September 13, 2005

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

Dear Ms. Salmonson:

RE: Final Environmental Assessment for a Self-Storage Facility located at TMK: 4-5-007:004, Lahaina, Island of Maui, Hawaii (EA 2005/0004)

The Maui Planning Commission at its regular meeting on September 13, 2005, accepted the Final Environmental Assessment (FEA) for the subject project, and issued a Finding of No Significant Impact (FONSI). Please publish the FEA in the October 8, 2005, Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the FEA. If you have any questions, please call Ms. Kivette Caigoy, Environmental Planner, of our office at 270-7735.

Sincerely,

[Signature]

MICHAEL W. FOLEY
Planning Director

MWF:KAC:bsv
Enclosures

C: Wayne A. Boteilho, Deputy Director
   Kivette A. Caigoy, Environmental Planner
   Paul F. Fasi, Staff Planner
   Mark Roy, Munekiyo & Hiraga, Inc.
   EA Project File
   General File
   K:\WP_DOCS\PLANNING\EA\2005\0004\SelfStorage\OEQC Transmit FEA.wpd
Final Environmental Assessment
prepared in support of the
Special Management Area
Use Permit Application for the
PROPOSED WAINEE SELF STORAGE FACILITY AND RELATED IMPROVEMENTS
AT TMK (2) 4-5-07:04, LAHAINA, MAUI, HAWAII

Prepared for:
Finance Holdings, Ltd.
and
Accepting Authority,
Maui Planning Commission

September 2005
Final Environmental Assessment
prepared in support of the
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PROPOSED WAINEE SELF
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AT TMK (2) 4-5-07:04,
LAHAINA, MAUI, HAWAII

Prepared for: Finance Holdings, Ltd.
and Accepting Authority,
Maui Planning Commission

September 2005

MUNEKIYO & KIRAGA, INC.
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Executive Summary

Applicant: Finance Holdings, Ltd.
1164 Bishop Street, 10th Floor
Honolulu, Hawaii 96813

Type of Document: Final Environmental Assessment

Legal Authority: Chapter 343, Hawaii Revised Statutes

Agency Determination: Anticipated Finding of No Significant Impact

Applicable Environmental Assessment review "trigger": Use of lands within the Lahaina National Historic Landmark District

Location: Wainee Street
Lahaina, Maui, Hawaii, 96761

Accepting Authority: Maui Planning Commission
250 South High Street
Wailuku, Hawaii 96793
Contact: Kiyette Caigoy
Phone: (808) 270-7735

Consultant: Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Contact: Mark A. Roy
Phone: (808) 244-2015

Project Summary: The applicant, Finance Holdings, Ltd., is proposing the development of a self storage facility at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii. The property is located on Wainee Street (between Kenui Street and Papalaua Street) within the Lahaina National Historic Landmark District. The 18,638 square feet parcel of land is situated within the "Urban" State Land Use district, designated as "Business-Commercial" by the West Maui Community Plan and zoned as "B-2, Community Business" district by the Maui County Zoning. The proposed action will provide a business use and architectural design that is compatible with both surrounding uses and the overall character of Lahaina Town.
Preface

The applicant, Finance Holdings, Ltd., is proposing the development of a 22,780 square foot self storage facility on a parcel identified by TMK (2)4-5-07:04, Lahaina, Maui, Hawaii. Since the parcel is located within the limits of the Lahaina National Historic Landmark District, this Environmental Assessment (EA) has been prepared pursuant to Chapter 343, Hawaii Revised Statutes to document the project's technical characteristics, environmental impacts and alternatives. The EA advances findings and conclusions relative to the significance of the project.
Chapter 1

Project Overview
I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

The applicant, Finance Holdings, Ltd., is proposing the development of a self storage facility at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii. The subject property encompasses approximately 18,638 square feet and is located on Wainee Street (between Kenui and Papalaua Streets) within the Lahaina National Historic Landmark. See Figure 1. The property, identified as TMK (2)4-5-07:04, is bordered along its mauka (northeast) boundary by the Honoapiilani Highway. See Figure 2. The State of Hawaii's Pilani Elderly Housing Project is located to the northwest of the property, while the restaurant and shops associated with the Longhi Building are located to the immediate southeast of the property. Access to the property is via Wainee Street, a two-lane, improved County roadway which parallels Honoapiilani Highway.

With the exception of a few large mango trees and introduced weeds and grasses, the property is cleared and vacant. See Figure 3.

The subject property is located within the State Land Use "Urban" district. The West Maui Community Plan currently designates the property as "Business/Commercial". The parcel is designated "B-2, Community Business District" by Maui County zoning. In addition to the aforementioned land use designations, the parcel is within the County's Special Management Area (SMA).

The subject property is owned in fee by Finance Holdings, Ltd.
Figure 1  Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii Regional Location Map

Source: U.S. Geological Service, Lahaina Quad Map

Prepared for: Finance Holdings, Ltd.
Figure 2

Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii

Site Location Map
Figure 3 Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii Site Photography
B. **PROJECT NEED**

The project site is located within the town of Lahaina in an area of existing urban development. Business/commercial development within the vicinity of the project site is characterized by Anchor Square, West Maui Center, Lahaina Square, Lahaina Center, and the Lahaina Shopping Center. In this regard, the proposed self storage facility represents a land use in consonance with the existing urbanized lands near and around the project site. The proposed project is intended to support the Lahaina business, commercial and residential community by providing easily accessible self storage space.

C. **PROPOSED DEVELOPMENT**

The proposed action will provide a business use and architectural design that is compatible not only with the surrounding land uses in the immediate vicinity of the site, but one that also conforms to the overall character of Lahaina Town.

The proposed self storage building will occupy a building footprint of approximately 7,990 square feet. The maximum building height is set at 35 feet. While the building's exterior architectural elevations will depict a two (2) story configuration, the interior space will be separated into three (3) levels of storage space. See Figure 4. Total floor area provided by the three (3) levels is approximately 22,780 square feet. Related site improvements include the installation of underground utilities (e.g., sewer, water, drainage and electrical systems), paved parking and landscaping.

The proposed project use, design and operating hours have been specifically selected for compatibility with the neighboring Pilani Elderly Housing Project. Self storage is a low activity level and low impact use. Further, the posted hours of operation will be limited to daylight hours.
Figure 4
Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii

Conceptual Site Plan

Source: Eric S. Toguchi, AIA, (2009)
Prepared by Fumie Kojima, Ltd.
only. An office has been incorporated within the self storage facility design in order to allow a manager to be present onsite during working hours. The manager will monitor onsite activity and ensure that customers adhere to the use and operational parameters of the facility. A lockable access gate will also be installed at the entrance point from Wainee Street in order to further guarantee the effective regulation of customer access to storage units. It is noted that individual storage units shall not be utilized for retail purposes.

The estimated cost of the project is $1,025,100.00. Construction is anticipated to begin in the fourth quarter of 2006. Construction duration is estimated to be eight (8) months.

D. PERMITTING REQUIREMENTS
Inasmuch as the subject property is located within the County of Maui, Special Management Area (SMA), a SMA Use Permit is required from the Maui Planning Commission. In addition, the subject property is located within the Lahaina National Historic Landmark, triggering the Environmental Assessment (EA) requirement. Accordingly, this EA has been prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS).
Chapter II

Description of the Existing Environment
II. DESCRIPTION OF EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use
   The project site is situated on the fringe of Lahaina’s business/commercial district. Numerous retail and office commercial complexes are located in close proximity to the property. Land uses to the immediate south of the property, along Wainee Street, include the restaurant and shops associated with the Longhi (Commercial) Building, Kaiser Permanente’s Lahaina Clinic, and First Hawaiian Bank’s Lahaina Branch. The Lahaina Center is located across from the western boundary of the subject property, at the corner of Wainee Street and Papalaua Street. Honoapillani Highway, the West Maui Center, and the Lahaina Kaanapali & Pacific Railroad Station lie to the east of the property, with numerous commercial outlets fronting the highway north of Pioneer Mill Company Ltd.’s former sugar mill. In addition, Anchor Square, Lahaina Square, and the Lahaina Shopping Center are located along Wainee Street, to the south of its intersection with Papalaua Street. The State of Hawaii’s Pillani Elderly Housing Project complex borders the property to the north, with Hale Mahaolu’s Lahaina Surf apartment complex located to the north of the Lahaina Center parking lot.

2. Climate
   Like most areas of Hawaii, Lahaina’s climate is relatively uniform year-round. Lahaina’s tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions on Maui are, therefore, dictated by the inherent characteristics of local terrain.
Average daily temperatures in Lahaina typically range between 70 degrees and 88 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest.

Rainfall in West Maui is both low and highly seasonal in nature, with most precipitation occurring between the months of October and April when winter storms hit the area. Situated on the leeward side of the West Maui Mountains, this dry region receives most of its rainfall in late afternoon and early evening, after seabreezes take moisture upslope during the day.

The winds in the Lahaina area are also seasonal, although northeasterly tradewinds are predominant. Wind patterns also vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. This process reverses in the evening when breezes blow toward the relatively warm ocean.

3. **Topography and Soils**

The subject property is relatively flat, with a smooth and level terrain. The existing ground elevations range from approximately 24-feet at the mauka property line, to approximately 20-feet along Wainee Street. This elevation differential represents an average ground slope of approximately 1.8 percent from northeast to southeast.

Soils at the project site belong to the Pulehu-Ewa-Jaucas association. See Figure 5. The specific soil type at the project site consists of the Ewa Series’ Ewa Silty Clay Loam (EaA). See Figure 6. The Ewa Silty Clay Loam soil type is characterized by
Figure 5  Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii Soil Association Map

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

Prepared for: Finance Holdings, Ltd.
Figure 6  Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii Soil Classification Map

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

Prepared for: Finance Holdings, Ltd.
slopes from 0 to 3 percent, as well as having very slow runoff and very slight erosion hazard. Vegetation normally associated with this series include Fingergrass, Kiawe, Koa Haole, Klu and Uhaloa.

4. **Flood and Tsunami Zone**
The Flood Insurance Rate Map (FIRM) for this area of the island designates the project site as being within Zone "C". See Figure 7. Zone "C" indicates an area of minimal flooding. The entire site is located mauka (northeast) of coastal flood zones.

5. **Flora and Fauna**
The site has been previously cleared and, with the exception of a few mature mango trees, is sparsely vegetated with exotic weeds and grasses. There are no rare, threatened or endangered species of plants found at or in the vicinity of the property.

Animal life which may be found in this area is typical of the urbanized regions of West Maui. Domestic mammals found in the area include dogs and cats. Avifauna commonly found in this area include the common mynah, Japanese white-eye, spotted dove, barred dove and house finch. There are no known endangered or rare species found in the vicinity of the project site.

6. **Air Quality and Noise**
The subject property in general does not experience adverse air quality conditions. Airborne pollutants that do exist can largely be attributed to automobile exhaust from Honoapillani Highway and other surrounding roadways. There are large scale agricultural activities located in the nearby vicinity which would contribute to adverse air quality conditions.
Figure 7

Proposed Wainee Self Storage Facility and Related Improvements at
TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii

Flood Insurance Rate Map

Prepared for: Finance Holdings, Ltd.
Existing background noise in the vicinity of the site is principally attributed to traffic from the adjoining Honoapiilani Highway and the other surrounding local roadways.

7. **Archaeological and Historical Resources**
The subject property formerly housed an old single-family dwelling unit of which has since been cleared from the site. Given the extensive surface disturbance in the past, the property is not considered significant in terms of historic or archaeological resource value. See Appendix "A". The project site is, however, located within the boundaries of the Lahaina National Historic Landmark District, an area listed on the National Register of Historic Places. Given the presence of a number of Land Commission Awards (LCAs) in the surrounding area and the potential existence of subsurface deposits, an Archaeological Inventory Survey was completed for the project site by Archaeological Services Hawaii on August 4, 2005. No significant surface or subsurface archaeological resources were identified during the completion of fieldwork for the Archaeological Inventory Survey. See Appendix "A-1".

8. **Cultural Context**
The Lahaina District was considered to be a favorable place by high chiefs because of its natural resource qualities and its proximity to Lana'i and Moloka'i (Rosendahl, 1994). The majority of lands up to approximately the 700-foot elevation comprised a nearly continuous band of agricultural and related habitation features. Initial development of the field systems likely occurred between AD 1200 to 1400. Seasonal dryland agricultural practices
eventually evolved to year-round cultivation as water diversion and distribution improvements were implemented.

Historical accounts document Lahaina as an important population center. Such accounts note the continued presence of agriculture through the early 1800’s. Crops included taro, potatoes, yams and sugarcane.

With the decline of the whaling industry, which brought a new populace to Lahaina, the sugar industry began to evolve. The sugar industry was developed in the mid-1800’s and over the next few years, further developed with the eventual consolidation of multiple smaller mills into what is known today as Pioneer Mill Company, Ltd. As with other sugar plantation communities, the late 1800’s and early 1900’s saw the rapid expansion and growth of the Pioneer Mill Company. In the early part of the 20th century, Pioneer Mill controlled approximately 12,500 acres of land (Xamanek Researches, 2000). A 1919 map by W.E. Wall further reveals that approximately 15,000 acres were under sugarcane cultivation by Pioneer Mill (Rosendahl, 1989.) Sugar cultivation areas extended from Ukumehame to Honokowai.

In addition to sugar, pineapple was established as a viable commercial crop in West Maui. Baldwin Packers opened a cannery in Lahaina in 1919 to provide the product processing component of the pineapple industry. Pineapple cultivation lands are generally delineated from Honokowai, north to Honokohau.

The historic significance of Lahaina Town itself is well documented. Lahaina was the home of Kahekili until his death in 1794 (Spenser
Mason Architects/Austin Tsutsumi & Associates, Inc., 1988). It became the home of Kamehameha I and was designated the capital of the Hawaiian Kingdom until 1843. Evidence of this historic era is apparent today, and includes remnants of Kamehameha's Brick Palace which was built at Lahaina Harbor in 1803 (Belt Collins & Associates, 1992).

The restoration of Moku'ula, the royal residence of King Kamehameha III, is further evidence of the historic significance of Lahaina to the former Kingdom of Hawaii. According to legend, Moku'ula was built over a grotto of the highest protector mo'o goddess, Kihawahine, who swam in the surrounding Mokuhinia. The goddess, Kihawahine was frequently evoked by Kamehameha I during his conquest of the Hawaiian Islands (P. Christian Klieger, 1998).

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

The project site is located along the Honoapiilani Highway in Lahaina. This highway represents West Maui's sole access route to the central and southern areas of Wailuku, Kahului and Kihei. Despite the urbanized nature of the surrounding area, scenic resources in the vicinity of the site include the West Maui Mountains to the east, as well as the Pacific Ocean and the offshore island of Lanai, both of which can be seen off to the west beyond the Front Street coastal area. Other open space resources in the region include the vast expanse of agricultural lands that lie between the mountains and the existing urbanized areas. The project site itself is not a part of a scenic corridor.
B. **Socio-Economic Environment**

1. **Regional Setting**
   The majority of lands in West Maui are either designated by the State as "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the foothills of the West Maui Mountains.

   "Urban" designated lands occupy the lower elevations along the coast and include the communities of Lahaina, Kahana-Napili-Kapalua and Kaanapali. The resort communities north of Lahaina include hotels and visitor-oriented condominiums. Lahaina, meanwhile, is more typical of a small town center. The town contains several shopping centers and retail business areas, and serves as a core for the region's residential housing.

   Part of West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by its many white-sand beaches and scenic landscape. Visitor accommodation can be found in Lahaina as well as the resort communities of Kaanapali, Honokowai, Kahana, Napili and Kapalua.

   The Kapalua-West Maui Airport at Mahinahina, owned by the State of Hawaii, Department of Transportation, conveniently links West Maui to Oahu and other neighbor islands.

2. **Population**
   The resident population of the West Maui Community Plan region has demonstrated a substantial increase over the last two decades. Population gains have been especially evident over the last 30 years as the rapidly developing visitor industry has attracted many
new residents. The population of the Lahaina region rose from 14,574 to 17,967 persons over the 10-year period from 1990 to 2000, an increase of 23.3 percent (SMS, 2002).

The resident population is further expected to increase by 41.5 percent over the next 20 years with projections for the years 2010 and 2020 set at 21,663 and 25,431 persons, respectively (SMS, 2002).

Population growth at the County level exhibits a similar pattern. The County’s 1990 resident population of 91,361 increased 28.8 percent to 117,644 by 2000 (SMS, 2002). A 36.1 percent growth in the resident population of the County is expected over the next 20 years, with projections to the years 2010 and 2020 estimated at 138,665 and 160,090, respectively (SMS, 2002).

3. **Economy**

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. Major hotels in this region include the Hyatt Regency Maui, Maui Marriott Resort and Ocean Club, Westin Maui, the Sheraton Maui, the Kapalua Bay Hotel & Villas, and the Ritz-Carlton.

West Maui's visitor orientation is reflected in the unique character and history of Lahaina Town, which serves as a center for retail outlets, as well as tourism activities.
In addition to the visitor industry, pineapple cultivation is established as a vital component of the West Maui economy. Lands owned by the Maui Land and Pineapple Company remain an important component of the region's agricultural base. The closure of the Pioneer Mill in 1999 marked the end of sugar cane cultivation in the West Maui region.

C. PUBLIC SERVICES AND INFRASTRUCTURE

1. Solid Waste Disposal
   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 at the County's 55-acre Central Maui Landfill, located four (4) miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill also accepts commercial waste from private collection companies.

   A refuse transfer station located about six (6) miles south of the project site at Olowalu serves West Maui residents and accommodates household refuse and green waste, as well as used oil; no commercial waste is accepted at this facility. A private waste disposal service has been contracted by the County to transport waste from this facility to the Central Maui Landfill.

2. Medical Facilities
   The only major medical facility on the island is Maui Memorial Medical Center, located approximately twenty (20) miles from Lahaina, midway between Wailuku and Kahului. The 196-bed facility provides general, acute, and emergency care services.
In addition, medical services are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente's Lahaina Clinic.

3. **Police and Fire Protection**

The project site is within the Maui Police Department's service area, which services all of the Lahaina district. The Department's Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately one (1) mile east of the project site. The Lahaina Patrol includes 54 full-time personnel, including one (1) captain, one (1) lieutenant and 39 police officers. The remaining six (6) personnel consist of public safety aides and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District are provided by the Department of Fire and Public Safety's Lahaina Fire Station, located in the Lahaina Civic Center and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili Fire Station consists of an engine company including 15 full-time firefighting personnel.

4. **Educational Facilities**

The West Maui area is served by four (4) public schools operated by the State Department of Education: Lahainaluna High School, Lahaina Intermediate School, King Kamehameha Elementary III School, and Princess Nahienaena Elementary School. The region is also served by privately operated pre-elementary and elementary schools, such as Sacred Hearts Elementary School on Dickenson Street.
5. **Recreational Facilities**

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are approximately 20 County parks in West Maui. About one-third of the County parks are situated along the shoreline and provide for excellent swimming, diving, and snorkeling, as well as fishing, surfing, picnicking, sunbathing and other shoreline-related activities.

In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use.

Recreational facilities in close proximity to the proposed site include the Lahaina Aquatic Center, Puamana Park, Malu Ulu Olele Park, and Lahaina Recreation Center.

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D. **INFRASTRUCTURE**

1. **Transportation**

Honoapiilani Highway (State Highway 30) is the main roadway serving the West Maui region. This highway is the only link between West Maui and the rest of the island (although an unimproved segment of highway extends around the north coast of the island to Waihee, providing limited access). The highway has a typical two-lane configuration except for a segment between Kaanapali and Lahaina where four (4) travel lanes are provided. Papalaua Street and Kenui Street link Honoapiilani Highway with Front Street.

Wainee Street, a two-lane County roadway aligned on a north-south axis, parallels Honoapiilani Highway and intersects both Papalaua Street and Kenui Street. Access to the site is offered via
Wainee Street, which fronts the project site. The property, therefore, falls within the block defined by the Wainee Street/Papalaua Street intersection and the Wainee Street/Kenui Street intersection.

2. **Water Systems**
The West Maui region is served by the County's Department of Water Supply water system. The West Maui water system services the coastal areas from Launulupoko to Kaanapali and from Honokowai to Napili. Two (2) surface sources and nine (9) wells are used to supply the County domestic system (County of Maui, May 2003). In addition to the County system, the West Maui region is served by private water systems, which service the Kaanapali and Kapalua Resorts. An existing 12-inch diameter waterline along Wainee Street fronting the project site is available to service the domestic water and fire flow requirements of the project site. See Appendix "B".

3. **Wastewater Systems**
The County's wastewater collection and transmission system and the Lahaina Wastewater Reclamation Facility (LWRF) accommodate the region's wastewater needs. The LWRF is located in Honokowai along Honoapiilani Highway just north of Kaanapali Resort. The cumulative wastewater flow currently allocated to the LWRF is approximately 6.14 MGD or 92 percent of the 6.7 MGD design capacity (County of Maui, May 2003). There is approximately 5 MGD of wastewater being processed at the plant daily. Wastewater from the subject property will be conveyed to an existing 8-inch diameter gravity sewer lateral located along Wainee Street. A series of force mains and gravity lines convey
wastewater from Lahaina Town to the LWRF. Refer to Appendix "B".

4. **Drainage**

The drainage infrastructure in Lahaina Town generally consists of short, small capacity culverts with grated inlets along roadways which outlet to the ocean (County of Maui, May 2003). There are currently no drainage facilities onsite or immediately fronting the project site.

Surface runoff generated on the property sheetflows across the project site in an east to west direction towards Wainee Street. Runoff flows southeast along the existing roadway gutter on Wainee Street, until it is intercepted by the drainage system located at the corner of Wainee Street and Papalaua Street. Flows are then conveyed via existing drainlines to the ocean.

It is estimated that the existing 50-year storm runoff from the project site is 0.53 cubic feet per second (cfs). See Appendix "C".

5. **Electrical and Telephone Services**

Electrical and telephone service to the West Maui region is provided by Maui Electric Company and Hawaiian Telcom, respectively. Existing overhead utility lines are located along Wainee Street across from the project site. Refer to Appendix "B".
Chapter III
Potential Impacts and Mitigation Measures
III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Use
The subject property is located within the commercial district of Lahaina Town. Uses to the east (across Honoapillani Highway), west, and south of the property include retail, dining, banking, medical and other business establishments. The Pilani Elderly Housing Project borders the property to the north. The proposed use of the property for self storage facility is low-impact in nature and offers a transitional use between the high-activity commercial uses (e.g., shopping centers and restaurant) to the south, and the Pilani Elderly Housing Project to the north. The proposed building will be designed to complement its surrounding environs and will be used for storage purposes only, during normal daytime business hours. An onsite manager, as well as a lockable access gate, will ensure customer compliance with requirements of operations. In this regard, the proposed use of the property for a self storage facility is considered to have no adverse impacts upon the surrounding environs.

2. Flora and Fauna
The property has been previously cleared and graded and is located within an urbanized area of Lahaina Town. The removal of the existing flora and the displacement of fauna from the site is not considered a significant adverse impact.

3. Air Quality
Air quality impacts attributed to the project will include dust generated by short-term, construction-related activities. Site work such as clearing, grubbing and grading, and utilities construction for
example, will generate airborne particulates. Best Management Practices (BMPs) incorporating various dust control measures, such as regular watering and sprinkling, will be implemented to minimize nuisance impacts on adjacent residents.

There are no long-term air quality impacts anticipated from the project.

4. **Noise**
As with air quality, ambient noise conditions will be temporarily impacted by construction activities. Heavy construction equipment, such as front-end loaders, and materials-carrying trucks and trailers, would be the dominant source of noise during the site construction period. Proper equipment and vehicle maintenance are anticipated to minimize noise levels. In addition, equipment mufflers or other sound attenuating devices will be utilized as required in order to reduce nuisance impacts. Construction activities will be limited to normal, daylight working hours.

It is noted that special care will be exercised to reduce noise impacts across all project phases in consideration of the neighboring Pillani Elderly Housing Project.

From a long-term perspective, the proposed project is not anticipated to generate adverse noise impacts.

5. **Archaeological Historic Resources**
The subject property, which previously contained a single-family residence, has been cleared and graded and is not considered significant in terms of historic or cultural resource value. The State
Historic Preservation Division (SHPD) was consulted in 1998/1999 during the preparation of a previous Change in Zoning (CIZ) request for the subject property. In letters dated November 23, 1998 and March 18, 1999, the SHPD indicated that the subject property may have once been the location of pre-contact agriculture and possibly scattered housing. However, 20th century residential development has since altered the landscape, making it unlikely that any historic sites remain intact. Refer to Appendix "A". An archaeological inventory survey was completed for the subject property on August 4, 2005 by Archaeological Services Hawaii due to the location of the site in the Lahaina National Historic Landmark District and the presence of a number of Land Commission Awards (LCAs) in the surrounding area. No significant surface or subsurface archaeological resources were identified during completion of fieldwork for the Archaeological Inventory Survey. Refer to Appendix "A-1".

6. Cultural Impact Considerations

To obtain a broader range of cultural perspectives in the proposed project area, an interview with a knowledgeable informant was conducted during the preparation of the Draft Environmental Assessment. Information provided by interview held with Stuart Kahan follows.

**Stuart Kahan**

Stuart Kahan, president of the Pillani Elderly Housing Project Community Association was interviewed at 11:30 a.m. on Wednesday, March 16, 2005. The interview was carried out following a community meeting and project overview with members of the Pillani Elderly Housing Project.
Mr. Kahan first moved to Lahaina in 1978. He has been a long-term resident at the Piilani Elderly Housing Project for almost 15 years. Before becoming disabled and moving into the project, Mr. Kahan held a variety of jobs and residences in the West Maui area, including working and living on fishing boats. He recalled living adjacent to the old Lahaina Cannery site and that this area (located north of the Wainee Self Storage property) was frequently inundated by flood water from Kahoma Stream.

Mr. Kahan noted that the Piilani Elderly Housing Project was originally constructed in 1969. He also recalled that much of the surrounding area, especially from Baker Street to Papalua Street, was cultivated for sugar cane by Pioneer Mill. He mentioned that the Lahaina Sugar Cane Train was in operation at that time and that the Pioneer Mill facilities were located across the street along Honoapiilani Highway. Mr Kahan mentioned that the Honoapiilani Highway, which was a two-lane road at that time, was not widened until sometime between 1984 and 1989.

When asked about the subject property in 1978, he mentioned that a single-family residential house existed on the site. It was an old plantation house, set back approximately 30 to 50 feet from the road, and was owned and occupied by Arthur Horswell and his family. Arthur and his wife raised their family in the house. He also recalled the demolition of the Horswell house in the early 1980's.

Mr. Kahan could not recall any cultural practices taking place on the subject property. He did, however, note that the property had acted in the past as a buffer, between the commercial and residential areas along Wainee Street. He likes the greenery of the site but emphasized that the subject property has attracted homeless people and other problems (e.g., trashing, fighting, etc.) in recent years. While Mr. Kahan stated support for the proposed project, he also stressed the importance of reassuring elderly residents in the area that safety and security will continue to be a priority in both the development and operational phases of the self storage facility.
Cultural Assessment
Based on State archaeological reviews, land use history and information gained from the informant interview, the proposed project is not anticipated to have an adverse impact upon cultural resources. The site is in the midst of the urbanized Lahaina area and was previously used for single-family purposes. There are no cultural practices conducted on the property and the site's limited size and locational context does not indicate any adverse implications for cultural practices and resources.

7. Scenic and Open Space Resources
The proposed improvements will integrate a low-rise structure (35 feet), landscaping, and parking to provide facilities which satisfy spatial requirements and are compatible with the overall character of both the surrounding environment and Lahaina Town. In addition, the building will be compatible in height and mass with surrounding structures and will be in keeping with the existing townscape.

It is noted that the self storage facility has been designed in accordance with the Lahaina Design Guidelines.

The subject property is not part of a scenic corridor and will not affect views from inland vantage points. Accordingly, the proposed project is not anticipated to have an adverse impact upon the visual character of the surrounding area.

B. IMPACTS TO THE SOCIO-ECONOMIC ENVIRONMENT
The proposed development of a self storage facility on the subject property will support the construction industry in the short term. In the
long term, the proposed self storage facility will serve as a business use which will meet the needs of local residents and businesses seeking readily accessible storage space.

In itself, the project is not of a scale or magnitude which will affect the local population base. The project is intended to meet the increasing need for storage space by residents and businesses.

C. **IMPACTS TO PUBLIC SERVICES**

Inasmuch as the proposed use of the property is not expected to increase the resident or visitor population, impacts of the proposed action upon public services are not anticipated. Specifically, demands upon existing recreational and educational facilities will not be adversely impacted by the proposed development of a self storage facility. Similarly, the proposed project will not significantly affect the requirements or service areas for fire and police operations.

D. **IMPACTS TO INFRASTRUCTURE**

1. **Roadways**

   A Traffic Assessment Report (TAR) was prepared in February 2005 by Wilson Okamoto Corporation in order to address any potential impacts along Wainee Street. See Appendix "D". A field investigation was conducted on January 18 and 19, 2005 and consisted of both manual-turning movement count surveys and 24-hour mechanical count surveys. The TAR includes an analysis of existing traffic flows along Wainee Street (from Papalaua Street to Kenui Street), as well as potential impacts to Wainee Street at its intersections with Kenui Street and Papalaua Street. Despite historical trends indicating a relatively steady net decrease in traffic demands in the project vicinity, an annual traffic growth rate of 2
percent was conservatively assumed and applied to existing traffic
data to achieve projected Year 2007 traffic demands. The TAR
concluded that traffic operations in the Year 2007 both with or
without project conditions are expected to remain similar to existing
conditions. Based on the analysis of the projected traffic impacts,
the following recommendations were made for incorporation in the
overall project design in order to maintain safe and efficient traffic
operations.

1. Maintain sufficient sight distances for motorists to safely
   enter and exit the project access driveway.

2. Provide adequate turn-around area for service, delivery, and
   refuse collection vehicles to maneuver on the project
   property. Avoid vehicle-reversing maneuvers onto County
   Streets.

3. Provide sufficient driveway width and storage to
   accommodate safe vehicle ingress and egress. If a gated
   entry is provided at the driveway, ensure a minimum of one
   vehicle-storage (25 feet) is provided from the road travelway
   in the driveway design.

4. Provide sufficient turning radii at driveway for vehicular
   ingress and egress clearances.

The proposed self storage facility is not expected to significantly
impact traffic operations in the vicinity of the project site.

2. **Water**

Water will be provided by the Department of Water Supply's
Lahaina-Alaeloa water system. The domestic water and irrigation
demand for the proposed self storage facility is not anticipated to
have an adverse effect on existing County water source and
storage facilities, as well as water transmission and distribution
systems. Total water consumption for the project will be minimal
due to the low use nature of the proposed self storage facility. As mentioned previously, the facility will be operated by a single onsite manager during designated hours of operation. Customer access to the facility will be restricted to daylight hours only. Water consumption for the project is estimated at 900 gallons per day (GPD), a figure based on projected requirements for the single onsite restroom facility, exterior hosebibs, as well as the proposed landscape irrigation system.

As part of the building permit process, domestic water and fire flow calculations will be provided to determine the adequacy of the existing water system in accordance with the rules of the Department of Water Supply. All water system improvements will be designed in accordance with applicable regulatory design standards.

3. **Wastewater**

The proposed project is not anticipated to impact existing County wastewater collection and treatment facilities. Based on the estimated water use for the project, wastewater generation is estimated at 180 GPD. All wastewater system improvements will be designed in accordance with appropriate regulatory design criteria. The development schedule for the proposed self storage facility will be coordinated with the Department of Public Works and Environmental Management's Wastewater Reclamation Division to assure availability of treatment capacity at the Lahaina Wastewater Reclamation Facility.
4. **Drainage and Erosion Control**

The existing 50-year storm runoff from the project site is estimated at 0.53 cubic feet per second (cfs). Under project conditions, it is estimated that the 50-year storm runoff will be 1.75 cfs, a net increase of approximately 1.22 cfs.

The proposed drainage plan for the project provides for the installation of an underground drainage system consisting of catch basins located within the paved parking area of the subject parcel. Refer to Appendix "C". Surface runoff from the project site will be intercepted by these grated catch basins and conveyed to the proposed onsite subsurface drainage system. The subsurface drainage system will be sized to accommodate the increase in runoff from the project site for a 50-year, 1-hour storm event.

No additional surface runoff sheet flowing from the subject property onto Wainee Street is anticipated under project conditions. The proposed grading and drainage design for the site will, therefore, not adversely impact adjacent and downstream properties. Refer to Appendix "C".

Soil loss will be minimized during the construction period through the implementation of appropriate BMPs and erosion control measures, including but not limited to:

1. Minimizing the time of construction.
2. Retaining existing ground cover until the latest possible date to complete construction.
3. Initiating the early construction of drainage features.
4. Using temporary area sprinklers in non-active construction areas when ground cover is removed.

5. Stationing water truck on site during construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).

6. Using temporary berms, filter berms, and cut-off ditches, where needed, for control of erosion.

7. Ensuring graded areas are thoroughly watered after construction activity has ceased for the day and on weekends.

8. Ensuring all cut and fill slopes are sodded or planted immediately after grading work has been completed.

All drainage improvements will conform to County standards and will be coordinated with the Department of Public Works and Environmental Management.
Chapter IV
Relationship to Land Use Plans, Policies and Controls
IV. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205A, HRS, all lands in the State have been divided and placed into one (1) of four (4) land use districts by the State Land Use Commission. These land use districts have been designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is located within the State "Urban" district. See Figure 8. The proposed action is compatible with, and deemed permissible within, the State "Urban" land use district.

B. MAUI COUNTY GENERAL PLAN

The 1990 update of the Maui County General Plan establishes broad objectives and policies to guide the long-range development of the County. As indicated by the Maui County Charter,

"The general plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns, and characteristics of future developments."

The proposed action is in keeping with the following General Plan objectives relating to land use, economic activity and urban design:

LAND USE

Objectives:

• To use the land within the County for the social and economic betterment of the County's residents.

• To preserve for present and future generations existing geographic, cultural and traditional community lifestyles by
limiting and managing growth through environmentally
sensitive and effective use of land in accordance with the
individual character of the various communities and regions
of the County.

**Policy:**

- Formulate a directed land use growth strategy which will
  encourage the redevelopment and infill of existing
  communities allowing for mixed land uses where
  appropriate.

**ECONOMIC ACTIVITY**

**Objective:**

- To provide an economic climate which will achieve the
  controlled expansion, and diversification of the County's
  economic base.

**Policy:**

- Maintain a diversified economic environment compatible with
  acceptable and consistent employment.

**URBAN DESIGN**

**Objective:**

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

**Policy:**

- Require that appropriate principles of urban design be
  observed in the planning of all new developments.

C. **WEST MAUI COMMUNITY PLAN**

The project site is located in the West Maui Community Plan region, one
(1) of the 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 development in the region.

Land use guidelines are established by the West Maui Community Plan land use map. The subject property along Honoapiilani is designated "Business/Commercial" by the Community Plan land use map. A Sliver of "Open Space" along the Honoapiilani Highway right-of-way borders the property along its eastern extent. See Figure 9. The proposed self storage facility is in keeping with the uses designated by the West Maui Community Plan.

The West Maui Community Plan sets forth goals which are statements identifying preferred conditions. Goals, objectives, policies, and planning standards associated with the development of the proposed project include the following:

GOALS, OBJECTIVES AND POLICIES

Goal (Land Use):

- An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region’s open space areas and natural environmental resources.

Objectives and Policies for Lahaina Town:

3. Provide resident-oriented commercial uses along Wainee Street from Baker to Dickenson Streets.

Goal (Environment):

- A clean and attractive physical, natural and marine environment in which man-made developments or alterations to the natural and marine environment are based on sound environmental and ecological practices, and important scenic and open space
Figure 9  Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii West Maui Community Plan Designations

Source: County of Maui, Planning Department

Prepared for: Finance Holdings, Ltd.
resources are preserved and protected for public use and enjoyment.

Objective:
- Promote drainage and storm water management practices that prevent flooding and protect coastal water quality.

Goal (Economic Activity):
- A diversified economy that provides a range of stable employment opportunities for residents, allows for desired commercial services for the community, and supports the existing visitor and agricultural industries, all in a manner that will enhance both the community's quality of life and the environment.

Objectives and Policies:

2. Promote a diversified economic base which offers long term employment to West Maui residents and maintains overall stability in economic activity in the areas of:
   d. Resident-related service/commercial services.

3. Expand light industrial and service commercial activities in appropriate locations to accommodate the region's needs.
   a. Enhance Lahaina town's role as the regional center for resident-related commercial and professional services.
   b. Encourage neighborhood commercial activities and professional services to serve existing and future residents.

Planning Standards

Planning standards are specific guidelines or measures for development and design. These standards clarify the intent of the land use and town design objectives and policies, as well as the Community Plan's Land Use Map.
1. **Land Use Standards**

   g. Due to an adjacent senior citizen housing, business/commercial use of the parcel identified as TMK 4-5-07:04, Lahaina, Maui, Hawaii, shall be restricted to office type uses during daylight hours.

In accordance with the Community Plan, the business/commercial use of the property will be restricted to daylight hours due to the proximity of the Pillani Elderly Housing Project. The proposed self storage facility is deemed a low-impact use, meeting the intent of the aforementioned land use standard.

D. **COUNTY ZONING**

   The subject property is designated "B-2, Community Business District" by Maui County zoning.

   This zoning was established through Ordinance No. 2827, which was approved by the Maui County Council in February 28, 2000. See Appendix "E". Conditions of zoning were adopted and include the following:

   • That the uses on the site shall be limited to business offices, financial offices, and professional offices, as well as uses permitted in the B-1 Neighborhood District, excluding churches, day care, laundromats, gas stations, and liquor stores.

   • That the height limit shall be restricted to 35 feet.

   • That the architectural design, signage, and landscaping shall be compatible with the Design Guidelines for the Lahaina Historic District.
E. LAHAINA HISTORIC DISTRICT DESIGN GUIDELINES

As mentioned previously, the subject property falls within the boundary of the Lahaina National Historic Landmark. Although, not located in either of the two (2) Lahaina Historic Districts, as defined in Title 19.50.010, Zoning of the Maui Country Code, the following principles of the Lahaina Design Guidelines (Nore V. Winter, 2003) have been incorporated into the overall design of the proposed self storage facility.

1. Design Character

New buildings should be distinguishable as more recent additions to the community, albeit in a subtle way that the overall historic character is conveyed. Regardless of stylistic treatment, a new building should appear simple in form and detail. Buildings should also be visually compatible with older structures, without being direct copies of them.

2. Mass, Scale and Form

The architecture of Lahaina has been built on simple straightforward geometric principles. A new building’s overall form should be one of simplicity. The mass and scale of buildings in Lahaina are also key considerations that affect compatibility. The overall height, width and depth of the building should reflect those of traditional buildings in the district.

3. Building Materials

New buildings should reinforce the pedestrian-oriented character of Lahaina by conveying a sense of human scale. This can be achieved by using traditional building materials, such as doors, windows, and wood siding. The type of materials used should be selected from those used historically in the district. If a new
material is selected it should have a simple finish, similar to those seen traditionally.

4. **Roof Forms and Materials**

Simple roof shapes were the predominant form found throughout Lahaina. Roof materials for new buildings should be used in a manner similar to that seen traditionally in the district.

It is noted that the project site is located on the fringe of Lahaina’s business/commercial district between the Longhi Commercial Building and the Pilani Elderly Housing Project. The proposed self storage facility has, therefore, been architecturally designed to provide a transitional use between existing high-activity commercial uses to the south of the subject property and the elderly housing to the north along Wainee Street.

**F. COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA**

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

An application for an SMA Use Permit will be prepared and submitted to the Maui Planning Commission for review and approval.
1. **Recreational Resources**

   **Objective:** Provide coastal recreational opportunities accessible to the public.

   **Policies:**
   
   a. Improve coordination and funding of coastal recreation 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 recreation 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 sandy 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 use 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, County Planning Commissions and crediting such dedication against the requirements of Section 46-6 of the Hawaii Revised Statutes.

**Response:** The proposed action is not anticipated to impact coastal recreational opportunities or affect existing public access to the shoreline. The project is designed to provide a self storage facility to Lahaina residents and businesses and accordingly, is not a direct generator of demand for regional recreational resources.

2. **Historical/Cultural Resources**

**Objective:** Protect, preserve and where desirable, restore those natural and man-made 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 archaeological 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 area is located within the Lahaina National Historic Landmark District. The subject property formerly contained
a single-family residence and has been previously cleared and 
graded. The property is currently vacant and undeveloped and is 
not considered significant in terms of historic or cultural resource 
value. The State Historic Preservation Division (SHPD) was 
consulted in 1998/1999 during the preparation of the Change in 
Zoning (CIZ) request. In letters dated November 23, 1998 and 
March 18, 1999, the SHPD indicated that the subject property may 
have once been the location of pre-contact agriculture and possibly 
scattered housing. However, 20th century residential development 
has since altered the landscape, making it unlikely that any historic 
sites remain intact. Refer to Appendix "A".

An Archaeological Inventory Survey was completed for the subject 
property on August 4, 2005 by Archaeological Services Hawaii due 
to the location of the site in the Lahaina National Historic Landmark 
District and the presence of a number of Land Commission Awards 
(LCAs) in the surrounding area. No significant surface or 
substantive archaeological resources were identified during 
completion of fieldwork for the Archaeological Inventory Survey. 
Refer to Appendix "A-1". Should human remains be inadvertently 
discovered during earth moving activities for the proposed project, 
work shall cease at once in the immediate area of the find, and the 
find shall be protected from further damage. The SHPD shall be 
immediately notified and procedures for the treatment of 
inadvertently discovered human remains shall be followed pursuant 
to Chapter 6E, HRS.
3. **Scenic and Open Space Resources**

*Objectives:* 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 land forms 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 which are not coastal dependent to locate in inland areas.

*Response:* The site and proposed self storage facility will be designed and landscaped in accordance with applicable regulatory standards to ensure visual compatibility with the surrounding land uses. The proposed action is not anticipated to impact coastal scenic and open space resources, nor will it adversely affect public views to and along the coastline.

4. **Coastal Ecosystem**

*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 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 which reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and non-point source water pollution control measures.

**Response:** The proposed action is not expected to adversely impact coastal ecosystems. Drainage system improvements will be designed in accordance with applicable regulatory standards to ensure that there are no adverse effects to adjacent or downstream properties.

In addition, appropriate BMPs and erosion control measures will be implemented to minimize the effects of stormwater runoff during construction of the project.

5. **Economic Use**

**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 developments 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 is consistent with the goals of the West Maui Community Plan, which guides growth and development in the region. There are no anticipated adverse impacts to coastal zone resource parameters as a result of the proposed action.

6. **Coastal Hazards**

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

**Policies:**

a. Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, 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 source 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 project site falls within Zone C, an area of minimal flooding. Drainage improvements will be designed in accordance with the Drainage Standards of the County of Maui to ensure that the project will not adversely affect downstream and adjoining 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 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 general public to facilitate public participation in the planning and review process.

**Response:** All aspects of the development will be conducted in accordance with applicable State and County requirements. Opportunity for review of the proposed action is offered through the Chapter 343, HRS and SMA permitting processes.
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-related issues, developments, and government activities; and

c. Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

**Response:** The proposed project is subject to County of Maui Special Management Area (SMA) proceedings. Opportunities for public awareness, education, and participation in coastal management are provided through these entitlement processes, as well as through the Federal and State regulatory review processes.

Additionally a meeting with residents of the Pilani Elderly Housing Project was held on March 16, 2005. A summary of that meeting is presented in Appendix "F".

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 subject property is located approximately 1,200 feet from the shoreline and is not anticipated to impact shoreline activities.

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.

**Resources:** BMPs will be incorporated into the construction phase of the project to support the policies of effective management of marine resources.
Chapter V

Summary of Adverse Environmental Effects Which Cannot Be Avoided
V. **SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED**

The proposed self storage facility will result in unavoidable construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures.

Potential effects include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust discharged by construction equipment. These impacts are expected to be minimized through the implementation of the BMPs highlighted in Chapter III.

Once in operation, the self storage facility is not anticipated to adversely impact the surrounding uses, infrastructure systems and public services. The facility would service both local residents and businesses in Lahaina Town through the provision of storage space.

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

Alternatives to the Proposed Action
VI. ALTERNATIVES TO THE PROPOSED ACTION

A. NO ACTION ALTERNATIVE

The proposed project involves the development of a self storage facility with approximately 22,000 square feet of storage space on a parcel consisting of 18,638 square feet. The proposed facility will be located within the commercial district of Lahaina Town and is in consonance with existing surrounding business/commercial uses in the area.

The "no action" alternative would maintain the existing physical condition of the project site. When considering potential land uses for the project site, the "no action" alternative does not support the highest and best use of the project site as reflected by the West Maui Community Plan's "Business/Commercial" land use designation for the subject property. Accordingly, the "no action" alternative was not considered.

B. DEFERRED ACTION ALTERNATIVE

A "deferred action" alternative would have similar consequences as the "no action" alternative in that the land use objectives of the proposed project would be delayed and would not be immediately realized.

This alternative could result in potentially higher development costs due to increases in labor and material costs or changes to infrastructure or the existing physical or socio-economic environment (i.e., opportunity costs). Based on the preceding, the "deferred action" alternative was not considered.

C. OFFICE BUILDING ALTERNATIVE

In connection with the initial Change In Zoning (CIZ) request, as approved by Ordinance No. 2827, (refer to Appendix "E") a proposed office building alternative was proposed. The office building option was considered an
appropriate use in terms of establishing a land use context compatible with the adjoining Piiilani Elderly Housing Project. From a market need and product feasibility standpoint, however, the proposed self storage facility is also considered to meet the needs of the community with minimal impact implications, consistent with the office use option initially proposed. Furthermore, the proposed self storage facility also offers a transitional use between existing high-activity commercial uses to the south and the Piiilani Elderly Housing Project to the north along Wainee Street. The proposed self storage option was, therefore, deemed preferable over the higher-activity office use alternative from both a land use compatibility position as well as a market need position.
Chapter VII
Irreversible and Irretrievable Commitments of Resources
VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The development of the proposed project is anticipated to result in the irreversible and irretrievable commitment of land and fiscal resources. Other resource commitments include energy, labor, and material resources. Impacts relating to the use of these resources should be weighed against the expected positive socio-economic benefits to be derived from the project versus the consequences of taking no action.

In addition, the proposed project is not anticipated to require a substantial commitment of government services or facilities, nor is it anticipated to place significant additional requirements on police, fire, medical, and social services.
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 project 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 Resource Would Occur as a Result of the Proposed Project

The proposed project will not result in any adverse environmental impacts. There are no known, rare, endangered or threatened species of flora, fauna or avifauna located within the project site.

An Archaeological Inventory Survey, completed on August 4, 2005, found no evidence of significant surface or subsurface resources on the subject property. Refer to Appendix "A-1". Furthermore, should any cultural artifacts or human remains be encountered during construction for the proposed project, work will stop in the immediate vicinity of the find and the SHPD will be immediately notified to establish an appropriate mitigation strategy.

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

The proposed project and the commitment of land resources would not curtail the range of beneficial uses of the environment.
3. **The Proposed Action Does Not Conflict with the State’s Long-term Environmental Policies or Goals or Guidelines as Expressed in Chapter 334, Hawaii Revised Statutes (HRS)**

   The State’s Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is in consonance with the policies and guidelines of Chapter 344, HRS.

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

   The proposed project would have a direct beneficial effect on the local economy during construction. In the long term, the proposed project will support the local economy through the provision of salaries, wages and benefits and by meeting existing demand for storage space by both residents and businesses in the Lahaina area.

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

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

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

   No significant population changes are anticipated as a result of the proposed project.

   From a land use standpoint, the proposed project is compatible with surrounding business/commercial uses in the vicinity of the property, as well as the neighboring Pillani Elderly Housing Project.

   The proposed utility improvements will connect to existing water and wastewater systems. No adverse impacts to water and wastewater
capacities and facilities are anticipated. BMP's and appropriate erosion control measures will be utilized during the construction period. Drainage system improvements will be constructed in accordance with applicable regulatory design standards to ensure that surface runoff will not have an adverse effect on adjacent or downstream properties. The project is not expected to significantly impact public services such as police, fire, and medical services. Impacts upon educational, recreational, and solid waste collection and disposal facilities and resources are considered minimal.

7. **No Substantial Degradation of Environmental Quality is Anticipated**
   During the construction phase of the project, there will be short-term air quality and noise impacts as a result of the project. In the long term, effects upon air quality and ambient noise levels will be minimal. The project is not anticipated to significantly affect the open space and scenic character of the area.

No substantial degradation of environmental quality resulting from the project is anticipated.

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 involve a commitment to larger actions, nor will it have any significant cumulative impacts on the environment.

9. **No Rare, Threatened or Endangered Species or Their Habitats Would be Adversely Affected by the Proposed Action**
   There are no known rare, threatened or endangered species of flora, fauna, avifauna or their habitats on the subject property and none are, therefore, anticipated to be impacted by the proposed action.
10. **Air Quality, Water Quality or Ambient Noise Levels Would Not be Detrimentally Affected by the Proposed Project**

Construction activities will result in short-term air quality and noise impacts. BMPs incorporating various dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related activities. Construction activities will be limited to daylight working hours. No significant impacts to the quality of water resources in the vicinity of the project are anticipated to result from the proposed project.

In the long term, the project is not expected to have a significant impact on air and water quality or ambient noise levels.

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 is not located within and would not affect any environmentally sensitive areas. The project site is not subject to flooding or tsunami inundation. Soils of the project site are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

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

The project site is not identified as a scenic vista or viewplane. The proposed project will not affect scenic corridors and coastal scenic and open space resources.
13. **The Proposed Action Would Not Require Substantial Energy Consumption**

The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project will create an additional demand for electricity. However, due to the limited size and scope of the proposed project this demand is deemed nominal within the context of the region's overall energy consumption.

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

List of Permits and Approvals
IX. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required prior to the implementation of the project.

County of Maui
1. Construction Permits (e.g., building, driveway, electrical, plumbing).
2. Special Management Area Use Permit.
Chapter X

Agencies Consulted During the Preparation of the Draft Environmental Assessment; Letters Received and Responses to Substantive Comments
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. Comments and responses provided during this
early consultation process, and responses to substantive comments are included
in this section.

1. Ranea Ganske-Cerizo, Acting
   District Conservationist
   Natural Resources Conservation
   Service
   U.S. Department of Agriculture
   210 Iwi Kala Street, Suite 209
   Waipahu, Hawaii 96793-2100

2. George Young
   U.S. Department of the Army
   U.S. Army Engineer District,
   Honolulu
   Building 230
   Fort Shafter, Hawaii 96858-5440

3. Robert P. Smith
   Pacific Islands Manager
   U. S. Fish and Wildlife Service
   300 Ala Moana Blvd.
   Rm. 3-122, Box 50088
   Honolulu, Hawaii 96813

4. Mary Lou Kobayashi,
   Planning Program Administrator
   Office of Planning
   P. O. Box 2359
   Honolulu, Hawaii 96804

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

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

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

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

9. Rodney Haraga, Director
   State of Hawaii
   Department of Transportation
   889 Punchbowl Street
   Honolulu, Hawaii 96813

10. Clyde Namu'o, Administrator
    Office of Hawaiian Affairs
    711 Kapiohi Boulevard, Suite 500
    Honolulu, Hawaii 96813
11. Carl Kaupalolo, Chief
   County of Maui
   Department of Fire and Public Safety
   200 Dairy Road
   Kahului, Hawaii 96732

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

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

14. Glenn Correa, Director
    County of Maui
    Department of Parks and
    Recreation
    700 Hali'a Nakoa Street, Unit 2
    Wailuku, Hawaii 96793

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

16. Milton Arakawa, Director
    County of Maui
    Department of Public Works
    and Environmental Management
    200 South High Street
    Wailuku, Hawaii 96793

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

    P. O. Box 398
    Kahului, Hawaii 96732

19. Ezekiel Kalua, Executive Director
    West Maui Taxpayers Association
    P. O. Box 10338
    Lahaina, Hawaii 96763

20. Cliff Libed
    Housing & Community
    Development Corporation of
    Hawaii
    2015 Holowai Place
    Wailuku, Hawaii 96793
March 2, 2005

Mark Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

This responds to your request for comments on your Environmental Assessment preparation notice for a proposed self-storage facility at Lahaina, Maui (TMK 4-5-07-04). We have reviewed the preliminary project information you provided in your letter with respect to the Corps' authority to issue DA permits under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

Based on the information you provided, it appears that the proposed activity will not involve the discharge of dredged or fill material into waters of the United States, including adjacent wetlands; therefore, a DA permit is not required.

Should you have questions concerning this determination, please contact Mr. Galloway via e-mail (peter.galloway@usace.army.mil), by telephone at (808) 438-8416, or by fax at (808) 438-4060. Written inquiries should cite File No. POH-2005-122 and should be sent to: Regulatory Branch (CEPOH-EC-R/P. Galloway); U.S. Army Engineer District, Honolulu; Building 230; Fort Shafter, Hawaii 96858-5440.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch
George P. Young, Chief  
Regulatory Branch  
Department of the Army  
U.S. Army Engineer District  
Building 230  
Fort Shafter  
Honolulu, Hawaii 96858-5440

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii (File No. POH-2005-172)

Dear Mr. Young:

Thank you for your letter dated March 2, 2005, in response to the early consultation request regarding the subject action.

We acknowledge the determination by your office that a Department of the Army (DA) permit will not be required, as the proposed project will not involve the discharge of dredged or fill material into waters subject to DA regulation.

A copy of the Draft Environmental Assessment will be provided to your office for review and comment.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp  
cc: Howard Murai, Finance Holdings, Ltd.
March 7, 2005

Mr. Mark A. Roy
Planner
Munekyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Early Consultation Request for Proposed Self-Storage Facility
Lanai, Maui, Hawaii

The Department of Health (DOH), 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 Control 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. Discharges of treated effluent from leaking underground storage tank remedial activities.

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

   e. Discharges of hydrotesting water.
Mr. Mark A. Roy  
March 7, 2005  
Page 2

f. Discharges of construction dewatering effluent.
g. Discharges of treated effluent from petroleum bulk stations and terminals.
h. Discharges 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. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by an 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.hawaii.gov/health/environmental/water/cleanwater/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. NPDES general permits do not cover discharges into Class 1 or Class AA State 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.hawaii.gov/health/environmental/water/cleanwater/index.html

4. Hawaii Administrative Rules, Section 11-55-38, also requires the applicant 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.

If you have any questions, please contact Ms. Kris Poentis of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

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

KP:cu
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Mr. Lau:

Thank you very much for your letter of March 7, 2005, commenting on the early consultation request for the subject action. On behalf of the applicant, we offer the following responses to the comments noted:

1. The Department of the Army (DA) has been contacted with regard to federal permitting requirements. In their letter of March 2, 2005, it was confirmed that a DA permit will not be required for the project.

2. It should be noted that the parcel of land (18,638 square feet or 0.43 acre), upon which the proposed action will take place is less than one (1) acre in size, and therefore, does not require a National Pollutant Discharge Elimination System (NPDES) general permit for applicable construction and discharge activities.

3. As applicable, an individual NPDES permit will be obtained prior to the commencement of construction activities.

4. The State Historic Preservation Division (SHPD) was consulted during the preparation of a previous Change In Zoning (CIZ) request for the subject property. In letters dated November 23, 1998 and March 18, 1999, the SHPD issued a determination of “no-effect” on significant historic sites.
Thank you again for providing your input to the proposed action. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please feel free to contact me should you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc: Howard Mural, Finance Holdings, Ltd.
    Stacy Otomo, Otomo Engineering, Inc.
March 8, 2005

Mr. Mark A. Roy, Planner
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai‘i 96793

Dear Mr. Roy:

Subject: Self Storage Facility
TMK: (2) 4-5-07: 04, Lahaina, Hawaii

Thank you for the opportunity to participate in the early consultation process for the environmental assessment. The following comments are offered:

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

2. HAR, Chapter 11-46, sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.

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

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Mr. Matsubayashi:

Thank you for your letter of March 8, 2005, providing comments on the early consultation request for the subject action. On behalf of the applicant, the following information is provided in response to your comments:

1. We confirm that the proposed project will comply with Hawaii Administrative Rules (HAR) Chapter 11-46, "Community Noise Control" and a noise permit, if required, will be obtained prior to the commencement of work.

2. We also acknowledge that HAR, Chapter 11-46 sets maximum sound levels from stationary equipment, such as compressors and HVAC equipment. The placement of these types of equipment will be considered during the planning, design and construction/installation phases of the proposed project.
Thank you again for providing your input to the proposed action. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Should you have any questions or require additional information related to the aforementioned subject action, please feel free to contact me at 244-2015.

Very truly yours,

[Signature]

Mark Alexander Roy, Planner

MAR:yp
cc: Howard Murai, Finance Holdings, Ltd.

[Email address]
March 4, 2005

Mr. Mark A. Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Finance Holdings, Ltd. (Applicant)
Early Consultation Request for Proposed Self-Storage Facility at
Wainee Street, Lahaina, Maui
TMK: 4-5-07: 04

In reply to your request for our review of the proposed storage facility, this is to advise you that we do not anticipate that it will have an impact on our State highway facilities. We did note, however, a statement in your letter indicating that an Environmental Assessment Report (EA) would have to be prepared for the facility.

We would like to defer further comment on the proposed storage facility until we have had an opportunity to review the EA.

We appreciate the opportunity to provide our comments.

Very truly yours,

[Signature]

RODNEY K. HARAGA
Director of Transportation
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Mr. Haraga:

Thank you for your letter dated March 4, 2005, in response to the early consultation request regarding the subject action.

We acknowledge the Department’s preliminary determination that no impact to State highway facilities is anticipated. A copy of the Draft Environmental Assessment will be provided to your office for further review and comment.

Please do not hesitate to call me should you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc: Howard Murai, Finance Holdings, Ltd.
    Pete Pascua, Wilson Okamoto Corporation
February 22, 2005

Mr. Mark Alexander Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: EARLY CONSULTATION REQUEST FOR PROPOSED
SELF-STORAGE FACILITY AT TMK 4-5-07:04,
LAHAINA, MAUI, HAWAII

We have reviewed the information in your February 17, 2005
letter and enclosures and wish to inform you that we have no
comment to offer.

Thank you for the opportunity to comment.

Very truly yours,

ALICE L. LEE
Director

ETO: hs

c: Housing Administrator
Mr. Mark Roy  
Munekiyo & Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793  

Dear Mr. Roy;  

RE: Preconsultation Comments in preparation of a Draft Environmental Assessment (DEA) for a Self-Storage Facility located at TMK: 4-5-007: 004, Lahaina, Island of Maui, Hawaii (EA 2005/0004)  

The Maui Planning Department (Department) provides the following comments for the above referenced document:  

1. Include a summary of the meetings held with the adjacent elderly housing projects.  
2. Include a proposed landscape planting plan. The Department recommends incorporating landscape elements to further shield the massing of the building.  
3. Discuss how the proposed building complies with the design guidelines for Lahaina Town.  

Thank you for the opportunity to comment. Should you require further clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7735.  

Sincerely,  

Michael W. Foley  
Planning Director  

MWF-KAC:dm  
c: Wayne Boteiho, Deputy Planning Director  
Kivette Caigoy, Environmental Planner  
EA Project File  
General File  
K:\WP_DOCS\PLANNING\EA2005\0004_SelfStorage\preconsultation.wpd
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Mr. Foley:

Thank you for your letter of March 15, 2005, outlining the Department’s early consultation comments in regards to the subject action. We have prepared the following responses to your comments:

1. A summary of all meetings held with residents of the adjacent Piilani Elderly Housing Project will be included in the Draft Environmental Assessment (EA).

2. The applicant acknowledges the Department’s recommendation relating to the need to incorporate landscaping that effectively shields the massing of the proposed building. A proposed landscaping plan will be included in the Draft EA.

3. Compliance of the proposed building with the design guidelines for Lahaina Town will also be discussed in the Draft EA.

A copy of the Draft EA will be provided to your office for review and comment.
Thank you again for providing your input to the proposed action. Should you have any questions or require additional information related to the aforementioned subject action, please feel free to contact me at 244-2015.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc: Howard Murai, Finance Holdings, Ltd.
    Eric Taniguchi, Eric S. Taniguchi, AIA
March 8, 2005

Mr. Mark A. Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: EARLY CONSULTATION REQUEST FOR PROPOSED SELF-STORAGE FACILITY AT TMK 4-5-07:04, LAHAINA, MAUI, HAWAII

Thank you for the opportunity to review and comment on the subject project. We have no comments to submit at this time.

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 Parks Planning and Development
Mr. Mark A. Roy, Planner  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Mr. Roy:

SUBJECT: Early Consultation Request for Proposed Self-Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Thank you for your letter of February 17, 2005, requesting comments on the above subject.

We have reviewed the information submitted for this project and have enclosed a copy of our comments. As always, thank you for giving us the opportunity to comment on this project.

Very truly yours,

[Signature]

Assistant Chief Sydney Kikuchi  
for: Thomas M. Phillips  
Chief of Police

c: Michael Foley, Planning Department

Enclosure
TO: THOMAS PHILLIPS, CHIEF OF POLICE, COUNTY OF MAUI
VIA: CHANNELS
FROM: SCOTT Y. MIGITA, P.O. III, LAHAINA BIKE PATROL
SUBJECT: EARLY CONSULTATION REQUEST FOR PROPOSED SELF-STORAGE FACILITY AT TMK 4-5-07:04, LAHAINA, MAUI, HAWAII

Sir, this transmittal is being submitted by Munekiyo & Hiraga, Inc. on behalf of Finance Holdings, Ltd. regarding a proposal for the development of a self-storage facility located on Wainee Street, between Kenui Street and Papalaua Street. This facility is bordered along the mauka boundary by Honoapiilani Highway with access to the property via Wainee Street parallel to Honoapiilani Highway. It is characterized as a predominantly retail and commercial area within the State Land Use “Urban” district and is designated for business/commercial (“B”) use by the West Maui Community Plan and is County zoned “B-2, Community Business District”. The proposed self-storage facility will provide approximately 20,000 square feet of storage space with approximately fourteen parking stalls. Customer access to this facility will be limited to daylight hours.

Munekiyo & Hiraga, Inc. is requesting early review and comment on this proposed project. In reference to traffic issues in this area, this proposed facility is located on the outskirts of Lahaina town and in an area with a minimum amount of vehicular traffic. Wainee Street is a two lane roadway running north and southbound. The intersection of Wainee Street and Papalaua Street has an operational traffic signal in existence. There are additional roadway outlets via Baker and Kenui Streets. An additional self-storage business in this vacant property along with adjacent residential Piilani elderly housing and restaurant and offices in the Longhi building would create a minimum increase in vehicular traffic as well as on-street parking limited to the mauka side of Wainee Street.

Regarding the issue of public safety from a police perspective, whenever a new project is developed, there is a question on the impact on police services and manpower. As the development of businesses continues in the Lahaina district, increased police services are needed to effectively respond to the needs of these businesses. The potential for an increase in police patrol officers would need to be addressed with the implementation of this new commercial development. Submitted for your information and perusal.

Respectfully Submitted,

Scott Y. MIGITA, E-1122
P.O. III, Lahaina Bike Patrol
02/25/2005 at 1130 hours

[Handwritten notes]
May 4, 2005

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

SUBJECT: Early Consultation Comments on Proposed Self-Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Chief Phillips:

Thank you for your letter dated March 3, 2005, in response to the early consultation request regarding the subject action.

The applicant, Finance Holdings, Ltd., concurs with your assessment that increased police presence is needed with continued growth in the West Maui region. With respect to the proposed self-storage facility, it is anticipated that the project will not place significant demands upon police services. Operating hours will be limited to the daytime only, with low-levels of traffic egress and ingress to the property.

New real property taxes generated by the project will contribute to the County's revenue stream. It is hoped that this additional revenue will contribute to a more supportive environment for resources allocation to the Police Department.

A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please do not hesitate to call me should you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

cc: Howard Murai, Finance Holdings

planning

MUNKEYO & HIRADA, INC.
March 14, 2005

Munekiyo & Hiraga, Inc.
Attn: Mr. Mark A. Roy, Planner
302 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: Proposed Self Storage Facility at TMK (2) 4-5-007:004, Lahaina

Dear Mr. Roy:

Thank you for the opportunity to participate in the early consultation process for this project.

Source Availability and Consumption

The project site is served by our Lahaina system with Laniuipoko aquifer as major source of water. As of December 2004, pending projects in West Maui at some stage of discretionary review total roughly 15.8 MGD, of which about 7.1 MGD plan to connect to the county system. DWS does NOT grant or imply any guarantee of water until an application for water meter has been received and reviewed. Water availability will be determined at time of meter application or meter reservation.

The EA should address sources and anticipated potable and non-potable water use for the proposed development. By standards, project this size would use about 2,600 gpd. Commercial use in the Lahaina area tends to be higher than the standard guidelines.

System Infrastructure

Twelve inch and eight inch water lines run along the West and East sides of the project site. The applicant will be required to provide domestic and irrigation services as well as fire protection in accordance with standards. Domestic, irrigation and fire flow calculations will be required in the building permit process. Actual fire demand for structures is determined by using fire flow calculations prepared, signed and stamped by a certified architect or engineer. 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. Required fire flow for business districts is 2000 gallons per minute (gpm) at 250 feet spacing for a 2 hour duration. Installation of reduced pressure back-flow prevention approved by the Department is also required.

Conservation

We recommend that the following water conservation measures be considered to alleviate the demand from the Lahaina system:

- Use brackish or reclaimed water sources for all non-potable water uses, including dust control during construction. Reclaimed water is readily available at the Lahaina Wastewater Facility.
- 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.

By Water All Things Find Life
Proposed Self Storage Facility
Mr. Mark A. Roy
March 14, 2003

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 Zones 3 and 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 zones as well as potentially invasive plants to avoid.

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. Check for leaks in faucets and toilet tanks.

Pollution Prevention

The project site overlies the Launiupuko aquifer which has a sustainable yield of 8 MGD potable water. In order to protect ground and surface water resources, we recommend that the applicant adopt Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction, vehicle operations as well as from daily activities. We have attached sample BMPs for reference. Additional BMPs can be obtained from the State Department of Health.

Should you have any questions regarding system infrastructure and requirements, please call our Engineering Division at 270-7835 and any questions on source availability or conservation and resource matters, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,

[Signature]
George T. Hingan
Director

cc: Engineering Division

attachments:
- The Costly Drip
- Maui County Planting Plan - Plant Zones 3 & 5 - Saving Water in Your Yard - What and How to Plant in Your Area
- Selected BMPs from “Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters” - EPA

C:\WP\Proj Rev\Lahaina Proj\Self-Storage Facility - Early Cons EA.wpd

By Water All Things Find Life
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

Tips From The Maui County Department of Water Supply
*By Water All Things Find Life*
Zone-specific Native and Polynesian plants for Maui County

<table>
<thead>
<tr>
<th>Type</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Height</th>
<th>Spread</th>
<th>Elevation</th>
<th>Water req.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Paliotum nudum</td>
<td>moa, moa kula</td>
<td>1'</td>
<td>1'</td>
<td>sea to 3,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>G</td>
<td>Colubrina asiatica</td>
<td>'anapanapa</td>
<td>3'</td>
<td>10'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>G</td>
<td>Eragrostis monticola</td>
<td>kalamalo</td>
<td>1'</td>
<td>2'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>G</td>
<td>Eragrostis variabilis</td>
<td>'emo-loa</td>
<td>1'</td>
<td>2'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>G</td>
<td>Timbrastylis cymosa ssp. spathacea</td>
<td>mau'uak'i, timbrastylis</td>
<td>0.5'</td>
<td>1'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Boerhavia repens</td>
<td>aloha</td>
<td>0.5'</td>
<td>4'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Chamaesyce celestroides var. ishikensis</td>
<td>'okoko</td>
<td>2'</td>
<td>3'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Cressa truxilensis</td>
<td>cressa</td>
<td>0.5'</td>
<td>1'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Heliotropium anomalum var. argenteum</td>
<td>hinahina ku kahekai</td>
<td>1'</td>
<td>2'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Ipomoea tuboides</td>
<td>Hawaiian moon flower, 'uala</td>
<td>1'</td>
<td>10'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Jacquemontia ovalifolia ssp. sandwicensis</td>
<td>pa'u o hiraka</td>
<td>0.5'</td>
<td>6'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Lippia esculenta</td>
<td>nehe</td>
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<td>5'</td>
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<td>Gr</td>
<td>Peperomia leptostachya</td>
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<td>1'</td>
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<td>Dry to Medium</td>
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<tr>
<td>Gr</td>
<td>Plumbago zeylanica</td>
<td>'ille'e</td>
<td>1'</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Gr</td>
<td>Sesuvium portulacastrum</td>
<td>'akulikul, sea-purslane</td>
<td>0.5'</td>
<td>2'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>Gr</td>
<td>Sida fallax</td>
<td>'ima</td>
<td>0.5'</td>
<td>3'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Tephrosia purpurea var. purpurea</td>
<td>'o'uhu'uhu</td>
<td>2'</td>
<td>2'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr - Sh</td>
<td>Hibiscus calyphyllus</td>
<td>ma'o hau hea, Rock's hibiscus</td>
<td>3'</td>
<td>2'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr - Sh</td>
<td>Lippia esculenta</td>
<td>nehe</td>
<td>2'</td>
<td>2'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr - Sh</td>
<td>Lippia esculenta</td>
<td>nehe</td>
<td>2'</td>
<td>5'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>Gr - Sh</td>
<td>Lycium sandwicense</td>
<td>'oha'o-kal, 'e'aa'a</td>
<td>2'</td>
<td>2'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>P</td>
<td>Cocos nucifera</td>
<td>coconut, niu</td>
<td>100'</td>
<td>30'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>P</td>
<td>Pritchardia halebrandy</td>
<td>'o'ulu, fan palm</td>
<td>25'</td>
<td>15'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
</tr>
<tr>
<td>S</td>
<td>Mariucca javanica</td>
<td>marsh cypress, 'ahu'a'wa</td>
<td>0.5'</td>
<td>0.5'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
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Zone-specific Native and Polynesian plants for Maui County

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<thead>
<tr>
<th>Type</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Height</th>
<th>Spread</th>
<th>Elevation</th>
<th>Water req.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tr</td>
<td>Morinda citrifolia</td>
<td>Indian mulberry, noni</td>
<td>20'</td>
<td>15'</td>
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<tr>
<td>Tr</td>
<td>Nesoloma polynascum</td>
<td>keahi</td>
<td>15'</td>
<td>15'</td>
<td>sea to 3,000'</td>
<td>Dry</td>
</tr>
<tr>
<td>Tr</td>
<td>Naegia sandwicensis</td>
<td>olopa</td>
<td>15'</td>
<td>15'</td>
<td>1,000' to 3,000'</td>
<td>Dry to Medium</td>
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<tr>
<td>Tr</td>
<td>Pandanus tectorius</td>
<td>hala, puhala (HALELIST)</td>
<td>35'</td>
<td>25'</td>
<td>sea to 1,000'</td>
<td>Dry to Wet</td>
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<tr>
<td>Tr</td>
<td>Pisonia auwahiensis</td>
<td>halapepe</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tr</td>
<td>Nainalia sandwicensis</td>
<td>hao</td>
<td>20'</td>
<td>15'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Tr</td>
<td>Reynoldsia sandwicensis</td>
<td>ohe makai</td>
<td>20'</td>
<td>20'</td>
<td>1,000' to 3,000'</td>
<td>Dry</td>
</tr>
<tr>
<td>Tr</td>
<td>Scaletum ellipticum</td>
<td>coastal sandalwood, ili-ahi</td>
<td>8'</td>
<td>8'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Tr</td>
<td>Thapsia populnea</td>
<td>milo</td>
<td>30'</td>
<td>30'</td>
<td>sea to 3,000'</td>
<td>Dry to Wet</td>
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### Zone-specific Native and Polynesian plants for Maui County

#### Zone 5

<table>
<thead>
<tr>
<th>Type</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Height</th>
<th>Spread</th>
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<tbody>
<tr>
<td>G</td>
<td>Colubrina asiatica</td>
<td>anapanapa</td>
<td>3'</td>
<td>10'</td>
<td>sea to 1,000'</td>
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<tr>
<td>G</td>
<td>Eragrostis variabilis</td>
<td>emo-loa</td>
<td>1'</td>
<td>2'</td>
<td>sea to 3,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>G</td>
<td>Fimbristylis cymosa ssp. spathacea</td>
<td>mau'u akakai timbristyls</td>
<td>0.5'</td>
<td>1'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Boerhavia repens</td>
<td>alena</td>
<td>0.5'</td>
<td>4'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Chamaesyce calostrides var. laahienals</td>
<td>akoko</td>
<td>2'</td>
<td>3'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Cressa truxillensis</td>
<td>cressa</td>
<td>0.5'</td>
<td>1'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Heliotroplum anomalum var. argenteum</td>
<td>hinahina ku kakahai</td>
<td>1'</td>
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<tr>
<td>Gr</td>
<td>Jacquinonila ovalifolia ssp. sandwicensis</td>
<td>pa'u o hi'aka</td>
<td>0.5'</td>
<td>6'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Lipochaeta integrifolia</td>
<td>nehe</td>
<td>1'</td>
<td>5'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Sesuvium portulacastrum</td>
<td>akulkuli, sea-purslane</td>
<td>0.5'</td>
<td>2'</td>
<td>sea to 1,000'</td>
<td>Dry to Medium</td>
</tr>
<tr>
<td>Gr</td>
<td>Sida fallax</td>
<td>ilima</td>
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<td>Tephrosia purpurea var. purpurea</td>
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<td>G - Sh</td>
<td>Hibiscus calyphyllus</td>
<td>mo'a hau hale, Rock's hibiscus</td>
<td>3'</td>
<td>2'</td>
<td>sea to 3,000'</td>
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<tr>
<td>G - Sh</td>
<td>Lycium sandwicense</td>
<td>'ohelo-kai, 'ae 'ae</td>
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<td>Cocos nucifera</td>
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<td>30'</td>
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<td>P</td>
<td>Pluchardia hillebrandii</td>
<td>lo'ulu, fan palm</td>
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<td>15'</td>
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<td>Mariscus javanicus</td>
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<td>Argemone glauca var. decipiens</td>
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<td>Bidens hillebrandiana ssp. hillebrandiana</td>
<td>koko'o'oluau</td>
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<td>Bidens maulensis</td>
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<tr>
<td>Sh</td>
<td>Chenopodium oahuense</td>
<td>haleahea, aweoweo</td>
<td>6'</td>
<td>2'</td>
<td>sea to higher</td>
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<tr>
<td>Sh</td>
<td>Uleiadina sandwicensis</td>
<td>uki</td>
<td>2'</td>
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<tr>
<td>Sh</td>
<td>Gossypium tomentosum</td>
<td>mao, Hawaiian cotton</td>
<td>9'</td>
<td>8'</td>
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### Zone-specific Native and Polynesian plants for Maui County

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<th>Type</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Height</th>
<th>Spread</th>
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<td>Sh</td>
<td>Hedyotis spp.</td>
<td>au, pilo</td>
<td>3'</td>
<td>2'</td>
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<td>Lipochaeta lavatarum</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<td></td>
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</tr>
<tr>
<td>Chinese violet</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Christmas berry, Brazilian pepper</td>
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<tr>
<td>Koster's curse</td>
<td>Mimosaceae</td>
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</tr>
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<tr>
<td>Mauritian hemp</td>
<td>Mimosaceae</td>
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</tr>
<tr>
<td>Mexican ash, topical ash</td>
<td>Mimosaceae</td>
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<td>Mules foot, Madagascar tree fern</td>
<td>Mimosaceae</td>
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</tr>
<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>New Zealand lea</td>
<td>Mimosaceae</td>
<td></td>
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</tr>
<tr>
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<td>Mimosaceae</td>
<td></td>
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<tr>
<td>Panama rubber tree, Mexican rubber tree</td>
<td>Mimosaceae</td>
<td></td>
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</tr>
<tr>
<td>Shoebullion ardisa</td>
<td>Mimosaceae</td>
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<td></td>
</tr>
<tr>
<td>Banana poka</td>
<td>Mimosaceae</td>
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</tbody>
</table>
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.
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.\textsuperscript{10} Macadamia nut hulls are also easy to find and can make a nice mulch.\textsuperscript{11}

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

\textsuperscript{10} Bornhorst, p. 24

\textsuperscript{11} Nagata, p. 7
Propagation

There are many ways to propagate and plant-out native Hawaiian species. One of the most thorough 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, trim off some of the leaves to compensate for the loss.³

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

³ Bornhorst, p.20-21
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.\footnote{Bornhorst, p. 19-20}

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.\footnote{Nagata, p. 6}

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.
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. 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.

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. 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*:

<table>
<thead>
<tr>
<th>WATER REQUIREMENT</th>
<th>WATERING FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>3x / week</td>
</tr>
<tr>
<td>Moderate</td>
<td>2x / week</td>
</tr>
<tr>
<td>Light</td>
<td>1x / week</td>
</tr>
</tbody>
</table>

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

3 Nagata, p. 8

6 Nagata, p. 8
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 porous 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)

1 K. Nagata, P.6
2 K. Nagata, P.9
3 Nagata, P.9
PLACES TO BUY NATIVE PLANTS ON MAUI

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

2. Kahanu Gardens
   National Tropical Botanical Garden
   Alau Place, Hana
   248-8912

3. Kihana Nursery
   1708 South Kihei Road
   Kihei HI 96753
   879-1165

4. Kihie Garden and Landscape
   Waiko Road, Wailehua
   P O Box 1058
   Puunene HI 96784
   244-3804

5. Kula Ace Hardware and Nursery
   3600 Lower Kula Road
   Kula HI 96790
   876-0734
   * many natives in stock
   * get most of their plants from Ho'olawa Farms
   * they take special requests

6. Kulamanu Farms - Ann Carter
   Kula HI 96790
   878-1801

7. Maui Nui Botanical Gardens
   Kanaloa Avenue
   (Across from stadium)
   Kahuku HI 96732
   249-2798

8. Native Gardenscapes
   Robin McMillan
   1330 Lower Kimo Drive
   Kula HI 96790
   870-1421
   * grows native plants and installs landscapes including irrigation.

9. Native Hawaiian Tree Source
   1630 Piiholo Road
   Makawao HI 96768
   572-6180

10. Native Nursery, LLC
    Jonathan Keyser
    250-3341

11. New Moon Enterprises - Pat Bily
    47 Kahoana Place
    Kula HI 96790
    878-2441

12. Waiakea Tree Farm - Kua Rogoff
    Pukalani HI 96768
    Cell - 264-4166
PLACES TO SEE NATIVES ON MAUI:

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.

1. Hoolawa Farms
   P O Box 731
   Haiku HI 96708
   575-5099

2. The Hawaiian Collection
   1127 Manu Street
   Kula HI 96790
   878-1701

3. Kula Botanical Gardens
   RR4, Box 228
   Kula HI 96790
   878-1715

4. Maui Botanical Gardens
   Kanaloa Avenue, Kahului
   across from stadium
   249-2798

5. Kula Forest Reserve
   access road at the end of Waipoli Rd
   Call the Maui District Office
   984-8100

6. Wailea Point, Private Condominium residence
   4000 Wailea Alanui, Kihei
   public access points at Four Seasons Resort or
   Polo Beach
   875-9557

7. Kahanu Gardens, National Tropical Botanical Garden
   Alau Place, Hana HI 96713
   248-8912

8. Kahului Library Courtyard
   20 School Street
   Kahului HI 96732
   873-3097
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 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

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1 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.

EPA-840-B-92-002 January 1993 4-69
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>
<thead>
<tr>
<th>Location</th>
<th>Problem</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Sediment loading rates vary from 36.5 to 1,000 tons/acre/year. 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.</td>
<td>York County Soil and Water Conservation District, 1990</td>
</tr>
<tr>
<td>Franklin County, FL</td>
<td>Sediment yield (tons/acre/year): forest &lt; 0.5, rangeland &lt; 0.5, tilled 1.4, construction site 30, established urban &lt; 0.5</td>
<td>Franklin County, FL</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Erosion rates range from 30 to 200 tons/acre/year (10 to 20 times those of cropland).</td>
<td>Wisconsin Legislative Council, 1991</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>Erosion rates range from 35 to 45 tons/acre/year (10 to 100 times greater than agriculture and stabilized urban land uses).</td>
<td>MWCOG, 1987</td>
</tr>
<tr>
<td>Anacostia River Basin, VA, MD, DC</td>
<td>Sediment yields from portions of the Anacostia Basin have been estimated at 75,000 to 130,000 tons/acre.</td>
<td>U.S. Army Corps of Engineers, 1990</td>
</tr>
<tr>
<td>Washington</td>
<td>Erosion rates range from 50 to 500 tons/acre/year. Natural erosion rates from forests or well-sodded prairies are 0.01 to 1.0 tons/acre/year.</td>
<td>Washington Department of Ecology, 1989</td>
</tr>
<tr>
<td>Anacostia River Basin, VA, MD, DC</td>
<td>Erosion rates range from 7.2 to 100.8 tons/acre/year.</td>
<td>USGS, 1978</td>
</tr>
<tr>
<td>Alabama</td>
<td>1.4 million tons eroded per year.</td>
<td>Woodward-Clyde, 1991</td>
</tr>
<tr>
<td>North Carolina</td>
<td>6.7 million tons eroded per year.</td>
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</tr>
<tr>
<td>Louisiana</td>
<td>5.1 million tons eroded per year.</td>
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<tr>
<td>Oklahoma</td>
<td>4.2 million tons eroded per year.</td>
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</tr>
<tr>
<td>Georgia</td>
<td>3.8 million tons eroded per year.</td>
<td></td>
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<tr>
<td>Texas</td>
<td>3.5 million tons eroded per year.</td>
<td></td>
</tr>
<tr>
<td>Tennessee</td>
<td>3.3 million tons eroded per year.</td>
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</tr>
<tr>
<td>Pennsylvania</td>
<td>3.1 million tons eroded per year.</td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>3.0 million tons eroded per year.</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>3.0 million tons eroded per year.</td>
<td></td>
</tr>
</tbody>
</table>
4.

Chapter 4

III. Construction Activities

Rotted 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
III. Construction Activities

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 commenters responding to the draft (May 1991) guidance expressed the need to define "more measurable, enforceable ways" to control sediment loadings, other commenters 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., 1980).
wale 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).

q. Seed and fertilize.

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once dense vegetative cover has been established. However, often seeding and fertilizing do not produce a thick 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 dry 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 a vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation comes established.

4. 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 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. Very flat, non-sensitive areas with favorable soils, stabilization may involve simply seeding and fertilizing, mulching, and/or planting. Mulching may be necessary as slopes become moderate to steep, as soils become more erosive, and areas become more sensitive.

q. Use mulch/mats.

Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulch/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone could be used only for temporary protection of the soil surface when permanent seeding is not feasible. The effect of mulch varies with the material used and the amount of precipitation, but it 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 low rainfall, mulch alone cannot stop erosion. 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. Sodstocking, ceramic materials, filter fabric, and netting are available for this purpose. Before stabilizing an area, 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.
III. Construction Activities

- **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 moisture 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
Chapter 4

III. Construction Activities

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

a. Seed and fertilize.

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once 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 nutrient excess and 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 dry flat areas and not in sensitive areas.

b. 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 comes established.

use management of land by using ground cover reduces erosion by reducing the flow rate of runoff and the windstorm space. Bare soil 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 seed and establishing vegetation during favorable seasons in areas where vegetation can be established.

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 erodible, and areas become more sensitive.

c. Use mulch mats.

Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulches/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 reduction in soil loss achievable using various mulching techniques. During times of dry weather when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are 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.

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 the site if the stockpile has been covered and stabilized.

Consideration should be given to maintenance when designing mulching and netting schemes. Plastic nets are often used to cover the mulch or mats; however, they can foul lawn mower blades if the area requires mowing.
Figure 4-5. Water velocity reductions for different mulch treatments (adapted from Harding, 1993).
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*

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

*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...
III. Construction Activities

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 sumps may be effective. In areas where sheet flow leaves the site and the drainage area is greater than 0.5 ac/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>
<thead>
<tr>
<th>Practice</th>
<th>Design Constraints or Purpose</th>
<th>Percent Removal of TSS</th>
<th>Useful Life (years)</th>
<th>Construction Cost (as % construction cost)</th>
<th>Annual Maintenance Cost</th>
<th>Total Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sod</td>
<td>Immediate erosion protection where there is high erosion potential during vegetative establishment.</td>
<td>Average: 90%</td>
<td>2</td>
<td>Average: $0.2 per ft&lt;sup&gt;2&lt;/sup&gt; ($11,300 per acre)</td>
<td>Range: 5% Reference: SWRPC, 1991; Schueler, 1987; Virginia, 1980</td>
<td>$0.20 per ft&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Seed</td>
<td>Establish vegetation on disturbed area.</td>
<td>Average: 90%</td>
<td>2</td>
<td>Average: $400 per acre</td>
<td>Range: $200 - $1000 per acre</td>
<td>$300 per acre</td>
</tr>
<tr>
<td>Seed and Mulch</td>
<td>Establish vegetation on disturbed area.</td>
<td>Average: 90%</td>
<td>2</td>
<td>Average: $1,500 per acre</td>
<td>Range: $800 - $3,500 per acre</td>
<td>$1,100 per acre</td>
</tr>
</tbody>
</table>

NA<sup>3</sup> indicates that the data is not available.
Table 4-15. (Continued)

<table>
<thead>
<tr>
<th>Practice</th>
<th>Design or Purpose</th>
<th>Use of TSS Percent Removal (as %)</th>
<th>Useful Life (years)</th>
<th>Construction Cost</th>
<th>Maintenance Cost (as % of construction cost)</th>
<th>Total Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mulch</td>
<td>Temporary stabilization of disturbed areas.</td>
<td>Observed range:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand</td>
<td>20% slope 60% slope</td>
<td>Wet</td>
<td>0.25</td>
<td>Straw mulch:</td>
<td>Average: $1,700 per acre</td>
<td>Straw mulch:</td>
</tr>
<tr>
<td></td>
<td>wood fiber 1500 lb/acre</td>
<td>50-60% 60-70%</td>
<td>0-20%</td>
<td>Range: $500 - $5,000 per acre</td>
<td>Average: NA</td>
<td>Range: NA</td>
</tr>
<tr>
<td></td>
<td>wood fiber 3000 lb/acre</td>
<td>50-85% 50-70%</td>
<td>85%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>straw 3000 lb/acre</td>
<td>90-100% 90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt-loam</td>
<td>20% slope 60% slope</td>
<td>Wet</td>
<td>0.33</td>
<td>Wood fiber mulch:</td>
<td>Average: $1,000 per acre</td>
<td>Wood fiber mulch:</td>
</tr>
<tr>
<td></td>
<td>wood fiber 1500 lb/acre</td>
<td>20-60% 40-60%</td>
<td>0-20%</td>
<td>Range: $100 - $2,300 per acre</td>
<td>Average: $1,000 per acre</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wood fiber 3000 lb/acre</td>
<td>60-90% 60-70%</td>
<td>70-90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>straw 3000 lb/acre</td>
<td>90-95% 70-90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt-clay-loam</td>
<td>10-30% slope 30-50% slope</td>
<td>Wet</td>
<td>0.33</td>
<td>Jute netting:</td>
<td>Average: $3,700 per acre</td>
<td>Jute netting:</td>
</tr>
<tr>
<td></td>
<td>wood fiber 1500 lb/acre</td>
<td>5% 50-60%</td>
<td>0-20%</td>
<td>Range: $3,500-$4,100 per acre</td>
<td>Average: $3,700 per acre</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wood fiber 3000 lb/acre</td>
<td>40% 30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>straw 3000 lb/acre</td>
<td>40-70% 40-60%</td>
<td>0-20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>wood chips</td>
<td>60-80% 50-60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10,000 lb/acre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mulch blanket</td>
<td>60-80% 60-60%</td>
<td>90%</td>
<td>Straw and jute:</td>
<td>Average: $5,400 per acre</td>
<td>Straw and jute:</td>
</tr>
<tr>
<td></td>
<td>excelsior blanket</td>
<td>60-80% 50-60%</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>multiple treatment</td>
<td>(straw and jute)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>References: Minnesota Pollution Control Agency, 1989; Key, 1983 cited in Goldman, 1985</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Practice</td>
<td>Design Constraints or Purpose</td>
<td>Percent Removal of TSS</td>
<td>Useful Life (years)*</td>
<td>Construction Cost</td>
<td>Annual Maintenance Cost (as % construction cost)</td>
<td>Total Annual Cost</td>
</tr>
<tr>
<td>----------</td>
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<td>------------------------</td>
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<td>-----------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Fences</td>
<td>Break up long or steep slopes.</td>
<td>Observed range:</td>
<td>2</td>
<td>Average: $5 per lin ft</td>
<td>Average: 20%</td>
<td>$4 per lin ft</td>
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<tr>
<td></td>
<td></td>
<td>1-12%</td>
<td>70%</td>
<td>References:</td>
<td>Reference:</td>
<td>SWRPC, 1991</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12-16%</td>
<td>60%</td>
<td>Goldman, 1988</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>18-24%</td>
<td>55%</td>
<td>Virginia, 1991</td>
<td></td>
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</tr>
<tr>
<td>All</td>
<td>Erosion Controls</td>
<td>Reduce amount of sediment entering runoff.</td>
<td>Variably but typically low</td>
<td>Variably but typically low</td>
<td>Variably but typically low</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observed range: 85%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reference: Schueler, 1990</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

NA - Not available.

* Useful life estimated as length of construction project (assumed to be 2 years).

For Total Annual Cost, assume Annual Maintenance Cost = 2% of construction cost.
<table>
<thead>
<tr>
<th>Practice</th>
<th>Design Constraints or Purpose</th>
<th>Percent Removal of TSS</th>
<th>Useful Life (years)</th>
<th>Construction Cost</th>
<th>Annual Maintenance Cost (as % of construction cost)</th>
<th>Total Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment basin</td>
<td>Minimum drainage area = 5 acres, maximum drainage area = 100 acres</td>
<td>Average: 70% Observed range: 55% - 100% References: Schueler, 1990; Engle, BW and Jarrett, AR, 1990; Baumann, 1990</td>
<td>2</td>
<td>Less than 50,000 ft³ storage Average: $0.60 per ft³ storage ($1,100 per drainage acre²) Range: $0.20 - $1.30 per ft³</td>
<td>Average: 25% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991</td>
<td>Less than 50,000 ft³ storage $0.40 per ft³ storage $700 per drainage acre²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Greater than 50,000 ft³ storage Average: $0.3 per ft³ storage ($550 per drainage acre²) Range: $0.10 - $0.40 per ft³</td>
<td>References: SWRPC, 1991</td>
</tr>
<tr>
<td>Sediment trap</td>
<td>Maximum drainage area = 5 acres</td>
<td>Average: 60% Observed range: (-7%) - 100% References: Schueler, et al., 1990; Tahoe Regional Planning Agency, 1988; Baumann, 1990</td>
<td>1.5</td>
<td>Average: $0.60 per ft³ storage ($1,100 per drainage acre²) Range: $0.20 - $2.00 per ft³</td>
<td>Average: 20% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1995</td>
<td>$0.70 per ft³ storage $1,300 per drainage acre²</td>
</tr>
<tr>
<td>Filter Fabric Fence</td>
<td>Maximum drainage area = 0.5 acre per 100 feet of fence. Not to be used in concentrated flow areas.</td>
<td>Average: 70% Observed range: 0% - 100% sand: 80% - 99% silt-loam: 55% - 80% silt-clay-loam: 0% - 20% References: Munson, 1991; Fisher et al., 1984; Minnesota Pollution Control Agency, 1989</td>
<td>0.5</td>
<td>Average: $3 per lin ft ($700 per drainage acre²) Range: $1 - $8 per lin ft</td>
<td>Average: 100% References: SWRPC, 1991</td>
<td>$7 per lin ft $850 per drainage acre²</td>
</tr>
<tr>
<td>Practice</td>
<td>Design Constraints or Purpose</td>
<td>Percent Removal of TSS</td>
<td>Useful Life (years)</td>
<td>Construction Cost</td>
<td>Annual Maintenance Cost (as % construction cost)</td>
<td>Total Annual Cost</td>
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<tr>
<td>Straw Bale Barrier</td>
<td>Maximum drainage area = 0.25 acre per 100 feet of barrier. Not to be used in concentrated flow areas.</td>
<td>Average: 70% Observed Range: 70% References: Virginia, 1980 cited in EPA, 1991</td>
<td>0.25</td>
<td>Average: $4 per lin ft ($1,600 per drainage acre) Range: $2 - $8 per lin ft References: Goldman, 1988; Virginia, 1991</td>
<td>Average: 100% Range: 100% References: SWRPC, 1991</td>
<td>$17 per lin ft $6,600 per drainage acre</td>
</tr>
<tr>
<td>Construction Entrance</td>
<td>Removes sediment from vehicles' wheels.</td>
<td>Average: NA Observed Range: NA References: None</td>
<td>2</td>
<td>Average: $2,000 each Range: $1,000 - $4,000 References: Goldman, 1988; NC State, 1990</td>
<td>Average: NA* Range: NA References: None</td>
<td>$1,500 each</td>
</tr>
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<td>With washrack: Average: $3,000 each Range: $1,000 - $5,000 References: Virginia, 1991</td>
<td>$2,000 each</td>
</tr>
<tr>
<td>Practice</td>
<td>Design Constraints or Purpose</td>
<td>Percent Removal of TSS</td>
<td>Useful Life (years)*</td>
<td>Construction Cost</td>
<td>Annual Maintenance Cost (as % construction cost)</td>
<td>Total Annual Cost</td>
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<tr>
<td>Vegetative Filter Strip</td>
<td>Must have sheet flow.</td>
<td>Average: 70%</td>
<td>2</td>
<td>Established from existing vegetation-</td>
<td>Average: NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observed Range: 20% - 80%</td>
<td>Range: $0</td>
<td>Range: $0</td>
<td>References: Schueler, 1987</td>
<td>References: None</td>
</tr>
</tbody>
</table>

NA - Not available.

* Useful life estimated as length of construction project (assumed to be 2 years)

* For Total Annual Cost, assume Annual Maintenance Cost = 20% of construction cost.

* Assumes trap volume = 1800 cfs (0.5 inches runoff per acre).

* Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).

* Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).
Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

*Estimated
EFF = Efficiency
Figure 4-4. Comparison of cost and effectiveness for erosion control practices (based on information in tables 4-15 and 4-16).
B. Construction Site Chemical Control Management Measure

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

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

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

1. Applicability

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

2. Description

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

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

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

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

(2) The physical characteristics of the construction site. The majority of all pollutants generated at construction sites are carried to surface waters via runoff. Therefore, the factors affecting runoff volume,
such as the amount, intensity, and frequency of rainfall; soil infiltration rates; surface roughness; slope length and steepness; and area denuded, all contribute to pollutant loadings.

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

a. Pesticides

Insecticides, rodenticides, and herbicides are used on construction sites to provide safe and healthy conditions, reduce maintenance and fire hazards, and curb weeds and woody plants. Rodenticides are also used to control rodents on 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 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.

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 sites, 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 off.

f. Other Pollutants

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

Proceeding operations, in which seed, fertilizers, and lime are applied to the ground surface in a one-step operation, are more conducive to nutrient pollution than are the conventional seedbed-preparation operations, in which fertilizers and lime are tilled into the soil. Use of fertilizers containing little or no phosphorus may be required by
local authorities if the development is near sensitive waterbodies. The addition of lime can also affect the pH of sensitive waters, making them more alkaline.

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

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

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

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

3. Management Measure Selection

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

This management measure was selected because (1) construction activities have the potential to contribute to increased loadings of toxic substances and nutrients to waterbodies; (2) various States and local governments regulate the control of chemicals on construction sites through spill prevention plans, erosion and sediment control plans, or other administrative devices; (2) 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.
Il. Construction Activities

Pesticides 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 as 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 ne the storage area, and notifying neighboring property owners prior to spraying.

b. Property 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 construction workers.

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

f. Develop and implement a spill prevention and control plan. Agencies, contractors, and other commercial entities that store, handle, or transport fuel, oil, or hazardous materials should develop a spill response plan.
Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Spill control plan components should include:

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

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

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

Washout from concrete trucks should be disposed of into:

- A designated area that will later be backfilled;
- An area where the concrete wash can harden, can be broken up, and then 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.**
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,

(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 understroking.

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

APPROVED AS TO FORM
AND LEGALITY:

[Signature]
HOWARD H. FUKUSHIMA
Deputy Corporation Counsel
County of Maui

C:\wp51\words\flows\pk
I HEREBY CERTIFY that the foregoing BILL NO. 6 (1992), Draft 1

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 1st day of May, 1992, by the following votes:

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<tbody>
<tr>
<td>Aye</td>
<td>Aye</td>
<td>Excused</td>
<td>Excused</td>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
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</table>

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 1st day of May, 1992.

DATED AT WAILUKU, MAUI, HAWAII, this 1st day of May, 1992.

[Signature]
HOWARD S. KIHUNE, CHAIR
Council of the County of Maui

[Signature]
DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 5th DAY OF MAY, 1992.

[Signature]
LINDA CROCKETT LINGLE, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 2108 of the County of Maui, State of Hawaii.

[Signature]
DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

Passed First Reading on January 17, 1992.

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 2108, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

[Signature]
County Clerk, County of Maui
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

Dear Mr. Tengan:

Thank you for your letter dated March 14, 2005, regarding the early consultation request for the subject action. In response to your comments we note the following:

1. The applicant acknowledges that water availability is not granted or guaranteed until an application for a water meter has been received and reviewed. Discussions relating to both source availability and water resource requirements (both potable and non-potable) will be included in the Draft Environmental Assessment (EA).

2. Domestic and irrigation water calculations, along with fire flow calculations, will be submitted to your department in order to determine adequacy during the building permit application process. The applicant acknowledges that reduced pressure back-flow prevention may be required for the proposed facility if one does not already exist. Construction plans will be submitted to your Engineering Division during the building permit application process.

3. The applicant acknowledges your recommendations regarding water conservation measures and will consider the feasibility and applicability of those suggestions.

4. Best Management Practices will be utilized to minimize runoff and protect area water resources.
May 4, 2005

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

SUBJECT: Proposed Self Storage Facility at TMK 4-5-07:04, Lahaina, Maui, Hawaii

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3. The applicant acknowledges your recommendations regarding water conservation measures and will consider the feasibility and applicability of those suggestions.

4. Best Management Practices will be utilized to minimize runoff and protect area water resources.
Thank you again for your input regarding the proposed action. A copy of the Draft EA will be provided to your office for review and comment. Please do not hesitate to call me should you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc:  Stacy Otomo, Otomo Engineering, Inc.
     Howard Mural, Finance Holdings, Ltd.
Thank you again for your input regarding the proposed action. A copy of the Draft EA will be provided to your office for review and comment. Please do not hesitate to call me should you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc: Stacy Otomo, Otomo Engineering, Inc.
    Howard Murai, Finance Holdings, Ltd.
April 6, 2005

Mr. Mark A. Roy, Planner
Munekiyo & Hiraga, Inc.
305 S. High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Roy:

Subject: Early Consultation Request for Proposed Self-Storage Facility at TMK 4-5-07:04,
Lahaina, Maui, Hawaii

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. We encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinya
Manager, Engineering

NS/dt/lkh
May 4, 2005

Neal Shinyama
Maui Electric Company, Ltd.
210 West Kamehameha Avenue
P.O. Box 398
Kahului, Hawaii 96733-6898

SUBJECT: Early Consultation Comments on Proposed Self Storage Facility at
TMK 4-5-07-04, Lahaina, Maui, Hawaii

Dear Mr. Shinyama:

Thank you for your letter dated April 6, 2005, in response to the early consultation request regarding the subject action. We acknowledge the determination made by your office that there is no objection to the proposed project.

All necessary coordination with Maui Electric Company, Ltd., will be undertaken by the applicant's electrical consultant early in the plans preparation phase of work in order to address the electrical demand requirements of the proposed self-storage facility.

Thank you again for the input provided. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. Please do not hesitate to call me in the event that you require additional information or have any other questions related to the aforementioned subject action.

Very truly yours,

Mark Alexander Roy, Planner

MAR:yp
cc: Howard Murai, Finance Holdings, Ltd.
July 11, 2005

Mr. Mark A. Roy
Munekyo & Hiraga, Inc.
335 South High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Early Consultation Request for the
Proposed Self-Storage Facility at TMK: 4-5-07:04
Lahaina, Lahaina District, Island of Maui
TMK: (2) 4-5-007:004

Thank you for the opportunity to review and comment on the Early Consultation Request for the Proposed Self-Storage Facility at TMK: 4-5-07:04, which was received by our staff on February 24, 2005. 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.

Based on the submitted document, we understand the proposed undertaking consists of the construction of a self-storage facility on a cleared and currently vacant lot.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. The proposed project area is located within the boundaries of the Historic Lahaina District (State Site 50-50-03-3001). This area comprises the port town of the 1800s and is likely to have once been the location of pre-contact farming, perhaps with scattered houses, during the pre-contact period. Near-by known historic sites include the Kaeleh Burial Complex (SHNP 50-50-03-3550). Given the above information, we believe it is likely historic sites and/or remnants of previously disturbed sites may be 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 no action be taken on the proposed undertaking until an 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. Daghar at 662-8023.

Aloha,

Melanie Chinien, Administrator
State Historic Preservation Division
August 16, 2005

Melanie Chinen, Administrator
State Historic Preservation Division
State of Hawaii
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii

Dear Ms. Chinen:

Thank you for your letter of July 11, 2005, providing comments on the early consultation request for the subject action.

We acknowledge the determination made by your office that an archaeological inventory survey has yet to be conducted for the subject property and that, given the historic importance of the surrounding area, historic sites and/or remnants of previously disturbed sites may be present in the subsurface deposits. As such, the applicant is currently in the process of completing an archaeological inventory survey for the proposed project area to determine whether significant historic sites are present on-site. Upon completion, a copy of the report documenting findings of the archaeological inventory survey will be forwarded to your office to allow resumption of the historic preservation review process.
We appreciate the input provided by your office and look forward to receiving your comments on the archaeological inventory survey. Should you have any questions or require further information on the subject action, please feel free contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

cc: Lisa Rotunno-Hazuka, Archaeological Services Hawaii
    Kivette Caigoy, Department of Planning
    Paul Fasi, Department of Planning
    Howard Murai, Finance Holdings
    Stacy A. Otomo, P.E., Otomo Engineering, Inc.
    Eric Taniguchi, A.I.A.
Chapter XI

Letters Received During the Draft Environmental Assessment Public Comment Period and Responses to Substantive Comments
XI. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

A Draft Environmental Assessment (EA) for the subject project was filed and published in the Office of Environmental Quality Control's The Environmental Notice on June 8, 2005. Copies of the Draft EA were provided to agencies and organizations for review and comment. A copy of the Draft EA was also made available for public review at the Lahaina Public Library prior to the publication of the Draft EA in the Environmental Notice.

Comments on the Draft EA were received during the 30-day public comment period. All letters received during the Draft EA public comment period, as well as responses to substantive comments, are included in this chapter. The Draft EA was reviewed and discussed by the approving agency, Maui Planning Commission, at its meeting of June 14, 2005. In addition to the review by the Maui Planning Commission, advisory input was also received on the project during a Cultural Resources Commission (CRC) review meeting held on July 7, 2005. The Planning Commission’s and the Cultural Resources Commission’s comments, as well as the applicant’s responses to those comments are also incorporated in this chapter.
June 30, 2005

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

Dear Mr. Foley:


Thank you for the opportunity to review and comment on the Draft Environmental Assessment Prepared in Support of the Special Management Area Use Permit Application for the Proposed Wainea Self-Storage Facility and Related Improvements at TMK: 4-5-07:04, which was received by our staff on May 27, 2005. 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.

Based on the submitted document, we understand the proposed undertaking consists of the construction of a self-storage facility on a cleared and currently vacant lot.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. The proposed project area is located within the boundaries of the Historic Lahaina District (State Site 50-50-03-3001). This area comprises the port town of the 1800s and is likely to have once been the location of pre-contact farming, perhaps with scattered houses, during the pre-contact period. Near-by known historic sites include the Kainehi Burial Complex (SIHP 50-50-03-3550). Given the above information, we believe it is likely historic sites and/or remnants of previously disturbed sites may be 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 no action be taken on the proposed undertaking until an 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. Daght at 692-8023.

Aloha,

Melanie Chinien, Administrator
State Historic Preservation Division
August 16, 2005

Melanie Chinen, Administrator
State Historic Preservation Division
State of Hawaii
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007; SMA 2005/0007)

Dear Ms. Chinen:

Thank you for your letter of June 30, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action.

We acknowledge the determination made by your office that an archaeological inventory survey has yet to be conducted for the subject property and that, given the historic importance of the surrounding area, historic sites and/or remnants of previously disturbed sites may be present in the subsurface deposits. As such, the applicant is currently in the process of completing an archaeological inventory survey for the proposed project area to determine whether significant historic sites are present on-site. Upon completion, a copy of the report documenting findings of the archaeological inventory survey will be forwarded to your office to allow resumption of the historic preservation review process.
We appreciate the input provided by your office and look forward to receiving your comments on the archaeological inventory survey. Should you have any questions or require further information on the subject action, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

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CC: Lisa Rotunno-Hazuka, Archaeological Services Hawaii
    Kivette Caigoy, Department of Planning
    Paul Fasi, Department of Planning
    Howard Murai, Finance Holdings
    Stacy A. Otomo, P.E., Otomo Engineering, Inc.
    Eric Taniguchi, A.I.A.
June 30, 2005

Mr. Howard Muri
Finance Holdings, Ltd.
1164 Bishop Street, 10th Floor
Honolulu, Hawaii 96813

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

Mr. Mark A. Roy
Munekiyo & Hiraga, Inc.
205 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Messrs. Muri, Foley, and Roy:

The Office of Environmental Quality Control has received the draft environmental assessment for the Waihe'e Self Storage project, Tax Map Key (2) 4-5-07:04, in the judicial district of Lahaina and offers the following comments for your consideration and response.

SUSTAINABLE BUILDING GUIDELINES: Please refer to, and incorporate as appropriate into the design plan, guidance concerning sustainable building found on our internet website at http://www.state.hi.us/health/eoqc/guidance/index.xhm.

Thank you for the opportunity to comment. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

Genevieve Salmonson
Director
August 16, 2005

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

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007, SM1 2005/0007)

Dear Ms. Salmonson:

Thank you for your letter of June 30, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action.

We acknowledge the request made by your office to refer to, and incorporate as appropriate into the design plan, guidance concerning sustainable building design in Hawaii, which was adopted by the Environmental Council on October 13, 1999.

The development of the proposed self storage facility on the project site has been specifically selected by the applicant as it meets the overall objective of satisfying local community needs with minimal impact implications. While catering to existing residual demand for storage space in Lahaina Town, the overall design and use characteristics associated with the daily operation of the proposed project will also involve minimal resource consumption and waste generation rates. To further ensure the minimization of environmental impacts, the following sustainable principles have been incorporated into the design plan for the proposed self storage facility:

1. Best Management Practices (BMPs) will be implemented during the development of the proposed project to minimize short-term construction impacts on the surrounding environment.

2. Energy-efficient fixtures will be installed within the proposed building.
Genevieve Salmonson, Director
August 16, 2005
Page 2

3. Water conserving, low flow fixtures will be installed in restroom facilities within the proposed building.

4. Drought tolerant species of plants will be integrated into the landscaping design, as appropriate.

5. The landscaping for the proposed project will seek to incorporate Native Hawaiian flora, based on availability of appropriate species.

6. The applicant will seek to purchase EPA rated, Energy Star, energy-efficient office equipment, appliances, computers and copiers during occupancy and operation of the self storage facility.

7. The applicant will seek to purchase business products with recycled content, such as paper, toners, etc. during occupancy and operation of the self storage facility.

8. The applicant will seek to purchase furniture made with sustainably harvested wood, or with recycled content materials during occupancy and operation of the self storage facility.

We appreciate the input provided by your office. Should you have any questions or require further information on the subject action, please feel free to contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

cc: Kivette Calgo, Department of Planning
    Paul Fasi, Department of Planning
    Howard Murai, Finance Holdings
    Eric S. Taniguchi, A.I.A.
    Russel Gushi, ASLA
MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR
FROM: MILTON M. ARAKAWA, A.I.C.P., DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
SUBJECT: APPLICATIONS FOR DRAFT ENVIRONMENTAL ASSESSMENT AND
SPECIAL MANAGEMENT AREA USE PERMITS
WAINEE SELF STORAGE
TMK: (2) 4-5-007:004
EA 2005/0007, SM1 2005/0007

We reviewed the subject application and have the following comments:

1. Submit plan for construction waste disposal/recycling. Include facility recycling such as bins for clothes collection by non-profits.

2. Although wastewater system capacity is currently available as of June 21, 2005, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.

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

4. Developer is not required to pay assessment fees for this area at the current time.
5. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.

6. Plans should show the installation of a single service lateral and an advance riser for each lot.

7. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.

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

9. Existing trees in the new Wainee Street right-of-way shall either be removed or be located within a landscape planter area and outfitted with root barriers. Trees shall not obstruct sight distance of vehicles entering or exiting the project driveway.

10. A road-widening lot shall be provided for the adjoining half of Wainee Street to provide for future 56 foot wide right-of-way and improved to County standards to include, but not be limited to pavement widening, construction of curb, gutter and sidewalk, street lights and relocation of utilities underground. Said lot shall be dedicated to the County upon completion of the improvements.

11. All structures such as walls, trees, etc., shall be removed or relocated from the road-widening strip. The rear boundaries of the road-widening strip shall be clearly marked to determine if said structures have been properly removed and relocated.

12. A verification shall be provided by a Registered Civil Engineer that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.

13. A detailed and final drainage report and a Best Management Practices (BMP) Plan shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the “Rules and Design of Storm Drainage Facilities in the County of Maui” and must provide verification that the grading and runoff water generated by the project will not have
an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.

14. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.

15. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.

16. For all infrastructure to be dedicated to the County, preliminary construction plan submittal shall include a completed technical assistance review performed by the Disability and Communication Access Board (DCAB) for compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for all facilities. All technical and structural infeasible assessments shall be the responsibility of the developer and an agreement waiving the County of Maui of any future liability including redesign and reconstruction for said facility shall be recorded with the State Bureau of Conveyances.

17. The plans submitted for the 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.

18. All grading/grubbing work shall comply with Chapter 20.08 (Soil Erosion and Sedimentation control) of the Maui County Code.

19. The project shall comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

20. The project may be subject to Section 16.08 (Driveways) of the Maui County Code.

If you have any questions regarding this memorandum, please call Michael Miyamoto at 270-7845.
August 16, 2005

Milton Arakawa, A.I.C.P., Director
Department of Public Works and
Environmental Management
County of Maui
200 S. High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) and Application for Special
Management Area (SMA) Use Permit for Proposed Wainee Self
Storage Facility and Related Improvements at TMK (2)4-5-07:04,
Lahaina, Maui, Hawaii (EA 2005/0007, SMA 2005/0007)

Dear Mr. Arakawa:

Thank you for your letter of July 12, 2005, providing comments on the Draft Environmental
Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the
subject action.

We have prepared the following responses to your comments, which are arranged below
in the same order as they appear in your letter.

1. Solid waste generated from site construction will be recycled to the extent
practicable. Where recycling is not feasible, construction waste will be conveyed
to an approved construction waste disposal site. Though the applicant does not
intend to provide bins for recycling of clothes at the facility, it should be noted that
every effort will be made to donate recyclable items in cases where self storage
users abandon stored items.

2. We acknowledge that wastewater capacity cannot be ensured until the issuance of
building permits.

3. Detailed wastewater contribution calculations will be submitted during the
construction plans preparation phase of work.

4. We acknowledge the determination made by your office that the applicant is not
required to pay assessment fees at the current time.
5. We acknowledge that the applicant is required to fund any necessary off-site improvements to collection systems and wastewater pump stations.

6. The plans to be submitted during the construction permitting phase of work will show the installation of a single service lateral and an advance riser for the proposed structure.

7. Non-contact cooling water and condensation from the proposed project will not be allowed to drain to the wastewater system.

8. The proposed self storage facility will not contain a kitchen area.

9. Existing structures and trees in the Wainee Street right-of-way will be removed, as required, to ensure unobstructed sight distance for vehicles entering or exiting the project driveway.

10. A road widening lot, allowing a future 56-foot right-of-way for the adjoining half of Wainee Street will be dedicated to the County. The road widening lot will be improved as necessary to County standards to include pavement widening, construction of curb, gutter and sidewalk, streetlights and relocation of utilities underground prior to dedication to the County.

11. All existing structures will be removed from the road-widening strip and the rear boundaries of the area will be clearly marked to show that all said structures have been removed.

12. The Preliminary Drainage Report (PDR), prepared by Otomo Engineering, Inc., verifies that runoff from the proposed project will not have an adverse impact on adjacent or downstream properties.

13. Grading plans will be submitted along with a Final Drainage Report (FDR) and a Best Management Practices (BMP) Plan for review and approval prior to the issuance of grading permits. All necessary hydrologic and hydraulic calculations, as well as schemes for the disposal of run-off waters, will be included within the FDR, which will comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui". As with the PDR, the FDR will also provide verification that grading and run-off water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan will show the location and details of structural measures to control erosion and sedimentation to the maximum extent practicable.
14. All existing structures will be shown on the project plat plan.

15. A site plan and a sight distance report to determine required and available sight distances at the proposed driveway of the project site, as well as at existing intersections along Wainee Street will be provided to the Department for review and approval during the building permit application phase of work. It is noted that the proposed project will not involve the installation of any additional intersections in the area.

16. The plans to be submitted during the construction permitting process will address compliance issues with the Americans with Disabilities Act (ADA) for all infrastructure to be dedicated to the County. Structural infeasibility assessments which may be required will be the responsibility of the applicant and an agreement waiving the County of Maui of any future liability will be recorded with the State Bureau of Conveyances.

17. We acknowledge that the plans will be reviewed for compliance with building codes during the construction permitting process.

18. All grading/grubbing work will comply with Chapter 20.80 (Soil Erosion and Sedimentation Control) of the Maui County Code.

19. The proposed project will comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.

20. The applicant acknowledges that the project may be subject to Section 12.08 (Driveways) of the Maui County Code.
We appreciate the input provided by your office. Should you require additional information or have any other questions related to the aforementioned subject action, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

cc:  Kivette Caigoy, Department of Planning
     Paul Fasi, Department of Planning
     Howard Murai, Finance Holdings
     Stacy Otomo, P.E., Otomo Engineering, Inc.
     Eric S. Taniguchi, A.I.A.
     Russel Gushi, ASLA
July 7, 2005

Mr. Michael W. Foley, Director
Planning Department
250 South High Street
Wailuku HI 96793
Attn: Ms Kivette A. Caigoy, Staff Planner

Project Name: Wainee Self Storage Facility
TMK: (2) 4-5-007:004, Lahaina
ID: EA 2005/0007 & SM 2005/0007

Dear Mr. Foley:

Thank you for the opportunity to comment on this project proposal.

Source Availability and Consumption

The project site is served by our Lahaina system with Laniopoko aquifer as major source of water. As of May 2005, pending projects in West Maui at some stage of discretionary review total roughly 17.9 MGD, of which about 8.3 MGD plan to connect to the county system. DWS does not grant or imply any guarantee of water until an application for water meter has been received and reviewed. Water availability will be determined at time of meter application.

Anticipated consumption based on system standards is approximately 2,600 gpd. The applicant estimates an average daily use of 900 gpd. Empirical use of self storage facilities suggests that actual usage will likely be higher than the applicant's estimate.

System Infrastructure

Twelve inch and eight inch waterlines run along the West and East sides of the project site. The applicant should be required to provide domestic and irrigation services as well as fire protection in accordance with standards. Domestic, irrigation and fire flow calculations will be required in the building permit process. Actual fire demand for structures is determined by using fire flow calculations prepared, signed and stamped by a certified architect or engineer. 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. Required fire flow for business districts is 2000 gallons per minute (gpm) at 250 feet spacing for a 2 hour duration. Installation of reduced pressure back-flow prevention approved by the Department should also be required.

By Water All Things Find Life
Conservation and Pollution Prevention

Included in the application material is our comment letter of March 14, 2005. We encourage the applicant to include water conservation measures listed in our letter in the project design and construction as well as implement Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction and vehicle operations.

Should you have any questions regarding system infrastructure and requirements, please call our Engineering Division at 270-7835 and any questions on source availability or conservation and resource matters, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,

[Signature]
George Y. Tengar
Director

cc: Engineering Division
Applicant
August 16, 2005

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

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007, SMA 2005/0007)

Dear Mr. Tengan:

Thank you for your letter of July 7, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action. We offer the following information in response to the comments noted:

Source Availability and Consumption

We acknowledge the determination made by your office that the subject property is located in an area of the Lahaina System and that water availability will be determined at the time of meter application.

The Department’s estimation regarding anticipated water consumption of 2,600 gallons per day (GPD) is also acknowledged. We would, however, like to note that the scale of the proposed project, containing approximately 22,780 square feet of storage space, is significantly smaller than other self storage facilities found on Maui and will not include common features, such as an apartment for a resident manager and multiple restrooms. Water demand, therefore, expected to be limited to irrigation systems, exterior hosebibs and a single restroom facility. As such, a lower than average water consumption estimate of 900 GPD has been utilized for the purposes of the EA.
System Infrastructure

We acknowledge your comments regarding available system infrastructure and fire flow calculations/requirements for business districts, as well as the determination that the applicant may be required to install reduced pressure back-flow prevention approved by the Department. The applicant will provide domestic and irrigation services, as well as fire protection in accordance with standards. All required domestic, irrigation and fire flow calculations will be submitted during the building permit application phase of work.

Conservation and Pollution Prevention

We acknowledge your recommendations regarding water conservation measures and will consider the feasibility and applicability of those suggestions. It is also noted that Best Management Practices (BMPs) will be implemented to minimize runoff and protect area water resources from construction and vehicle operations.

We appreciate the input provided by your office. Should you require additional information or have any other questions related to the aforementioned subject action, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

cc:  Kivette Cagoy, Department of Planning
     Paul Fasi, Department of Planning
     Howard Murai, Finance Holdings
     Stacy Otomo, P.E., Otomo Engineering, Inc.
     Eric S. Taniguchi, A.I.A.
     Russel Gushi, ASLA
July 1, 2005

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

Dear Mr. Foley:

Subject: Waihee Self Storage Facility
Special Management Area Use Permit (SM1 2005/0007) and
Draft Environment Assessment (DEA 2005/0007)
TMK: (2) 4-5-007: 004

In reply to your request for our review of the subject application, this is to advise you that the proposed storage facility will not have a significant impact on our highway facilities.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation
August 16, 2005

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

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Waihee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007, SM1 2005/0007)

Dear Mr. Haraga:

Thank you for your letter of July 1, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action.

We acknowledge the determination made by your office that the proposed self storage facility will not have a significant impact on State highway facilities.

We appreciate the input provided by your office. Should you have any questions or require further information on the subject action, please feel free contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy  
Planner

cc: Kivette Caigoy, Department of Planning  
Paul Fasi, Department of Planning  
Howard Mural, Finance Holdings  
Stacy Otomo, P.E., Otomo Engineering, Inc.  
Eric S. Taniguchi, A.I.A.
MEMORANDUM

TO: MS. SUSAN MOIKEHA, Chair
    AND MEMBERS OF THE MAUI PLANNING COMMISSION

FROM: MR. SAM KALALAU, Chair
    AND MEMBERS OF THE CULTURAL RESOURCES COMMISSION

RE: CULTURAL RESOURCES COMMISSION COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR A SELF-STORAGE FACILITY LOCATED AT TMK: 4-5-007: 004, LAHAINA, ISLAND OF MAUI, HAWAII (EA 2005/0004)

At your regular meeting of June 14, 2005, the Maui Planning Commission (Commission) reviewed the Draft Environmental Assessment (EA) for the proposed self-storage facility located on Wainee Street in Lahaina, Maui. The Commission noted that the property is located near the boundaries of the County historic districts, and as such, requested review and comments from the Cultural Resources Commission (CRC) regarding the design of the proposed project in relation to the architectural character of the County historic districts.

At its regular meeting on July 7, 2005, the Cultural Resources Commission (CRC) reviewed the design of the proposed project. Comments and recommendations from the CRC are as follows:

1. Incorporate native vegetation in the landscape planting plan to the extent practicable.

2. Discuss how the visual impacts of the long wall abutting the Longhi Building were assessed in relation to the scale of Lahaina Town. The CRC further noted that they do not object to the design but requested that the concern be discussed.
3. That the applicant meet with the West Maui Taxpayers Association, Lahaina Restoration Association, and the Lahaina Town Action Committee.

4. The CRC further noted that the proposed project successfully integrates design elements of both residential and commercial character. The design of the structure favorably gives the appearance of two (2) stories while in actuality using three (3) stories. Further, the location of the parking area in relation to the building successfully allows ease of access.

5. The CRC expressed concerns with security in the evening hours and the potential impacts to the neighboring elderly housing property. The CRC recommended incorporating a gated system and/or security system within the project.

6. The State Historic Preservation Division (SHPD) recommended an archaeological inventory survey be conducted for the property, and the CRC requested the opportunity to review the results of the archaeological inventory survey.

Further, the Cultural Resources Commission recommends incorporating copies of the plans shown at the CRC meeting into the Final EA.
August 16, 2005

Sam Kalalau, Chair, and the
Members of the Cultural Resources Commission
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007, SM1 2005/0007)

Dear Mr. Kalalau:

Thank you for your letter of July 7, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action.

We have prepared the following responses to your comments, which are arranged below in the same order as they appear in your letter:

1. The applicant intends to incorporate native vegetation in the landscaping plan to the extent practicable. The use of native species deemed appropriate for the landscaping requirements of the proposed project will, however, be contingent on the availability of the required field stock on Maui at the time of landscaping.

2. As discussed during the July 7, 2005 CRC meeting, the design for the proposed project was selected on a basis of providing the area with a transitional use between existing high activity commercial uses (Longhi commercial building, Kaiser Permanente and First Hawaiian Bank) to the south and residential uses (Pillani Elderly Housing Project) to the north of the project site. The abutting wall of the proposed facility (32 feet) will be approximately 6 feet higher than that of the Longhi commercial building roofline (26 feet). The applicant, however, anticipates minimal visual impacts associated with this exposed area of wall to pedestrians and vehicles along both Wainee Street and Honoapiilani Highway. The angle of sight of pedestrians and vehicles traveling along Wainee Street and Honoapiilani Highway is limited by both the close proximity of the aforementioned roadways to the project...
site as well the existence of a number of large shade trees in the area. In an effort to reduce any visual impacts which may result, a combination of shaded tones and geometric lines will be implemented in the design of the wall in order to break up massing.

3. Copies of the Draft EA were transmitted to the West Maui Taxpayers Association, the Lahaina Restoration Foundation, and the Lahaina Town Action Committee on July 13, 2005. Follow-up coordination has since been undertaken with these three (3) Lahaina based organizations and any comments received will be presented at the upcoming CRC meeting scheduled for September 1, 2005.

4. The applicant acknowledges the determination by commissioners that the proposed project successfully integrates design elements of both residential and commercial character and that the design of the structure favorably gives the appearance of two (2) stories awhile in actuality providing three stories of storage space. Furthermore, the applicant also acknowledges the determination that the location of the parking area in relation to the building successfully allows ease of access.

5. The applicant concurs with the concerns expressed by the CRC in relation to ensuring security during evening hours when the facility will be closed, especially when considering the close proximity of the neighboring Pilani Elderly Housing Project. A number of security measures are therefore proposed to ensure the prevention of unauthorized access to the project site during evening hours including fencing along both the Wainee Street and Honoapiilani project site boundaries, a lockable access gate at the project driveway along Wainee Street and installation of low-level lighting and a security alarm system.

6. As outlined in your comment, the State Historic Preservation Division, in letters dated June 30, 2005 and July 11, 2005, recommended the completion of an archaeological inventory survey for the project site. We acknowledge the request made by CRC at the July 7, 2005 meeting for the opportunity to review the findings of the archaeological inventory survey. As such, a post field investigation report has been attached to this letter detailing all findings and recommendations resulting from the archaeological inventory survey fieldwork that was completed on August 4, 2005 by Lisa Rotunno-Hazuka of Archaeological Services Hawaii. A review of the findings of the archaeological inventory survey by CRC has been scheduled for the September 1, 2005 meeting.

We appreciate the input provided by the CRC and look forward to reviewing the findings of the archaeological survey with the commissioners at the September 1, 2005 meeting.
Should you require additional information or have any other questions related to the aforementioned subject action, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

MAR:ifm
Enclosure

cc:  Kivette Caigoy, Department of Planning (w/enclosure)
     Paul Fasi, Department of Planning (w/out enclosure)
     Howard Mural, Finance Holdings (w/out enclosure)
     Lisa Rotunno-Hazuka, Archaeological Services Hawaii (w/out enclosure)
     Stacy Otomo, P.E., Otomo Engineering, Inc. (w/out enclosure)
     Eric S. Taniguchi, A.I.A. (w/out enclosure)
     Russel Gushi, ASLA (w/out enclosure)
5 August 2005

Mr. Mark Roy
Munekiyo and Hiraga

VIA FACSIMILE

Subject: Post-Field Summary Letter for TMK 4-05-07: 04 located in Lahaina

Dear Mark,

Please be advised that the post-field summary letter (attached) is written to summarize the subsurface testing which was performed at the above referenced parcel on 4 August 05. The summary letter briefly describes the project area, the purpose for the inventory survey and discusses future recommendations for this parcel. Although it is a summary, the content of this letter will be similar to the final archaeological inventory Survey Report. All discussions and recommendations contained within the post-field summary letter, will be presented within the final report. Again, there are no deviations between a post-field summary letter and the report, it is merely a tool to summarize recently completed work.

Thank you for this opportunity, if you should have any questions and or comments, please do not hesitate to call me.

Respectfully,

Lisa Kono-Hazuka
Consulting Archaeologist
ARCHEOLOGICAL SERVICES HAWAI'I, LLC (ASH)
1930A Vineyard Street
Wailuku, Hawaii 96793
Ph. (808) 244-2012; Fax (808) 244-9592

4 August 2005

Howard Muni
Lee Miller
Finance Holdings, Ltd.

Re: Post-field Summary Letter for Archaeological Testing at TMK 4-5-07:4, Lahaina, Maui Island

Dear Mr. Muni,

Archaeological Services Hawai‘i, LLC (ASH), of Wailuku, conducted an archaeological inventory survey of a parcel of land located in Panawa ahepua‘a, Lahaina District, Maui Island. The current undertaking was conducted to determine presence/absence of surface archaeological sites, and the potential for subsurface sites. Ms. Diane Guerriero (B.A.), performed the survey and subsurface testing on August 4, 2005. Ms. Lisa Rotunno-Hazuka (B.A.) coordinated the project, and Mr. Jeffrey Pantaeco was the Principal Investigator.

The project area (TMK 4-5-07: 4), encompassing 0.428 acres (18,000 sq. ft.), is situated along the lower northeasterly slopes of West Maui in the coastal portion of Lahaina, Panawa ahepua‘a, Lahaina District (Figure 1). It is bounded on the east by Honoapiilani Highway, to the south by Parcel 9, along the north by Parcel 5, and Wainee Street defines the west (Figure 2). The parcel is relatively flat and void of vegetation with the exception of large mango trees along the north and south property boundaries. It has undergone previous disturbances with the removal of a residential structure, and surface grading. It is situated near the coast less than a kilometer inland from the coast. The elevation ranges from sea level to about 5 feet above mean sea level and receives less than 15 inches of rain annually (Armstrong 1983:62), with most occurring during the winter months between November and February. Foote et al. (1972:115-116) have placed the soils of the project area within the Pulehu Series. "This series consists of well-drained soils on alluvial fans and stream terraces and in basins. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevation ranges from nearly sea level to 300 feet". Specific to the project area is soils identified as Pulehu silt loam, with 0 to 3 percent slopes (PPA), permeability is moderate, runoff is slow, and the erosion hazard is no more than slight. These soils are primarily associated with sugarcane production, and homesites.

The study area is located within the boundaries of the Lahaina National Historic Landmark and is in close proximity to Front Street and Kenui Street where traditional period occupation cultural layers, and Native Hawaiian burial sites have been identified. Due to these circumstances, historic period materials and possibly pre-Contact historic properties may be recovered during subsurface investigations.

Initially, a pedestrian survey of the parcel was conducted to determine the presence/absence of cultural remains and or isolated artifacts. No surface cultural remains were identified, however the parcel had been previously cleared and disturbed. Due to a lack of surface historic properties from past clearing and grubbing, subsurface investigations through mechanical backhoe trenching
was implemented. A total of 9 backhoe trenches were excavated. Excavation was terminated when bedrock or sterile subsoil was reached. No cultural remains or deposits were encountered in all of the trenches. Trenches 1 thru 3 were excavated along the eastern portion of the project area; Trenches 1 thru 6 in the central portion and Trenches 7 thru 9 in the western portion.

Generally, three to five stratigraphic layers were exposed in the trenches. The “A” horizon, defined as the surface organic zone, was absent in the central portion of the project area from previous grading activities; the “A” horizon was identified along the north, south and western boundaries under the tree canopy. Surface coverage was scattered patches of various grasses and weeds.

The stratigraphic components of Trench 1 along the northeastern end of the project area were described as:

Layer I (25cm thick): dark grayish-brown (10YR 4/2) silt with few roots and a moderate amount of sub-angular pebbles and recent debris including lumber and glass; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (40cm thick): brown, dark brown (7.5YR 4/2, 4/3, 3/3) silt with clay peds and water affected cobbles; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (30cm thick): brown, dark brown (10YR 4/3) silt with fewer water affected cobbles than Layer II; slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer IV (30cm thick): gray, grayish brown (10YR 5/1, 5/2) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic; non-cultural.

Layer V (40cm thick): gray, grayish brown (10YR 5/1, 5/2) gravel, stream bed, extremely hard, firm, non-sticky, non-plastic; non-cultural. BOE 1.6mbs

The stratigraphic components of Trench 2 along the southeastern end of the project area were described as:

Layer I (27cm thick): dark grayish-brown to brown (10YR 4/3) silt with few roots and a moderate amount of sub-angular pebbles and debris including glass and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (40cm thick): brown, dark brown (10YR 4/3, 3/3) silt with clay peds and water affected cobbles; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (50cm thick): dark brown, dark yellowish brown (10YR 3/3, 3/4) silt with clay peds, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer IV (20cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, extremely hard, firm, non-sticky, non-plastic; non-cultural.
Layer V (40cm thick): dark brown (7.5YR 3/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. BOE 1.8mbs

The stratigraphic components of Trench 3 along the northeastern end of the project area were described as:

Layer I (23cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer II (78cm thick): dark brown (10YR 3/3, 3/4) silt with clay peds, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer III (16cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic; non-cultural.
Layer IV (20cm thick): dark brown (7.5YR 3/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.
Layer IV (30cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic; non-cultural. BOE 1.66mbs

The stratigraphic components of Trenches 4 and 5 along the south central end and Trenches 7 and 8 along the southwestern portion of the project area were described as:

Layer I (15-20cm thick): dark brown (10YR 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer II (1 to 1.2m thick): dark brown (7.5YR 3/3) silt with clay peds, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer III (30-60cm thick): brown (10YR 4/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. Trenches 7 and 8 contained a deeper deposit of Layer III.
Layer IV in Trenches 4 and 5 (40 cm thick) very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic, non-cultural. BOE for TR 4 was 1.8 and TR 5 was 2mbs.

The stratigraphic components of Trench 6 along the central north end of the project area were described as:

Layer I (13cm thick): dark brown (10YR 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer II (80cm thick): dark brown (7.5YR 3/3) silt with clay peda, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (20cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, and small pebbles, storm wash, fine, extremely hard, firm, non-sticky, non-plastic; non-cultural. Layer IIIs (5cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) silt, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer IV (20cm thick): very dark grayish brown (10YR 3/2) loamy silt with scattered pebbles, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer V (50cm thick): dark brown, dark yellowish brown (10YR 3/1, 3/4) silt, charcoal flecks, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. BOE 1.7mbs.

The stratigraphic components of Trench 9 along the northwestern end of the project area were described as:

Layer I (10cm thick): dark brown (10YR 3/3) loamy silt with few roots, organic debris and few sub-angular pebbles and modern debris including recent glass, plastic; loose, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (60cm thick): dark reddish brown (5YR 3/3) silt clay with few roots, scattered sub-angular pebbles and cobbles, slightly hard, fine, friable, sticky, plastic; non-cultural.

Layer III (90cm thick): dark reddish brown (5YR 3/2) clay, a few cobbles, hard, fine, firm, very sticky, plastic; non-cultural. BOE 1.5mbs.

A total of nine backhoe trenches were excavated within this small parcel area. The results of archaeological testing, coupled with the project area’s close proximity to Kahuna Surum produced evidence for past agricultural use (possibly lo') within this parcel. The soil deposits were thick, and some layers exhibited charcoal flecking which is typical of agricultural soils. No evidence for pro-Contact or historic period habitation (beyond the presence of mango trees and the former structure) was recovered during the current undertaking. Further archival research and analyses of the LCA's in the immediate vicinity should provide additional information regarding past land use.

Due to the negative results of the backhoe testing, together with previous disturbances from surface grading activities, no further archaeological inventory work is recommended; however, due to the presence of significant sites in the vicinity, archaeological monitoring during initial construction-related activities is recommended to assess the subsurface and ensure that any unanticipated subsurface remains are properly documented.

If you have any questions, please contact Lisa Rotunno-Hazuka in Walluku at 281-3004

Respectfully

Lisa Rotunno-Hazuka
Consulting Archaeologist
REFERENCES

Armstrong, R.W., J.A. Bier, and S. Chang

Foote, D., E.L. Hill, S. Nakamura, and F. Stephens
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S) IMMEDIATELY FOLLOWING
Layer II (80cm thick): dark brown (7.5YR 3/3) silt with clay ped, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (20cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, and small pebbles, storm wash, fine, extremely hard, firm, non-sticky, non-plastic; non-cultural. Layer IIIa (5cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) silt, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer IV (20cm thick): very dark grayish brown (10YR 3/2) loamy silt with scattered pebbles, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer V (50cm thick): dark brown, dark yellowish brown (10YR 3/3, 3/4) silt, charcoal flecks, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. BOE 1.7mbs.

The stratigraphic components of Trench 9 along the northwestern end of the project area were described as:

Layer I (10cm thick): dark brown (10YR 3/2) loamy silt with few roots, organic debris and few sub-angular pebbles and modern debris including recent glass, plastic; loose, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (60cm thick): dark reddish brown (5YR 3/7) silty clay with few roots, scattered sub-angular pebbles and cobbles, slightly hard, fine, friable, sticky, plastic; non-cultural.

Layer III (90cm thick): dark reddish brown (5YR 3/2) clay, a few cobbles, hard, fine, firm, very sticky, plastic; non-cultural. BOE 1.5mbs.

A total of nine backhoe trenches were excavated within this small parcel area. The results of archaeological testing, coupled with the project areas close proximity to Kahuna Stream produced evidence for past agricultural use (possibly lo’i) within this parcel. The soil deposits were thick, and some layers exhibited charcoal flecking which is typical of agricultural soils. No evidence for pre-Contact or historic period habitation (beyond the presence of mango trees and the former structure) was recovered during the current undertaking. Further archival research and analyses of the L.C.A’s to the immediate vicinity should provide additional information regarding past land use.

Due to the negative results of the backhoe testing, together with previous disturbances from surface grading activities, no further archaeological inventory work is recommended; however, due to the presence of significant sites in the vicinity, archaeological monitoring during initial construction-related activities is recommended to assess the subsurface and ensure that any unanticipated subsurface remains are properly documented.

If you have any questions, please contact Lisa Rotunno-Hazuka in Wailuku at 281-3004.

Respectfully

Lisa Rotunno-Hazuka
Consulting Archaeologist
REFERENCES

Armstrong, R.W., J.A. Bier, and S. Chang

Foote, D., E.L. Hill, S. Nakamura, and F. Stephens
MEMO TO: MS. SUSAN MOIKEHA, CHAIR 
AND MEMBERS OF THE MAUI PLANNING COMMISSION

FROM: MICHAEL W. FOLEY, PLANNING DIRECTOR

SUBJECT: CRC ARCHEOLOGICAL FINDINGS REVIEW FOR THE PROPOSED SELF-STORAGE FACILITY LOCATED AT TMK: 4-5-007: 004, LAHAINA, ISLAND OF MAUI, HAWAII (EA 2005/0004)

At its regular meeting on September 1, 2005, the Cultural Resources Commission reviewed the archaeological findings report for the above-referenced project and recommended approval without comment.

If further clarification is required, please contact Paul Fasi, Staff Planner, of this office at 270-7814 or paul.fasi@co.maui.hi.us

MWF:PFbsv

c: Wayne A. Boteilho, Deputy Planning Director
  Clayton I. Yoshida, AICP, Planning Program Administrator
  Kivette A. Caigoy, Environmental Planner
  Mark Roy & Munekiyo & Hiraga
  EA Project File
  General File
  (K:\WP_DOCS\PLANNING\EA1200510004_SelfStorageMPC_CRC.wpd)
June 28, 2005

Michael Foley
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

RE: Draft Environmental Assessment and Special Management Area Use Permit for the Proposed Waine Self Storage Facility, Lahaina, Maui, TMK: (2) 4-5-07:04.

Dear Mr. Foley,

The Office of Hawaiian Affairs (OHA) is in receipt of your May 25, 2005 request for comment on the above listed proposed project, TMK: (2) 4-5-07:04. OHA offers the following comments:

The area of proposed development lies within the Lahaina National Historic Landmark District. Because of the historic nature of the parcel and the possibility that subsurface historic properties will be encountered, an Archaeological Monitoring Plan should be drafted in support of the proposed project. This document will analyze the need for “on-site” or “on-call” monitoring. If the plan is not completed, OHA’s default recommendation would be that all ground altering activities (footing excavations and trenching for water lines and other utilities) should be monitored by a professional archaeologist.

A possible alternative to a monitoring program would be an Archaeological Inventory Survey program that would emphasize subsurface testing. In either case, some form of documented excavation should take place with an archaeologist present to mitigate potential effects to subsurface historic properties.

OHA recommends that the proposed project’s landscaping plans include a variety of Native Hawaiian flora. This would help to create a native landscape and to promote a native ecosystem in coastal Lahaina, which is currently overrun with exotic flora and fauna.
Michael Foley  
June 28, 2005  
Page 2  

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

[Signature]

Clyde W. Nāmu'o  
Administrator
August 16, 2005

Clyde W. Nāmu'o, Administrator
State of Hawai‘i
Office of Hawaiian Affairs
711 Kapi‘olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for Proposed Wainee Self Storage Facility and Related Improvements at TMK (2)4-5-07:04, Lahaina, Maui, Hawaii (EA 2005/0007, SM1 2005/0007)

Dear Mr. Nāmu'o:

Thank you for your letter of June 28, 2005, providing comments on the Draft Environmental Assessment (EA) and Application for Special Management Area (SMA) Use Permit for the subject action.

We have prepared the following responses to your comments, which are arranged below in the same order as they appear in your letter.

1. We concur with the determination made by your office that the subject property is located within the Lahaina National Historic Landmark District (LNHLD). We also acknowledge that given the historic importance of the surrounding area, historic sites and/or remnants of previously disturbed sites may be present in the subsurface deposits. As such, the applicant is currently in the process of completing an archaeological inventory survey for the proposed project area to determine whether significant historic sites are present on-site. Upon completion, a copy of the report documenting findings of the archaeological inventory survey will be forwarded to the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR) for historic preservation review and determination.

2. In regards to landscaping, the applicant's landscape architect intends to utilize Native Hawaiian flora in the proposed project to the extent practicable.

3. Should human remains or significant Hawaiian cultural/traditional deposits be encountered during ground disturbance for the proposed project, work will cease at
once in the immediate area of the find and the appropriate agencies will be contacted pursuant to applicable law.

We appreciate the input provided by your office. Should you have any questions or require further information on the subject action, please feel free contact me at (808) 244-2015.

Very truly yours,

Mark Alexander Roy
Planner

MAR:fm
F:DATA\Peele\Notes\05\05\GreatPond\010.cad
cc: Klvette Calgoey, Department of Planning  
Paul Fasi, Department of Planning  
Howard Murai, Finance Holdings  
Russel Gushi, ASLA  
Lisa Rotunno-Hazuka, Archaeological Services Hawaii
Mr. Mark Roy  
Munekiyo & Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Roy:

RE: Maui Planning Commission Comments on the Draft Environmental Assessment (DEA) for a Self-Storage Facility located at TMK: 4-5-007: 004, Leilani, Island of Maui, Hawaii (EA 2005/0004)

At its regular meeting on June 14, 2005, the Maui Planning Commission (Commission) reviewed the above-referenced document and provided the following comments:

1. Discuss the demand for the proposed use within the West Maui area.

2. The Commission requests that the design of the proposed action be reviewed by the Urban Design Review Board (UDRB). The Commission further encourages the use of more shade trees as an element of design.

3. The Property is not located within the boundaries of the County Historic Districts, and as such, does not require review and approval by the Cultural Resources Commission (CRC). However, the Property is located near the boundaries, and the Commission recommends that the proposed action be reviewed by the CRC relative to the design of the structure! The Commission requests these comments prior to the public hearing for the Special Management Area Use permit application.

4. Discuss whether the proposed action considers designing the parking lot to accommodate large storage containers.
Mr. Mark Roy  
June 15, 2005  
Page 2  

Thank you for your cooperation. If additional clarification is required, please contact Ms. Kivette A. Calgoy, Environmental Planner, of this office at 270-7735.

Sincerely,

[Signature]

MICHAEL W. FOLEY  
Planning Director

MWF:KAC:Jar  
c: Wayne A. Boteilho, Deputy Planning Director  
Clayton I. Yoshida, AICP, Planning Program Administrator  
Kivette A. Calgoy, Environmental Planner  
Paul Fasi, Staff Planner  
EA Project File  
General File  
K:\WP_DOCS\PLANNING\EA\20050004_SelfStorage\MPC_DEAComments.wpd
August 16, 2005

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

SUBJECT: Draft Environmental Assessment (DEA) for a Proposed Self Storage Facility at TMK (2) 4-5-007-004, Lahaina, Maui, Hawaii

Dear Mr. Foley:

Thank you for providing us the Planning Commission’s comments on the Draft Environmental Assessment (DEA) for the subject action.

We have prepared the following responses to the comments provided. The responses are numbered to correspond with the listed comments set forth in your letter of June 15, 2005.

1. The applicant believes there to be a significant demand for self storage space in Lahaina Town, particularly among the local residential community. There are currently two existing self storage facilities in the Lahaina area, one located at the Anchor Square Commercial Center and the other situated in Honokowai. Preliminary market research completed by the applicant over a period of two (2) years indicates that the aforementioned facilities are currently operating at or very close to full occupancy. A third, large capacity (approximately 100,000 square feet) self storage facility is presently under construction in Lahaina Industrial Park and is reportedly intended for larger commercial uses. The design of the proposed self storage facility has, therefore, been tailored specifically towards catering to the additional residential demand for storage space that exists within Lahaina Town and will contain approximately 198 low volume units ranging from 3.5 ft. x 5 ft. to 10 ft. x 20 ft. in size. The project site has been selected as the optimal location for the subject action due to the presence of numerous nearby multi-family residential developments, such as Hale Mahaolu’s Lahaina Surf apartment complex. Furthermore, several residents of the neighboring Pillani Elderly Housing Project expressed a need for additional storage space beyond that currently available in their apartments during a community meeting held on March 16, 2005.
2. The applicant acknowledges the request by the Planning Commission that the preliminary designs for the proposed self storage facility be reviewed by the Urban Design Review Board (UDRB). A review of the project was provided by the Urban Design Review Board during a meeting that took place on July 19, 2005. A copy of the UDRB recommendation letter, dated July 25, 2005, has been attached to this letter for your reference.

Furthermore, the applicant acknowledges the importance of shade trees as an integral design element for Lahaina Town. Appropriate landscape planting will be provided accordingly.

3. The applicant concurs with the determination made by the Department of Planning, that the project site is not located within the boundaries of the County Historic Districts. However, as the property is located in the midst of Lahaina Town, the applicant also acknowledges the recommendation that the design of the proposed facility be reviewed by the Cultural Resources Commission (CRC). As such, a CRC meeting was attended on July 7, 2005, allowing comments to be received prior to the public hearing for the Special Management Area Use permit application.

4. As mentioned above, the proposed facility has been designed as a low volume, low activity facility catering specifically to existing residential demand for storage space in Lahaina Town. Insomuch as the proposed self storage facility is intended for residential users, container sized loading areas are deemed unnecessary.

Should you require additional information or have any other questions related to the aforementioned subject action, please do not hesitate to call me on (808) 244-2015.

Very truly yours,

Mark Alexander Roy, Planner

MARK TYP
Enclosure
cc: Howard Murai and Lee Miller, Finance Holdings, Ltd. (w/out enclosure)
Eric Taniguchi, Eric S. Taniguchi, AIA (w/out enclosure)
Ms. Susan Moikeha, Chairperson  
and Members of the Maui Planning Commission  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Dear Chairperson Moikeha and Commissioners:

RE: Proposed Wainee Self Storage Facility and Related Improvements at TMK (2) 4-5-07:04, Lahaina, Maui, Hawaii

At its regular meeting on July 19, 2005, the Maui Urban Design Review Board (UDRB) reviewed the design, landscaping, architectural plans, and related aspects of the proposed project referenced above. Based on those considerations within the Board’s purview, it voted to recommend approval subject to the following conditions:

1. Provide sufficient landscaping along the Honoapiilani Highway border of the building to mitigate the massing of the wall facing the highway.

2. Utilize landscaping (e.g. Areca Palms or similar), with a foliage height of 15 feet, to the extent field stock of the size specified is available on Maui, along the building’s Honoapiilani Highway and Wainee Street sides to soften the building’s massing.

3. Incorporate mansard roof detail along the roofline of the building’s elevation facing the Piilani Elderly Housing Project.

4. Utilize an Areca Palm or shade tree in the small alcove area between the building and Wainee Street.

The UDRB respectfully recommends its decision to be incorporated into the Maui Planning Commission’s deliberations during the public hearing on the SMA application.
Ms. Susan Moikeha, Chairperson
and Members of the Maui Planning Commission
July 25, 2005
Page 2

If additional clarification is required, please contact the undersigned or
Mr. Paul Fasi, Staff Planner, County of Maui, Department of Planning at (808) 270-7814.

Sincerely,

[Signature]

DEMETREOUS CALLINICOS
MAUI URBAN DESIGN REVIEW BOARD

DC:PF:jar

c: Clayton Yoshida, AICP, Planning Program Administrator
Paul Fasi, Staff Planner
Kivette Caigoy, Staff Planner
Mark Alexander Roy, Munekiyo & Hiraga, Inc.
Howard Murai, Finance Holdings, Ltd.
Project File
General File
K:\WP_DOCS\PLANNING\SM\200501016_WalineeSelfStorage\UDRBappx4.wpd
TO: KIVETTE A. CAIGOY, Staff Planner
Department of Planning

FROM: ALICE L. LEE, Director
Department of Housing and Human Concerns

SUBJECT: I.D.: PA 2005/0007 and SM1 2005/0087
TMK: (2)4-5-007; 004
PROJECT NAME: WAINEE SELF STORAGE FACILITY
APPLICANT: FINANCE HOLDINGS, INC.

We have reviewed the draft Environmental Assessment (EA) and Special Management Area (SMA) Use Permit Application for the subject project and do not have any comments to offer.

Thank you for the opportunity to comment. We are returning the draft EA and SMA Use Permit Application for your use.

ETO: hs
Enclosure

c: Housing Administrator
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: Wainee Self Storage Facility  
TMK: (2) 4-5-007:004  
EA 2005/0007 and SM1 2005/0007

Thank you for the opportunity to comment on the proposed Wainee Self Storage Facility. Comments from this office were made during the early consultation process of the environmental assessment. We have no further comments to offer at this time.

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

Sincerely,

Herbert S. Matsubayashi  
District Environmental Health Program Chief
MEMORANDUM

TO: MICHAEL W. FOLEY, PLANNING DIRECTOR
FROM: THOMAS M. PHILLIPS, CHIEF OF POLICE

TMK: (2) 4-5-007: 004
Project Name: Waihee Self Storage Facility
Applicant: Finance Holdings, Inc.

x No recommendation or comment to offer.

Refer to enclosed comments and/or recommendations.

As always, thank you for giving us the opportunity to comment on this project.
We are returning the draft EA and SMA which were submitted for our review.

Acting Assistant Chief Glenn Miyahira
For THOMAS M. PHILLIPS
Chief of Police

Enclosures
MEMORANDUM

June 2, 2005

TO: Michael W. Foley, Director
Planning Department

FROM: Glenn T. Correa, Director

SUBJECT: Wainee Self Storage Facility
EA 2005/0007
SM1 2005/0007
TMK (2) 4-5-007:004

Thank you for the opportunity to review and comment on the Wainee Self Storage Facility project.

At this time we have no comment to offer.

Should you have any questions or need of additional information, please call me, or Patrick Matsui, Chief of Parks Planning & Development at extension 7931.

c: Patrick Matsui, Chief of Parks Planning & Development
Appendices
Appendix A

State Historic Preservation
Division "No Effect"
November 23, 1998

Munekiyu Arakawa, and Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Tadaka:

SUBJECT: Chapter 6E-42 Historic Preservation Review of the Proposed Waine’e Office Building Change in Zoning Permit Request Ahupu’a, Lahaina District, Maui Island

TMK: 4-5-07:004

Thank you for the opportunity to comment on this project which consists of a change in zoning request for the Waine’e Building from the "A-1, Apartment District to the B-2, Community Business District for the future development of a two-story office building. Our review is based on reports, maps and aerial photographs maintained at the State Historic Preservation Office; no field inspection was made of the subject property.

The subject property is located in the Lahaina National Historic District and seems likely to have once been the location of pre-Contact agriculture and perhaps scattered housing. However, 20th century residential construction has since altered the landscape, making it unlikely that any historic sites remain intact. Therefore we believe that this project will have "no effect" on significant historic sites.

In the event that historic remains (i.e. subsurface firepits, artifacts, or human skeletal remains) are inadvertently uncovered during construction, all work in the vicinity should cease and the contractor should immediately contact the State Historic Preservation Office.

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

Aloha,

Don Hubbard, Administrator
State Historic Preservation Division
March 18, 1999

Mr. John E. Min
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Min:

SUBJECT: Chapter 6E-42 Historic Preservation Review of the Proposed Waine’e Office Building Change in Zoning Permit Request Pana‘ewa Ahupua‘a, Lahaina District, Island of Maui

TMK: 4-5-905: 06

Thank you for the opportunity to comment on this project which we understand to be a change in zoning request for the Waine’e Building from the "A-1, Apartment District to the B-2 Community Business District" for the future development of a 2-story office building.

We have previously reviewed the proposed project (SHPD DOC NO. 1530a and 9811CD08) and found that this project will have "no effect" on significant historic sites.

The proposed project is located in the Lahaina Historic District and seems likely to have once been the location of pre-contact agriculture and associated houses. However, this area is no longer likely to contain historic sites due to 20th century residential construction and ground disturbance resulting from modern sugar cane cultivation.

In the event that historic remains (i.e. artifacts, human skeletal remains, and/or concentrations of charcoal or shell) are inadvertently encountered during construction, all work needs to cease in the immediate vicinity of the find and the find needs to be protected from further damage. The Contractor needs to immediately contact the State Historic Preservation Office at 243-5169 on Maui or 692-8023 on O‘ahu. The Division will assess the significance of the find and recommend mitigation measures, if necessary.

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

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

CD:jen
July 16, 1999

Mr. Glen Tadaki
Muneikyo, Arakawa and Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Tadaki,

SUBJECT: Historic Preservation Review of a Change in Zoning Request for the Waine'e Office Building
Lahaina Ahupua'a, Lahaina District, Island of Maui
TMK: 4-5-07:004

Thank you for the opportunity to comment on the Change in Zoning request for the Waine'e Office Building. We have made previous comments regarding this request. Please see attachment.

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

Aloha,

DEN HIBBARD, Administrator
State Historic Preservation Division

CD:lpf
Appendix A-1

Post Field Investigation Report Letter From Archaeological Services Hawaii
5 August 2005

Mr. Mark Roy
Munekiyo and Hiraga

VIA FAX SIMILE

Subject: Post-Field Summary Letter for TMK 4-05-07: 04 located in Lahaina

Dear Mark,

Please be advised that the post-field summary letter (attached) is written to summarize the subsurface testing which was performed at the above referenced parcel on 4 August 05. The summary letter briefly describes the project area, the purpose for the inventory survey and discusses future recommendations for this parcel. Although it is a summary, the content of this letter will be similar to the final archaeological Inventory Survey Report. All discussions and recommendations contained within the post-field summary letter, will be presented within the final report. Again, there are no deviations between a post-field summary letter and the report, it is merely a tool to summarize recently completed work.

Thank you for this opportunity, if you should have any questions and or comments, please do not hesitate to call me.

Respectfully,

[Signature]

Lisa Kotambo-Hazuka
Consulting Archaeologist
4 August 2005

Howard Murai
Lee Miller
Finance Holdings, Ltd.

Re: Post-field Summary Letter for Archaeological Testing at TMK 4-5-07-4, Lahaina, Maui Island

Dear Mr. Murai,

Archaeological Services Hawaii, LLC (ASH), of Wailuku, conducted an archaeo logical inventory survey of a parcel of land located in Panewa ahuwau'a, Lahaina District, Maui Island. The current undertaking was conducted to determine presence/absence of surface archaeological sites, and the potential for subsurface sites. Ms. Diane Guerriero (B.A.), performed the survey and subsurface testing on August 4, 2005. Ms. Lisa Rotunno-Hazuka (B.A.) coordinated the project, and Mr. Jeffrey Pantaleo was the Principal Investigator.

The project area (TMK 4-5-07-4), encompassing 0.428 acres (18,000 sq. ft.), is situated along the lower leeward northwestern slopes of West Maui in the coastal portion of Lahaina, Panewa ahuwau'a, Lahaina District (Figure 1). It is bounded on the east by Honosipiliani Highway, to the south by Parcel 9, along the north by Parcel 5, and Wainee Street defines the west (Figure 2). The parcel is relatively flat and devoid of vegetation with the exception of large mango trees along the north and south property boundaries. It has undergone previous disturbances with the removal of a residential structure, and surface grading. It is situated near the coast less than a kilometer inland from the coast. The elevation ranges from sea level to about 5 feet asl (above mean sea level) and receives less than 15 inches of rain annually (Armstrong 1983:62), with most occurring during the winter months between November and February. Fofofa et al. (1972:115-116) have placed the soils of the project area within the Pulauha Series. "This series consists of well-drained soils on alluvial fans and stream terraces and in basins. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevation ranges from nearly sea level to 300 feet". Specific to the project area is soils identified as Pulauha silt loam, with 0 to 3 percent slopes (PpA), permeability is moderate, runoff is slow, and the erosion hazard is no more than slight. These soils are primarily associated with sugarcane production, and homesteads.

The study area is located within the boundaries of the Lahaina National Historic Landmark and is in close proximity to Front Street and Kenlei Street where traditional period occupation cultural layers, and Native Hawaiian burial sites have been identified. Due to these circumstances, historic period materials and possibly pre-Contact historic properties may be recovered during subsurface investigations.

Initially, a pedestrian survey of the parcel was conducted to determine the presence/absence of cultural remains and or isolated artifacts. No surface cultural remains were identified, however, the parcel had been previously cleared and disturbed. Due to a lack of surface historic properties from past clearing and grubbing, subsurface investigations through mechanical backhoe trenching...
was implemented. A total of 9 backhoe trenches were excavated. Excavation was terminated when bedrock or sterile subsoil was reached. No cultural remains or deposits were encountered in all of the trenches. Trenches 1 thru 3 were excavated along the eastern portion of the project area, Trenches 3 thru 6 in the central portion and Trenches 7 thru 9 in the western portion.

Generally, three to five stratigraphic layers were exposed in the trenches. The "A" horizon, defined as the surface organic zone, was absent in the central portion of the project area from previous grading activities; the "A" horizon was identified along the north, south and western boundaries under the tree canopy. Surface coverage was scattered patches of various grasses and weeds.

The stratigraphic components of Trench 1 along the northeastern end of the project area were described as:

Layer I (25cm thick): dark grayish-brown (10YR4/2) silt with few roots and a moderate amount of sub-angular pebbles and recent debris including lumber and glass; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (40cm thick): brown, dark brown (7.5YR 4/2, 4/3, 3/3) silt with clay ped and water affected cobbles; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (30cm thick): brown, dark brown (10YR 4/3) silt with fewer water affected cobbles than Layer II; slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer IV (30cm thick): gray, grayish brown (10YR 5/1, 5/2) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer V (40cm thick): gray, grayish brown (10YR 5/1, 5/2) gravel, stream bed, extremely hard, firm, non-sticky, non-plastic; non-cultural. BOE 1.6lbs

The stratigraphic components of Trench 2 along the southeastern end of the project area were described as:

Layer I (27cm thick): dark grayish-brown to brown (10YR 4/3) silt with few roots and a moderate amount of sub-angular pebbles and debris including glass and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (40cm thick): brown, dark brown (10YR 4/3, 3/3) silt with clay ped and water affected cobbles; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (50cm thick): dark brown, dark yellowish brown (10YR 3/3, 3/4) silt with clay ped; charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer IV (20cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, extremely hard, firm, non-sticky, non-plastic; non-cultural.
Layer V (40cm thick): dark brown (7.5YR 3/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. BOE 1.8mbs

The stratigraphic components of Trench 3 along the northeastern end of the project area were described as:

Layer I (23cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (70cm thick): dark brown (10YR 3/3, 3/4) silt with clay pods, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (16cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic; non-cultural.

Layer IV (20cm thick): dark brown (7.5YR 3/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer IV (30cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic; non-cultural. BOE 1.66mbs

The stratigraphic components of Trenches 4 and 5 along the south central end and Trenches 7 and 8 along the southwestern portion of the project area were described as:

Layer I (15-20cm thick): dark brown (10YR 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (1 to 1.2m thick): dark brown (7.5YR 3/3) silt with clay pods, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (30-60cm thick): brown (10YR 4/3) silt, no inclusions, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. Trenches 7 and 8 contained a deeper deposit of Layer III.

Layer IV in Trenches 4 and 5 (40 cm thick) very dark grayish brown, dark brown (10YR 3/2, 3/3) gravel, very fine, extremely hard, firm, non-sticky, non-plastic, non-cultural. BOE for TR 4 was 1.8 and TR 5 was 2mbs.

The stratigraphic components of Trench 6 along the central north end of the project area were described as:

Layer I (12cm thick): dark brown (10YR 3/3) silt with few roots and few sub-angular pebbles and debris including glass, wood fragments and rusted metal; slightly hard, fine, friable, slightly sticky, slightly plastic; non-cultural.
Layer II (80cm thick): dark brown (7.5YR 3/2) silt with clay peds, charcoal flecks, agricultural zone slightly hard, very fine, friable, slightly sticky, slightly plastic; non-cultural.

Layer III (20cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/2) gravel, and small pebbles, storm wash, fine, extremely hard, firm, non-sticky, non-plastic; non-cultural. Layer IIIa (5cm thick): very dark grayish brown, dark brown (10YR 3/2, 3/2) silt, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer IV (20cm thick): very dark grayish brown (10YR 3/2) loamy silt with scattered pebbles, silt, fine, very friable, slightly sticky, slightly plastic, non-cultural.

Layer V (50cm thick): dark brown, dark yellowish brown (10YR 3/3, 3/4) silt, charcoal flecks, soft, fine, very friable, slightly sticky, slightly plastic, non-cultural. BOE 1.7mbs.

The stratigraphic components of Trench 9 along the northwestern end of the project area were described as:

Layer I (10cm thick): dark brown (10YR 3/3) loamy silt with few roots, organic debris and few sub-angular pebbles and modern debris including recent glass, plastic; loose, friable, slightly sticky, slightly plastic; non-cultural.

Layer II (60cm thick): dark reddish brown (5YR 3/3) silty clay with few roots, scattered sub-angular pebbles and cobbles, slightly hard, fine, friable, sticky, plastic; non-cultural.

Layer III (80cm thick): dark reddish brown (5YR 3/2) clay, a few cobbles, hard, fine, firm, very sticky, plastic; non-cultural. BOE 1.5mbs.

A total of nine backhoe trenches were excavated within this small parcel area. The results of archaeological testing, coupled with the project areas close proximity to Kahona Stream, produced evidence for past agricultural use (possibly lo 'i) within this parcel. The soil deposits were thick, and some layers exhibited charcoal flecking which is typical of agricultural soils. No evidence for pre-Contact or historic period habitation (beyond the presence of mango trees and the former structure) was recovered during the current undertaking. Further archival research and analyses of the L.C.A.s in the immediate vicinity should provide additional information regarding past land use.

Due to the negative results of the backhoe testing, together with previous disturbances from surface grading activities, no further archaeological inventory work is recommended; however, due to the presence of significant sites in the vicinity, archaeological monitoring during initial construction-related activities is recommended to assess the subsurface and ensure that any unanticipated subsurface remains are properly documented.

If you have any question, please contact Lisa Rotunno-Hazuka in Wailuku at 281-3004.

Respectfully,

Lisa Rotunno-Hazuka
Consulting Archaeologist
REFERENCES

Armstrong, R.W., J.A. Bier, and S. Chang

Foote, D., E.L. Hill, S. Nakamura, and F. Stephens
Appendix B

Preliminary Engineering Report
PRELIMINARY ENGINEERING REPORT

FOR

FINANCE REALTY STORAGE BUILDING

T.M.K.: (2) 4-5-007: 004

Prepared For:
Finance Realty, Ltd.
1164 Bishop Street, Suite 810
Honolulu, Hawaii 96813

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

April 2005
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IV. DRAINAGE
V. SEWER
VI. WATER
VII. ELECTRIC, TELEPHONE, AND CABLE TV
PRELIMINARY ENGINEERING REPORT FOR
FINANCE REALTY STORAGE BUILDING
Lahaina, Maui, Hawaii

I. INTRODUCTION
The purpose of this report is to provide information on the existing infrastructure which will be servicing the proposed project. It will also evaluate the adequacy of the existing infrastructure and any improvements which may be required for the proposed project.

II. SITE LOCATION AND PROJECT DESCRIPTION
The subject parcel is identified as T.M.K.: (2) 4-5-007: 004 which encompasses an area of approximately 18,638 square feet. The project site is bordered by a residence to the north, Honoapiilani Highway to the east, a commercial building to the south, and Wainee Street to the west.

The proposed project consists of a three story storage building occupying approximately 22,160 square feet.

Associated improvements include grading, paved parking areas, utility connections, and landscaping.

III. ROADWAYS
The major roadway servicing the Lahaina area is Honoapiilani Highway. Papalaua Street and Kenui Street link Honoapiilani Highway with Front Street. Wainee Street parallels Honoapiilani Highway and intersects both Papalaua Street and Kenui Street. Access to the project site will be from Wainee Street.

The right-of-way width of Wainee Street fronting the subject property is 44 feet. The existing pavement width is approximately 30 feet with an existing sidewalk fronting the property and unpaved shoulder and an existing curb, gutter and sidewalk on the opposite side of the street. The County will require a road widening lot to achieve the planned right-of-way width of 56 feet. Curb, gutter and sidewalk improvements will also be required per County standards.
Access to the property will be provided by a proposed driveway from Wainee Street.

IV. DRAINAGE

There are no drainage facilities onsite or immediately fronting the parcel. Surface runoff sheet flows across the project site in the east to west direction towards Wainee Street. Surface runoff exits the parcel onto Wainee Street and flows along the existing roadway gutter into the existing drainage system in the surrounding area.

It is estimated that the existing 50-year storm runoff from the project site is 0.53 cfs. After the development of the proposed project, it is estimated that the 50-year storm runoff will be 1.75 cfs, a net increase of only 1.22 cfs.

Surface runoff from the project site will be intercepted by grated catch basins located within the paved parking and conveyed to the proposed onsite subsurface drainage system. The subsurface drainage system will be sized to accommodate the increase in runoff volume from the project site for a 50 year-1 hour storm. There will be no additional runoff from the project site onto Wainee Street. Overflow from the project will continue to drain into the existing drainage system along Wainee Street which outlets makai of Front Street.

V. SEWER

The existing facility is serviced by an 8-inch sewerline on Wainee Street. Wastewater collected from the Lahaina area is transported to the Lahaina Waste Water Treatment Plant, which is located in Honokowai.

According to the Wastewater Reclamation Division, County of Maui, as of December 31, 2004, said treatment plant has ample capacity. The treatment plant was designed to handle 6.7 million gallons a day and 6.14 million gallons have been allocated. There is approximately 5 million gallons of wastewater being processed at the plant daily.
VI. WATER

Domestic water and fire flow for the for the proposed project will be provided by the County’s water system. Presently, there is an existing 12-inch waterline along Wainee Street which will service the project.

As part of the building permit process, domestic water and fire flow calculations will be provided to determine the adequacy of the existing water system, in accordance with the rules of the Department of Water Supply.

VII. ELECTRIC, TELEPHONE AND CABLE TV

Existing overhead utility lines are located along Wainee Street, on the opposite side of the project’s street frontage. The installation of electrical, telephone and cable TV systems for the project will be coordinated with Maui Electric Company, Verizon Hawaii, and Hawaiian Cablevision.
Appendix C

Preliminary Drainage Report
PRELIMINARY DRAINAGE REPORT
FOR
FINANCE REALTY STORAGE BUILDING
Lahaina, Maui, Hawaii
T.M.K.: (2) 4-5-007: 004

Prepared For:
Finance Realty, Ltd.
1164 Bishop Street, Suite 810
Honolulu, Hawaii 96813

Prepared By:

OTOMO ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS
305 SOUTH HIGH STREET, SUITE 102
WEATHERFORD, WY 82837
PHONE: (307) 242-0032
FAX: (307) 242-0774

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PRELIMINARY DRAINAGE REPORT
FOR
FINANCE REALTY STORAGE BUILDING
Lahaina, Maui, Hawaii

I. INTRODUCTION

The purpose of this report is to examine both the existing drainage conditions and proposed drainage improvements for the proposed project.

II. SITE LOCATION AND PROJECT DESCRIPTION

The subject parcel is identified as T.M.K.: (2) 4-6-007: 004 which encompasses an area of 18,638 square feet. The project site is bordered by a senior housing to the north, Honoapiilani Highway to the east, a commercial building to the south, and Wainee Street to the west.

The proposed project consists of a three story storage building occupying approximately 22,160 square feet.

Associated improvements include grading, paved parking areas, utility connections, and landscaping.

III. EXISTING TOPOGRAPHY AND SOIL CONDITIONS

The project site is currently undeveloped and is covered with various trees, shrubs and grass. The property generally slopes down in the east to west direction with the elevations on the site ranging from 24 feet at the mauka boundary to 20 feet at the makai boundary, averaging about 1.8%.

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 Ewa silty clay loam (EaA). On this soil, runoff is very slow and the erosion hazard is no more than slight.

IV. EXISTING DRAINAGE CONDITIONS

It is estimated that the existing 50-year storm runoff from the project site is 0.53 cfs. Presently, onsite runoff sheet flows across the project site in the east to west direction towards Wainee Street. Surface runoff exits the parcel onto Wainee street and flows along the existing roadway gutter into the existing drainage system in the surrounding area.
V. FLOOD AND TSUNAMI ZONE

According to Panel Number 150003 0163 B of the Flood Insurance Rate Map, June 1, 1981, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C. Flood Zone C 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 1.75 cfs, a net increase of approximately 1.22 cfs.

Surface runoff from the project site will be intercepted by grated catch basins located within the paved parking and conveyed to the proposed onsite subsurface drainage system. The subsurface drainage system will be sized to accommodate the increase in runoff volume from the project site for a 50 year-1 hour storm. There will be no additional runoff from the project site sheet flowing onto Wainee Street.

VII. HYDROLOGIC CALCULATIONS


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. CONCLUSION

The proposed development is expected to generate a 50-year storm runoff of 1.75 cfs, with an increase of 1.22 cfs. Onsite runoff will continue to sheet flow through the project site into the proposed grated catch basins in the paved parking areas and conveyed into the proposed subsurface drainage system. There will be no additional surface runoff sheet flowing from the project site onto
Wainee Street. The post-development runoff pattern will remain the same as the pre-development.

Therefore, it is our professional opinion that the proposed development will not have an adverse effect on the adjoining or downstream properties.

IX. REFERENCES


D. Flood Insurance Rate Maps of the County of Maui, June, 1981.

E. 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
APPENDIX A
HYDROLOGIC CALCULATIONS
Hydrologic Calculations

Purpose: Determine the increase in surface runoff from the development of the proposed project based on a 10-year storm.

A. Determine the Runoff Coefficient (C):

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EXISTING CONDITION:

- Infiltration (Medium) = 0.07
- Relief (Flat) = 0.00
- Vegetal Cover (Poor) = 0.05
- Development Type (Open) = 0.15
- C = 0.27

DEVELOPED CONDITIONS:

- Pavement Areas = 0.14 Acres
- Roof Areas = 0.20 Acres
- Landscaped Areas = 0.09 Acres
- WEIGHTED C = 0.73

B. Determine the 50-year 1-hour rainfall:
   - \( i_o = 2.5 \) inches

   Adjust for time of concentration to compute Rainfall Intensity (I):

   Existing Condition:
   - \( T_c = 15 \) minutes
   - \( I = 4.6 \) inches/hour

   Developed Condition:
   - \( T_c = 8 \) minutes
   - \( I = 5.6 \) inches/hour

C. Drainage Area (A) = 0.43 Acres

D. Compute the 50-year storm runoff volume (Q):
   - \( Q = CIA \)
Existing Conditions:
\[ Q = (0.61)(4.9)(1.58) \]
\[ = 4.7 \text{ cfs} \]

Developed Conditions:
\[ Q = (0.63)(4.9)(1.58) \]
\[ = 4.9 \text{ cfs} \]

The increase in runoff due to the proposed development is 4.9 - 4.7 = 0.2 cfs.
Appendix D

Traffic Assessment Report
Traffic Assessment Report

Wainee Street Self-Storage Facility

Submitted to:
Munekiyo & Haraga, Inc.

Submitted by:
Wilson Okamoto Corporation

April 2005
TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
WAINEE STREET SELF-STORAGE FACILITY

Prepared for:
Munekyo & Haraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Prepared by:
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC ref. 7339-01

April 2005
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I. INTRODUCTION
   A. Purpose of Study
      The purpose of this study is to identify and assess the traffic impacts resulting from the proposed Wainee Street Self-Storage Facility in Lahaina project. The proposed project site will be located within a single block in Lahaina bounded by Kenui Street, Honoapiilani Highway, Papalaua Street, and Wainee Street.

   B. Scope of Study
      This report presents the findings and conclusions of the traffic study, the scope of which includes:
      1. Description of the proposed project.
      2. Evaluation of existing roadway and intersection traffic operations in the vicinity.
      3. Analysis of future roadway and traffic conditions without the proposed project.
      4. Analysis and development of trip generation characteristics for the proposed project.
      5. Superimposition of proposed project-generated traffic over future traffic conditions.
      6. Identification and analysis of traffic impacts resulting from the proposed project.
      7. Formulation of recommendations for improvements, if appropriate, to mitigate traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION
   A. Location
      The project site is located in Lahaina on the island of Maui (see Figure 1). It occupies a portion of the block bounded by Kenui Street to the north, Honoapiilani Highway to the east, Papalaua Street to the south, and Wainee Street to the west. The 22,160 square-foot project site is further identified as Tax Map Key (TMK): 4-5-007:004. Access to the proposed project will be via a driveway off of Wainee Street.
B. Project Characteristics

The proposed Wainee Street Self-Storage Facility will include 22,160 square feet of storage space. A 15-stall on-site parking area will be provided with 1 required accessible parking stall and 2 loading areas. The proposed Wainee Street Self-Storage Facility is expected to be completed and occupied by the start of Year 2007. Figure 2 shows the proposed site plan.

One vehicular access/egress point will serve the project. The driveway connection will be located on Wainee Street, near the southern edge of the project site. The Wainee Street driveway will provide two-way ingress and egress into the parking area of the Wainee Street Self-Storage Facility.

III. EXISTING TRAFFIC CONDITIONS

A. General

The roadway network in Lahaina town is generally comprised of roadways forming a grid system. Honoapiilani Highway (Route 30) provides regional access to and from other areas of the island.

B. Area Roadway System

In the vicinity of the project site, Wainee Street is generally a two-lane, two-way north-south County of Maui roadway with various parking restrictions on both sides of the roadway during peak traffic periods. Traffic signal systems and turning lanes are provided at major intersections along Wainee Street. At the intersection with Papalaua Street, all approaches include separate left-turn lanes. The traffic signal system at the intersection Wainee Street and Papalaua Street operates on four phases within a 90-second cycle, allowing the protected and permitted movements of left-turns from all approaches.

Papalaua Street is a two-lane, two-way, County of Maui roadway oriented in the east-west directions. Papalaua Street serves as a connector road linking Wainee Street with Honoapiilani Highway with a posted speed limit of 20 mph. Multiple driveways along Papalaua Street serve several commercial uses.

Approximately 1,650 feet north of the Wainee Street and Papalaua Street intersection, Wainee Street intersects with Kenui Street to form a T-intersection.
Kenui Street is a two-lane, two-way County of Maui local street. At the intersection of Wainee Street and Kenui Street, the westbound approach of Kenui Street services left-turn and through traffic movements and the eastbound approach services through and right-turn traffic movements. The northbound approach of the intersection is stop-controlled and services left-turn and right-turn traffic movements.

C. Traffic Volumes and Conditions

1. General

a. Field Investigation

   A field investigation was conducted on January 18 and 19, 2005 and consisted of manual turning movement count surveys and 24-hour mechanical count surveys along Papalaua Street, west of the intersection with Wainee Street, and along Wainee Street, north of the intersection with Papalaua Street. The manual turning movement count surveys were conducted between the morning peak hours of 6:00 AM and 8:30 AM, and the afternoon peak hours of 3:00 PM and 6:00 PM at the following intersections:

   • Wainee Street and Papalaua Street
   • Wainee Street and Kenui Street

   Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

   The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS).

   LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS “A” through “F”; LOS “A” representing ideal or free-flow traffic operating conditions and LOS “F” unacceptable or potentially congested traffic operating conditions. The LOS definitions are included in Appendix B.
"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity.

2. Existing Peak Hour Traffic
   a. General

      Figures 3 and 4 show the existing AM and PM peak hour traffic volumes and operating traffic conditions. The AM peak hour of traffic generally occurs between 7:15 AM and 8:15 AM in the vicinity of the proposed project. In the afternoon, the PM peak hour of traffic generally occurs between the hours of 3:00 PM and 4:00 PM. The analysis is based on these peak hour time periods to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.

   b. Wainee Street and Papalaua Street

      North of the intersection of Wainee Street and Papalaua Street, Wainee Street carries 355 vehicles during the AM peak hour of traffic, 163 vehicles traveling northbound and 192 vehicles traveling southbound. During the PM peak hour of traffic, Wainee Street just north of Papalaua Street carries 607 vehicles, 271 vehicles traveling northbound and 336 vehicles traveling southbound. The northbound and southbound left-turn movements of Wainee Street at the intersection of Papalaua Street operate at LOS "B" during both the existing AM and PM peak hours of traffic. The northbound and southbound through and right-turn movements of Wainee Street at the intersection of Papalaua Street operate at LOS "C" during both the existing AM and PM peak hours of traffic.

      East of the intersection of Wainee Street and Papalaua Street, Papalaua Street carries 492 vehicles during the AM peak hour of traffic, 213 vehicles traveling westbound and 279 vehicles traveling...
LEGEND

90
TRAFFIC MOVEMENT VOLUME (VPH)

LANE USAGE

A  LANE GROUP LEVEL OF SERVICE

DATE OF COUNT: JANUARY 18 & 19, 2005

WAINEE STREET SELF-STORAGE FACILITY

EXISTING AM PEAK HOUR OF TRAFFIC
Traffic Assessment Report for the Proposed Wainee Street Self-Storage Facility

eastbound. During the PM peak hour of traffic, Papalaua Street just
east of Wainee Street carries 704 vehicles, 321 vehicles traveling
westbound and 383 vehicles traveling eastbound. The westbound and
eastbound left-turn movements of Papalaua Street at the intersection of
Wainee Street operate at LOS “B” during both the existing AM and
PM peak hours of traffic. The westbound and eastbound through and
right-turn movements of Papalaua Street at the intersection of Wainee
Street operate at LOS “C” during both the existing AM and PM peak
hours of traffic.

c. Wainee Street and Kenui Street

At the intersection of Wainee Street and Kenui Street, Kenui
Street just east of Wainee Street carries 145 vehicles during the AM
peak hour of traffic, 119 vehicles traveling westbound and 26 vehicles
traveling eastbound. During the PM peak hour of traffic, Kenui Street
just east of Wainee Street carries 241 vehicles, 171 vehicles traveling
westbound and 70 vehicles traveling eastbound. The westbound left-
turn and through movements of Kenui Street at the intersection of
Wainee Street operates at LOS “A” during both the existing AM and
PM peak hours of traffic.

Wainee Street at this intersection carries 209 vehicles during
the AM peak hour of traffic, 78 vehicles traveling northbound and 131
vehicles traveling southbound. During the PM peak hour of traffic,
Wainee Street carries 442 vehicles, 243 vehicles traveling northbound
and 199 vehicles traveling southbound. The northbound approach of
this intersection operates at LOS “B” and LOS “C” during the AM and
PM peak hours of traffic, respectively.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon
generally accepted techniques and procedures developed by the Institute of
Traffic Assessment Report for the Proposed Wainee Street Self-Storage Facility

Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The ITE trip rates are developed empirically by correlating the trip generation data with various land use characteristics, such as the gross floor area of the project. The project is not expected to generate a significant amount of traffic during the morning and afternoon commuter traffic peak hours. Table 1 summarizes the project site trip generation characteristics applied to the AM and PM peak hours of traffic to measure the impact resulting from the proposed Wainee Street Self-Storage Facility project.

Table 1: Peak Hour Trip Generation

<table>
<thead>
<tr>
<th>MINI-WAREHOUSE</th>
<th>Independent Variable: 22,160 Square Feet</th>
<th>PROJECTED TRIP ENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM PEAK</td>
<td>ENTER</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EXIT</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>7</td>
</tr>
<tr>
<td>PM PEAK</td>
<td>ENTER</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EXIT</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>6</td>
</tr>
</tbody>
</table>

2. Trip Distribution

The directional distribution and traffic assignment of site-generated trips were based on the prevailing traffic patterns of Wainee Street. The 7 and 6 trips generated by the proposed project in the morning and afternoon peak hours, respectively, were assumed to represent a net increase in traffic on the area street system. As stated above, access to the proposed project would be via a driveway connection off of Wainee Street. The directional distribution of all site-generated vehicular trips was based on the directional distribution of existing traffic along Wainee Street fronting the proposed project site (southbound and northbound) (See Figures 5 & 6).

B. Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at a survey station located along Honoapiilani Highway in the project vicinity. The historical data were
analyzed by linear regression techniques to obtain an annual traffic growth rate. However, historical trends indicate a net decrease in traffic demands in the project vicinity partly due to the increased availability of roadways serving as alternate routes, effects of tourism, and other factors contributing to the traffic demand. For the purpose of this study, however, a 2% per year growth was conservatively assumed to encompass other developments in the area. A growth factor of 1.040 was applied to the existing traffic movements on Wainee Street and Papalaua Street to achieve the projected Year 2007 traffic demands.

C. Total Traffic Volumes Without Project

Figures 7 and 8 show the projected Year 2007 AM and PM peak hour traffic volumes and operating conditions within the project vicinity without the development of the proposed Wainee Street Self-Storage Facility project. Comparisons of the existing and projected (without project) levels of service are included in Table 2.

Traffic operations under Year 2007 without project conditions are expected to remain similar to existing conditions along Wainee Street in the project vicinity. The left-turn movement of all approaches at the intersection of Wainee Street and Papalaua Street would continue to operate at LOS “B” during both projected peak hours of traffic. All through and right-turn movements at the Wainee Street and Papalaua Street intersection would continue to operate at LOS “C” conditions during the projected AM and PM peak hours of traffic. Similarly, at the intersection of Wainee Street with Kenui Street, all approaches are expected to operate similar to existing conditions with no changes to the operating levels of service during both the projected Year 2007 AM and PM peak hours without the proposed project.

D. Total Traffic Volumes With Project

Figures 9 and 10 show the cumulative AM and PM peak hour traffic conditions resulting from the projected ambient traffic and the development of the proposed Wainee Street Self-Storage Facility project. The cumulative
volumes consist of site-generated traffic superimposed over Year 2007 projected traffic demands.

Table 2: Comparison of Existing and Projected (Without Project) Intersection LOS Traffic Operating Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Approach/ Movement</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing Year 2007 w/out Project</td>
<td>Existing Year 2007 w/out Project</td>
<td></td>
</tr>
<tr>
<td>Wainee Street and Papalaua Street</td>
<td>Westbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Westbound TH+RT</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Eastbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Eastbound TH+RT</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Northbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Northbound TH+RT</td>
<td>C</td>
<td>C</td>
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<tr>
<td></td>
<td>Southbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Southbound TH+RT</td>
<td>C</td>
<td>C</td>
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<td>A</td>
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<tr>
<td></td>
<td>Northbound LT+RT</td>
<td>B</td>
<td>C</td>
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V. TRAFFIC IMPACT ANALYSIS

The Year 2007 cumulative AM and PM peak hour traffic conditions with the proposed new Wainee Street Self-Storage Facility project are summarized in Table 3. The existing and projected Year 2007 operating conditions without the proposed project are provided for comparison purposes.

Within the project vicinity, traffic operations under Year 2007 with project conditions are expected to remain similar to existing as well as Year 2007 without project conditions. The left-turn movement of all approaches at the intersection of Wainee Street and Papalaua Street would continue to operate at LOS “B” during both projected peak hours of traffic. All through and right-turn movements at the Wainee Street and Papalaua Street intersection
Traffic Assessment Report for the Proposed Wainee Street Self-Storage Facility

would continue to operate at LOS “C” conditions during the projected AM and PM peak hours of traffic. Similarly, at the intersection of Wainee Street with Kenui Street, all approaches are expected to operate similar to existing conditions with no changes to the operating levels of service during both the projected Year 2007 AM and PM peak hours with the proposed project.

Table 3: Comparison of Existing and Projected (With and Without Project) Intersection LOS Traffic Operating Conditions

<table>
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<th>Approach/ Movement</th>
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<th>PM</th>
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<td>Year 2007 w/ Project</td>
</tr>
<tr>
<td>Wainee Street</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>and Papahana Street</td>
<td>Westbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>Northbound TH+RT</td>
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<td></td>
<td>Southbound LT</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Southbound TH+RT</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Kenui Street</td>
<td>Westbound LT+TH</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Northbound LT+RT</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

VI. RECOMMENDATIONS

Based on the analysis of traffic impacts attributable to the proposed Wainee Street Self-Storage Facility project, the following recommendations should be incorporated in the project design:

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1. Maintain sufficient sight distances for motorists to safely enter and exit the project access driveway. This improvement should be addressed in the design phase of the project.

2. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project property. Avoid vehicle-reversing maneuvers onto County streets. This improvement should be addressed in the design phase of the project.

3. Provide sufficient driveway width and storage to accommodate safe vehicle ingress and egress. If a gated entry is provided at the driveway, ensure a minimum of one vehicle-storage (25 feet) is provided from the road travelway in the driveway design.

4. Provide sufficient turning radii at driveway for vehicular ingress and egress clearances. This improvement should be addressed in the design phase of the project.

VIII. CONCLUSION

The proposed Wainee Street Self-Storage Facility is not expected to impact traffic operations in the vicinity. The recommendations provided above are presented to ensure they are incorporated in the project design to maintain the quality of the project. Notably, the assumptions used in this traffic study were conservative regarding growth in external or ambient traffic unrelated to the proposed project. The historical trends show a relatively steady decline in traffic volumes in the vicinity. Even with the conservative projected peak generation volumes superimposed over projected AM and PM peak periods, the operating levels of service for all traffic movements at the study intersection would remain within the same range as existing conditions. The project would generate very minimal traffic representing 1.8% and 1.0% of the total traffic on Wainee Street during the AM and PM peak hours of traffic, respectively.
APPENDIX A

EXISTING TRAFFIC COUNT DATA
### Wilson Okamoto Corporation
**1907 S. Beretania St. Suite 400**
**Honolulu, HI 96826**

#### Groups Printed- Unshifted

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<th>Papalua Street Westbound</th>
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<td>Right</td>
</tr>
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<td>1.0</td>
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<td>4</td>
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<td>8</td>
</tr>
<tr>
<td>08:15 AM</td>
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<td>25</td>
<td>10</td>
</tr>
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<td>08:30 AM</td>
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<td>Appro%</td>
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<td>5.2</td>
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#### Peak Hour From 06:00 AM to 08:15 AM - Peak 1 of 1

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Intersection 07:15 AM

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Volume 07:30 AM 07:45 AM 07:15 AM

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### Wilson Okamoto Corporation
1907 S. Beretania St. Suite 400
Honolulu, HI 96826

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Site Code: 00000002
Start Date: 1/18/2005
Page No: 1

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*Volume*: 335 | 472 | 804
*Actor*: 0.89 | 0.94 | 0.96

*NOTE: The data represents the activity levels and time intervals for Wilson Okamoto Corporation at 1907 S. Liliwana St, 4th Flr, Honolulu, HI 96826.*
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Wilson Okamoto Corporation
1907 S. Beretania St, 4th Flr
Honolulu, HI 96820

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**Units** | 826 | 0 | 763 | 0 | 1,389 | 0 |

**%** | 52.0 | 48.0 |

**Day Totals** | 826 | 763 | 1,389 |

**Peak Hour** | 08:15 | 07:45 | 07:45 |

**Volume** | 228 | 252 | 412 |

**Factor** | 0.81 | 0.73 | 0.85 |
LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Control Delay per Vehicle (sec/veh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤10.0</td>
</tr>
<tr>
<td>B</td>
<td>&gt;10.0 and ≤20.0</td>
</tr>
<tr>
<td>C</td>
<td>&gt;20.0 and ≤35.0</td>
</tr>
<tr>
<td>D</td>
<td>&gt;35.0 and ≤55.0</td>
</tr>
<tr>
<td>E</td>
<td>&gt;55.0 and ≤80.0</td>
</tr>
<tr>
<td>F</td>
<td>&gt;80.0</td>
</tr>
</tbody>
</table>

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.
LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Control Delay (Sec/Veh)</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>≤10.0</td>
</tr>
<tr>
<td>B</td>
<td>&gt;10.0 and ≤15.0</td>
</tr>
<tr>
<td>C</td>
<td>&gt;15.0 and ≤25.0</td>
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<tr>
<td>D</td>
<td>&gt;25.0 and ≤35.0</td>
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<tr>
<td>E</td>
<td>&gt;35.0 and ≤50.0</td>
</tr>
<tr>
<td>F</td>
<td>&gt;50.0</td>
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APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS
**HCS2000: Signalized Intersections Release 4.1d**

**Analyst:** GMT  
**Agency:**  
**Date:** 1/21/2005  
**Period:** AM Peak  
**Project ID:**  
**E/W St:** Papalaua Street  
**N/S St:** Wainee Street

### SIGNALIZED INTERSECTION SUMMARY

<table>
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<tr>
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<th>Eastbound</th>
<th>Westbound</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
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<tr>
<td>No. Lanes</td>
<td>L: 1  T: 1  R: 0</td>
<td>L: 1  T: 1  R: 0</td>
<td>L: 1  T: 1  R: 0</td>
<td>L: 1  T: 1  R: 0</td>
</tr>
<tr>
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<td>L: 12.0  12.0  12.0</td>
<td>L: 12.0  12.0  12.0</td>
<td>L: 12.0  12.0  12.0</td>
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<td>Duration</td>
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### Phase Combination

- **EB Left:** A  A  | MB Left: A  A
- **Thru:** A  | Thru: A
- **Right:** A  | Right: A
- **Peds:** | Peds
- **WB Left:** A  A  | SB Left: A  A
- **Thru:** A  | Thru: A
- **Right:** A  | Right: A
- **Peds:** | Peds
- **NB Right:** | EB Right
- **SB Right:** | WB Right

**Green:** 8.0  32.0  | 8.0  32.0
**Yellow:** 0.0  4.0  | 0.0  4.0
**All Red:** 0.0  1.0  | 0.0  1.0

**Cycle Length:** 90.0  secs

### Intersection Performance Summary

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<th>Flow Rate (v/c)</th>
<th>Adj Sat Ratios</th>
<th>Lane Group</th>
<th>Approach</th>
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<td>0.07 0.44 14.4</td>
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<tr>
<td>TR</td>
<td>648</td>
<td>1822</td>
<td>0.30 0.36 21.1</td>
<td>C</td>
<td>20.0+ C</td>
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</table>

### Westbound

- **L:** 487 | 1770 | 0.21 0.44 15.2 | B
- **TR:** 639 | 1798 | 0.22 0.36 20.5 | C | 18.3 B |

### Northbound

- **L:** 490 | 1770 | 0.13 0.44 14.8 | B
- **TR:** 611 | 1719 | 0.39 0.36 22.2 | C | 20.6 C |

### Southbound

- **L:** 447 | 1770 | 0.09 0.44 14.7 | B
- **TR:** 640 | 1801 | 0.30 0.36 21.1 | C | 20.0+ C |

**Intersection Delay = 19.8  (sec/veh)**  
**Intersection LOS = B**
### Signalized Intersection Summary

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<th>Westbound</th>
<th>Northbound</th>
<th>Southbound</th>
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<td>T</td>
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**Duration** 1.60

**Signal Operations**

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| Green   | 8.0 | 32.0 |   | 8.0 | 32.0 |   |
| Yellow  | 0.0 | 4.0  |   | 0.0 | 4.0  |   |
| All Red | 0.0 | 1.0  |   | 0.0 | 1.0  |   |

**Intersection Performance Summary**

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**Intersection Delay** = 20.5 (sec/veh)  **Intersection LOS = C**
HCS2000: Unsignalized Intersections Release 4.1d

**TWO-WAY STOP CONTROL SUMMARY**

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Vehicle Volumes and Adjustments

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Minor Street: Approach Movement Northbound Southbound

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Delay, Queue Length, and Level of Service

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| v (vph) | 145 | 108 |
| C(m) (vph) | 1559 | 633 |
| v/c | 0.08 | 0.17 |
| 95% queue length | 0.31 | 0.62 |
| Control Delay | 7.5 | 11.9 |
| LOS | A | B |
| Approach Delay | 11.9 |
| Approach LOS | B |
## HCS2000: Unsignalized Intersections Release 4.1d

**TWO-WAY STOP CONTROL SUMMARY**

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APPENDIX D
CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2007 PEAK HOUR TRAFFIC
ANALYSIS WITHOUT PROJECT
**HCS2000: Signalized Intersections Release 4.1d**

**Analyst:** GMT  
**Agency:**  
**Date:** 1/31/2005  
**Period:** AM Peak  
**Project ID:**  
**E/W St:** Papalua Street  
**N/S St:** Wainee Street  
**Area Type:** All other areas  
**Jurisdiction:**  
**Year:** Year 2007 Without Project

### SIGNALIZED INTERSECTION SUMMARY

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**Duration:** 1.00

### Signal Operations

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**Green** 8.0 12.0
**Yellow** 0.0 0.0
**All Red** 0.0 0.0

**Cycle Length:** 90.0 secs

### Intersection Performance Summary

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<td>20.2 C</td>
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**Intersection Delay = 19.9 (sec/veh)**  
**Intersection LOS = B**
**HCS2000: Signalized Intersections Release 4.1d**

**Analyst:** GMT  
**Agency:**  
**Date:** 1/31/2005  
**Period:** PM Peak  
**Project ID:**  
**E/W St:** Papalua Street  
**N/S St:** Wainee Street  

**INTERSECTION SUMMARY**

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**Duration 1.00 Area Type: All other areas Signal Operations**

| Phase Combination | EB Left | Thru | Right | Peds | WB Left | Thru | Right | Peds | NB Left | Thru | Right | Peds | SB Right | Thru | Right | Peds | Green | Yellow | All Red | Cycle Length: 90.0 secs |
|-------------------|---------|------|-------|------|---------|------|-------|------|---------|------|-------|------|----------|------|-------|------|-------|--------|---------|
|                   | A       | A    | A     | A    | A       | A    | A     | A    | A       | A    | A     | A    | A        | A    | A     | A    | 8.0   | 0.0    | 0.0     | 90.0   |

**Intersection Performance Summary**

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**Intersection Delay = 20.6 (sec/veh) Intersection LOS = C**
TWO-WAY STOP CONTROL SUMMARY

### Analyst: GMT
### Date Performed: 1/31/2005
### Analysis Time Period: AM Peak
### Jurisdiction: Year 2007 Without Project
### Units: U. S. Customary
### Study period (hrs): 1.00
### Classification: Two-Way Stop
### Project ID: Kenne Street
### North/South Street: Waimanalo Street
### Intersection Orientation: EW

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### Delay, Queue Length, and Level of Service

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## TWO-WAY STOP CONTROL SUMMARY

**Analyst:** GMT  
**Agency/Co.:**  
**Date Performed:** 1/31/2005  
**Analysis Time Period:** PM Peak  
**Jurisdiction:**  
**Units:** U. S. Customary  
**Analysis Year:** Year 2007 Without Project  
**Project ID:**  
**East/West Street:** Kenui Street  
**North/South Street:** Wainee Street  
**Intersection Orientation:** EW  
**Study period (hrs):** 1.00

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### Delay, Queue Length, and Level of Service

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APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2007 PEAK HOUR TRAFFIC
ANALYSIS WITH PROJECT
**Signalized Intersection Summary**

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**Signal Operations**

- **Phase Combination**:
  - EB Left: A
  - Right: A
  - Thru: A
  - Peds: A
  - WB Left: A
  - Right: A
  - Thru: A
  - Peds: A
  - NB Right: A
  - SB Right: A
  - Green: 8.0 32.0
  - Yellow: 0.0 6.0
  - All Red: 0.0 1.0

**Intersection Performance Summary**

- **Approach Lane Group**:
  - **Eastbound**
    - L 526
    - TR 648
  - **Westbound**
    - L 481
    - TR 640
  - **Northbound**
    - L 482
    - TR 611
  - **Southbound**
    - L 438
    - TR 640

- **Lane Group Capacity**:
  - Flow Rate
  - Adj Sat Ratios
  - Lane Group
  - Approach
  - Delay LOS
  - Delay LOS

- Intersection Delay = 19.9 (sec/veh) Interesction LOS = B
SIGNALIZED INTERSECTION SUMMARY

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| No. Lanes | L 146 TR 62 | L 109 TR 34 | L 189 TR 145 | L 109 TR 73 |
| Volume    |              |              |              |             |
| Lane Width| 112.0 12.0   | 12.0 12.0    | 12.0 12.0    | 12.0 12.0   |
| RTOR Vol  | 12 7        | 12 28        | 14           |
| Duration  | 1.00        |             |             |             |

Area Type: All other areas

Signal Operations

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Intersection Performance Summary

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</tbody>
</table>

Intersection Delay = 20.7 (sec/veh)  Intersection LOS = C
### TWO-WAY STOP CONTROL SUMMARY

**Analyst:** GNT  
**Agency/Co.:**  
**Date Performed:** 1/31/2005  
**Analysis Time Period:** AM Peak  
**Intersection:**  
**Jurisdiction:**  
**Units:** U.S. Customary  
**Analysis Year:** Year 2007 With Project  
**Project ID:**  
**East/West Street:** Kenui Street  
**North/South Street:** Wainee Street  
**Intersection Orientation:** NW  
**Study period (hrs):** 1.00

#### Vehicle Volumes and Adjustments

<table>
<thead>
<tr>
<th>Major Street: Approach Movement</th>
<th>Eastbound</th>
<th></th>
<th></th>
<th>Westbound</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>T</td>
<td>R</td>
<td>L</td>
<td>T</td>
<td>R</td>
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<tr>
<td><strong>Volume</strong></td>
<td>15</td>
<td>25</td>
<td>108</td>
<td>13</td>
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<tr>
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<td>0.83</td>
<td>0.83</td>
<td>0.73</td>
<td>0.73</td>
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<tr>
<td><strong>Hourly Flow Rate, HFR</strong></td>
<td>18</td>
<td>30</td>
<td>147</td>
<td>17</td>
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</tr>
<tr>
<td><strong>Percent Heavy Vehicles</strong></td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Median Type/Storage</strong></td>
<td>Undivided</td>
<td>/</td>
<td></td>
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<tr>
<td><strong>RT Channelized?</strong></td>
<td>No</td>
<td>No</td>
<td></td>
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<td></td>
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#### Minor Street: Approach Movement

<table>
<thead>
<tr>
<th>Minor Street: Approach Movement</th>
<th>Northbound</th>
<th></th>
<th></th>
<th>Southbound</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>T</td>
<td>R</td>
<td>L</td>
<td>T</td>
<td>R</td>
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<td><strong>Volume</strong></td>
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<td>11</td>
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<td><strong>Hourly Flow Rate, HFR</strong></td>
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<td><strong>Percent Heavy Vehicles</strong></td>
<td>2</td>
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<tr>
<td><strong>Percent Grade (%)</strong></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Flared Approach?</strong></td>
<td>Exists?/Storage</td>
<td>No</td>
<td>/</td>
<td>No</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td><strong>Lanes</strong></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Configuration</strong></td>
<td>LR</td>
<td></td>
<td></td>
<td></td>
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#### Delay, Queue Length, and Level of Service

<table>
<thead>
<tr>
<th>Approach Movement</th>
<th>EB</th>
<th>WB</th>
<th>Northbound</th>
<th>Southbound</th>
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</thead>
<tbody>
<tr>
<td>Movement</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>8</td>
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<td>Config</td>
<td>LT</td>
<td></td>
<td>LR</td>
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<tr>
<td><strong>v (vph)</strong></td>
<td>147</td>
<td>114</td>
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<tr>
<td><strong>C(m) (vph)</strong></td>
<td>1559</td>
<td>627</td>
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<td><strong>v/c</strong></td>
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<tr>
<td><strong>Control Delay</strong></td>
<td>7.2</td>
<td>12.0</td>
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<tr>
<td><strong>LOS</strong></td>
<td>A</td>
<td>B</td>
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<tr>
<td><strong>Approach Delay</strong></td>
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<td></td>
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<tr>
<td><strong>Approach LOS</strong></td>
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<td></td>
<td>B</td>
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HCS2000: Unsignalized Intersections Release 4.1d

TWO-WAY STOP CONTROL SUMMARY

Analyst: GMT
Agency/Co.: 
Date Performed: 1/31/2005
Analysis Time Period: PM Peak
Interception:  
Jurisdiction:  
Units: U. S. Customary
Analysis Year: Year 2007 With Project
Project ID:  
East/West Street: Kenui Street
North/South Street: Wainee Street
Intersection Orientation: EW  
Study period (hrs): 1.00

<table>
<thead>
<tr>
<th>Vehicle Volumes and Adjustments</th>
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<tr>
<td>Major Street: Approach</td>
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<tr>
<td>Movement</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Volume</td>
</tr>
<tr>
<td>Peak-Hour Factor, PHF</td>
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<tr>
<td>Hourly Flow Rate, HFR</td>
</tr>
<tr>
<td>Percent Heavy Vehicles</td>
</tr>
<tr>
<td>Median Type/Storage</td>
</tr>
<tr>
<td>Lanes</td>
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<tr>
<td>Configuration</td>
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<tr>
<td>Upstream Signal?</td>
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<p>| Minor Street: Approach      | Northbound | Southbound |</p>
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<tr>
<th>Movement</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tr>
<td>Percent Grade (%)</td>
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<td>Flared Approach: Exists?/Storage</td>
<td>No</td>
<td>/</td>
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<td>0</td>
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<table>
<thead>
<tr>
<th>Delay, Queue Length, and Level of Service</th>
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</thead>
<tbody>
<tr>
<td>Approach</td>
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<tr>
<td>Movement</td>
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<td>Lane Config</td>
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<td>v (vph)</td>
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<td>C(m) (vph)</td>
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<td>LOS</td>
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<tr>
<td>Approach Delay</td>
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<tr>
<td>Approach LOS</td>
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Appendix E

Ordinance No. 2827,
Bill No. 7 (2000)
ORDINANCE NO. 2827

BILL NO. 7 (2000)

A BILL FOR AN ORDINANCE TO CHANGE ZONING FROM A-1 APARTMENT DISTRICT TO B-2 COMMUNITY BUSINESS DISTRICT (CONDITIONAL ZONING) FOR PROPERTY SITUATED AT LAHAINA, MAUI, HAWAII

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

SECTION 1. Pursuant to Chapters 19.18 and 19.510, Maui County Code, a change in zoning from A-1 Apartment District to B-2 Community Business District (conditional zoning) is hereby granted for property situated at Lahaina, Maui, Hawaii, and identified by Tax Map Key No. (2) 4-5-007: 004, comprised of approximately 18,638 square feet, and more particularly described in Exhibit "A", attached hereto and by this reference made a part hereof, and in Land Zoning Map No. L-865 which is on file in the Office of the County Clerk of the County of Maui, and which is by this reference made a part hereof.

SECTION 2. Pursuant to Section 19.510.050, Maui County Code, the zoning established by this ordinance is subject to the conditions set forth in Exhibit "B", attached hereto and by this reference made a part hereof, and the Unilateral Agreement and Declaration for Conditional Zoning, attached hereto as Exhibit "C" and by this reference made a part hereof.

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

APPROVED AS TO FORM AND LEGALITY:

[Signature]
KELLY A. CAIRNS
Deputy Corporation Counsel

ECLERK/ADMIN/ORD/4401215C/1WP
EXHIBIT "A"

All of that certain parcel of land (being portion of the land(s) described in and covered by Land Patent Number 6278, Land Commission Award 11032 to George Shaw and Neunahina situate, lying and being between Honoapilani Highway and Wainee Street, approximately 300 feet southeasterly from Baker Street, at Kukuihau L. Lahaina, Island and County of Maui, State of Hawaii, being PARCEL "A", of the "HONOKA SUBDIVISION", and thus bounded and described:

Beginning at the northwest corner of this piece of land and on the southwest side of Honoapilani Highway, the coordinates of said point of beginning referred to Government Survey Triangulation Station "ALAIN" being 1856.58 feet south and 3197.61 feet west and running by azimuths measured clockwise from true South:

1. 116° 59' 71.24 feet along the southwest side of Honoapilani Highway

2. 05° 00' 242.54 feet

3. 117° 49' 65.13 feet along the northeast side of Wainee Street

4. 143° 00' 187.97 feet along R. P. 6327 L. C. Aw. 6849 to Colas: Kataleskiri and L. P. 6391 to L. C. Aw. 11216 Ap. 19 to M. Kakaawonch

5. 133° 00' 21.00 feet along L. P. 6391 L. C. Aw. 11216 Ap. 19 to M. Kakaawonch

6. 241° 00' 61.37 feet along L. P. 6391 L. C. Aw. 11216 Ap. 19 to M. Kakaawonch to the point of beginning and containing an area of 16,638 square feet, more or less.

Said above described parcel of land having been acquired by the grantor herein by the following Deeds:

1. Deed of Joyce Ouchi, unmarried, and Miles S. Kunishige, unmarried, dated April 3, 1987, and recorded in Liber 20078 on Page 1641 and


SUBJECT, HOWEVER, to the restrictive vehicular access affecting Course 1.

END OF EXHIBIT "A"

Tax Key: 4-5-007-004 (3)
EXHIBIT "B"

Conditions

Pursuant to Section 19.510.050 of the Maui County Code, the zoning established for the Parcel described herein shall be subject to the following conditions:

1. That the uses on the site shall be limited to business offices, financial offices, and professional offices, as well as uses permitted in the B-1 Neighborhood District, excluding churches, day care, laundromats, gas stations, and liquor stores.

2. That the height limit shall be restricted to 35 feet.

3. That the architectural design, signage, and landscaping shall be compatible with the Design Guidelines for the Lahaina Historic District.
LAND COURT SYSTEM

REGULAR SYSTEM

Return By Mail (x)  Pickup ( ) : To:
Office of the County Clerk
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

TITLE OF DOCUMENT:

UNILATERAL AGREEMENT AND DECLARATION FOR CONDITIONAL ZONING

PARTIES TO DOCUMENT:

Declarant:  FINANCE HOLDINGS, LTD.
1164 Bishop Street, Suite 810
Honolulu, Hawaii 96813-2810

County of Maui:  County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Affects Tax Map Key: (2) 4-5-007:004  (This document consists of 8 pages.)
UNILATERAL AGREEMENT AND DECLARATION FOR CONDITIONAL ZONING

THIS INDENTURE, made this 21ST day of January, 2000, by FINANCE HOLDINGS, LTD., a Hawaii corporation, whose principal place of business is located in Honolulu, Oahu, Hawaii and whose mailing address is 1164 Bishop Street, Suite 810, Honolulu, Hawaii 96813-2810, hereinafter referred to as 'DECLARANT', and who is the owner of the parcel of land located at Lahaina, Island and County of Maui, State of Hawaii, comprised of approximately 18,638 square feet, and identified for real property tax purposes by Tax Map Key No. (2) 4-5-007:004, hereinafter referred to as 'PARCEL'.

WITNESSETH:

WHEREAS, the Council of the County of Maui, State of Hawaii, hereinafter referred to as 'Council', is considering the establishment of zoning for the Parcel, comprised of approximately 18,638 square feet, which is more particularly described in Exhibit 'A', attached hereto and made a part hereof, and more particularly identified in Land Zoning Map No. 86F, which is on file in the Office of the County Clerk of the County of Maui; and

WHEREAS, the Council recommends through its Land Use Committee, Committee Report No. 00-12., that said establishment of zoning be approved for passage on first reading subject to certain conditions pursuant to Section 19.510.050, Maui County Code; and

WHEREAS, the Declarant has agreed to execute this instrument pursuant to the conditional zoning provisions of Section 19.510.050, Maui County Code;

NOW, THEREFORE, the Declarant makes the following Declaration:

1. That this Declaration is made pursuant to the provisions of Section 19.510.050, Maui County Code relating to conditional zoning;

2. That until written release by the County of Maui, hereinafter referred to as the "County", the Parcel, and all parts thereof, are and shall be held subject to covenants, conditions and restrictions which shall be effective as to and shall run with the land as to the Parcel, from and after the recording of this Declaration with the Bureau of Conveyances or the Land Court of the State of Hawaii, without the execution, delivery or recordation of any further deed, instrument, document, agreement, declaration, covenant or the like with respect thereto by the Declarant, the County, or any heir, devisee, executor, administrator, personal representative, successor, and assigns that the acquisition of any right, title or interest in or with respect to the Parcel by any person or persons, entity or entities, whomever, shall be deemed to constitute the acceptance of all of the covenants, conditions and restrictions of this Declaration by such person or persons, entity or entities; and that upon any transfer of any right, title or interest in or with respect to the Parcel the same shall be subject to, and the transferee shall assume and be bound and obligated to observe and perform all of the covenants, conditions and restrictions of this Declaration;
3. That this Declaration and all of the covenants, conditions and restrictions contained herein shall continue to be effective as to and run with the land in perpetuity, or until the Declarant notifies the appropriate County Department that any said covenants, conditions and restrictions are satisfied by the Declarant, and the appropriate County Department verifies the satisfaction and provides a written release of the covenants, condition or restriction;

4. That the term "Declarant" and any pronoun in reference thereto, wherever used herein, shall be construed to mean the singular or the plural, the masculine or the feminine, or the neuter, and vice versa, and shall include any corporation, and shall be held to mean and include the "Declarant", the Declarant's heirs, devisees, executors, administrators, personal representatives, successors, and assigns;

5. That the Declaration shall become fully effective on the effective date of the zoning ordinance approving the establishment of B-2, Community Business District Zoning and this Declaration shall be recorded in the Bureau of Conveyances or Land Court of the State of Hawaii;

6. That the Declarant agrees to develop said Parcel in conformance with the conditions set forth in Exhibit "B", which is attached hereto and made a part hereof and which shall be made a part of the zoning ordinance;

7. That the conditions imposed are reasonable and rationally relate to the objective of preserving the public health, safety and general welfare and such conditions fulfill the need for the public service demands created by the proposed use.

AND IT IS EXPRESSLY UNDERSTOOD AND AGREED that until released in writing by the County, the conditions imposed in this Declaration shall run with the land identified hereinafter and shall bind and constitute notice to all subsequent lessors, grantees, assignees, mortgagees, lienors and any other persons who claim an interest in said land, and the County of Maui shall have the right to enforce this Declaration by appropriate action at law or suit in equity against all such persons, provided that the Declarant or its successors and assigns may at any time file a petition for the removal of the conditions and terminate this Unilateral Agreement, such petition to be processed in the same manner as petitions for change in zoning.
IN WITNESS WHEREOF, the undersigned has executed this Declaration the day and year first above written.

DECLARANT:

FINANCE HOLDINGS, LTD.

By
Print Name: Howard Y. Murai
Its Vice President

By
Print Name: Jed Sueoka
Its Vice-President

APPROVED AS TO FORM AND LEGALITY:

KELLY A. CARR
Deputy Corporation Counsel
County of Maui
STATE OF HAWAII

CITY AND COUNTY OF HONOLULU

On this 24th day of January, 2000, before me appeared HOWARD Y. MURALI, to me personally known, who, being by me duly sworn, did say that he is the Vice-President of FINANCE HOLDINGS, LTD., a Hawaii corporation, that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and said HOWARD Y. MURALI acknowledged said instrument to be the free act and deed of said corporation.

ELAINE I. UEUMURA

Notary Public, State of Hawaii

My Commission expires: June 12, 2002
STATE OF HAWAII
HONOLULU

On this 21st day of January 2000, before me appeared JED SUEOKA, to me personally known, who, being by me duly sworn, did say that he is the VICE-PRESIDENT of FINANCE HOLDINGS, LTD., a Hawaii corporation, that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and said JED SUEOKA acknowledged said instrument to be the free act and deed of said corporation.

[Signature]
Name: Elaine Uemura
Notary Public, State of Hawaii
My Commission expires: June 12, 2002
EXHIBIT "AC"

All of that certain parcel of land (being portion of the land(s) described in and covered by Land Patent Number 6278, Land Commission Award 11213 to George Shaw and Maunahina) situated, lying and being between Konaopilani Highway and Maine Street, approximately 300 feet southeasterly from Baker Street, at Kukuihaele L. Land, Island and County of Maui, State of Hawaii, being PARCEL "A", of the "HINUDA SUBDIVISION", and thus bounded and described:

Beginning at the northwest corner of this piece of land and on the southwest side of Konaopilani Highway, the coordinates of said point of beginning referred to Government Survey Triangulation Station "LAINA" being 5556.18 feet south and 1927.41 feet west and running by stints measured clockwise from true south:

1. 116° 59' 71.16 feet along the southwest side of Konaopilani Highway;
2. 45° 00' 242.54 feet;
3. 147° 49' 85.13 feet along the northeast side of Maine Street;
5. 333° 00' 21.00 feet along L. F. 8291 L. C. Av. 11216 Ap. 19 to M. Kakau and.
6. 241° 00' 62.57 feet along L. F. 8291 L. C. Av. 11216 Ap. 19 to M. Kakau and the point of beginning containing an area of 18,628 square feet, more or less.

Said above described parcel of land having been acquired by the Grantor herein by the following Deeds:

1. Deed of Joyce Ouchi, unmarried, and Miles S. Kunishige, unmarried, dated April 3, 1987, and recorded in Liber 10350 on Page 3444 and

SUBJECT, HOWEVER, to the restrictive vehicular access affecting Course 1.

END OF EXHIBIT "AC"

Tax Keys 4-5-007-004 (2)
EXHIBIT "B"

Conditions

Pursuant to Section 19.510.050 of the Maui County Code, the zoning established for
the Parcel described herein shall be subject to the following conditions:

1. That the uses on the site shall be limited to business offices, financial offices, and pro-
   fessional offices, as well as uses permitted in the B-1 Neighborhood District, excluding
   churches, day care, laundromats, gas stations, and liquor stores.

2. That the height limit shall be restricted to 35 feet.

3. That the architectural design, signage, and landscaping shall be compatible with the Design
   Guidelines for the Lahaina Historic District.
WE HEREBY CERTIFY that the foregoing BILL NO. 7 (2000)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held the 18th day of February, 2000, by the following votes:

<table>
<thead>
<tr>
<th>Patrick S. Kawano, Chair</th>
<th>Oak P. Kane, V. Chair</th>
<th>Michael A. Davis</th>
<th>J. Kalan ENGLISH</th>
<th>John W. Enrigues</th>
<th>G. Tani HOKAMA</th>
<th>Darrel V. Nakamura</th>
<th>Wayne R. Nishii</th>
<th>Clarence TAVARES</th>
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</thead>
<tbody>
<tr>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
<td>Excused</td>
<td>Aye</td>
<td>Aye</td>
<td>Aye</td>
</tr>
</tbody>
</table>

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 18th day of February 2000.

DATED AT WAILUKU, MAUI, HAWAII, this 18th day of February, 2000.

[Signature]

PATRICK S. KAWANO, CHAIR
Council of the County of Maui

[Signature]

DIANE A. WAKAMATSU, DEPUTY COUNTY CLEF
County of Maui


[Signature]

JAMES H. APANA, JR., MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 2827 of the County of Maui, State of Hawaii.

[Signature]

DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

Passed First Reading on February 4, 2000.

[Signature]

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 2827, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

[Signature]

County Clerk, County of Maui
Appendix F

Summary of Community Meeting with Residents of Piilani Elderly Housing Project (March 16, 2005)
MEETING MEMORANDUM

Date of Meeting: March 16, 2005
From: Mark Roy, Planner
Subject: Proposed Self Storage Facility at TMK 4-5-7:04, Lahaina, Maui, Hawaii
Participants: Cliff Libed, Public Housing Manager (Hawaii Housing and Community Development Corporation) (HCDC)
Howard Mural and Lee Miller (Finance Holdings, Ltd.)
Eric Taniguchi (Eric S. Taniguchi, AIA)
Michael Munekiyo and Mark Roy (Munekiyo & Hiraga, Inc.)
Pillani Elderly Housing Project Residents (See attached list)

A community meeting was held with residents of the Pillani Elderly Housing Project at 10:00 a.m. on Wednesday, March 16, 2005. Cliff Libed, Public Housing Manager for the Hawaii Housing and Community Development Corporation (HCDC), also attended the meeting. The primary aim of the meeting was to provide the residents with an overview of the proposed project and to address any concerns or questions. Presentations were first delivered by Howard Mural, Eric Taniguchi and Mike Munekiyo. A question and answer session then followed.

A number of questions were raised and discussed during the meeting, relating to proposed facility design, public safety, security, traffic, parking, lighting, repair of sidewalk fronting property, and the preservation of onsite mango trees. The overall footprint and design of the proposed facility, particularly the use of a pitched roof, raised favorable reactions from the residents attending the meeting.

Primary concerns expressed by residents related to how the subject property would be secured at night and what was going to be done to ensure their safety. Residents expressed particular concern regarding the unauthorized use of parking at the facility both during the day and at night, due to parking shortages currently experienced around the
Front Street area. In response to the parking issue, residents were informed that a lockable gate would restrict out-of-hours access to the site and that the position of the proposed managers office relative to the gated access point would also ensure the use of onsite parking by customers only. Security concerns were addressed through the fact that alarm systems, and low-level parking lighting have all been integrated in the overall site design. Concern for the preservation of the mango tree nearest to the Pillani Elderly Housing Project was also expressed along with the need for the County to improve the sidewalk area fronting the subject property. Residents were assured that these concerns would be further addressed in the planning and permitting process.

At the end of the meeting, president of the Pillani Elderly Housing Community Association, Mr. Stuart Kahan, stated that all issues of concern seem to have been effectively addressed in the design and planning stages of the project. He stated that it represented the most acceptable project out of all other past proposals made in connection with the subject property. As a next step, Mr. Kahan pointed out that the subject action would be presented and further discussed with all the residents at the next meeting of the Community Association, whereupon an official statement would be issued.

Mark Roy, Planner

MR:yp
Attachment
cc: Lee Miller, Finance Holdings, Ltd. (w/attachment)
    Eric Taniguchi, Eric S. Taniguchi, AIA (w/out attachment)
    Cliff Libed, Housing and Community Development Corporation (w/out attachment)

Page 2
<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>CONTACT TELEPHONE NUMBER</th>
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<tbody>
<tr>
<td>1. Carol Valentine</td>
<td>G-2</td>
<td>344-1611</td>
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<tr>
<td>2. Karolyn Helly</td>
<td>C-4</td>
<td>667-4886</td>
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<td>3. Helen J.</td>
<td>H-3</td>
<td>667-6111</td>
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<td>5. James A. Hunt</td>
<td>H-1</td>
<td>661-6689</td>
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<td>6. Stuart A. Kahan</td>
<td>E-5</td>
<td>661-0238</td>
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<tr>
<td>7. Emilya Rose</td>
<td>R-2</td>
<td>662-0274</td>
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<tr>
<td>8. Laynele Carkinette</td>
<td>E-2</td>
<td>661-5550</td>
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MĀNOA HERITAGE CENTER
FINAL REVISED ENVIRONMENTAL ASSESSMENT & SUPPORT DOCUMENT
FOR CONDITIONAL USE PERMIT (MINOR) APPLICATIONS

Prepared for the Mānoa Heritage Center by
PlanPacific, Inc.
September 2005
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S) IMMEDIATELY FOLLOWING