DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

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

May 5, 2004

Genevieve K.Y. Salmonson, Director
Office of Environmental Quality Control
Department of Health
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT
PROPOSED KAUNOA SENIOR WELLNESS CENTER
AT TMK 3-8-01:8

In accordance with the provisions of Chapters 343, Hawaii Revised Statutes, and Title 11, Chapter 200 of the Administrative rules of the State Department of Health, a Final Environmental Assessment (FEA) has been prepared for the proposed project. The Department of Housing and Human Concerns acting as the Applicant Agency and the Approving Agency, has accepted the FEA and issued a Finding of No Significant Impact (FONSI).

The Office of Environmental Quality Control publication form, four (4) copies of the FEA, and the project summary are enclosed. The project summary will also be electronically transmitted to your office. We request that notice of the availability of the FEA be published in the next edition of the Environmental Notice.

Sincerely,

ALICE L. LEE
Director

cc: Mich Hirano, Munekiyo & Hiraga, Inc.

2004-05-23 FONSI
KAUNOA SENIOR WELLNESS CENTER

Final
Environmental Assessment

PROPOSED KAUNOA SENIOR WELLNESS CENTER AT TMK 3-8-01:08

Prepared for:

Approving Agency:

County of Maui, Department
of Housing and Human Concerns

May 2004

MUNEKIYO & HIRAGA, INC.

Final
Environmental Assessment

PROPOSED KAUNOA SENIOR WELLNESS CENTER AT TMK 3-8-01:08

Prepared for:

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May 2004

MUNEKIYO & HIRAGA, INC.

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Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, BACKGROUND, AND LAND OWNERSHIP

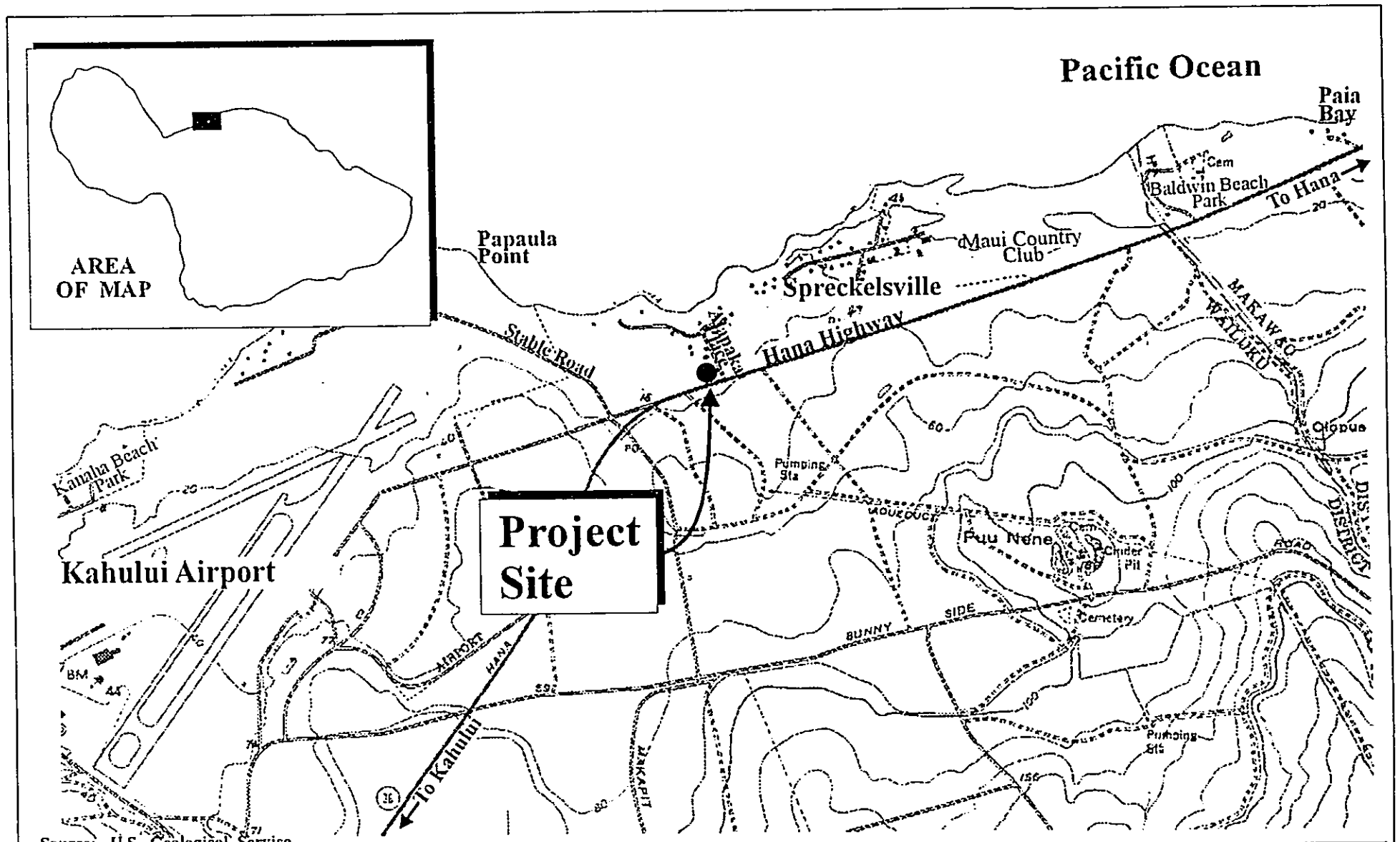
The applicant, the County of Maui, Department of Housing and Human Concerns (DHHC), proposes the development of a wellness center at the Kaunoa Senior Center located in Paia, Maui. See Figure 1. The 4.54-acre property is located on the northwest corner of Hana Highway and Alapaka Place. The subject property is identified by TMK 3-8-01:08. Access to the subject property is provided from Alapaka Place. The subject property is located within the Urban district of the State Land Use Classification Map. The property is designated Public/Quasi-Public by the Wailuku-Kahului Community Plan and is County zoned R-3, Residential. Buildings or premises used by the Federal, State or County governments for public purposes are permitted in the R-3 zoning district.

The subject property was formerly used for the Kaunoa English Standard School. The State of Hawaii, through Executive Order No. 02715 in September 1974, set aside the subject property to the County of Maui to be utilized for the Kaunoa Senior Center.

B. EXISTING FACILITIES AND PROGRAMS

The purpose of the program at Kaunoa Senior Center is to serve as a catalyst for bringing senior citizens together in an environment where they can pursue meaningful and interesting activities, and remain healthy, active and contributing members of the community. The program strives to provide a balanced variety of classes, lectures, and seminars, covering various subjects such as art, culture, crafts, performing arts, self-improvement, exercise and wellness.

Existing structures on the subject property include an administrative office building, a three (3) classroom building, a crafts and ceramic classroom



Source: U.S. Geological Service

Figure 1 Proposed Kaunoa Senior Wellness Center at TMK 3-8-01:08

Regional Location Map

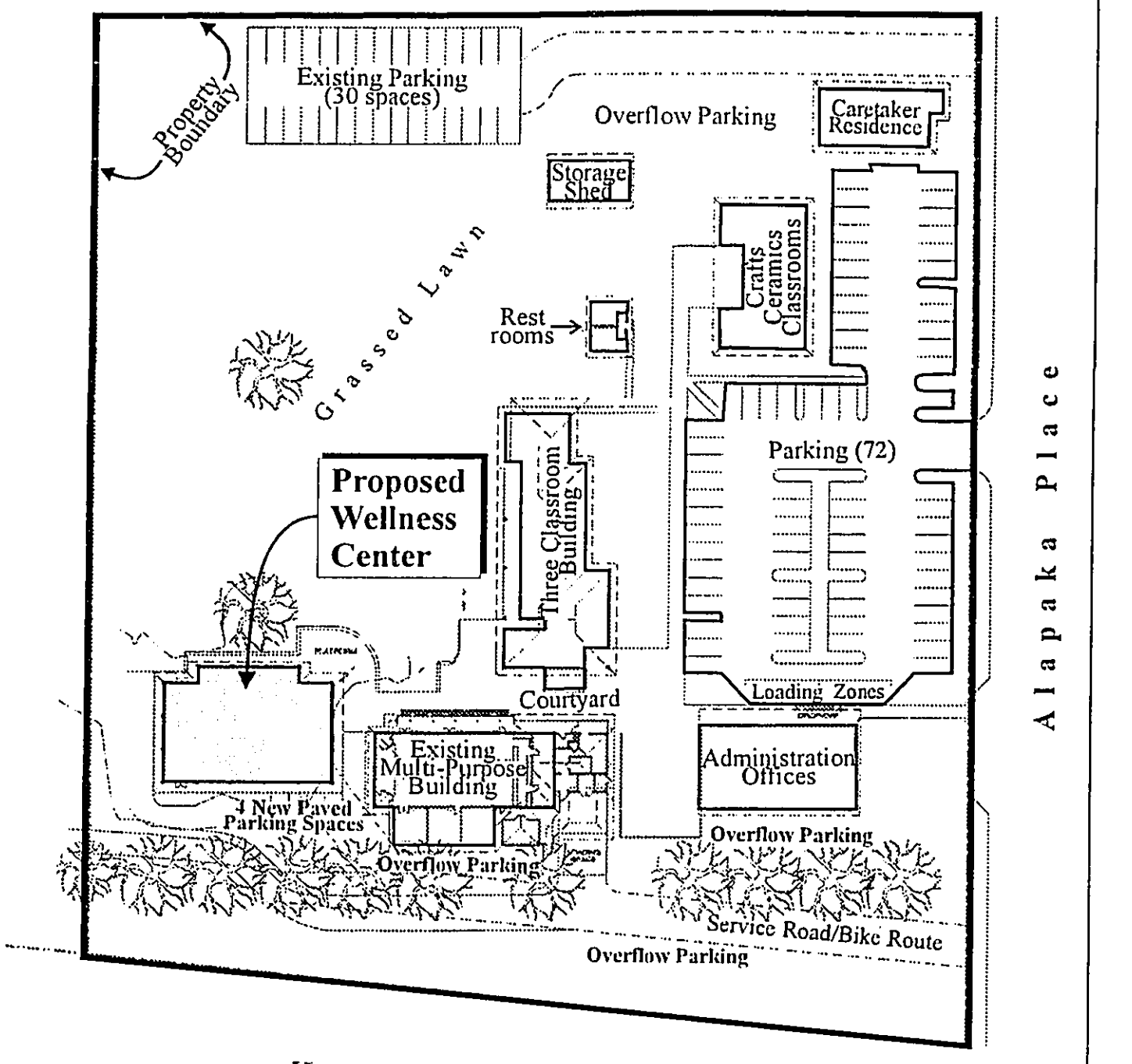
Prepared for: County of Maui, Dept. of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

building, a multi-purpose building, storage shed, wood workshop, restrooms, and a vacant caretaker's residence. There is a 72-stall main parking lot and a 35-stall parking compound, providing a total of 102 parking spaces and two (2) loading stalls. See Figure 2.

Access to the Kaunoa Center is provided off of Alapaka Place. There is a main driveway entrance and exit into the 72-stall parking area. There is a service driveway leading to the County parking compound near the eastern boundary of the subject property. There is also a paved service road on the western boundary of the subject property adjacent to Hana Highway. This service road is used to access the multi-purpose building for the meals-on-wheels program; staff parking; and will be used for a service access to the proposed wellness center building and to the four (4) parking stalls. This service road also provides for a bike route through the subject property. The bike route continues beyond the subject property to the north.

There are approximately fifty-two (52) full- and part-time employees at the Kaunoa Senior Center. The administrative functions of the center are open between the hours of 7:45 a.m. to 4:30 p.m. Monday to Friday. The center facilities are also open for scheduled activities in the evenings, on weekends and for special occasions as required, or as facilities are available. Generally, not all facilities are used concurrently. Programs and activities are scheduled throughout the day, on evenings and weekends. On average, approximately 221 people frequent the center on a daily basis. The center is serviced by transportation provided by Maui Economic Opportunity, Inc.



Source: Hiyakumoto + Higuchi Architects, Inc.

Figure 2 Proposed Kaunoa Senior Wellness Center at TMK 3-8-01:08 Site Plan

NOT TO SCALE

Prepared for: County of Maui, Dept. of Housing and Human Concerns

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C. *PROPOSED IMPROVEMENTS*

The proposed project will involve the construction of a free standing, single-story building with a floor area of approximately 4,320 square feet. The building will have a large open area for activities, storage area space, a small kitchenette and washroom. The building will be integrated with the existing facilities by a walkway and courtyard. Other improvements include utilities servicing, a four (4) stall paved parking area on the south side of the building and landscaping. Access to the building and four (4) parking stalls will be provided by the paved service road. See Figure 3, Figure 4 and Figure 5.

The proposed improvements will be used to house the existing activities currently operating out of the multi-purpose building. Therefore, no additional staff nor additional clientele are anticipated to result from the expansion of the facilities.

D. *PROJECT SCHEDULE*

Construction of the proposed project is anticipated to commence in January 2005. Estimated cost of construction is approximately $825,000.00, with a construction period of approximately nine (9) months.

E. *REGULATORY CONTEXT*

The proposed project will involve the use of State lands and County funds. Therefore, an environmental assessment (EA) has been prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 200, Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. The County of Maui, Department of Housing and Human Concerns is both the applicant and approving agency for the EA. The subject property is located within the limits of the County's Special Management Area (SMA). Accordingly, an application

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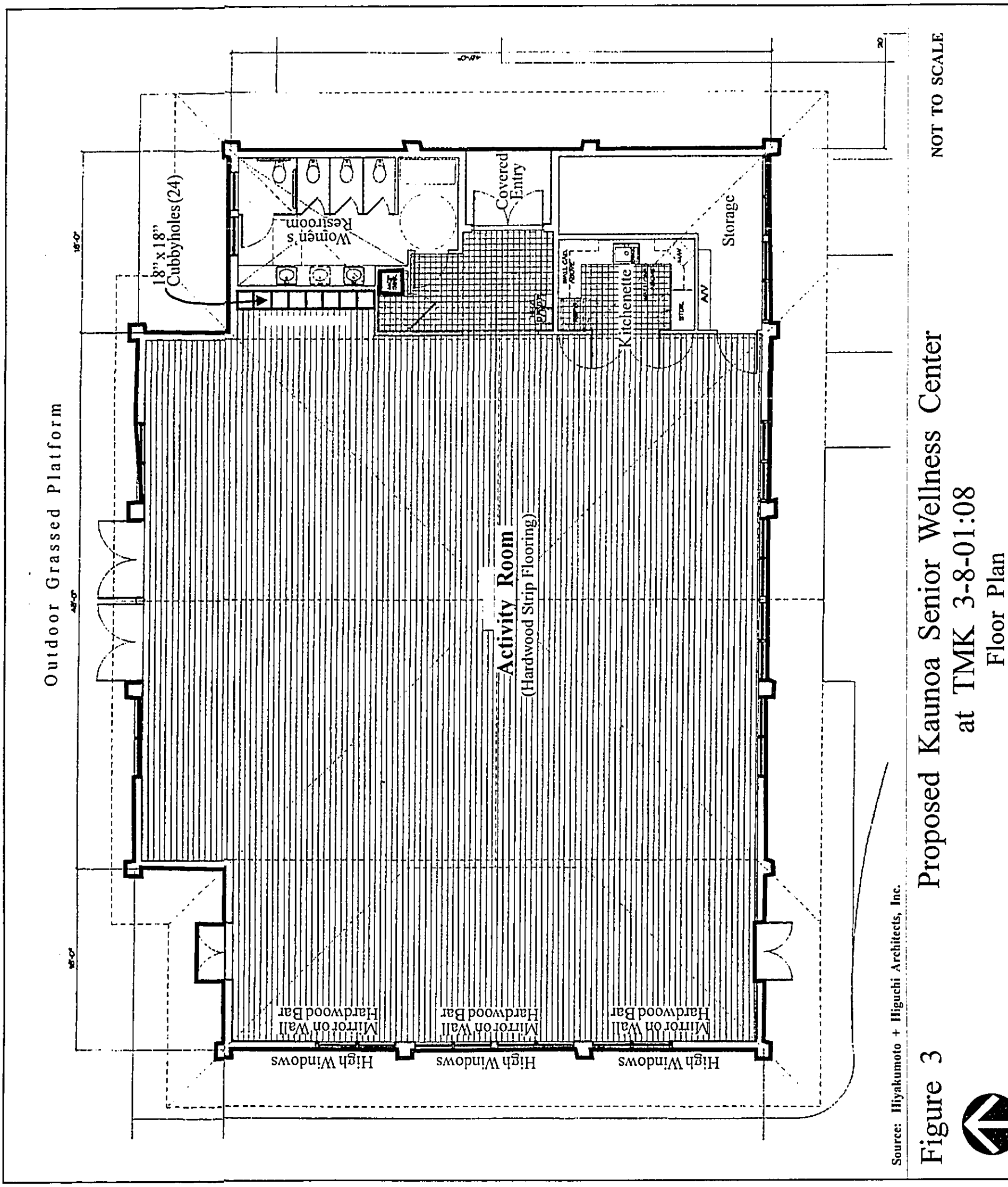

Source: Hiyakumoto + Higuchi Architects, Inc.

Figure 3 Proposed Kaunoa Senior Wellness Center
at TMK 3-8-01:08
Floor Plan

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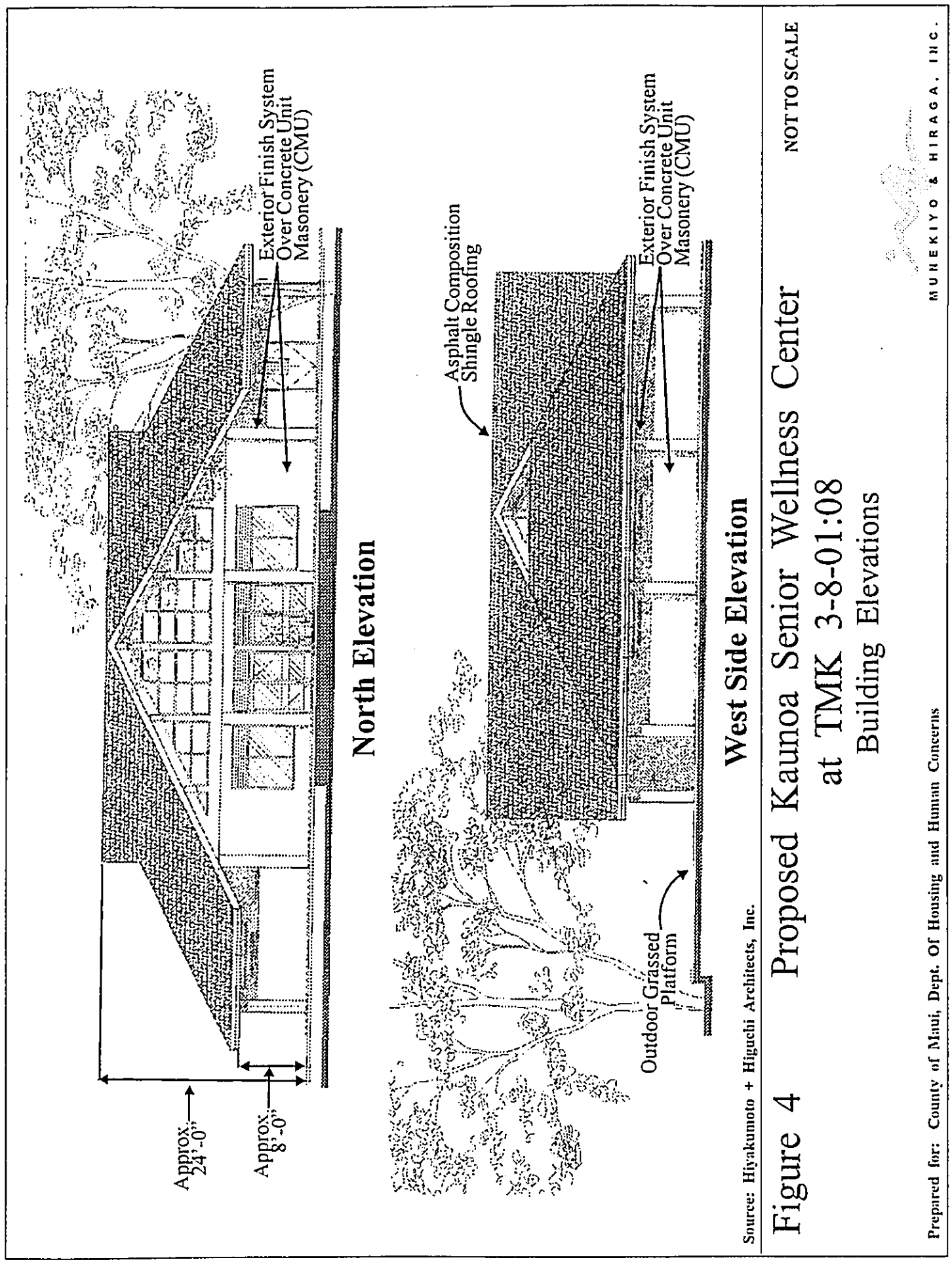

Source: Hiyakumoto + Higuchi Architects, Inc.

Figure 4 Proposed Kaunoa Senior Wellness Center
at TMK 3-8-01:08
Building Elevations

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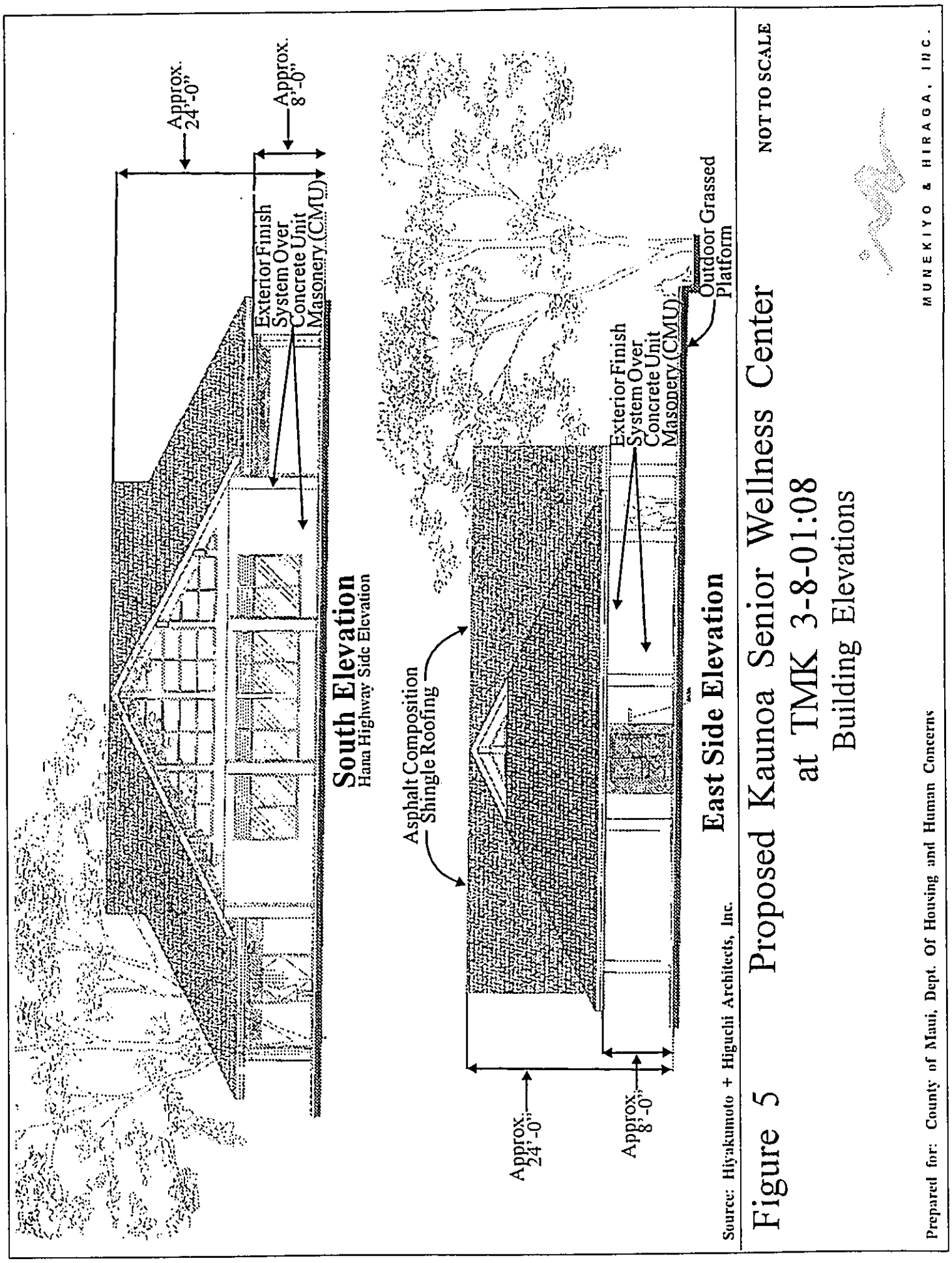

Figure 5 Proposed Kaunoa Senior Wellness Center
at TMK 3-8-01:08
Building Elevations

Prepared for: County of Maui, Dept. Of Housing and Human Concerns

for a SMA Use Permit has been prepared for review and action by the Maui Planning Commission.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The Kaunoa Senior Center, which is the project site and location of the proposed improvements, is located approximately 3.0 miles east of Kahului, the island of Maui's center of commerce. The subject property is set between the agricultural and open space lands of Kahului to the west and the residential community of Spreckelsville and Paia Town to the southeast. Surrounding land uses include open space and agricultural lands to the west and south, a vacant parcel to the immediate east and single-family residences to the north and beyond to the east of the project site. Beyond the agricultural and open space lands to the west is the Kahului airport and the Pacific Ocean to the north. Beyond the single-family residential uses to the southeast is the Maui Country Club Golf Course, Baldwin Park and Paia Town.

2. Climate

Like most areas of Hawaii, Maui's climate is relatively uniform year-round. Characteristic of Hawaii's climate, the project site experiences mild and uniform temperatures year round, moderate humidity and a relatively consistent northeasterly tradewind. Variation in climate on the island is largely left to local terrain.

Average temperatures at the project site (based on temperatures recorded at Kahului Airport) range from lows in the 60's to highs in the 80's. August is historically the warmest month, while January and February are the coolest. Rainfall at the project site averages approximately 20 inches per year. Winds in the Kahului region are predominantly out of the north-northeast and northeast.

3. ***Topography and Soil Characteristics***

The lands underlying the project site have been extensively altered in connection with past agricultural uses and by development of the existing facilities. Elevations around the subject property range from 13 feet above mean sea level (MSL) in the southerly portion to approximately 10 feet MSL in the northerly portion. The site for the proposed improvements are characterized by level terrain.

Underlying the project site are soils belonging to the Pulehu-Ewa-Jaucas association. See Figure 6. This soil association is characteristically deep and well-drained and located on alluvial fans and in basins. The soil type underlying the major portion of the project site is the Molokai series, in particular, Molokai silty clay loam (MuA), 0 to 3 percent slopes. A small triangular portion underlying the northwestern portion of the project site is Jaucus sand (JaC), 0 to 15 percent slopes. See Figure 7. The Molokai soil, which can be found at elevations ranging from near sea level to 1,000 feet, is characterized by moderate permeability, slow runoff, and slight erosion hazard. The Jaucus sand has rapid permeability and slow runoff, wind erosion is a severe hazard where vegetation does not exist. This type of soil is often used for pasture, sugar cane, truck crops and urban development.

4. ***Flood and Tsunami Hazards***

As indicated by the Flood Insurance Rate Map for this part of the island, the project site is situated in Zone C, an area of minimal flooding. See Figure 8.

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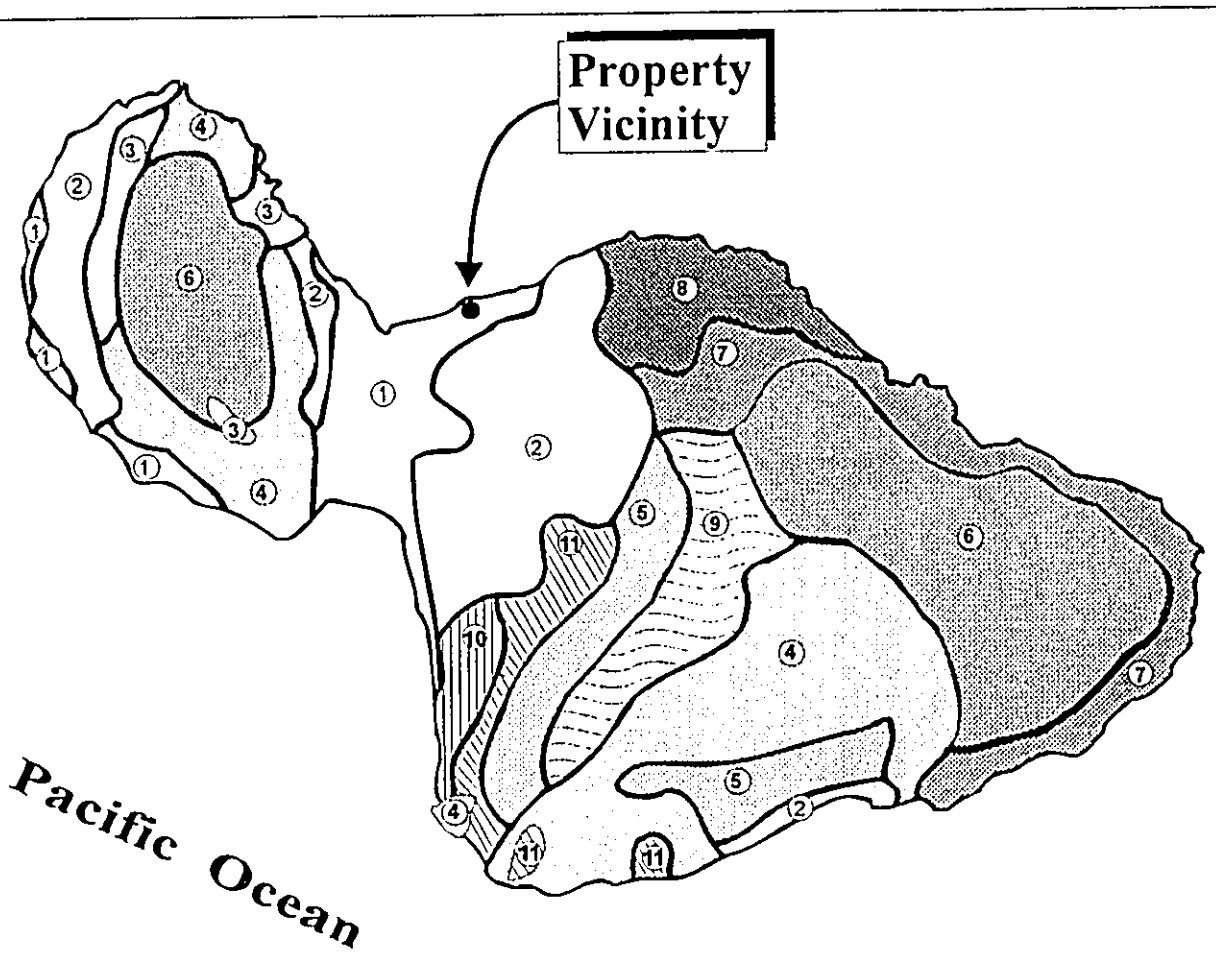
LEGEND

- 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: U. S. Department of Agriculture, Soil Conservation Service

Figure 6 Proposed Kaunoa Senior Wellness Center at TMK 3-8-01:08
Soil Association Map

NOT TO SCALE

Prepared for: County of Maui, Dept. of Housing and Human Concerns

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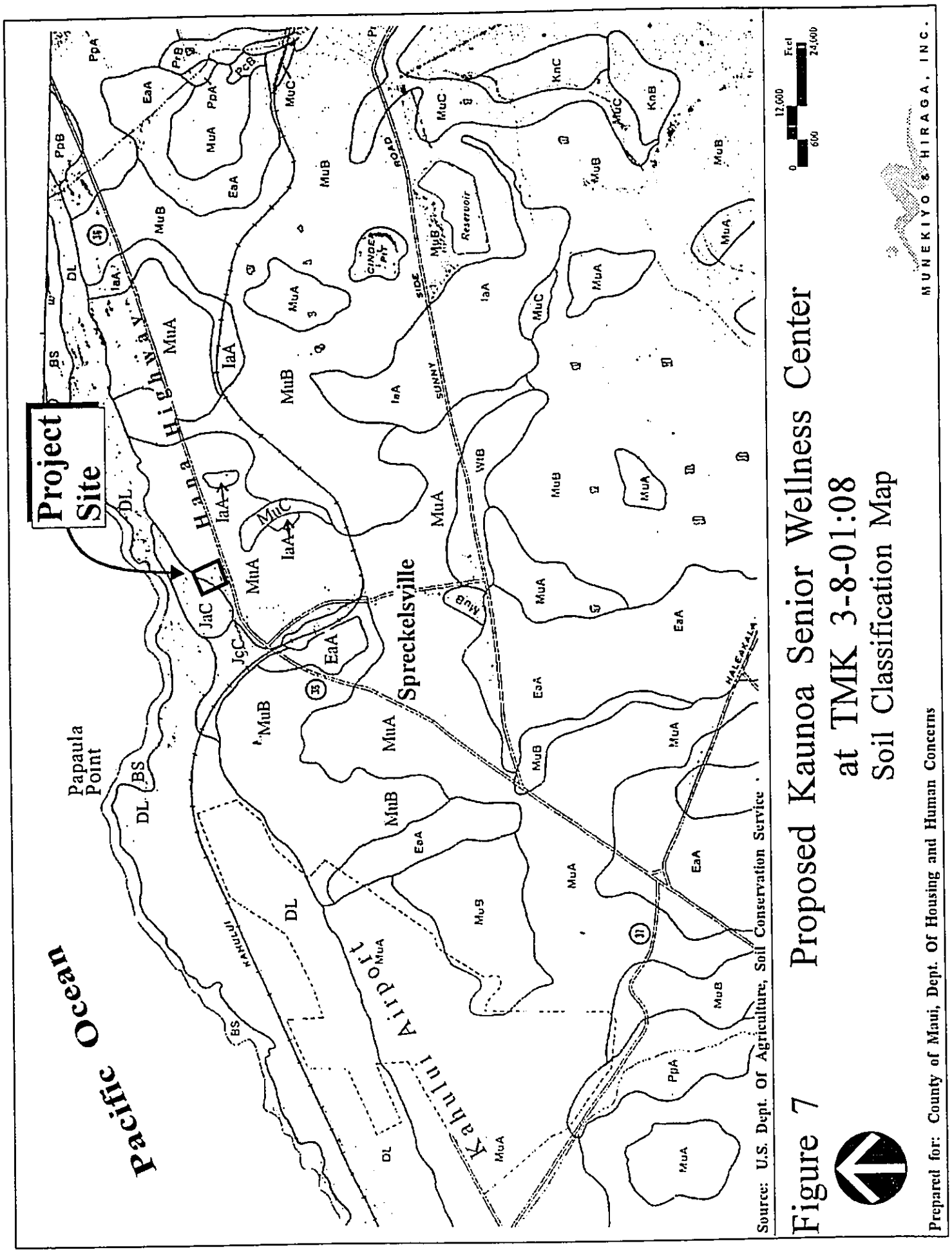

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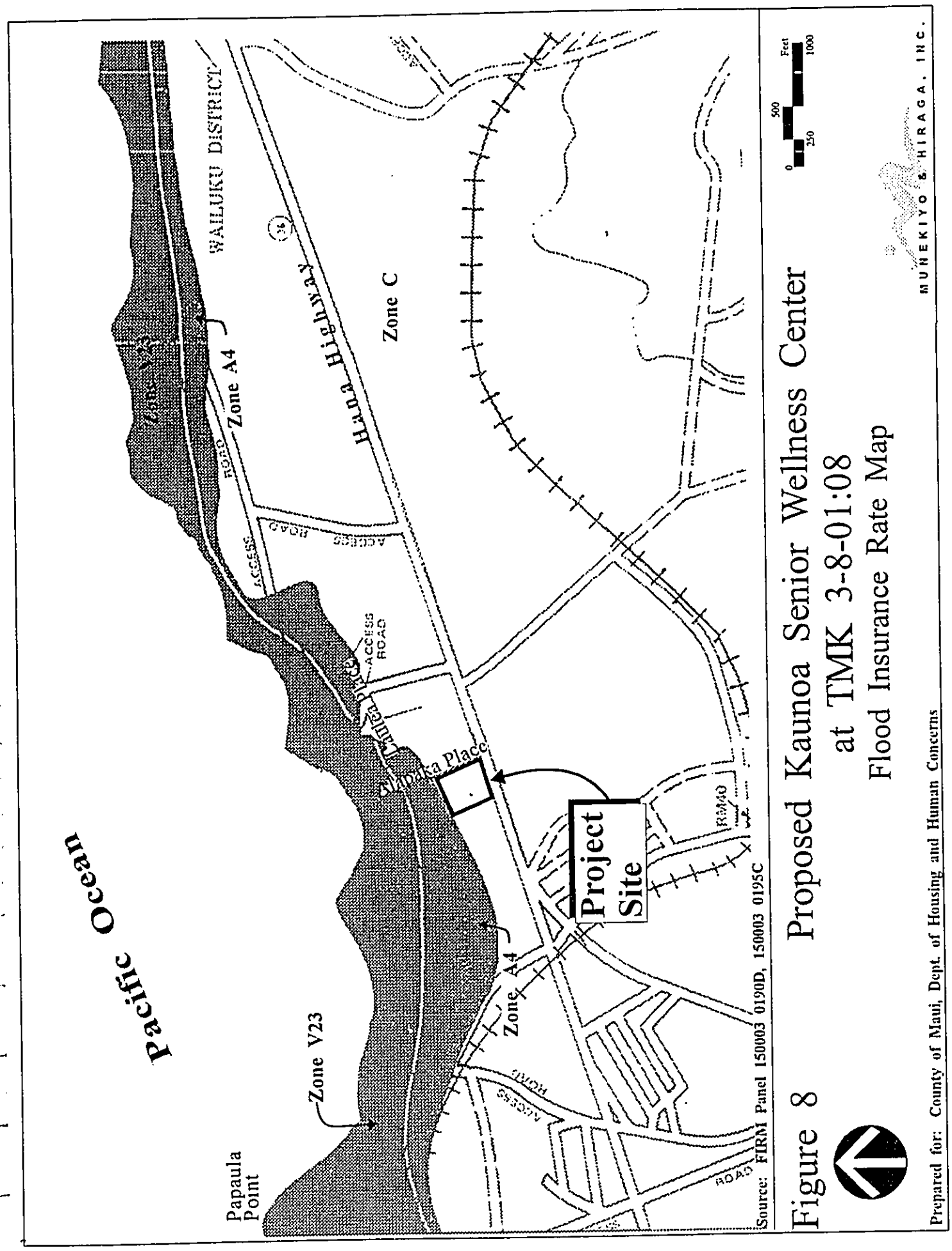

Figure 8 Proposed Kaunoa Senior Wellness Center at TMK 3-8-01:08 Flood Insurance Rate Map

Prepared for: County of Maui, Dept. of Housing and Human Concerns

5. ***Flora and Fauna***

Plant life at the existing Kaunoa Senior Center is decorative in nature and consists of grassed and landscaped areas containing a number of large monkeypod trees, introduced species of palm trees and other types of shade and ornamental trees, as well as ground cover. There are no known rare, threatened or endangered species of plants or important habitats within the project site.

Fauna and avifauna around the project site are characteristic of urban areas. Fauna typically found in the vicinity include mongoose, rats, dogs and cats. Avifauna typically include mynas, several types of doves, and house sparrows. There are no rare, threatened or endangered species of fauna or avifauna found at the project site, nor are there any significant habitats.

6. ***Archaeological Resources***

The lands underlying the Kaunoa Senior Center have been extensively disturbed due to previous site work for the construction of former school and senior center related facilities. The State Historic Preservation Division has indicated this area in general is likely to have once been the location of pre-contact farming, possibly with scattered houses. An archaeological assessment has been carried out on the building site. See Appendix "A". There was no evidence of cultural deposits or any significant cultural materials encountered during subsurface testing of the project site.

7. ***Air Quality***

Air quality in the Wailuku-Kahului region is considered good as emissions from point sources, including Maui Electric Company's

(MECO) power plant and Hawaiian Commercial and Sugar Company's (HC&S) sugar mill, as well as non-point sources such as automobile emissions, do not generate problematic concentrations of pollutants. The relatively high quality of air can also be attributed to the region's constant exposure to winds which quickly disperse concentrations of emissions. This rapid dispersion is evident during burning of sugar cane in fields located to the south of the project site.

8. ***Noise***

Aircraft noise from the Kahului Airport is the predominant source of background noise around the vicinity of the project site. Traffic noise from nearby roadways can also add to the background noise levels in the surrounding area.

9. ***Scenic and Open Space Resources***

Scenic resources to the west of the project site include the open space agricultural lands and the West Maui Mountains. The majority of the lands in the Central Maui plain are utilized for sugar cane cultivation. This agricultural use creates a vast expanse of sugar cane fields that establishes and dominates the open space character of the region. The Pacific Ocean and Haleakala comprise visual resources to the north and southeast of the project site, respectively.

The subject property is not part of a scenic corridor.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The population of the island of Maui has exhibited relatively strong growth over the past decade with the 2000 population of 117,644 reflecting a 28.8 percent increase over the 1990 population of 91,361 (SMS, June 2002). Growth on the island is expected to continue with population forecasts for 2010 and 2020 estimated to be 138,665 and 160,090, respectively (SMS, June 2002). These projections reflect gains of 17.9 percent and 36.1 percent over the historical 2000 population.

2. Economy

The Kahului region is the island's center of commerce. Combined with neighboring Wailuku, the region's economic character encompasses a broad range of commercial, service, and governmental activities. In addition, the region is surrounded by significant agricultural acreages which include sugar cane fields and pineapple fields. The vast expanse of agricultural land, managed by HC&S and Wailuku Agribusiness Company, is considered a key component of the local economy.

C. PUBLIC SERVICES

1. Recreational Facilities

The Wailuku-Kahului region provides a full range of recreational opportunities, including shoreline and ocean recreation activities such as boating, fishing diving, surfing, canoeing, kayaking, picnicking, kite surfing, and windsurfing at Kahului Harbor and nearby beach parks. Individual and organized athletic activities are held at numerous County parks and the War Memorial Sports

Complex. County parks in the vicinity include Kanaha Beach Park and the H.A. Baldwin Park.

2. ***Police and Fire Protection***

Police protection for the Wailuku-Kahului region is provided by the Maui Police Department headquartered in Wailuku, about 4.0 miles to the west of the project site. The region is served by the department's Central Maui patrol.

Fire prevention, suppression, and protection services for the Wailuku-Kahului region are provided by the Maui Fire Department's Kahului Station, approximately 2.5 miles west of the project site. In addition, the department's Paia Station is located about 2.75 miles to the east of the project site along the Hana Highway in Paia Town.

3. ***Solid Waste***

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews is disposed of at the County's 55-acre Central Maui Landfill, located approximately 4.0 miles southeast of the subject site. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies. Refuse collection for the Kaunoa Senior Center is provided by a private refuse collection company.

4. ***Health Care***

Maui Memorial Medical Center, the only major medical facility on the island, services the Wailuku-Kahului region. Acute, general and emergency care services are provided by the facility, which is

licensed for about 194 beds and is located in Wailuku, approximately 4.5 miles to the west of the Kaunoa Senior Center. In addition, numerous privately operated medical/dental clinics and offices are located in Kahului and Paia Town to serve the region's residents.

5. Schools

The Wailuku-Kahului region is served by the State Department of Education's public school system as well as several privately operated schools accommodating elementary, intermediate and high school students. Department of Education facilities in the Kahului area include Lihikai and Kahului Schools (Grades K-5), Maui Waena Intermediate School (Grades 6-8), and Maui High School (Grades 9-12). Existing facilities in the Wailuku area include Wailuku Elementary School (Grades K-5), Iao Intermediate School (Grades 6-8), and Baldwin High School (Grades 9-12). Paia Elementary School, covering kindergarten to grade 5, is the only public school facility in nearby Paia Town.

D. INFRASTRUCTURE

1. Roadways

The Wailuku-Kahului region is served by a network of State and County roadways which includes arterial, collector, connector and local roads. The major roadway in the vicinity of the Kaunoa Senior Center is Hana Highway which extends from Kahului to Hana. Hana Highway is a two-way, two-lane State arterial. Fronting the project site is Alapaka Place, a local road serving the single-family residential neighborhood and providing access to the north shore beaches.

2. ***Bike Route***

The Department of Public Works and Environmental Management has recently provided a paved bike route along the western boundary of the subject property. The Department of Housing and Human Concerns, Kaunoa Senior Center, has allowed the bike route to be established within the property boundary on the condition that the Kaunoa Senior Center may use it for a service road to provide access to the multi-purpose building for the meals-on-wheels vehicles and access for staff parking, as well as access to the proposed Senior Wellness Center.

3. ***Wastewater***

Wastewater generated in the Wailuku-Kahului region is conveyed to the County's Wailuku-Kahului Wastewater Reclamation Facility located 0.5 mile south of Kahului Harbor. The design capacity of the facility is 7.9 million gallons per day (MGD), while the cumulative wastewater flow currently allocated is approximately 7.0 MGD (personal communication with S. Rollins, Department of Public Works and Environmental Management, April 2003).

The subject property is serviced by the County wastewater collection system.

4. ***Water***

Domestic water for the Wailuku-Kahului region is provided by the Department of Water Supply's (DWS) Central Maui System. The major source of water for this system is the Iao Aquifer. The sustainable yield of the Iao Aquifer is 20 MGD. As of June 2003, the rolling average on pumpage from the Iao Aquifer was 18.050 MGD (State Commission on Water Resource Management

Pumpage Report, July 30, 2003). The Iao Aquifer was designated a Groundwater Management Area on July 21, 2003 by the Commission on Water Resource Management.

Based on recent water usage reports, the Kaunoa Senior Center's water demand is approximately 6,700 gallons per day.

5. ***Drainage***

The project site is characterized by areas which have been developed for the Kaunoa Senior Center uses. The topography in the area where the proposed improvements are planned to occur is generally characterized by terrain that is level and developed with existing grass lawn and landscaping.

Surface runoff on the subject property sheet flows in a south to north direction into the courtyard area. It then ponds in the low lying areas or eventually sheet flows into the ocean. It is estimated that the existing 50-year storm runoff from the limits of the proposed project site is 0.2 cubic feet per second (cfs). See Appendix "B".

6. ***Electrical and Communication Systems***

Electrical service to the Kaunoa Senior Center is provided by Maui Electric Company, Ltd. Communication service is provided by Verizon Hawaii, Inc. and cable TV service is provided by Hawaiian Cablevision.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Uses

The Kaunoa Senior Center is situated in an area of existing urban development as reflected by the adjacent single-family residential neighborhoods to the north and east. As an addition to an existing senior services complex, the proposed wellness center is consistent and compatible with land uses in the vicinity and is not anticipated to have an adverse effect on land uses in the area.

2. Topography

The elevations of the subject property range from approximately 13 feet above mean sea level (MSL) at the southerly boundary to approximately 10 feet MSL at the northerly boundary. The elevation of the project site is approximately 10 feet MSL. The project site will be built up with approximately 18 inches of imported fill material to maintain existing drainage patterns.

3. Flora and Fauna

There are no known significant habitats, rare, threatened or endangered species of flora and fauna nor important habitats, located within the project site. The proposed project is therefore not anticipated to have an adverse impact upon these environmental features.

The existing monkeypod trees will not be affected by the proposed project.

4. Archaeological Resources

Former ground-altering activities involving site work and the construction of the former Kaunoa School and existing Kaunoa

Senior Center facilities have disturbed the lands underlying the project site.

In response to the request for early consultation, the State Historic Preservation Division (SHPD) has determined that due to the presence of Jaucus sand deposits underlying the northern portion of the subject property, and presence of archaeological sites (Site Nos. 1777 and 1778) in the vicinity of the subject parcel, cultural resources may be present. Therefore, archaeological field work was carried out as recommended to mitigate potential impacts to cultural resources. However, because no significant cultural materials were encountered during subsurface testing, the results were documented as an archaeological assessment. Refer to Appendix "A". No further work is recommended for the development of the project site as proposed. Based on the results of the archaeological assessment, adverse impacts to cultural and historic resources are not anticipated as a result of project implementation.

5. *Cultural Impact Assessment*

a. *Settlement Context*

Prior to Western contact in Hawaii, land was divided into units called *ahupua'a.* Each *ahupua'a* was a self-sufficient land unit, running from the mountain *(mauka)*, to the ocean *(makai)* (MacKenzie, 1991). These divisions served as both cultural and settlement systems, as traditional Hawaiian life was tied intimately to the land. Hunting, gathering, cultivation, and habitation took place within three (3) zones, which characterized the *ahupua'a*: the *Mauka* Zone, the Agricultural Zone, and the Coastal Zone. The *Mauka* Zone

provided access to a variety of trees, plants and herbs for various needs, customs and practices. Planting of yams, sweet potato, sugar cane, taro, and other foods took place in the Agricultural Zone, where gradual slopes of land allowed terraces to be constructed for more efficient irrigation. The Coastal Zone and lowlying areas was where most of the *kauhale,* group of houses, were found, as well as temples, fishing shrines, and fishponds (Minerbi 77).

The project site is located in the traditional *ahupua'a* of Wailuku in the district of Wailuku. The district covers the eastern flank of the West Maui mountains and all of the isthmus between east and west Maui. The *ahupua'a* of Wailuku covers almost half of the district, including the coastal area of Kahului Bay, all of 'Iao Valley, and the northern half of the isthmus.

In the late prehistoric period, a time of frequent warfare among the chiefs of the Hawaiian Islands, Wailuku was a chiefly center and site of decisive battles. In 1736, there was a battle between Maui chief Kekaulike and Hawaii chief Alapa'i. During this battle, Maui chief Kekaulike died at Haleki'i Heiau. Later, Puunene was the site of the final battle between the sons of Kekaulike for control of the island of Maui. Between 1765 and 1793, Kahekili was chief of the island (as well as Oahu, Molokai and Lanai) and Wailuku was the site of his residence. In the 19th century, Kamehameha fought one of his first battles with European weapons on the plains of Wailuku (International Archaeological Research, Inc., 1995).

Western contact also brought changes to the Hawaiian land system, along with the introduction of private ownership of land, a concept foreign to the Native Hawaiians. A Board of Land Commissioners was established in 1845 to uphold or reject all private land claims of both foreigners and Hawaiians. The Commission adopted rules pertaining to the proof of claims, right of tenants, and commutation to the government in attempts to achieve the goal of totally partitioning undivided lands. All lands not claimed by February of 1848 were to be forfeited to the government (MacKenzie, 1991).

Following the enactment of these rules, the *Mahele* division of 1848 divided all lands of Hawaii between the king and chiefs. Two (2) years later the *Kuleana* Act completed the *Mahele* process by authorizing the Land Commission to award fee simple titles to native tenants for their land. These *kuleana* parcels, also known as Land Commission Awards (LCA), were generally among the richest and most fertile in the islands and came from king, government, or chief's land. All claims and awards were numbered and recorded in the *Mahele* Book (MacKenzie, 1991). There are no LCAs in the vicinity of the project site. In addition, government lands were sold as "Royal Patent Grants" or "Grants" in order to meet the increasing costs of government. These grants differed from LCAs, as it was not necessary for the recipients to obtain an award for their land from the Land Commission (Chinen, 1958).

During the Mahele, Wailuku *ahupua'a* was designated Crown Lands. With the help of King Kalakaua, Claus Speckels obtained a lease over 40,000 acres of land in the Wailuku district to grow sugar cane and water rights to build a mill. In 1882, Spreckels acquired fee simple title to all of Wailuku *ahupua'a*, through Grant 3343. In a short period of time, he built irrigation ditches to bring water from the north slopes of Haleakala and West Maui mountains to his plantation lands and mill and also built a railroad from Kahului Harbor to Paia and Puunene to transport his cane. The Spreckelsville mill was located near the present intersection of Stable Road and Hana Highway, approximately one-half mile west from the project site. The sugar plantation was ultimately incorporated as Hawaii Commercial and Sugar Company (HC & S) which quickly became the biggest and best-equipped plantation in the islands (International Archaeological Research, Inc. 1995).

In the early 20th century, along the north coast in the east Wailuku area, Kahului, Puunene and Spreckelsville were the only large communities. There were, however, several plantation camps located around Puunene. The subject property was sold by HC & S to the Territory of Hawaii in 1925 for the establishment of the Kaunoa Standard School. In 1974 by Executive Order No. 02715, management and control of the Kaunoa School site was transferred to the County of Maui for implementation of assistance programs for the elderly.

b. ***Informant Data***

Interviews with knowledgeable informants were conducted during the preparation of the Draft EA, to obtain a broader range of cultural resource perspectives in and around the proposed project area.

Interviews were held at the Kaunoa Senior Center on August 8, 2003. Interviews were arranged by Kaunoa Senior Center staff. The interviews were with former students of the Kaunoa English Standard School. The following are summaries of the interviews.

(1) Jan Wysard

Jan Wysard was born on Maui at the Puunene Hospital. Her father's first position in 1935 was a recreational director for H C & S. Her mother was a teacher and taught at the Kaunoa English Standard School from 1949 to 1953, and then went on to teach at Maui High School. She attended Kaunoa English Standard School from grades 1 through 8. She then attended Maui High School and then went to Punahou School in Honolulu.

Jan and her family lived up the road from Kaunoa English Standard School, in the area that is now part of the Maui Country Club. She recalls playing in the area, and that she used to walk to and from school every day. She remembers lots of monkeypod trees around the school yard, and under the trees a lot of dirt.

One of Jan's distinct memories was the tsunami that occurred on April 1, 1946. It happened on a weekday, while she was getting ready for school. That morning her father was in the yard and commented that the ocean was really funny, and the wave break was coming up into their yard. They lived about 50 yards from the shoreline, so it was

quite unusual to see the water so high. Shortly, another big set of waves came in and the water was way up into their yard. Their house was about two (2) or three (3) feet off the ground. Jan could see the water kept rising, it came past their house and all the way to Puani Road. Their car was completely under water. She remembers the water to be up to her chest. The family had to wade through the water to get to higher ground and safety. There was lots of sea life washed up on the land. Many local people came to look and started to gather around the road. As the water receded, lots of fish, eels and crabs were left on the land, and the people started to gather, the fish and seafood that got washed up. She recalled the school was closed for a few days after the tsunami.

Jan recalled that when she was growing up, there were many large sand dunes around the beach, that the dunes were noted for containing Native Hawaiian burials. She also remembers seeing Native Hawaiian families torch fishing at night off the shoreline near her home, and around Baby Beach near Baldwin Park. They would fish off the reef, then move along the coast, and collect shellfish off the rocks.

Jan did not recall any agriculture on the Kaunoa English Standard School property. The surrounding area was in sugar cane cultivation, but the school site property looked pretty much like it does now, except, there is presently a lot more grass areas. She was not aware of any traditional beach access trails on or near the subject property. She also was not aware of any traditional mountain access trails on or in the vicinity of the subject property. She did not think the proposed project would have an negative impact on the Native Hawaiian cultural resources or practices.

(2) <u>Fred Bush</u>

Fred was born on Maui at the Puunene Hospital. His father's family moved to Honolulu in 1894 and his father was born in Honolulu. His father worked for H C & S as head of construction. Fred attended the Kaunoa English Standard School from grades 1

through 8. He recalled that he had to pass an english speaking test in order to be accepted into the school. He felt the quality of education was a little higher at the school. He said the teachers were very bright, and really encouraged the students to do well in their subjects. The Kahului Railroad Company also operated buses and Fred came to school by bus. The buses picked up students from Puunene, Kahului, Wailuku and Waiehu since Kaunoa English Standard School received students from a wider area, not just within the local area.

Fred also recalled the tsunami of 1946. He was getting ready to go to school when his father got a call about the tsunami. At first, he said his father thought it was an April fool's joke since it was April 1st, but was soon convinced it was real. He went with his father down towards the ocean to see what happened. He remembers as they were driving, they stopped by the Puunene plantation service station, which was run by Mr. Skaug. Fred recalled that Mrs. Skaug was in her nightgown, she had seaweed in hair and was very distraught. Apparently, the tidal wave had washed out their house and she barely survived the ordeal.

Fred remembers that the school was closed for three (3) or four (4) days after the tsunami. The water came about half way into the school property. There was sand, seaweed and sea debris still on the property, when they returned to school.

Fred recalled there were vast fields of sugar cane grown around the property. Fred was not aware of any traditional trails or beach access on the property. He mentioned that people used Alapaka Place to get to the beach. He also was not aware of any traditional trails leading to the mountains in or near the subject property.

Based on the settlement context and informant interviews, the proposed project is not anticipated to adversely impact

cultural resources or cultural practices. The area has been in use as an educational facility since 1925.

6. ***Air Quality and Noise***

During the project's construction phase, existing air quality and noise conditions will be temporarily affected by short-term construction activities. Emissions generated by construction machinery and vehicles may temporarily affect ambient air quality. However, these effects can be minimized by proper maintenance. Dust generated during construction, especially from earth-moving activities such as excavating, trenching, and filling may temporarily affect ambient air quality. To mitigate these short-term effects, construction activities will be limited to daylight working hours and measures, such as utilizing dust barriers and watering for fugitive dust control will be employed as necessary. Ambient noise conditions may also be affected by construction activities. Heavy construction machinery such as backhoes, dump trucks, cement mixers, and construction equipment are anticipated to be the dominant noise-generating source during construction. Proper equipment and vehicle maintenance are anticipated to minimize construction noise impacts. In addition, equipment mufflers or other noise attenuating devices may be utilized as necessary.

On a long-term basis, the proposed project is not anticipated to result in adverse air quality nor noise impacts.

7. ***Scenic and Open Space Resources***

Architectural design and landscaping elements have been incorporated in the project to establish a visual integration with existing buildings and which will be compatible with the surrounding

environment. The architectural and aesthetic character of the project site and its surroundings are not expected to be adversely affected by the proposed improvement.

The project site is not part of a scenic corridor and will not affect views from inland vantage points or open space resources. Accordingly, the proposed action is not anticipated to have an adverse impact upon the scenic and open space character of the surrounding area.

B. *SOCIO-ECONOMIC ENVIRONMENT*

The proposed project is not expected to have an adverse effect on short- or long-term population parameters.

On a short-term basis, the proposed project will support construction and construction-related employment through the payment of wages and salaries, the contribution of taxes and benefits, and the purchase of goods and services.

C. *PUBLIC SERVICES*

The proposed project is not expected to create a need for additional park and school facilities, nor is it anticipated to have short- or long-term adverse impacts to existing recreational and educational facilities. The proposed project will provide greater recreational support facilities for senior citizens. In this context the proposed project will have a positive impact on recreational facilities. In addition, police, fire, health and emergency medical services are not expected to be adversely impacted by the proposed project. The project will not extend existing service area limits for emergency services.

On a short-term basis, construction activities will require the disposal of construction-related waste material. The Department of Housing and Human Concerns will work with the contractor to minimize the amount of solid waste generated during the implementation of the project. As appropriate, a private construction waste disposal facility will be utilized by the contractor for the disposal of construction waste materials.

D. *INFRASTRUCTURE*

1. *Roadways*

The proposed project will not have an adverse impact on the local roadway system. No additional traffic will be generated as a result of the proposed project.

2. *Bike Route*

The proposed project will not have an adverse impact on the bike route along the western property boundary. The pavement width is 18-feet, 6 inches and is wide enough to accommodate access to the wellness building and four (4) stall parking area, without obstructing the bike route.

3. *Wastewater*

The proposed project is not expected to generate any significant additional wastewater flows. The onsite wastewater system that presently serves the Kaunoa Senior Center will be extended and improved as necessary, to accommodate the proposed improvements.

All necessary wastewater system improvements will be coordinated with the appropriate governmental agencies and will be designed and constructed in accordance with applicable regulatory

standards. The proposed project is not expected to have an adverse effect on wastewater treatment capacities or facilities.

4. ***Water***

Water for the project site is furnished by the County's domestic water system servicing the area. To accommodate the proposed improvements, the existing onsite water system serving the Kaunoa Senior Center will be extended and improved, as necessary, to provide water for potable, fireflow, and irrigation purposes. Only a nominal increase in water demand is anticipated from the proposed improvements.

All necessary water system improvements will be coordinated with the appropriate governmental agencies and will be designed and constructed in accordance with applicable regulatory standards. The proposed project is not anticipated to have an adverse effect on water source and storage facilities, nor is it expected to impact transmission and distribution systems.

5. ***Drainage***

A drainage letter report has been prepared for the proposed project. Refer to Appendix "B". After development of the proposed project, it is estimated that the 50-year storm runoff will be 0.7 cfs, which results in a net increase of 0.5 cfs.

Onsite runoff will be intercepted by grated catch basins and area drains located within the paved areas around the wellness center building. The runoff will be conveyed to an onsite subsurface drainage system, where the runoff will be temporarily stored and allowed to percolate into the substrata.

building. The runoff will be conveyed to an onsite subsurface drainage system, where the runoff will be temporarily stored and allowed to percolate into the substrata.

The subsurface drainage system will be sized to accommodate the increase in runoff from the project site for a 50 year-1 hour storm. There will be no additional runoff sheet flowing from the proposed project limits onto the courtyard area or the adjoining properties.

6. ***Electrical and Communication Systems***

The existing electrical and communication systems that serve the Kaunoa Senior Center will be extended and improved, as necessary, to accommodate the proposed improvements. The proposed project is not expected to have an adverse effect on electrical and communication systems.

Chapter IV

Relationship to Governmental Plans, Policies and Controls

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The Kaunoa Senior Center is situated within the "Urban" district. See Figure 9. The proposed action involves improvements to the existing Kaunoa Senior Center which are intended to improve program delivery and services. The proposed use of the project site for this purpose is consistent with "Urban" district standards.

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 provisions of the General Plan:

Land Use (Objective)

- To use the land within the County for the social and economic benefit of all the County's residents.

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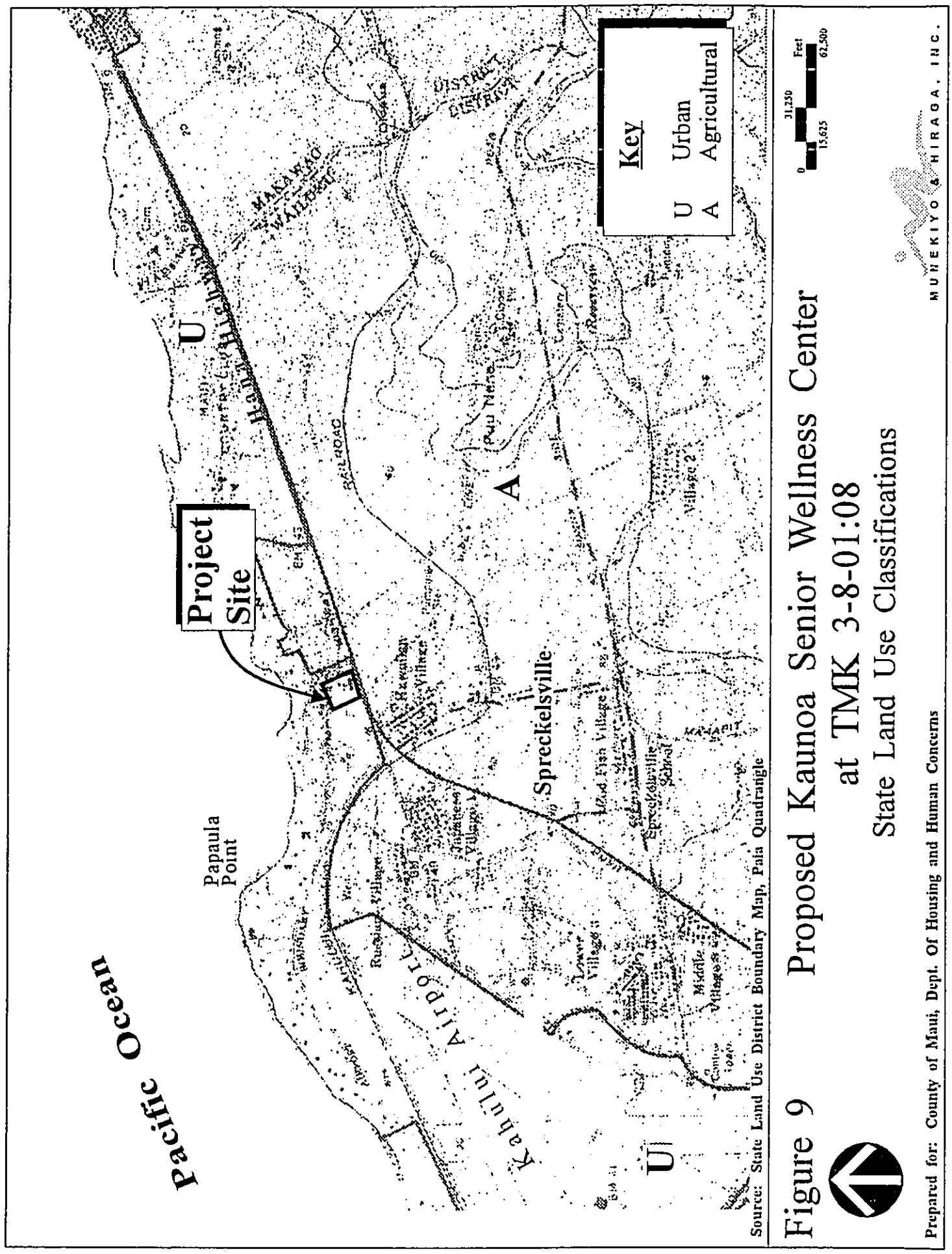


Figure 9 Proposed Kaunoa Senior Wellness Center
at TMK 3-8-01:08
State Land Use Classifications

Prepared for: County of Maui, Dept. Of Housing and Human Concerns

Urban Design (Objective)

- To see that all developments are well designed and are in harmony with their surroundings.

Public Utilities and Facilities (Policies)

- Seek improvement in the maintenance and operation of public facilities.

Cultural Resources (Objective)

- To preserve for present and future generations the opportunity to know and experience the arts, culture and history of Maui County.

Social Infrastructure (Objectives)

- To coordinate through the Maui County Department of Human Concerns the establishment of quick and reliable access to human services.
- To provide high-quality recreational facilities to meet the present and future needs of our residents of all ages and physical ability.
- To provide a wide range of recreational, cultural and traditional opportunities for all our people.
- To meet the health needs of all residents and visitors.
- To provide Maui residents with continually improving quality educational opportunities which can help them better understand themselves and their surroundings and help them realize their ambitions.
- 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.
- To create a community in which the needs of all segments of the population will be recognized and met.

Government (Objective)

- Improve the delivery of services by government agencies to all community plan areas.

C. *WAILUKU-KAHULUI COMMUNITY PLAN*

The Kaunoa Senior Center is situated in the Wailuku-Kahului Community Plan region which is one (1) of nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns and characteristics of future development in the region.

Land use guidelines are set forth by the Wailuku-Kahului Community Plan Land Use Map. See Figure 10. The project site is designated for "Public/Quasi-Public" use by the Community Plan.

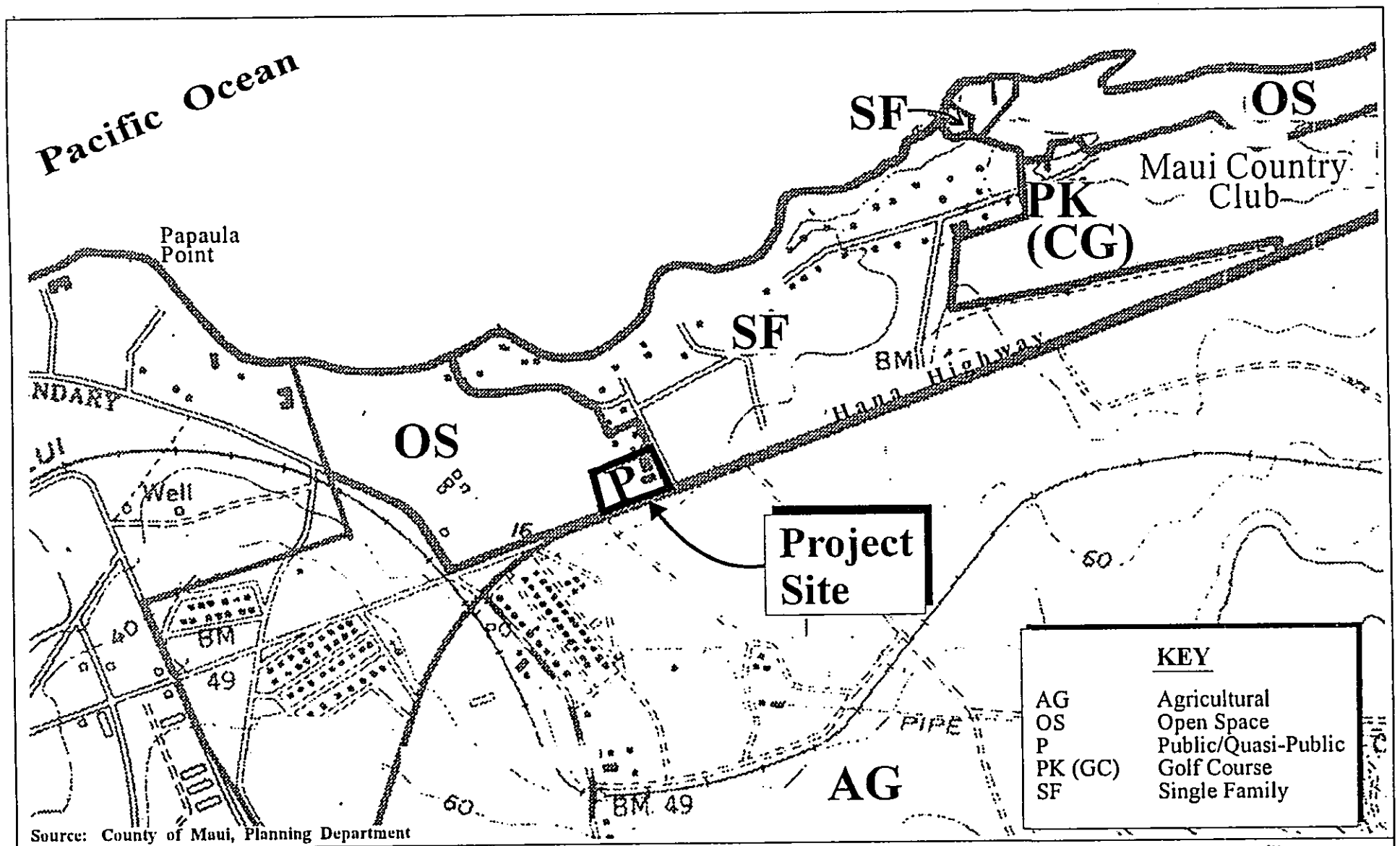
The proposed action is in consonance with the land use designation for the subject property set forth by the Wailuku-Kahului Community Plan Land Use Map, as well as the following Community Plan goals, objectives, and policies.

Social Infrastructure (Goal)

- Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy and enjoyable lifestyle, accommodates the needs of young, elderly, disabled and disadvantaged persons, and offers opportunities for self-improvement and community well-being.

Social Infrastructure (Objectives and Policies)

- Plan for the expansion of community services facilities, such as the Cameron Center.
- Expand social services for young and elderly persons.
- Continue to assess the social needs in the community and facilitate a coordinated response in the delivery of social services and programs for young, elderly, disabled and disadvantaged persons.



Source: County of Maui, Planning Department

Figure 10 Proposed Kaunoa Senior Wellness Center at TMK 3-8-01:08 Wailuku-Kahului Community Plan Land Use Designations

Prepared for: County of Maui, Dept. Of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

- Support the formulation of an elderly needs assessment study for Maui County by the State Department of Health and lobby for the implementation of needed programs and projects.

Government (Goal)

- Government that demonstrates the highest standards of fairness; responsiveness to the needs of the community; fiscal integrity; effectiveness in planning and implementation of programs and projects; a fair and equitable approach to taxation and regulation; and efficient, results-oriented management.

Land Use (Goal)

- An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the social and economic well-being of residents and the preservation and enhancement of the region's environmental resources and traditional towns and villages.

Urban Design (Goal)

- An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design, defines a unified landscape planting and beautification theme along major roads and highways, watercourses and at major public facilities, and recognizes the historic importance and traditions of the region.

Objectives and Policies for the Wailuku-Kahului Region in General

- Maintain a design quality for commercial and public projects and large-scale master planned developments.

D. ZONING

The subject property is zoned R-3, Residential district. Pursuant to Chapter 19.08.020(E) of the Maui County Code pertaining to the Residential Districts, permitted uses include buildings or premises used by the federal, state, or county governments for public purposes.

The proposed improvements are consistent with the uses permitted by the Residential district zoning.

E. *OFF-STREET PARKING AND LOADING*

A parking analysis was carried out for the proposed project pursuant to Maui County Code, Section 19.36.010 with respect to the designated number of parking spaces as required in connection with any remodeling or erection of any building or structure. A parking summary is presented in Table 1.

Table 1

KAUNOA SENIOR CENTER PARKING SUMMARY			
		Parking Ordinance	
Building Name	*Floor Area*	*Parking Ratio*	*Parking Required*
Multi-Purpose Building	6,400 s.f. 1,978 s.f.	1 space per 100 s.f. Assembly Area	20 spaces
Three Classroom Building	5,317 s.f.	8 spaces per Classroom	24 spaces
Crafts/Ceramics Classrooms	2,940 s.f.	8 spaces per classroom	16 spaces
Administration Offices	2,975 s.f.	1 space per 500 s.f.	6 spaces
Storage Shed	800 s.f.	1 space per 700 s.f.	1 space
Restrooms	432 s.f.	None	None
Caretaker Residence	1,584 s.f.	2 spaces per dwelling	2 spaces
Proposed Wellness Center	4,224 s.f. (3,297 s.f.)	1 space per 100 s.f. Assembly Area	33 spaces
		REQUIRED PARKING	**102 space**

Source: Hiyakumoto + Higuchi Architects, Inc.

Taking into account the proposed wellness center building floor area, a total 102 parking spaces are required, pursuant to the parking ordinance. There currently are 102 designated parking spaces at the Kaunoa Senior Center. With the additional 4 designated stalls proposed with the wellness center building, a total of 106 parking spaces will be provided. As such, with the proposed improvements, the Kaunoa Senior Center parking capacity will exceed the County Code parking requirements.

F. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

Pursuant to Chapter 205A, Hawaii Revised Statutes, and the Rules and Regulations of the Planning Commission of the County of Maui, projects located within the Special Management Area (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 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 project site is located approximately 1,000 feet from the shoreline. As such, the proposed project will not affect coastal recreational resources. Accessibility to shoreline areas will not be impacted by the proposed action.

(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 project site has been disturbed by previous construction activities for the Kaunoa English Standard School and Kaunoa Senior Center improvements. An archaeological assessment was carried out on the project site. No significant cultural materials were encountered during subsurface testing. No further archaeological work is recommended. However, should any inadvertent finds be located during ground-altering activities, work shall immediately cease in the area of the find and the find protected from damage. The SHPD will be promptly notified and appropriate mitigative measures shall be implemented pursuant to Chapter 6E, HRS.

(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. In addition, architectural design and landscaping elements have been incorporated in the project to ensure visual compatibility with its surroundings. Public views to and along the shoreline will be unaffected by the project, as will the existing scenic and open space character of the project site and surrounding area.

(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: The proposed action will involve minimal site work. Appropriate Best Management Practices and mitigative measures will be utilized during construction activities to ensure that coastal ecosystems and water quality are not degraded by construction-related activities.

(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 project will have a beneficial short-term impact on the local economy during construction by providing construction-related employment. On a long-term basis, the project will not generate any adverse economic impacts.

(6) ***Coastal hazards***

Objectives:

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: The proposed action is situated within the limits of Zone C, an area of minimal flooding. Appropriate mitigative measures will be utilized during construction activities to minimize soil loss, erosion, and water quality impacts. As necessary, temporary drainage improvements during construction will be installed to ensure that there are no adverse drainage impacts to adjoining and downstream properties.

(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: The County's Special Management Area permitting process provides an avenue for public review. In addition, opportunities for public input were also provided through Chapter 343, Hawaii Revised Statutes.

(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: As previously noted, opportunities for agency and public review of the proposed action are provided through the notification, review and comment procedures of the Maui Planning Commission's SMA permitting process, as well as through the Chapter 343, Hawaii Revised Statutes.

(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 action will occur in and immediately around the existing Kaunoa Senior Center. As the proposed project will not involve any construction work along or near the shoreline, the project will have no effect upon shoreline processes and beach dynamics.

(10) ***Marine Resources***

Objective:

Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: The project site is located approximately 1,000 feet from the shoreline. Given its limited scale and scope, the proposed project is not anticipated to have adverse effects upon marine and coastal resources in the vicinity.

Chapter V

Summary of Adverse Environmental Effects Which Cannot Be Avoided

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed project will result in some construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures.

Potential effects include noise generated impacts occurring from 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.

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

Chapter VI

Alternatives to the Proposed Action

VI. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The preferred alterative represents the proposed action. In addition to improving delivery of program activities and services at the Kaunoa Senior Center, the proposed project will facilitate the health and wellness of participants.

During the project's preliminary planning phase, a series of meetings were held with Kaunoa Senior Center staff and user groups. The input received during these meetings was used to outline the scope of the improvements that are being advanced by the proposed action.

B. CARETAKER'S RESIDENCE SITE ALTERNATIVE

The caretaker residence site alternative was originally considered for the proposed wellness center building since the caretaker's residence was in poor condition and not being used. Site preparation at this location would have involved the additional cost of demolition. Moreover, the building was in the lower portion of property and development of this area may have interfered with site drainage. Due to these considerations, this site alternative was not selected.

C. NO ACTION ALTERNATIVE

The no action alternative calls for continuing the program activities for seniors in the confined classroom facilities. In light of the need to improve program services for senior citizens, carrying out the program activities in spaces that limit movement and program benefits is not considered a viable option. Accordingly, the no action alternative was dropped from consideration.

D. *DEFERRED ACTION ALTERNATIVE*

The deferred action alternative has the same implications as the no action alternative, in that the implementation of the project would be delayed and would not be immediately realized. This alternative could result in higher construction costs due to increases in labor and material costs. Based on the foregoing, the deferred action alternative was dropped from consideration.

Chapter VII

Irreversible and Irretrievable Commitments of Resources

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed action would involve a commitment of fuel, labor, funding and material resources.

Development of the proposed project will involve the commitment of physical assets such as the lands comprising the Kaunoa Senior Wellness Center. This commitment of physical assets, however, is consistent with existing and future land uses in and around the project area.

Chapter VIII

Findings and Conclusions

VIII. FINDINGS AND CONCLUSIONS

The "Significance Criteria", Section 12 of the Administrative Rules, Title 11, Chapter 200, "Environmental Impact Statement Rules", were reviewed and analyzed to determine whether the proposed action will have significant impacts to the environment. The following analysis is provided:

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

   There are no anticipated adverse environmental impacts as a result of the proposed project. There are no identified rare, threatened or endangered species in the vicinity of the subject site.

   Lands underlying the subject site were previously altered in connection with the development of the Kaunoa English Standard School facilities. An archaeological assessment has been carried out on the project site. No significant cultural materials were encountered during subsurface testing. Loss or destruction of any natural or cultural resources are not anticipated as a result of the proposed project, since the building will be built on approximately 18 inches of fill.

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

   The proposed action is not anticipated to curtail the range and 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's Environmental Policy and Guidelines are set forth in Chapter 344, HRS, and were reviewed in connection with the proposed action.

The proposed action is in consonance with the State's long-term environmental policies and goals of Chapter 344, HRS.

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

It is anticipated that the proposed action will not adversely impact the economic or social welfare of the neighboring community. The proposed action will provide a program facility to meet the needs of senior citizens. In the long term, the proposed action will have a beneficial effect on the social welfare of the community.

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

The proposed action is anticipated to have a positive benefit to the public health.

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

There are no secondary impacts or effects on public facilities anticipated as a result of the proposed action.

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

The proposed action will not result in adverse degradation to the environment. Site preparation and construction activities will require the design and implementation of BMPs to mitigate construction activity impacts. In the long term, adverse impacts upon air quality and noise parameters are not anticipated. The proposed action is not anticipated to significantly affect the open space and scenic character of the area.

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

The proposed project does not entail a commitment to larger actions. No cumulative impacts are anticipated which would result in considerable effects on the environment.

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

There are no identified rare, threatened or endangered species located within the vicinity of the subject property. The proposed action will not adversely impact local habitats.

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

The proposed project will not adversely affect air, water 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 project site is not located within the limits of environmentally sensitive areas. As such, construction of the proposed project will not adversely affect flood plains, tsunami zones, erosion-prone areas, hazardous lands, estuaries, fresh waters or coastal waters. The project site is located within Zone C (FIRM), an area of minimal flooding.

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

The project site is not part of an identified scenic view corridor or viewplane. As such, adverse impacts to coastal and scenic views are not anticipated from the development of the Kaunoa Senior Wellness Center. Further, the proposed action is not anticipated to impact view corridors or viewplanes.

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

The proposed project is not anticipated to require substantial energy consumption.

Based on the foregoing findings, it is anticipated that the proposed action will result in a Finding of No Significant Impacts (FONSI).

Chapter IX

List of Permits and Approvals

IX. LIST OF PERMITS AND APPROVALS

The following permits and approvals may be required for the proposed project.

State of Hawaii

1. Community Noise Permit

2. NPDES Permit (to be determined in coordination with the State Department of Health)

County of Maui

1. Special Management Area (SMA) Use Permit, including Urban Design and Review Board Approval

2. Grading, Grubbing, Building, Electrical, Plumbing and Driveway Permits

Chapter X

Agencies Consulted During the Preparation of the Draft Environmental Assessment; Letters Received and Responses to Substantive Comments

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

The following agencies were consulted during the preparation of the Draft Environmental Assessment. Agency comments and 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. George Young, P.E.
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. Chiyome L. Fukino, M.D., Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

5. Peter T. Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

6. P. 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

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

8. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

9. Carl Kaupololo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

10. Alice Lee, Director
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

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

12. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
1580 C. Kaahumanu Avenue
Wailuku, Hawaii 96793

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

14. Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793

15. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

16. Honorable Dain Kane
Council Chair
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

17. Honorable Joseph Pontanilla
Councilmember
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

18. Honorable Michael Molina
Councilmember
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

19. Paia Main Street Association
P.O. Box 995
Paia, Hawaii 96779-0995

20. Jimmy Lawrence
Kahului Town Association
117 West Papa Avenue
Kahului Hawaii 96732

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

22. Jack Thompson, President
Spreckelsville Community Association
204 Kealakai Place
Paia, Hawaii 96779

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

JUL 15 2003

In reply, please refer to
File:

July 14, 2003

Mr. Mich Hirano, AICP
Munekiyo Hiraga, Inc.
305 High Street, Ste 104
Honolulu, HI 96793

Dear Mr. Hirano:

SUBJECT: **Comments to the Proposed Kaunoa Senior Wellness Center Early Consultation Request for Preparation of a Environmental Assessment Paia, Maui, TMK (2) 3-8-01: 08**

Our comments should be printed as follows:

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

- Chapter 11-46 Community Noise Control.

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

Sincerely,

Russell S. Takata
Program Manager
Noise, Radiation & IAQ Branch

MUNEKIYO & HIRAGA, INC.

November 19, 2003

Russell S. Takata, Program Manager
Noise, Radiation & IAQ Branch
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Takata:

Thank you for your letter dated July 14, 2003 commenting on the subject project.

We wish to confirm that the proposed project activities shall comply with the Administrative Rules of the Department of Health, Chapter 11-46 Community Noise Control. An application for a permit will be submitted to the Department of Health, as applicable.

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

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\nr&iaqb.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

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

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

JUL 2 9 2003

In reply, please refer to:
EMD / CWB

07109PKP.03

July 28, 2003

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

Dear Mr. Hirano:

Subject: Proposed Kaunoa Senior Wellness Center Project
Paia, Maui, Hawaii

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

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

   a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

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

   c. Discharge of treated effluent from leaking underground storage tank remedial activities.

   d. Discharge of once through cooling water less than one (1) million gallons per day.

   e. Discharge of hydrotesting water.

f. Discharge of construction dewatering effluent.

g. Discharge of treated effluent from petroleum bulk stations and terminals.

h. Discharge of treated effluent from well drilling activities.

i. Discharges of treated effluent from recycled water distribution systems.

j. Discharges of storm water from a small municipal separate storm sewer system.

k. Discharge of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.state.hi.us/doh/eh/cwb/forms/genl-index.html.

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. discharges into Class 1 or Class AA waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.state.hi.us/doh/eh/cwb/forms/indiv-index.html.

4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD) or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at (808) 586-4309.

Sincerely,

Alan Wong

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

KP:cu

MUNEKIYO & HIRAGA, INC.

November 19, 2003

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

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Lau:

Thank you for your letter dated July 18, 2003 providing comments on the subject project. We wish to provide the following responses to your comments in the same order as in your letter.

1. ***Response to the Army Corps of Engineers***

   A letter requesting early consultation for the subject project was sent to the U.S. Army Corps of Engineers. Further coordination will be carried out with the Corps of Engineers to determine if a Department of Army permit and a Section 401 Water Quality Certification will be required for the proposed project.

2. ***A National Pollution Discharge Elimination System (NPDES)***

   Further coordination will be carried out with the Department of Health to determine if a NPDES permit will be required for the proposed project.

3. ***Coordination with State Historic Preservation Division***

   We note the requirements of Hawaii Administrative Rules, Section 11-55-38 and will coordinate with the Department of Land and Natural Resources, State Historic Preservation Division, if a Notice of Intent or NPDES is required for the proposed project.

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 and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\cwbdoh.res

JUL 31 2003

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMD / WB

M3 8 001 008.wpd
WP9 030661

July 29, 2003

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

Dear Mr. Hirano:

Subject: Early Consultation Request for Preparation of an Environmental Assessment (EA) for the Proposed Kaunoa Senior Wellness Center Project
Paia, Maui
TMK: (2) 3-8-001: 008

We have reviewed the subject document which requests comments for the proposed project. We have the following to offer, as wastewater generation and treatment are not thoroughly addressed in this EA, we can not offer, recommend, nor concur with the project. However, should the project be located within the County sewer service system, we will require the project to connect to the County sewer system. Continued use of existing cesspool is not acceptable.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at direct toll free no. 984-2400, extension 64294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

MUNEKIYO & HIRAGA, INC.

November 19, 2003

Harold K. Yee, P.E., Chief
Wastewater Branch
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu Hawaii 96801

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Yee:

Thank you for your letter dated July 18, 2003 providing comments on the subject project. We wish to provide the following response to your comments.

The Kaunoa Senior Center is currently within and connected to the County of Maui sewer collection system. The proposed improvements will be connected to the county sewer collection system. We confirm the wastewater plans for the proposed improvements will conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems".

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

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Senior Kaunoa Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\wwbdoh.res

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

environment planning government

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

AUG 14 2003

In reply, please refer to:
File:

August 12, 2003

03-872A CAB

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

Dear Mr. Hirano:

SUBJECT: Request for Early Consultation, Proposed Senior Wellness Center Project, Paia, Maui - TMK: (2) 3-8-01:08

This letter is to transmit the following comments on the subject document:

Control of Fugitive Dust:

There is a significant potential for fugitive dust emissions during all phases of construction. Proposed construction activities will occur in proximity to existing residences, public areas and major thoroughfares, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
b) Provide an adequate water source at the site prior to start-up of construction activities;

c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
d) Minimize dust from shoulders and access roads;
e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f) Control dust from debris being hauled away from the project site.

If you have any questions, please contact Mr. Barry Ching of my staff at 586-4200.

Sincerely,

Wilfred K. Nagamine

WILFRED K. NAGAMINE
Manager, Clean Air Branch

BC:jhm

MUNEKIYO & HIRAGA, INC.

November 19, 2003

Wilfred K. Nagamine, Manager
Clean Air Branch
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu Hawaii 96801-3378

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Nagamine:

Thank you for your letter dated August 12, 2003 providing comments on the subject project.

We wish to confirm a dust control management plan will be developed, which identifies and addresses all project construction activities that have a potential to generate fugitive dust. Construction activities will comply with the provisions of Hawaii Administrative Rules, Section 11-60.1-33 on Fugitive Dust. A copy of your letter will be forwarded to the project design team to ensure that adequate measures to control dust from the road areas will be implemented during appropriate phases of construction.

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

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\doh.res

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

JUL 16 2003

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
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 11, 2003

LD-NAV
KAUNOAWELLNESSMAUI.RCM

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

Dear Mr. Hirano:

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Island of Maui, Hawaii - TMK: 3-8-01: 08

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed a copy of your letter (summary of the project) and site map dated June 17, 2003 to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land Division Maui District Land Office

Attached is a copy of the Commission on Water Resource Management, Engineering Division and Maui District Land Office comments.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer at this time.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO
OCCL

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

...RESOURCES
...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

June 26, 2003

LD/NAV
Ref.: KAUNOAWELLNESSMAUI.CMT

Suspense Date: 7/7/03

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division Charlene

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Maui - TMK: 3-8-01: 08

Please review the attached letter dated June 17, 2003 (summary of project) pertaining to the subject matter and submit your comments on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

(X) We have no comments.

( ) Comments attached.

Division _____

Signed: _____

Title: MICHAEL G. BUCK, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

Date: JUN 30

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
CHIYOME L. FUKINO, M.D.
BRIAN C. NISHIDA
HERBERT M. RICHARDS, JR.

ERNEST Y.W. LAU
DEPUTY DIRECTOR

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

July 2, 2003

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Kaunoa Senior Wellness Center

FILE NO.: KAUNOAWELLNESSMAUI.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.

[X] OTHER

Projected water demand for the project will be important. The aquifer that serves as the water supply for this project was overpumped beyond its sustainable yield in the recent past, and continues to show signs it has not yet fully recovered. The Commission action of November 2002 established criteria under which the Iao and/or Waihee Aquifers as water management areas. If those criteria are met, all ground-water withdrawals to the purveyor would be subject to water use permits. The service area would be subject to a declaration of water shortage or a water emergency. If withdrawals are constrained, water users may be subject to restrictions by the purveyor .will be designated

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

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/NAV
Ref.: KAUNOAWELLNESSMAUI.COM

COMMENTS

For your information, the project site is located in Zone C (No Shading). This is an area of minimal flooding. The National Flood Insurance Program (NFIP) does not have any specific regulations for development within Zone C.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Andrew M. Monden
~~for~~ ERIC T. HIRANO, CHIEF ENGINEER

Date: 7/7/03

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1247

LINDA LINGLE
GOVERNOR OF HAWAII

TO:
___ADMINISTRATOR
___ASST ADMIN
___DEV BR
___PLAN BR
___RES MGT BR
___CLERICAL
___ADMIN ASST
___INTERP BR

FOR:
___CIRC/POST/STAFF RM
___COMMENTS & REC
___DRAFT REPLY
___FILE
___FOLLOW UP
___INFO
___RUN COPIES_____
___RUSH DUE_____
___SEE ME
___FAX/SEND COPY TO

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

June 26, 2003

LD/NAV
Ref.: KAUNOASENIORS.MAUI.CMT

Suspense Date: 7/7/03

MEMORANDUM:

TO:
Division of Aquatic Resources
XXX Division of Forestry & Wildlife
Na Ala Hele Trails
√XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division Charlene

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Maui - TMK: 3-8-01: 08

Please review the attached letter dated June 17, 2003 (summary of project) pertaining to the subject matter and submit your comments on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

(✓) We have no comments.

( ) Comments attached.

Division State Parks

Signed: [signature]

Title: State Parks Admin.

Date: 7/11/03

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 26, 2003

LD/NAV
Ref.: KAUNOAWELLNESSMAUI.CMT

Suspense Date: 7/7/03

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- √ XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division *Charlene*

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Maui - TMK: 3-8-01: 08

Please review the attached letter dated June 17, 2003 (summary of project) pertaining to the subject matter and submit your comments on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

( ) We have no comments.

(√) Comments attached.

Division Maui District Land Office

Signed: *Jason K. Kagawa*

Title: District Land Agent

Date: 7/7/03

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
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STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 31, 2003

LD-NAV
KAUNOASENIORMAUI.RCM

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

Dear Mr. Hirano:

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Island of Maui, Hawaii - TMK: 3-8-01: 08

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed a copy of your letter (summary of the project) and site map to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land Division Maui District Land Office

Attached is a copy of the Maui District Land Office comment.

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

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

PHONE: (808) 984-8103
FAX: (808) 984-8111

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

54 High Street, Room 101
Wailuku, Hawaii 96793

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
COMMISSION ON WATER RESOURCE MANAGEMENT

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

July 7, 2003

Ref: KAUNOAWELLNESSMAUI.CMT

MEMORANDUM

TO: Dierdre S. Mamiya, Administrator
Land Division

FROM: Jason K. Koga, District Land Agent
Maui District Land Office

SUBJECT: Early Consultation, Proposed Kaunoa Senior Wellness Center Project, Paia, Maui, Tax Map Key: (2) 3-8-001:008

The Kaunoa Senior Wellness Center is located on land owned by the State of Hawaii. The land is set aside by Governor's Executive Order No. 2715 for the implementation of assistance programs to the elderly, to be under the control and management of the County of Maui.

The Maui District Land Office has no further comments on the project at this time. Thank you for the opportunity to provide comments on the matter.

c: N. Vaccaro
District Files

MUNEKIYO & HIRAGA, INC.

November 19, 2003

Dierdre S. Mamiya, Administrator
Land Division
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Ms. Mamiya:

Thank you for your letter dated July 11, 2003 providing comments from the divisions within the Department on the subject project. We wish to provide the following responses to comments from the Divisions.

1. ***Response to Comment from the Commission on Water Resource Management***

   The Kaunoa Senior Center property is currently serviced by the Department of Water Supply. The current water use is 6,700 gallons per day. The proposed project will not significantly increase the water demand. A copy of the Draft Environmental Assessment will provided to the Department of Water Supply to incorporate the project's use into the County's Water Use and Development Plan.

2. ***Response to Comment from the Engineering Division***

   We confirm that the project site is located within Zone C, an area of minimal flooding, of the Federal Insurance Rate Map.

3. ***Response to Maui District Land Office***

   We confirm that the proposed use of the Kaunoa Senior Wellness Center is to provide a facility for dance and movement programs for seniors and complies to the Governor's Executive Order No. 2715 to provide assistance programs to the elderly.

environment
planning
government

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 and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\dlnr2.res

JUL 2 5 2003

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

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AQUATIC RESOURCES
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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

July 23, 2003

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

LOG NO: 2003.1274
DOC NO: 0307CD42

Dear Mr. Hirano,

SUBJECT: **Chapter 6E-42 Historic Preservation Review – Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center Project, Paia, Maui**
Wailuku Ahupua`a, Wailuku District, Island of Maui
TMK: (2) 3-8-001:008

Thank you for the opportunity to review and comment on the Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center Project, Paia, Maui, which was received by our staff June 19, 2003. 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 property. Please note that our comments are in response to an information request for early consultation and are subject to revision upon receipt of additional information.

Based on the submitted document, we understand the County of Maui, Department of Housing and Human Concerns (DHHC) proposed the development of a wellness center at the Kaunoa Senior Center. The proposed undertaking consists of the construction of a single story structure (approximately 2224 sq ft), a four-stall paved parking area, landscaping, lighting, and walkways.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. This area in general is likely to have once been the location of pre-Contact farming, perhaps with scattered houses. The USDA Soil Survey indicates a portion of the subject property (including the proposed project area) is located in the Jaucus Sand deposit, which is known to contain both isolated and clusters of human burials and habitation sites. Previously identified near-by historic sites consist of SIHP 50-50-05-1777, a subsurface habitation site, and SIHP -1778, subsurface habitation site with human skeletal remains representing a minimum of two individuals, and SIHP -1171, the Baldwin Beach Burials. Given the above information, we believe it is likely that historic sites (and possibly previously disturbed site remnants) are present in the subsurface deposits of the subject property.

Therefore, in order to determine the effect of the proposed undertaking on historic sites, we recommend that an archaeological inventory survey, to occur concurrently with the construction related ground altering activities, be conducted of the proposed project area to determine whether significant historic sites are present. An acceptable report documenting the findings of the survey will need to be submitted to this office for review. If significant historic sites are identified, a mitigation plan may need to be developed, in consultation with this office, and executed. An acceptable monitoring plan will need to be submitted to this office for review prior to the commencement of the ground altering activities.

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: Michael Foley, Director, Dept of Planning, 250 South High Street, Wailuku, HI 96793
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793
Chair, Maui/Lana`i Islands Burial Council
Kana`i Kapeliela, Burial Sites Program

MUNEKIYO & HIRAGA, INC.

November 19, 2003

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division
State of Hawaii
Department of Land and Natural Resources
601 Kamokila Boulevard
Kapolei, Hawaii 96707

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Ms. McEldowney:

Thank you for your letter dated July 23, 2003 providing comments on the subject project.

We confirm that an archaeological inventory survey, to occur concurrently with the construction related ground altering activities, will be conducted to determine whether significant historic sites are present. An acceptable report documenting the findings of the survey will be submitted to your office for review. An acceptable monitoring plan will be submitted to your office for review prior to the commencement of ground altering activities.

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

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\dlnr.res

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

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

JUL 0 3 2003

COUNTY OF MAUI
DEPARTMENT OF PLANNING

July 1, 2003

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

Dear Mr. Hirano:

RE: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center Project, 401 Alapaka Place, Tax Map Key 3-8-001: 008, Specklesville, Island of Maui, Hawaii

The Planning Department (Department) received your request for comments on the subject application. The proposed development is for a single-story building of approximately 2,224 square feet in area, four (4) stall paved parking area, landscaping, lighting and walkways. The building will be used to hold dance and exercise classes organized by the Department of Housing and Human Concerns at the Kaunoa Senior Center. The proposed project will involve the use of County lands and funding.

The subject property is located in the R-3 Residential Zoning District, Wailuku-Kahului Community Plan Public/Quasi-Public Land Use Designation, State Land Use Urban District, and is in the Special Management Area. A Special Management Area Use Permit will be required for the proposed development.

The Department's comments are based on the limited information provided in your request. The conceptual site plan indicates an area for "Proposed Paved Parking" fronting Hana Highway. It is unclear from the plan where a driveway or egress and ingress from the property will be from this parking area. This needs to be clarified. In addition, it is not clear from the plans whether or not mature trees, that are more than 50 years old will be destroyed by the proposed development. Traffic along Hana Highway in this area is also a major concern. Information on the number of participants, hours of operation, occupancy load, and whether there is an increase in the number of participants to the Center as a result of this program should be identified, along with an analysis of any increase in participation as a result of this expansion.

Should you have any questions, please contact, Julie Higa, Staff Planner, at 270-7814.

Very truly yours,

MICHAEL W. FOLEY
Director of Planning

JMH:jmu
cc: Clayton I. Yoshida, AICP, Deputy Planning Director
Julie M. Higa, Staff Planner
Project File
General File
S:\ALL\Julie\EA\KaunoaDanceCtr\PreConsult.wpd

MUNEKIYO & HIRAGA, INC.

November 19, 2003

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

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Foley:

Thank you for your letter dated July 1, 2003 commenting on the subject project. We provide the following responses to your comments in the same order as in your letter.

1. ***Response to Comment on Egress and Ingress***

   Access to the proposed new wellness center building will be provided by the current paved service road off of Alapaka Place. This service road is presently used by the meals on wheels program vehicles to access the multi-purpose building and by staff to access staff parking areas. The service road also has provision for the bike route which extends from Alapaka Place to Stable Road. These uses will not be adversely impacted by the proposed project. Egress and Ingress to the proposed Kaunoa Wellness Center will be clarified on the site plan as requested.

2. ***Response to Comments on the Mature Trees***

   There are a number of mature monkeypod trees on the Kaunoa Senior Center site. These trees will not be impacted by the proposed Kaunoa Senior Wellness Center building. The existing monkeypod trees will be incorporated into the landscape features.

3. ***Response to Comments on Traffic Along Hana Highway***

   The Kaunoa Senior Center currently has approximately 220 people frequenting the facility on a daily basis. The hours of operation are from 7:45 a.m. to 4:30 p.m.

Monday to Friday. Programs and events are also scheduled in the evenings and on weekends. The existing dance and exercise classes to be housed in the proposed new building are currently being held in the multi-purpose room. The purpose of the new facility is to accommodate current programs carried out in existing facilities. As the population of the island's senior residents grow, a corresponding growth trend for those taking advantage of services provided by the Kaunoa Senior Center may also be anticipated. In itself however, the proposed wellness center is not intended to directly generate new levels of participation. This information will be incorporated in the draft Environmental Assessment.

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

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\planning.res

ALAN M. ARAKAWA
Mayor

JUN 25 2003

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

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

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2 , Wailuku, Hawaii 96793

June 22, 2003

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

Dear Mr. Hirano:

SUBJECT: KAUNOA SENIOR WELLNESS CENTER
PAIA, MAUI, TMK: (2) 3-8-01:08

We have reviewed the proposed action for the subject project and have no comments to offer at this time.

Thank you for the opportunity to review and comment. Should there be any questions, please contact Mr. Patrick Matsui, Chief of Parks Planning and Development, at 270-7387.

Sincerely,

GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development

AUG 2 5 2003

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

August 12, 2003

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

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Project - construction of a single story building on approximately 2,224 sf, 4 parking stalls, landscaping, lighting and walkways on TMK (2) 3-8-001:008

Dear Mr. Hirano:

Thank you for the opportunity to participate in the early consultation process for this project. The Department of Water Supply provides the following comments:

Source Availability and Consumption
The project area is served by the Central Maui System. The main sources of water for this system are the Iao and Waihee aquifers, the Iao tunnel and the Iao-Waikapu Ditch. As of July 21, 2003, Iao aquifer has been designated by the Commission on Water Resource Management (CWRM) as Groundwater Management Area. As a result, DWS will not issue reservations for future meters until new sources are brought on-line. The department also asks Central Maui residents to voluntarily conserve water.

Although the Department continues to issue meters for those ready to receive service at this time, it may also become necessary to stop issuing new meters altogether. Therefore, the applicant should be aware that additional source or larger maters, if required for this project may not be available until new sources are on-line.

The EA should include the source and expected potable and non-potable water use. Existing facilities use an average of 5,000 GPD. Absent detailed information, anticipated use for the entire parcel would be approximately 7,700 GPD based on system standards.

System Infrastructure
The project site is served by two waterlines, 8-inch along Alakapa Place and 12-inch on Hana Highway, two water meters, and two fire hydrants situated on the east side of the property. Domestic, fire and irrigation calculations will be required during the building permit process as well as provision for back-flow prevention, if one does not already exist. These calculations will 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.

Conservation
We encourage the applicant to consider the following water conservation measures and integrate them in the project design and construction:

Use brackish and /or reclaimed water sources for dust control during construction, if such alternatives 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.

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".

Use Climate -adapted Plants: The project is located in the Maui County Planting Plan - Plant Zone 5. We encourage the applicant to utilize appropriate native and non invasive species and 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 zone as well as potentially invasive plants to avoid.

Limit Irrigated Turf: Limit irrigated turf to 25% or less of total landscaped area. Low-water use shrubs and ground covers can be equally attractive and require substantially less water that turf.

Look for Opportunities to Conserve Water: A few examples of these are as follows: When clearing driveways, etc. of debris, use a broom instead of a hose. When washing cars, use a hand-operated spray nozzle instead of an open hose. Additionally, check for leaks in faucets and toilet tanks.

Pollution Prevention

The project overlies the Paia aquifer which has an estimated sustainable yield of 8 MGD. This was derived for pre-irrigation times. The estimate of sustainable yield as recoverable potable water is about 4 MGD. In order to protect surface and ground water resources, we encourage the applicant to adopt Best Management Practices (BMPs) designed to minimize infiltration and runoff from daily activities. We have attached sample BMPs for construction for reference. Additional mitigation measures are enumerated below and should be implemented during construction:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water.
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
- Retain ground cover until the last possible date.
- 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.
- Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
- Keep run-off on-site.
- Construct drainage control features, such as berms
- Install silting basins where warranted
- Maintain drainage structures, detention, silting and debris basins
- Control dust by proper stockpiling and use non-potable water for dust control

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

Sincerely,

George Y. Tengan
Director

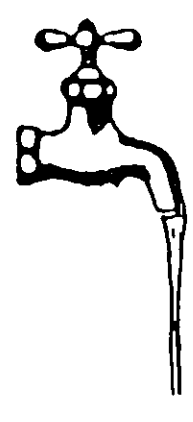
eam
c:: engineering division
applicant, with attachments
The Costly Drip
Maui County Planting Plan - Plant Zones 3 & 5 - Saving Water in the Yard - What and How to Plant in your Area
Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code
Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

"THE COSTLY DRIP"

Slowly Dripping
Spigot Wastes
15 Gallons a day.

1/32" Leak Wastes
25 Gallons a day.

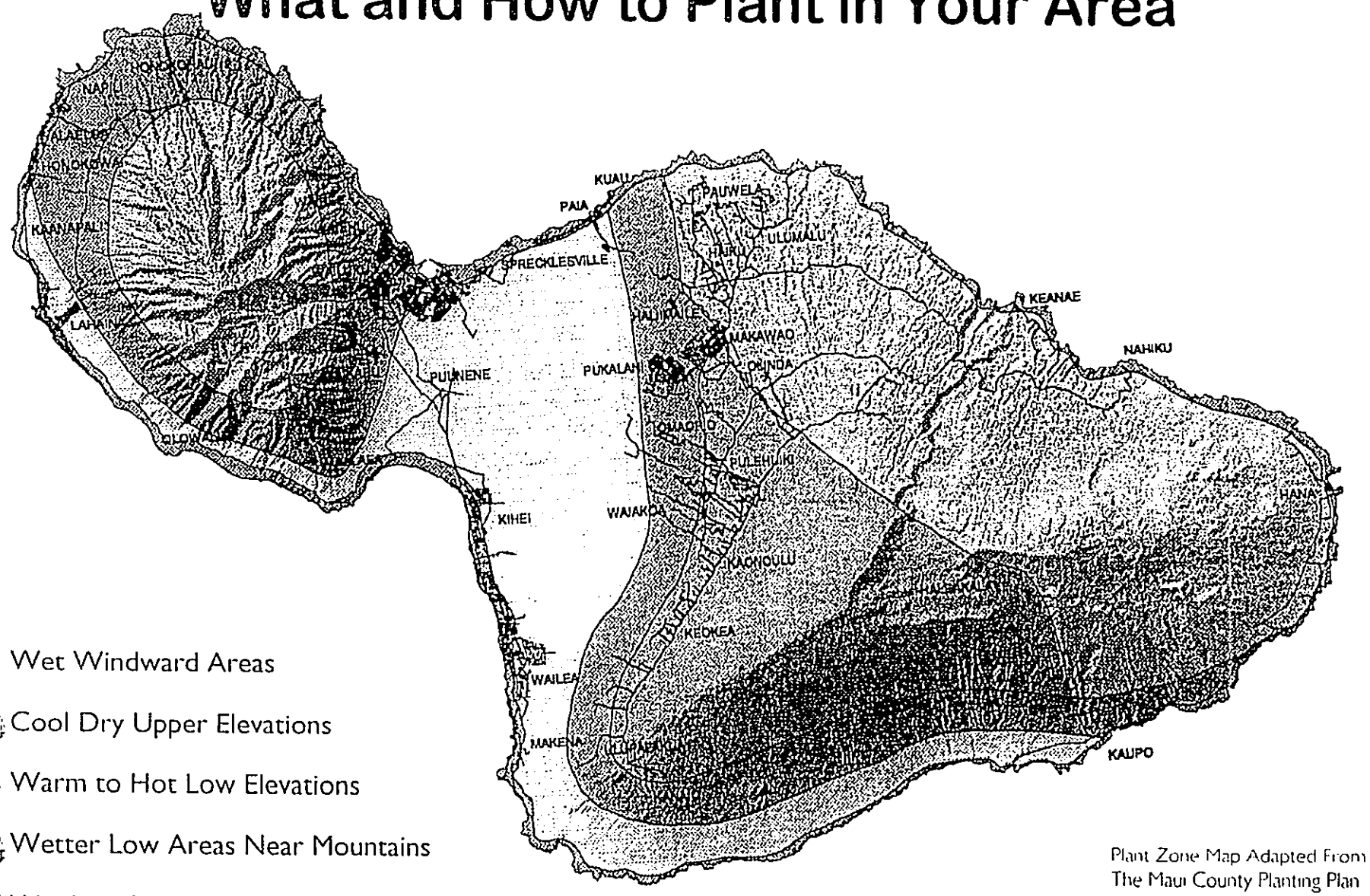
1/16" Stream Wastes
100 Gallons a Day.



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

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. deciplens	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 kauaiensis kauaiensis	'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 argulus	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

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 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

ORDINANCE NO. 2108

BILL NO. 6 (1992)

Draft 1

A BILL FOR AN ORDINANCE AMENDING CHAPTER 16.20 OF THE MAUI COUNTY CODE, PERTAINING TO THE PLUMBING CODE

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Title 16 of the Maui County Code is amended by adding a new section to Chapter 10 of the Uniform Plumbing Code to be designated and to read as follows:

"16.20.675 Section 1050 added. Chapter 10 of the Uniform Plumbing Code is amended by adding a new section, pertaining to low-flow water fixtures and devices, to be designated and to read as follows:

Sec. 1050 Low-flow water fixtures and devices. (a) This section establishes maximum rates of water flow or discharge for plumbing fixtures and devices in order to promote water conservation.

(b) For the plumbing fixtures and devices covered in this section, manufacturers or their local distributors shall provide proof of compliance with the performance requirements established by the American National Standards Institute (ANSI) and such other proof as may be required by the director of public works. There shall be no charge for this registration process.

(c) Effective December 31, 1992, only plumbing fixtures and devices specified in this section shall be offered for sale or installed in the County of Maui, unless otherwise indicated in this section. All plumbing fixtures and devices which were installed before December 31, 1992, shall be allowed to be used, repaired or replaced after December 31, 1992.

(1) Faucets (kitchen): All kitchen and bar sink faucets shall be designed, manufactured, installed or equipped with a flow control device or aerator which will prevent a water flow rate in excess of two and two-tenths gallons per minute at sixty pounds per square inch of water pressure.

(2) Faucets (lavatory): All lavatory faucets shall be designed, manufactured, installed or equipped with a flow control device or aerator which will prevent a water flow rate in excess of two and two tenths gallons per minute at sixty pounds per square inch of water

pressure.

(3) Faucets (public rest rooms): In addition to the lavatory requirements set forth in paragraph (2), lavatory faucets located in rest rooms intended for use by the general public shall be of the metering or self-closing types.

(4) Hose bibbs: Water supply faucets or valves shall be provided with approved flow control devices which limit flow to a maximum three gallons per minute.

EXCEPTIONS: (A) Hose bibbs or valves not used for fixtures or equipment designated by the director of public works.

(B) Hose bibbs, faucets, or valves serving fixed demand, timing, or water level control appliances, and equipment or holding structures such as water closets, pools, automatic washers, and other similar equipment.

(5) Showerheads: Showerheads, except where provided for safety or emergency reasons, shall be designed, manufactured, or installed with a flow limitation device which will prevent a water flow rate in excess of two and one-half gallons per minute at eighty pounds per square inch of water pressure. The flow limitation device must be a permanent and integral part of the showerhead and must not be removable to allow flow rates in excess of two and one-half gallons per minute or must be mechanically retained requiring force in excess of eight pounds to remove.

(6) Urinals: Urinals shall be designed, manufactured, or installed so that the maximum flush will not exceed one gallon of water. Adjustable type flushometer valves may be used provided they are adjusted so the maximum flush will not exceed one and six tenths gallons of water.

(7) Water closets (toilets): Water closets shall be designed, manufactured, or installed so that the maximum flush will not exceed one and six tenths gallons of water.

(d) Beginning December 31, 1992, it is unlawful to sell or install any plumbing fixtures or devices not specified in this section, except as permitted under this section.

(e) The director of public works may exempt the use of low-flow water fixtures and devices if there is a finding that the use of such fixtures and devices would not be consistent with accepted engineering practices and would be detrimental to the public health, safety and welfare.

(f) Any person violating this section shall be fined $250 for each violation and shall correct all instances of non-compliance for which a citation is issued. Violation of this section shall constitute a violation as defined in section 701-107 Hawaii Revised Statutes and shall be enforceable by employees of the department of public works. The foregoing fine may also be imposed in a civil, administrative proceeding pursuant to Rules and Regulations adopted by the department of public works in accordance with chapter 91 Hawaii Revised Statutes."

SECTION 2. New material is underscored. In printing this bill, the County Clerk need not include the underscoring.

SECTION 3. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

HOWARD M. FUKUSHIMA
Deputy Corporation Counsel
County of Maui
c:\wp51\ords\flows4\pk

United States
Environmental Protection
Agency

Office of Water
Washington, DC 20460

840-B-92-002
January 1993

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	1.4 million tons eroded per year.	Woodward-Clyde, 1991
North Carolina	6.7 million tons eroded per year.	
Louisiana	5.1 million tons eroded per year.	
Oklahoma	4.2 million tons eroded per year.	
Georgia	3.8 million tons eroded per year.	
Texas	3.5 million tons eroded per year.	
Tennessee	3.3 million tons eroded per year.	
Pennsylvania	3.1 million tons eroded per year.	
Ohio	3.0 million tons eroded per year.	
Kentucky	3.0 million tons eroded per year.	

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.*

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

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

c. *Clear only areas essential for construction.*

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

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

laterial stockpiles, borrow areas, access roads, and other land-disturbing activities can often be located away from ritical 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.*

Vhere possible, construction traffic should travel over areas that must be disturbed for other construction activity. his 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 runks, but should be placed at the tree's drip line so that construction equipment is kept away from the tree. The ree drip line is the minimum area around a tree in which the tree's root system should not be disturbed by cut, fill, ɔr soil compaction caused by heavy equipment. When cutting or filling must be done near a tree, a retaining wall ɔr tree well should be used to minimize the cutting of the tree's roots or the quantity of fill placed over the tree's :oots.

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

swale or channel. Check dams should be used when a swale or channel will be used for a short time and therefore 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.*

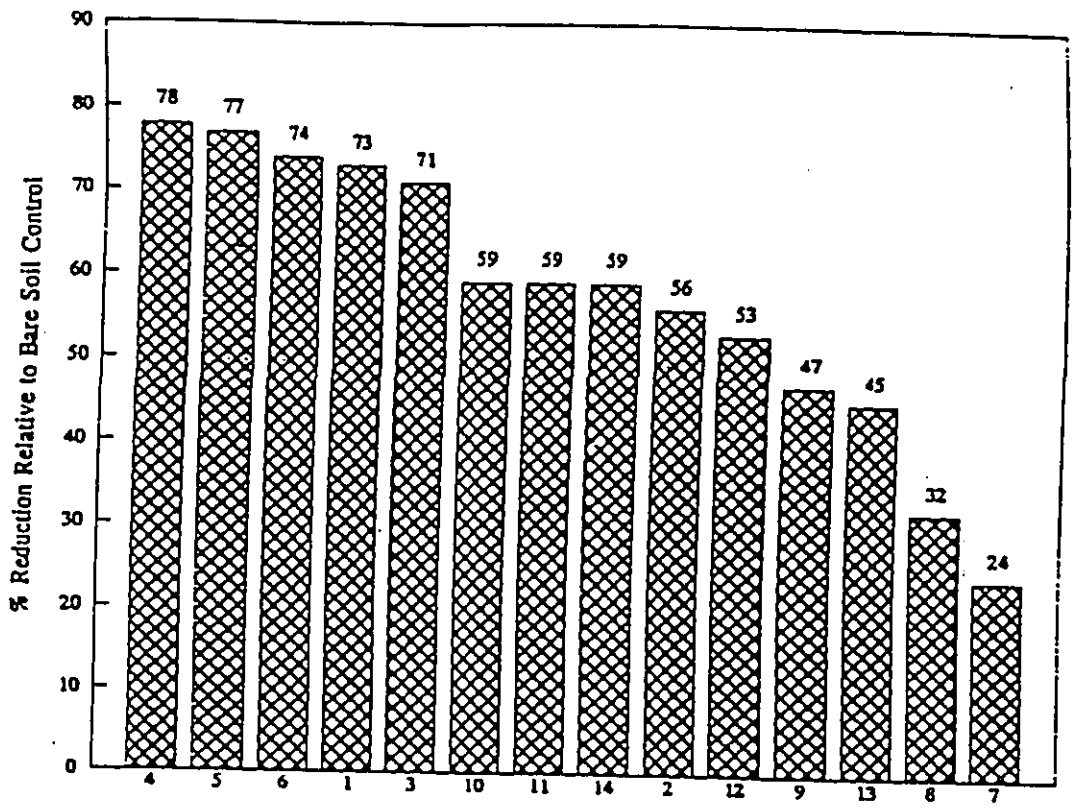
Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once the vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation becomes established.

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.*

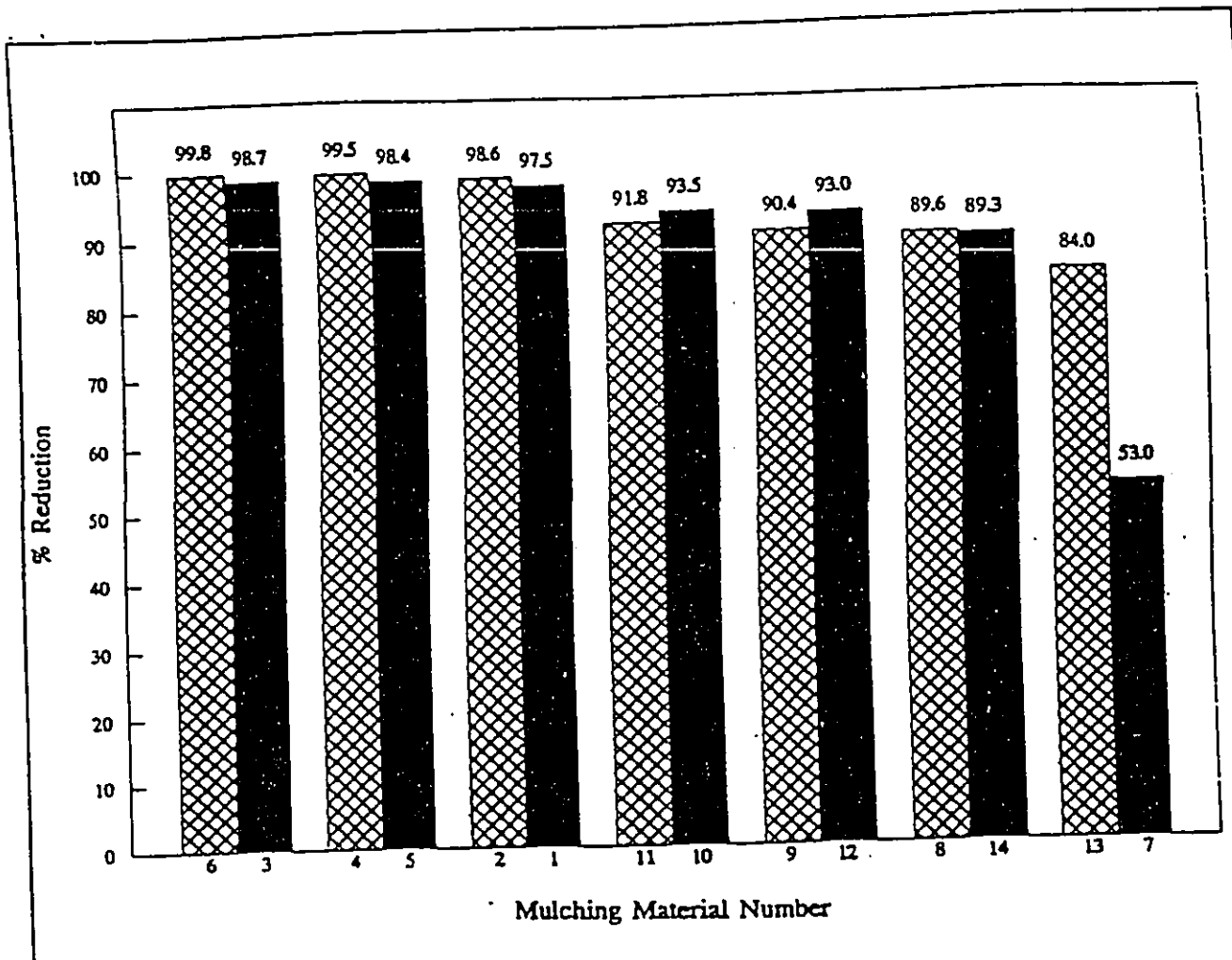
Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulchs/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone should be used only for temporary protection of the soil surface or when permanent 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 - $8 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)
[a] 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).

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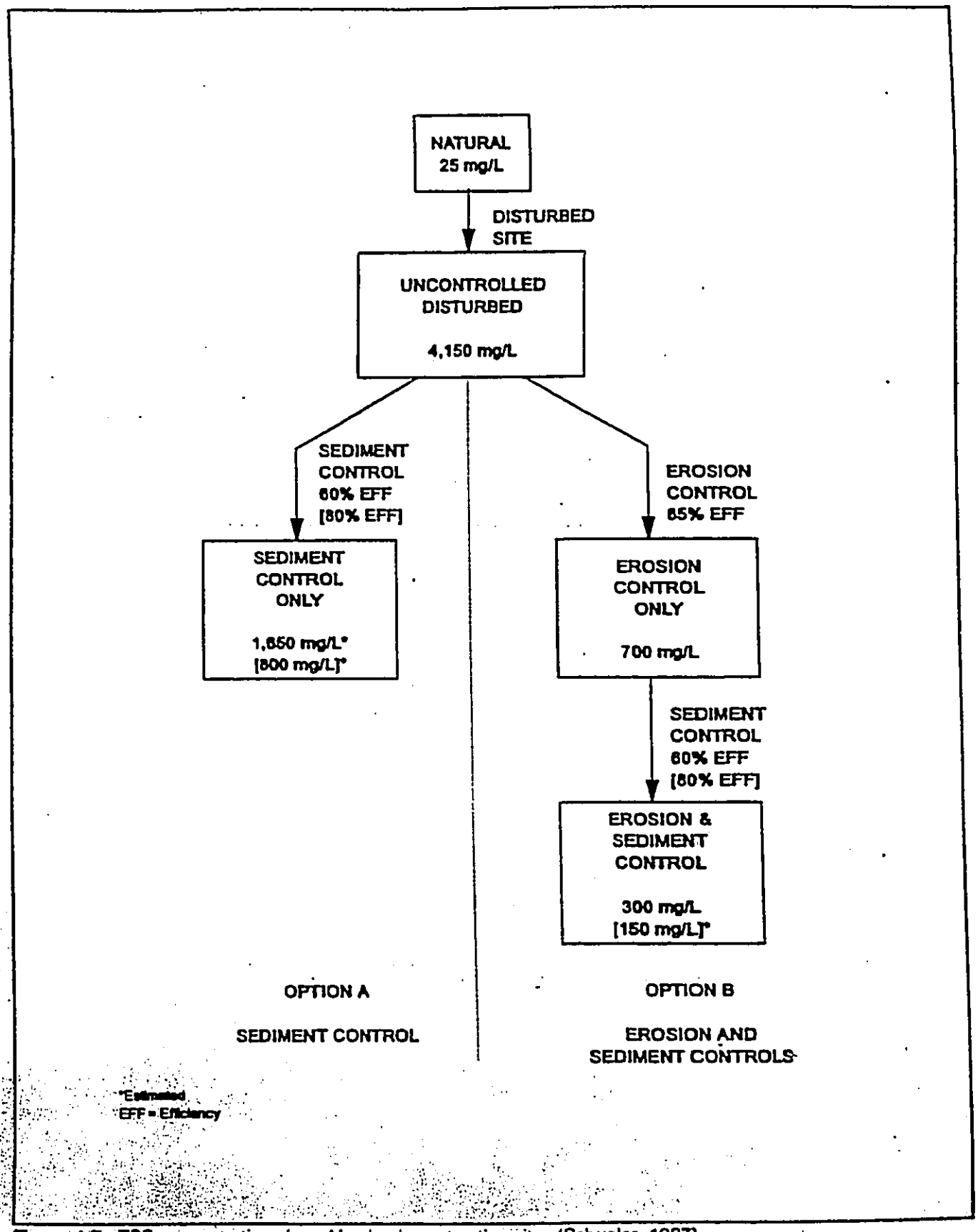

Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

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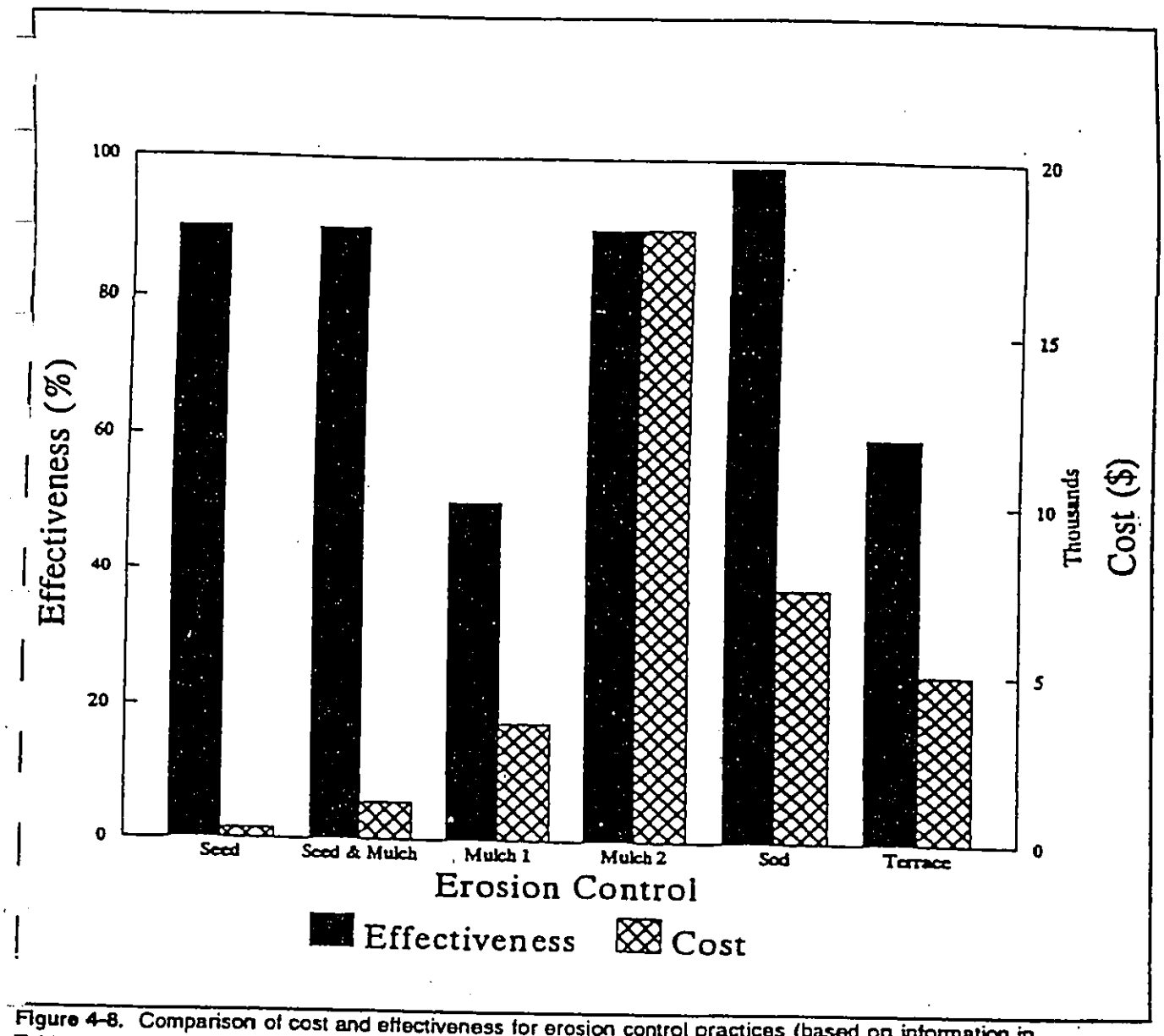

Figure 4-8. Comparison of cost and effectiveness for erosion control practices (based on information in Tables 4-15 and 4-16).

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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,

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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.

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.

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

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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.

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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.

November 19, 2003

George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Tengan:

Thank you for your letter dated August 12, 2003 providing comments on the subject project. We wish to provide the following information in response to your comments.

1. ***Response to Comments on Source Availability and Consumption***

   Current water use is approximately 6,700 gallons per day. The proposed improvements are not anticipated to significantly increase the daily water use since the number of visitors to the Kaunoa Senior Center are not expected to significantly increase as a result of the proposed improvements. This information will be included in the Environmental Assessment.

2. ***Response to Comments on System Infrastructure***

   Calculations of domestic, fire and irrigation demands will be submitted for review during the building permit process.

3. ***Response to Comments on Conservation***

   The water conservation measures provided in your letter will be forwarded to the project design team for integration into the project, as appropriate.

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 and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.

hha\kaunoa\dws.res

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July 14, 2003

Dear Mr. Hirano,
I write in response to your request for my evaluation of the proposed Kaunoa Senior Center expansion. Let me begin by saying that this County facility and staff have been extremely good neighbors and community members. Our community association has the need for large group meetings and Kaunoa has always been most cooperative in providing us with the rooms and setups. In return, we have, on occasion, contributed token donations to the center.

Kaunoa Center is a very busy place with multiple programs and activities geared to Maui's elderly needs. Adding space will certainly make new programs possible for more participants. I fully support your proposed building plans.

The only question I have of your plans (as shown in Figure 2) is the proposed parking area. As you are aware the County recently constructed an extension to the airport bike path. This involved running the path from Stable Road to Alakapa Place. The Center's portion of this area was used heavily for parking. It appears that much of that has been eliminated by the path. Will staff and/or visitors be allowed to drive on the path from Alakapa to the proposed parking area? If not, this can prove to be a real inconvenience for the Meals on Wheels program and several other current activities involving pickups and deliveries.

We, in this community, enjoy a healthy relationship with the Center and it's highly professional staff. We give total support for their expansion.

Aloha,

Jack Thompson

Jack Thompson, President
Spreckelsville Community Association
204 Kealakai Place, Paia 96779
Tel: 877-5749
<jjmaui@maui.net>

MUNEKIYO & HIRAGA, INC.

November 19, 2003

Jack Thompson, President
Spreckelsville Community Association
204 Kealakai Place
Paia, Hawaii 96779

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK 3-8-01: 08

Dear Mr. Thompson:

Thank you for your letter dated July 14, 2003 commenting on the subject project. We wish to provide the following information in response to your comments.

The extension to the airport bike path, runs along the western boundary of the Kaunoa Senior Center property to Alakapa Place. It is wide enough to also provide a service road to access the multi-purpose building for the meals on wheels program, and to access staff parking areas. This service road will be used by teaching staff, and persons with disabilities to access the proposed wellness center building, and the four (4) parking stalls provided near the building. Use of the service road will not be adversely impacted by the proposed project. The bike route will also not be adverselyimpacted by the proposed project

Again, thank you for your comments and expressed support for the proposed Kaunoa Senior Wellness Center.

Very truly yours,

Mich Hirano, AICP
Planner

MH:yp
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\sca.res

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

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Chapter XI

Agencies and Organizations Consulted During the Preparation of the Final Environmental Assessment; Letters Received and Responses to Substantive Comments

XI. AGENCIES AND ORGANIZATIONS CONSULTED DURING THE PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies received the Draft Environmental Assessment for review and comment. Agency comments and 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. George Young, P.E.
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. Chiyome L. Fukino, M.D., Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

5. Peter T. Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

6. P. 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

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

8. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

9. Carl Kaupololo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

10. Alice Lee, Director
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

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

12. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
1580 C. Kaahumanu Avenue
Wailuku, Hawaii 96793

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

14. Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and Waste Management
200 South High Street
Wailuku, Hawaii 96793

15. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

16. Honorable Dain Kane
Council Chair
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

17. Honorable Joseph Pontanilla
Councilmember
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

18. Honorable Michael Molina
Councilmember
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

19. Paia Main Street Association
P.O. Box 995
Paia, Hawaii 96779-0995

20. Jimmy Lawrence
Kahului Town Association
117 West Papa Avenue
Kahului Hawaii 96732

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

22. Jack Thompson, President
Spreckelsville Community Association
204 Kealakai Place
Paia, Hawaii 96779

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

04 JAN -2 ... DEPT OF PLANNING COUNTY OF MAUI RECEIVED

December 29, 2003

Ms Kivette A. Caigoy
250 South High Street
Wailuku, Hawaii 96793

Dear Ms Caigoy,

SUBJECT: Kaunoa Senior Wellness Center
TMK: (2) 3-8-001:008

The grading and grubbing measures as specified appear adequate. Provide and control adequate dust control measures at all times. Schedule so clearing and grading are done during times of minimum erosion potential. Maintenance of all temporary erosion control measures during construction and after storm events are highly recommended

Plantings need to be vegetated and irrigated immediately following grubbing. Grubbed material need to be discarded correctly. Vegetation adapted to the area is highly recommended.

Thank you for the opportunity to comment.

Sincerely,

Acting for Neal Fujiwara

Neal Fujiwara
District Conservationist

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Ranae Ganske-Cerizo, Acting District Conservationist
Natural Resources Conservation Service
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Ms. Ganske-Cerizo:

Thank you for your letter addressed to Michael Foley, Director of Planning dated December 29, 2003 providing comments on the subject project. On behalf of the applicant we wish to provide the following information in response to your comments.

Best management practices (BMPs) will be implemented during the project to minimize grading and construction impacts. Specific BMPs will include the following:

a. A dust fence will be erected and regular sprinkling of the construction site will be carried out to control dust;
b. The construction activities will be scheduled so that site clearing and grading will be carried out during times of minimum erosion potential;
c. Temporary erosion control measures will be maintained during construction and after storm events to contain stormwater runoff; and
d. Project landscaping will be coordinated with construction activities so that vegetated areas will be planted and irrigated as soon as possible.

Landscaping will incorporate native plants and materials that are adapted to the area. A construction waste management plan will be submitted to the Department of Public Works and Environmental Management for review and approval during the building permit application process.

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:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\nrcs.res

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, MAUI, HAWAII 96793-2102

'04 JAN 20 A8:33

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

January 15, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Attention: Kivette A. Caigoy

Dear Mr. Foley:

Subject: **Kaunoa Senior Wellness Center**
TMK: (2) 3-8 -001:008
SM1 2003/0025

Thank you for the opportunity to comment on the Special Management Area Permit application. The following comments are offered:

> 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

MUNEKIYO & HIRAGA, INC.

May 6, 2004

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

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Mr. Matsubayashi:

Thank you for your letter addressed to Michael Foley, Director of Planning dated January 15, 2004 on the subject project. The following information is provided in response to your comment.

1. ***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.

Again, thank you for your comment and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
h:\wp\kaunoa\dohmaul.res

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

5/19/2

LINDA LINGLE
GOVERNOR

STEPHANIE AVEIRO
EXECUTIVE DIRECTOR

PAMELA Y. DODSON
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
HOUSING AND COMMUNITY DEVELOPMENT CORPORATION OF HAWAII
677 QUEEN STREET, SUITE 300
Honolulu, Hawaii 96813
FAX: (808) 587-0600

IN REPLY REFER TO:
04:PEO/43

March 8, 2004

Ms. Kivette A. Caigoy
Staff Planner
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Dear Ms. Caigoy:

Re: Application for Special Management Area Use Permit for the Proposed Kaunoa Senior Wellness Center

Thank you for the opportunity to review the SMA Use Permit application for the proposed Kaunoa Senior Wellness Center.

We have no housing related comments to offer.

Sincerely,

Stephanie Aveiro
Stephanie Aveiro
Executive Director

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

04 JAN 28 P12:12

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

NRCD 04-1237

January 20, 2004

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

Dear Mr. Foley:

Subject: **Draft Environmental Assessment**
Special Management Area Use Permit
Proposed Kaunoa Senior Wellness Center
TMK (2) 3-8-001:008

Thank you for the opportunity to review and comment on the above referenced request. The Office of Hawaiian (OHA) understands that based on the material provided in chapter 3, section A-3, *Archaeological Resources,* (pages 21-22), an archaeological inventory survey will occur concurrently with the construction. However, we recommend that prior to the beginning of construction, a burial treatment plan be prepared and approved by the Maui Island Burial Council.

Should you have any questions, please feel free to contact Pomaialoha Cox at 594-1970 or by email at pomaialohac@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

LF

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapi`olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Mr. Namu'o:

Thank you for your letter to Michael W. Foley, Director of Planning, dated January 20, 2004 commenting on the subject project. The following information is provided in response to your comments.

We have discussed with the State Historic Preservation Division (SHPD), your office's recommendation that a burial treatment plan be submitted to the Maui/Lanai Islands Burial Council for approval prior to construction. Generally, burial treatment plans and burial preservation plans are prepared upon discovery of human cultural remains. Therefore, the recommendation that a burial treatment plan be prepared is premature, since, there is no evidence of human burials on the project site.

As recommended by SHPD, an archaeological assessment carried out under the scope of work of an inventory survey was performed on the project site. No significant cultural materials were located during subsurface testing. As a result, an archaeological assessment report, recommending no further work be required for the proposed project, has been submitted to SHPD for their review and approval. Coordination will be carried out with SHPD to establish appropriate protocols to protect cultural resources, as required.

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:lfm
cc: Michael W. Foley, Director of Planning
P. Holly McEldowney, Acting Administrator, SHPD
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\oha.res

JAN 27 2004

DEPARTMENT OF WATER SUPPLY

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

January 21, 2004

Ms. Kivette A. Caigoy, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku HI 96793

Project Name: Kaunoa Senior Wellness Center
TMK: 3-8-01:008
ID: SM1 2003/008

Dear Ms. Caigoy:

Thank you for the opportunity to provide comments to this application. Please find attached our comment letter to the early consultation request in preparation of the Environmental Assessment for this project dated August 12, 2003. We provide the following additional comments:

Due to the designation of Iao aquifer, the Department will not issue reservations for future meters until new sources are brought on-line. The department also asks Central Maui residents to voluntarily conserve water. The Department continues to issue meters for those ready to receive service at this time, but it may also become necessary to stop issuing new meters altogether. The applicant should be aware that additional source or larger meters, if required for this project may not be available until new sources are on-line

As stated in the response to our August 12, 2003 letter, current water use is about 6,700 gallons per day and should not increase significantly for the proposed improvements.

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

Sincerely,

George Y. Tengan
Director
emb

c:: engineering division
applicant, with attachment:

DWS letter dated 8/12/03

By Water All Things Find Life

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

August 12, 2003

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

SUBJECT: Early Consultation Request for Preparation of an Environmental Assessment for the Proposed Kaunoa Senior Wellness Project - construction of a single story building on approximately 2,224 sf, 4 parking stalls, landscaping, lighting and walkways on TMK (2) 3-8-001:008

Dear Mr. Hirano:

Thank you for the opportunity to participate in the early consultation process for this project. The Department of -Water Supply provides the following comments:

Source Availability and Consumption
The project area is served by the Central Maui System. The main sources of water for this system are the Iao and Waihee aquifers, the Iao tunnel and the Iao-Waikapu Ditch. As of July 21, 2003, Iao aquifer has been designated by the Commission on Water Resource Management (CWRM) as Groundwater Management Area. As a result, DWS will not issue reservations for future meters until new sources are brought on-line. The department also asks Central Maui residents to voluntarily conserve water.

Although the Department continues to issue meters for those ready to receive service at this time, it may also become necessary to stop issuing new meters altogether. Therefore, the applicant should be aware that additional source or larger maters, if required for this project may not be available until new sources are on-line.

The EA should include the source and expected potable and non-potable water use. Existing facilities use an average of 5,000 GPD. Absent detailed information, anticipated use for the entire parcel would be approximately 7,700 GPD based on system standards.

System Infrastructure
The project site is served by two waterlines, 8-inch along Alakapa Place and 12-inch on Hana Highway, two water meters, and two fire hydrants situated on the east side of the property. Domestic, fire and irrigation calculations will be required during the building permit process as well as provision for back-flow prevention, if one does not already exist. These calculations will 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.

Conservation
We encourage the applicant to consider the following water conservation measures and integrate them in the project design and construction:

Use brackish and /or reclaimed water sources for dust control during construction, if such alternatives 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.

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".

Use Climate -adapted Plants: The project is located in the Maui County Planting Plan - Plant Zone 5. We encourage the applicant to utilize appropriate native and non invasive species and 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 zone as well as potentially invasive plants to avoid.

Limit Irrigated Turf: Limit irrigated turf to 25% or less of total landscaped area. Low-water use shrubs and ground covers can be equally attractive and require substantially less water that turf.

Look for Opportunities to Conserve Water: A few examples of these are as follows: When clearing driveways, etc. of debris, use a broom instead of a hose. When washing cars, use a hand-operated spray nozzle instead of an open hose. Additionally, check for leaks in faucets and toilet tanks.

Pollution Prevention

The project overlies the Paia aquifer which has an estimated sustainable yield of 8 MGD. This was derived for pre-irrigation times. The estimate of sustainable yield as recoverable potable water is about 4 MGD. In order to protect surface and ground water resources, we encourage the applicant to adopt Best Management Practices (BMPs) designed to minimize infiltration and runoff from daily activities. We have attached sample BMPs for construction for reference. Additional mitigation measures are enumerated below and should be implemented during construction:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water.
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
- Retain ground cover until the last possible date.
- 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.
- Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
- Keep run-off on-site.
- Construct drainage control features, such as berms
- Install silting basins where warranted
- Maintain drainage structures, detention, silting and debris basins
- Control dust by proper stockpiling and use non-potable water for dust control

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

Sincerely,

George Y. Tengan
Director

eam
c:: engineering division
applicant, with attachments
The Costly Drip
Maui County Planting Plan - Plant Zones 3 & 5 - Saving Water in the Yard - What and How to Plant in your Area
Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code
Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

MUNEKIYO & HIRAGA, INC.

May 6, 2004

George Y. Tengan, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Mr. Tengan:

Thank you for your letter dated January 21, 2004 to Kivette Caigoy, Staff Planner, Department of Planning, commenting on the subject project. On behalf of the applicant, we provide the following responses to your comments in the order presented in your letter.

1. ***Response to designation of the Iao Aquifer.*** The applicant confirms and acknowledges that due to the designation of the Iao Aquifer, the Department of Water Supply cannot issue reservations for future meters until new sources are brought on-line.

2. ***Response to conserve limited water resources.*** The applicant acknowledges your request that users voluntarily conserve water. Please note, single-pass, water-cooled systems will be eliminated. Low flow water fixtures and devises in faucets shall be installed in compliance with Maui County Code Subsection 16.20A.680. The proposed landscaping plan includes the use of appropriate native and non- invasive species. A source of non-potable water for irrigation is currently not available in the vicinity of the project site. Non-potable water sources will be used for dust control during construction.

3. ***Response to requirement for a larger meter.*** The applicant acknowledges that additional source or larger meters, if required for the subject project may not be available until new sources are on-line. In this regard, the applicant acknowledges the current water use of 6,700 gallons per day is not anticipated to increase significantly for the proposed improvements.

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 and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hhc\kaunoa\dwsdea.res

ALAN M. ARAKAWA
MAYOR

CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

'04 JAN 30 P2:00

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

January 29, 2004

Kivette A. Caigoy
Department of Planning
250 S. High St.
Wailuku, HI 96793

Subject: Kaunoa Senior Wellness Center, SM1 2003/0025

Dear Ms. Caigoy,

I have reviewed the project proposal and have a concern regarding the site of the fire hydrant for fire protection. An acceptable fire hydrant shall be located within 300ft of the building. A fire truck needs to get within 150ft of all portions of the building.

The project will get a thorough review when the building plans are submitted during the permit process.

Sincerely,

Valeriano F. Martin
Captain
Fire Prevention Bureau

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Valeriano F. Martin, Chief
Fire Prevention Bureau
County of Maui
200 Dairy Road
Kahului, Hawaii 96732

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Captain Martin:

Thank you for your letter to Kivette Caigoy, Staff Planner, dated January 29, 2004 on the subject project. On behalf of the applicant, we wish to provide the following information in response to your comments.

We note your comment that an acceptable fire hydrant shall be located within 300 feet of the building and that a fire truck will need to get within 150 feet of all portions of the building. Two (2) fire hydrants are currently located near the subject property. One (1) hydrant is located at the entrance to the Kaunoa Senior Center on Alapaka Place. The second hydrant is located on Alapaka Place near the service road. The second hydrant is located within 300 feet of the proposed wellness center building. These requirements will be taken into account during the project design phase. Further coordination will be carried out with the Department of Fire and Public Safety during the building permit process to ensure the building plans and required onsite and offsite infrastructure meet applicable County Code requirements.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.

hha\kaunoa\dfire.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
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 30, 2004

SM12003-0025.RCM

LD-NAV

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

Dear Mr. Foley:

Subject: L.D. No.: SM1 2003/0025
Authority: County of Maui Department of Planning
Project: Kaunoa Senior Wellness Center
TMK: (2) 3-8-001: 008

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed is a copy of the Commission on Water Resource Management comment.

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

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

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

January 7, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Kaunoa Senior Wellness Center, Spreckelsville

FILE NO.: SM1 2003/0025

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.

[X] OTHER:

The proposal appears to have a nominal increased impact on water demand. The water source for this project is now in a groundwater management area under the State Commission on Water Resource Management (CWRM). Water use permit applications are now required from lao well owners for uses as of July 21, 2003. .Future uses will be addressed after existing uses are considered. If pumpage from this area is restricted, it could result in restrictions of use within the service area.

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

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Dierdre S. Mamiya, Administrator
Department of Land and Natural Resources
Land Division
P. O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Ms. Mamiya:

Thank you for your letter to Michael W. Foley, Planning Director, dated January 30, 2004 providing comments on the subject project. On behalf of the applicant, the following information is provided in response to the comments from the Commission on Water Resource Management.

Coordination will be carried out with the Department of Water Supply to incorporate the project into the County's Water Use Development Plan.

We also understand that the Iao Acquifer is now in a groundwater management area under the State Commission on Water Resource Management and if pumpage from this area is restricted, it could result in restrictions of use within the service area.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\dlnrland.res

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

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Director
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1010

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

'04 FEB 18 P1:13

DEPT OF PLANNING
COUNTY OF MAUI
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February 5, 2004

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

Dear Mr. Foley:

Subject: Kaunoa Senior Wellness Center
Special Management Area Use Permit Application (SM1 2003/0025)
TMK: (2) 3-8-001: 008

In response to your request for our review of the subject application, we have the following comments:

1. We recommend that the Kaunoa Senior Wellness Center be sound attenuated because it is situated within the 60-65 DNL noise contour for Kahului Airport. The noise from aircraft operations to and from the airport can be mitigated with appropriate design and construction measures so that interior noise levels do not exceed 45 DNL.

2. Our Highways Division is in the process of concluding its review of its findings at and around the affected site. We will provide our traffic and roadway comments to your department as soon as a determination has been made by our Highway staff.

We appreciate the opportunity to provide our comments on the subject application.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Director
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1050

'04 MAR 11 P1:02

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

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

March 8, 2004

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

Dear Mr. Foley:

Subject: Kaunoa Senior Wellness Center
Special Management Area Use Permit Application (SM1 2003/0025)
TMK: 3-8-01: 08

As a follow-up to our earlier letter STP 8.1010 dated February 5, 2004, this is to advise you that our highways staff completed their review of the proposed facilities for the subject senior center and have determined that the facilities will not have an adverse impact on our State highways.

We appreciate your cooperation for the opportunity to provide this additional comment.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

MUNEKIYO & HIRAGA, INC.

May 6, 2004

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

SUBJECT: Proposed Kaunoa Senior Wellness Center; Special Management Area Use Permit Application (SM1 2003-20025)

Dear Mr. Harada:

Thank you for your letters dated February 5, 2004 and March 8, 2004 addressed to Michael Foley, Planning Director providing comments on the subject application. On behalf of the applicant, we wish to provide the following information in response to your comments.

Response to Comment No. 1

The recommendation that the wellness center building be sound attenuated due to its location within the 60-65 DNL noise contour for Kahului Airport has been reviewed by the project design team and forwarded to the County of Maui Department of Housing and Human Concerns for consideration. Noise from airport operations has not adversely impacted programs within air conditioned buildings that are used with their windows and doors closed. The proposed building will be air conditioned and adverse noise impacts from airport operations are not anticipated to negatively impact program activities.

Response to Comment No. 2

We note the Highways Division has determined that the proposed project will not have an adverse impact on State highways.

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

Again, thank you for your comments on the Special Management Area Use Permit application.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\dot.res.wpd

'04 FEB 20 P1:33

DEPT OF PLANNING
COUNTY OF
RECEIVED

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

February 17, 2004

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

LOG NO: 2004.0447
DOC NO: 0402CD28

Dear Mr. Foley,

SUBJECT: Chapter 6E-42 Historic Preservation Review – Application for Special Management Area Use Permit for the Proposed Kaunoa Senior Wellness Center at TMK: 3-8-01:08 (Subject I.D.: SM1 2003/0025) [County/Planning] Wailuku Ahupua`a, Wailuku District, Island of Maui
TMK: (2) 3-8-001:001

Thank you for the opportunity to review and comment on the Application for Special Management Area Use Permit (SMA) for the proposed Kaunoa Senior Wellness Center at TMK: 3-8-01:08, which was received by our staff December 24, 2003. 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 property. We have previously responded to an information request pertaining to the proposed undertaking (SHPD DOC NO.: 02307CD42/LOG NO.: 2003.1274). As our Administrative Rules are now in effect, our initial comments have been slightly modified.

Based on the submitted SMA, we understand the County of Maui, Department of Housing and Human Concerns (DHHC), proposes the development of a wellness center at the Kaunoa Senior Center. The proposed undertaking consists of the construction of a single story structure (approximately 4320 sq ft), a four-stall paved parking area, landscaping, lighting, and walkways. We also understand the Kaunoa Senior Center is currently located on the subject property and existing structures are present (an administrative office building, a classroom building, a crafts and ceramics building, a multi-purpose building, storage shed, wood workshop, County parking compound, restrooms, vacant building, and an on-site parking area).

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. This area in general is likely to have once been the location of pre-Contact farming, perhaps with scattered houses. The USDA Soil Survey indicates a portion of the subject property (including the proposed project area) is located in the Jaucus Sand deposit, which is known to contain both isolated and clustered of human burials and habitation sites. Previously identified near-by historic sites consist of SIHP 50-50-05-1777, a subsurface

habitation site, and SIHP -1778, subsurface habitation site with human skeletal remains representing a minimum of two individuals, and SIHP -1171, the Baldwin Beach Burials. Given the above information, we believe it is likely that historic sites (and possibly previously disturbed site remnants) are present in the subsurface deposits of the property.

Therefore, in order to determine the effect of the proposed undertaking on historic sites, we recommend that no action be taken on the subject SMA application until an acceptable archaeological inventory survey has been conducted of the proposed project area to determine whether significant historic sites are present. An acceptable report documenting the findings of the survey will need to be submitted to this office for review. If significant historic sites are identified, a mitigation plan may need to be developed, in consultation with this office, and executed.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793
Chair, Maui/Lana`i Islands Burial Council
Kana`i Kapeliela, Burial Sites Program

APR 0 7 2004

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

April 5, 2004

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

LOG NO: 2004.1034
DOC NO: 0404CD05

Dear Mr. Hirano,

SUBJECT: **REVISED Chapter 6E-42 Historic Preservation Review – Early Consultation**
Request for Preparation of an Environmental Assessment for Proposed
Kaunoa Senior Wellness Center, Paia, Maui
Wailuku Ahupua`a, Wailuku District, Island of Maui
TMK: (2) 3-8-001:008

These are our revised comments pertaining to the Early Consultation Request for Preparation of an Environmental Assessment for Proposed Kaunoa Senior Wellness Center, Paia, Maui. In our previous comments to this information request we recommended an archaeological inventory survey to occur concurrently with the construction related ground altering activities (SHPD DOC NO.: 0307CD42/LOG NO.: 2003.1274). We now recommend that an archaeological inventory survey, with subsurface testing, be carried out before any ground disturbance associated with the development has commenced. Given the available evidence that historic sites are likely to be present, and given the extent of ground disturbance, we believe that an inventory survey conducted prior to construction is the most prudent recommendation.

A report of findings from the survey should be submitted to our office for review and approval. If significant historic sites are found during the survey, and the proposed undertaking will affect those sites, mitigation plans may need to be prepared for our review and approval.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Michael Foley, Director, Dept of Planning, 250 South High Street, Wailuku, HI 96793
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793
Chair, Maui/Lana`i Islands Burial Council
Kana`i Kapeliela, Burial Sites Program

MUNEKIYO & HIRAGA, INC.

May 6, 2004

P. Holly McEldowney, Administrator
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

SUBJECT: Proposed Kaunoa Senior Wellness Center; Draft Environmental Assessment (EA) and Special Mananagement Area Use Permit Application (SM1 2003-20025)

Dear Ms. McEldowney:

Thank you for your letter to Mr. Michael Foley, Planning Director, dated February 17, 2004 providing comments on the subject application, as well as your revised letter dated April 5, 2004 regarding Chapter 6E-42, historic preservation review of the request for early consultation in the preparation of the EA. We would like to provide the following information in response to comments contained in both letters.

We confirm that an archaeological inventory survey was recommended and applicable field work has been carried out on the site to determine whether significant historical sites are present. In this regard, the applicant retained the services of Xamanex Researches to carry out the field survey. We also confirm that since no significant historic sites were identified during subsurface testing of the project site, the study would be documented as an archaeological assessment. A report describing the findings of the archaeological assessment has been forwarded to your office for review and approval. This information will also 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

Again, thank you for your comments and review of the subject application.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Erik Fredericksen, Xamanek Researches
hha\kaunoa\shpd.res.wpd

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

DEC 22 2003

COUNTY OF MAUI
DEPARTMENT OF PLANNING

December 19, 2003

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

Dear Mr. Hirano:

RE: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center located at TMK: 3-8-001: 008, 401 Alakapa Place, Paia, Hawaii (SM1 3003/0025)

The Maui Planning Department (Department) has the following comments on the Draft Environmental Assessment (EA) for the above-referenced project:

1. The Draft EA document should clearly identify the Proposing Agency and the Approving Agency.

2. Section VI, Alternatives to the Proposed Action

   a. Discuss any potential alternate locations for the building.

3. Section III.D.2, Infrastructure - Bike Route

   a. The report indicates that the bike route may be used for a service road to provide access to the multi-purpose building for the meals-on-wheels vehicles and access for staff parking, as well as access to the proposed Senior Wellness Center. Discuss the proposed measure for ensuring the safety of pedestrians/cyclists if this path is to be used for vehicles.

4. Appendix X, Agencies Consulted

   a. The comment letter from Mr. Jack Thompson, President, Spreckelsville Community Association states that the project site

area is heavily used for parking and that a large portion was eliminated with the bike path. Discuss any impacts to parking with the loss of this area. Provide a parking analysis for the Kaunoa Senior Center in its entirety.

Thank you for the opportunity to comment. Should you have any additional questions, please contact Ms. Kivette A. Caigoy, Staff Planner, at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:KAC:ctc
c: Kivette A. Caigoy, Staff Planner
Department of Housing and Human Concerns
Project File
General File
K:\WP_DOCS\PLANNING\SM1\2003\25_KaunoaSeniorCtr\DraftEAComments.wpd

MUNEKIYO & HIRAGA, INC.

May 6, 2004

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

SUBJECT: Draft Environmental Assessment (EA) for the
Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Mr. Foley:

Thank you for your letter dated December 19, 2003 providing comments on the subject project. We wish to provide the following information in response to your comments.

1. ***Response to Comment No. 1.***

   The proposing agency and the approving agency is the County of Maui, Department of Housing and Human Concerns. This will be clearly identified in the Final EA.

2. ***Response to Comment No. 2.***

   Discussion on potential alternate locations for the building will be discussed in the Final EA.

3. ***Response to Comment No. 3. a.***

   The Draft EA indicates there is a paved service road along the western boundary of the subject property which is currently used for vehicular access to center facilities. It states: *"This service road is used to access the multi-service building for the meals-on-wheels program; staff parking; and will be used for a service access to the proposed wellness center building and to the four (4) parking stalls. This service road also provides a bike route through the subject property"* (Draft EA, Page 3). Most users of the proposed wellness center building are bussed to the center and will access the building from the main parking area through the interior walkway. The proposed project is not anticipated to create additional traffic on the service road

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

which will adversely impact the bike route. Furthermore, the bike route along the service road was established upon request by the Department of Public Works and Environmental Management (DPWEM) and subject to the condition that the bike route would not interfere with the center's use of the service road. Therefore, coordination will need to take place with DPWEM to determine if further measures will be required to ensure the safety of pedestrian/cyclists, which may include but not limited to; striping the bike route, widening the bike route pavement or relocating the bike route.

4. ***Response to Comment No. 4***

The loss of the parking on the western side of the service road has not been impacted by the bike route. Parking areas are available for staff near the administration building on the eastern side of the service road. An overall parking analysis for the Kaunoa Senior Center has been carried out and is enclosed as Exhibit "A". Based on the existing buildings and proposed wellness center building, a total of 102 parking spaces are required. Upon completion of the proposed wellness center building, a total of 106 parking spaces will be provided.

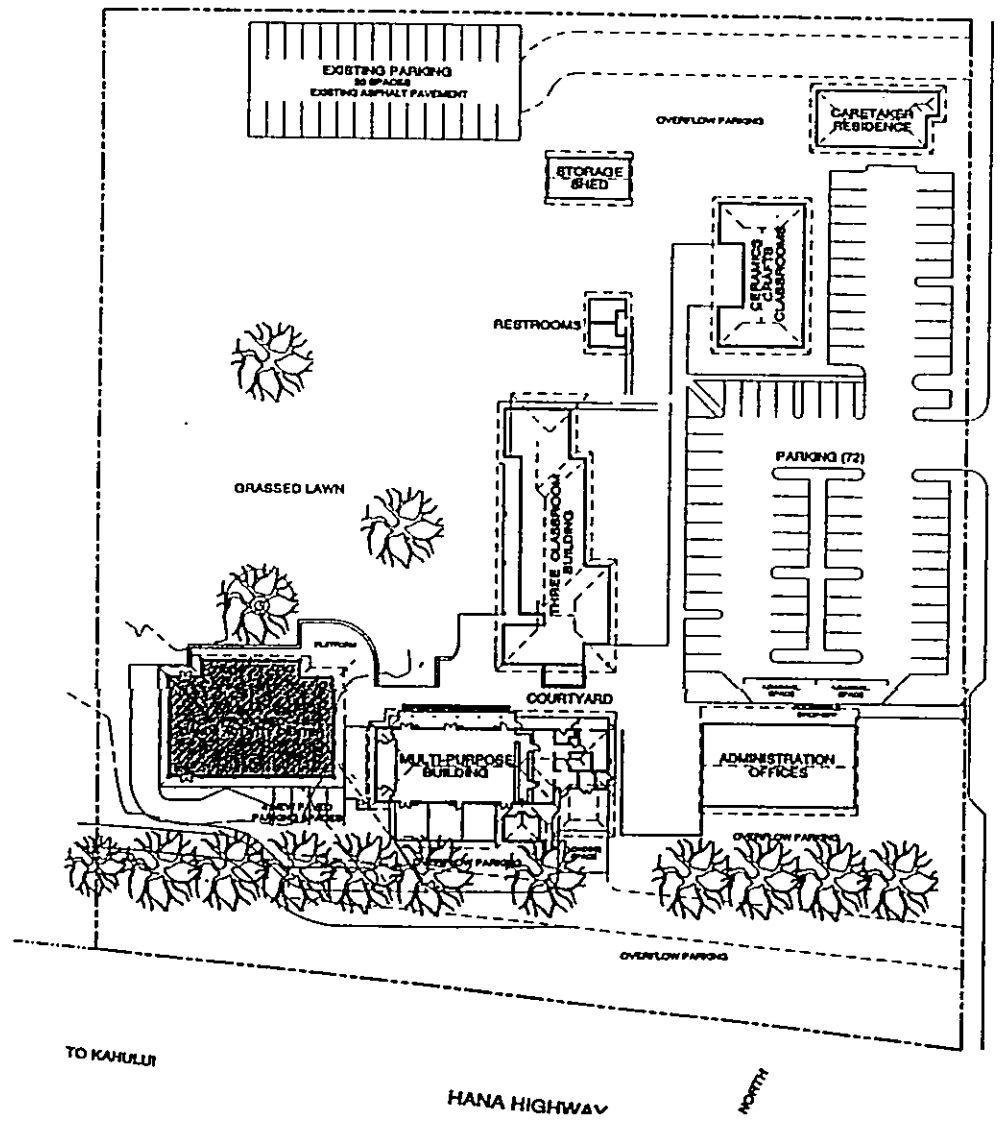
Again, thank you for your comments and review of the Draft EA.

Very truly yours,

Mich Hirano, AICP

MH:yp
Enclosure
cc: Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Gilbert Coloma-Agaran, Director, Department of Public Works and Environmental Management
hha\kaunoa\dop.resltr

EXHIBIT A



PROJECT DATA

TAX MAP KEY : (2) 3-8-01:08

ADDRESS : 401 ALAKAPA PLACE, PAIA, MAUI, HAWAII

LAND AREA : 4.64 ACRES

ZONING : STATE LAND USE DISTRICT : URBAN
COMMUNITY PLAN : PUBLIC / QUASI PUBLIC
MAUI COUNTY ZONING : R-3 RESIDENTIAL

FLOOD ZONE : ZONE C

PARKING : EXISTING PAVED PARKING LOT:
REGULAR: 68 SPACES
ADAAG: 3 ACCESSIBLE
1 VAN ACCESSIBLE
ADDITIONAL PAVED PARKING: 30 SPACES (STAFF VEHICLES)
TOTAL EXISTING PARKING: 102 SPACES
PROPOSED NEW PARKING: 4 SPACES (WELLNESS CENTER)
TOTAL PARKING: 106 SPACES

LOADING : PROVIDED : 2 SPACES (12'X35')

PARKING SUMMARY

BUILDING NAME	BUILDING CODE				PARKING ORDINANCE	
	FLOOR AREA	BLDG HEIGHT	OCCUPANCY GROUP	TYPE OF CONSTRUCTION	PARKING RATIO	PARKING REQUIRED
MULTI-PURPOSE BUILDING	6,400 s.f. 1070 s.f.	ONE STORY	A-3	TYPE V-N	1 SPACE PER 100 s.f. ASSEMBLY AREA	80 SPACES
THREE CLASSROOM BUILDING	5317 s.f.	ONE STORY	B	TYPE V-N	6 SPACES PER CLASSROOM	54 SPACES
CRAFTS / CERAMICS CLASSROOMS	2940 s.f.	ONE STORY	B	TYPE V-N	6 SPACES PER CLASSROOM	18 SPACES
ADMINISTRATION OFFICES	2975 s.f.	ONE STORY	B	TYPE V-N	1 SPACE PER 500 s.f.	6 SPACES
STORAGE SHED	900 s.f.	ONE STORY	U-1	TYPE V-N	1 SPACE PER 700 s.f.	1 SPACE
RESTROOMS	432 s.f.	ONE STORY	U-1	TYPE V-N	NONE	NONE
CARETAKER RESIDENCE	1584 s.f.	ONE STORY	R-3	TYPE V-N	2 SPACES PER DWELLING	2 SPACES
PROPOSED WELLNESS CENTER	4224 s.f. (3,997 s.f.)	ONE STORY	A-3	TYPE V-N	1 SPACE PER 100 s.f. ASSEMBLY AREA	39 SPACES
REQUIRED PARKING						102 SPACES

Hiyakumoto + Higuchi
ARCHITECTS - INC.
1860 Main Street
Wailuku, Maui, Hawaii 96793
Telephone (808) 242-9705

This work was prepared by me or under my supervision.

Date : MARCH 1, 2004
Revisions :

KAUNOA SENIOR CENTER
401 ALAKAPA PLACE
SPRECKELSVILLE (PAIA), MAUI, HAWAII

Sheet Title
PARKING SUMMARY

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

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

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

January 22, 2004

'04 JAN 23 P12:01
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM: for GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT

SUBJECT: SPECIAL MANAGEMENT AREA USE PERMIT
KAUNOA SENIOR WELLNESS CENTER
TMK: (2) 3-8-001:008
SM1 2003/0025

We reviewed the subject application and have the following comments:

1. Submit a plan for recycling and disposal of construction waste.

2. Although wastewater capacity is available as of December 31, 2003, the developer should be informed that wastewater capacity cannot be ensured until the issuance of the building permit.

3. Wastewater contribution calculations are required before a building permit is issued.

4. The developer is not required to pay assessment fees for this area at the current time.

5. The developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

6. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.

7. Kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens, etc.).

8. Non-contact cooling water, condensate, etc. cannot drain to the wastewater system.

9. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with building codes. We will review the project for building code requirements during the building permit application process.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

GSCA:MA:jlh
S:\LUCA\CZM\KaunoaSrWellnessCtr_sm1_38001008_jlh.wpd

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Gilbert Coloma-Agaran, Director
Department of Public Works and
Environmental Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Mr. Coloma-Agaran:

Thank you for your letter dated January 22, 2004 to Michael Foley, Planning Director, commenting on the subject project. On behalf of the applicant, we provide the following responses to your comments in the order presented in your letter.

1. ***Response to Item 1.*** A construction waste management plan and recycling plan will be submitted to the Department of Public Works and Environmental Management (DPWEM), Solid Waste Division, for approval. Generally, all non-recyclable construction debris shall be disposed of at the Maui Demolition and Construction Landfill at Ma`alaea. No recyclable materials from demolition or construction are anticipated. Should any be encountered, these materials shall be properly separated and delivered to the appropriate recycling center, e.g. Aloha Plastic Recycling, Maui Recycling Service and Best Disposal. Organic materials from grubbing shall be removed from the site and disposed of at an approved construction disposal site.

2. ***Response to Item 2.*** The Applicant acknowledges that wastewater capacity cannot be ensured until the issuance of the building permit.

3. ***Response to Item 3.*** Wastewater calculations for the proposed project will be prepared by a licensed civil engineer and shall be submitted in connection with the building permit application process.

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

4. ***Response to Item 4.*** The applicant acknowledges they will not be required to pay assessment fees for this area at this current time.

5. ***Response to Item 5.*** We confirm the applicant is required to fund any necessary off-site improvements to the collection system and wastewater pump stations.

6. ***Response to Item 6.*** We confirm the project plans will indicate the ownership of each easement (in favor of which party) and sewer easements shall not traverse private property.

7. ***Response to Item 7.*** We confirm that kitchen facilities within the proposed project shall comply with pre-treatment requirements. In this regard, the kitchenette in the proposed wellness center will be used to heat prepared food. A microwave oven will be included in the kitchenette. The kitchenette will not have a stove. Furthermore, the existing cafetorium is not used to prepare the food for the Meals-on-Wheels program, but only as a staging area for delivery. All foods are prepared offsite by Hale Mahaolu and by the Department of Education and brought to the Kaunoa Senior Center for distribution.

8. ***Response to Item 8.*** We confirm, any non-contact cooling water and condensate shall be directed to a dry well system and not introduced to the county wastewater system.

9. ***Response to Item 9.*** We confirm project plans will comply with Maui County Code requirements. Project plans providing sufficient detail to determine whether the project is compliant with building codes will be provided during the building permit application process.

Again, thank you for your comments and participation in the draft environmental assessment review.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\dpwem.res

PA'IA MAIN STREET ASSOCIATION

1896-1996

January 15, 2004

TO: County of Maui Department of Planning

RE: SMA Application review and comment for TMK (2) 3-8-001:008
KAUNOA SENIOR WELLNESS CENTER ID # SM1 2003/0025

The Paia Main Street Board of Directors and Officers reviewed the SMA document on January 13, 2004 at our Board Meeting. The following comments were made.

1. The architecture is fitting to the environment.
2. The building is sited well keeping in mind the beautiful existing mature monkey pods.
3. Although it is not recommended to share a bike path with a service road for safety issues, the situation seems to have low traffic and impact on the bike path. If the activity of the bike/jogging/walking path increases significantly it may become a future issue of safety.

We appreciate the opportunity to review the project.

Sincerely,
Paia Main Street Association

Debra Schonewill

Debra Schonewill
Chairperson, Paia Main Street

cc. Jocelyn Perreira, Executive Director
Tri-Isle Main Street Program Coordinator

MUNEKIYO & HIRAGA, INC.

May 6, 2004

Debra Schonewill, Chairperson
Paia Main Street Association
P. O. Box 995
Paia, Hawaii 96779-0995

SUBJECT: Draft Environmental Assessment for the Proposed Kaunoa Senior Wellness Center at TMK (2) 3-8-001:008

Dear Ms. Schonewill:

Thank you for your memo to the Maui County Department of Planning, dated January 15, 2004 on the subject project. On behalf of the applicant, we wish to provide the following information in response to your comments.

1. ***Response to Comment No. 1.*** The applicant notes that the Paia Main Street Association considers the building design to be contextually appropriate.

2. ***Response to Comment No. 2.*** The Monkeypod trees are a prominent feature of the property and will be retained and incorporated into the project landscaping.

3. ***Response to Comment No. 3.*** The Kaunoa Senior Center allowed the Department of Public Works and Environmental Management to utilize the center's service road for a bike route on the condition that it would not interfere with the activities of the center. The service road is used every day by the Meals-on-Wheels staff to get to the cafetorium which is used as a staging area for its meal delivery program. The Kaunoa staff also uses the service road to gain access to parking adjacent to the administrative building. The service road will also be used for vehicular access to the proposed wellness center building. Four (4) parking stalls will be provided near the proposed wellness center building. However, most users of the proposed building will be bussed to the center and will access the building from the main parking area through the interior walkway. Therefore, the proposed project is not anticipated to create additional traffic on the service road which will adversely impact use of the bike route.

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

Again, thank you for your review of the draft EA and comments.

Very truly yours,

Mich Hirano, AICP

MH:lfm
cc: Michael W. Foley, Director of Planning
Robin Tanaka, Kaunoa Senior Center
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hha\kaunoa\paiamain.res

References

References

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County of Maui, The General Plan of the County of Maui, September 1990 Update.

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Appendices

Appendix A

Archaeological Assessment Report

An Archaeological Assessment Report for the proposed Wellness Activities Center Project At the Kaunoa Senior Center, Wailuku *Ahupua'a*, Wailuku District, Maui Island (TMK: 3-8-01: 08)

Prepared On behalf of:

County of Maui
Department of Housing &
Human Concerns—Senior Services
Wailuku, Maui

Prepared by:

Xamanek Researches
Pukalani, Maui

Demaris L. Fredericksen
Erik M. Fredericksen

20 April 2004

ABSTRACT

Xamanek Researches conducted an archaeological assessment (originally an inventory survey) on a c. 4,200 square foot portion of land in Wailuku *ahupua`a*, Wailuku District, Island of Maui (TMK (2) 3-8-01: Portion of 01). This study was initiated as an inventory survey and was carried out in late March and early April of 2004 for the proposed Wellness Activities Center at the County of Maui Kaunoa Center in Spreckelsville, Maui. The study area is located adjacent to and south of a residential community and is in relatively close proximity to the shoreline. The archaeological assessment was conducted on behalf of Mr. Robin Tanaka of the County of Maui Housing and Human Concerns—Senior Services.

There was no evidence of an intact cultural deposit or any significant cultural materials encountered during subsurface testing on the level project area. Test results indicate that the upper c. 30 cm of the study area has been filled with landscaping soil. Tested portions of the two underlying silty clay strata did not yield any significant material culture remains. All trenches were excavated to weathered bedrock. Consequently, no further work is recommended for this c. 4,200 square foot section of the Kaunoa Center parcel.

While there were no significant material culture remains located during testing, it is important to note that the survey sampled only the area of potential impact (APE) for the footprint of the proposed building, which is located on the southern (*mauka*) portion of the Kaunoa Center parcel near Hana Highway. A previously identified habitation area (Site 50-50-05-1777) and a habitation area with associated human remains (Site 1778) were identified in the 1980s near the northern (*makai*) boundary of this property. The extent of these previously identified sites remain unknown. In particular, Site 1777 was located near the boundary of the Kaunoa Senior Center parcel. The presence of this nearby site suggests that there may be undocumented cultural resources contained in untested portions of this County administered parcel. Consequently, it is recommended that the State Historic Preservation Division review all future construction/development plans for the Kaunoa Senior Center facility.

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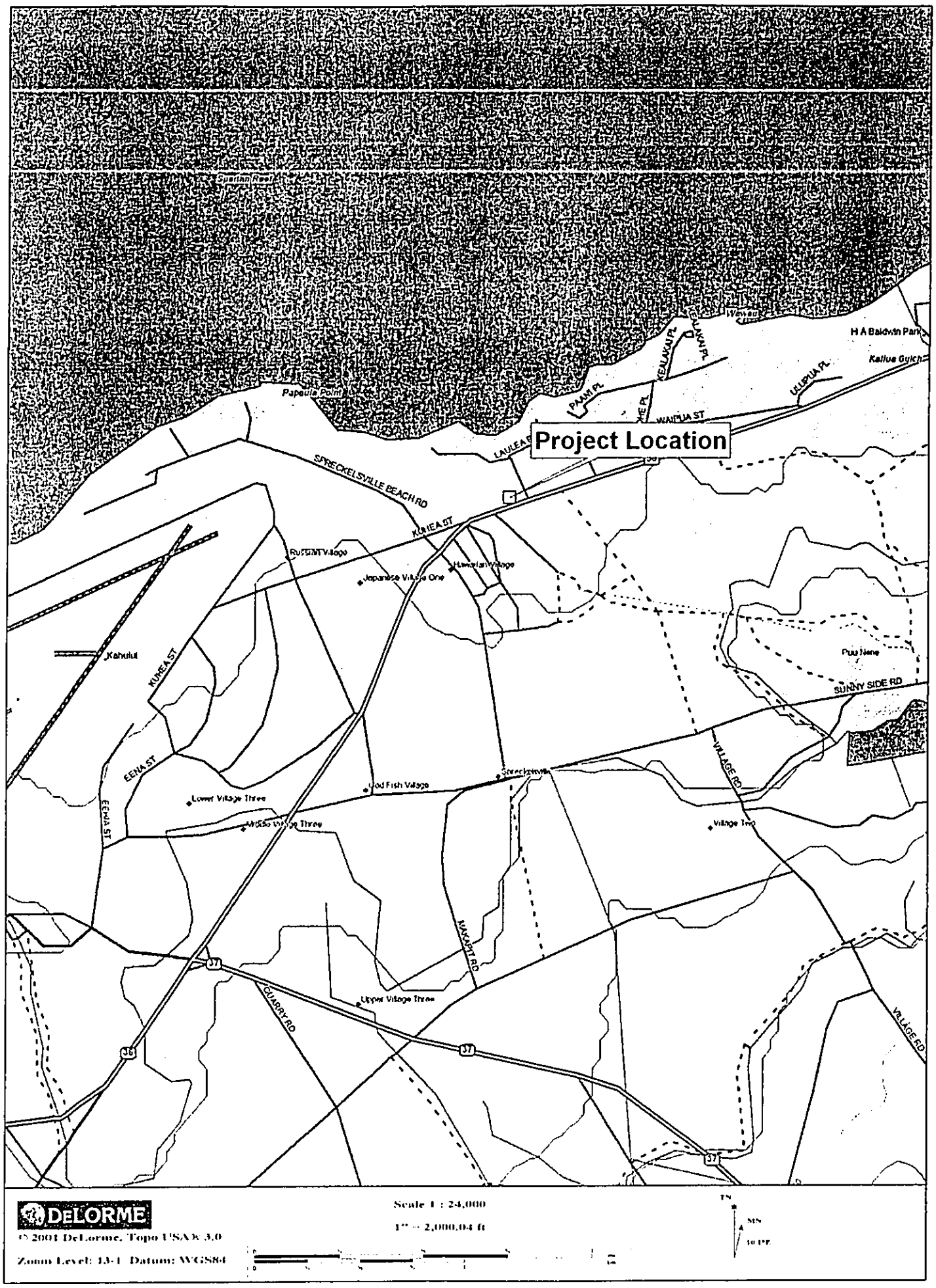

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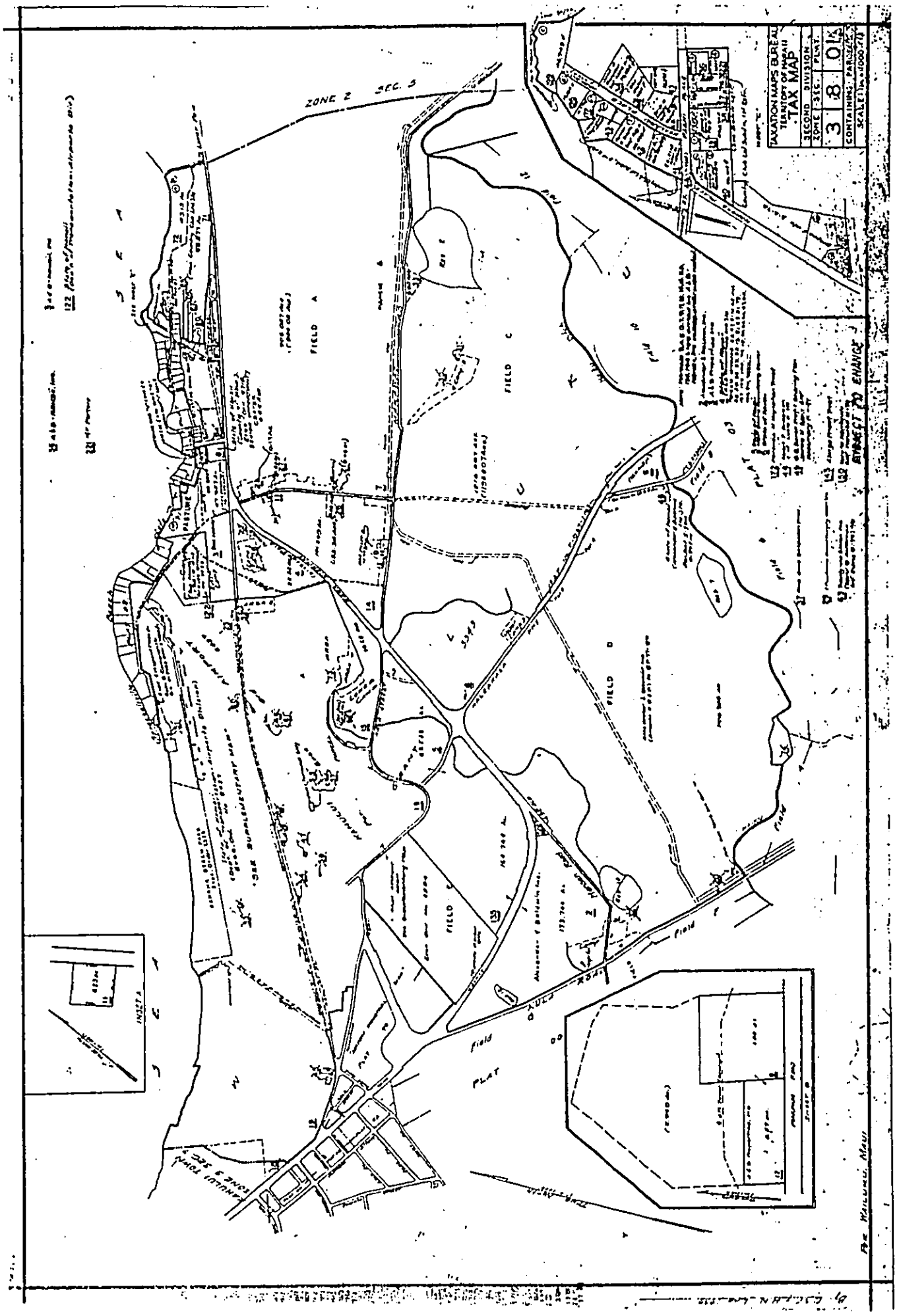

Map 2 – State of Hawaii Tax Map, Zone 3, Section 8, Plat 01.

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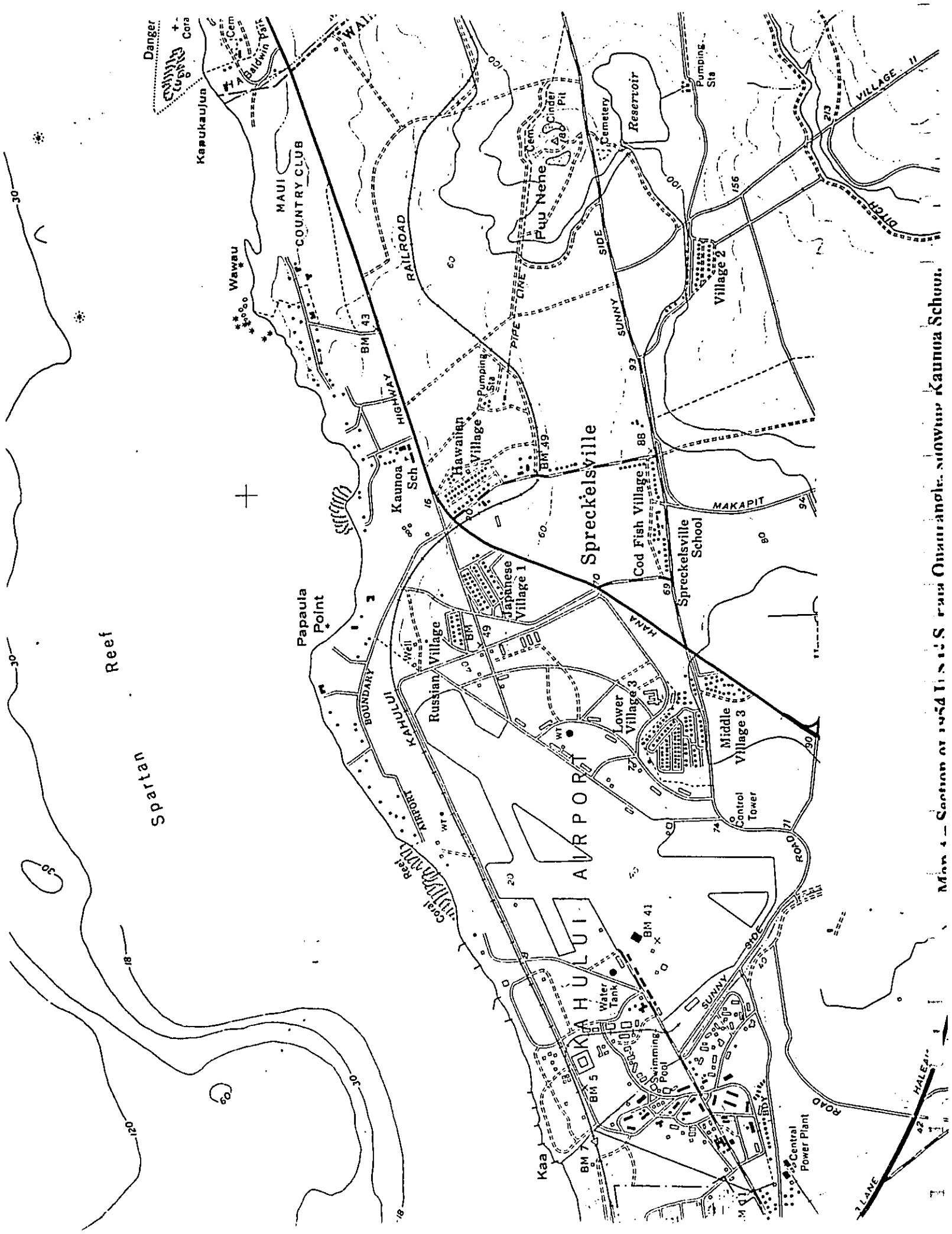

Map 4 – Section of 1954 U.S. Coast & Geodetic Survey Quadrangle showing Kaunoa School.

INTRODUCTION

Mr. Robin Tanaka of the County of Maui contacted Xamanek Researches during the early spring of 2004 about an archaeological inventory survey for a planned Wellness Activities Center located at the Kaunoa Senior Center facility in Spreckelsville, Maui (TMK (2) 3-8-01: 08). The proposed project area consisted of a c. 4,200 square foot building that would be constructed on the existing grounds of the facility. Mr. Tanaka requested that we submit a proposal per the State Historic Preservation Division (SHPD) requirements for this project. The SHPD had previously indicated in a 17 February 2004 review letter that an archaeological inventory survey was required for this project, because there had been no previous work undertaken on this near coastal parcel (SHPD DOC NO: 0402CD28). In addition, sand dune deposits and previously identified subsurface sites had been located in the general vicinity of the study area.

Following consultation with Dr. Melissa Kirkendall of the SHPD Maui office, we prepared a proposal for the necessary scope of work for this small inventory survey project. We submitted our proposal to Mr. Tanaka and were subsequently contracted to undertake the necessary study. The following report presents the results of this archaeological assessment[1] of a portion of TMK: 3-8-01: 08. This report has been prepared at the direction of Mr. Tanaka on behalf of the County of Maui Department of Housing and Human Concerns—Senior Services.

STUDY AREA

The Kaunoa Senior Center facility (Center) lies in Wailuku *ahupua`a*, Wailuku District, on the isthmus of Maui (TMK (2) 3-8-01: 08). The project area is located *makai* (northwest) of Hana Highway and was developed for use by the County of Maui in the late 1970s. Sugarcane was grown for several decades in the surrounding area, and the land just to the northeast of the facility was in sugarcane until the late 1980s. The area to the west of the Center was—until recently—used as a horse stable facility. The overall Kaunoa Senior Center has been developed and landscaped. The current project examined

[1] The original scope called for an inventory survey, but because no resources were identified this study is actually an archaeological assessment.

the footprint of the planned Wellness and Activities Center, which is located between the existing Multi-Purpose Building and the former "Stables" parcel to the west (Photos 1 and 3). The Kaunoa Center is bordered by a portion of the Spreckelsville Bikeway to the south, Alakapa Place to the east, private residences to the north, and the "Stables" parcel to the west. The shoreline is located an estimated 150 meters to the north of the project area.

Natural History

The soil types present in the vicinity of the project area include Jaucus Sand deposits, as well as the reddish brown (7.5 YR 4/3) silty clay common to this part of the North Shore of Maui.

The project area lies an estimated 10 feet to 12 feet AMSL. Annual precipitation on this part of Maui is about 20-30 inches, and the rains generally occur during the winter months. The average temperature ranges from the mid-seventies to the mid-eighties, and is relatively constant throughout much of the year.

Vegetation noted in the project area at the time of our survey was dominated by non-native plant species. Common vegetation noted adjacent to the study area included *koa haole* (Leucaena leucocephala) shrubs, *kiawe* (Prosopis pallida) trees, monkeypod (Albizia saman) trees, date palms (Phoenix dactylatra), and alien grasses. Vegetation observed on the Kaunoa Center parcel included monkeypod trees, *niu* (Cocos nucifera) trees, and various landscaping plants.

BACKGROUND INFORMATION

The *ahupua`a* of Wailuku is a large land unit stretching around Kahului Bay from Paukukalo to Kapukaulua. It includes Iao Valley and the northern half of the Kahului Isthmus. This single land division comprises nearly half of the District of Wailuku, and is noted as a place where chiefs were buried and wars were fought. The word itself can be translated as "water of destruction" (Pukui, et al., 1974, p. 225), and the name Wailuku refers to the battles that took place in the area.

Iao Valley and the two associated dunes on the north and south sides of the river, constituted the core area of Wailuku. This was the central place of religious and political power on Maui, which culminated during the time of Pi`ilani (c. 1600 AD). In the precontact period warfare increased as the chiefs of Maui, Oahu and Hawaii vied for political and military dominance. High Chief Pi`ilani unified the districts of Maui by warfare, but after his death, his sons fought with one another—each hoping to establish

his own political control. Eventually, Kiha-a-Pi`ilani seized political control of Maui island, and each succeeding generation of chiefs struggled through warfare to secure their positions of political dominance (Speakman, 1978, pp. 9-13).

During the reign of the last powerful paramount chief, Kahekili (who ruled from 1765 to 1794), Wailuku once again became the site of intense warfare. Kahekili's residence, Kalanihale, was located in Wailuku, near the entrance to Iao Valley. In the mid-1770s, it was marched upon by a Hawaii chief named Kalani`opu`u and his *Alapa* (the name given to his warriors). News of his coming preceded him, and Kahekili hid his warriors in the sand dunes above Haleki`i *heiau* to surprise the invading troops. The *Alapa* division was slaughtered in the sand hills, and a truce was negotiated.

John Papa I`i wrote about these conflicts in Wailuku and how peace was initiated between Kahekili and Kiwalao (nephew of Kahekili, and heir to Kalaniopu`u)—mentioning a fleet of canoes which had been beached in the area.

"Then Kiwalao met Kahekili, and an order was given to stop fighting. This was agreed to by Kahekili, the uncle of the chief. A proclamation was sent back by Kiwalao, the chief of the prostrating kapu, to report the cessation of war. When this word was received by Kalani-opu`u* he *went up to see his brother-on-law, Kahekili. Kalaniopu`u's forces remained on Maui for some time and peace existed, on both sides, with nothing to disturb it. Finally those of Hawaii became anxious to go home, and it is said that they asked permission to do so.

When they were all ready to leave, the sands were covered with the canoes of Hawaii warriors from Kahului to Paia. After a last farewell to the kama`aina of the land, Kalaniopu`u boarded his canoe and left Kahekili ma [1959, p.11].

Years later, these northern beaches were once again the scene of an invasion from Hawaii. It was reported that Kamehameha's fleet of canoes stretched for miles, as he prepared for battle against Kahekili in 1790. The battle of Kepaniwai[1] in Iao Valley, in which the invading forces were victorious this time, ended Kahekili's reign on Maui. He fled over the mountains of the valley and hence to Molokai and later Oahu, where he continued to rule until his death in 1794.

Early Post-contact

The reign of Kamehameha was intertwined with the increasing presence of foreigners (*haoles*). The arrival of Captain Cook offshore at Kahului Bay in 1778, began the steady flow of outside influences that would forever alter the indigenous population and environment. Some of the first influences came with the missionaries, whose charge it was to save heathen souls. The first missionaries arrived in Wailuku in 1832, where they set up the Central Female Boarding School to teach Hawaiian girls the language and customs of foreigners, as well as their religion.

[1] Kepaniwai means literally "water dam" in reference to Iao Stream, because the stream was choked with human bodies after the slaughter there (Pukui, Elbert and Mookini, 1994, p. 109).

A second influence to bring change was foreign commercialism, and it came in the form of sugar production. The first sugar crops in Wailuku were harvested and processed in 1828. Kamehameha III, with the help of two Chinese technicians, established a water-powered mill—Hungtai Sugar Works. It was later followed by the establishment of Wailuku Sugar Mill in 1862. The major competitors were Alexander and Baldwin Plantation in 1869—later absorbing Haiku Plantation and becoming Pa`ia Plantation in 1883, east of Spreckelsville, and Hawaiian Commercial Company, formed by Claus Spreckels in 1878, to the west of Spreckelsville.

Post-1850s period

Much of the land adjacent to the project location was designated as Crown Land during the Mahele of 1848. Princess Ruth Ke`elikolani, a great-granddaughter of Kamehameha I, was designated as the owner of the Ka`a lands of Wailuku, situated in the southern portion of the *ahupua`a*. She inherited this land when Kamehameha V died in 1872.

The Reciprocity Treaty of 1876 with the United States gave a boost to the sugar industry, mainly by increasing prices for the producers. The dry eastern part of the *ahupua`a* would be attractive as potential sugar land, only if water could be brought to it from the east Maui watershed. In 1880, Spreckels began construction of what was called "Spreckels' Ditch", located *makai* of the Hamakua Ditch, which had been built earlier by Alexander and Baldwin to water their east Maui fields. Spreckel's Ditch was 30 miles long, and delivered about 60 million gallons of water a day, and cost $500,000 (Adler, pp.48-49).

In 1882, Princess Ruth, who was deeply in debt, relinquished one-half of the Crown Lands in her name to Claus Spreckels for the sum $10,000 to in order to pay her creditors. This potentially gave him control of a major portion of Crown Lands of the Kingdom. Spreckels already held a lease for 16,000 acres of Wailuku *ahupua`a*, dating from 1878. Worried about what Spreckels might do with half of the Crown Lands, King Kalakaua gave him Land Grant 3343, a 24,000 acre portion of the southeastern section of Wailuku *ahupua`a*, in return for the surrender of his claim (Adler, 1966, pp. 262-264). The present study parcel lies within this huge land grant.

With vast acreage and a dependable water supply at hand, Spreckels' Hawaiian Commercial and Sugar Company flourished, and he continued to be involved with the company, even though he resided in California. In 1898, when stocks were low in price, James Castle initiated a move to buy enough shares to control the company. With Alexander and Baldwin funding the purchase of stock, control was thus wrested from Spreckels' hands. The parent company still bears the name of Alexander and Baldwin. Maui Agricultural Company was formed in 1903, and absorbed into HC&S after WW II.

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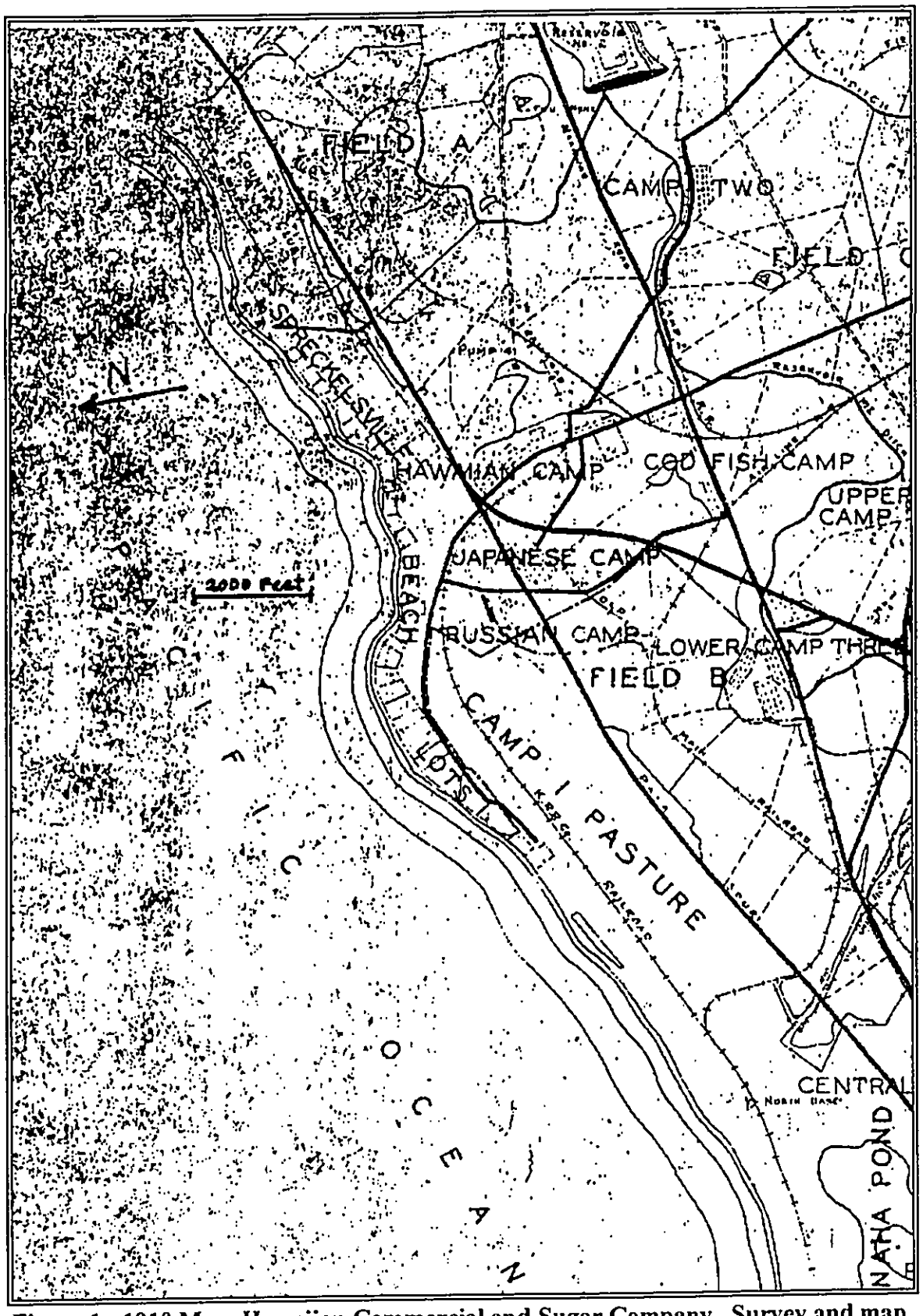


Figure 1 - 1910 Map, Hawaiian Commercial and Sugar Company. Survey and map by H. Shoemaker.

The lands around the Kaunoa Senior Center were part of Maui Agricultural Company and later HC & S lands. A series of plantation camp communities were formed in the latter 18th and early 19th century to house the plantation workers and their families. Those around the project area were variously named Hawaiian Camp, Japanese Camp, Russian Camp, Cod Fish Camp, Upper Camp Three, and Lower Camp Three (See Figure 1). Camp 1 pasture is shown to the west of the study parcel.

The property for Kaunoa School was transferred to the Territory of Hawaii in 1925, by HC & S. The school was built shortly thereafter, and an article in the Maui News related that the "new cafeteria" was opened in 1933 (The Maui News, January 06, 1933). The school closed its doors and the facility was turned over to the County of Maui in 1974, and later reopened as the Kaunoa Senior Center.

As a place name, "Kaunoa" refers to the school in Spreckelsville—with a literary meaning of "place without taboo" (Pukui, Elbert and Mookini, 1974, p. 95).

Previous Archaeological work in vicinity of project area (Figure 2)

The archaeological sites closest to the study parcel were identified in 1987 during a Bishop Museum archaeological monitoring project of the excavation of a sewer line. It extended eastward from Spreckelsville to Ku`au and provided information on two sites in the vicinity of the project area (Clark and Toenjes, 1987).

One site, to the northeast of the study area (Site 1778) along Pa`ani Place, consisted of habitation deposits and a burial containing the remains of 2 individuals. Carbon samples yielded a date of AD 1235 to 1420 (Ibid., p. 57). Another, Site 1777 lies adjacent to the subject property to the northwest. It was identified by a depression, which contained a surface deposit of midden and other scattered cultural materials. Two manual test units were used to sample subsurface conditions. A charcoal sample from a subsurface hearth returned a date of AD 1340 to 1650. A total of 82 indigenous artifacts were recovered, which included an adze fragment, polished flakes, hammerstones, a sinker, volcanic glass, coral abraders, a fishhook, sea urchin spine abraders, and worked bone (Ibid., pp. 40-65). These, along with quantities of midden, indicated a habitation and activity area that had extensive use in precontact times.

Xamanek Researches conducted an inventory survey on the parcel lying east of the project area in 1988 (Fredericksen, et al., 1988). The 34-acre parcel had been in sugarcane for about a century, and any surface or subsurface evidence of habitation had been obliterated. A series of backhoe trenches tested the subsurface conditions, with negative findings.

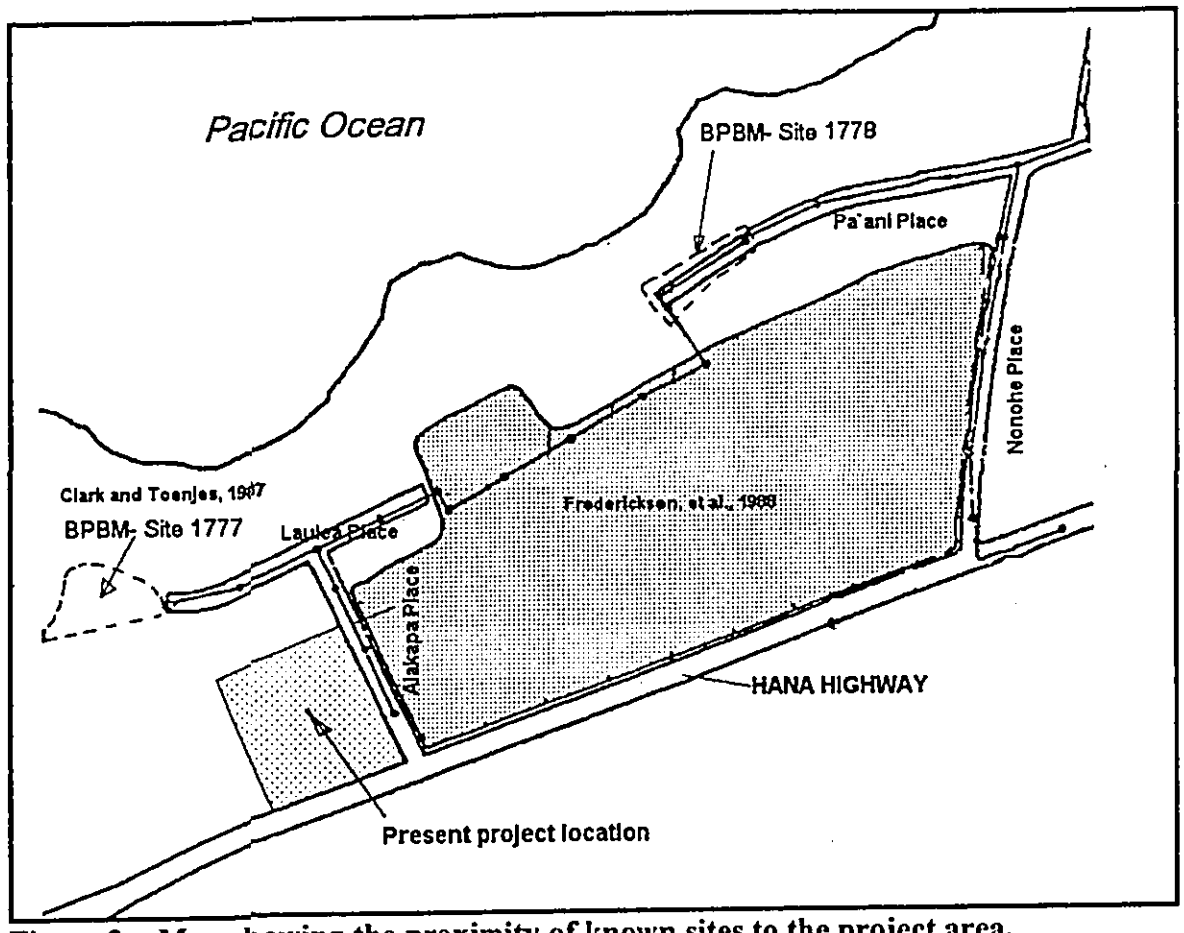


Figure 2 – Map showing the proximity of known sites to the project area.

Settlement Patterns

The identification of a coastal habitation area is consistent with the findings elsewhere around Kahului Harbor, and elsewhere in the Hawaiian Islands. The study parcel lies close to the coastline, and is *mauka* of a relatively large habitation site (Site 1777). While the area has been impacted by the construction of the school, there is a possibility that subsurface deposits still may be present.

Expected Findings

Based on our background research, the proximity of the shoreline, and the presence of previously identified sites—Site 1777 and Site 1778, the expected findings are thought to include possible precontact subsurface habitation site remnants, possibly containing associated human burials. Given that the Center has already been developed, we do not anticipate any surface features reflecting earlier usage. However, given the relatively close proximity of the plantation camps, there could possibly be subsurface remnants of plantation era activities.

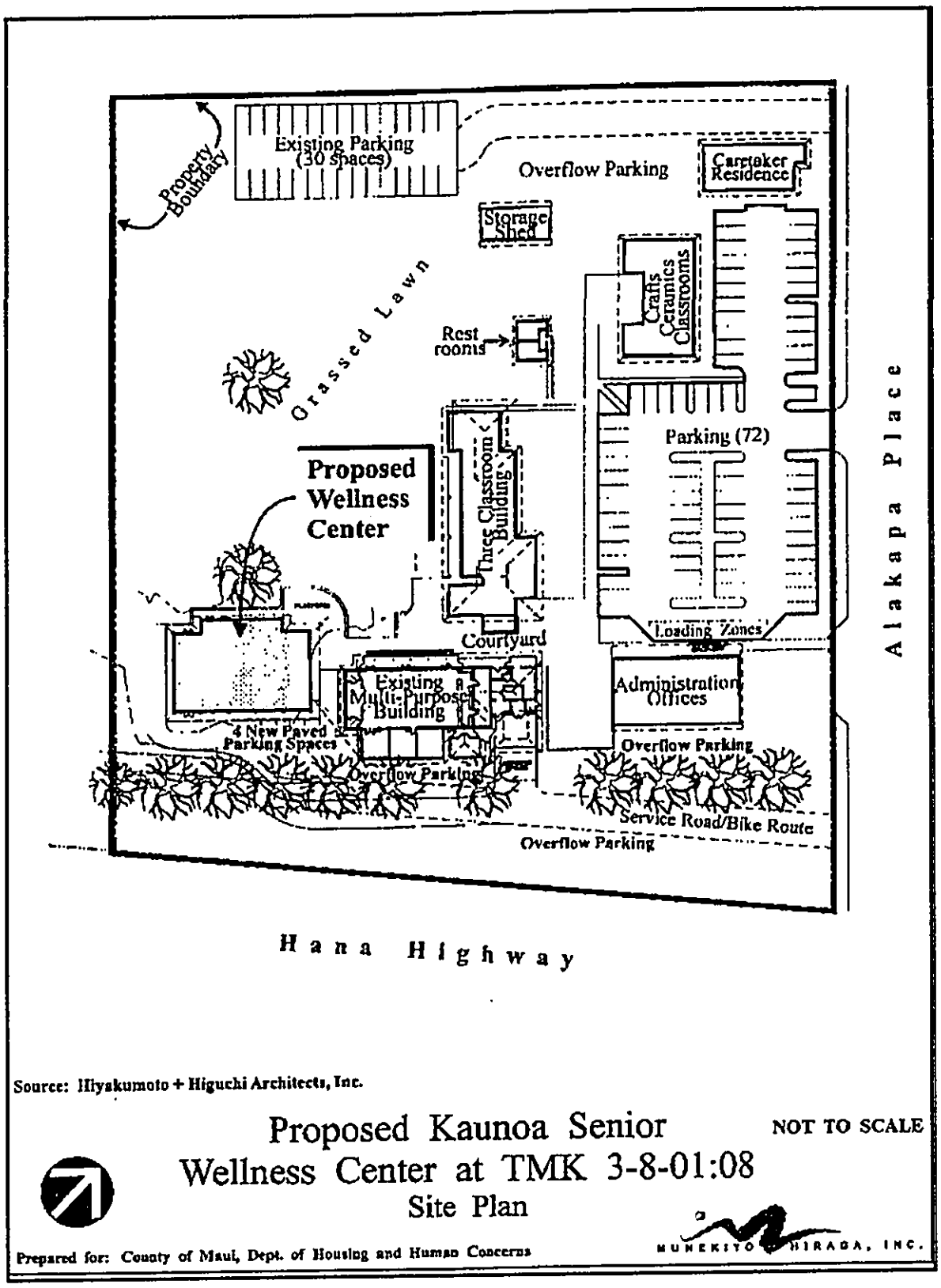


Figure 3 – Map showing location of limited area tested during this assessment survey.

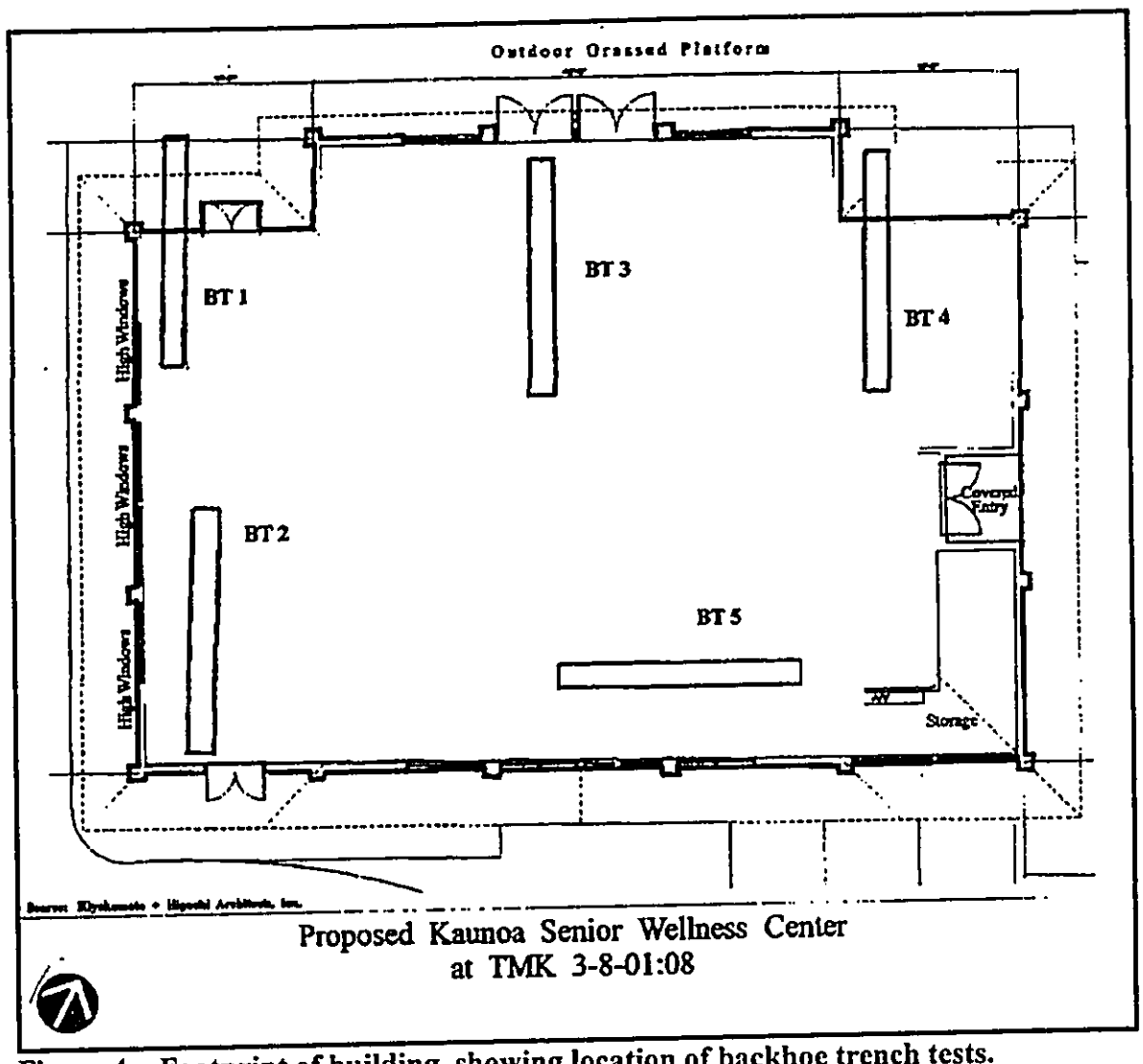


Figure 4 – Footprint of building, showing location of backhoe trench tests.

ARCHAEOLOGICAL METHODS

This archaeological survey was conducted during late March and early April of 2004. The field team was made up of Hugh Coflin and Erik Fredericksen. Erik Fredericksen was also the project director. Walter and Demaris Fredericksen were the senior advisors, and Demaris Fredericksen worked extensively on this report.

The assessment survey of the study area was carried out in 2 phases—a pedestrian surface inspection was first conducted, followed by subsurface investigation. This latter

phase consisted of five backhoe trenches in the footprint of the proposed Wellness and Activities Center. The walkover portion of the survey was undertaken using transect lines spaced c. 5 meters apart, and oriented roughly north/south. While the overall facility was not subjected to inventory level testing, the grounds were inspected in order to assess the possible presence of significant material culture remains elsewhere on the parcel. In addition, the margins of the adjacent property to the southwest were visually inspected from the border of the County facility. The second phase consisted of subsurface investigation of the c. 4,200 square foot building footprint.

As previously noted, a total of five backhoe trenches were utilized to sample the project area (Figure 4). These subsurface tests were excavated in the approximate footprint of the planned Wellness And Activities Center (Figure 3). Backhoe trench profiles were visually inspected, and compiled using metric survey tapes and hand-bearing compasses. In addition soil samples from each trench profile were spot checked with $1/8^{th}$ inch screen, and the back dirt was raked over. Written notes were kept in the field, and photographs were taken with a digital camera. No material culture remains were transported off-island and standard laboratory procedures and methods were utilized.

ARCHAEOLOGICAL RESULTS

A total of five backhoe trenches were utilized to assess subsurface conditions in study area during the course of this small archaeological survey. There were no subsurface cultural layers encountered during the course of our subsurface testing. The backhoe trenches were c. 6.0 meters in length by 0.8 meter in width by a maximum of 2.1 meters in depth. All trenches were excavated to weathered bedrock. Table 1 provides a summary of backhoe trench results for this project. Backhoe test results are discussed below.

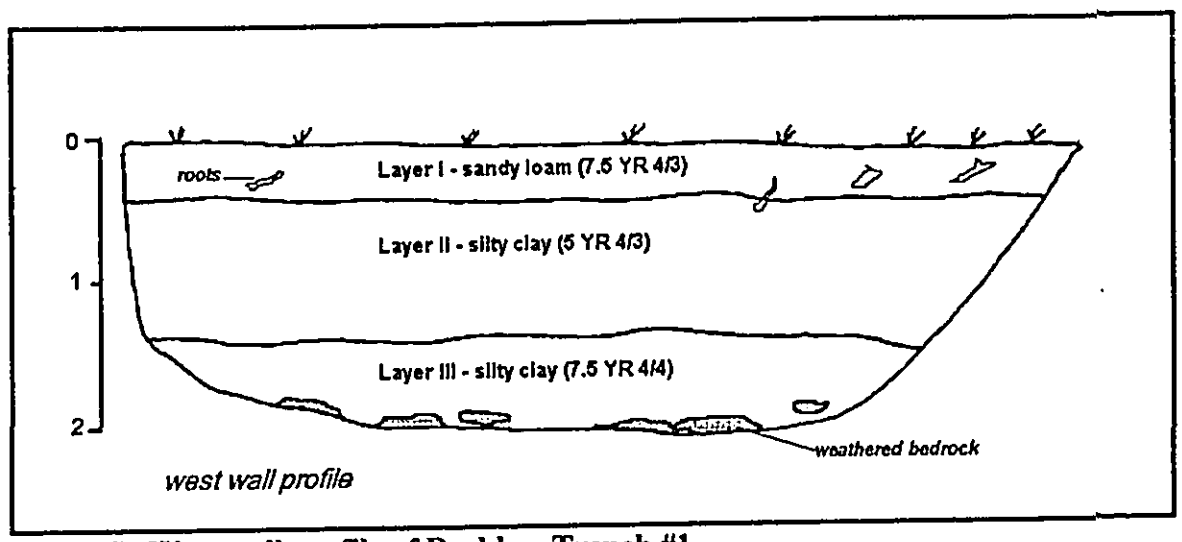


Figure 5 –West wall profile of Backhoe Trench #1.

Backhoe Trench 1 (Figure 5, Photos 1, 2, and 3)

This first backhoe trench was located near the northwestern corner of the proposed Wellness Center. The trench was oriented to 350 degrees magnetic and c. 6 meters in length by up to 2.0 meters in depth by 80 cm in width. Excavation of Backhoe Trench (BT) 1 revealed three soil strata.

Layer I was up to 34 cm in depth, and was composed of brown (7.5 YR 4/3) sandy loam. This relatively loose layer contained some sand banding and isolated flecks of charcoal, along with scattered modern materials such as aluminum foil, plastic and bottle glass. In addition, small pieces of cinder were also noted. This soil is interpreted as landscaping fill.[2]

Layer II extended from c. 30 cmbs to a maximum of 1.42 mbs. This compact stratum was composed of reddish brown (5YR 4/3) silty clay with small amounts of reddish gray (5 YR 5/2) silty clay inclusions. There were no significant material culture remains noted in this layer.

Layer III (c. 1.35 to 2.0 mbs) consisted of compact, brown (7.5 YR 4/4) silty clay. This stratum contained pieces of weathered bedrock, and did not appear to contain any significant material culture remains. Excavation was halted at a maximum of 2.0 mbs in weathered bedrock.

[2] An abandoned irrigation line was noted c. 20 cmbs, along with a buried sprinkler head.

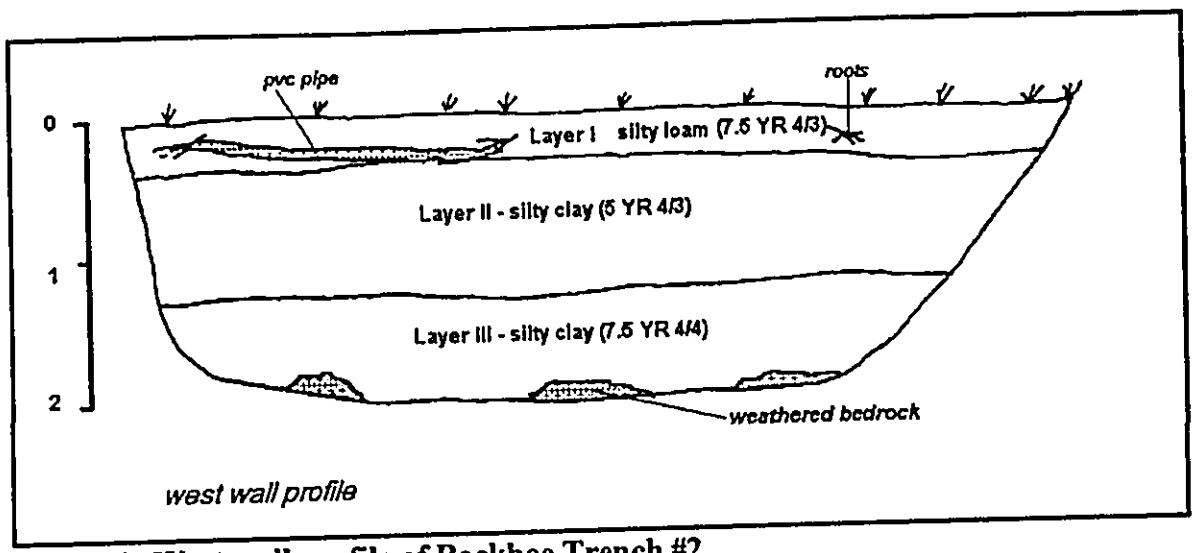


Figure 6 –West wall profile of Backhoe Trench #2.

Backhoe Trench 2 (Figure 6, Photos 3 and 4)

This second trench was place to the southeast of BT 1, near the southwestern corner of the planned building. Trench orientation was approximately 350 degrees magnetic. Unit dimensions were c. 6 meters in length by up to 2.0 meters in depth by 80 cm in width. The three common soil strata were present in BT 2.

Layer I consisted of landscaping fill and was up to 32 cm in depth. This brown (7.5 YR 4/3) sandy loam contained remnants of an old sprinkler system, including an abandoned PVC 1-inch water line. This relatively loose layer contained some sand banding and isolated flecks of charcoal, along with scattered modern materials including aluminum foil, plastic and bottle glass. In addition, a moderate amount of woody roots (monkeypod) were also present.

Layer II (c. 0.32 to 1.34 mbs) was made up of reddish brown (5YR 4/3) silty clay with small amounts of angular basalt and reddish gray (5 YR 5/2) silty clay inclusions. There were no significant material culture remains noted in this layer.

Layer III extended from c. 1.30 to 2.0 meters in depth. This stratum consisted of compact, brown (7.5 YR 4/4) silty clay. This layer contained increasing amounts of weathered bedrock with depth. Excavation of this sterile stratum was abandoned at a maximum depth of 2.0 meters.

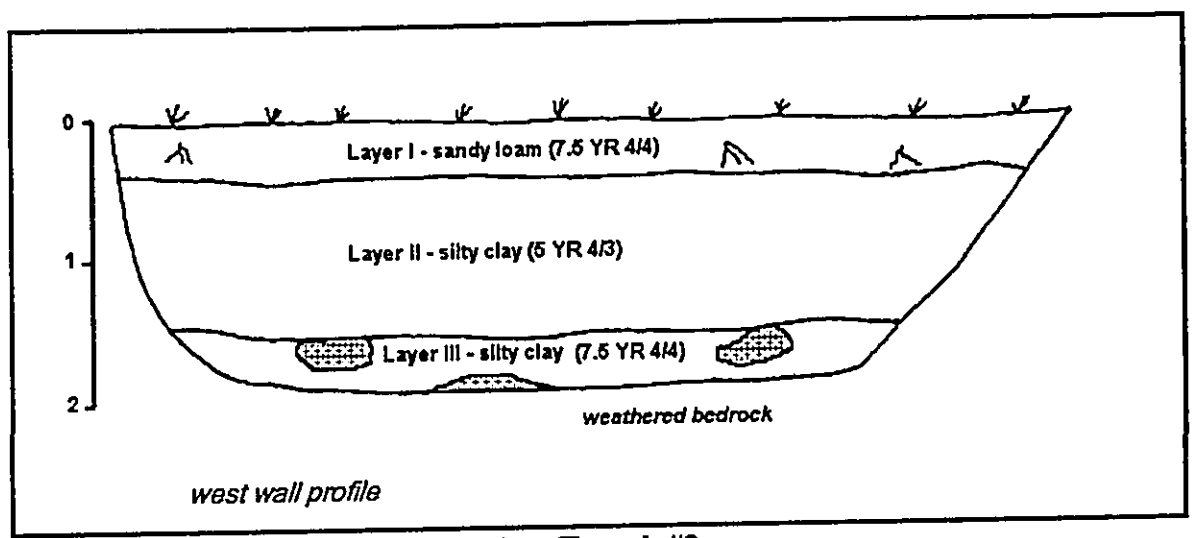


Figure 7 –West wall profile of Backhoe Trench #3.

Backhoe Trench 3 (Figure 7, Photo 5)

This backhoe trench sampled the central portion of the building site. Trench orientation was approximately 350 degrees magnetic. BT 3 was c. 6 meters in length by up to 1.9 meters in depth by 80 cm in width. The three common soil strata were present.

Layer I was up to 35 cm in depth, and consisted of brown (7.5 YR 4/4) sandy loam. This relatively loose layer contained mixed sand banding and isolated flecks of charcoal. In addition, scattered modern materials such as aluminum foil, plastic and bottle glass were also present in this landscaping fill.

Layer II extended from c. 28 cmbs to a maximum depth of 1.58 mbs. This relatively compact layer was made up of reddish brown (5 YR 4/3) silty clay along with very small amounts of angular basalt pebbles and reddish gray (5 YR 5/2) silty clay inclusions. There were no significant material culture remains noted in this stratum.

Layer III (c. 1.54 to 1.9 mbs) was composed of compact, brown (7.5 YR 4/4) silty clay. This layer contained pieces of weathered bedrock, and there were significant material culture remains observed. Excavation was halted at consolidated weathered bedrock.

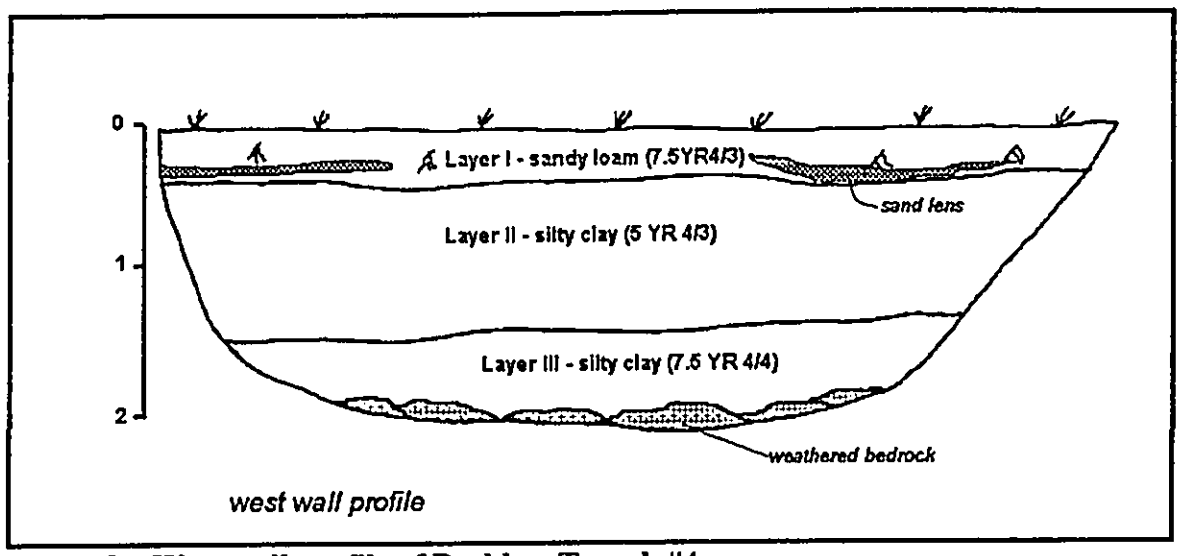


Figure 8 – West wall profile of Backhoe Trench #4.

Backhoe Trench 4 (Figure 8)

This trench was located near the northeastern corner of the proposed Wellness Center. BT 4 was oriented to c. 350 degrees magnetic. This subsurface test was c. 6 meters in length by up to 2.1 meters in depth by 0.8 meter in width. The three common soil layers were present in BT 4.

Layer I (0 to 30 cmbs) consisted of brown (7.5 YR 4/3) sandy loam. This relatively loose stratum contained some mixed sand banding and isolated flecks of charcoal. In addition, there were scattered modern materials including plastic, wood and bottle glass noted in this fill.

Layer II (c. 0.30 to 1.64 mbs) was made up of reddish brown (5YR 4/3) silty clay, which contained small amounts of reddish gray (5 YR 5/2) silty clay inclusions, and scattered angular basalt pebbles. There were no significant material culture remains present in this stratum.

Layer III (c. 1.6 to 2.1 mbs) was composed of compact, brown (7.5 YR 4/4) silty clay. This compact layer contained pieces of weathered bedrock, and no significant material culture remains were present. Excavation was halted at a maximum depth of 2.1 mbs in weathered bedrock.

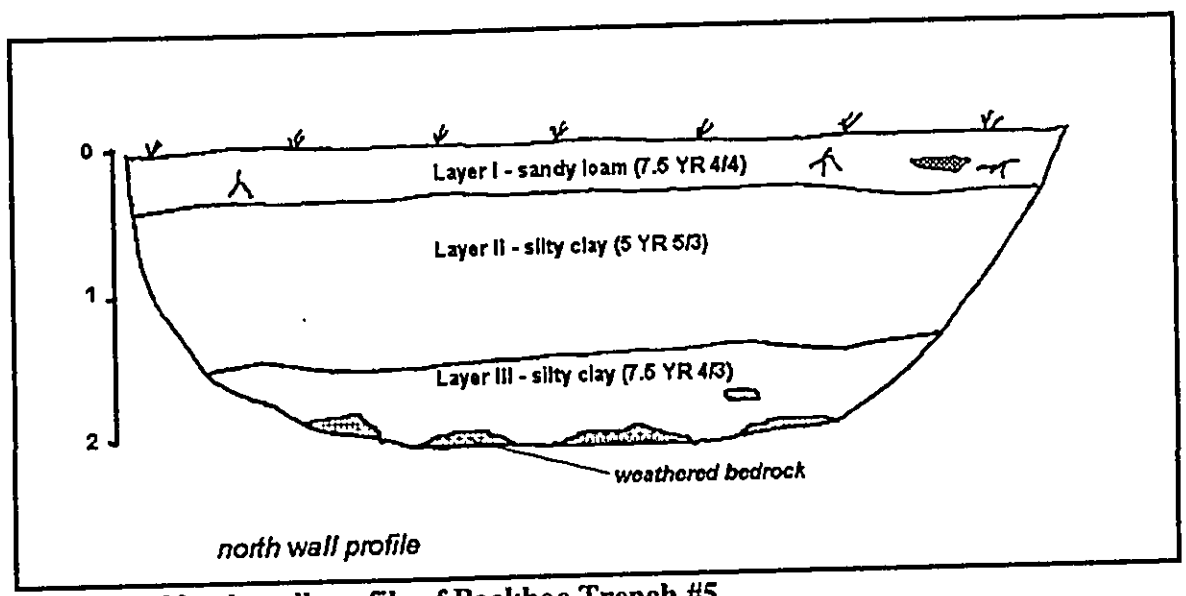


Figure 9 – North wall profile of Backhoe Trench #5.

Backhoe Trench 5 (Figure 9, Photo 6)

This final backhoe trench sampled the southeastern portion of the planned building site. BT 5 orientation was approximately 70 degrees magnetic. This trench was c. 6 meters in length by up to 2.05 meters in depth by 80 cm in width. The three common soil strata were located in this subsurface test.

Layer I was up to 30 cm in depth, and consisted of brown (7.5 YR 4/4) sandy loam. This relatively loose fill contained mixed sand banding and scattered flecks of charcoal. In addition, modern material remains including aluminum foil, plastic and pieces of milled wood were also noted.

Layer II extended from c. 25 cmbs to a maximum depth of 1.62 mbs. This compact reddish brown (5 YR 5/3) silty clay contained very small amounts of angular basalt pebbles and reddish gray (5 YR 5/2) silty clay inclusions. There were no significant material culture remains observed in this stratum.

Layer III (c. 1.55 to 2.05 mbs) was composed of compact, brown (7.5 YR 4/3) silty clay. This layer contained increasing pieces of weathered bedrock with depth, and there were significant material culture remains noted. Excavation was halted at consolidated weathered bedrock.

Discussion of Backhoe Trench Results

There was no evidence of an intact cultural layer encountered during subsurface investigation in the proposed Wellness Activities Center project area. It appears that landscaping soil (Layer I) covers all of the study area to a depth of about 30 cmbs. The presence of modern material culture remains indicates that this material was likely imported in relatively recent times.

There were no significant cultural materials located in Layers II and III. However, it is interesting to note that there was no evidence of a plow zone located during our testing. While not conclusive proof, the absence of a plow zone suggests that this area was not utilized for commercial sugarcane production in the past. This possible lack of previous disturbance is supported by the presence of Site 1777, which lies just to the north (*makai*) of the Kaunoa Center parcel.

Table 1

Summary of backhoe results

BT#	Depth[3]	Stratigraphy	cmbs	Remarks
1	200 cmbs	Layer I: brown (7.5 YR 4/3), sandy loam	0-34	Layer I: modern materials include aluminum foil, plastic, bottle glass
		Layer II: reddish brown (5 YR 4/3), silty clay with small amounts of angular basalt pebbles and clay inclusions	30-142	Layer II: compact, appears to be sterile
		Layer III: brown (7.5 YR 4/4) silty clay with weathered bedrock	135-200	Layer III: compact, excavation terminated in weathered bedrock
2	200	Layer I: brown (7.5 YR 4/3), sandy loam	0-32	Layer I: modern materials include aluminum foil, plastic, bottle glass
		Layer II: reddish brown (5 YR 4/3), silty clay with small amounts of angular basalt pebbles and clay inclusions	32-134	Layer II: compact, appears to be sterile
		Layer III: brown (7.5 YR 4/4) silty clay with weathered bedrock	130-200	Layer III: compact, excavation terminated in weathered bedrock
3	190	Layer I: brown (7.5 YR 4/3), sandy loam	0-35	Layer I: modern materials include aluminum foil, plastic, bottle glass
		Layer II: reddish brown (5 YR 4/3), silty clay with small amounts of angular basalt pebbles and clay inclusions	28-158	Layer II: compact, appears to be sterile
		Layer III: brown (7.5 YR 4/4) silty clay with weathered bedrock	154-190	Layer III: compact, excavation terminated in weathered bedrock
4	210	Layer I: brown (7.5 YR 4/3), sandy loam	0-30	Layer I: modern materials include aluminum foil, plastic, bottle glass
		Layer II: reddish brown (5 YR 4/6), silty clay with small amounts of angular basalt pebbles and clay inclusions	30-164	Layer II: compact, appears to be sterile
		Layer III: brown (7.5 YR 4/4) silty clay with weathered bedrock	160-210	Layer III: compact, excavation terminated in weathered bedrock
5	205	Layer I: brown (7.5 YR 4/3), sandy loam	0-32	Layer I: modern materials include aluminum foil, plastic, bottle glass
		Layer II: reddish brown (5 YR 5/3), silty clay with small amounts of angular basalt pebbles and clay inclusions	30-162	Layer II: compact, appears to be sterile
		Layer III: brown (7.5 YR 4/4) silty clay with weathered bedrock	155-205	Layer III: compact, excavation terminated in weathered bedrock

[3] All trenches were 6 meters long by 0.80 meter wide. Cmbs= centimeters below surface.

SUMMARY AND CONCLUSIONS

There were no significant material culture remains located during this limited inventory survey/archaeological assessment for the proposed Wellness and Activities Center at the Kaunoa Center. Landscaping soil (Layer I) was found to cover the study area to a depth of about 30 cmbs. The presence of modern material culture remains indicates that this fill material was likely imported in relatively recent times.

As in Layer I, there were no significant cultural materials noted in Layers II and III. However, as previously mentioned in this report, it is of interest to note that there was no evidence of a plow zone located during our testing. The absence of a plow zone suggests that this area was not cultivated for commercial sugarcane production in the past. However, construction of Kaunoa School no doubt impacted any surface cultural deposits that might have occurred. A relatively intact habitation area—Site 1777, lies just to the north (*makai*) of the Kaunoa Senior Center parcel. This site was dated between AD 1340 to 1650, and Site 1778—lying to the northeast was dated earlier between AD 1235 and 1420. These sites indicate that habitation settlements were present on this northern coastal area of Maui in precontact times.

Site Significance Evaluations

The following significance evaluations are based on the Rules Governing Procedures for Historic Preservation Review (DLNR 1996; Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling and association and shall meet one or more of the following criteria:

Criterion "a"—Be associated with events that have made an important contribution to the broad patterns of our history;

Criterion "b"—Be associated with the lives of persons important in our past;

Criterion "c"—Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;

Criterion "d"—Have yielded, or is likely to yield, important information for research on prehistory or history;

Criterion "e"—Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts.

Sites can be considered no longer significant when they qualify only under Criterion "d" and sufficient information has been collected from them during inventory survey level investigation.

As previously mentioned, there were no significant material culture remains located during the archaeological assessment for the c. 4,200 square foot Wellness and Activities Center.

Mitigation Recommendations

There was no evidence of an intact cultural layer or any significant material culture remains encountered during subsurface investigation in the proposed Wellness Activities Center project area, and no further work is recommended for this portion of the parcel. However, it is important to note that the current study focused only on a small portion of the existing facility. The proximity of a previously identified subsurface habitation layer (i.e. Site 50-50-05-1777), and a subsurface habitation layer with associated human remains (i.e. Site 1778) to the northeast (*makai*) suggests that there may be undocumented sites contained in untested portions of this County administered parcel. Therefore, it is recommended that the State Historic Preservation Division review all future proposed construction/development plans for the Kaunoa Senior Center facility before any action is taken.

REFERENCES

Adler, Jacob
1966 Claus Spreckels: The Sugar King of Hawaii, University of Hawaii Press, Honolulu, HI.

Clark, Stephen D., and James Toenjes
1987 Archaeological Monitoring of Sewer Line Construction from Spreckelsville to Ku`au, Maui, State of Hawaii. Bishop Museum, Honolulu.

Fredericksen, Demaris, Walter Fredericksen, and Erik Fredericksen

1988 An Archaeological Inventory Survey Preliminary Report on a parcel of Land in Spreckelsville, Maui, prepared for A & B Properties Group, by Xamanek Researches, Pukalani, HI.

I'i, John Papa
1959 Fragments of Hawaiian History, Bishop Museum Press, Honolulu, HI.

Pukui, Mary K., Samuel Elbert and Esther Mookini
1994 Place Names of Hawaii, University of Hawaii Press, Honolulu, HI.

Speakman, Cummins E.
1978 Mowee: An Informal History of the Hawaiian Island, Peabody Museum of Salem, Salem, Mass.

Photographs

Photo 1 – General view to the northwest across the project area. Excavation of BT 1 complete.

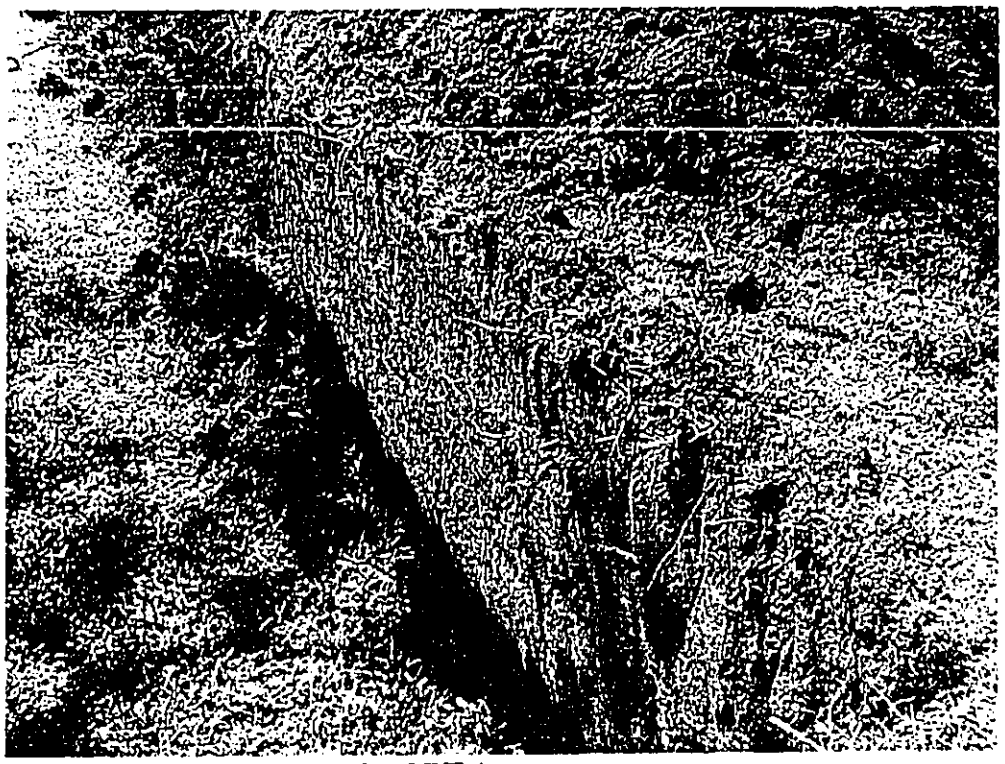


Photo 2 – View to the south of BT 1.

Photo 3 – View to the south across the project area; BT 1 at right, BT 2 at center.

RECEIVED AS FOLLOWS

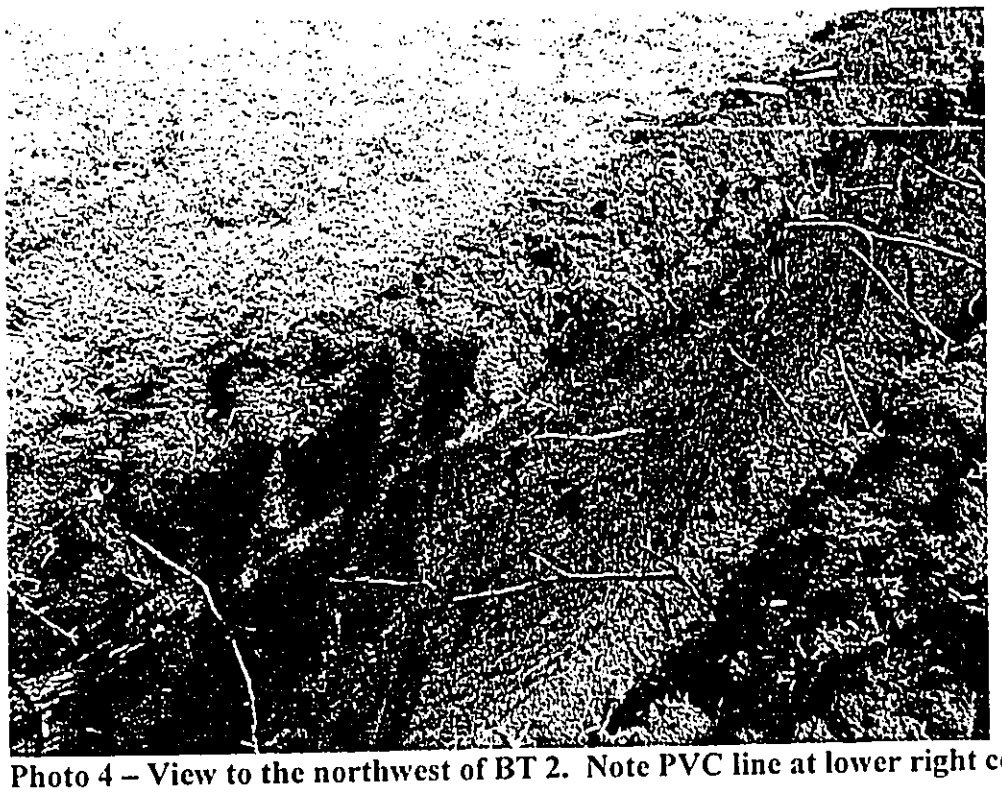


Photo 4 – View to the northwest of BT 2. Note PVC line at lower right corner.

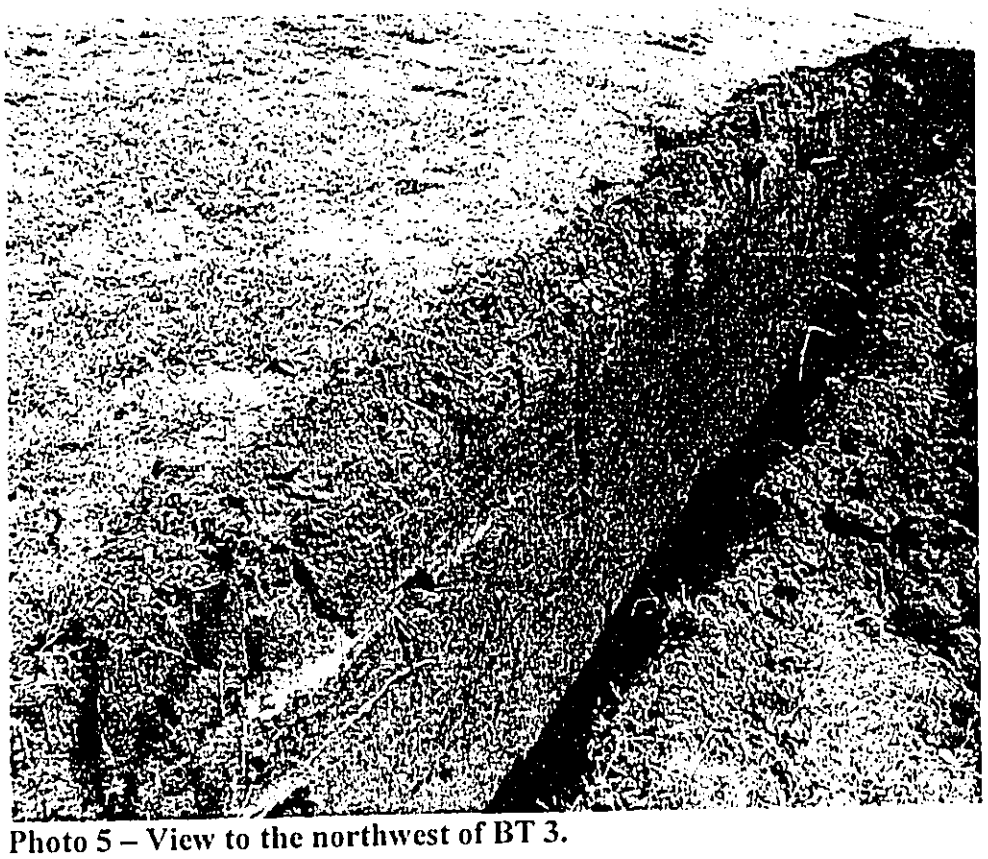


Photo 5 – View to the northwest of BT 3.

Photo 6 – View of a section of BT 5.

Appendix B

Sewer, Water and Drainage Assessments

August 11, 2003

OTOMO
ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS
305 SOUTH HIGH STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793
PHONE: (808) 242-0032
FAX: (808) 242-5779

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

Dear Mitch:

Subject: Kaunoa Senior Center
Dance Activity Center Wellness Building
T.M.K.: (2) 3-8-001: por. 008
Spreckelsville, Maui, Hawaii

Gerald Hiyakumoto has indicated that the estimated average daily use of the facility will be 150 people. It is my understanding that the majority of the users of the facility will be people who are at the Kaunoa Senior Center.

In view of the foregoing, there should be a nominal increase in the existing sewer and water demand due to the proposed project.

Feel free to call me if you have any questions or need additional information.

Sincerely,

Stacy A. Otomo

Stacy A. Otomo. P.E.
President

c: Gerald Hiyakumoto

PRELIMINARY DRAINAGE REPORT

FOR

KAUNOA SENIOR CENTER
DANCE ACTIVITY CENTER
WELLNESS BUILDING

Spreckelsville, Maui, Hawaii

T.M.K.: (2) 3-8-001: por. of 008

Prepared For:

Hiyakumoto + Higuchi Architects, Inc.
1860 Main Street
Wailuku, Maui, Hawaii 96793

Prepared By:

OTOMO
ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS
305 SOUTH HIGH STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793
PHONE: (808) 242-0032
FAX: (808) 242-5779

August 2003

TABLE OF CONTENTS

PRELIMINARY DRAINAGE REPORT
FOR
KAUNOA SENIOR CENTER
DANCE ACTIVITY CENTER
WELLNESS BUILDING

Spreckelsville, Maui, Hawaii

I. INTRODUCTION

The purpose of this report is to examine both the existing drainage conditions and proposed drainage improvements for the project.

In addition, this examination and plan has been prepared to determine the potential movement of soil due to rainfall and surface runoff from the project site, and to prepare for measures which will control erosion therefrom. This is in accordance with Chapter 20.08 "Soil Erosion and Sediment Control" of the Maui County Code as part of the application for the grading and building permits.

II. SITE LOCATION AND PROJECT DESCRIPTION

The subject parcel is identified as T.M.K.: (2) 3-8-001: 008, which contains an area of approximately 4.54 acres. The project site is bordered by vacant land to the north and west, Alakapa Place to the east, and Hana Highway to the south.

The proposed project consists of a 4,224 square feet dance activity center, paved access to the existing yard area, and paved parking stalls. Associated improvements includes grading, concrete walkways, utility connections, and landscaping.

III. EXISTING TOPOGRAPHY AND SOIL CONDITIONS

Presently, the site is being used as the Senior Opportunity Center (Executive Order No. 2715). Existing uses on the site are for administration offices, crafts/ceramics building, caretaker's residence, storage shed, restrooms, classroom building, multi-purpose building, courtyard, paved parking area, and grassed lawn.

The elevations at the proposed project site ranges from 13 feet at the southern limits to 10 feet at the northern limits, averaging about 2.5%.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the soil within the project site is classified as Molokai silty clay loam (MuA).

Molokai silty clay loam is classified as having moderate, slow runoff, and a slight erosion hazard.

IV. EXISTING DRAINAGE CONDITIONS

There are seven (7) existing structures and an asphalt paved parking area on the subject parcel. The remainder of the site is open with a few canopy trees and lawn.

Runoff from the proposed project site sheet flows in a south to north direction into the courtyard area. It then ponds in the low lying areas or eventually sheet flows into the ocean.

It is estimated that the existing 50-year storm runoff from the limits of the proposed project site is 0.2 cfs.

V. FLOOD AND TSUNAMI ZONE

According to Panel Number 150003 0190 C of the Flood Insurance Rate Map, September 6, 1989, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C, which represents areas of minimal flooding.

VI. PROPOSED DRAINAGE PLAN

After the development of the proposed project, it is estimated that the 50-year storm runoff will be 0.7 cfs, a net increase of 0.5 cfs.

Onsite runoff will be intercepted by grated catch basins and area drains located within the paved parking and landscape areas. The runoff will be conveyed to an onsite subsurface drainage system, where the runoff will be temporarily stored and allowed to percolated into the substrata.

The subsurface drainage system will be sized to accommodate the increase in runoff from the project site for a 50 year-1hour storm. There will be no additional runoff sheet flowing from the proposed project limits onto courtyard area or the adjoining properties. This is in accordance with Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui."

The drainage design criteria shall be to minimize any alterations to the natural pattern of the existing onsite surface runoff.

VII. HYDROLOGIC CALCULATIONS

The hydrologic calculations are based on the "Drainage Master Plan for the County of Maui," and the "Rainfall Frequency Atlas of the Hawaiian Islands," Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau.

Rational Formula Used: $Q = CIA$

Where Q = rate of flow (cfs)

C = rainfall coefficient

I = rainfall intensity for a duration equal to the time of concentration (in/hr)

A = drainage area (Acres)

See Appendix A for Hydrologic Calculations

VIII. SOIL EROSION CONTROL PLAN

A. General:

A dust screen will be installed around the areas of the proposed building which are adjacent to existing structures. A silt fence will be installed on the downstream end of the limits of work to capture any silt which may be transported by runoff.

B. Erosion Control Plan:

The following measures will be taken to control erosion during the site development period (estimated 6 months).

1. Minimize time of construction.
2. Retain existing ground cover until latest date to complete construction.
3. Early construction of drainage control features.
4. Use temporary area sprinklers in non-active construction areas when ground cover is removed.
5. Station water truck on site during construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).
6. Use temporary berms and cut-off ditches, where needed, for control of erosion.
7. Graded areas shall be thoroughly watered after construction activity has ceased for the day and on weekends.
8. All cut and fill slopes shall be sodded or planted immediately after grading work has been completed.

The development project is provided with adequate facilities for drainage control and storm water disposal. This, together with ultimate ground cover, shall preclude any appreciable onsite erosion.

IX. CONCLUSION

The proposed development is expected to generate a 50-year storm runoff volume of 0.7 cfs, with an increase of 0.5 cfs. The existing drainage pattern will be maintained.

The onsite runoff will be collected by catch basins and conveyed to onsite subsurface drainage system, which will be sized to accommodate the increase in runoff due the development of the project site. This is in accordance with Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui."

Therefore, it is our professional opinion that the proposed development will not have an adverse effect on the adjoining or downstream properties.

X. REFERENCES

A. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U.S. Department of Agriculture, Soil Conservation Service, August, 1972.

B. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau, 1962.

C. Flood Insurance Rate Maps of the County of Maui, September, 1989.

D. Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui, prepared by the Department of Public Works and Waste Management, County of Maui, 1995.

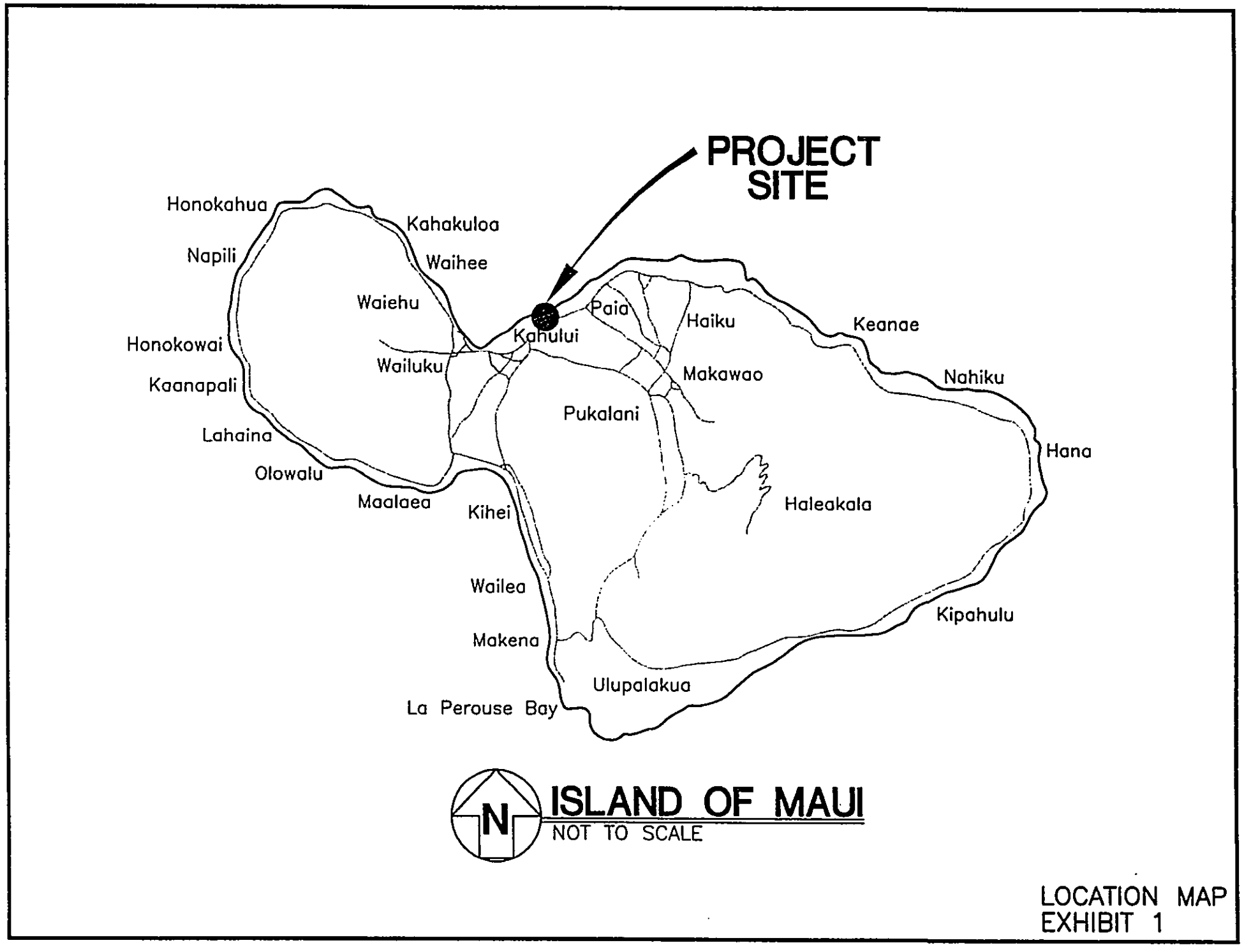
EXHIBITS

1 Location Map

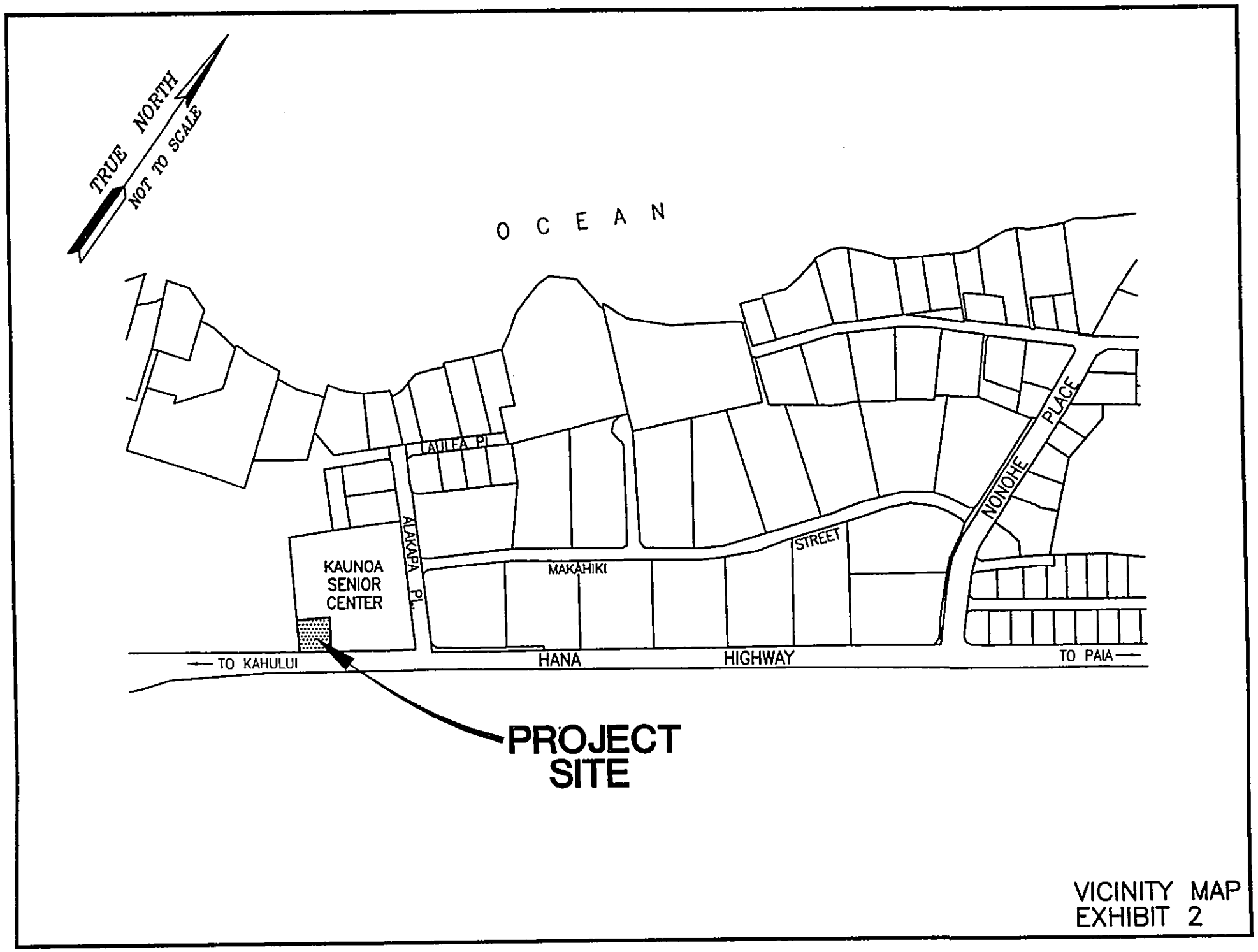
2 Vicinity Map

3 Soil Survey Map

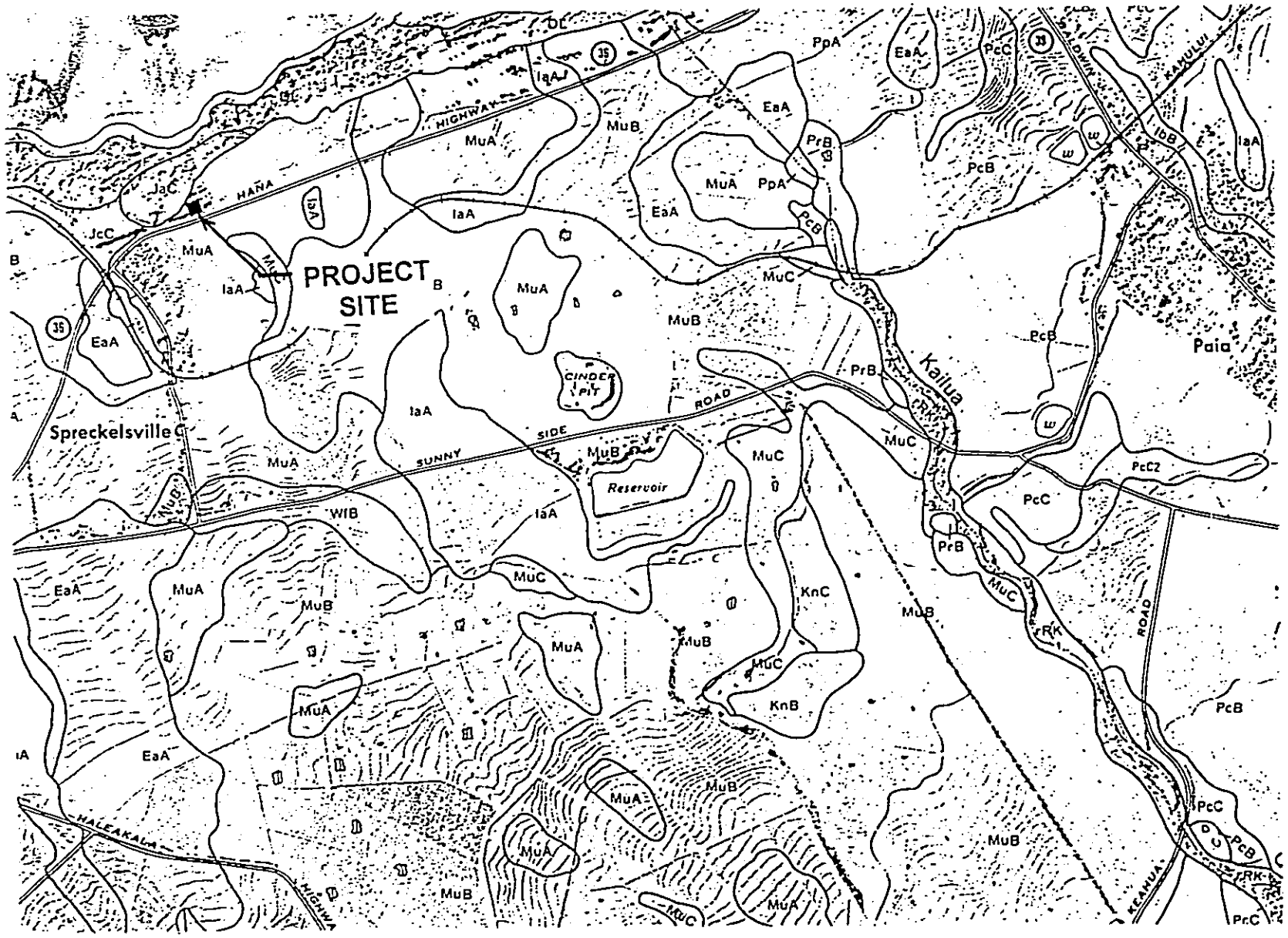
4 Flood Insurance Rate Map



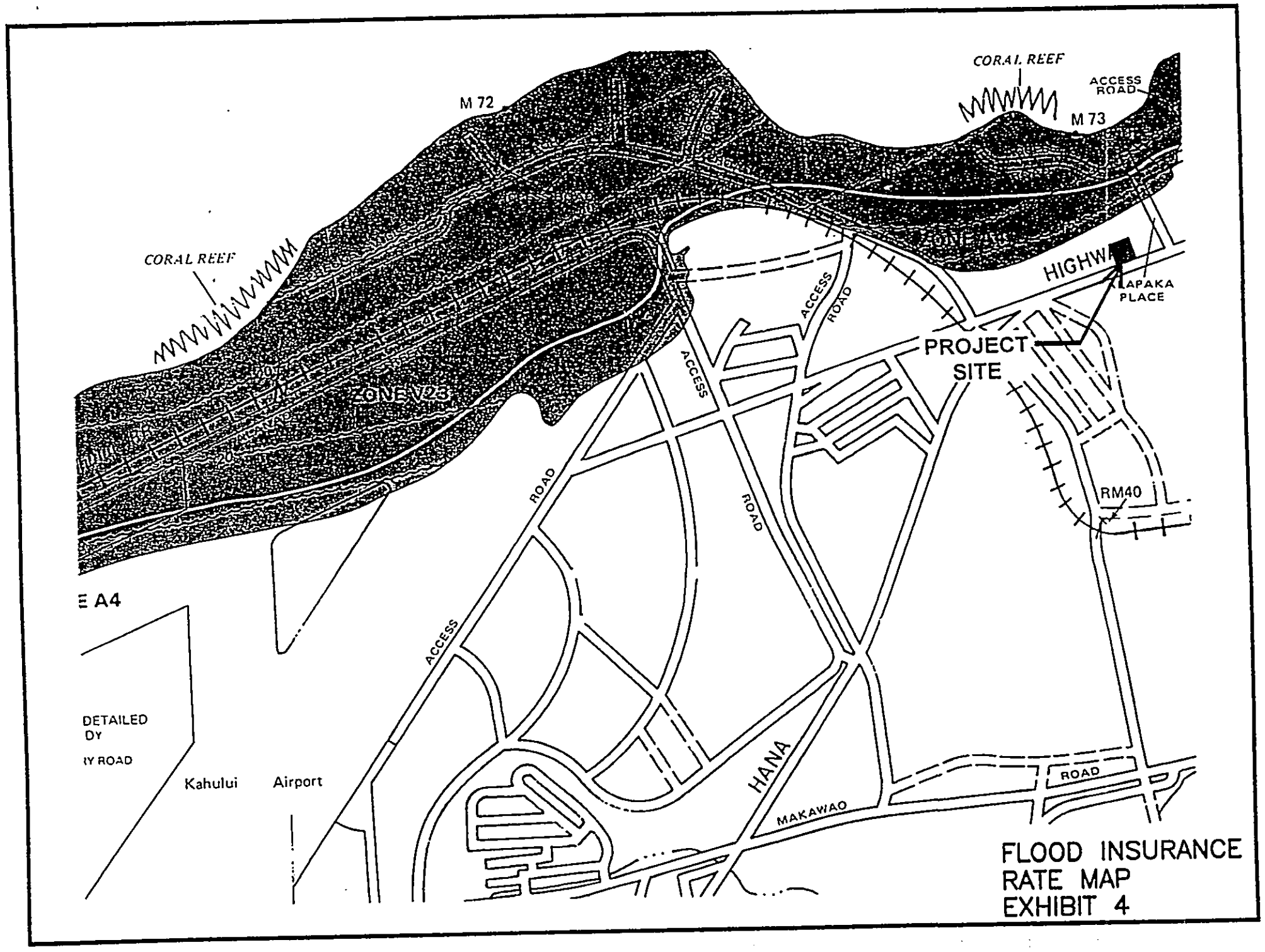
LOCATION MAP
EXHIBIT 1



VICINITY MAP
EXHIBIT 2



SOIL SURVEY MAP
EXHIBIT 3


CORAL REEF
M 72
CORAL REEF
ACCESS ROAD
M 73
ZONE A4
HIGHWAY
KAPAKA PLACE
ACCESS ROAD
PROJECT SITE
ZONE V23
ROAD
ACCESS ROAD
RM40
E A4
DETAILED
DY
IY ROAD
Kahului
Airport
ACCESS
HANA
MAKAWAO
ROAD
FLOOD INSURANCE
RATE MAP
EXHIBIT 4

APPENDIX A

HYDROLOGIC CALCULATIONS

Hydrologic Calculations

Purpose: Determine the increase in surface runoff from the development of the proposed project based on a 50-year storm.

A. Determine the Runoff Coefficient (C):

EXISTING CONDITIONS (OPEN AREAS):

Infiltration (Medium)	=	0.07
Relief (Flat)	=	0.00
Vegetal Cover (Good)	=	0.03
Development Type (Open)	=	0.15
	C =	0.25

EXISTING CONDITIONS (ENTIRE SITE):

Infiltration (Medium)	=	0.07
Relief (Flat)	=	0.00
Vegetal Cover (Good)	=	0.03
Development Type (Community)	=	0.45
	C =	0.55

DEVELOPED ROOFED AREAS:

Infiltration (Negligible)	=	0.20
Relief (Steep)	=	0.08
Vegetal Cover (None)	=	0.07
Development Type (Roof)	=	0.55
	C =	0.90

DEVELOPED PAVED AREAS:

Infiltration (Negligible)	= 0.20
Relief (Flat)	= 0.00
Vegetal Cover (None)	= 0.07
Development Type (Pavement)	= 0.55
C	= 0.82

Developed Areas = 0.12 Roofed Acres and 0.08 Paved Acres
Weighted Developed C = 0.86

B. Determine the 50-year 1-hour rainfall:

i_{50} = 2.5 inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition:

T_c = 25 minutes

I = 3.85 inches/hour

Developed Condition:

T_c = 25 minutes

I = 3.85 inches/hour

C. Drainage Area (A) = 4.54 Acres (Entire Project Site)

Note-the only change to the project site will be the increase in the total floor area of the proposed Dance Activity Center building of approximately 4,224 square feet and the paved parking areas and the concrete walkways. Therefore, the increase in runoff will be evaluated by the increase in impervious surfaces.

D. Compute the 50-year storm runoff volume (Q):

Q = CIA

Existing Conditions:

$$Q = (0.25)(3.85)(0.2)$$

$$= 0.2 \text{ cfs}$$

Developed Conditions:

$$Q = (0.86)(3.85)(0.2)$$

$$= 0.7 \text{ cfs}$$

The increase in runoff due to the proposed development is 0.7 - 0.2 = 0.5 cfs.

MUNEKIYO HIRAGA, INC.

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'04 MAY 14 P2:52

OFC. OF ENVIRONMENTAL QUALITY CONTROL

May 13, 2004

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

SUBJECT: Draft Environmental Assessment (EA) for
Kaunoa Senior Wellness Center

Dear Ms. Salmonson:

Thank you for your letter to Alice Lee (dated December 8, 2003) providing comments on the Draft EA for the subject project. On behalf of the applicant, the following information is provided in response to your comments.

Response to Comment on Sustainable Building Design

Sustainable building design considerations employed in site selection of the building include the following: Preservation of the existing landscape features; location of building on property to take advantage of air circulation for natural ventilation; accessibility of building from existing facilities and public transportation drop-off; and minimizing the building footprint by utilizing common corridors to minimize site degradation and improve efficiency. Discussion of the location of the building to facilitate accessibility from existing facilities and to preserve existing landscape features are included in the Final EA. The sustainable building design guidelines have been forwarded to the project design team for consideration in the development of the detailed design and material specifications. Sustainable building design considerations will be incorporated, as appropriate.

Response to Comment on Paving

Your comment regarding use of recycled glass in the paving materials, wherever possible will be forwarded to the project design team for consideration. We have also forwarded a copy of HRS Chapter 103D-407 regarding the recycled glass content requirement to the design team for their information.

environment
planning
government

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

Response to Comment on Landscaping

The siting of the proposed wellness center building and landscaping plan has been developed to maintain the existing mature Monkeypod trees and Coconut Palms which are prominent features of the subject property. The landscape plan also specifies the following Native plants: Nehe for ground cover; Anapanapa for shrubs; and Hibiscus (Koki`oke`oke`o) for hedges.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: Alice Lee, Department of Housing and Human Concerns
Robin Tanaka, Kaunoa Senior Center
Kivette Caigoy, Department of Planning
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
hhq\kaunoa\oeqc.deares

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

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
E-mail: oeqc@health.state.hi.us

December 8, 2003

Alice Lee
Department of Housing & Human Concerns
200 South High Street
Wailuku, HI 96793

Dear Ms. Lee:

Subject: Draft Environmental Assessment (EA) for **Kaunoa Senior Wellness Center**

We have the following comments to offer:

Sustainable Building Design: Please consider applying sustainable building techniques presented in the enclosed "Guidelines for Sustainable Building Design in Hawaii." In the final EA include a description of any of the techniques you will implement. Contact our office for a paper copy or go to our homepage at *http://www.state.hi.us/health/oeqc/guidance/sustainable.htm.*

Paving: Hawaii Revised Statutes 103D-407 requires the use of recycled glass in paving materials whenever possible. Please consider this for the paved areas.

Landscaping: HRS 103D-408 requires the use of native Hawaiian flora whenever and wherever possible. For the text of the sections of HRS on paving and landscaping contact our office for a paper copy or go to our website at *http://www.state.hi.us/health/oeqc/guidance/index.html*.

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

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

c: Mich Hirano