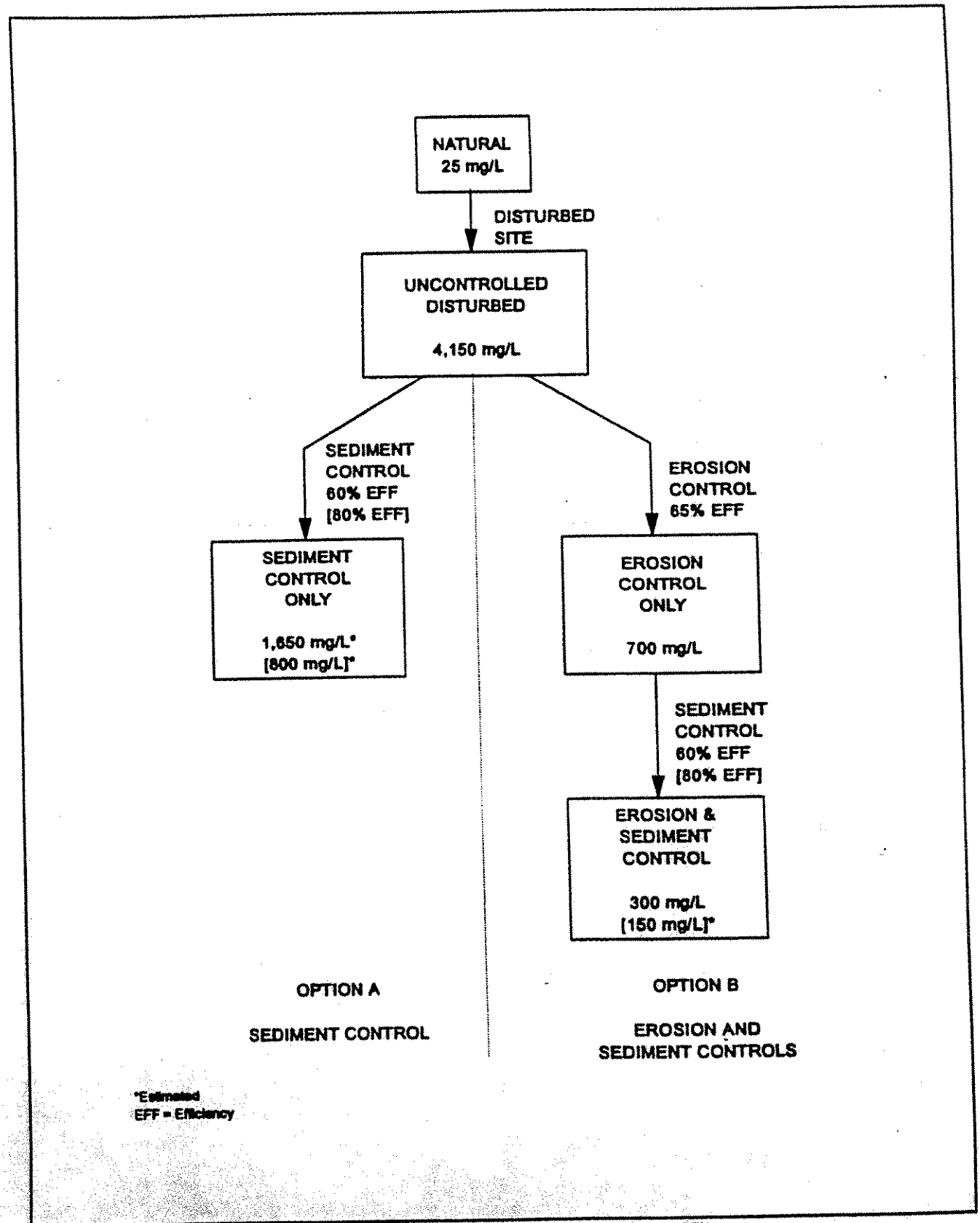


Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

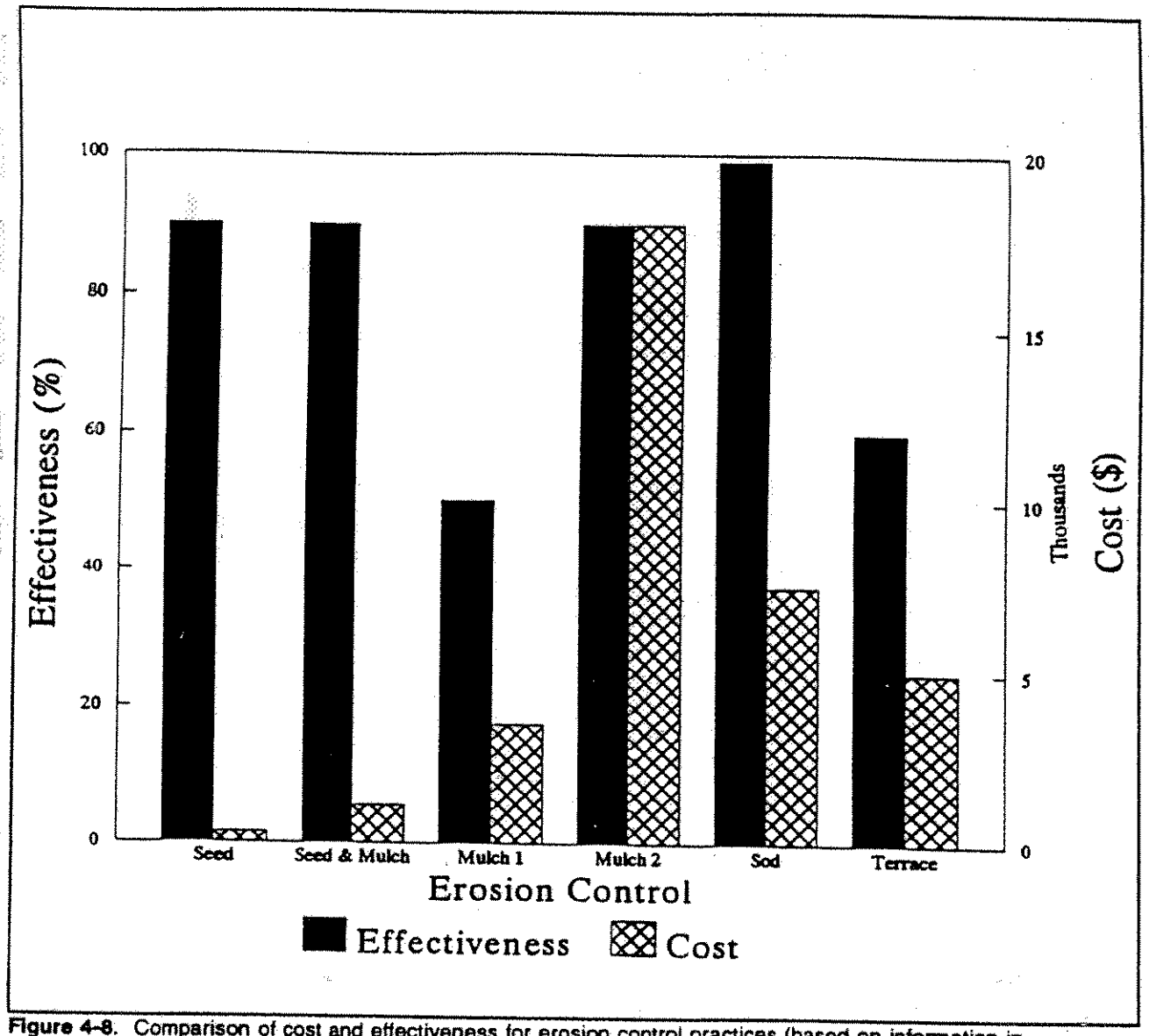


Figure 4-8. Comparison of cost and effectiveness for erosion control practices (based on information in Tables 4-15 and 4-16).

B. Construction Site Chemical Control Management Measure

(1) Limit application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

1. Applicability

This management measure is intended to be applied by States to all construction sites less than 5 acres in area and to new, resurfaced, restored, and reconstructed road, highway, and bridge construction projects. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformance with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides (insecticides, fungicides, herbicides, and rodenticides); fertilizers used for vegetative stabilization; petrochemicals (oils, gasoline, and asphalt degreasers); construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary wastes (Washington State Department of Ecology, 1991).

The variety of pollutants present and the severity of their effects are dependent on a number of factors:

(1) **The nature of the construction activity.** For example, potential pollution associated with fertilizer usage may be greater along a highway or at a housing development than it would be at a shopping center development because highways and housing developments usually have greater landscaping requirements.

(2) **The physical characteristics of the construction site.** The majority of all pollutants generated at construction sites are carried to surface waters via runoff. Therefore, the factors affecting runoff volume,

such as the amount, intensity, and frequency of rainfall; soil infiltration rates; surface roughness; slope length and steepness; and area denuded, all contribute to pollutant loadings.

(3) **The proximity of surface waters to the nonpoint pollutant source.** As the distance separating pollutant-generating activities from surface waters decreases, the likelihood of water quality impacts increases.

a. Pesticides

Insecticides, rodenticides, and herbicides are used on construction sites to provide safe and healthy conditions, reduce maintenance and fire hazards, and curb weeds and woody plants. Rodenticides are also used to control rodents attracted to construction sites. Common insecticides employed include synthetic, relatively water-insoluble chlorinated hydrocarbons, organophosphates, carbamates, and pyrethrins.

b. Petroleum Products

Petroleum products used during construction include fuels and lubricants for vehicles, for power tools, and for general equipment maintenance. Specific petroleum pollutants include gasoline, diesel oil, kerosene, lubricating oils, and grease. Asphalt paving also can be particularly harmful since it releases various oils for a considerable time period after application. Asphalt overloads might be dumped and covered without inspection. However, many of these pollutants adhere to soil particles and other surfaces and can therefore be more easily controlled.

c. Nutrients

Fertilizers are used on construction sites when revegetating graded or disturbed areas. Fertilizers contain nitrogen and phosphorus, which in large doses can adversely affect surface waters, causing eutrophication.

d. Solid Wastes

Solid wastes on construction sites are generated from trees and shrubs removed during land clearing and structure installation. Other wastes include wood and paper from packaging and building materials, scrap metals, sanitary wastes, rubber, plastic and glass, and masonry and asphalt products. Food containers, cigarette packages, leftover food, and aluminum foil also contribute solid wastes to the construction site.

e. Construction Chemicals

Chemical pollutants, such as paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, soil additives used for stabilization, and concrete-curing compounds, may also be used on construction sites and carried in runoff.

f. Other Pollutants

Other pollutants, such as wash water from concrete mixers, acid and alkaline solutions from exposed soil or rock, and alkaline-forming natural elements, may also be present and contribute to nonpoint source pollution.

Revegetation of disturbed areas may require the use of fertilizers and pesticides, which, if not applied properly, may become nonpoint source pollutants. Many pesticides are restricted by Federal and/or State regulations.

Hydroseeding operations, in which seed, fertilizers, and lime are applied to the ground surface in a one-step operation, are more conducive to nutrient pollution than are the conventional seedbed-preparation operations, in which fertilizers and lime are tilled into the soil. Use of fertilizers containing little or no phosphorus may be required by

local authorities if the development is near sensitive waterbodies. The addition of lime can also affect the pH of sensitive waters, making them more alkaline.

Improper fueling and servicing of vehicles can lead to significant quantities of petroleum products being dumped onto the ground. These pollutants can then be washed off site in urban runoff, even when proper erosion and sediment controls are in place. Pollutants carried in solution in runoff water, or fixed with sediment crystalline structures, may not be adequately controlled by erosion and sediment control practices (Washington Department of Ecology, 1991). Oils, waxes, and water-insoluble pesticides can form surface films on water and solid particles. Oil films can also concentrate water-soluble insecticides. These pollutants can be nearly impossible to control once present in runoff other than by the use of very costly water-treatment facilities (Washington Department of Ecology, 1991).

After spill prevention, one of the best methods to control petroleum pollutants is to retain sediments containing oil on the construction site through use of erosion and sediment control practices. Improved maintenance and safe storage facilities will reduce the chance of contaminating a construction site. One of the greatest concerns related to use of petroleum products is the method for waste disposal. The dumping of petroleum product wastes into sewers and other drainage channels is illegal and could result in fines or job shutdown.

The primary control method for solid wastes is to provide adequate disposal facilities. Erosion and sediment control structures usually capture much of the solid waste from construction sites. Periodic removal of litter from these structures will reduce solid waste accumulations. Collected solid waste should be removed and disposed of at authorized disposal areas.

Improperly stored construction materials, such as pressure-treated lumber or solvents, may lead to leaching of toxics to surface water and ground water. Disposal of construction chemicals should follow all applicable State and local laws that may require disposal by a licensed waste management firm.

3. Management Measure Selection

This management measure was selected based on the potential for many construction activities to contribute to nutrient and toxic NPS pollution.

This management measure was selected because (1) construction activities have the potential to contribute to increased loadings of toxic substances and nutrients to waterbodies; (2) various States and local governments regulate the control of chemicals on construction sites through spill prevention plans, erosion and sediment control plans, or other administrative devices; (3) the practices described are commonly used and presented in a number of best management practice handbooks and guidance manuals for construction sites; and (4) the practices selected are the most economical and effective.

4. Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

a. Properly store, handle, apply, and dispose of pesticides.

Pesticide storage areas on construction sites should be protected from the elements. Warning signs should be placed in areas recently sprayed or treated. Persons mixing and applying these chemicals should wear suitable protective clothing, in accordance with the law.

Application rates should conform to registered label directions. Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State, and local regulations that govern their usage, handling, storage, and disposal. Pesticides and herbicides should be used only in conjunction with Integrated Pest Management (IPM) (see Chapter 2). Pesticides should be the tool of last resort; methods that are the least disruptive to the environment and human health should be used first.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage, and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.

Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage area, and notifying neighboring property owners prior to spraying.

b. Properly store, handle, use, and dispose of petroleum products.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Oil and oily wastes such as crankcase oil, cans, rags, and paper dropped into oils and lubricants should be disposed of in proper receptacles or recycled. Waste oil for recycling should not be mixed with degreasers, solvents, antifreeze, or brake fluid.

c. Establish fuel and vehicle maintenance staging areas located away from all drainage courses, and design these areas to control runoff.

Proper maintenance of equipment and installation of proper stream crossings will further reduce pollution of water by these sources. Stream crossings should be minimized through proper planning of access roads. Refer to Chapter 3 for additional information on stream crossings.

d. Provide sanitary facilities for constructions workers.

e. Store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff of pollutants and contamination of ground water.

f. Develop and implement a spill prevention and control plan. Agencies, contractors, and other commercial entities that store, handle, or transport fuel, oil, or hazardous materials should develop a spill response plan.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Spill control plan components should include:

- Stop the source of the spill.
- Contain any liquid.
- Cover the spill with absorbent material such as kitty litter or sawdust, but do not use straw. Dispose of the used absorbent properly.

g. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm sewer systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled. Do not discharge any solvents into sewers.

Washout from concrete trucks should be disposed of into:

- A designated area that will later be backfilled;
- An area where the concrete wash can harden, can be broken up, and then can be placed in a dumpster; or
- A location not subject to urban runoff and more than 50 feet away from a storm drain, open ditch, or surface water.

Never dump washout into a sanitary sewer or storm drain, or onto soil or pavement that carries urban runoff.

h. Develop and implement nutrient management plans.

Properly time applications, and work fertilizers and liming materials into the soil to depths of 4 to 6 inches. Using soil tests to determine specific nutrient needs at the site can greatly decrease the amount of nutrients applied.

i. Provide adequate disposal facilities for solid waste, including excess asphalt, produced during construction.

j. Educate construction workers about proper materials handling and spill response procedures. Distribute or post informational material regarding chemical control.

MUNEKIYO HIRAGA, INC.

April 22, 2003

George Tengan, Director
County of Maui
Department of Water Supply
P.O. Box 1109
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Tengan:

Thank you for the letter dated March 18, 2002 in response to the request for early consultation on the subject project.

We acknowledge the comments regarding fire, domestic and irrigation calculations, and have forwarded the comments to the project design committee to ensure appropriate coordination will be carried out during the building permit process.

We acknowledge and confirm the Environmental Assessment report will include the estimated potable and non-potable water usage, and details of the proposed water service improvements.

We acknowledge the comments and the information provided regarding the recommended water conservation measures and Best Management Practices (BMPs) to protect the integrity of surface and groundwater resources and have forwarded this information to the project design committee for further consideration.

Again, thank you for the comments provided during early consultation on the proposed project.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dws.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

POLICE DEPARTMENT
COUNTY OF MAUI

JAMES "KIMO" APANA
MAYOR

OUR REFERENCE
ty
YOUR REFERENCE

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

March 11, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Hirano:

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses

Thank you for your letter of February 8, 2002, requesting comments on the above subject.

We have reviewed the proposed summary and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

Assistant Chief Robert Tam Ho
for: Thomas M. Phillips
Chief of Police

Enclosures

c: John E. Min, Planning Department

COPY

TO : THOMAS PHILLIPS, CHIEF OF POLICE

VIA : CHANNELS

A-4
3/11/02

FROM : ROCKY LASSETER, POLICE OFFICER, D-IV

SUBJECT : LAHAINA KINGDOM HALL OF JEHOVAH'S WITNESSES

The Lahaina Kingdom Hall of Jehovah's Witnesses proposes the redevelopment of two parcels located at 75 and 91 Puunoa Place, Lahaina. The proposed site is made up of two parcels identified as TMK: (2) 4-5-04:42 and TMK (2) 4-5-04:44. The subject parcels are currently used as a Kindom Hall of Jehovah's Witnesses and a single-family residence.

The proposed action involves the consolidation of the parcels, the demolition of the existing single-family residence and the construction of a single story approximately 3,500 square foot wooden frame Kingdom Hall on the TMK:(02) 4-5-04:44 portion of the site. Upon the completion of the new building, the existing Kingdom Hall on the TMK: (2) 4-5-04:42 parcel will be demolished and a 33-stall parking lot, with an additional 18 stacked spaces will be built. Access to the proposed site will be from two driveways off of Puunoa Place Via Front Street.

Upon reviewing the letter and attached project location map, site plan and building elevations from Mich Hirano, from Munekiyo & Hiraga, Inc., and visiting the area of this proposed consolidation and redevelopment, the following are areas of concern from the police perspective:

1. The 33-stall parking lot with an additional 18 stacked stalls does not appear to satisfy the requirements of one parking stall per 100 square feet of building space (3,500 square feet = 35 parking stalls) that the Maui County Code (19.36.010 MCC) mandates. Additionally, Maui County Code (19.36.060 MCC) states that the "stacked stalls" cannot be counted as approved parking.

2. Puunoa Place is an older residential neighborhood comprised mainly of retired persons or younger families with small children. The road is narrow and there are no sidewalks. This places a mix of older retirees and adults along the shoulders of the road maintaining the grassed area of the road's shoulder and the plants in their yards, along

with small children walking along the edge of the road.

3. Puunoa Place is a dead end road. Three more dead end roads; Lahilahi Place, Kaahanui Place and Halepaka Place originate from Puunoa Place. The traffic in and out of these roads already tax Puunoa Place's limited capability.

4. Parking along the street is very limited and when packed it would be difficult for emergency equipment to respond.

5. The beach at the makai end Puunoa Place is a very popular area for parents to take their children. This places more cars and children on an already congested street.

6. The design of the proposed parking lot shows two entry/exits located about 100 feet apart. This may add to the congestion on the narrow street as 50 vehicles attempt to enter or exit the parking lot in a relatively short time at the beginning and end of services.

7. Also of concern is the planned sequence of the redevelopment. With the demolition of the 600 square foot house and the beginning of construction of the 3,500 square foot Kingdom Hall parking in that parcel will be displaced most likely to the street. The same will be true when the current Kingdom Hall is demolished and construction begins on the parking lot.

8. Additionally, in the event that after the construction of the new 3,500 square foot Kingdom Hall something happens (i.e., lack of funds, dispute with contractors, etc.) that delays or prevents the demolition of the existing Kingdom Hall and the building of the new parking lot, there will be two buildings and no parking.

To address these concerns, the following is suggested:

1. Add two additional parking stalls or reduce the buildings size to no larger than 3,300 square feet. (Addresses no. 1. above)

2. Remove the two entry/exits to the new parking from Puunoa Place. (Alleviates/mitigates no.'s 2 to 6 above)

3. Make a single entry/exit into the parking lot via a driveway from Front Street, which would be located along the boundary line on the Mala Wharf side of the consolidated property. (Alleviates/mitigates no.'s 2 to 6 above)

4. Require demolition of both structures on the two parcels at the same time, prior to the beginning of any construction. (Addresses no.'s 7 and 8 above)

Good suggestion by Officer Lasseter. I concur with his report.
Capt. 2/26/02

ROCKY LASSETER, E-7298
POLICE OFFICER, LAHAINA
02/25/02 1335 HOURS

MUNEKIYO HIRAGA, INC.

April 21, 2003

Thomas M. Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses

Dear Chief Phillips:

Thank you for the comments provided by Officer Lasseter of the Lahaina Police Department in response to the early consultation on the subject project. We would like to provide the following information in response to the comments.

Response to Item 1

We acknowledge the preliminary site plan enclosed with the early consultation letter provided 29 parking stalls. In this regard, we note in County Code 19.36.010. subsection 11, church parking requirements, it states:

> *"... where authorized on-street parking spaces are available within a distance of five hundred feet from the nearest point of the church or place of worship, the required number of off-street parking spaces may be reduced by thirty-three and one-third (33-1/3) of the total number of such on-street parking spaces within the five-hundred-foot distance. Where such on-street parking spaces fall within five hundred feet of two or more churches or places of worship, the reduction of thirty-three and one-third (33-1/3) shall be prorated equally among them."*

In reference to the Lahaina Kingdom Hall, there are approximately 58 spaces within a five-hundred foot radius of the church. There are also three (3) churches within this area, the Lahaina Kingdom Hall, the Lahaina Jodo Mission and the Apolistic Faith Church of Honolulu. Applying the provision of Chapter 19.36.010. subsection 11, the required parking for the Lahaina Kingdom Hall is reduced by approximately 6 stalls. However, since parking has been identified as an issue the preliminary development plan which was

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 fax: (808)244-8729 · planning@mhinconline.com

attached to the early consultation letter has been revised to provide more onsite parking. The current plan provides 35 single stall parking spaces and an additional 13 stacked stalls. Although the stacked stalls are not counted in determining compliance with County Code requirements, they nevertheless do provide additional parking onsite and will help mitigate on-street parking congestion.

Response to Item 2 and 4

We acknowledge the comments regarding the character of the neighborhood, composition of the residents and substandard conditions of the roadway. We note that the Department of Public Works and Environmental Management has restricted parking on the south side of Puunoa Place to maintain clear passage on the roadway. As well, the proposed development plan has allowed a dedication of 5 feet to the County of Maui to allow for the expansion of right-of-way for the future roadway improvement.

Response to Item 3, 4 & 5

We acknowledge that Puunoa Place is a dead end road with three (3) dead end roads originating from Puunoa Place. As stated previously, the proposed project grew out of a concern for parking and traffic on Puunoa Place. The proposed plan provides more onsite parking on the Kingdom Hall property and thereby reduces the number of congregation members' vehicles parking on the side streets.

Response to Item 6

In response to traffic concerns related to egress and ingress from Puunoa Place, the preliminary development plan which was attached to the early consultation letter has been revised to provide for a one-way driveway entering and exiting the proposed project. This would facilitate the movement of traffic into the parking area and out of the parking area onto Puunoa Place. The congregation also provides ushers before and after the Sunday morning service to assist with onsite parking and passenger drop-off and to regulate flow onto Puunoa Place in order to avoid traffic congestion at the intersection of Puunoa Place and Front Street.

Response to Item 7

During construction of the new Kingdom Hall, a construction fence will be erected to secure the construction area from the rest of site. Only a portion of the site which is presently used for parking will be unavailable during construction. Demolition of the existing Kingdom Hall and construction of the parking area will be coordinated and scheduled to

minimize the time duration of the activities which may cause displacement of onsite parking.

Response to Item 8

See response to Item 7. The Jehovah's Witnesses building committee will not initiate the project until all funds are approved and allocated to complete the project in its entirety which includes the demolition of the buildings and completion of the new Kingdom Hall and the parking area.

Response to Suggested Items

1. An alternative site development plan which was considered involved an exit/entry into the subject property via a driveway off of Front Street. However, due to the proximity with the adjacent driveway to the north and limited sight distance requirements between the proposed driveway and the Puuona Place intersection this alternative was not viable.

2. The suggestion requiring demolition of both the existing cottage and Kingdom Hall at the same time, would require the congregation to find an alternative meeting hall during the construction period. As presently planned, the existing Kingdom Hall would be used until the new building is completed. Upon completion, the existing Kingdom Hall would be demolished and the parking area constructed. The concurrent demolition of the existing buildings will place considerable hardship on the congregation.

Again, thank you for the comments offered. A copy of the Draft Environmental Assessment will be forwarded to the Maui Police Department for further review and comment.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainakh\mdp.res

MAR 0 5 2002

PHONE (808) 594-1888

FAX (808) 594-1865

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

HRD02-44

February 19, 2002

Mich Hirano
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Subject: Lahaina Kingdom Hall of Jehovah's Witnesses
TMK: (2) 4-5-04:42 and (2) 4-5-04:44
Lahaina, Maui, Hawaii

Dear Mr. Hirano:

This is in response to your letter of February 8, 2002, requesting written comments on the above referenced proposal.

The Office of Hawaiian Affairs requests that the EA assess cultural resources in the project area. The EA should include archeological, ethnographic, historical, anthropological and other culturally-related documentary research on the site. Procedures for handling inadvertent discoveries of human burials and cultural artifacts should also be included.

OHA also requests that the EA address the effects on Hawai'i's culture and traditional and customary rights, pursuant to Act 50, Session Laws of Hawaii 2000. The cultural impact statement must identify the cultural practices located in the project area; assess the impact on these practices; examine alternatives to the proposed action; and propose mitigation measures. The preparer of the cultural impact statement should consult with Native Hawaiian individuals and organizations to determine the impact of the proposed action on cultural practices. The EA should include a discussion of the methods used to select persons with knowledge of cultural practices and the results of consultation with them. At a minimum, the draft EA should identify individuals and organizations with expertise on cultural practices with whom consultation has occurred.

Thank you for the opportunity to comment on the above referenced project. If you have questions, please contact Sharla Manley, policy analyst at 594-1944 or email her at sharlam@oha.org.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

CK: sam

cc: Board of Trustees
Clyde W. Namu'o, Administrator
Maui CAC

MUNEKIYO HIRAGA, INC.

April 22, 2003

Collin Kippen, Jr., Deputy Administrator
Office of Hawaiian Affairs
711 Kapi`olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Kippen:

Thank you for your letter dated February 19, 2002 providing comments in response to the request for early consultation on the subject project.

We acknowledge your comments regarding the assessment of cultural resources and confirm the Draft Environmental Assessment will include archaeological, ethnographic, historical, anthropological and other culturally-related documentary information pertaining the subject site as appropriate. We wish to note that early consultation has been carried out with the State Historic Preservation Division (SHPD). An archaeological inventory survey with subsurface testing will be carried out. We also note that an archaeological inventory survey report will be submitted to SHPD for review and approval prior to any ground altering or demolition activities.

We also confirm that the Draft Environmental Assessment will assess the cultural impacts of the proposed project, pursuant to Act 50, Sessions Laws of Hawaii 2000.

A copy of the Draft Environmental Assessment will be provided to the Office of Hawaiian Affairs for review and comment.

Thank you again for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\oha.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

MAR 0 4 2002

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

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

March 1, 2002

LD-NAV
KINGDOMHALL.RCM

LOG-821/1003/1008

Munekiyo and Hiraga, Inc.
Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT:	Review:	Pre-Consultation for the Preparation of a Draft Environmental Assessment
	Applicant:	Lahaina Kingdom Hall of Jehovah's Witnesses
	Project Name:	Lahaina Kingdom Hall of Jehovah's Witnesses
	Proposed:	Consolidation and construct a single story building and related improvements
	Consultant:	Munekiyo and Hiraga, Inc. (Mich Hirano)
	Location:	75 & 01 Puunoa Place, Lahaina, Maui, Hawaii
	TMK:	2nd/ 4-5-004: 042 and 044

Thank you for your letter dated February 8, 2002 pertaining to the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division transmitted a copy of your letter and attachments covering the proposed project to the following DLNR Divisions for their review and comment:

- Division of Aquatic Resources
- Division of Forestry & Wildlife
- Division of State Parks
- Historic Preservation Division
- Commission on Water Resource Management
- Land Division Planning and Technical Services
- Land Division Engineering Branch
- Land Division Maui District Land Office

The Department of Land and Natural Resources has no comment to offer at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0438.

Very truly yours,

HARRY M. YADA
Acting Administrator

C: Maui District Land Office

MAR 1 1 2002

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

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

March 8, 2002

LD-NAV
L1256/1128/1270
KINGDOMHALL.RCM2

Munekiyo and Hiraga, Inc.
Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT:

Review:	Pre-Consultation for the Preparation of a Draft Environmental Assessment
Applicant:	Lahaina Kingdom Hall of Jehovah's Witnesses
Project Name:	Lahaina Kingdom Hall of Jehovah's Witnesses
Proposed:	Consolidation and construct a single story building and related improvements
Consultant:	Munekiyo and Hiraga, Inc. (Mich Hirano)
Location:	75 & 01 Puunoa Place, Lahaina, Maui, Hawaii
TMK:	2nd/ 4-5-004: 042 and 044

This is a follow-up to our letter (Ref.: KINGDOMHALL.RCM) to you dated March 1, 2002, pertaining to the subject matter.

Attached herewith is a copy of the Commission on Water Resource Management and Land Division Engineering Branch.

The Department of Land and Natural Resources has no other comment to offer at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0438.

Very truly yours,

HARRY M. YADA
Acting Administrator

C: Maui District Land Office

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

CHAIRPERSON

BRUCE S. ANDERSON
MEREDITH J. CHING
CLAYTON W. DELA CRUZ
BRIAN C. NISHIDA
HERBERT M. RICHARDS, JR.

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

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

March 1, 2002

TO: Mr. Harry Yada, Acting Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Lahaina Kingdom Hall (Jehovah's Witnesses) Pre-consultation

FILE NO.: KINGDOMHALL.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

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

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact Charley Ice at 587-0251.

DLNR-LAND DIVISON
ENGINEERING BRANCH

COMMENTS

LD/NAV
Ref.: KINGDOMHALL.CMT

COMMENTS

The project site, according to FEMA Community Panel Numbers 150003 0161 C (August 3, 1998), is located in Zone C (No Shading). This is an area of minimal flooding.

MUNEKIYO & HIRAGA, INC.

April 21, 2003

Harry M. Yada, Acting Administrator
Land Division
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Yada:

Thank you for your letter dated March 8, 2002 providing comments from the Commission on Water Resource Management (CWRM) and Land Division, Engineering Branch in response to the request for early consultation on the subject project.

We acknowledge the CWRM comment in regards to coordination with the county government and confirm that appropriate consultation will be carried out with the Department of Water Supply in order to incorporate the proposed project into the County's Water Use and Development Plan.

We wish to note, based on the Federal Emergency Management's, Flood Insurance Rate Map, Community Panel Number 150003 0161 C and 150003 0163 C, the subject property is located in Zone A4, areas of 100 year flooding with depths of seven (7) feet (Parcel 42) and Zone C, an area of minimal flooding (Parcel 44). We confirm this information will be included in the Draft Environmental Assessment report.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dlnr.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

MAR 0 4 2002

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 26, 2002

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

RE: Preliminary Comments on a Draft Environmental Assessment (EA) for the Lahaina Kingdom Hall of Jehovah Witnesses Church, TMK: 4-5-004:042 and 044, Lahaina, Maui, Hawaii

The Maui Planning Department has reviewed the above-referenced project and has the following comments:

1. On the West Maui Community Plan Map parcel 42 is identified as public/quasi-public use recognizing the existing use of the property while parcel 44 is designated as single family use. In addition, the draft EA should include the applicable goals, objectives and policies of the General Plan and Community Plan.

2. Parcels 42 and 44 are zoned R-2 Residential District. Churches are identified as a special use in the Residential District. The existing church is an existing nonconforming use established prior to the change in the Residential District that permits churches as a special use. The new church and related improvements will require a County Special Use Permit from the Maui Planning Commission.

3. Parcels 42 and 44 is located within the Special Management Area (SMA) of the Island of Maui and an appropriate SMA Permit will be required. Also, the design of the church with it's appurtenant structures and landscaping will be reviewed by the Maui Urban Design Review Board during the SMA process.

4. The subject property is identified on the Federal Flood Insurance Maps as Zone "C" and area of minimal flooding.

5. The existing church was constructed in 1970 and the residence in 1992. The structures are less than 50 years old and do not qualify as historic structures.

6. Puunoa Place is a substandard roadway with limited pavement width and no curbs, gutters, or sidewalks. According to the surrounding neighbors the existing church use on Parcel 42 currently impacts the roadway due to vehicles parking along the roadway. The County of Maui has received several letters from the surrounding community voicing their concerns relative to adequate access for emergency vehicles and drainage issues. In the draft EA the applicant shall address these concerns and the adequacy of parking for the members of the congregation and alternatives.

   Further, as part of community participation in the process the applicant is advised to hold a community meeting with the affected property owners and residents of Puunoa Place.

7. In addition, to the traffic on Puunoa Place, the applicant shall address traffic impacts on Front Street and other neighboring streets. Of particular concern is left turning traffic in and out of Puunoa Place. Since the original church was constructed in 1970 traffic on Front Street has increased and should be further analyzed.

8. Although the property has been developed, Lahaina Town is noted for subsurface archaeological and cultural remains. The applicant is advised to consult with the State Historic Preservation Division for comment and recommendation.

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Colleen M. Suyama, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:CMS:tlm
c: Clayton I. Yoshida, AICP, Deputy Planning Director
Colleen M. Suyama, Staff Planner
Rocky Lasseter, Lahaina Police Department
Project File
General File
(K:\WP_DOCS\PLANNING\EA\2002\02EALahainaJehovahWitnesses\DeptComments.wpd)

MUNEKIYO HIRAGA, INC.

April 21, 2003

Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Foley:

Thank you for the letter dated February 26, 2002 in response to the request for early consultation on the subject project. We wish to provide the following information in response to the comments provided in the letter.

Response to Item 1

We confirm the Draft Environmental Assessment will include an assessment of the proposed project in the context of the applicable goals, objectives and policies of the General and Community Plan.

Response to Item 2

We acknowledge that the new Kingdom Hall and related improvements will require a County Special Use Permit from the Maui Planning Commission. We wish to confirm the Draft Environmental Assessment will include an assessment of the proposed project in relation to the criteria for a County Special Use Permit and a consolidated application will be submitted to the Maui Planning Commission which addresses the County Special Management Area Use Permit and a County Special Use Permit application requirements.

Response to Item 3

As mention in Item 2 above, a Special Management Area Use Permit application will be submitted to the Maui Planning Commission for consideration. We also acknowledge that the design of the proposed Kingdom Hall with it's appurtenant structures and landscaping will be reviewed by the Maui Urban Design Review Board during the SMA process.

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

Response to Item 4

Based on the Federal Emergency Management's, Flood Insurance Rate Map, Community Panel Number 150003 0161 C and 150003 0163 C, we note the subject property is located in Zone A4, areas of 100 year flooding with depths of seven (7) feet and Zone C, an area of minimal flooding.

Response to Item 6

We acknowledge the comments with respect to the substandard conditions of Puunoa Place and the comments of the neighbors regarding the existing Kingdom Hall use and impacts on the local streets due to vehicles parking on the streets. We wish to note that one of the primary reasons for the proposed project is to address these concerns by providing more onsite parking in order to reduce the requirement for the Kingdom Hall users to park off site. We confirm that the Draft Environmental Assessment will address concerns expressed with respect to street parking and adequacy of parking for the members of the Lahaina Jehovah's Witnesses congregation provided by the proposed project. We also confirm that the assessment will include consideration of alternatives. We confirm that a community information meeting to discuss the project and to receive comments from neighborhood residents was held at the Lahaina Community Center on December 18, 2002. A summary of the issues raised and comments received will be included in the Draft Environmental Assessment document.

Response to Item 7

We acknowledge and confirm the Draft Environmental Assessment will need to address traffic impacts on Front Street, particularly the left turn movements from and to Front Street and other neighboring streets.

Response to Item 8

We acknowledge the comment regarding the potential for subsurface archaeological and cultural remains. We wish to note that early consultation with the State Historic Preservation Division (SHPD) has been coordinated. An archaeological inventory survey has been carried out on Parcels 42 and 44 with subsurface testing on Parcel 44. The archaeological inventory report will be sent to SHPD for their review and approval prior to any ground altering or demolition activities. The archaeological inventory survey results and report will be included in the Draft Environmental Assessment.

Again, thank you for the comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\pd.res

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

MAR 0 4 2002

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 25, 2002

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

RE: Preliminary Comments on a Draft Environmental Assessment (EA) for Lahaina Kingdom Hall of Jehovah Witnesses Church, TMK: 4-5-004:042 and 044, Lahaina, Maui, Hawaii

At its regular meeting on February 22, 2002 the Maui County Cultural Resources Commission (Commission) reviewed the above-referenced project and had the following comments:

1. This area in Lahaina is noted for ancient burials. Several nearby sites during construction encountered Hawaiian burials such as the recent Front Street Apartments on Kenui Street. The Draft EA should address the potential impacts on burials and proposed mitigation measures especially monitoring during subsurface disturbances.

2. Although the Lahaina National Landmark District does not have specific design guidelines, the Commission requested that the design of the new church be appropriate to the history of the area.

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Colleen Suyama, Staff Planner, of the Maui Planning Department at 270-7735.

Very truly yours,

for JAMES "KIMO" FALCONER, Chair
Maui County Cultural Commission

JKF:CMS:cmb
c: Clayton Yoshida, AICP, Deputy Planning Director
Colleen Suyama, Staff Planner
Don Hibbard, SHPD
Project File
General File
(K:\WP_DOCS\PLANNING\EA\2002\02EALahainaJehovahWitnesses\CRCComments.wpd)

MUNEKIYO HIRAGA, INC.

April 22, 2003

Dawn Duensing, Chair
Maui County Cultural Resources Commission
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Ms. Duensing:

Thank you for the letter dated February 25, 2002 in response to the request for early consultation on the subject project.

We acknowledge the comments regarding ancient burials. We wish to note that in recognition of possible cultural resource values on and around the proposed site, an archaeological inventory survey has been carried out on Parcels 42 and 44 with subsurface testing on Parcel 44. An archaeological inventory survey report will be submitted to SHPD for review and approval prior to any ground altering or demolition activities.

We acknowledge the request of the Cultural Resources Commission that appropriate consideration to the history of the area be given in the design of the proposed Kingdom Hall. We have forwarded these comments to the project design committee for consideration as appropriate.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\crc.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

FEB 21 2002

JAMES "KIMO" APANA
Mayor
ALICE L. LEE
Director
PRISCILLA P. MIKELL
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

February 13, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: LAHAINA KINGDOM HALL OF JEHOVAH'S WITNESS

We have reviewed your February 8, 2002 letter and attachments regarding the subject project and wish to inform you that we have no comment to offer.

Thank you for the opportunity to comment.

Very truly yours,

ALICE L. LEE
Director

ETO:hs

c: Housing Administrator

FEB 22 2002

BENJAMIN J. CAYETANO
GOVERNOR

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / CWB
02053PKP.02

February 19, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: **Lahaina Kingdom Hall of Jehovah's Witnesses**

The Department of Health, Clean Water Branch (CWB) has reviewed the subject document and has the following comments:

1. The Army Corps of Engineers should be contacted to identify whether a Federal permit (including a Department of Army permit) is required for any future project. If it is determined that a Federal permit is required for the subject project, then a Section 401 Water Quality Certification would also be required from our office.

2. If any future construction project involves any of the following discharges into State waters, a National Pollutant Discharge Elimination System (NPDES) permit coverage is required for each type of discharge:

   a. Storm water runoff associated with construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five acres of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale.

      Note: After March 10, 2003, an NPDES permit will be required for discharges of storm water associated with construction activities, including clearing, grading, and excavation that result in the disturbance of one acre or more.

   b. Hydrotesting water; and

   c. Construction dewatering effluent.

Notices of Intent (NOI) for NPDES general permit coverages should be submitted at least 30 days before the discharge is to occur. NOI forms can be downloaded from the CWB website at *http://www.state.hi.us/doh/eh/cwb/forms/index.html.*

Should you have any questions, please contact Ms. Kris Poentis of the Engineering Section, CWB, at 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:cu

MUNEKIYO HIRAGA, INC.

April 21, 2003

Denis Lau, P.E., Chief
Clean Water Branch
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Lau:

Thank you for your letter dated February 19, 2002 in response to the request for early consultation on the subject project.

We wish to note that based on our early consultation with the U.S. Department of Army Corps of Engineers it has been determined that a Department of Army permit will not be required for the proposed project. Nevertheless, a copy of the Draft Environmental Assessment will be forwarded to the U.S. Department of Army for their further review and comment.

We note your comments regarding a National Pollution Discharge Elimination System (NPDES) permit for the discharge into State waters related to storm water runoff associated with construction activities, hydrotesting water and construction dewatering effluent. We have forwarded your comments to the project design team to ensure coordination with the Clean Water Branch will be carried out as appropriate.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dohcwb.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

JAMES "KIMO" APANA
Mayor

MAR 0 1 2002

FLOYD S. MIYAZONO
Director

GLENN T. CORREA
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

1580-C Kaahumanu Avenue, Wailuku, Hawaii 96793

February 26, 2002

Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: LAHAINA KINGDOM HALL OF JEHOVAH'S WITNESSES

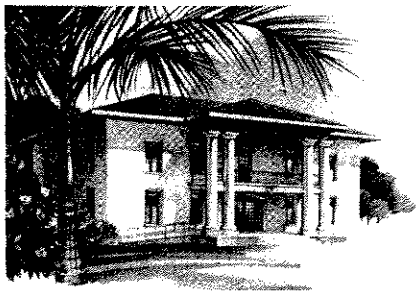
Thank you for the opportunity to review the summary and site plans for the subject project. We have no comments to the proposed action.

If there are further questions, please contact me or Mr. Patrick Matsui, Chief of Planning and Development, at 270-7387.

Sincerely,

For FLOYD S. MIYAZONO
Director

c: Patrick Matsui, Chief of Planning and Development



FEB 27 2002

LAHAINATOWN

ACTION COMMITTEE

Annual Events: Chinese New Year • WhaleFest • Banyan Tree Birthday • In Celebration of Canoes
Lahaina Poster Contest • Maui Chefs • A Taste of Lahaina & the Best of Island Music
Halloween - The Mardi Gras of the Pacific • Festival of Art and Flowers
On-going Events: He U'i Cultural Arts Festival • Friday Night is Art Night

February 22, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, suite 104
Wailuku, HI 96793

Re: Lahaina Kingdom Hall of Jehovah's Witnesses

Dear Mr. Hirano,

We are in receipt of your letter dated February 8, 2002 requesting our input on the proposed project of the Lahaina Kingdom Hall of Jehovah's Witnesses. Thank you for allowing us an early opportunity to comment.

The LahainaTown Acton Committee Board of Directors discussed this issue at their meeting of February 21, 2002. A unanimous decision was reached that the proposed larger building and parking lot would be out of character for this small residential neighborhood. In addition, the increased use of this expanded facility would cause heightened congestion on the narrow Puunoa Street.

The Lahaina Kingdom Hall of Jehovah's Witnesses is to be commended for it growing congregation, however the organization has clearly outgrown the neighborhood and should build its expanded facility elsewhere.

Sincerely,

Joan McKelvey
President

Event Hotline: On Maui: 808.667.9194 • Mainland (toll free) 888.310.1117
Lahaina Visitor Center: Old Lahaina Courthouse • 648 Wharf Street • Lahaina, HI 96761 • 808.667.9193
LahainaTown Action Committee: phone: 808.667.9175 • fax: 808.661.4779
Visit us on the web at: www.visitlahaina.com • email: info@visitlahaina.com • 648 Wharf Street • Lahaina, Maui, Hawaii 96761

MUNEKIYO HIRAGA, INC.

April 21, 2003

John McKelvey, President
LahainaTown Action Committee
648 Wharf Street
Lahaina, Hawaii 96761

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses

Dear Mr. McKelvey:

Thank you for your letter dated February 22, 2002 providing comments on the subject project. In response to your comments we would like to provide the following information for your further consideration.

We acknowledge your comment that a larger building would be out of character for the residential neighborhood. However, we wish to note the proposed Kingdom Hall will be a single story building with a total floor area of approximately 3,500 square feet and seating capacity for 145 people. The existing Kingdom Hall building is a two story building with a total floor area of approximately 3,750 square feet and seating capacity for approximately 134 people. The proposed building provides a more efficient allocation of functional space and the single story structure is more reflective of the residential character of the neighborhood.

We acknowledge your comment with respect to the substandard conditions of Puunoa Place and related traffic congestion and on-street parking issues. We wish to note that the proposed project was initiated by the Lahaina congregation primarily to provide more onsite parking. The proposed project will provide parking for 35 single stalls and an additional 13 stacked stalls. The existing Kingdom Hall provides approximately 20 stalls for parking. As such, the proposed project would lessen the need to park off-site and mitigate current congestion caused by street parking on Puunoa Place.

With respect to relocation of the Kingdom Hall, we wish to note that the congregation spent two years looking for an alternate location in the Lahaina area. During this time properties on Mala Street and Wainee Street were considered. However, due to pending code compliance issues related to one of the properties and financial considerations regarding the Wainee property, the congregation decided that the purchase of the adjacent property would best meet their requirements.

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\ltac.res

FEB 20 2002

BENJAMIN J. CAYETANO
GOVERNOR

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H
MAUI DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

February 19, 2002

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai`i 96793

Dear Mr. Hirano:

Subject: **Lahaina Kingdom Hall of Jehovah's Witnesses**
TMK: (2) 4-5-04: 42 & 4-5-04: 44

Thank you for the opportunity to comment on the proposed redevelopment of the two parcels located at 75 and 91 Puunoa Place in Lahaina. The following comments are offered:

1. The Federal Register, 40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revisions; November 20, 1990, requires inspections of all affected areas to determine whether asbestos is present prior to any demolition activities.

   Under the NESHAP regulation, the project would be required to file with the Noise, Radiation and Indoor Air Quality Branch of the Department of Health Asbestos Demolition/Renovation notification ten (10) working days prior to the demolition of each building or the disturbance of regulated asbestos containing materials. All regulated quantities and types of asbestos containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill. Questions concerning asbestos requirements should be directed to Mr. Robert H. Lopes of the Noise, Radiation and Indoor Air Quality Branch at (808) 586-5800.

2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: Robert H. Lopes
Russell Takata

MUNEKIYO HIRAGA, INC.

April 21, 2003

Herbert S. Matsubayashi, Chief
District Environmental Health Program
Maui District Health Office
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Matsubayashi:

Thank you for your letter dated February 19, 2002 in response to the request for early consultation on the subject project.

We acknowledge your comment regarding inspections of all affected areas to determine whether asbestos is present prior to any demolition activities pursuant to Federal Register, 40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revision; November 20, 1990. We have forwarded your comments to the project design committee to ensure coordination with the Noise, Radiation and Indoor Air Quality Branch, State Department of Health will be carried out as appropriate prior to any demolition activities.

We also acknowledge your comments regarding a noise permit may be required for construction activities and have forwarded your comments on to the project design committee to ensure appropriate noise permit will be obtained prior to the commencement of work at the project site.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dohmaui.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

BENJAMIN J. CAYETANO
GOVERNOR

FEB 22 2002

BRIAN K. MINAAI
DIRECTOR

DEPUTY DIRECTORS
JEAN L. OSHITA
JADINE Y. URASAKI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.0178

February 15, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Lahaina Kingdom Hall of Jehovah's Witnesses

Thank you for your transmittal requesting our review of the subject project.

The proposed development will not directly impact our State transportation facilities.

We appreciate the opportunity to provide comments.

Very truly yours,

Brian K. Minaai

BRIAN K. MINAAI
Director of Transportation

MUNEKIYO & HIRAGA, INC.

April 21, 2003

Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Haraga:

Thank you for the letter dated February 15, 2002 from the Department of Transportation in response to the request for early consultation on the subject project.

We acknowledge the Department's comment that the proposed project will not directly impact the State transportation facilities.

However, a copy of the Draft Environmental Assessment will be forwarded to your office for your further review.

Again, thank you for your Department's comment and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dot.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

FEB 15 2002

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

February 13, 2002

Regulatory Branch

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

This letter responds to your request for a jurisdictional determination for the Lahaina Kingdom Hall of Jehovaha's Witnesses, dated February 8, 2002. Based on the information you provided, I have determined that a Department of the Army (DA) permit will not be required for this project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200200188.

Sincerely,

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

MUNEKIYO & HIRAGA, INC.

April 21, 2003

George P. Young, P.E., Chief
Regulatory Branch
U. S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Young:

Thank you for your letter dated February 13, 2002 in response to the request for early consultation on the subject project.

We acknowledge your determination that a Department of Army permit will not be required for this project.

A copy of the Draft Environmental Assessment will be transmitted to your department for further review.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\da.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

FEB 15 2002

February 13, 2002

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 S. High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Hirano:

Subject: Lahaina Kingdom Hall of Jehovah's Witnesses

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. We encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinyama
Manager, Energy Delivery

MUNEKIYO HIRAGA, INC.

April 21, 2003

Neal Shinyama, Manager Energy Division
Maui Electric Company, Ltd.
210 West Kamehameha Avenue
PO Box 398
Kahului, Hawaii 96733-6898

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Shinyama:

Thank you for your letter dated February 13, 2002 in response to the request for early consultation on the subject project.

We acknowledge your comment regarding verification of electrical requirements so that service can be provided in a timely manner. We have forwarded your comments to the project design committee to ensure coordination with Maui Electric will be carried out as appropriate.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\meco.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

BENJAMIN J. CAYETANO
GOVERNOR

FEB 14 2002

BRIAN K. MINAAI
DIRECTOR

DEPUTY DIRECTORS

JADINE Y. URASAKI
Jean L. Oshita

IN REPLY REFER TO:
HWY-M2.053-02

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAUI DISTRICT
650 PALAPALA DRIVE
KAHULUI, HAWAII 96732

February 13, 2002

MEMORANDUM

TO: **Mich Hirano**
Munikiyo & Hiraga, Inc.

FROM: **Paul M. Chung** pmc
State Highways

SUBJECT: **Lahaina Kingdom Hall of Jehovah's Witnesses**
Lahaina, Maui, Hawaii

Thank you for the opportunity to review and comment on the proposed improvements for the subject project. Based upon our review of the plans, it appears that this project will not significantly affect our facilities, therefore, we have no objection to this project.

If there are any questions or concerns, please call me at 873-3535.

/pmc

MUNEKIYO & HIRAGA, INC.

April 21, 2003

Paul Chung
Maui District
State of Hawaii
Department of Transportation
650 Palapala Drive
Kahului, Hawaii 96732

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses at
TMK: (2) 4-5-04: 42 and 44

Dear Mr. Chung:

Thank you for your memorandum dated February 13, 2002 in response to the request for early consultation on the subject project.

We acknowledge the Maui District's comment that the proposed project does not appear to have a significant impact on the Department of Transportation facilities.

A copy of the Draft Environmental Assessment will be transmitted to your department for further review.

Again, thank you for your comment and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:yp
jehovahs\lahainkh\dotmaui.res

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinconline.com

XII. AGENCIES AND ORGANIZATIONS CONSULTED DURING THE PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies and organizations were consulted during the preparation of the Final Environmental Assessment. Agency comments and responses to substantive comments are also incorporated herein.

1. Neal Fujiwara, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

2. William Lennan
Department of the Army
U.S. Army Engineer District, Hnl.
Attn: Operations Division
Bldg. T-1, Room 105
Fort Shafter, Hawaii 96858-5440

3. Robert P. Smith
Pacific Islands Manager
U. S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

4. Ted Liu, Director
State of Hawaii
Office of Planning
Department of Business, Economic Development and Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

5. Denis Lau, Chief
Clean Water Branch
State of Hawaii
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaii 96814

6. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

7. Peter Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

8. Holly McEldowney, Acting Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

9. Rodney Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

10. Fred Cajigal, Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732

11. Colin Kippen, Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

12. Carl Kaupololo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

13. Michael Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

14. Cultural Resources Commission
c/o Maui Planning Department
2200 Main Street, Suite 335
Wailuku, Hawaii 96793

15. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

16. Tom Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

17. Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793

18. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

20. **Maui Electric Company, Ltd.**
P.O. Box 398
Kahului, Hawaii 96732

21. Lahaina Town Action Committee
648 Wharf Street, Suite 102
Lahaina, Hawaii 96761

22. West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawaii 96761

23. Lahaina Restoration Foundation
695 Front Street, 2nd Floor
Lahaina, Hawaii 96761

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

'03 MAY 23 P1:31

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Email: oeqc@health.state.hi.us

May 22, 2003

Mr. Miles Yeda
Lahaina Congregation of Jehovah's Witnesses
75 Puunoa Place
Lahaina, Hawai'i 96761

Mr. Michael W. Foley
Department of Planning, County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Mr. Michael T. Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Messrs. Yeda, Foley, and Munekiyo:

The Office of Environmental Quality Control (OEQC) has reviewed the draft environmental assessment for the Lahaina Kingdom Hall, Tax Map Key (2) 4-5-4, parcels 42 and 44 in the judicial district of Lahaina, and offers the following comments for your consideration and response:

1. *TREES:* Please describe what trees, if any, you will preserve. If trees are to be removed, we respectfully recommend your favorable consideration of our comments in item 5 below.
2. *TRAFFIC IMPACTS:* Please discuss traffic impacts to surrounding streets especially in relation to ingress and egress before and after services.
3. *APPLICANT ACTION:* The Office of Environmental Quality Control understands that this action is subject to Section 343-5(c), Hawai'i Revised Statutes, governing applicant actions. Please confirm our understanding. Also, when completing the OEQC Publication form please include the name, address, telephone number and contact name of the applicant.
4. *SUSTAINABLE BUILDING DESIGN:* The Office requests that you visit our website at http://www.state.hi.us/health/oeqc/index.html and read the guidance documents concerning sustainable building design for possible incorporation into the project.
5. *USE OF RECYCLED GLASS IN CONSTRUCTION PROJECTS.* To promote the use of recycled materials in-state, section 103D-407, Hawai'i Revised Statutes recommends that State/county agencies purchase materials with minimum recycled glass content. We ask that you consider this in the design of your station.
6. *NATIVE, INDIGENOUS AND POLYNESIAN INTRODUCED PLANTS FOR USE IN PUBLIC LANDSCAPING:* We ask that you consider the use of xerophagic native, indigenous and polynesian introduced plants in your landscaping.

If there are any questions, please call Leslie Segundo, Environmental Health Specialist, at (808) 586-4185. Thank you for the opportunity to comment.

Sincerely,

Genevi Salmonson

GENEVIEVE SALMONSON
Director

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Ms. Salmonson:

Thank you for your letter addressed to Miles Yeda, Lahaina Congregation of Jehovah's Witnesses, dated May 22, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregration of Jehovah's Witnesses, we wish to provide the following information in response to your comments in the same order as in your letter.

1. ***Response to Comment on Trees***

The proposed project will integrate the existing palm tree and cluster of sago palms on the southeast corner of Parcel 44 and the existing palm cluster and hibiscus hedge along the frontage of Puunoa Place on Parcel 42. New landscaping improvements will include native, indigenous and Polynesian introduced plants as suggested in your letter. The hibiscus hedge will be extended on Puunoa Place to buffer the parking lot. Clusters of sago palms will be planted along Puunoa Place and Front Street. Shade trees in the parking area will be either Koa or Kukui Nut. A Podo Carpus tree will be planted in the northeastern corner of the property. This information will be included in the Final EA.

2. ***Response to Comment on Traffic Impacts***

Discussion of traffic impacts to surrounding streets in relation to ingress and egress before and after services will be included in the Final EA.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

3. Response to Comment on Applicant Action

We confirm that this is an applicant action subject to Section 343-5(c), Hawaii Revised Statutes, governing applicant actions. The contact name and information as requested will be provided in the OEQC Publication form when the Final EA is submitted to the Office of Environmental Quality Control.

4. Response to Comment on Sustainable Building Design

Your request to visit your website to read the guidance documents concerning sustainable building design has been forwarded to the project design team for consideration.

5. Response to Comment on Use of Recycled Glass

Your request to consider materials with minimum recycled glass content has been forwarded to the project design team for consideration.

6. Response to Comment on Use of Native, Indigenous and Polynesian Introduced Plans for Use in Landscaping

See response to Item 1.

Again, thank you for your comments and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Michael W. Foley, Director, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\oeqc.res

PHONE (808) 594-1888

FAX (808) 594-1865

'03 JUL 15 A11:33

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

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

HRD03/44B

July 11, 2003

Colleen Suyama
Department of Planning
County of Maui
250 South High Street
Wailuku, HI 96793

RE: Lahaina Kingdom Hall, TMK 4-5-004:042 and 044

Dear Ms. Suyama,

OHA is in receipt of your May 14, 2003 request for comment on the above referenced project. We apologize for our late response. OHA has the following comments.

Cultural Assessment

In our letter of February 19, 2002 we had requested that the effects of the project on traditional and customary rights be assessed pursuant to Act 50, Session Laws of Hawaii, 2000. We had also asked that the preparer include a discussion of methods used to select persons with knowledge of cultural practices.

OHA is concerned that at least two of the three people contacted are members of the Church requesting the project. OHA does not doubt the sincerity of the people interviewed, but rather questions the ethics of asking the project proponents to address the cultural impact of the project. OHA also questions why a person who was not raised in Lahaina, and whose credentials to be cultural witness are not given, was interviewed for the cultural assessment (Jacquelyn Kaahui). OHA raises these questions to ensure that the integrity of the cultural assessment process is intact and conforms to the intent of the law.

Landscaping

OHA suggests that native plants be used in the landscaping, and that trees be placed in the parking lot to provide shade and some space for water recharge.

Archaeological Resources

We will rely on your assurances that should iwi or cultural deposits be found, work will stop and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Thank you for the opportunity to comment on this project. Should you have further questions, please contact Pua Aiu at 594-1931 or e-mail her at paiu@oha.org.

Sincerely,

Peter L. Yee
Director
Nationhood and Native Rights

C: Munekiyo and Hiraga, Inc.
305 High St. Ste 104
Wailuku, HI 96793

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Peter L. Yee, Director
Nationhood and Native Rights
State of Hawaii
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Mr. Yee:

Thank you for your letter addressed to Colleen Suyama, Maui County Staff Planner, dated July 11, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregation of Jehovah's Witnesses, we wish to provide the following information in response to your comments in the same order as in your letter.

1. ***Response to Comments on Cultural Assessment***

Your comments regarding the credentials of the cultural witnesses are noted. We have contacted the Office of Hawaiian Affairs, Maui office in order to obtain the names of appropriate cultural witnesses to interview in order to address the cultural impacts. William Waiohu, a representative of Na Kupuna O Maui, a recognized Native Hawaiian organization, and a member of the Maui/Lanai Islands Burial Council was interviewed to gain an additional perspective for the cultural impact assessment. Mr. Waiohu indicated that he was not aware of recent cultural practices being carried out in the vicinity of the project area. He noted that cultural resources may be located beneath the surface and recommended the proposed Kingdom Hall be built on fill in order to limit ground disturbance. This information will be included in the Final EA.

2. ***Response to Comment on Landscaping***

The proposed landscaping plan will retain some existing palm trees and cluster of sagal palms. New landscaping improvements will include native, indigenous and Polynesian introduced plants. Trees will be planted in the parking area at a ratio of

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

one (1) tree per five (5) parking spaces as required by Maui County Code to provide shade and space for water recharge.

3. ***Response to Comment on Archaeological Resources***

In review of the archaeological inventory survey report, the State Historic Preservation Division has determined the proposed project will have *"no effect"* on significant historic sites. A copy of this determination is attached as Exhibit "A" for your reference. We confirm that should any cultural deposits be found during demolition and construction, work will stop and the appropriate agencies, including Office of Hawaiian Affairs will be contacted pursuant to applicable law.

Thank you again for your comments.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
Enclosure
cc: Miles Yeda, Lahaina Congregation of Jehovah's Witnesses (w/enclosure)
Colleen Suyama, Staff Planner, Department of Planning (w/enclosure)
jehovahs\lahainkh\ohanationhood

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 25, 2003

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

LOG NO: 2003.0935
DOC NO: 0306MK22

Dear Mr. Sinoto,

SUBJECT: **Historic Preservation Review - 6E-42 - Archaeological Inventory Survey New Lahaina Kingdom Hall Site**
Paunau Ahupua'a, Lahaina District TMK (2) 4-6-04:42 and 44

Thank you for the opportunity to review this report which our staff received on April 17, 2003 (Sinoto and Pantaleo 2003, *Archaeological Inventory Survey of the Proposed Site for the New Lahaina Kingdom Hall, Pu'unoa, Paunau Ahupua'a, Lahaina District, Maui Island [TMK 4-5-04:42 & 44]*. Aki Sinoto Consulting ms). The inventory survey was conducted in response to our March 25, 2002 letter (Log 29495, Doc 0203CD21) in which we indicated that parcel 44 needed inventory survey prior to demolition activities, and monitoring was recommended for parcel 42 during demolition activities to identify historic properties. Our initial letter was part of pre-consultation for the Draft Environmental Assessment.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The report also documents the LCA awarded in the vicinity of the parcel.

The survey has adequately covered the project area documenting no historic properties in the project area. Seven back hoe trenches were excavated to examine the subsurface deposits. All of the trenches yielded negative results and evidenced subsurface disturbance and fill.

We concur that no monitoring is warranted as the proposed development will not penetrate existing below the existing fill layer. Should inadvertent discoveries be made during construction, work in the area will be halted and SHPD consulted.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793

EXHIBIT "A"

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

June 12, 2003

Mr. Michael Foley, Planning Director
Department of Planning – Maui
250 South High Street
Wailuku, Hawaii 96793

LOG NO: 2003.0845
DOC NO: 0306CD26

Dear Mr. Foley,

SUBJECT: **Chapter 6E-42 Historic Preservation Review – Draft Environmental Assessment and Applications for Special Management Area Use Permit and County Special Use Permit for The Proposed Lahaina Kingdom Hall of Jehovah's Witnesses (SUBJECT I.D.: EA 2003/0001, SM1 2003/002, CUP 2003/0001) [County/Planning] Lahaina Ahupua`a, Lahaina District, Island of Maui TMK: (2) 4-5-004: 042 & 044**

Thank you for the opportunity to comment on the Draft Environmental Assessment (DEA) and Applications for Special Management Area Use Permit (SMA) and County Special Use Permit CUP) for the Proposed Lahaina Kingdom Hall of Jehovah's Witnesses, which was received by our staff May 16, 2003.

We have previously provided comments pertaining to an information request pertaining to the proposed improvements to the Lahaina Kingdom Hall of Jehovah's Witnesses (SHPD DOC NO.: 0203CD20/LOG NO.: 29494). As the proposed plans have been slightly altered since our previous comment, we restate our recommendations below.

Based on the submitted DEA, we understand the proposed undertaking will involve: the consolidation of the two parcels, the demolition of the existing cottage, the construction of a single-story Kingdom Hall – all to be conducted on parcel 44. Upon completion of the new building, the existing Kingdom Hall, located on parcel 42, will be demolished and a 35-stall parking lot, with an additional 13-stacked spaces, will be constructed. Related construction activities will include the installation of landscaping, irrigation, sewer, and water service improvements. Access to the proposed site will be from two driveways off Pu`unoa Place via Front Street. Although these plans are somewhat changed from the original submittals to our office, the changes are minor, and so our previous comments still apply.

For parcel 44, we recommended an archaeological inventory survey (with subsurface testing) be conducted prior to the commencement of any demolition activities. Aki Sinoto has recently conducted an archaeological inventory survey of the subject properties, and we received a report documenting the findings of the survey (*Archaeological Inventory Survey of the Proposed Site for the New Lahaina Kingdom Hall, Pu`unoa, Paunau Ahupua`a, Lahaina District, Maui Island (TMK: 4-5-04:42 & 44.* Sinoto and Pantaleo. 2003) and it is currently under review. We will be better able to comment on the effects, if any, of proposed undertaking on Parcel 44 after the inventory survey report has been reviewed.

For parcel 42, we recommended archaeological monitoring during demolition activities and the submittal of an acceptable monitoring plan to this office for review prior to the commencement of any ground altering or demolishing of existing structures. To date we have not received a copy of the monitoring plan for review and approval:

Therefore, we recommend the following condition pertaining to Parcel 42 be attached to the subject SMA and CUP should they be approved:

> An acceptable archaeological monitoring plan for parcel 42 shall be submitted to the State Historic Preservation Division for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following nine specifications: (1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (2) How the remains and deposits will be documented; (3) How the expected types of remains will be treated; (4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; (5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (6) What laboratory work will be done on remains that are collected; (7) A schedule of report preparation; (8 Details concerning the archiving of any collections that are made; and (9) An acceptable report will need to be submitted to the State Historic Preservation Division for review upon 180 days following the completion of the proposed undertaking.

We will provide additional comments pertaining to the proposed undertaking on Parcel 44 following our review of the archaeological inventory survey report.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

CD:jen

c: Cultural Resources Commission, Planning Dept, County of Maui, 250 S. High Street, Wailuku, HI 96793

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Holly McEldowney, Acting Administrator
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Ms. McEldowney:

Thank you for your letter addressed to Michael Foley, Director of Planning, dated June 12, 2003 providing comments on the subject Draft EA. Based on your subsequent review of the archaeological inventory survey and letter to Aki Sinoto Consulting, dated June 25, 2003 and attached as Exhibit "A", we wish to confirm the following:

1. No archaeological monitoring is warranted as the proposed development will not penetrate below the existing fill layer.

2. State Historic Preservation Division has determined the development of the project areas will have *"no effect"* on significant historic sites.

Again, thank you for your comments and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
Enclosure
cc: Michael W. Foley, Director, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\shpd.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 25, 2003

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

LOG NO: 2003.0935
DOC NO: 0306MK22

Dear Mr. Sinoto,

SUBJECT: **Historic Preservation Review - 6E-42 - Archaeological Inventory Survey New Lahaina Kingdom Hall Site**
Paunau Ahupua'a, Lahaina District TMK (2) 4-5-04:42 and 44

Thank you for the opportunity to review this report which our staff received on April 17, 2003 (Sinoto and Pantaleo 2003, *Archaeological Inventory Survey of the Proposed Site for the New Lahaina Kingdom Hall, Pu'unoa, Paunau Ahupua'a, Lahaina District, Maui Island [TMK 4-5-04:42 & 44].* Aki Sinoto Consulting ms). The inventory survey was conducted in response to our March 26, 2002 letter (Log 29495, Doc 0203CD21) in which we indicated that parcel 44 needed inventory survey prior to demolition activities, and monitoring was recommended for parcel 42 during demolition activities to identify historic properties. Our initial letter was part of pre-consultation for the Draft Environmental Assessment.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The report also documents the LCA awarded in the vicinity of the parcel.

The survey has adequately covered the project area documenting no historic properties in the project area. Seven back hoe trenches were excavated to examine the subsurface deposits. All of the trenches yielded negative results and evidenced subsurface disturbance and fill.

We concur that no monitoring is warranted as the proposed development will not penetrate existing below the existing fill layer. Should inadvertent discoveries be made during construction, work in the area will be halted and SHPD consulted.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793

EXHIBIT "A"

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

'03 JUN 25 P12:32

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

IN REPLY REFER TO:
HWY-PS
2.0615

JUN 2 4 2003

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Foley:

Subject: I.D: EA 2003/0001, SM1 2003/0002, CUP 2003/0001, Lahaina Kingdom Hall – Jehovah's Witness Church, TMK: 4-5-004: 042 and 044, Lahaina, Maui

Thank you for requesting our review and comments regarding the subject project.

The proposed demolition of the existing church hall and construction of a new Kingdom Hall will not adversely impact our State highway facilities.

If you have any questions, please contact Ronald F. Tsuzuki, Head Planning Engineer, Highways Division, at 587-1830.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
Comptroller

KATHERINE H. THOMASON
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

'03 JUN 16 P12:07

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

June 13, 2003

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

ATTN: Colleen Suyama, Staff Planner

FROM: Randall M. Hashimoto, State Land Surveyor
DAGS, Survey Division

SUBJECT: I.D.: EA 2003/0001, SM1 2003/0002, CUP 2003/0001
TMK: 4-5-04:42 and 44
Project Name: Lahaina Kingdom Hall
Applicant: Jehovah's Witness Church

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.

POLICE DEPARTMENT

COUNTY OF MAUI

ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE ti

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

June 2, 2003

MEMORANDUM

TO : MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM : THOMAS M. PHILLIPS, CHIEF OF POLICE

SUBJECT :

I.D.:	EA 2003/0001, SM1 2003/0002, CUP 2003/0001
TMK:	4-5-004:042 and 044
Project Name:	Lahaina Kingdom Hall
Applicant:	Jehovah's Witness Church

____ No further recommendation or comment is necessary or desired.

_X_ Refer to enclosed comments and/or recommendations.

Thank you for giving us the opportunity to comment on this project.

Assistant Chief Sydney Kikuchi
For: THOMAS M. PHILLIPS
Chief of Police

Enclosure

TO : THOMAS PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT

VIA : CHANNELS 05/23/03

FROM : CHARLES M. HIRATA, CAPTAIN, LAHAINA PATROL

SUBJECT : COMMENTS ON "APPLICATIONS FOR SPECIAL MANAGEMENT USE PERMIT AND COUNTY SPECIAL USE PERMIT, LAHAINA KINGDOM HALL OF JEHOVAH'S WITNESSES"

Sir,

I received this document and was asked to submit comments or recommendations. I noted that Officer Rockford LASSETER submitted comments on February 25, 2002 and outlined some concerns. These concerns were addressed by the consultants in a letter dated April 21, 2003.

I reviewed this document and was initially concerned with Puunoa Place's ability to allow for fire apparatus to pass the area where the church was situated. I conducted a site inspection and used a LTI LASER to conduct measurements. The road adjacent to the church is approximately 17 feet wide. There are "No Parking" signs on the South side of the Puunoa Place and no vehicles were observed in the "no parking" areas.

I spoke with Mr. Paul Nishimura who resides at 84 Puunoa Place, which is across the street from the current entrance to the church. He related that church goers have never been a problem on Puunoa Place and he has lived here for most of his life. Nishimura identified surfers who park illegally (there is a beach access at the end of Puunoa) as the source of the problems on this street. He said that it would be nearly impossible for fire trucks to get to the end of Puunoa Place with cars parked on both sides. That situation prompted the county to install "No Parking" on the South side of the street.

Since church activity does not appear to have a negative impact on this area, I see no reason, from a public safety standpoint, to make recommendations against this project.

Respectfully submitted,

Charles M. HIRATA E-4855
Commander, Lahaina District
May 22, 2003 (3:00pm)

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Thomas M. Phillips, Chief of Police
Maui Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Chief Phillips:

Thank you for your memo to Michael W. Foley, Director of Planning, dated June 2, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregation of Jehovah's Witnesses, we wish to provide the following information in response to the department's comments.

We concur with Commander Hirata's report that emergency access on Puunoa Place has been improved with the installation of the *"No Parking"* sign on the south side of Puunoa Place.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Michael W. Foley, Director, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\mpd.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

'03 JUN 13 P2:16

DEPT OF PLANNING
COUNTY OF MAUI
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DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7833

June 6, 2003

Ms. Colleen Suyama, Staff Planner
County of Maui
Planning Department
250 S High Street
Wailuku HI 96793

Dear Ms. Suyama:

SUBJECT: I.D: EA 2003/0001, SM1 2003/0002, CUP 2003/0001
TMK: 4-5-004:042 & 044
Project Name: Lahaina Kingdom Hall

Thank you for the opportunity to provide comments on this project proposal.

The project site is served by two 5/8-inch water meters, a fire hydrant located within 250-ft and an 8-inch waterline which runs along Puunoa Place. Domestic, fire and irrigation services should be required in accordance with standards. Domestic, fire, and irrigation calculations will be required during the building permit process to determine meter capacity and adequate fire protection . Actual fire demand for structures is determined by fire flow calculations prepared, signed and stamped by a certified engineer or architect. The approved fire flow calculation methods for use include - Guidance for Determination of Fire Flow - Insurance Service Office,1974 and Fire Flow - Hawaii Insurance Bureau, 1991. Installation of reduced pressure back-flow prevention approved by the Department will likewise be required.

Based on system standards, anticipated consumption for the proposed project would be about 3,200 gpd. Actual demand will depend on intensity of use. Empirical use for religious institutions in the Lahaina area is 1,766 gpd.

We suggest that the applicant consider the following water conservation measures:

Use of brackish and/or reclaimed water sources for all non-potable water uses, including irrigation and dust control during construction, if such alternative sources are available.

Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers, and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

Use Climate-adapted Plants : We encourage the applicant to consider the use of appropriate native and non invasive species and to avoid the use of potentially invasive plants in the landscape plan. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. The project is located in Maui Planting Plan-Plant Zone 3. A list of appropriate plants for the zone as well as potentially invasive plants to avoid was provided to the applicant during the early consultation process.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day.

Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapotranspiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Look for Opportunities to Conserve Water: A few examples: When clearing driveways, etc. of debris, use a broom instead of a hose, periodically check for leaks in faucets and toilet tanks.

The project overlies the Launiupoko Aquifer which has a sustainable yield of 8 mgd. In order to protect surface and groundwater resources, we encourage the applicant to use best management practices (BMPs) to minimize infiltration and runoff from all construction and vehicle operations. In addition to the sample BMPs provided to the applicant during the early consultation process, we recommend the implementation of the following mitigation measures during construction:

1. Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water.
2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
3. Retain ground cover until the last possible date.
4. Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments, fertilizers and temporary irrigation. Use high seeding rates to ensure rapid stand establishment.
5. Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
6. Keep run-off on site.
7. Construct drainage control features, such as berms
8. Install silting basins where warranted
9. Maintain drainage structures, detention, silting and debris basins

Should you have any questions regarding system infrastructure and requirements, please call our Engineering Division at 270-7835 and any questions on source availability or conservation and resource matters, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,

George Y. Tengan
Director

eam
c:: engineering division
applicant

MUNEKIYO & HIRAGA, INC.

November 20, 2003

George Tengan, Director
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Mr. Tengan:

Thank you for your letter addressed to Colleen Suyama, Staff Planner dated June 6, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregation of Jehovah's Witnesses, we wish to provide the following information in response to your comments in the same order as in your letter.

We concur that domestic, fire and irrigation calculations will be submitted for review during the building permit process to determine meter capacity. The fire flow calculations will be prepared, signed and stamped by a certified engineer according to applicable codes and standards.

The applicant will consider the water conservation measures as suggested.

The applicant will also employ best management practices as appropriate during the construction process to minimize infiltration and runoff from all construction and vehicle operations.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Colleen Suyama, Staff Planner, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\dws.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

LINDA LINGLE
GOVERNOR OF HAWAII

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

LORRIN W. PANG, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, HAWAII 96793-2198

May 28, 2003

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai`i 96793

Attention: Colleen Suyama

Dear Mr. Foley:

Subject: **Lahaina Kingdom Hall**
TMK: (2) 4-5-004: 042 and 044
EA 2003/0001, SM1 2003/0002, CUP 2003/0001

Thank you for the opportunity to comment on the Lahaina Kingdom Hall project. The following comments are offered:

1. Hawaii Administrative Rules, Chapter 501, "Asbestos Requirements" requires inspections of all affected areas to determine whether asbestos is present prior to any demolition activities. The Applicant is required to file with the Noise, Radiation and Indoor Air Quality Branch, Notification of Demolition and Renovation ten (10) working days prior to the demolition of each building or the disturbance of regulated asbestos containing materials. All regulated quantities and types of asbestos containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill. Questions concerning asbestos requirements should be directed to Mr. Thomas Lileikis of the Noise, Radiation and Indoor Air Quality Branch at (808) 586-4700.

2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

3. HAR, Chapter 11-46 sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: NRIAQ

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Herbert S. Matsubayashi
District Environmental Health
Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Mr. Matsubayashi:

Thank you for your letter addressed to Michael Foley, Director of Planning dated May 28, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregation of Jehovah's Witnesses, we wish to provide the following information in response to your comments in the same order as in your letter.

1. ***Response to Comment on Asbestos Requirements***

We confirm the applicant will comply with HAR, Chapter 501 regarding asbestos requirements and follow appropriate inspection, notification and disposal procedures.

2. ***Response to Comment on Community Noise Control***

We confirm that the proposed project will comply with HAR, Chapter 11-46 *"Community Noise Control"* and a noise permit, if required will be obtained prior to the commencement of work.

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Again, thank you for your comments and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Michael W. Foley, Director, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\dohmaui.res

Maui Electric Company, Ltd. • [illegible] West Kaahumanu Avenue • P O Box [illegible] • [illegible]

'03 MAY 23 P1:30

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May 22, 2003

Ms. Colleen Suyama
Staff Planner
Maui Planning Department
250 S. High Street
Wailuku, HI 96793

Dear Ms. Suyama:

Subject: Lahaina Kingdom Hall
TMK: 4-5-004:042 and 044
I.D.: EA 2003/0001, SM1 2003/0002, CUP 2003/0001

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. Please reference our earlier comments to Munekiyo & Hiraga, Inc. dated February 13, 2002, which is included in the Application for Special Management Area Use Permit and County Special Use Permit for the above project.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinyama
Manager, Energy Delivery

NS/dt:lkh

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

Our People...Our Islands...In Harmony
210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

Date: May 30, 2003

Mr. Michael W. Foley, Director
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley,

SUBJECT: Lahaina Kingdom Hall; TMK: 4-5-004: 042 and 044
I.D. : EA 2003/0001, SM1 2003/0002, CUP 2003/0001

We have no comment on the subject application.

Thank you for the opportunity to comment.

Sincerely,

Neal S. Fujiwara
District Conservationist

CMS

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

RALPH M. NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

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

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

'03 JUN 17 P4:04

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COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

DATE: JUNE 16, 2003

MEMO TO: MICHAEL W. FOLEY, DIRECTOR OF PLANNING

FROM: GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT

SUBJECT: ENVIRONMENTAL ASSESSMENT, SPECIAL MANAGEMENT AREA AND COUNTY SPECIAL USE PERMIT APPLICATIONS
KINGDOM HALL OF JEHOVAH'S WITNESSES - LAHAINA
TMK: (2)4-5-004:042, 044
EA 2003/0001, SM1 2003/0002, CUP 2003/0001

We reviewed the subject application and have the following comments:

1. Comments from the Wastewater Reclamation:

   A. Although wastewater capacity is available as of May 21, 2003, the developer should be informed that wastewater capacity cannot be ensured until the issuance of the building permit.

   B. The developer is not required to pay assessment fees for this area at this time.

   C. Wastewater contribution calculations are required before a building permit is issued. Indicate on the plans the ownership of each easement (in favor of each party). The County will not accept sewer easements which traverse private property. Plans should show the installation of a property line clean-out on the sewer service lateral.

   D. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

   E. Non-contact cooling water and condensate cannot drain to the wastewater system.

F. The project description indicates on page 21 and page 37 an 8 inch sewer line within Puunoa Place. Our records indicate that no lines exist within this street and that the lot is serviced via a 6 inch lateral from the 18 inch main line in Front Street.

2. Comments from the Engineering Division:

A. Increased flows must remain "on-site". The applicant shall designate and provide calculations to mitigate these impacts. This application does not provide enough details.

3. Comments from the Development Services Administration:

A. The grading for the project shall comply with the provisions of the grading ordinance. Best management practices shall be implemented to the maximum extent practicable to prevent pollutants including dust and sediment from discharging off the project site.

B. The drainage system design shall comply with the provisions of the drainage rules and shall create no additional adverse effects to adjacent and downstream properties.

C. The provisions of Section 16.26.3304 of the Building Code, Improvements to Public Streets, shall be complied with to provide road widening as necessary as determined by the Engineering Division to Front Street and to Puunoa Place. The subdivision of the road widening lots shall comply with the provisions of the subdivision ordinance.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

RMN:msc

MUNEKIYO & HIRAGA, INC.

November 20, 2003

Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and
Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Lahaina Kindgom Hall
Draft Environmental Assessment (EA)

Dear Mr. Coloma-Agaran:

Thank you for your memo addressed to Michael Foley, Planning Director, dated June 16, 2003 providing comments on the subject Draft EA. On behalf of the Lahaina Congregation of Jehovah's Witnesses, we wish to provide the following information in response to your comments in the same order as in your letter.

1. Response to Comments from Wastewater Reclamation

a. We confirm that wastewater capacity cannot be ensured until the issuance of the building permit.

b. We note that the Congregation of Jehovah's Witnesses is not required to pay assessment fees for this area at this time.

c. We confirm that wastewater contribution calculations by a licenced civil engineer will be submitted with the building permit application. The plans will indicate on the ownership of each easement and the easements will not traverse private property. Plans will show the installation of a property line clean-out on the sewer service lateral.

d. We confirm that kitchen facilities will not be included in the proposed project.

e. We confirm non-contact cooling water and condensate will not drain to the wastewater system.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

f. The Final EA will be amended as per your comment and indicate that the lot is serviced via a 6-inch lateral from the 18-inch main line in Front Street.

2. *Response to Comments from the Engineering Division*

a. Increased flows will remain *"onsite"*. Design details and detailed calculations for the onsite drainage system will be submitted for review and approval with the building permit application.

3. *Response to Comments from the Development Services Administration*

a. We confirm the grading for the project will comply with the provisions of the grading ordinance. Best management practices (BMPs) will be implemented to the maximum extent practicable to prevent pollutants including dust and sediment from discharging off the project site.

b. We confirm the drainage system design will comply with the provisions of the drainage rules and will create no additional adverse effects to adjacent and downstream properties.

c. We confirm the project will comply with provisions of Section 16.26.3304 of the Building Code to provide road widening as necessary as determined by the Engineering Division to Front Street and Puunoa Place. We also confirm the subdivision of the road widening lots will comply with the provisions of the subdivision ordinance.

Thank you again for your comments.

Very truly yours,

Mich Hirano, AICP
Planner

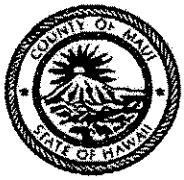
MH:yp
cc: Michael W. Foley, Director, Department of Planning
Miles Yeda, Lahaina Congregation of Jehovah's Witnesses
jehovahs\lahainkh\dpwem.res

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



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

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

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

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

November 18, 2003

MEMO TO: MICHAEL W FOLEY, PLANNING DIRECTOR

FROM: for GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT

SUBJECT: TRAFFIC ASSESSMENT
LAHAINA KINGDOM HALL
TMK: (2) 4-5-004:042, 044
SM1 2003/0001

We reviewed the subject traffic assessment and have no additional comments.

If you have any questions regarding this memorandum, please call Milton Arakawa at Ext. 7845.

GSCA:MA:jlh
S:\LUCA\ALL\PERMITS\JLH\Lahaina Kingdom Hall_traffic assessment.wpd

Reference

Community Resources, Inc., Maui County Community Plan Update Program Socio-Economic Forecast Report, January, 1994.

County of Maui, The General Plan of the County of Maui, 1990 update.

County of Maui, Lahaina Community Plan, December 1983.

County of Maui, Department of Planning and Department of Water Supply, Maui County Water Use and Development Plan, Executive Summary, March 1990.

Environment Impact Study Corp., Draft EIS for Lahaina Water Treatment Plant, prepared for the County of Maui, Department of Water Supply, December 1979.

Handy, E.S. Graighill and Handy, Elizabeth Green, Native Planters in Old Hawaii: Their Life, Love and Environment, Bernice P. Bishop Museum Bulletin 233, Bishop Museum Press, Honolulu, 1978.

Helber, Hastert and Kimura, Planners, South Beach Mauka Environmental Assessment, prepared for Amfac/JMB Hawaii, Inc., June 1990.

Locations, Inc., Real Estate Sales and Research, Hawaii Real Estate Indicators, 3rd Quarter, 1993.

Munekiyo & Arakawa, Inc., Application for Special Management Area Permit-Lahaina Center Parking Structure, May 1994.

Michael T. Munekiyo Consulting, Inc., Applications for Special Management Area Permit and Shoreline Setback Variance-Lot 45 Subdivision, March 1994.

Michael T. Munekiyo Consulting, Inc., Special Management Area Permit Application-Redevelopment of ABC Store at 726 Front Street, June 1993.

PBR, Hawaii, Planning, Environmental and Engineering Considerations for Puukolii Village, February 1993.

Pukui, Mary Kawena, Elbert, Samual E. and Mookini, Esther T., Place Names of Hawaii, University of Hawaii Press, Honolulu, 1974.

R.T. Tanaka Engineers, Inc., Preliminary Drainage & Soil Erosion Control Study for Mala Wharf Comfort Station, June 1994.

SMS, Maui County Community Plan Update Program: Socio-Economic Forecast, prepared for Planning Department, County of Maui, June 2002.

Speakman, Cummins, E., Jr., Mowee: A History of Maui, The Magic Isle, Peabody Museum, Salem, 1978.

State of Hawaii, Department of Business and Economic Development, Date Book, 1992- A Statistical Abstract, March 1993.

State of Hawaii, Department of Labor and Industrial Relations, Labor and Occupational Information, June 2002.

Sterling, Elspeth P., Sites of Maui, Bishop Museum Press, Honolulu 1998.

Telephone Conversation with Elden Chang, Maui Fire Department, December 1993.

Telephone Conversation with Greg Takahashi, Maui Police Department, December 1993.

Telephone Conversation with Manuel Fraganta, Department of Labor and Industrial Relations - Research and Statistics Office, June 1994.

Telephone Conversation with Aileen Shirota, Department of Education, February 1994.

The Maui News, Pioneer Mill Co., Ltd. Lahaina, Maui, 1860-1990, Supplement to the Maui News, July 8, 1990.

U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

University of Hawaii, Department of Geography, Atlas of Hawaii, Second Edition, 1983.

University of Hawaii-Land Study Bureau, Detailed Land Classification Island of Maui, May, 1967.

ASC403-3

ARCHAEOLOGICAL INVENTORY SURVEY OF THE PROPOSED SITE FOR THE NEW LAHAINA KINGDOM HALL PUUNOA, PAUNAU *AHUPUA`A* LAHAINA DISTRICT, MAUI ISLAND (TMK 4-5-04:42 & 44)

for

The Lahaina Congregation of Jehovah's Witnesses
75 Puunoa Place
Lahaina, Maui, Hawai`i 96761

by

Aki Sinoto
and
Jeffrey Pantaleo

April 2003

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

ABSTRACT

At the request of the Lahaina Congregation of Jehovah's Witnesses, Aki Sinoto Consulting (ASC) of Honolulu completed an archaeological inventory survey of two parcels located at the northern coastal section of Lahaina Town. The parcels are located *makai* of Front Street along Puunoa Place, in the northern section of Lahaina Town near Mala Wharf, on the coastal portion of Paunau *ahupua`a,* Lahaina District, Maui Island. Parcel 1 (TMK 4-5-04:44) encompassing 11,880 sq. ft. is located northeast of Parcel 2 (TMK 4-5-04:42) encompassing 11,887 sq. ft. An unoccupied cottage, constructed in 1991, is located on Parcel 1 and the existing Kingdom Hall on Parcel 2.

The surface survey resulted in negative findings. Subsurface testing in the form of seven backhoe trenches was conducted in Parcel 1. Again, the results were negative and no cultural remains were encountered. Substantial amounts of imported fill material were seen in the stratigraphic profiles of the trenches.

Due to the negative results of the current survey and the understanding that the construction activities associated with the proposed development will not penetrate below the existing fill layer, with the exception with the sewer lateral, no further archaeological procedures are recommended. Archaeological monitoring during construction is also deemed unwarranted. However, should inadvertent discoveries be made, work in the immediate area shall be halted and a qualified archaeologist shall be retained to evaluate the findings.

(cover: Lahaina as Seen from Lahainaluna-original etching in possession of the Robert E. Van Dyke Collection, Honolulu.)

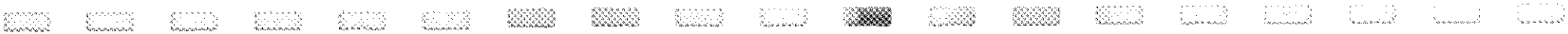


TABLE OF CONTENTS

LIST OF FIGURES

TABLES

INTRODUCTION

At the request of the Lahaina Congregation of Jehovah's Witnesses, Aki Sinoto Consulting (ASC) of Honolulu completed an archaeological inventory survey of two parcels located at the northern coastal section of Lahaina Town. The phased construction of a new Kingdom Hall facility is proposed on a recently acquired parcel together with the adjoining parcel to the southwest occupied by the existing Kingdom Hall. Under the proposed plan, the new hall will be completed first, the old hall will be demolished, and in its place a new parking lot will be constructed. The objective of the survey was to satisfy historic preservation regulatory requirements of the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR), as mandated by the Hawaii Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules.

PROJECT AREA

The parcels are located *makai* of Front Street along Puunoa Place, in the northern section of Lahaina Town near Mala Wharf, on the coastal portion of Paunau *ahupua`a,* Lahaina District, Maui Island (Fig. 1). Parcel 1 (TMK 4-5-04:44) encompassing 11,880 sq. ft. comprises the southeast corner of a residential block and is bounded along the northeast by Front Street, southeast by Puunoa Place, southwest by the existing Kingdom Hall, and northwest by residential lots. Parcel 2 (TMK 4-5-04:42) encompassing 11,887 sq. ft. which adjoins Parcel 1 to the southwest is bounded along the southeast by Puunoa Place, and southwest and northwest by residential lots (Fig. 2). An unoccupied cottage, constructed in 1991, is located on Parcel 1 and the existing Kingdom Hall on Parcel 2 (Fig. 3).

ENVIRONMENTAL SETTING

The project area is located on the coastal flat of Paunau *ahupua`a*, in the traditional locality known as Puunoa. The elevation is less than 10 ft amsl and the flat terrain slopes slightly toward the shore. The southwestern slopes, behind the rain shadow, of the West Maui mountains are relatively dry with a mean annual rainfall of c. 14 inches. The arid climate of Lahaina is similar to that of Kihei in East Maui. The mean annual temperature is approximately 80 degrees Farenheit (Armstrong 1983:62,64). The naturally occurring soil represented in the project area is Pulehu clay loam. The Pulehu series soils; developed in alluvium washed from basic igenous rock; are well-drained soils on alluvial fans, stream terraces, and in basins. Pulehu clay loam exhibits moderate permeability, slow runoff, with no more than slight erosion hazard. Within the project area, a considerable amount of imported fill overlies the natural soil.

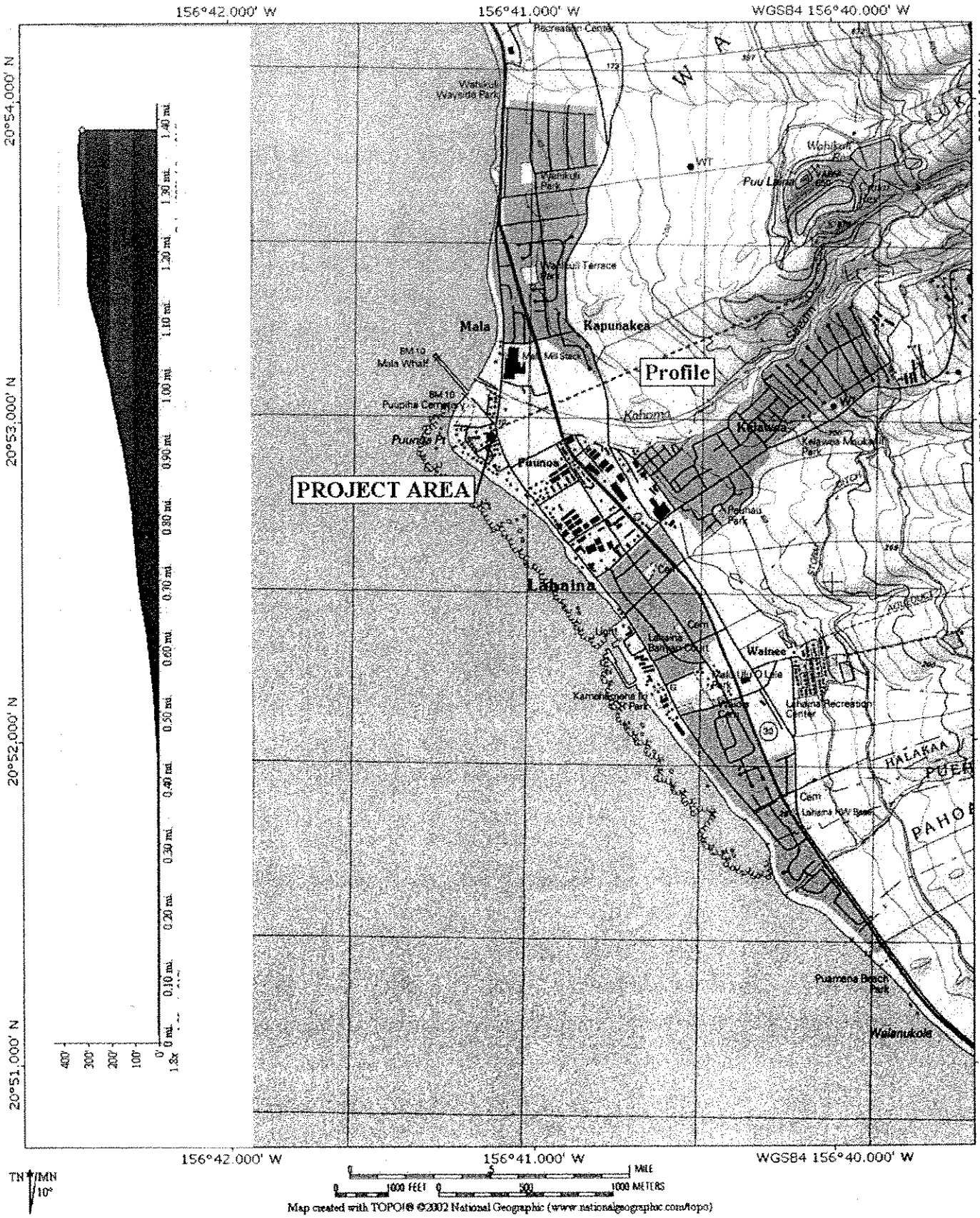


Figure 1. Project Area on 1995 USGS Lahaina Quadrangle

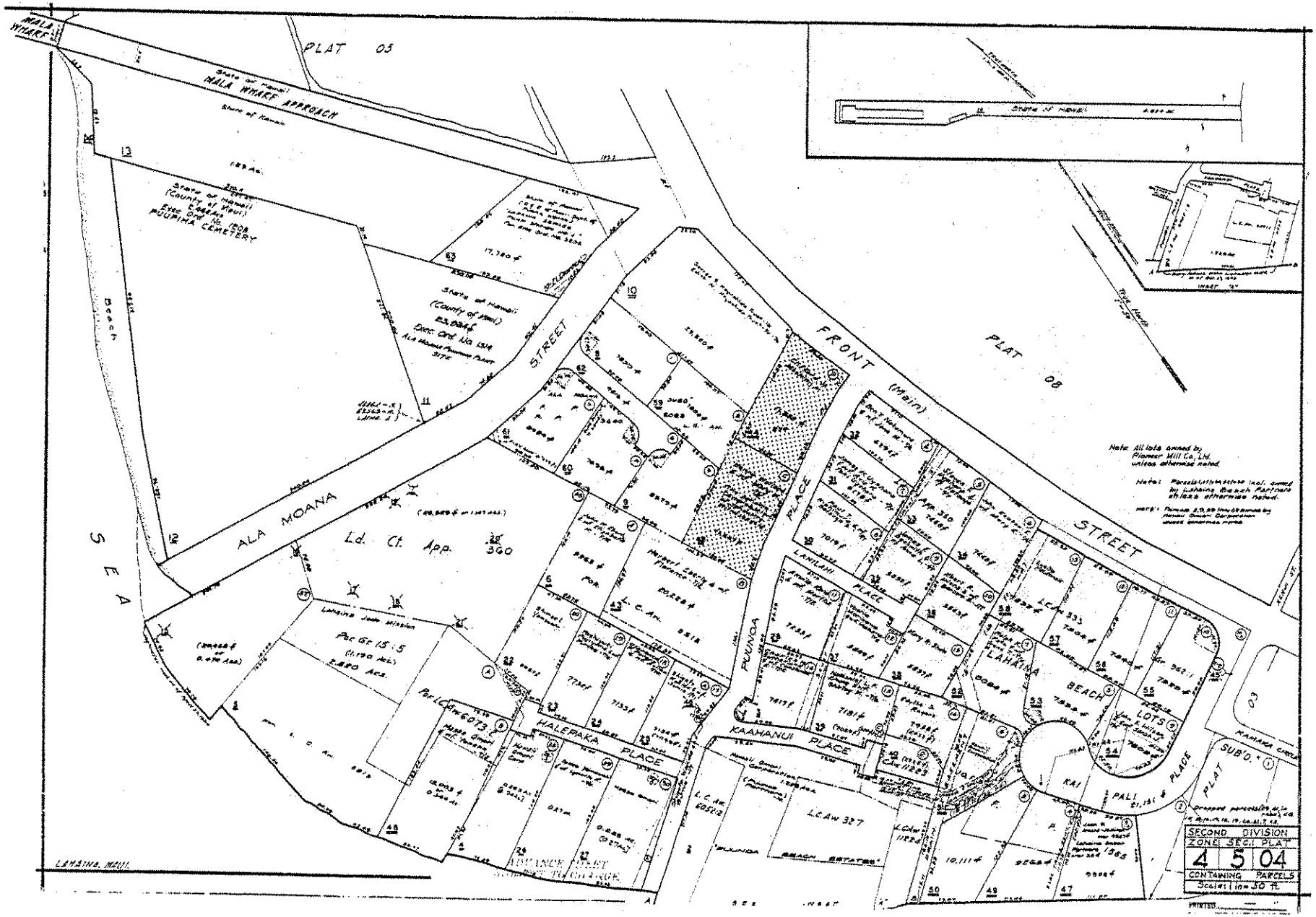


Figure 2. Project Area on Tax Map

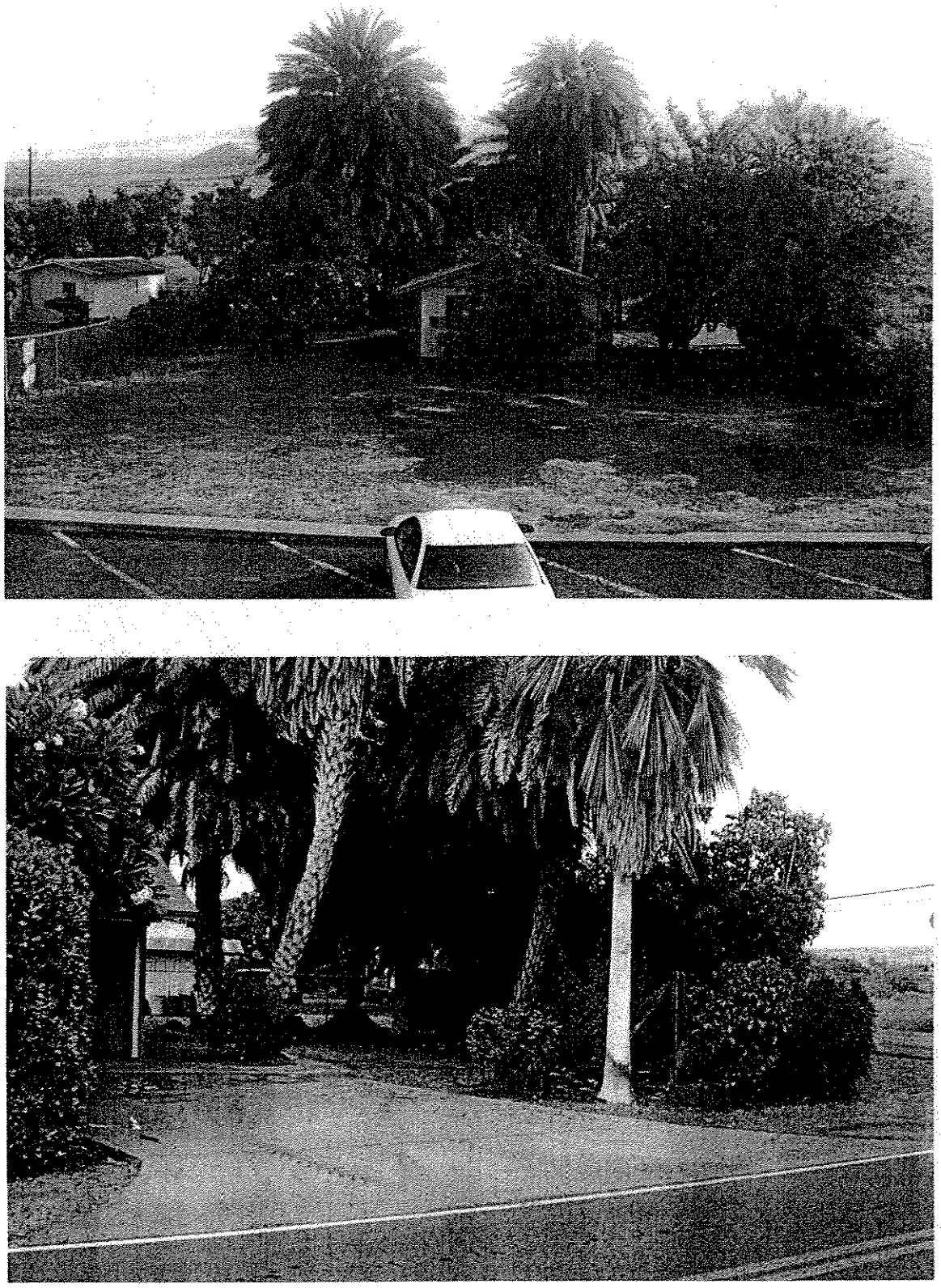


Figure 3. Overview of Parcel 1 and Cottage to Northeast (top) and to North (bottom)

The vegetation in the coastal portions of Lahaina consists of those species that commonly occur in arid areas. However, the project area has been irrigated and contains exotic ornamentals such as plumeria (*Plumeria acuminata*), hedges of croton (*Codiaeum variegatum*), several date palms (*Phoenix dactylifera*), one pritchardia palm (*Pritchardia* sp.), orchid trees (*Bauhinia monandra*), and mango trees (*Mangifera indica*). Other exotic shrubs grow along the boundaries and ground cover is lawn grass.

HISTORICAL SUMMARY

A number of previous studies provide comprehensive historical backgrounds of Lahaina including the Bishop Museum's studies of Moku`ula (Kleiger [ed.] 1995) and Pikanele's Kuleana (Major and Kleiger 1995), and International Archaeological Research Institute's inventory survey of the Pioneer Mill Company Lands (Goodwin and Leineweber 1997). The reader is referred to these and other sources. A brief historical summary for Lahaina will be presented here.

There exists a paucity of knowledge regarding the prehistoric period and most of what is known originate from oral tradition, legend, or the results of a few archaeological projects. Both the oral history and the archaeological information indicate that during the few centuries prior to Western contact, Hawaiian settlements occurred in the Lahaina and West Maui coastal areas.

Lahaina District was one of two main population centers in West Maui. It was a favored place of residence by the high chiefs of Maui because of the climate, the abundant food resources, easy communication with the other heavily populated areas of eastern and northeastern West Maui, and its proximity to Lana`i and Moloka`i (Handy and Handy 1972).

In 1793, when Captain George Vancouver visited Maui, there was much devastation as a result of the wars of unification that had been raging since the mid-1700s. At Lahaina, the irrigated taro fields, ponds, and water system had all been destroyed. Alapa`i-nui of Hawai`i, at war against the O`ahu *mo`i* Peleiohani on Maaui, dried up Kaua`ula, Kahana, and Kahoma streams, destroyed the terraces and *auwai*, and the productive capabilities of the *lo`i* below (Kamakau 1992).

However, apparently not all of Lahaina was devastated. According to a description of the village of Lahaina written in March 1793 by Archibald Menzies, naturalist and surgeon with Vancouver:

> March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with two Niihau women, to see the village of Lahaina, which we found scattered along the shore on a low tract of land that was neatly divided

> into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the plantation.
>
> These little fields were tranplanted in a variety of forms, some in rows, in squares, in clumps and others were with equal care kept dry by gathering earht around them in little hills. In short, the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration during a long walk through it, in which we were accompanied by a numerous group of natives that continued very peaceful and orderly the whole time (Menzies 1920).

The strategic location of Lahaina, its supply of fresh water, and forests brought Kamehameha I to Lahaina to build a fleet for his planned invasion of Kaua`i. Kamehameha and a court of 1,000 encamped in Lahaina in 1802 and constructed the "brick" palace on the point. Under the direction of Governor Ke`eaumoku, the reconstruction of Lahaina continued. Taro field walls destroyed during the wars if unification were repaired and the land was made productive once again (Kleiger and Dixon 1993).

During the reign of Kamehameha I, not only was Lahaina the seat of government, but the port of Lahaina thrived as the center of the sandalwood trade, a monopoly of the king, for shipments to China. Whaling flourished between 1820 to around 1862, when the whaling industry ceased. Lahaina was a busy port town with a peak of 549 ships in 1859. Around the same time the missionaries started to arrive from New England (Community Planning 1961).

The first map of Lahaina was made by M.L.I. Duperry, officer of a French battleship that visited Lahaina in august 1819 (Fig. 4). This map depicts the buildings of the village and identified various agricultural fields planted in taro, sugarcane, and cotton. The map shows no houses or agricultural fields in the current project area, but depicts Kahoma Stream. The limits of Lahaina Village are immediately south. To the north, a cluster of houses and a taro field are shown near the mouth of Kahoma Stream and scattered houses along the coast.

At the time of William Ellis' visit, Lahaina District had "extensive tracts of well-watered land in a high state of cultivation...the level land of the whole district, for about three miles, is one continuous garden, laid out in beds of taro, potatoes, yams, sugar-cane, or cloth plants" (Ellis 1979).

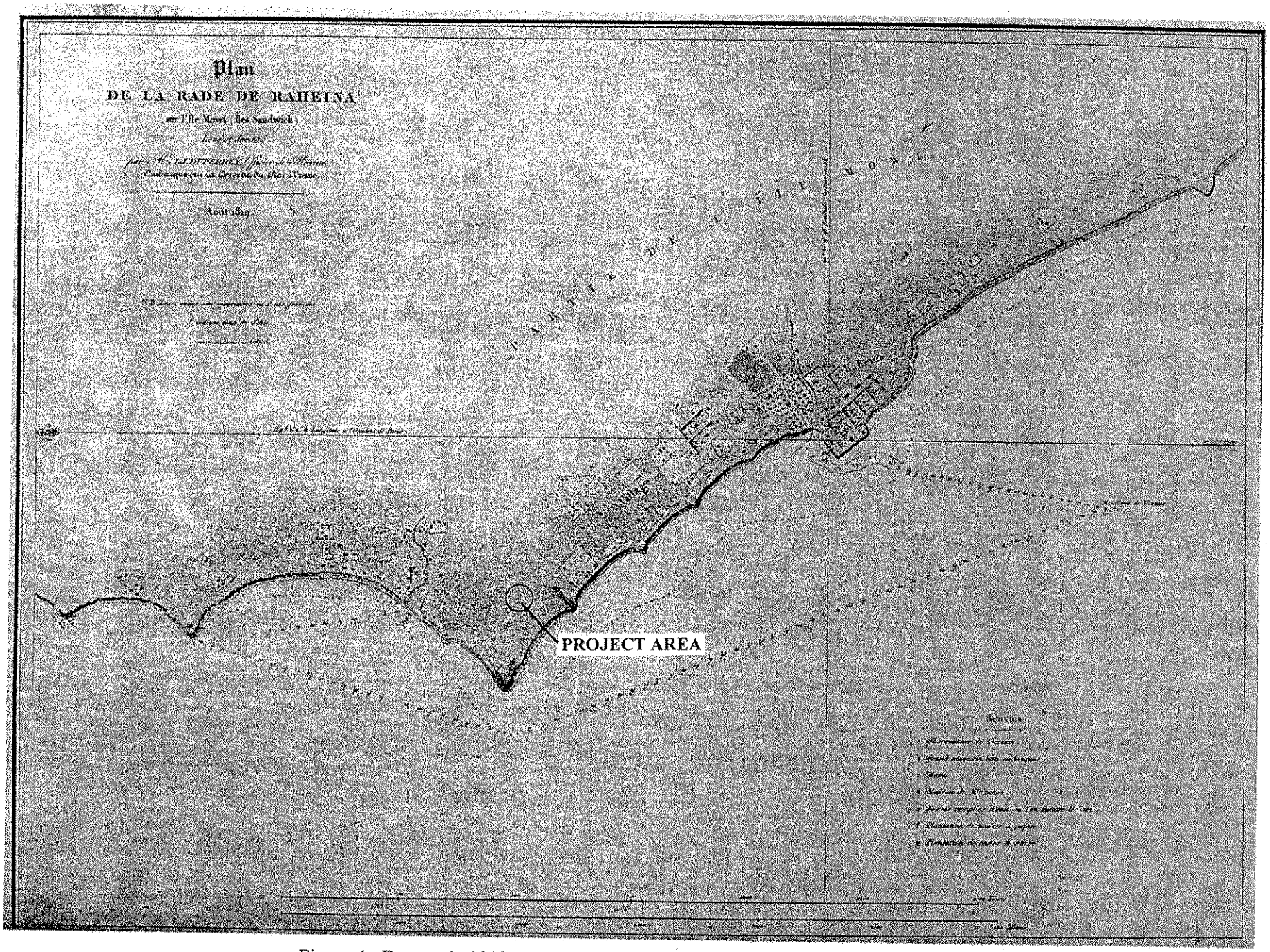


Figure 4. Duperry's 1819 Map of Lahaina Depicting Settlement and Agricultural Areas

Handy and Handy, citing Fornander (1917-1919), state that; according to legend, the country from Keka`a to Wahikuli, north of Lahaina, once had many houses and was intensively cultivated. Handy interprets this legend to imply "continuous cultivation of the coastal region along the northwest coast" of Maui (Handy and Handy 1972).

The advent of commercialism that arrived with the sandalwood trade followed by whaling and the provisioning of whaling ships, brought many outsiders to Lahaina, including missionaries. Commercial agriculture had a relatively early start with the first sugar ventures starting prior to 1837 at Hawaiian owned mills (MacLennan 1995). The first westerner-owned mill in the Lahaina area was started by Judge Alfred W. Parsons in 1849 and became the predecessor to the Lahaina Sugar Company which came into being in 1859 (Hall 1962). But, the serious large-scale enterprises did not start until the latter 1850s (Galloway 1989). Pioneer Mill was started in 1860 by a partnership among James Campbell, Henry Turton, and James Dunbar. In 1863, Pioneer Mill bought out the Lahaina Sugar Company. Although the ownership went through several changes, Pioneer Mill continued operations until the beginning of the 21st Century.

Historic Land Use

During the Mahele in 1848, lands of Hawaii were divided among the Royalty, Government, and commoners. Applications for land titles were considered by the Board of Commissioners to Quiet Land Titles. When a claim was validated, a Land Claim Award (L.C.A.) was awarded. Following payment of this claim, a Royal Patent (R.P.) was issued.

The fact that Lahaina was a population center is borne out by the large number of L.C.A., 618, listed for the district. A total of 34 claims are listed for Paunau *ahupua`a* and 15 for the locality of Puunoa. Of these, Royal Patents were issued for all but 3 claims. Four L.C.A., three of which were listed as houselots, were located near the current project area (Table 1 and see Fig. 2). The project area occupies a portion of L.C.A. 277 to W.C. Lunalilo which included a houselot and Alamihi Fishpond. Table 2. Provides a summary of all claims in Puunoa and Paunau *ahupua`a*. Much of the *ahupua`a* was *ali`i* lands as evidenced by L.C.A. 277 to Lunalilo, 7713 to Kamamalu, and 8515 to Lahilahi. Figure 5 shows general land use in Lahaina ca. 1884.

Table 1. Land Court Awards in the Project Area Vicinity

L.C.A.	NAME	USE
277	Lunalilo, William C.	*pahale and loko o Alamihi*
327	Kaauwai, Z.	*pahale*
6052:2	Waihokaea & Kenui	"
8515	Lahilahi, Ana Keoni no	*portion of ahupua`a*

Table 2. Land Court Awards in Pu`unoa and Paunau *ahupua`a*

NAME	L.C.A.	LOCATION	AREA	ROYAL PATENT
Ali	281-B	Puunoa	14 rods	8310
Hanemo	6061	"	5.91 ac	1860
Kaahanui	333	"	1.22 ac	1715
Kalama	4452	Puunoa 1	1 rood	-
Kamaka	344	Puunoa	9 rods	8249
Keliipio	477-F	"	1.80 ac	1205
Ku, W.	486	"	2.09 ac	1203
Leleku	9950	"	1.00 ac	1861
Namauu, N.	M.A. 63	"	-	-
Naowaha	11223	"	20 rods	8274
Poopuaa	486-D	"	12 rods	8250
*ABCFM	387	Paunau	5 ac 1 rood 11 rods	1943
Baldwin, Dwight	387	"	6.71 ac	1943
Haia	6541	"	1.45 ac	1674
Ikeole	4878-T	"	29 rods	2721
Kaai, B.	488	"	1.15 ac	1869
Kaawa	345-B	"	1 ac 31 rods	5633
Kahalelole	6389	"	2 roods 9 rods	1867
Kahula, Iosua	331	"	1 ac 1 rood 3 rods	413, 1952, 2476
"	6430	"	1 ac 2 roods 18 rods	1868
Kaiama	6859	"	0.36 ac	2751
Kaiki	6410	"	1.27 ac	1705
Kailaa, Kale	2924	"	1.58 ac	1213
Kaiwipalupalu	6437	"	0.25 ac	1212
Kamamalu, Victoria	7713	Paunau Ap. 26	-	4475
Kaumiumi	9780	Paunau	0.74 ac	1864
Kawau	6856	"	1 rood 26 rods	-
Keaka	5107	"	0.32 ac	1865
"	329	"	1 ac 34 rods	4383
Keakualele	477	"	0.50 ac	1209
Keaweaheulu	1815	"	1.02 ac	1685
Keawekolohe	5621	"	3 roods 25 rods	1211
Keaweluaole	9812-C	"	1.93 ac	1779
Koolani	4878-U	"	0.20 ac	1870
Kua	6876	"	3 roods 1 rod	7835
Kule	4878-S	"	2.42 ac	1207
Maluo for Kamauoha	6729	"	1.29 ac	1778
Nawaakoa	2762	"	1.26 ac	1703
Nui	4804	"	1.03 ac	1683
Ohule	6854	"	3.44 ac	1890
Paaluhi	462	"	3 roods	5564
Paniani	10785	"	2.19 ac	8255
Puu	330/6403	"	0.97 ac	1210
Umiumi	2538	"	0.50 ac	1697
Vincent, John	379	"	3 roods 35 rods	1774

* American Board of Commissioners for Foreign Missions

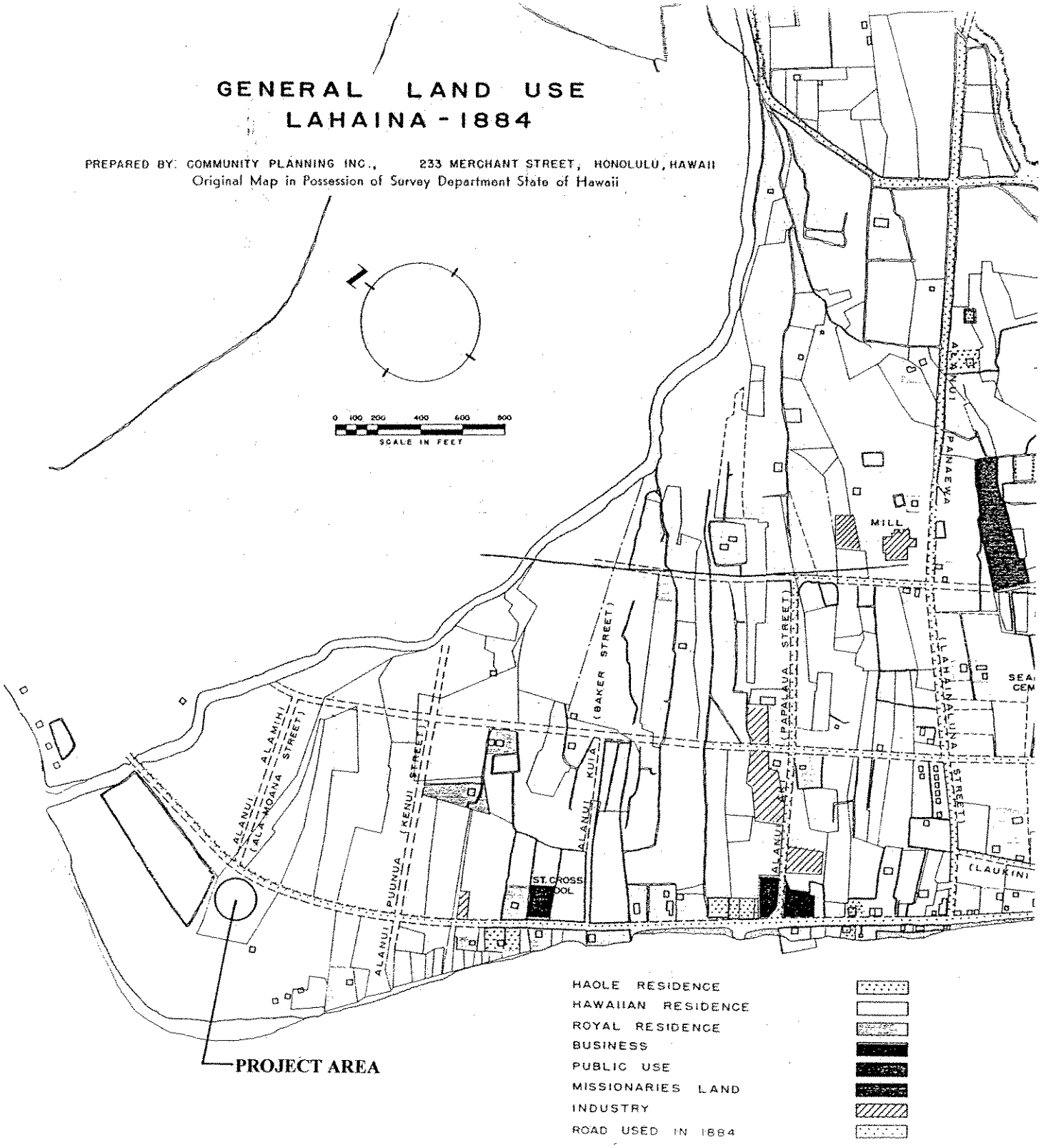


Figure 5. Portion of 1884 Land Use Map of Lahaina Showing Project Area
(Map Reproduced from Community Planning, Inc. 1961)

PREVIOUS ARCHAEOLOGY

With regard to other regions of Maui, comparatively little archaeological work has taken place in Lahaina. Again, a number of previous studies provide comprehensive summaries of previous archaeology in the region, including Jensen (1989), Burgett and Spear (1994), Major and Klieger (1995), Kleiger [ed] (1995), and Goodwin and Leineweber (1997).

Kleiger attempted to explain the paucity of archaeological investigations in Lahaina:

> "In general, very little work has been done in the Lahaina area. There are several factors for this paucity. One of the more important is the fact that the core of Lahaina is designated as a National Historic Monument. Any development must conform to rigid rules aimed at preservation of archaeological features. Adjacent areas in Lahaina have also benefited from careful, long-term planning which has kept the historical and cultural values of the community in the forefront. With little need to mitigate against the destructive effects of major intrusive urban development, there has been little need for so-called "salvage" archaeology. With a few exceptions, archaeology in Lahaina proper has been primarily research oriented, designed to provide information about the town's past which can be of value to county planners, and historical and restoration groups. The scope of much of the past work has been conservative (Kleiger 1995:123)."

However, within the so-called core of Lahaina, although the destructive effects of modern urbanization is comparatively less than in other areas of Maui Island, the effects of relatively early historic period urbanization and development of commercial agriculture most likely had a drastic impact on the remains from earlier occupation periods. Much of the previous work have indeed resulted in confirming the extensive disturbances originating from that era. However, the current project area is located at the periphery of the area being considered the "core" area of Lahaina town.

A good number of the previous investigations have concentrated around the Kahoma Stream and Mala Wharf areas north of town. Although no archaeological investigations have been previously undertaken within the current project area., the few studies that have been completed in the immediate vicinity will be briefly summarized here (Fig. 6).

An archaeological inventory survey was undertaken by Aki Sinoto Consulting in an 8.8 acre parcel located to the southwest of the current project area at Kenui Street in 1994 (Burgett and Spear 1994). A total of 22 backhoe trenches were excavated and a single human burial, State Site 50-50-03-3550, was encountered in one of the trenches at the southwest corner, close to Front Street. The burial was left in place under permanent *in-situ* preservation and an housing project for the elderly has been completed on the property by the Weinberg Foundation.

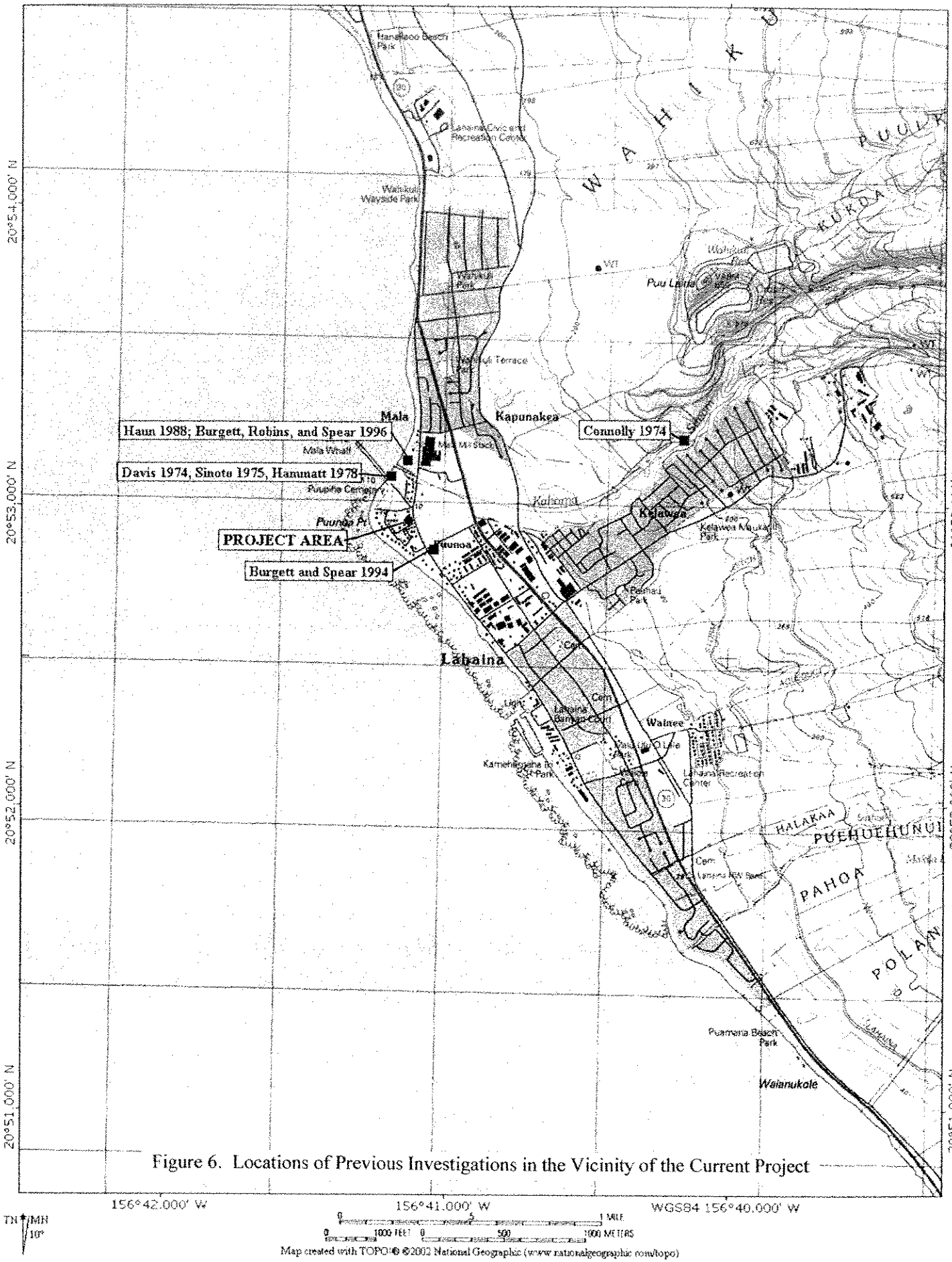


Figure 6. Locations of Previous Investigations in the Vicinity of the Current Project

Data recovery excavations were conducted at Site 50-50-03-2964, a prehistoric cultural layer, by Scientific Consultant Services, Inc. in 1996 (Burgett, Robins, and Spear 1996). This project area was located north of the current project area, just beyond Kahoma Stream. The site, estimated to encompass 400 square meters, was originally identified during a subsurface survey conducted by PHRI, Inc. (Haun 1988). Midden, a pit feature, and abundant charcoal and ash were encountered and radiocarbon dating yielded calibrated ranges of A.D. 1260-1440 and 1420-1640. The results of the 1996 data recovery procedures, during which six backhoe trenches totaling 72 linear meters were excavated, indicated that grading work that took place following the original survey in 1988 had removed the cultural deposit. No remains were encountered.

A surface survey was conducted by the Bishop Museum in 1974 in conjunction with the Kahoma Stream Flood-control Project (Connolly 1974). Three sites, consisting of two terrace systems (50-50-03-1775 and 1776) and a large burial mound (Site 50-50-03-226), were identified. The two terrace systems were located inland along Kahoma Stream and at the confluence of Kahoma and Kanaha Streams. The burial mound is located at Mala Wharf about ¼ mile northwest of the project area. This site is more like a coastal dune, c. 20 by 80 meters, that contain at least 25 individual burials. Located across the street from the Chinese cemetery, the marked burials; consisting of one cement tomb, one headstone, and 23 low stone platforms; most likely represent historic period Hawaiian burials. Subsequent mapping and testing of the coastal burials were undertaken by Davis (1974), Sinoto (1975), and Hammatt (1978).

Three slightly different historic preservation boundaries that exist in Lahaina are; the Lahaina Historic District (State Site 50-50-03-3001), the National Historic Landmark, and the County Historic District. The largest is the State District which completely incorporates the irregularly shaped National Landmark within a rectangular area with four corners and the smallest is the County boundary, which was primarily established as a design district for architectural purposes. The current project area occurs just beyond the northern boundary of the National Historic Landmark and outside of the County District.

SETTLEMENT PATTERN AND SITE EXPECTABILITY

The general prehistoric land use pattern inferred from the results of previous studies in West Maui indicates population along the coast with a few permanent settlements (villages) along the shore, associated with agricultural developments along permanent streams and some gulches with seasonal streams. The Kahoma Stream area, located just north of the current project area was one

of these agricultural areas along a permanent stream. Dating of cultural deposits in the vicinity of Mala Wharf indicate continuous occupation of that area from AD 1200s to the 1700s (Haun 1988). Inland fishponds, *loko pu`uone*, also occurred along the coast. The coastal slopes and plateaus, due to the arid climate, were most likely not widely utilized until the advent of sugar cultivation when large scale irrigation systems imported water from wetter regions of the island.

During the historic period, population centered around the port town of Lahaina with the influx of residential and commercial uses along the coast. By the late 1800s, much of the flats behind the settlements, plateaus, and slope areas were cultivated in sugar cane with irrigation ditches, flumes, and tunnels supplying water to the various fields. When the plantations began diverting the water from their upland sources, affecting many of the streams, the traditional agricultural practices were largely abandoned (Connolly 1974:10).

The results of previous archaeological studies and historical documentary research have shown that much of the neighboring areas have been extensively disturbed by historic period and recent activities. The 1884 land use map (see Fig. 5) depicts several Hawaiian residences in the vicinity of the project area. The Land Commission Awards in the vicinity (see Fig. 2 and Table 1) included house-lots as well. Residential lots have occupied the area for a long time, at least the past 200 years or so, with compounded rebuilding involving extensive surface modification and considerable subsurface disturbance. Although, a few subsurface remnants of past habitation activities may be expected, more likely, the potential for the presence of intact, significant cultural remains is considered to be minimal to none.

METHODS

The objective of the current inventory survey was to determine the presence or absence of significant cultural remains through surface and subsurface investigations. Following a surface inspection of the project area. Seven trenches were excavated by a WB-140 Komatsu backhoe around the accessible periphery of the existing cottage. The paved area surrounding the Kingdom Hall in the neighboring parcel was not excavated since the facility will be in use for several more months.

Recording included scaled profile drawings, stratigraphic descriptions, photographic recording, and locational mapping for each trench. Standard accepted archaeological techniques and practices were followed throughout the course of the current project.

RESULTS OF FIELDWORK

The surface inspection encountered no remains of any prehistoric or historic features, artifacts, or other evidence of cultural activities, such as exposed midden scatters. The subsurface testing locations were selected to provide representative sampling around the periphery of the existing cottage. Due to the negative results of the surface survey, the trench locations were randomly selected and primarily determined by accessibility considerations. Areas with known buried utility lines, such as sewer and water, were also avoided.

Trenches 1 and 2 were located on the eastern end of the Parcel 1, Trenches 3 and 4 on the northern side of the cottage, and Trenches 5 to 7 were located on the grass parking area adjoining Parcel 2 west of the cottage (Fig. 7). No cultural remains were exposed within any of the backhoe trenches. Substantial fill material was present in all trenches ranging in thickness from 0.37 to 0.86 m. Modern debris comprised of building materials such as broken hollow tile, asphalt, lumber, glass fragments, rocks, and boulder were mixed in with a reddish brown silt-loam matrix in the fill. According to a neighbor living directly across the street, a wood frame house, occupied by a Japanese woman who made brooms, was demolished prior to construction of the cottage.

The stratigraphic layers represented in the trenches were:

Overburden- T-1 and 2; dark reddish brown (5YR 3/4) loam, top soil
T-3 thru 6; grass and gravel
T-7; asphalt and gravel

Imported fill- brown (7.5YR 4/4 to 10YR 4/3) silt loam matrix with modern construction debris, hollow tile, lumber, glass, rocks, and boulders

Layer I- very dark brown (7.5YR 2.5/3) silty clay loam, friable, sticky, and plastic homogenous, roots

Layer II- dark grayish brown (10YR 4/2) loamy clay, sticky and plastic, homogenous, roots

Layer III- pale brown (10YR 6/3) sand, homogenous, loose, non-sticky and, non-plastic

Water table- ranged between 1.50m (II) in T-2 and 1.80m (III) in T-1 and 7

Table 3 presents trench specifications and Figure 8 depicts representative stratigraphic profiles for each trench. Figures 9 through 15 are photographic overviews of each trench.

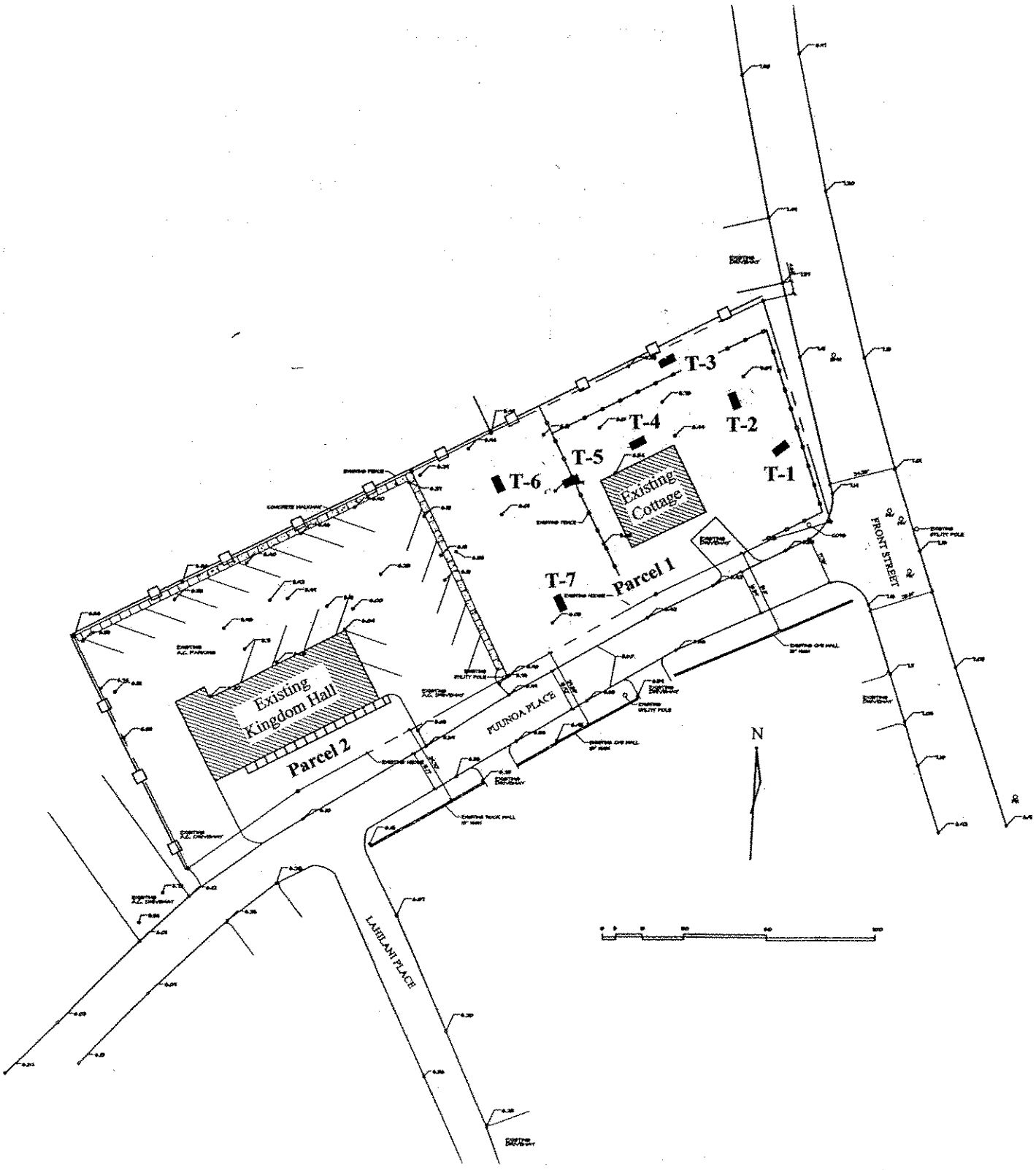


Figure 7. Locations of Backhoe Trenches 1 – 7 within Parcel 1

Table 3. Backhoe Trench Specifications

BHT-	LENGTH	WIDTH	DEPTH	ORIENT.	LAYERS	WATER	CULTURAL
1	3.00m	1.00m	1.80m	210	OB/fill/I/II/III	at 1.70m	none
2	2.50m	0.80m	1.50m	160	"	at 1.50m	"
3	3.50m	0.90m	"	228	"	-	"
4	2.50m	"	1.60m	230	"	-	"
5	4.00m	"	1.80m	225	"	-	"
6	4.50m	1.00m	1.55m	332	"	-	"
7	3.00m	0.80m	1.80m	150	"	at 1.80m	"

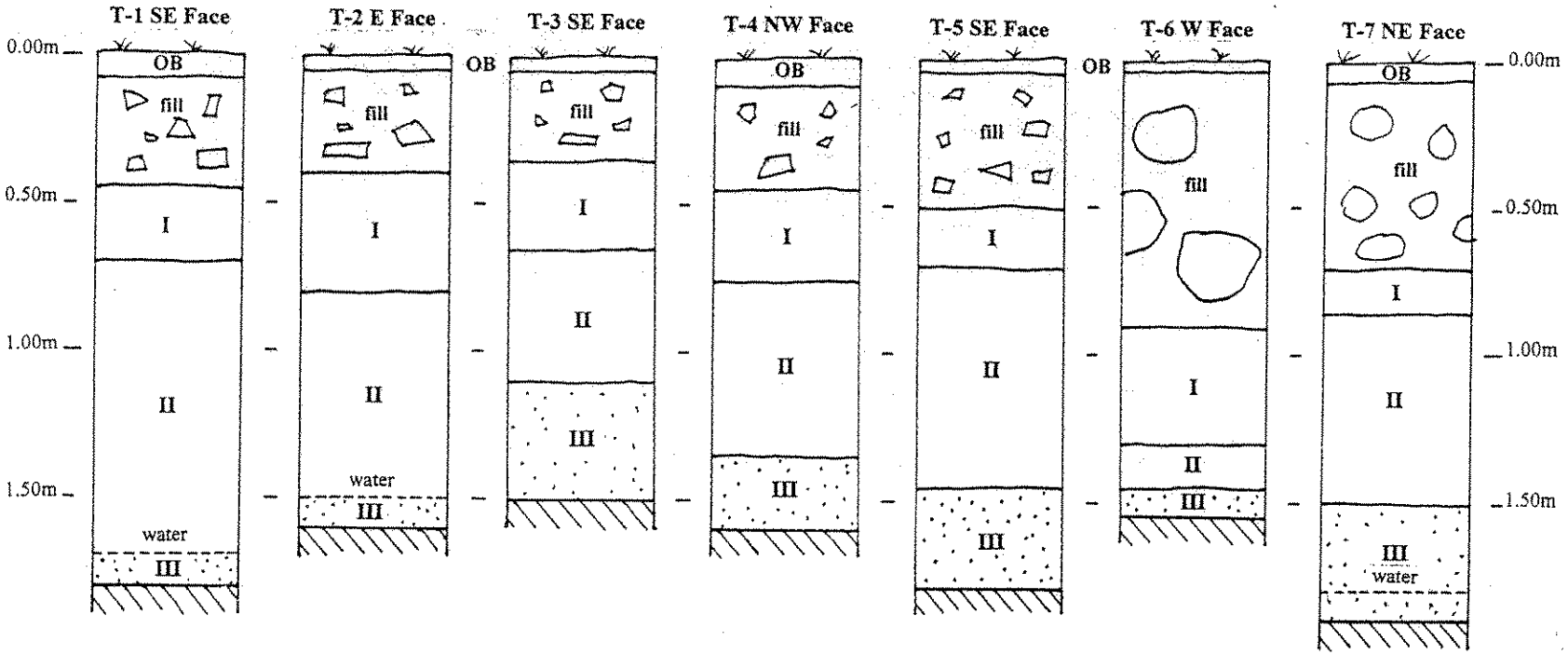


Figure 8. Representative Stratigraphic Profiles for Trenches 1 -7

Figure 9. Overview of Trench 1 to Southwest

Figure 10. Overview of Trench 2 to South

Figure 11. Overview of French 3 to West

Figure 12. Overview of Trench 4 to Southwest

Figure 13. Overview of Trench 5 to Southwest

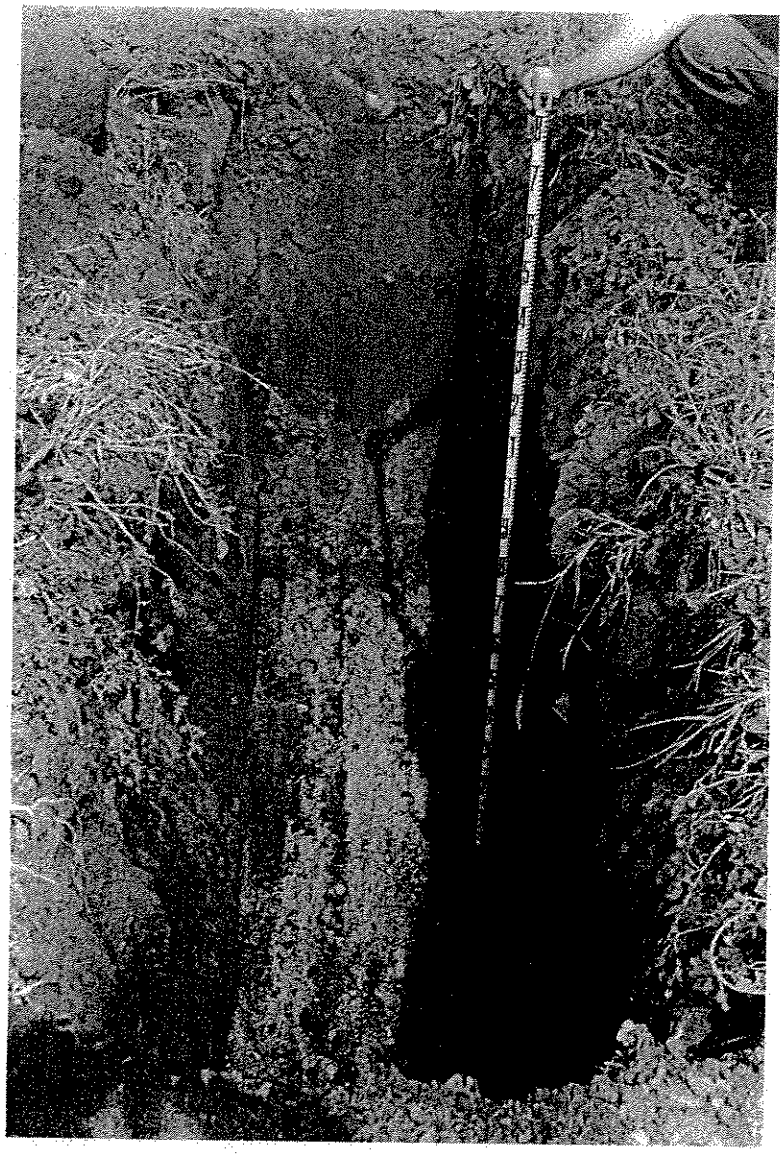


Figure 14. Overview of Trench 6 to North-northwest

Figure 15. Overview of Trench 7 to Southeast

DISCUSSION

The results of the current inventory survey fieldwork indicated that the project area had undergone extensive surface and subsurface modifications over the past 150 years. The earliest maps indicate a few Hawaiian residences in the area in the late 1800s. Sugar cane was cultivated in the area between the end of the 19th to the first half of the 20th centuries. Following WWII, a residential area started to flourish. A 1960 land use map shows that the project area was open land at that time. The existing Kingdom Hall was built in the late 1960s on Parcel 2 and the first wood frame house was probably built on Parcel 1 around that time. According to congregation members familiar with the original construction of the hall, imported fill was placed in Parcel 2 at that time. The grass parking area, where Trenches 5-7 were located, was filled in the 1980s. The existing cottage on Parcel 1 was constructed in 1991. At that time or earlier, when the previous house was demolished, Parcel 1 was filled with imported fill as well as some of the debris probably from the demolition. In both parcels, the fill ranges between 1.2 to 3 feet (0.30-0.85m).

No significant prehistoric or historic period cultural remains were encountered during the surface survey or the subsurface testing. The homogenous nature of the soils occurring below the fill layer suggested that these layers were culturally sterile. Layer I maybe the truncated remnant of the sugar cane cultivation zone.

RECOMMENDATIONS

The results of the current inventory survey determined that no significant surface remains are present within the project area and that the potential for encountering significant subsurface remains is minimal. Based on the plans, the proposed development on Parcel 1 will involve very little excavation since the Kingdom Hall will be built on a slab. Following demolition of the existing hall on Parcel 2, the area will be paved for a parking lot. Probably the deepest excavation will be the for the sewer-line lateral connecting to the main line along Puunoa Place.

In view of the negative results of the current undertaking and the proposed development not extending beyond the existing fill, no further archaeological procedures, including archaeological monitoring during demolition or construction, are deemed necessary. However, if inadvertent findings are made during construction, the work should be halted in the immediate area and a qualified archaeologist shall be notified to evaluate the findings.

REFERENCES

Armstrong, R.W., J.A. Bier, and S. Chang
1983:2 *Atlas of Hawaii.* University of Hawaii Press, Honolulu.

Board of Land Commissioners
1929 *Indices of Awards Made by the Board of Land Commissioners to Quiet land Titles in the Hawaiian Islands.* Territory of Hawaii, Honolulu.

Burgett, Berdena and Robert Spear
1994 *An Archaeological Inventory Survey of an 8.8 Acre Parcel in the Land of Kainehi, Distirct of Lahaina, Pauanu ahupua`a, Island of Maui.* Prepared for KCOM Corp. By Aki Sinoto Consulting. Honolulu.

Burgett, Berdena; Jennifer Robins, and Robert Spear
1996 *Data Recovery Excavations at Site 50-50-03-2964, Lahaina, Maui Island, Hawai`i (TMK:4-5-05:9).* Prepared for UTC Engineering. By Scientific Consultant Services, Inc. Honolulu.

Campbell, Susan M.
1986 *Sugar in Hawaii: A Guide to Historical Resources. Linda Menton (ed.)* Humanities Program of the State Foundation of Culture and the Arts in Cooperations with the Hawaii Historical Society. Honolulu.

Community Planning, Inc.
1961 *Proposal for the Historical Restoration and Preservation of Lahaina, Island of Maui, State of Hawaii.* Prepared for Board of Supervisors and Lahaina Restoration Committee. By Community Planning, Inc. Honolulu.

Connolly, Robert D. III
1974 *Phase I Archaeological Survey of Kahoma Stream Flood-control Project Area, Lahaina, Maui.* Prepared for the U.S. Army Corps of Engineers and the National Park Service. By Department of Anthropology, Bishop Museum..Honolulu.

Davis, B.D.
1974 *Preliminary Report, Mala Wharf Burials, Phase I, Mala, Lahaina, Maui Island.* Report No. 14-105. Archaeological Research Center Hawaii. Lawai.

Department of Land and Natural Resources
1980 Hawai'i Administrative Rules, Title 13. Department of Land and Natural Resources, Subtitle 13, State Historic Preservation Division Rules.

Ellis, William
1979 *Journal of William Ellis, Narrative of a Tour of Hawaii, or Owhyee.* Honolulu Advertiser Publishing. Honolulu.

Foote, D., E.L. Hill, S. Nakamura, and F. Stephens
1972 *Soil survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawai'i* U.S.D.A. Soil Conservation Service and University of Hawaii Agricultural Experiment Station, U.S. Gov't Printing Office, Washington, D.C.

Fitzpatrick, Gary L.
1986 *The Early Mapping of Hawai`i.* Editions Limited. Honolulu.

Fornander, A.
1916- Fornander Collection of Hawaiian Antiquities and Folklore, Vols. 4,5.

1919 *Memoirs* Bernice P. Bishop Museum, Honolulu.

1969 *An Account of the Polynesian Race, its Origin and Migrations.* Charles Tuttle,Tokyo.

Freycinet L. C. de
1827-1839 *Voyage Autour de Monde Entrepris par Ordre du Roi...execute sur les Corvettes de S.M.L. Uranie et La Physicienne.* Vol.2 Part 2. Imprimerie Royal. Paris.

Galloway, J.H.
1989 *The Sugar Cane Industry: An Historical Geography from its Origins to 1914.* Cambridge University Press. Cambridge.

Goodwin, Conrad and Spencer Leineweber
1997 *Lands of Pioneer Mill Company – Archaeological Inventory Survey Report, Pioneer Mill Company, Ltd. Sugar Enterprises Lands, Site No. 50-50-03-4420, Villages of Leiali`i Project, Lahaina, Maui, Hawai`i.* Prepared for Housing Finance and Development Corporation, State Department of Budget and Finance. By International Archaeological Research Institute, Inc. Honolulu.

Hall, Harold
1962 "Historical Sites in West Maui. *Ka Nani o Pioneer – The Pioneer Mill Family Newspaper.* 15(4):3-4. Copy on file, Hawaii Historical Society, Honolulu.

Hammatt, H.H.
1978 *Archaeological Investigation and Monitoring, Mala Wharf Boat-Launch Ramp Area, Lahaina, Maui.* Prepared for Water Transportation Facilities Division. By Archaeological Research Center Hawaii. Lawai.

Handy, E.S. Craighill and Elizabeth Green Handy
1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment.* Bernice P. Bishop Museum Bulletin No. 233. Bishop Museum Press. Honolulu.

Haun, A.E.
1988 *Subsurface Archaeological Survey, Lahaina Cannery Makai and Mauka Parcels, Land of Moali`i, Lahaina District, Island of Maui (TMK:4-5-05:9-11, 4-5-11:3).* Prepared for Hawaii Omori Corporation. By PHRI. Hilo.

Jensen, Peter M.
1989 *Archaeological Inventory Survey-Lahaina Master Planned Project Site, Land of Wahikuli, Lahaina District, Island of Maui.* Prepared for Housing Finance and Development Corporation, State Department of Budget and Finance. PHRI, Inc. Hilo.

Kalakaua, King David
1888 *The Legends and Myths of Hawaii.* Charles L. Webster and Co., New York.

Kamakau, S.
1961 *Ruling Chiefs of Hawaii* (Revised Edition). Kmehameha Schools Press, Honolulu Hawaii (1992).

Kirch, Patrick Vinton
1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory.* University of Hawaii Press. Honolulu.

Kleiger, Paul Christiaan (ed.)
1995 *MOKU`ULA: History and Archaeological Excavations at the Private Palace of King Kamehameha III in Lahaina, Maui.* Prepared for the Lahaina Restoration Foundation. Department of Anthropology, Bishop Museum. Honolulu.

Kleiger, Paul C. and Boyd Dixon
1993 *Moku`ula: A Proposal for Historical and Archaeological Research at the Royal Residence of Mausoleum, Loko Mokuhinia, Waine`e ahupua`a, Maui, Hawai`i. Prepared for the Lahaina Restoration Foundation. By Department of Anthropology, Bishop Museum. Honolulu.*

Kuykendall, R.S.
1968 *The Hawaiian Kingdom: 1778-1854, Foundation and Transformation, Voume 1.* University of Hawaii Press. Honolulu

La Perouse, J.F.G. de
1799 *A Voyage Round the World, performed in the years 1785...1788, by the Boussole and Astrolabe.* 2 Volumes, A. Hamilton, London.

Macdonald, G.A., A.T. Abbott, F.L. Peterson
1983 *Volcanoes in the Sea; The Geology of Hawaii* (Second Edition). University of Hawaii Press, Honolulu.

MacLennan, Carol A.
1994 "Foundations of Sugar's Power: Early Maui Plantations, 1840-1860. *Hawaiian Journal of History.* No. 29:33-56. Honolulu.

Major, Maurice and Paul C. Klieger
1996 *Historical Background and Archaeological Testing at Pikanele's Kuleana in Lahaina, Maui: An Inventory Survey Report of LCA 310.3 (Royal Patent 1729.2, TMK[2]4-6-07:13).* Prepared for John Oda and Associates. Department of Anthropology, Bishop Museum. Honolulu.

Menzies, Archibald
1920 *Hawaii Nei 128 Years Ago.* New Freedom Books. Honolulu.

Munsell Color
1972 *Munsell Soil Color Charts.* MacBeth Division, Kollmorgan Corporation, Baltimore.

Native Register
n.d *Native Register of Kuleana Claims Recorded by the Board of Commissioners to Quiet land Titles in the Hawaiian Islands*. Manuscript. Hawaii State Archives.

Neal, Marie C.
1965 *In Gardens of Hawaii.* Bishop Museum Special Publication No.50. Bishop Museum Press, Honolulu.

Pukui, M. K. and S. H. Elbert
1986 *Hawaiian Dictionary* (Revised and Enlarged Edition). University of Hawaii Press, Honolulu.

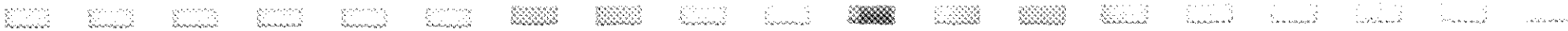
Pukui, M.K., S.H. Elbert, E.T. Mookini
1974 *Place names of Hawaii*. University of Hawaii Press, Honolulu.

Schmitt, R.C.
1973 "The Missionary Census of Hawaii." *Pacific Anthropological Records, 20.* Departament of Anthropology, Bernice P. Bishop Museum, Honolulu.

Sinoto, Aki
1975 *An Archaeological Reconnaissance of the Mala Wharf Boat-Launch Ramp Area, Lahaina, Maui.* Ms. 082075. Department of Anthropology, Bishop Museum. Honolulu.

Sterling, Elspeth P
1998 *Sites of Maui*. Bernice P. Bishop Museum, Honolulu.

Walker, W.M.
1931 *Archaeology of Maui*. Manuscript in Dept. of Anthropology Department, Bishop Museum, Honolulu.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 26, 2003

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

LOG NO: 2003.0935
DOC NO: 0306MK22

Dear Mr. Sinoto,

SUBJECT: **Historic Preservation Review - 6E-42 - Archaeological Inventory Survey New Lahaina Kingdom Hall Site**
Paunau Ahupua'a, Lahaina District TMK (2) 4-6-04:42 and 44

Thank you for the opportunity to review this report which our staff received on April 17, 2003 (Sinoto and Pantaleo 2003, *Archaeological Inventory Survey of the Proposed Site for the New Lahaina Kingdom Hall, Pu'unoa, Paunau Ahupua'a, Lahaina District, Maui Island [TMK 4-5-04:42 & 44]*. Aki Sinoto Consulting ms). The inventory survey was conducted in response to our March 25, 2002 letter (Log 29495, Doc 0203CD21) in which we indicated that parcel 44 needed inventory survey prior to demolition activities, and monitoring was recommended for parcel 42 during demolition activities to identify historic properties. Our initial letter was part of pre-consultation for the Draft Environmental Assessment.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The report also documents the LCA awarded in the vicinity of the parcel.

The survey has adequately covered the project area documenting no historic properties in the project area. Seven back hoe trenches were excavated to examine the subsurface deposits. All of the trenches yielded negative results and evidenced subsurface disturbance and fill.

We concur that no monitoring is warranted as the proposed development will not penetrate existing below the existing fill layer. Should inadvertent discoveries be made during construction, work in the area will be halted and SHPD consulted.

We find this report to be acceptable. The historic preservation review process is concluded. Development of the project areas will have "no effect" on significant historic sites. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793

Kalepa Business Center
73-5574 Maiau Street
Suite 11B
Kailua-Kona Hawaii 96740-2618
Telephone 808 329 4494
Fax 808 329 4495

R. M. TOWILL CORPORATION
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Surveying
Construction Management

December 11, 2002

Watchtower Bible and Tract Society
c/o Mr. Newton Chung
905 Spencer St. # 301
Honolulu, HI 96822

Lahaina Kingdom Hall Drainage Study

Dear Gentlemen:

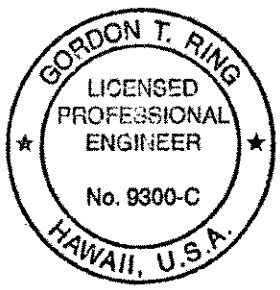
Pursuant to your request, a drainage analysis for the proposed Lahaina Kingdom Hall has been completed. The proposed project will be constructed on a half acre site located in Lahaina on the corner of Front Street and Puunoa Place. An existing worship hall, parking lot and house are currently located on the site. The proposed Lahaina Kingdom Hall project will consist of a new worship hall and a larger parking lot.

Based on a 10-year, 1-hour storm, the existing conditions currently generate a peak runoff rate of 1.8 cfs. The volume of runoff generated by this storm is approximately 2,900 cubic feet. The proposed conditions will generate a peak runoff rate of 2.2 cfs, with a volume of approximately 3,300 cubic feet. Based on these results, it appears that the proposed project will generate a negligible increase in runoff rate and volume. The increase in runoff rate is 0.4 cfs and the increase in runoff volume is 400 cubic feet.

The additional runoff generated by this proposed project is small enough to be contained on site in surface depressions located within the project's landscaped areas. Since the proposed project will retain the additional runoff onsite, the project's drainage should not have an adverse effect on adjacent and downstream properties.

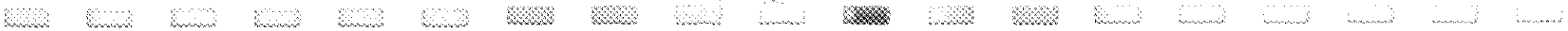
Should you have any questions or comments regarding this information, please feel free to call me at 329-4494.

Very truly yours,



Gordon T. Ring, P.E.
Project Coordinator

GTR:gr



Phillip Rowell and Associates
47-273 'D' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8206 FAX: (808) 239-4175 Email:prowell@gte.net

FINAL REPORT

October 8, 2003

Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Attn: Mr. Mich Hirano

Re: **Lahaina Kingdom Hall**
Lahaina, Maui, Hawaii

Dear Mich:

Phillip Rowell and Associates have prepared the following assessment of traffic conditions adjacent to the Lahaina Kingdom Hall in Lahaina, Maui. The purpose of this study is to document existing traffic conditions at the intersection of Front Street at Puunoa Place, which is the entrance to the project.

Project Location and Description

The project is located along the north side of Puunoa Place in Lahaina, Maui. One driveway provides access to and egress from the site. All traffic will access the project via the intersection of Front Street at Puunoa Place.

Purpose and Objective of Study

The purpose of this traffic assessment is to verify that the existing traffic conditions as described in the Draft Environmental Assessment (EA). The data provided in the Draft EA was obtained by non-professional traffic engineers.

Methodology

1. Existing conditions at the intersection of Front Street at Puunoa Place were documented. This was done by a field reconnaissance of the intersection and the adjacent area.

2. Existing traffic volumes at the intersection of Front Street at Puunoa Place were obtained from videotapes of the intersection. Conditions were recorded one hour before the Sunday service began and one hour after the end of the Sunday service.

3. The methodology for unsignalized intersections described in the 2000 *Highway Capacity Manual* (HCM) [1] was used to determine the level-of-service (LOS) at the study intersection. This methodology involves the calculation of the average vehicle delay which relates to the Level-of-Service. The Level-of-Service concept and the methodology is described in more detail further in the report.

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[1] *Highway Capacity Manual*, Institute of Transportation Engineers, Washington, D.C., 2000

Description of Existing Streets and Intersection Controls

Front Street is a two-lane, two-way roadway with a north-south orientation adjacent to the project entrance. There is a three-to-four foot wide asphalt sidewalk along the northbound lane. This sidewalk is also used as a bike path. The posted speed limit is 20 miles per hour.

Puunoa Place is also a two-lane, two-way street. The intersection of Puunoa Place at Front Street is the only outlet for the residences. The posted speed limit is 15 miles per hour.

The intersection of Front Street at Puunoa Place is unsignalized. The STOP sign is on the Puunoa Street approach to Front Street. No separate turn lanes are provided.

Peak Hourly Traffic Volumes

The counts were performed from 8:30 AM to 9:30 AM and from 11:30 AM to 12:30 AM on Sunday, July 27, 2003. The Sunday service begins at 9:30 AM and ends at approximately 11:30 AM. Therefore, the counts include the peak arrival period, which is the half-hour before the service begins, and the peak departure period, which is the half-hour after the service is completed. The traffic volumes are summarized in Attachment A.

The counts shown as using the study include traffic generated by the Lahaina Kingdom Hall as well as background traffic associated with the adjacent uses along Puunoa Place. The conclusion is that, at most, the Lahaina Kingdom Hall generates 74 inbound trips and 32 outbound trips prior to the beginning of the Sunday service and 18 inbound and 50 outbound trips at the end of the Sunday service.

The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour.[2] Based on the criterion, a traffic impact study is not warranted.

Level-of-Service Concept

The methodology described in the *2000 Highway Capacity Manual* (HCM) was used to estimate future traffic operating conditions of the proposed entrance for the project. This method involves the calculation of the average vehicle delay along the controlled movements which is related to a level-of-service.

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.

---

[2] Institute of Transportation, *Traffic Access and Impact Studies for Site Development*, A Recommended Practice, 1991, page 5.

Table 1 Level-of-Service Definitions for Unsignalized Intersections[1]

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

Level-of-Service Analysis of 2003 Conditions

The Level-of-Service analysis was performed using the following assumptions:

1. The intersection of Front Street at Puunoa Place is unsignalized. The STOP sign is along the Puunoa Street approach to Front Street.

2. There is no separate left turn storage lane for traffic turning from Front Street into Puunoa Place.

3. Puunoa Place has a one-lane approach to Front Street.

The results of the Level-of-Service analysis are summarized in Table 2. Shown in the table are average vehicle delays of the controlled movements and the levels-of-service.

Table 2 Results of Level-of-Service Analysis

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay [1]	LOS [2]	Delay	LOS
Puunoa Place at Front Street				
Northbound Left & Thru	8.1	A	8.1	A
Eastbound Left & Right	13.5	B	14.0	B

NOTES:
(1) Delay in seconds per vehicle.
(2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.

On average vehicle delays of the Puunoa Place approach were confirmed by a delay survey for the same time periods. The before and after service average vehicle delays were calculated to be 13.6 seconds and 14.1 seconds, respectively.

The conclusions of the level-of-service and delay analyses are:

1. All controlled traffic movements at the intersection of Front Street at Puunoa Place operate at Level-of-Service B or better, which implies good operating conditions.

2. Since the left turns into the project will operate at Level-of-Service A, providing a separate left turn lane will not result in a higher level-of-service since Level-of-Service A is the highest possible level-of-service.

In summary, all controlled traffic movements at the intersection of Front Street at Puunoa Place operate at Level-of-Service B, which is considered a high level-of-service. No improvements are recommended.

Summary and Conclusions

The conclusions of the traffic analysis are:

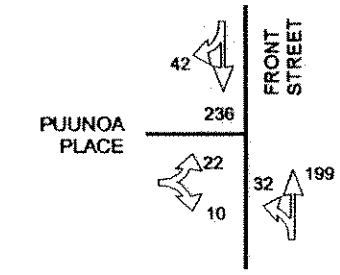
1. All controlled traffic movements at the intersection of Front Street at Puunoa Place operate at Level-of-Service B or better for existing roadway conditions.

2. Because traffic operates at a high level-of-service (B or better), no improvements are required.

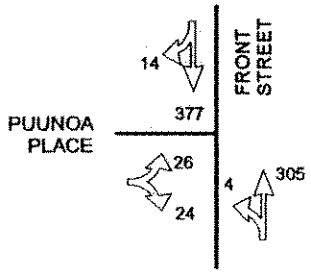
Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell, P.E.
Principal

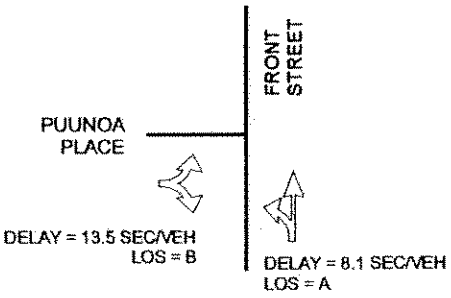
Attachment A
HOURLY TRAFFIC VOLUMES AND LEVELS-OF-SERVICE



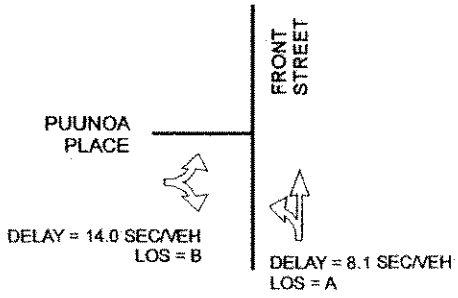
HOURLY TRAFFIC VOLUMES
8:30 AM TO 9:30 AM
SUNDAY, JULY 27, 2003



HOURLY TRAFFIC VOLUMES
11:30 AM TO 12:30 PM
SUNDAY, JULY 27, 2003



VEHICLE DELAY AND LEVEL-OF-SERVICE
8:30 AM TO 9:30 AM
SUNDAY, JULY 27, 2003



VEHICLE DELAY AND LEVEL-OF-SERVICE
11:30 AM TO 12:30 PM
SUNDAY, JULY 27, 2003

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*PJR*	Intersection	*Case1.1am*
Agency/Co.	*PRA*	Jurisdiction	
Date Performed	*7/27/2003*	Analysis Year	*Existing (2003)*
Analysis Time Period	*8:30 am to 9:30 am*		
Project Description	*Lahaina Kingdom Hall*		
East/West Street:	*Puunoa Place*	North/South Street:	*Front Street*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*32*	*199*	*0*	*0*	*236*	*42*
Peak-Hour Factor, PHF	*0.62*	*0.82*	*1.00*	*1.00*	*0.89*	*0.42*
Hourly Flow Rate, HFR	*51*	*244*	*0*	*0*	*264*	*100*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*22*	*0*	*10*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.61*	*1.00*	*0.63*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*36*	*0*	*16*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*51*						*52*	
C (m) (vph)	*1206*						*477*	
v/c	*0.04*						*0.11*	
95% queue length	*0.13*						*0.36*	
Control Delay	*8.1*						*13.5*	
LOS	*A*						*B*	
Approach Delay	--	--					*13.5*	
Approach LOS	--	--					*B*	

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*PJR*	Intersection	*Case1.1pm*
Agency/Co.	*PRA*	Jurisdiction	
Date Performed	*7/27/2003*	Analysis Year	*Existing (2003)*
Analysis Time Period	*11:30 am to 12:30 pm*		
Project Description	*Lahaina Kingdom Hall*		
East/West Street:	*Puunoa Place*	North/South Street:	*Front Street*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*4*	*305*	*0*	*0*	*377*	*14*
Peak-Hour Factor, PHF	*0.50*	*0.95*	*1.00*	*1.00*	*0.98*	*0.88*
Hourly Flow Rate, HFR	*8*	*320*	*0*	*0*	*384*	*16*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*26*	*0*	*24*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.59*	*1.00*	*0.67*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*44*	*0*	*35*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*8*						*79*	
C (m) (vph)	*1170*						*477*	
v/c	*0.01*						*0.17*	
95% queue length	*0.02*						*0.59*	
Control Delay	*8.1*						*14.0*	
LOS	*A*						*B*	
Approach Delay	--	--					*14.0*	
Approach LOS	--	--					*B*	

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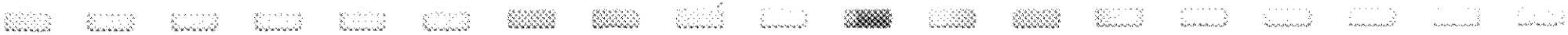
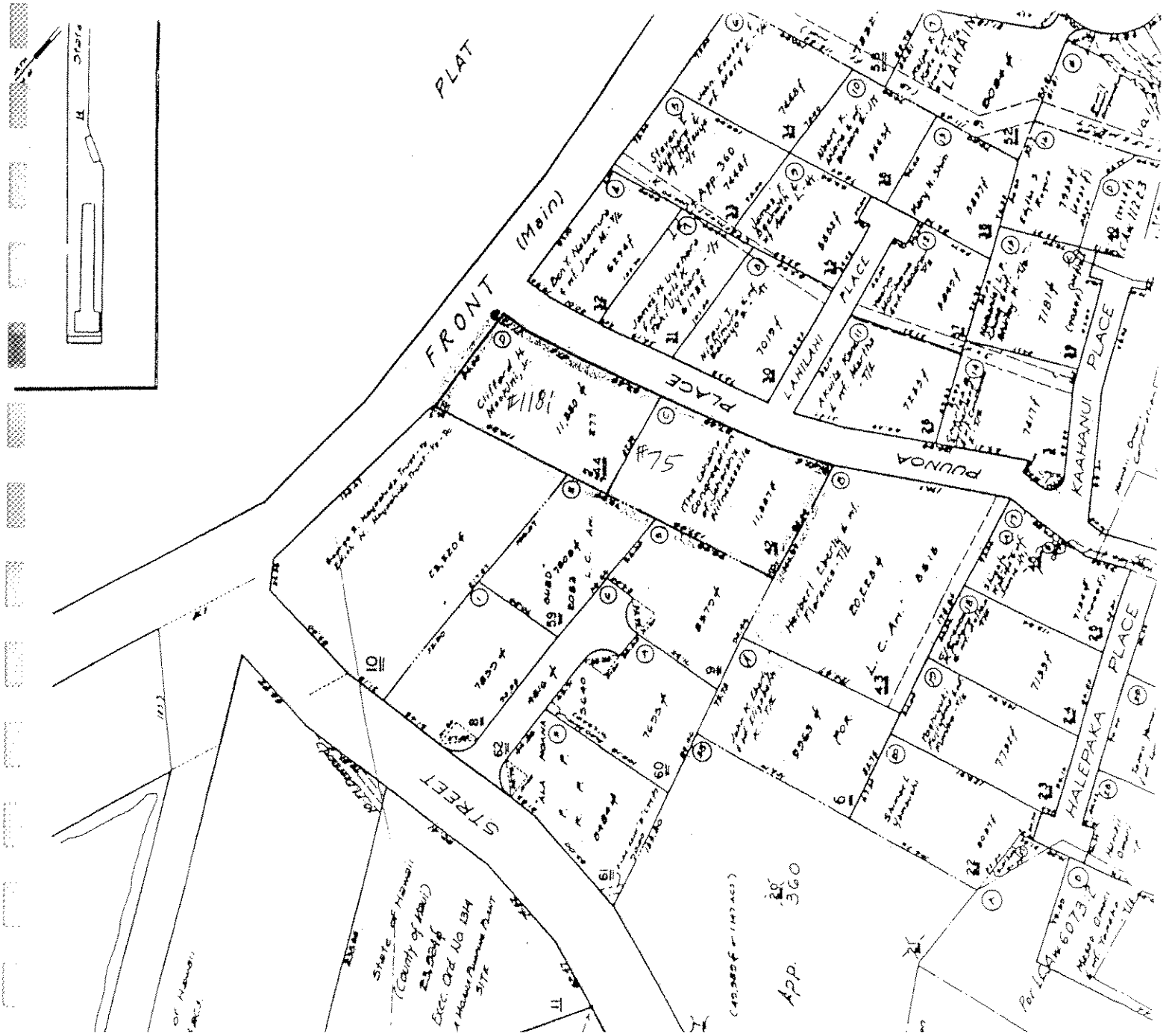


Project: New Kingdom Hall on 1181 Front Street and new parking lot on existing property at 75 Puunoa Place.

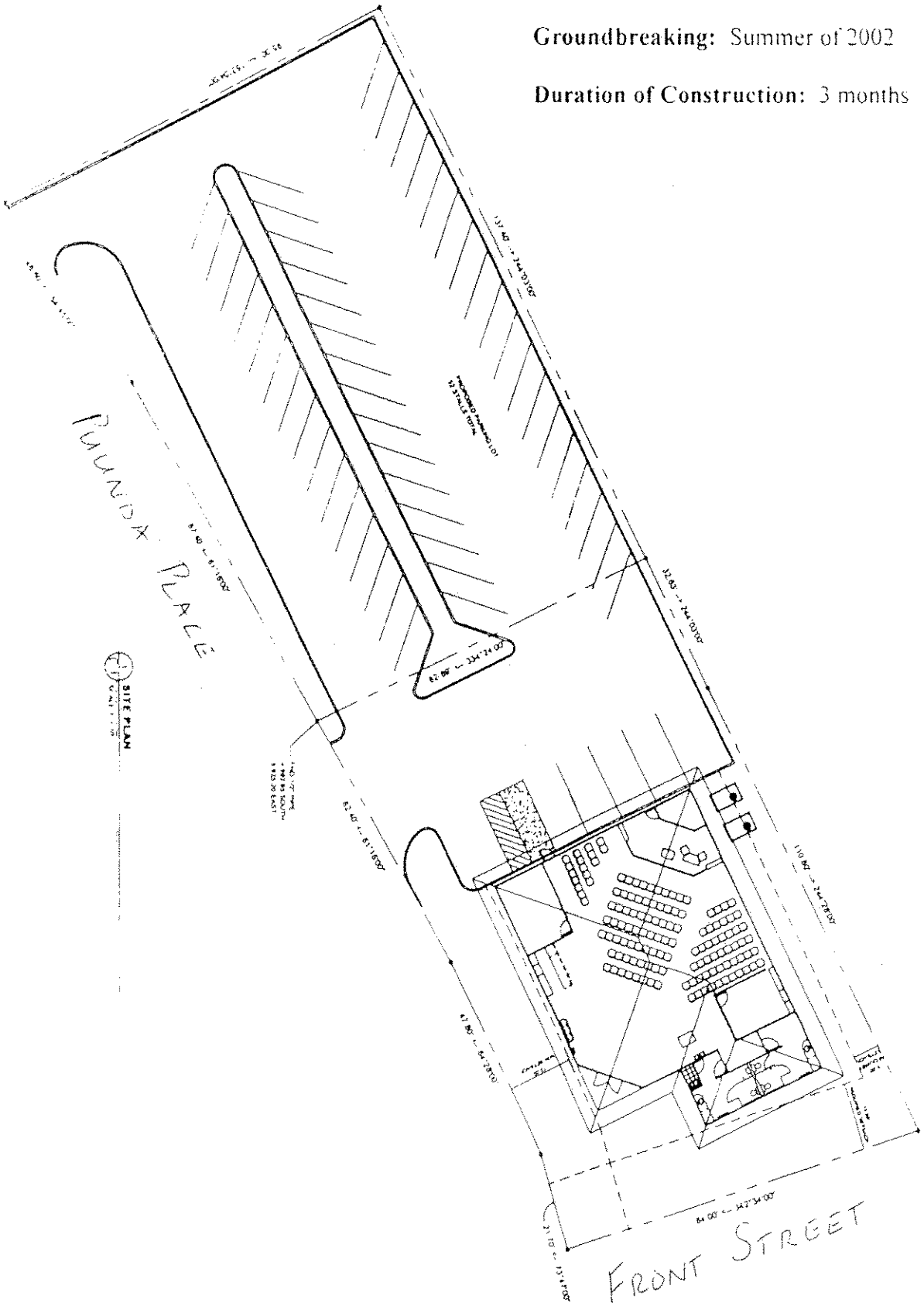
Objective: To accommodate the spiritual needs of the community and minimize on street parking.



Status: In negotiation to purchase 1181 Front Street

Groundbreaking: Summer of 2002

Duration of Construction: 3 months



C-1

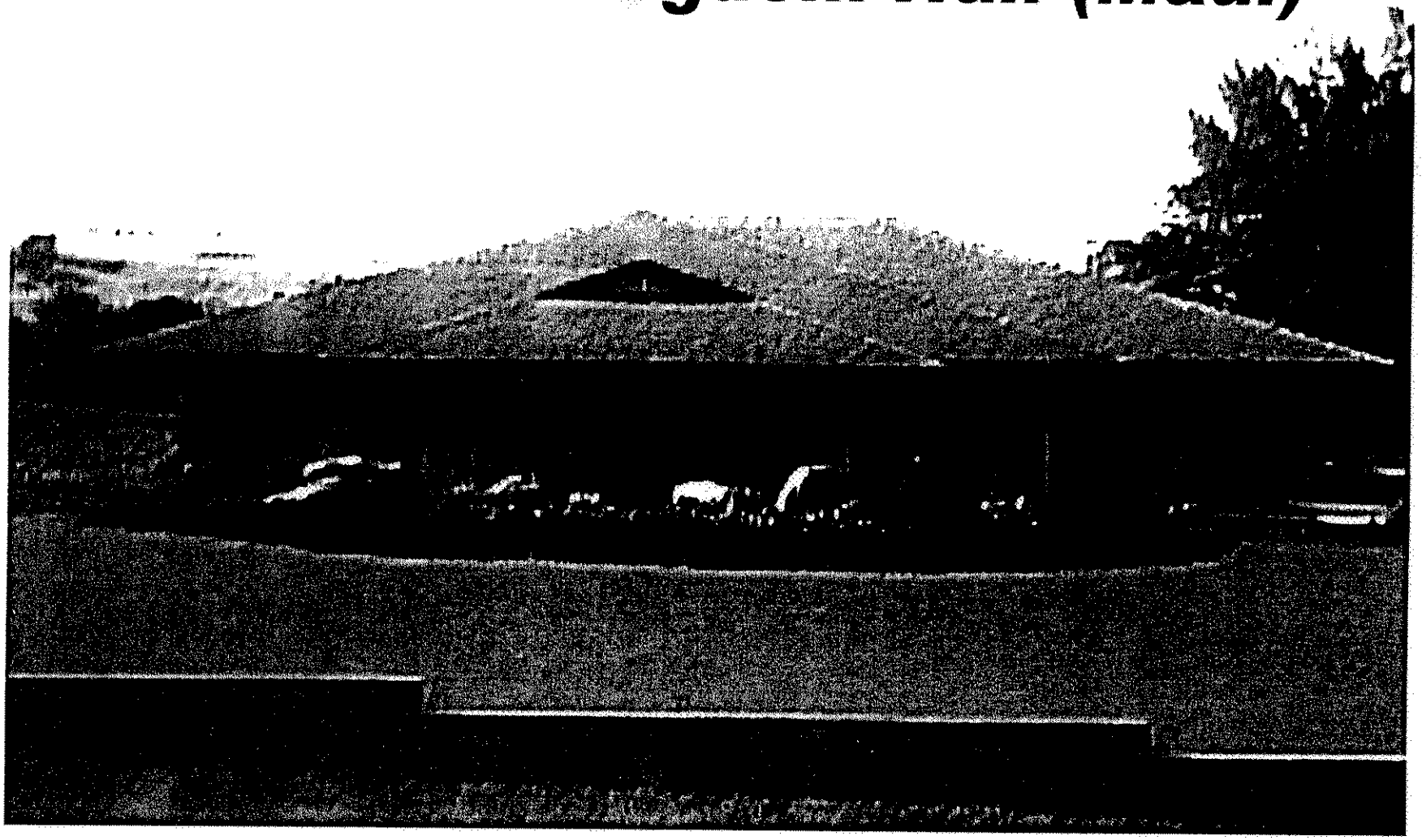
Lahaina Kingdom Hall of Jehovah's Witnesses

TMK: (2) 4-5-004-042

Lahaina Maui Hawaii

SITE PLAN

Makawao Kingdom Hall (Maui)



Lahaina Congregation Of Jehovah's Witnesses

c/o Miles Yeda
P.O. Box 93
Lahaina, Hawaii 96767

December 3, 2002

SUBJECT: Lahaina Kingdom Hall of Jehovah's Witnesses

Dear Sir or Madam:

The Lahaina Kingdom Hall of Jehovah's Witnesses proposes the development of a new Kingdom Hall located at 75 and 91 Puunoa Place, Lahaina, Maui, Hawaii. The proposed project site is made up of two parcels identified as TMK: (2) 4-5-04:42 and TMK: (2)4-5-04:44. The subject parcels are currently used as a Kingdom Hall of Jehovah's Witnesses and a single-family residence, respectively. A project location map and site plan for the proposed development are attached for your reference. See Figure 1 and Figure 2.

Our plans for the proposed development involves the consolidation of the parcels, the demolition of the existing single-family residence and the construction of a single story 3,500 square foot wooden frame Kingdom Hall on the TMK: (2) 4-5-04:44 portion of the subject site. Upon completion of the new building, the existing Kingdom Hall on the TMK: (2) 4-5-04:42 parcel will be demolished and a 35-stall parking area, with an additional 13 stacked spaces, will be built. Related construction elements would include the installation of landscaping, irrigation, sewer, and water service improvements. Access to the proposed site will be from a one-way driveway off of Puunoa Place via Front Street.

The proposed improvements are intended to accommodate the present needs of the Lahaina Congregation of Jehovah's Witnesses with a new and larger Kingdom Hall and to provide for additional on-site parking which will mitigate street parking on Puunoa Place and Ala Moana Street.

The Lahaina Kingdom Hall of Jehovah's Witnesses would like to invite you to a project information meeting at the Lahaina Civic Center on Wednesday, December 18, 2002 at 6:00 p.m. Members of our project team will make a presentation of our plans and answer any questions you may have.

It is our intent to provide a quality project. We hope that you will able to attend this informational meeting, however, if you are unable to attend and have questions about the project, please feel free to contact our planning consultant, Mich Hirano of Munekiyo & Hiraga, Inc. at (808)244-2015.

Very truly yours,

Miles Yeda

Miles Yeda
Lahaina Congreation of Jehovah's Witness

MY:yp
Attachments
jehovahs/lahaukh/neighboo.ltr

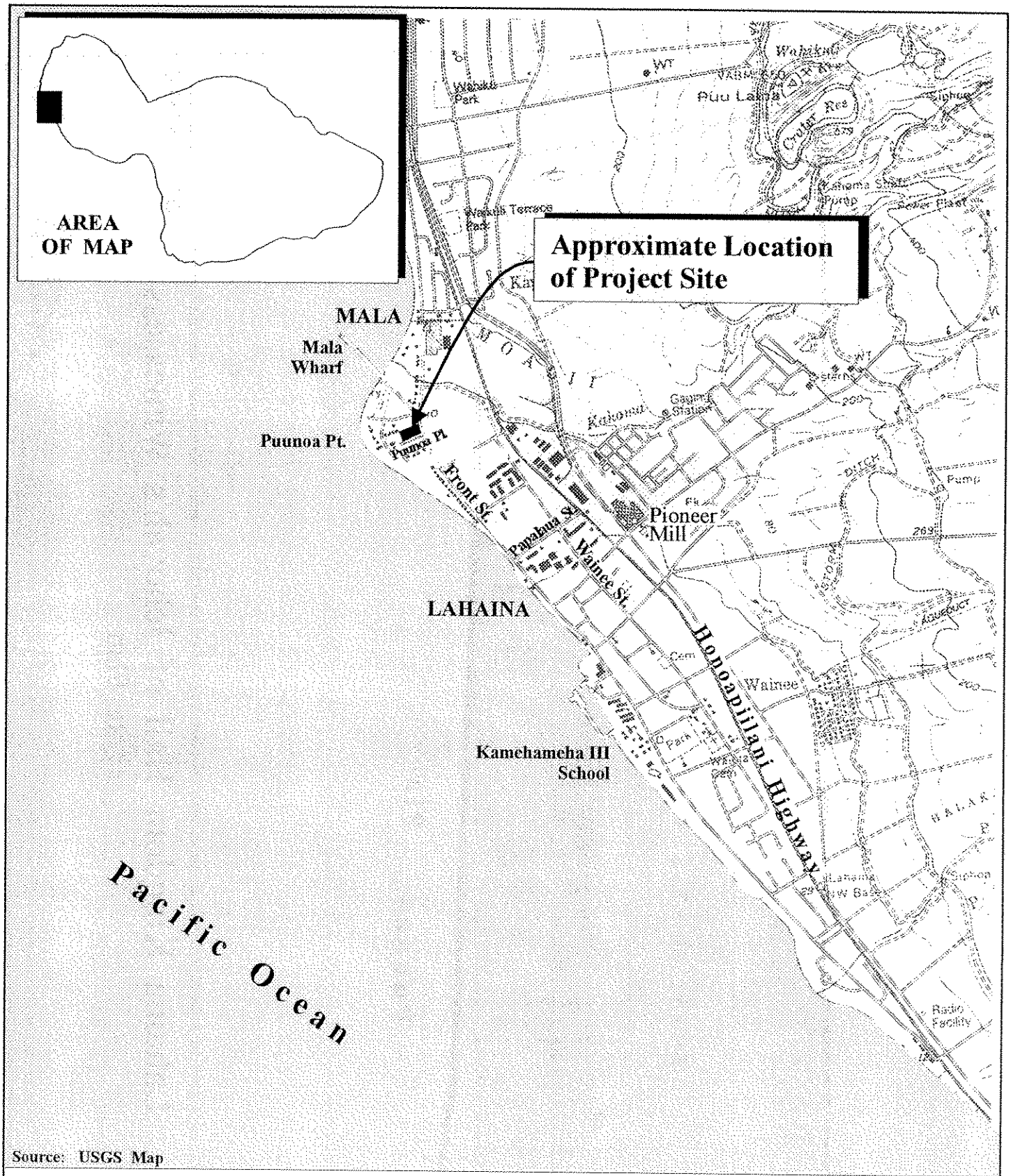


Figure 1

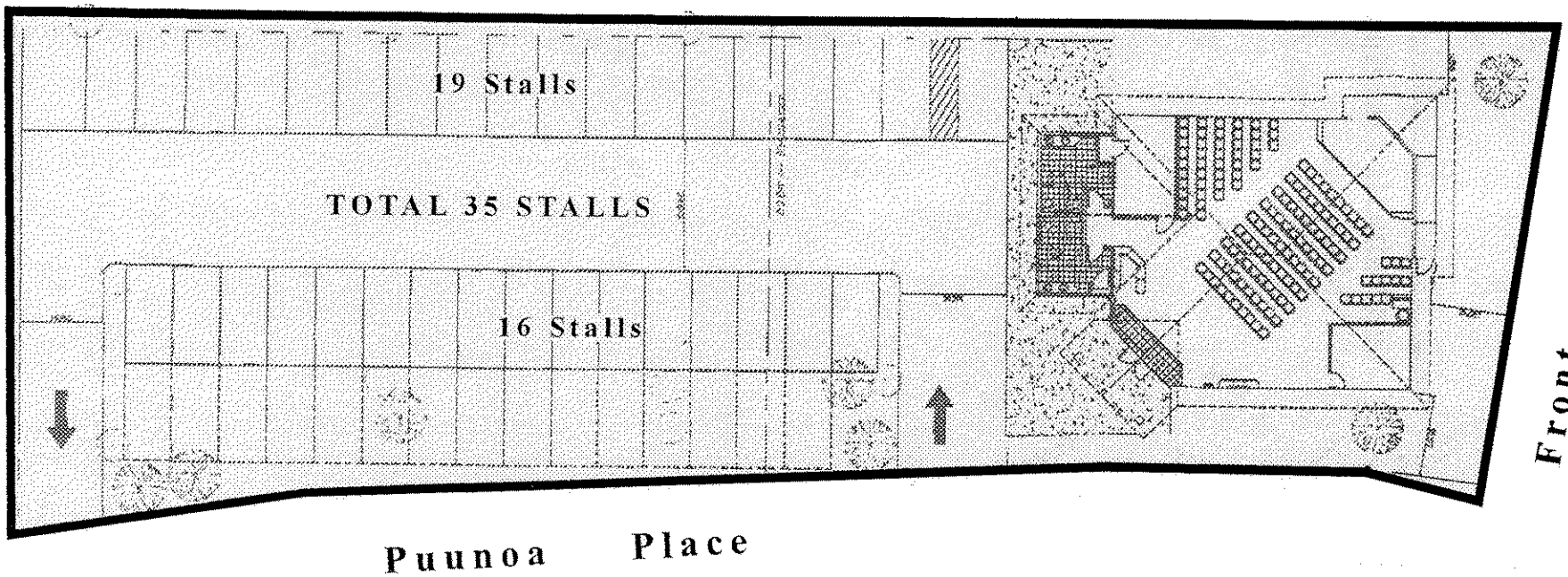
Lahaina Kingdom Hall of Jehovah's Witnesses

Regional Location Map

0 500 1000 2000 Feet

Prepared for: The Accepting Authority, County of Maui, Department of Planning and Lahaina Kingdom Hall of Jehovah's Witnesses

MUNEKIYO & HIRAGA, INC.



Source: Stephen T. Nakai, A.I.A.

Figure 2

Lahaina Kingdom Hall of Jehovah's Witnessess

Site Plan

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

Lahaina Kingdom Hall
Project Informational Meeting

Lahaina Civic Center
December 18, 2002
6:00 p.m.

NAME	ADDRESS	TELEPHONE
Patrick : Cullis Kindy	1640-B Kuuipo St Lahaina	808-661-7788
Michael & Tami Jenkins	4955 Hanawai St Lahaina	808-669-7550
Keaka Kaahui	4955 Hanawai St Lahaina	
Lance : Meray Navarro	4955 Hanawai St	808 665-1972
Tom : Terrie Trofholz	47 Poinciana Rd. Lahaina	808-669-8780
Todd Foot	865 Kalena St Lahaina	808 661 9746
Tom Trofholz	47 Poinciana	808 669 8780
John D. Kaahui	95-1511 Aina Makua Dr. #40 Mililani	808 349-3268
Marlene W. Kaahui	74 Puunoa Place Lahaina	
Jeffrey Sergio	86 Puunoa Pl Lahaina	
Keith Hodge	3785 Lower Hono Rd. #102	808 385-5997
PATRICK & NAOMI Guth	1154 LAHILAHI Pl. Lahaina	667-6029

Lahaina Kingdom Hall
Project Informational Meeting

Lahaina Civic Center
December 18, 2002
6:00 p.m.

NAME	ADDRESS	TELEPHONE
Mariano Gomez	790 Kahola Pl Lahaina	(808) 661-3079
Rachel Collom	3788L.H'piilani Rd G-105	665-1607
Priscilla Kim	3788L·H'Piilani Rd G105 Lahaina	665-1607
Lambert Tesoro	250-Malanai st Lahaina	661-1513
Steve Buyak	806 Olowalu Village Rd Lahaina	667-5488
Filomena S. Gomez	790 Kahola PL. Lahaina	661-3079
Lita Kaiser	5085-H Hanawai ST. Lahaina	268-1209
Jessica Bolasan	5125 G Kupele St. Lahaina	669-6021
Charlotte Hodge	3785 Lower Honoapiilani Rd Honokowai	665-5997
Trish Speros	805 Olowalu Village	661-3572
Jackie Kaahui	805 Olowalu Vlg Lahaina	661-3572
Keone Lum	919 North Laalo Place	667-0915
Ginger Lum	919 N. Laalo Place, Lahaina	667-0915

Lahaina Kingdom Hall
Project Informational Meeting

Lahaina Civic Center
December 18, 2002
6:00 p.m.

NAME	ADDRESS	TELEPHONE
James Takonaka	649 Kaakolu St. Lahaina	661-9567
Richard Kishi	117 Hakuu Loop Lahaina	6610376
Edward P Penados	860 Lui Street Lahaina	667 0868
Cameron Williams	4955 Honoapiilani St Napili	665-1755
Jonatham Hess	3535 L. Honoapiilani Rd. #201 Lahaina	665-0942
George Young	53 Pualu loop Lahaina	665-1669
Emily Kaniho	615 Kahena Street Lahaina	661-3093
Patty Joy Kaniho	615 Kahena St. Lahaina	661-3093
Robert Colley	1640 Kuuipo St. Lahaina	661-8500
Galen Colley	1640 Kuuipo St Lahaina	661-8500
Linda Colley	1640 Kuuipo St. Lahaina	661-8500
Clara M. Hess	3535 L. Honoapiilani Rd Lahaina	669-7446
Joyce S. Mundon	343 Oe St. Kihei, Hi 96753	283-2413

Lahaina Kingdom Hall
Project Informational Meeting

Lahaina Civic Center
December 18, 2002
6:00 p.m.

NAME	ADDRESS	TELEPHONE
Tonyu Charlotte Pay	100-1 Pualzi Dr. Lahaina	667-9318
Anthony & Ruth Griffith	96 Puunoa Place Lahaina	661-4041
JoAnne Johnson	50 Puu Anoano St. Lahaina	661-3237
Connie Sutherland	64 Puunoa Pl Lahaina	661-4592 WK 661-0768 HM
Judith Bolan	4299 L. Honoapiilani Rd. Lahaina	669-0855
Deane Hokamena	404 Lahaina Luna Rd Lahaina	661-7914
Fujiko Carter	457 Aki St. Lahaina	661-3892
Felicitas Maniago	838 Kuhua St. Lahaina	661-0249
MARISSA MIGUEL	884 Puiki Pl. Lahaina	662-0607
Deanna Hinsch	472 Front St Lahaina, HI	661 0807
Elaine OTA	472 Front St Lahaina, HI	661-0807
Todd Boss & Tami Boss	1400 Komohana Place Lahaina HI	661-1877
Jean Yeda & Miles Yeda	5208 Kohi St. Lahaina, HI	669-6070