ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

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April 16, 2015

Ms. Jessica Wooley, Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Wooley:

SUBJECT: NANI LOA CONDOMINIUM HOTEL, KIHEI DISTRICT, MAUI, HAWAII TMK (2) 3-9-020:032 (EA 2015/0004)

With this letter, the Department of Planning (Department) hereby transmits the Draft Environmental Assessment (EA) and Anticipated Finding of No Significant Impact (FONSI) for the proposed Nani Loa Condominium Hotel as noted above. The Department is requesting publication in the next available edition of the Environmental Notice.

Enclosed is a completed Office of Environmental Quality Control Publication Form, a hard copy of the Draft EA report and an electronic copy in MS WORD and PDF. Being sent simultaneously via email to oeqchawaii@doh.hawaii.gov is an Adobe Acrobat PDF file and project summary of the same.

Thank you for your cooperation. If you have any questions, please contact Staff Planner Paul Fasi at paul.fasi@mauicounty.gov or at (808) 270-7814.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANUARY 2013 REVISION)

Project Name: **NANI LOA CONDOMINIUM HOTEL**
Island: **MAUI**
District: **KIHEI**
TMK: **(2) 3-9-020:032**
Permits: **Building, Grading, Special Management Area, Community Plan Amendment**

Approving Agency:
Maui Planning Commission, County of Maui
c/o Department of Planning, 2200 Main Street, Suite 315, Wailuku, Hawaii 96793
Mr. William Spence, Director, (808) 270-7634

Applicant:
Victory Development Inc.
30 East Lipoa Street, Suite 4-109, Kihei Hawaii 96753
Mr. Greg Walker, (808) 875-0646

Consultant:
Chris Hart & Partners, Inc.
115 North Market Street, Wailuku, Hawaii 96793
Mr. R. Raymond Cabebe, (808) 242-1955

Status (check one only):

_**X**_DEA-AFNSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.

__FEA-FONSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.

__FEA-EISPN — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN — Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

__DEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.

__FEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__ Section 11-200-23 Determination — The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

__Statutory hammer Acceptance — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

__Section 11-200-27 Determination — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

__Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The applicant is proposing to develop a hotel condominium complex on 1.438 acres of land community planned for Multi-family and zoned for Hotel use in the Kihei District, Maui County. The proposed project consists of 39 units in one 3-story building (Building 1) with 11 units and one 4-story building (Building 2) with 28 units. The design has 6 floor plans, ranging from 780 square feet to 1,462 square feet of either two or three-bedroom units. All living units are served by exterior walkways and each have a private lanai from approximately 110 to 300 square feet. The lower floors of both buildings are used for parking. The EA is triggered by the proposed Community Plan Amendment from Multi-Family to Hotel.

HRS 343 DRAFT ENVIRONMENT ASSESSMENT
IN SUPPORT OF APPLICATIONS FOR
COMMUNITY PLAN AMENDMENT
AND
SPECIAL MANAGEMENT AREA USE PERMIT

NANI LOA CONDOMINIUM HOTEL

2505 South Kihei Road
Kihei, Maui, Hawaii
Tax Map Key: (2) 3-9-020:032

Prepared for:
Victory Development Inc.
30 E. Lipoa Street, Suite 4-109
Kihei, Hawaii 96753
Phone: (808) 875-0646

Prepared by:
Chris Hart & Partners, Inc.
Landscape Architecture & City and Regional Planning
115 North Market Street
Wailuku, Hawaii 96793
Phone: (808) 242-1955
Facsimile: (808) 242-1956

FEBRUARY 2015
Revised

HRS 343 DRAFT ENVIRONMENT ASSESSMENT
IN SUPPORT OF APPLICATIONS FOR
COMMUNITY PLAN AMENDMENT
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SPECIAL MANAGEMENT AREA USE PERMIT

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FEBRUARY 2015
Revised

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I. PROJECT INFORMATION

A. PREFACE

The applicant, Victory Development Inc., is proposing a development on a parcel identified as Tax Map Key (2) 3-9-020:032, Kihei, Maui, Hawaii (**See**: Figures No. 1 "Regional Location Map", & No. 2 "Tax Map"). This parcel was originally part of the adjoining parcel (TMK (2) 3-9-020:003) which contains the 180-unit Kihei Kai Nani development. According to Maui County Real Property records, the 1.438 acre parcel was "dropped" from TMK (2) 3-9-020:003 in 1969. A perpetual easement through the Kihei Kai Nani parcel to South Kihei Road for "roadway, sanitary sewer, utility and other purposes" was granted to the subject land-locked parcel in 1972. Kihei Kai Nani was constructed in 1970.

Land Use History. The subject property is located in what was known as the "Kamaole Superblock" in the *Kihei Civic Development Plan* (Maui County 1970), designated for high density hotel development. The property was designated **Hotel** in the *Kihei-Makena Community Plan* (July 1985). In the March 1998 update of the *Kihei-Makena Community Plan*, the property's designation was changed to **Multi-Family**.

In 1994, a Special Management Area (SMA) Use Permit application (SM1 94/0013) was approved by the Maui Planning Commission for a 48-unit condominium project. The project was never constructed and the SMA Use Permit was closed in 2003.

In 2009, an SMA Use Permit application (SM1 2009/0003) was submitted to the Maui Planning Department for the development of a 32-unit hotel condominium project. The Draft Environmental Assessment (EA) in support of the project was published for public comment in compliance with Hawaii Revised Statutes (HRS) Chapter 343 since the applicant is requesting a Community Plan Amendment (CPA). Several studies were prepared to assess the potential environmental impacts associated with the project. Due to the economic downturn in the latter part of the past decade, the original applicant was unable to pursue completion of the project, but continued to refine the project plans. The recent improvement in the economy has encouraged the applicant to resubmit this updated Draft EA document.

B. PURPOSE OF THE REQUEST

The proposed Nani Loa Hotel Condominium project will consist of 39 two- and three-bedroom units within two (2) buildings: one two-story and one three-story over ground level parking.

The subject property is located within the Special Management Area (SMA); therefore, an SMA Use Permit is required.

In order to develop the project as a Hotel Condominium and to satisfy the consistency requirement of the SMA, the request also includes a Community Plan Amendment (CPA) from (MF) Multi-Family to (H) Hotel. The CPA triggers compliance with Hawaii Revised Statutes (HRS) Chapter 343. As such, preparation of this Environmental Assessment is required. **Note**: The subject property is County zoned H-2 Hotel District.

The *Socio-Economic Forecast, The Economic Projections for the Maui County General Plan 2030* (County of Maui, June 2006) projects that Maui County will need 25,713 "visitor units" by 2030 based on the expected increase in visitor arrivals (baseline projection). In 2010, the Kihei-Makena region was projected to have 8,121 visitor units (43.7% of Maui Island total). By 2030, the region is projected to have 12,500 units (48.6% of Maui Island total), or an increase of 4,379 visitor units. With 39 units, the proposed Nani Loa Hotel Condominium represents about 0.89% of this projected increase.

C. PROJECT PROFILE

Proposed Project:	39-unit Hotel Condominium
No. of Buildings:	2
Stories:	3 and 4
Height:	35 feet and 45 feet
Project Address:	2505 South Kihei Road Kihei, Maui, Hawaii
Project TMK:	(2) 3-9-020:032
Parcel Size:	1.438 acres
Existing Land Use:	Vacant
Access:	South Kihei Road, via a perpetual easement through the Kihei Kai Nani Condominium property
Estimated Value:	$13,000,000.00

D. IDENTIFICATION OF THE APPLICANT/OWNER

Owner:	Victory Development Nani Loa LLC
Address:	30 E. Lipoa Street, Suite 4-109 Kihei, Hawaii 96753
Applicant:	Victory Development Inc.
Address:	30 E. Lipoa Street, Suite 4-109 Kihei, Hawaii 96753
Phone:	(808) 875-0646
Contact:	Mr. Greg Walker

E. CONSULTANTS

Land Use Planner & Landscape Architects:	Chris Hart & Partners, Inc. 115 North Market Street Wailuku, Maui, Hawaii 96793
Phone:	Voice: (808) 242-1955 Facsimile: (808) 242-1956
Contact:	Mr. Jordan E. Hart, President
Civil Engineer:	Otomo Engineering Inc. 305 South High Street, Suite 102 Wailuku, Hawaii 96793
Phone:	(808) 242-0032
Contact:	Mr. Stacy Otomo
Traffic Engineer:	Phillip Rowell and Associates 47-273 'D' Hui Iwa Street Kaneohe, Hawaii, 96744
Phone:	(808) 239-8206
Contact:	Mr. Phillip Rowell
Archaeological and Cultural Consultant:	Scientific Consultant Services, Inc. 711 Kapolei Blvd. Suite 975 Honolulu, HI 96813
Phone:	Voice: (808) 597-1182 Facsimile: (808) 597-1193
Contact:	Mr. Michael Dega, PhD.

F. ACCEPTING/APPROVING AGENCY

Agency:	Maui Planning Commission c/o Department of Planning, County of Maui 250 South High Street Wailuku, Maui, Hawaii 96793
Phone:	(808) 270-7735
Facsimile:	(808) 270-7634
Contact:	Mr. William Spence

G. MAJOR LAND USE, DEVELOPMENT AND CONSTRUCTION APPROVALS

1. Grading and Grubbing Permit approval from the Department of Public Works (DPW).
2. Building Permits for future structures from the DPW.
3. Demolition Permit from DPW.
4. Special Management Area Use Permit by the Maui Planning Commission, via the Department of Planning.
5. Community Plan Amendment approval by the Maui County Council.

H. CONSULTATION WITH AGENCIES & PRIVATE INTERESTS

The following agencies and individuals/organizations responded to requests for comments prior to submittal of the Draft EA (**See**: Appendix "A", "Pre-Consultation Agency Comments" and Appendix "B", "Community Consultation")

COUNTY OF MAUI

1. Department of Housing and Human Concerns
2. Department of Parks & Recreation
3. Department of Planning
4. Police Department

STATE OF HAWAII

1. Department of Education
2. Department of Health
3. Department of Land & Natural Resources
    a. Engineering Resources
    b. Land Division
4. Department of Transportation
5. Office of Hawaiian Affairs

FEDERAL

1. Department of the Army

OTHER

1. Maui Electric Company
2. Neighboring Property Owners and Registered Lessees within 500 feet
3. Kihei Community Association
4. Kihei Kai Nani Owners' Association Board

The Draft Environmental Assessment (EA), dated March 2009, was published on August 8, 2009 by the State Office of Environmental Quality Control (OEQC) for public comment. The Draft EA was distributed for agency comments and also reviewed by Maui Planning Commission on August 11, 2009. The following agencies responded (**See**: Appendix "C", "Draft EA Agency Comments & Responses"):

COUNTY OF MAUI

1. Department of Housing and Human Concerns
2. Fire Department
3. Department of Parks & Recreation
4. Department of Planning
    a. Maui Planning Commission
3. Police Department

5. Department of Public Works
6. Department of Water Supply

STATE OF HAWAII

1. Department of Accounting and General Services
2. Department of Health
3. Department of Land & Natural Resources
    a. Aquatic Resources Division
    b. Engineering Resources
    c. Historic Preservation Division

OTHER

1. Hawaiian Telcom

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION AND DESCRIPTION

The Nani Loa Project is located in the Kamaole area of Kihei, on the island of Maui, *Mauka* of South Kihei Road, and the existing Kihei Kai Nani Hotel Condominium Project. The parcel gains access to South Kihei Road via a Perpetual Easement through the Kihei Kai Nani Project (**See**: Figure No. 3, "TMK Parcel Map", Figure Nos. 4.1 & 4.2 "Photographs", & Appendix "D", "Deed & Perpetual Easement"). There are vacation condominium developments abutting to the west (Kihei Kai Nani) and abutting to the south (Kihei Akahi). **Note**: The subject parcel was originally part of the Kihei Kai Nani development. To the north and to the east, are vacant parcels zoned for hotel development. The Hale Pau Hana condominium is located across South Kihei Road. Major landmarks in the area are Kamaole Beach Park II to the west along the coastline across South Kihei Road and the recently dedicated Kihei Police Station to the northeast across Piilani Highway.

B. LAND USE DESIGNATIONS

See: SMA Application, "Zoning and Flood Confirmation".

State Land Use Classification:	Urban
Kihei-Makena Community Plan:	MF Multi-Family (**See**: Figure No. 5, "Kihei-Makena Community Plan")
County Zoning:	H-2 Hotel District (**See**: Figure No. 6, "County Zoning")
Flood Zone Designation:	"X", outside (**See**: Figure No. 7, "Flood Map")
Special Designations:	Special Management Area (SMA) (**See**: Figure No. 8, "SMA Map")

C. ALTERNATIVES

1. No Action

No development would result in an undeveloped parcel.

Analysis. The parcel has been designated by community plan and county zoning for dense urban development within the urbanized area of Kihei. Infill development of the urbanized area is consistent with the land use policies implemented by the State of Hawaii through State Land Use Designation and by the County of Maui through the Community Planning Process and County Zoning Designation.

Dissuading the development of infill parcels designated for dense development within the urban core of Kihei will result in sustained development pressures in areas outside the urban core, as alternative locations for development will continue to be sought. Discouraging centralized infill development encourages decentralized and sprawling development straining infrastructure and services.

2. Development as a Single Family Project

Uses permitted in the Residential District are permitted uses within the Hotel District. A single family dwelling development would require a subdivision or condominium action to create separate lots.

Analysis. Since an SMA permit would require land use consistency, a Community Plan Amendment (to Single Family Residential) as well as a Change in Zoning (to R-1, R-2, or R-3) would be required. Major infrastructure improvements would be required such as an access road with curb, gutter and sidewalks, sewer and water laterals, individual water meters, fire hydrants, and other underground utilities. With the highest level of Residential density, "R-1", approximately nine (9) lots would be the maximum possible. Even with *ohana* units, the density would not be financially viable or compatible with surrounding existing and potential developments.

3. Development as Multi-Family Project

Under the parcel's current land use designation, the applicant could pursue an SMA permit to develop the project as a Multi Family development without the requirement for additional land use entitlements.

Analysis. There is an increased demand for hotel units caused by a number of factors. The first is the trend towards conversion of hotel units into timeshare units. The second is the sinking inventory of County Zoned and Community Planned Hotel parcels. The anticipated need for Hotel Units is discussed in detail in the November 2006, Land Use Forecast, Island of Maui, Maui County General Plan 2030, prepared by Plan Pacific, Inc., for the County of Maui.

From a historical perspective, the subject parcel was at one time part of the adjacent Kihei Kai Nani Hotel Condominium Project originally constructed in 1970. The subject parcel was envisioned to eventually become an extension of Kihei Kai Nani.

A maximum building height of forty-five (45) feet is allowed within the Kihei-Makena Community Plan area for Multi-Family Projects. The Multi-Family height restriction negatively impacts the design of a proper roof when accommodating the quantity of units required making the project feasible. Providing adequate parking for the project was also a significant consideration for the project site.

According to the Kihei-Makena Community Plan, building heights for Hotel development may be gradually increased to seventy-five (75) feet further from the shoreline. The proposed Nani Loa Project will have a maximum height of approximately forty-five (45) feet from finish grade (fifty (50) feet from existing grade) which is consistent with the heights of neighboring Hotel development including the Kihei Akahi Project.

A Kihei-Makena Community Plan designation of Hotel will allow for architectural design flexibility from height restrictions to facilitate the design of a more aesthetically pleasing and financially feasible project.

4. Development as Resort Commercial

Uses permitted in the B-R Resort Commercial District are "activities and services oriented towards the needs of the transient visitor." (MCC 19.22.010) Although uses are visitor related, the district supports independent business use as the primary focus.

Analysis. Since an SMA permit would require land use consistency, a Community Plan Amendment (to Commercial) as well as a Change in Zoning (to B-R) would be required. Uses could be compatible with surrounding existing and potential developments, but would likely raise concerns and opposition from neighbors. Uses include restaurants, bars, coffee shops, art galleries, and theaters, among other uses providing goods and services to transient visitors. Building height would be limited to two-stories, creating a low profile building envelope. However since the parcel is

landlocked, the lack of through traffic (vehicular or pedestrian) would not be conducive to the operation of successful business activities.

5. Highest & Best Use

The maximum height for the H-2 Hotel District is twelve (12) stories. Maximum lot coverage is thirty-five percent (35%) and maximum floor area-lot area ratio is one hundred fifty percent (150%). This alternative would provide a unit density that would be double the preferred alternative.

Analysis. The proposed project (preferred alternative) has a more conservative configuration: four (4) stories maximum, lot coverage is thirty-four percent (34%), and floor area-lot area ratio is seventy-three percent (73%). This allows for a lower height, less dense, and more attractive site layout and building design with less impact to the environment. Additionally, the Kihei-Makena Community Plan states that, "Building height limits may gradually be increased up to seventy-five (75) feet for inland resort development provided that important mauka/makai vistas are maintained, and impacts to coastal resources are minimized." Because of the project's location within the Special Management Area, development of a twelve (12) story structure is not possible due to the lack of conformity with the Kihei-Makena Community Plan.

D. DESCRIPTION OF PROPOSED ACTION (PREFERRED ALTERNATIVE)

The applicant is proposing to develop a hotel condominium complex on 1.438 acres of land community planned for Multi-family and zoned for Hotel use. The proposed project consists of 39 units in one 3-story building (Building 1) with 11 units and one 4-story building (Building 2) with 28 units and (**See**: Figure Nos. 9.1 – 9.13). The design has 6 floor plans, ranging from 780 square feet to 1,462 square feet of either two or three-bedroom units. (**See**: Figure Nos. 9.2 and 9.3). All living units are served by exterior walkways and each have a private lanai from approximately 110 to 300 square feet. The lower floors of both buildings are used for parking.

The proposed project meets the zoning requirements of the H-2 Apartment District:

	H-2 Hotel District Regulations	Proposed
Stories	12	4 maximum
Lot Coverage	35%	34%
Floor Area Ratio	150%	73%
Parking	2 stalls/unit	83 stalls

The six living unit plans are configured as follows (**See**: Figure Nos. 9.2 & 9.3 "Unit Plans"):

Plan	Living Area (sq. ft.)	Lanai Area (sq. ft.)	Bedroom	Bath
1	963	110	2	2
2	922	200	2	2
3	963	201	2	2
4	1462	302	3	3.5
5	837	183	2	1.5
6	780	215	2	1

The unit plans are provided within each building by floor as follows:

Plan	1	2	3	4	5	6	Floor Totals
BLDG. 1							
Floor 2	0	2	2	0	1	1	6
Floor 3	0	2	2	1	0	0	5
BLDG. 2							
Floor 2	2	2	2	0	2	2	10
Floor 3	2	2	2	0	2	2	10
Floor 4	2	2	2	2	0	0	8
TOTALS	6	10	10	3	5	5	**39**

The exterior building materials will consist of board and batten siding, with lap siding at the upper floor areas, standing seam metal roofing with aluminum handrails at the lanais. The 4-story building height is 45 feet (50 feet above existing grade) and the 3-story building height is 35 feet (40 feet above existing grade) where 75 feet is recommended for hotel development in the Kihei-Makena Community Plan (**See**: Figure Nos. 9.4 - 9.7 "Elevations").

Common Area. The common area will include a swimming pool, spa, covered recreational facilities, BBQ, exercise room, manager's office and two elevators-one at each building.

Parking. The project provides the required two (2) parking stalls per living unit (**See**: Figure No. 9.1 "Site Plan"). Four (4) of the parking stalls are ADA (Americans with Disabilities Act) compliant. Eighty-three (83) stalls will be provided; forty-five (45) garages (assigned), and thirty-eight (38) uncovered stalls (one assigned to office manager with the remainder unassigned). Automobile and pedestrian access to the project site will be from South Kihei Road through a perpetual easement on the Kihei Kai Nani property.

Required parking for the proposed project is determined as follows:

Description	Area (sq. ft.)	Units	Ratio	Stalls Required
Hotel/Condo Units	N/A	39	2 stalls/unit	78
Office	240	N/A		
Restrooms	288	N/A		
Total Area	528	N/A	1 stall/500 sq. ft.	1
Total Stalls Required				**79**
Total Stalls Provided				**83**

Note: Common areas, such as swimming pool & deck area, lounge area, community kitchen, and owner storage room, are for the exclusive use of the owners & guests; therefore, no parking stalls are required for these uses, pursuant to the Planning Director's August 5, 2005 Memorandum regarding "Designated Number of Parking Spaces for Hotels and Apartments". Since eighty-three (83) stalls are provided, there will be four (4) excess stalls.

One electric vehicle charging station stall is included in the eighty-three (83) stalls. In addition, four (4) loading stalls will be provided.

ADA (Americans with Disabilities Act) Features. In conjunction with properly marked ADA compliant parking stalls, the designated disability entrance will have direct access to the elevator. All common areas are ADA compliant including the restrooms, with proper railings, clear travel widths, and sidewalk ramps. Final plans will be reviewed for compliance with the State Disability and Communication Access Board (DCAB) rules.

Landscape Design. Perimeter landscape planting is provided as required buffer parking areas from adjacent parcels (**See**: Figure No. 10 "Landscape Concept Plan"). Plantings will be a combination of native and climate adapted (Zone 3) species. An automatic irrigation system will be installed with drip emitters (where appropriate), rain sensors, and will be "R-1 ready" when recycled water becomes available. A detailed plan will be submitted with the Landscape Planting Plan application for approval prior to the final compliance report.

Infrastructure. The proposed project will require on-site support infrastructure. On-site infrastructure will include asphalt paved driveways, parking lots, as well as water, sewer, drainage, electrical, and telephone system improvements (**See**: Figure No. 9.1 "Site Plan").

Workforce Housing. As required by Chapter 2.96 "Residential Workforce Housing Policy", Maui County Code (MCC), the applicant will enter into a residential workforce housing agreement with the County of Maui to establish compliance with the said chapter. Currently, the applicant is required to offer for sale or rent to qualified families an equivalent of twenty-five percent (25%) of the proposed units either onsite or offsite, pay an in-lieu fee, provide improved or unimproved land, or obtain residential workforce housing credits. The method will be determined prior to the applicant entering into the workforce housing agreement. Compliance with the terms of the agreement must occur prior to approval of building permits, as required by MCC Chapter 2.96. The DHHC prepares the Affordable Sales Price and Rent Guidelines annually, based on the Median Family Income (MFI) established by the U.S. Department of Housing and Urban Development (HUD). The MFI for 2014 was $75,800.

Sustainability. Careful consideration has been made toward green building and higher energy and water efficiency by incorporating the following sustainable concepts into the design:

- The project site is within a half mile (10 minute average walking time) of public transportation, shopping, beach parks, schools, and other basic services indicating very good community connectivity. This, along with the network of sidewalks in the neighborhood, encourages pedestrian access to goods and services.

- Ample bicycle rack storage is provided to encourage an alternative mode of transportation. The project will maintain "complex owned" bikes for use by residents and guests as alternate mode of transportation.
- Roof mounted photovoltaic solar panels are proposed to be installed and sized to generate sufficient power for common areas (**See**: Figure No. 9.12 "Features"). Any proposed photovoltaic system is subject to MECO approval based on electrical grid conditions at the time of Project construction.
- An electric vehicle charging station will be located near Building No. 2's entrance (**See**: Figure No. 9.12 "Features").
- Outdoor water conservation (**See**: "Landscape Design" above).
- Indoor water conservation will be attained with WaterSense fixtures.
- Storm water managed with sub-surface retention system (**See**: Subsection III.D.3. "Drainage").
- Low E, high efficiency windows with sound reduction glass will be utilized.
- Each unit will be cooled with individual split air conditioning systems.
- All bedrooms and family rooms will have ceiling fans.
- Radiant barrier roofs with upgraded insulation will be provided throughout.
- The project is an in-fill development surrounded on all sides by current and future vacation condominium developments where the goods, services, and amenities, as well as major components of infrastructure, are already in place.

Schedule. Construction is anticipated to begin once all of the required State and County Permits have been issued. It is anticipated that full build-out of the site will require approximately twenty-four (24) months to complete.

III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The subject property is located within South Kihei, on the leeward facing shore of Maui where the weather is dry, sunny, and desirable for visitors. A patchwork of existing multi- and single-family residences, commercial, and resort developments characterize South Kihei. Development in the region generally occurs in a linear pattern between the shoreline and Piilani Highway, a four-lane principal arterial road from Mokulele Highway to Mapu Place/Kilohana Street. South Kihei Road is a two-lane major urban collector road that provides service along the shoreline to residential, commercial, and condominium resort areas. Zoning and Community Plan Designations throughout South Kihei are predominantly in support of commercial, resort, and multi- and single-family residential uses. Commercial uses are concentrated within regional shopping centers including Pi'ilani Village Shopping Center, Azeka's Place I & II, as well as, in smaller commercial developments located along South Kihei Road, in the vicinity of the Kamaole Beach Parks. In the Kamaole Beach Park II area, Dolphin Plaza, Kamaole Beach Center, Rainbow Mall, Kamaole Shopping Center and the Kai Nani Shopping Center provide convenience stores, eateries, coffee shops, other shopping opportunities and services within a half mile of the project site which is easily walkable. The Pi'ilani Village Shopping center is situated approximately two miles north of the subject site and is accessible from both Pi'ilani Highway and South Kihei Road. The center serves a regional market and includes such tenants as Safeway, Starbucks, Hilo Hattie, and Super Cuts, as well as, various restaurants and other services.

The subject property is bound to the south and west by existing condominium hotel developments, and to the north and east by land community planned multi-family and zoned for hotel use. The proposed development can be characterized as an urban infill project and is in character with the established land use pattern of the area (**See**: Figure No. 9.11). The subject property is located in what was known as

the "Kamaole Superblock" in the *Kihei Civic Development Plan* (Maui County 1970), designated for high density hotel development.

The Community Plan map presents an illustration of the range of potential future land uses planned within the immediate area (**See**: Figure No. 5 "Community Plan Map"). The following is a description of zoning, community plan designations, and existing land uses adjacent to the subject property:

North:	Zoning: (H-2) Hotel District Community Plan: Multi-Family State Land Use: Urban Existing uses: vacant, proposed Aloha Villages Residential Condominium
South:	Zoning: (H-2) Hotel District Community Plan: Hotel State Land Use: Urban Existing uses: Kihei Akahi, 240-unit condominium hotel.
East:	Zoning: (H-2) Hotel District Community Plan: Multi-Family State Land Use: Urban Existing uses: vacant.
West:	Zoning: (H-2) Hotel District Community Plan: Hotel State Land Use: Urban Existing uses: Kihei Kai Nani 180-unit condominium hotel.

Potential Impacts and Mitigation Measures. The proposed hotel condominium project is located within an area that is zoned for Hotel uses. The community plan for multi-family residential uses. Existing land development in the area largely reflects this settlement pattern. In the context of the Kihei-Makena Community Plan, the project is consistent with existing land use patterns in the area.

2. Climate

Existing Conditions. The climate in the South Maui region is influenced by persistent north-northeasterly trade winds. Kihei is located on the dry leeward side

of South Maui. Average annual temperature in South Maui is 80°F. Average monthly temperatures vary by about 20 degrees between the coolest and warmest months. Rainfall at the subject property averages 15 inches per year with the highest average monthly rainfall, less than three inches, occurring between November and March.

It has been recognized by the Federal and State governments that global climate change may have specific impacts on Hawaii, including sea level rise, ocean acidification, increased severity of storms and coastal hazards, and drought. In order address the impacts of climate change, §226-109 of the Hawaii Revised Statutes (HRS) establishes climate change priority guidelines. The guidelines relative to this project are:

> *(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;*

and,

> *(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;*

Potential Impacts and Mitigation Measures. The proposed Nani Loa Hotel Condominium project is located approximately 1,000 feet from the shoreline; therefore, it will not have a direct impact on shoreline resources such as reefs and beaches. Alterations to the existing drainage way through the property will be minimal, preserving a natural landscape feature. The proposed project will indirectly reduce greenhouse gas (GHG) emissions, which are known to accelerate the effects of climate change, by encouraging alternate modes of transportation, providing bicycle storage facilities, being located approximately 1,200 feet from a public bus stop, and within walking distance of goods and services.

3. Topography and Soils

Existing Conditions. The project site is currently vacant and covered with grass and weeds. The elevations on the project site ranges from 54 feet above mean sea level (AMSL) at the northeast corner to 34 feet AMSL at the midpoint of the west boundary, averaging about a 9.0% slope.

According to the "Soil Survey of Island 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

Puuone sand (PZUE) and Dune Land (DL). Puuone sand is classified as having rapid permeability above the cemented layer, slow runoff, and a moderate to severe hazard of wind erosion. Dune Land consists of hills and ridges of sand-sized particles drifted and piled by the wind (**See**: Figure No. 11 "Soils Map").

Potential Impacts and Mitigation Measures. Due to neighboring developments and vegetation, soils on the project site are generally stabilized. The topographic and soil analysis suggests that the proposed land uses are suitable for the site, including grading, paved parking, buildings, utility connections, and landscaping.

4. Flood and Tsunami Zone

Existing Conditions. According to Panel Number 1500030588F dated September 19, 2012 of the Flood Insurance Rate Map (FIRM), prepared by the United States Federal Emergency Management Agency, the project site is situated within Zone "X". Zone "X" is an area determined to be outside of the 0.2% annual chance floodplain (**See**: Figure No. 7, "Flood Insurance Rate Map").

Potential Impacts and Mitigation Measures. Since an existing drainage way runs through the project site, the proposed site layout locates the two main buildings on the higher points of the site. The subject development is located outside of the flooding hazard area and therefore is not prone to flood and tsunami related hazards.

5. Terrestrial Biota (Flora And Fauna)

Existing Conditions. The existing vegetation on the subject property primarily consists of common grasses, weeds, kiawe trees, and various shrubs. No known rare, endangered, or threatened species of flora were discovered on the subject property. Avifauna typically found in the area includes the Northern Cardinal, House Finch and gray and Black Francolin. Mammals common to this area include cats, dogs, rats, mice, and mongoose. No known rare, endangered, or threatened species of fauna have been observed on the subject property. The following excerpt is from the Archaeological Assessment Report for the project site (**See**: Appendix "E", "Archaeological Assessment Report"):

> *… extensive land alteration is apparent throughout the area, probably in association with the construction of the surrounding condominiums. Multiple sand piles were present throughout and modern debris including milled wood and metal pieces were observed in some of the piles. A recent road extends west from the neighborhood to the east onto the south side of the project. This road may have been made as an access for the construction*

of a fence associated with the ongoing development to the north. The north side of the drainage appears to have been graded extensively, probably as a staging area. Vegetation in this part of the project is sparse and does not have as dense of a grass growth as on the south side, as the project area is primarily sand and therefore will have no known impact on native or otherwise sensitive flora and fauna. (p. 9)

Potential Impacts and Mitigation Measures. There are no known significant habitats of rare, endangered or threatened species of flora and fauna located on the subject property. Thus, rare, endangered, or threatened species of flora and fauna will not be impacted by the proposed project.

6. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural background and emissions from many pollution sources. The impact of land development activities on air quality in a proposed development's locale differs by project phase (site preparation, construction, occupancy) and project type. In general, air quality in Kihei is considered relatively good. Non-point source emissions (automobile) are not significant to generate a high concentration of pollutants. The relatively high quality of air can also be attributed to the region's exposure to wind, which quickly disperses concentrations of emissions. Between the months of March and November, Kihei may be subject to the effects of sugar cane burning prior to harvesting. People with respiratory health issues can be affected. The Hawaii State Department of Health has determined that levels of smoke and ash released by this practice are below National Ambient Air Quality Standards (NAAQS) thresholds (*Sugar Cane Burning on Maui*, DOH, Clean Air Branch, April 9, 2013). The South Kihei area is currently in attainment of all criteria pollutants established by the Clean Air Act, as well as the State of Hawaii Air Quality Standards. In December 2009 the EPA determined that greenhouse gases (GHG) in the atmosphere endanger the welfare of current and future generations.

Potential Impacts and Mitigation Measures. During construction, there will be air quality impacts attributed to short-term construction related activities. A Best Management Practices (BMP) plan will be implemented which will include, but not be limited to:

- Providing an adequate water source prior to start-up of construction for use in dust control;

- Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grubbing and grading phase;
- Controlling of dust from shoulders, project entrances and other access roads;
- Providing adequate dust control measures during weekends, after hours and prior to daily start-up of construction activities;
- Controlling of dust from debris hauled away from the project site; and,
- Erecting a dust fence to shield the adjacent project sites.

The increase in the number of residents may result in a slight increase in the volume of traffic in the region, which would increase vehicular emissions such as carbon monoxide. However, this increase is not considered significant when compared to the overall number of vehicles in Kihei and in consideration of existing ambient conditions. Thus, the proposed project is not anticipated to be detrimental to local air quality or contribute significantly to GHG emissions.

7. Noise Characteristics

Existing Conditions. The noise level is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, ventilation and air-conditioning equipment. Ramifications of various sound levels and types may impact health conditions and an area's aesthetic appeal. Noise levels in the vicinity of the project area are generally low. Traffic noise along Kanani Road is the predominant source of background noise in the vicinity of the subject property.

Potential Impacts and Mitigation Measures. In the short-term, the proposed project could generate some adverse impacts during construction. Heavy construction equipment, such as bulldozers, front-end loaders, and material-carrying trucks and trailers, will be the dominant source of noise during the construction period. To minimize construction related impact to the surrounding property owners, the developer proposes to limit construction activities to normal daylight working hours, and to adhere to the State Department of Health's noise regulations for construction equipment.

In the longer-term, additional traffic will be generated by the project; however, relative to existing noise conditions in the area, the noise impacts should be minimal.

8. Archaeological/Historical Resources

Existing Conditions. Scientific Consultant Services (SCS), Inc. conducted an Archaeological Inventory Survey on 1.438 acres of undeveloped land in south Kīhei, Kama`ole Ahupua`a, Wailuku District, Maui Island, Hawai`i [TMK: (2) 3-9-20:032] for Victory Development, Inc. (**See**: Appendix "E", "Archaeological Assessment Report").

Survey & Excavation - Fieldwork was conducted February 13 and 15, 2007 by SCS archaeologist Tomasi Patolo, B.A., under the direction of Michael Dega, Ph.D., Principal Investigator. The work included a 100 percent systematic pedestrian survey and mechanical subsurface testing (excavation) all of which yielded negative results.

The project area was subjected to a pedestrian survey prior to the subsurface testing. No surface archaeological remains were observed; extensive land alteration was apparent throughout the area, probably in association with the construction of the surrounding condominiums. A total of four backhoe trenches were excavated during subsurface testing: three of the trenches were excavated south of the naturally occurring drainage swale and one was excavated on the north side. Archaeological monitoring was recommended due to the moderate possibility of inadvertent discovery of Native Hawaiian burials.

Potential Impacts and Mitigation Measures. The above referenced Inventory Survey was reviewed by State Historic Preservation Division (SHPD). SHPD has indicated that it will support the Inventory Survey's findings after an archaeological monitoring plan is submitted, reviewed, and accepted.

"An Archaeological Monitoring Plan for the Nani Loa Hotel Condominium Project" (Dagher & Dega, January 2015) was prepared by Scientific Consultant Services and submitted to SHPD in January 2015 (**See**: Appendix "F", "Archaeological Monitoring Plan"). The plan details monitoring conventions, methodology, analysis, and reporting procedures. The approved plan will be implemented during ground disturbance work for the proposed project.

9. Visual Resources

Existing Conditions. The project site is currently undeveloped, with various trees, including kiawe and a portion of landscape planted trees from the neighboring Kihei Kai Nani Condominium complex encroaching onto the project site. Because of the existing drainage way, which runs through the project site, the subject parcel is at a lower elevation than surrounding parcels.

The *Maui Scenic Coastal Resources Study* (Environmental Planning Associates, August 1990) describes the Maalaea to Makena region as such:

> *This is an area of sweeping and spectacular views of the ocean, Haleakala, and the West Maui Mountains. The area is one of contrast, with respect to the flat plain between the two main mountains; the wetlands at Kealia versus the dry kiawe lands of Kihei and Makena; the bright blue of the ocean, white clouds, and the varying shades of green and brown on land.*

The report identifies one "distinctive" view of the West Maui Mountains along Piilani Highway in the vicinity of the project (**See**: Figure No. 12 "Scenic Map"). The study defines the impact description as such:

> *"Distinctive" suggests a highly visually impactive scene, and "Noteworthy" suggests a scene that is significant but not distinctive in its visual impact.*

This view is not adjacent to the project site.

Potential Impacts and Mitigation Measures. There are no significant public views occurring across the subject property that will be affected by the development. The site is currently undeveloped, with portions heavily vegetated with large kiawe trees, bordering developed parcels to the west with three-story buildings and to the south with a six-story building, containing no unique scenic resources (**See**: Figure No. 13 "Site Section").

Mauka views from South Kihei Road are not affected since the project site is approximately 850 feet from the road. *Makai* views from the future North-South connector road, currently under construction, should not be affected due to the relatively low profile of the project. From Piilani Highway, *makai* views towards the project site are blocked by residential development.

Since the project is not near the shoreline, it does not affect any public coastal views and does not significantly impact public view corridors, or the visual character of the site and its immediate environs.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population and Housing

Existing Conditions. Maui County has experienced relatively strong population growth during the past decade with the 2010 resident population expanding to 154,834, a 20.9% increase over the 2000 population of 128,241 (*Census 2010*, U.S. Census Bureau). Growth is projected to continue with the year 2020's resident population projected to reach 174,450.

Likewise, Kihei-Makena experienced high growth rates as the population grew to 27,270 in 2010 up from 22,870 in 2000 (*Census 2010*, U.S. Census Bureau). The anticipated 2020 population of the Kihei-Makena region is projected to reach 31,578.

Potential Impacts and Mitigation Measures. Using the average Kihei household size from the 2010 Census (U.S. Census Bureau, 2010), the proposed project may increase the population of the immediate South Kihei area by approximately 96 persons. This represents approximately 2.2% of the projected growth in resident population for the Kihei-Makena region between 2010 and 2020. As noted in the project description, in compliance with Chapter 2.96 "Residential Workforce Housing Policy", Maui County Code (MCC), the applicant will enter into a residential workforce housing agreement with the County of Maui. As such, the proposed project will directly or indirectly provide support for workforce housing.

2. Economy

Existing Conditions. The Kihei-Makena economy is based primarily upon the visitor industry. Visitor accommodations are located along the shoreline along with various support facilities, multi-family, and single-family residential developments. Kihei and Wailea have developed into important visitor destination anchors. Makena is significantly less developed. Much of the regions economic activity is derived directly or indirectly from tourism. In addition to tourism, high technology promises to be an increasingly important component of the Kihei-Makena economy. Most existing and projected employment in high technology will occur at the Maui Research and Technology (R&T) Park located in North Kihei, which is likely to become a major employment center. The establishment of a Kihei high school adjacent to the R&T Park will create additional employment within Kihei. Countywide, unemployment has decreased from a decade high of 9.5% in 2009 to a rate of 4.9% in 2013 (U.S. Bureau of Statistics, July 2013). Full employment in an economy generally occurs at a rate of approximately 5%.

Potential Impacts and Mitigation Measures. In the short term, the project will generate construction phase economic impacts. They include employment, income, and expenditure impacts that are created by on-site and off-site construction

employment, on-site and off-site trade/transportation/service employment, and manufacturing employment in support of construction.

In the long term, the project is expected to directly generate employment related to sales, management, security, maintenance, and other related opportunities. It is estimated that this will result in approximately 17 full time equivalent (FTE) jobs.

3. Cultural Resources

Existing Conditions. A *Cultural Impact Assessment Report* (CIA) was prepared by Ms. Leann McGerty and Mr. Robert L. Spear of Scientific Consultant Services Inc. (November 2007) for the project site (**See**: Appendix "G"). The CIA identifies the *ahupua'a* as Kama'ole, an area noted for, as is much of Kihei, bountiful fishing. However, it is noted that "there is little specific information pertaining directly to Kihei where the proposed project is located (Clark 1980)." The report goes on to say:

> *Presently, Kihei refers a six-mile section along the coast from the town of Kihei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the kama'aina of the district including at least two heiau. In ancient times, there was a small village at Kalepolepo based primarily on marine resources. It was recorded the blustery Kaumuku Winds would occasionally arrive with amazing intensity along the coast (Wilcox 1921)*

Potential Impacts and Mitigation Measures. The CIA did not identify any cultural resources, i.e. medicinal plants, shoreline resources, religious sites that will be impacted by the project. Nor are there cultural sites in the immediate vicinity of the subject property that require access through the property. From a cultural practices and beliefs perspective, the subject property bears no apparent signs of cultural practices or gatherings taking place on the subject property or in the immediate vicinity of the subject property.

The *CIA* concludes that:

… it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities will not be affected and there will be no direct adverse effect upon cultural practices or beliefs on Parcel 32.

C. PUBLIC SERVICES

1. Recreational Facilities

Existing Conditions. Kihei-Makena has a reputation as a recreational destination, particularly for ocean related activities. Ocean sports and recreation available in the region include golfing, swimming, fishing, surfing, scuba diving, snorkeling, sailing, and kayaking. According to the *South Maui Region Parks & Open Space Master Plan* (Chris Hart & Partners, 2003), there were 27 County parks in South Maui providing approximately 189 developed acres of parkland, of which there are 15 beach parks, 7 neighborhood parks, 1 community park, 3 district complexes, and 1 community complex. Beach parks within a half mile of the project site include Charlie Young Beach, and Kamaole Beach Parks I, II, & III.

Potential Impacts and Mitigation Measures. The owners of the project will comply with the requirements for Parks and Playgrounds, pursuant to Maui County Code Section 18.16.320, in order to satisfy park assessment requirements. Thus, the proposed project is not anticipated to impact public recreational facilities in the region.

2. Police and Fire Protection

Existing Conditions. There are two fire stations serving this community. The nearest fire station is the Kihei Fire Station located at 11 Wamahaihai Street at Kalama Park, which is about 1.3 miles north of the subject site. This station is equipped with a 1,500-gallon pumper, and is staffed by one captain and five firefighters per twenty-four hour shift. Fire flow requirements are addressed in Section III.D.1.

Patrol officers on assignment previously provided police services for the Kihei-Makena district from the police sub-station at Kihei Town Center approximately 1.3 miles away. The recently completed Kihei Police Station is located on a 10-acre site approximately 1.2 miles to the northeast. The new station is staffed with approximately 100 police officers and civilians.

Potential Impacts and Mitigation Measures. In the context of the overall projected population growth for the Kihei-Makena region, the proposed project will not result in an overall significant increase in population and is in relative close proximity to fire and police services; thus, the proposed project is not anticipated to have an adverse impact upon existing police and fire protection services.

3. Schools

Existing Conditions. The South Maui region is serviced by both private and public schools, which provide education from preschool through high school. Public schools in the region include two (2) elementary and one (1) intermediate. Kihei is within the Maui High School (located in Kahului) district. The first phase of the new

Kihei public high school is projected to open in 2020. Students also have the option of attending Kihei Charter School for grades Kindergarten through 12. There are five (5) private schools, including one (1) high school.

Public school enrollment figures:

School	Capacity	School Year 2014-15
Kihei Charter	N/A	526
Kihei Elementary	957	874
Kamalii Elementary	830	533
Lokelani Intermediate	646	553
Maui High School	1,563	1,931

Note that only Maui High School is over capacity. The proposed Kihei high school, currently scheduled to open in 2020, will alleviate this condition.

Potential Impacts and Mitigation Measures. Occupants of the thirty-nine (39) units may be visitors or residents. Using State Department of Education data multipliers for school aged children and assuming 100% residential occupancy, the proposed project potentially would increase the student population of the affected schools by the approximate amounts:

Grades	Students (100% residents)
K-5	5.1
6-8	1.6
9-12	2.0

In the context of the overall projected population growth for the Kihei-Makena region, the proposed project will not result in an overall significant increase in population; thus, the proposed project is not anticipated to have an adverse impact upon existing educational facilities. The project may be subject to State education impact fees; such fees will be paid when the applicability and amount is determined.

4. Medical Facilities

Existing Conditions. The Wailuku based Maui Memorial Medical Center provides centralized medical services for the Island. Medical and dental offices are located in Kihei and Wailea to serve the Makena region's residents.

Potential Impacts and Mitigation Measures. In the context of the overall projected population growth for the Kihei-Makena region, the proposed project will not result in an overall significant increase in population; thus, the proposed project is not anticipated to have an adverse impact upon existing medical facilities.

5. Solid Waste

Existing Conditions. Only two landfills are currently operating on Maui, the Central Maui Landfill in Puunene, and the Hana landfill. Residential solid waste collection is provided by the County and taken to the Central Maui Landfill, which also accepts waste from private refuse collection companies.

Potential Impacts and Mitigation Measures. Based on the Residential Waste Generation Rate (2.3 tons per household per year) determined by the *Integrated Solid Waste Management Plan* (Maui County, February 17, 2009 update), the Nani Loa Project will generate approximately 89.7 tons of waste annually. Approximately 5.5% of this total is recycled, leaving 84.8 tons entering the land fill. An area for collection of recycled waste will be provided. Construction debris generated by the construction of the project will be reused or recycled when practicable or disposed at a construction and demolition waste landfill. Solid waste collection for the proposed project will be contracted to a private collection company. Green waste from the site will be either mulched on site or deposited at the Central Maui landfill's green waste recycling facility. It is envisioned that some of the green waste may also be used as mulch for other projects in South Maui. During construction the applicant will incorporate a job site recycling plan in order to reduce the amount of construction related waste generated by the project.

D. INFRASTRUCTURE

The *Preliminary Engineering Report for Nani Loa* was prepared by Otomo Engineering, Inc. (July 2014), which analyzes existing infrastructure systems accessible to the subject property and probable improvements to accommodate the proposed development. The report addresses water, sewer, drainage, roadway, electrical, and telephone systems (**See**: Appendix "H").

1. Water

Existing Conditions. Domestic water and fire flow for the proposed project will be provided by the County's Central Maui water system. There is an existing 12-inch waterline on South Kihei Road which can provide service for the project. The parcel is served by an existing 2-inch water meter.

Storage for the project area is provided by the 2.0 million gallon concrete Kamaole tank at an elevation of 311.5 feet, located above Piilani Highway, approximately 3,800 feet to the east of the project site.

Potential Impacts and Mitigation Measures. According to the "Domestic Consumption Guideline" in the Water System Standards for Department of Water Supply (DWS), the average daily demand for a hotel unit is 560 gallons per day (gpd). Therefore, the total average daily domestic demand is estimated at 21,840 gpd. The existing 2-inch meter provides 160 gallons per minute (gpm).

The fire flow demand for H-2 District is 2,000 gpm for a 2-hour duration and maximum spacing for fire hydrants is 250 feet. The *Preliminary Engineering Report for Nani Loa* (Otomo, July 2014) states that fire hydrants will be installed (**See**: Appendix "H").

The irrigation system will be designed to accept R-1 recycled water when it becomes available in this area of Kihei.

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.

2. Sewer

Existing Conditions. According to the Wastewater Reclamation Division, County of Maui, as of August 27, 2013, the KWRF has a capacity of 8.0 million gallons per day (mgpd), with a remaining capacity of approximately 1.2 mgpd, after the allocated and existing flows are accounted for.

The *Preliminary Engineering Report for Nani Loa* (Otomo, July 2014) states:

> *There is an existing 8-inch sewer stub out within the project site which connects to the existing sewerline in the perpetual easement over the Kihei Kai Nani project site. The sewerline traverses down the driveway and parking area of the Kihei Kai Nani and connects to the existing 24-inch sewer main on South Kihei Road, which transports sewer to the existing sewer pump station located in Kalama Park.*

Wastewater collected from the Kihei area is transported to the Kihei Wastewater Treatment Plant located above Piilani Highway and south of the Elleair Maui Golf Course.

The County assesses sewer fees for the treatment plant facility expansion. These fees will be paid at building permit application submittal.

Potential Impacts and Mitigation Measures. In accordance with County of Maui Wastewater Flow Standards, the *Preliminary Engineering Report for Nani Loa* (Otomo, July 2014) determined that the proposed development will generate approximately 9,945 gallons per day of wastewater, which can be adequately serviced by existing treatment facilities (**See**: Appendix "H").

3. Drainage

Existing Conditions. The existing 50-year, 1-hour storm runoff from the project site is estimated at 1.973 cubic feet per second (cfs). The *Preliminary Engineering Report for Nani Loa* (Otomo, July 2014) (**See**: Appendix "H") describes the existing conditions thusly:

> *There is an existing drainageway traversing through the middle of the site. Presently, runoff in the drainageway flows toward the westerly boundary of the site into an existing 2'-0" x 7'-6" concrete box culvert and outlets below the existing planter at mauka end of the parking lot for the Kihei Kai Nani. The runoff sheet flows through the existing parking area toward South Kihei Road. According to the Drainage Master Plan for Kihei, Maui, Hawaii, August 1997, prepared by Norman Saito Engineering Consultants, Inc., the 100-year flow in the existing drainageway is 660 cfs at the existing 2'-0" x 7'-6" concrete box culvert.*

Potential Impacts and Mitigation Measures. After the development of the proposed project, it is estimated that the 50-year storm runoff will be 5.86 cfs, a net increase of 4.209 cfs. The proposed drainage system is described in the *Preliminary Engineering Report for Nani Loa* (Otomo, July 2014):

> *Onsite runoff will be intercepted by grated catch basins located within the paved parking and landscape areas. The runoff will be conveyed to an onsite subsurface drainage system, which will be located in the pavement and landscaped areas. The subsurface drainage system consists of a perforated drainline embedded in crushed rock which will be wrapped with a layer of filter fabric. Surface runoff entering the perforated pipe will be allowed to infiltrate into the ground. The subsurface drainage system will be designed and sized to accommodate the increase in surface runoff volume from a 50-year, 1-hour storm created by the proposed project plus an additional 20 percent of the increase in runoff.*

In addition, wherever possible, surface and roof runoff will be directed to landscape areas

There will be no additional runoff sheet flowing from the project site onto the Kihei Kai Nani property, to other adjoining properties, or to South Kihei Road. This is in accordance with Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui". Note that an additional twenty percent (20%) of the increase in runoff will be retained onsite. As such, storm water runoff generated by the proposed project will not negatively impact existing drainage infrastructure.

4. Roadways

Existing Conditions. Although Maui has a public bus system, the private automobile is the primary source of transportation. The roadway system in the Kihei region has right-of-way widths that vary with each roadway. Roads in the area are paved with asphaltic concrete along with concrete curbing and sidewalks.

Major roadways in the vicinity of the proposed project are South Kihei Road and Piilani Highway, running north-south. Kealii Alanui Road to the north and Keonekai Road are the nearest connector roads running east-west. The North-South Collector Road connecting Kealii Alanui and Keonekai is currently under construction. The project site is a land locked parcel with a perpetual access easement through the Kihei Kai Nani property to South Kihei Road, a two-lane, two-way County roadway. South Kihei Road has a posted speed limit 30 miles per hour with concrete curb, gutters, sidewalks, and bike lanes on both sides. There are on street parking stalls on the *makai* side.

Public Transportation. The Kihei Islander Route #10 of the Maui Bus system, Maui's only public transportation system, has nearby stops on South Kihei Road at Kamaole Shopping Center (0.2 miles) and at Keala Place (0.5 miles).

Parking. A total of eighty-four (84) parking stalls will be provided onsite.

Potential Impacts and Mitigation Measures. A Traffic Impact Assessment Report (TIAR) was prepared by Rowell and Associates (December 2014) (**See**: Appendix "I"). The TIAR evaluates the following intersections in terms of overall Level of Service (LOS), without and with the proposed expansion project:

Intersection	Overall LOS Without		Overall LOS With	
	AM	PM	AM	PM
South Kihei Road at Kealii Alanui Drive	A	A	A	A

South Kihei Road at Kamaole Shopping Center Side Street	A	C	A	C
South Kihei Road at Kihei Kai Nani	A	A	A	A
South Kihei Road at Keonekai Road	A	A	A	A

All of these intersections are unsignalized, except for South Kihei Road at Kealii Alanui Drive. The "AM" peak hours are between 7:00 AM and 9:00 AM. "PM" peak hours are between 3:30 PM and 5:30 PM. The proposed project is estimated to generate a total of 24 trips during the AM peak and 28 trips during the PM peak.

Morning Peak (AM). Although the overall AM LOS of all of the intersections is "A" according to the TIAR, the westbound left movement at South Kihei Road and Keonekai Road operates at "D" with or without the project, which are categorized as "Long traffic delays" (25.1 to 35.0 seconds). However, these delays are not long enough to affect the intersection's overall LOS, according to the TIAR.

Afternoon Peak (PM). The overall PM LOS for all of the intersections is "A", except for at South Kihei Road and Kamaole Shopping Center Side Street intersection which is "C". The westbound left, through & right movements at this intersection have a LOS of "F" with or without the project. The TIAR notes that this LOS is due to proposed developments behind Rainbow Mall and Kamaole Shopping Center. The westbound left at Keonekai Road and South Kihei Road also has a PM LOS of "F" with or without the project. The delays are not long enough to affect the overall LOS "A" of the intersection

Since the proposed project does not degrade the LOS at any of the intersections, no mitigation is recommended.

5. Electrical, Telephone, Cable and Data Systems

Existing Conditions. Existing overhead utility lines are located on the *makai* side of South Kihei Road. The installation of electrical, telephone and cable TV systems for the project will be coordinated with Maui Electric Company, Verizon Hawaii, and Hawaiian Cablevision during the building permit process.

Potential Impacts and Mitigation Measures. Proposed electrical, telephone, cable TV, and data systems distribution lines will be install underground from South Kihei Road. The proposed project will not have any adverse impact upon the existing electrical or telephone systems that will serve the subject property.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE LAW

Hawaii Revised Statutes (HRS) Chapter 205. This statute, relating to the Land Use Commission, establishes four major land use districts into which all lands in the State are placed. These districts are designated Urban, Rural, Agricultural, and Conservation. The subject property is within the Urban District. The proposed hotel condominium development is permitted within the Urban District.

HRS Chapter 343. Since the proposed project proposes a Community Plan Amendment, compliance with the provisions of Hawaii Revised Statutes (HRS) Chapter 343 is triggered.

B. COUNTY OF MAUI 2030 GENERAL PLAN

The *Countywide Policy Plan* (CPP) was adopted by the Maui County Council on March 19, 2010 and provides a long-term vision, principles, goals, policies, and objectives directed toward improving living conditions in the County. The CPP provides the policy framework for the development of the *Maui Island Plan* and the nine Community Plans. The following Themes, Objectives and Policies are applicable to the proposed project:

A. PROTECT THE NATURAL ENVIRONMENT

Goal: *Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.*

Objective No. 3: *Improve the stewardship of the natural environment.*

Policies:

c. Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

d. Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.

Analysis. The stormwater treatment system is designed to remove pollutants in addition to retaining discharge from the site generated by the project. The system

will retain an additional twenty percent (20%) of stormwater generated by the project. During construction, best management practices will minimizes air, stormwater, and groundwater contamination.

F. STRENGTHEN THE LOCAL ECONOMY

Goal: *Maui County's economy will be diverse, sustainable, and supportive of community values.*

Objective No. 3: *Support a visitor industry that respects the resident culture and the environment.*

Policies:

f. Encourage resident ownership of visitor-related businesses and facilities.

n. Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.

Analysis. The proposed project will provide opportunities for resident ownership and will help to fill the projected need of approximately 4,400 visitor units within the Kihei-Makena by 2030.

C. MAUI ISLAND PLAN

The 2030 update to the General Plan of the County of Maui was approved by the Maui County Council and signed into law by the Mayor of Maui County on December 20, 2012. The *Maui Island Plan* (MIP) is used to determine the appropriateness of discretionary development proposals. The subject property is located within the Urban Growth Boundary (UGB) for Kihei. "The UGB denotes the areas within which urban-density development requiring a full range of services, such as new multi-user sewer and water, is supported in accordance with applicable land use laws." (MIP, page 8-4) The following Goals, Objectives and Policies of the December 2009 Maui Island Plan are applicable to the proposed project:

POPULATION

Goal:

1.1 ***Maui's people, values, and lifestyles will thrive through strong,***

healthy, and vibrant island communities.

Objective:

1.1.1 ***Greater retention of island residents by providing viable work, education, and lifestyle options.***

Policies:

1.1.1.b *Expand housing, transportation, employment, and social opportunities to ensure residents are able to comfortably age within their communities.*

Analysis. The proposed project is providing opportunities for employment in the short-term (approximately 75 construction related and 10 in administration and sales) and long term (approximately 11 workers).

ECONOMIC DEVELOPMENT

TOURISM

Goal:

4.2 ***A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities***

Objective:

4.2.1 ***Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life.***

Policies:

4.2.1.d *Provide a rich visitor experience, while protecting the island's natural beauty, culture, lifestyles, and aloha spirit.*

Analysis. The proposed project will help to fill the projected need of approximately 4,400 visitor units within the Kihei-Makena by 2030.

ENERGY

Goal:

6.10 ***Maui will meet its energy needs through local sources of clean, renewable energy and through conservation.***

Objective:

6.10.1 ***Reduce fossil fuel consumption: using the 2005 consumption as a baseline, reduce by 15% in 2015; 20% by 2020; and 30% by 2030.***

Policies:

6.10.1.a *Support energy efficient systems, processes, and methods in public and private operations, buildings and facilities.*

Analysis. The proposed project will have excellent community connectivity with many basic services within walking distance (half mile or approximately 10 minute walk). Bicycle racks are incorporated in the project, which will encourage an alternative transportation mode, reducing fossil fuel consumption.

D. KIHEI-MAKENA COMMUNITY PLAN

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

The subject property is located within the Kihei region. The Kihei-Makena Community Plan was adopted by ordinance No. 2641 on March 6, 1998. The subject property has a MF Multi Family designation (**See**: No. 5, "Kihei-Makena Community Plan"). The applicant is requesting a Community Plan Amendment to change the designation from *MF Multi Family Residential* to *H Hotel* in order to be consistent with the existing County H-2 Hotel District zoning. This Draft Environmental Assessment examines any impacts this amendment might have on the immediate area.

The following Kihei-Makena Community Plan goals, objectives, and policies are applicable to the proposed action:

Goal: Land Use. A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructure and community needs while preserving and enhancing the unique character of Ma'alaea, Kihei, Wailea and Makena as well as the region's natural environment, marine resources and traditional shoreline uses.

Objectives and Policies:

c. *Upon adoption of this plan, allow no further development unless infrastructure, public facilities, and services needed to service new development are available prior to or concurrent with the impacts of new development.*

g. *Encourage the establishment of single-family and multi-family land use designations which provide affordable housing opportunities for areas which are in close proximity to infrastructure systems and other urban services.*

Analysis. Section III.C and D of this report addressed the impact that the proposed project would have upon existing public infrastructure, facilities, and service systems. Based upon the analysis, public infrastructure and services currently have adequate capacity to serve the development and will therefore not be significantly impacted by the project. As discussed, the developer will contribute the pro rata share required by the State and County for roadways, sewer, water, and park facilities and services in order to minimize the incremental impact of the subject development upon public finances. Thus, the necessary infrastructure, public facilities, and services will be available prior to and/ or concurrent with development of the site.

In regards to Policy No. g, the proposed project is required to comply with Chapter 2.96 "Residential Workforce Housing Policy", Maui County Code (MCC).

Goal: Environment. Preservation, protection, and enhancement of Kihei Makena's unique and fragile environmental resources.

Analysis. As described in Section III.A of this report, Kihei's unique and fragile environmental resources, including its shoreline, near and off-shore water quality, drinking water, visual resources, archeological resources, and endangered species of flora and fauna, will not be impacted by this project.

Goal: Housing and Urban Design. A variety of attractive, sanitary, safe and affordable homes for Kihei's residents, especially for families earning less than the median income for families within the County. Also, a built environment which provides complementary and aesthetically pleasing physical and visual linkages with the natural environment.

Objectives and Policies

(a) *Provide an adequate variety of housing choices and range of prices for the needs of Kihei's residents, especially for families earning less than the median*

income for families within the County, through the project district approach and other related programs. Choices can be increased through public/private sector cooperation and coordinated development of necessary support facilities and services.

(e) Implement the principles of xeriscaping in all future landscaping.

Analysis: As discussed, in the project will comply with Chapter 2.96 "Residential Workforce Housing Policy", Maui County Code (MCC). Thus, the proposed development does serve the community's objective of providing for an adequate variety of housing choices and range of prices for the needs of Kihei's residents by either providing housing and/or contributing to a funding source for future or existing housing. In addition, the proposed landscaping plans incorporate the principles of xeriscaping into the design.

Goal: ***<u>Physical and Social Infrastructure</u>. Provision of facility systems, public services and capital improvement projects in an efficient, reliable, cost effective, and environmentally sensitive manner which accommodates the needs of the Kihei-Makena community, and fully support present and planned land uses, especially in the case of project district implementation. Allow no development for which infrastructure may not be available concurrent with the development's impacts.***

<u>Transportation</u>

Objectives and Policies:

(b) Undertake transportation system improvements concurrently with planned growth of the Kihei-Makena region. Require adequate interregional highway capacity, including the widening of Pi'ilani and Mokulele Highways to four lanes, prior to the construction of major projects south of Kilohana Road or mauka of Pi'ilani Highway.

(c) Strengthen the coordination of land use planning and transportation planning to promote sustainable development and to reduce dependence on automobiles. New residential communities should provide convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks and public facilities.

Analysis. As discussed in the Traffic Impact Analysis Report (Rowell, June 2014) (**<u>See</u>**: Appendix "I"), the proposed development will increase the number of vehicles traveling along the approach and departure routes to the proposed project. However, this increase in traffic represents a very small percentage of the overall

current level of traffic serviced by these roadways. The proposed project will not significantly change the current level of service along these roadways. It should be noted, that the proposed project is situated within the already urbanized area of Kihei. As discussed, the project represents an infill development on land that is zoned for the proposed land use and within an area that is proximate to urban infrastructure systems and facilities. Thus, from a regional land use perspective, the proposed project is not representative of "sprawl" type development patterns that are typically inefficient and place heavier burdens on regional infrastructure and services.

Goal: Drainage

Objectives and Policies

(a) Design drainage systems that protect coastal water quality by incorporating best management practices to remove pollutants from runoff. Construct and maintain, as needed, sediment retention basins and other best management practices to remove sediments and other pollutants from runoff.

(b) Construct necessary drainage improvements in flood prone areas. Where replacement drainage are required for flood protection, these systems shall be designed, constructed, and maintained using structural controls and best management practices to preserve the functions of the natural system that are beneficial to water quality. These functions include infiltration, moderation of flow velocity, reduced erosion, uptake of nutrients and pollutants by plants, filtering, and settlement of sediment particles. The use of landscaped swales and unlined channels shall be urged.

(d) Minimize the increase in discharge of storm water runoff to coastal waters by preserving flood storage capacity in low-lying areas, and encouraging infiltration of runoff.

Analysis. As discussed in the *Preliminary Engineering Report for Nani Loa* (**See**: Appendix "H" Otomo, July 2014), the increase in impervious surfaces created by the project will result in increased runoff estimated at 4.209 cfs. If not contained and filtered this increase in runoff could impact nearshore water quality. Thus, the increased runoff will be intercepted by grated catch basins located within the paved parking and landscape areas. These facilities will not only keep the post development peak flow volumes at predevelopment levels, but will also serve as sedimentation traps and filters to prevent sediments or pollutants from migrating into the coastal waters. The system will be designed to retain an additional twenty percent (20%) for a total of 5.051 cfs. Thus, the proposed project is consistent with

the community's goal to insure that new development will not adversely affect the marine environment and/or nearshore and offshore water quality.

C. Planning Standards

3. Urban Design Standards

a. Building Form

3) Limit resort development throughout the region to thirty-five (35) feet in building height for sites near the shoreline. Building height limits may gradually be increased up to seventy-five (75) feet for inland resort development provided that important mauka/makai vistas are maintained, and impacts to coastal resources are minimized. Resort community planning and design shall integrate recreational amenities with adequate shoreline setback and public shoreline access provisions.

Analysis. The proposed development is located approximately 1,000 feet from the shoreline *mauka* of an existing development. Building 1 has a height of 35 feet above finish grade, and approximately 40 feet above existing grade. Building 2 has a height of 45 feet above finish grade, and approximately 50 feet above existing grade. This well below the maximum height of 75 feet for inland resort development recommended in the Community Plan. Public *mauka/makai* vistas and coastal resources are not impacted.

E. MAUI COUNTY ZONING

The property is situated within the County of Maui's H-2 Hotel District (**See**: Figure No. 6). The proposed project is an allowable use within the hotel district and meets the district's development standards.

V. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

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

A. RECREATIONAL RESOURCES

Objective: Provide coastal recreational resources 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 recreational activities that cannot be provided in other areas;*
- *(ii) Requiring placement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or require 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 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;

(viii) Encourage 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, HRS.

Analysis. The project site is located approximately 1,000 feet from the shoreline; therefore the proposed project will not have a direct impact on the public's use or access to the shoreline area.

B. HISTORICAL/CULTURAL RESOURCES

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

Policies:

(a) Identify and analyze significant archeological resources;

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

(c) Support state goals for protection, restoration, interpretation, and display of historic structures.

Analysis. As discussed in Section III.A.7 of this report, an archaeological monitoring plan was prepared for approval by the State Historic Preservation Division (**See**: Appendix "F" "Archaeological Monitoring Plan"). If any historical and/or cultural resources are discovered during construction, appropriate measure will be taken.

C. SCENIC AND OPEN SPACE RESOURCES

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

Policies:

(a) Identify valued scenic resources in the coastal zone management area;

(b) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

(c) Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources; and

(c) *Encourage those developments that are not coastal dependent to locate in inland areas.*

Analysis. As discussed in Section III.A.8 of this report, numerous scenic resources have been identified in the Central Maui area, which are identified and discussed in the *Maui Scenic Coastal Resources Stud*y (Environmental Planning Associates, August 1990). However, the proposed project will not impact any distinctive or noteworthy views in the Kihei area (**See**: Figure Nos. 12 "Scenic Map" & 13 "Site Section").

D. COASTAL ECOSYSTEMS

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

Policies:

(a) Improve the technical basis for natural resource management;

(b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(c) 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

(d) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Analysis. The project is located approximately 1,000 feet from the shoreline. Additional storm runoff generated by the proposed project will be filtered of pollutants and retained onsite. Therefore, the proposed project is not anticipated to have a significant impact on the coastal ecosystem.

E. ECONOMIC USES

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

Policies:

(a) Concentrate coastal dependent development in appropriate areas;

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

(c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development 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 impacts are minimized; and

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

Analysis. The proposed project will not involve nor have a direct impact on coastal dependent development. Due to the distance of the proposed project from sensitive coastal areas, adverse impacts to the coastal zone management area are not anticipated.

F. COASTAL HAZARDS

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

Policies:

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

(b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;

(c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;

(d) Prevent coastal flooding from inland projects; and

(e) Develop a coastal point and nonpoint source pollution control program.

Analysis. As discussed in Section III.A.3 of this report, the project site is situated within Zone "X", an area determined to be outside of the 0.2% annual chance floodplain and is located approximately 1,000 feet from the shoreline. Thus, hazard

to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution is not expected to be significant.

G. MANAGING DEVELOPMENT

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

Policies:

(a) Use, implement, and enforce existing laws effectively to the maximum extent possible in managing present and future coastal zone development;

(b) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and

(c) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning process and review process.

Analysis. The applicant is committed to bringing the development of the subject property into compliance with all applicable State and County requirements. Opportunity for review of the proposed action is provided through the County's Special Management Area (SMA) permitting process.

H. PUBLIC PARTICIPATION

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

Policies:

(a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.

(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 medications to respond to coastal issues and conflicts.

Analysis. In conjunction with the submittal of the Special Management Area application, a notice of application will be published in the Maui News. The publication describes the proposed project and solicits any issues or concerns that

need to be addressed through the permitting process. A number of governmental agencies have also been consulted and copies of this application will be circulated to various agencies by the Department of Planning. During the scheduled public hearings, the public will have an opportunity to review and comment on the proposed project. Landowners located within 500 feet of the project will be notified of the scheduled public hearing dates. Public hearing dates and location maps will also be published in the Maui News on two separate occasions. The public will be allowed to participate in the public hearing portion of the Maui Planning Commission's review process.

I. BEACH PROTECTION

Objective: Protect beaches for public use and recreation.
Policies:

(a) Locate new structures inland from the shoreline setback to conserve open space and to 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.

Analysis. As previously noted the project site is approximately 1,000 feet from the shoreline and will not have direct physical impact upon any public beaches.

J. MARINE RESOURCES

Objective: Implement the State's ocean resources management plan.

Policies:

(a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
(b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
(c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
(d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;

(e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and

(f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Analysis. Development of marine and coastal resources is not in the scope of the project.

VI. ENVIRONMENTAL ASSESSMENT SIGNIFICANCE CRITERIA

Since the proposed project involves a Community Plan Amendment, an Environmental Assessment is required by Chapter 343, Hawaii Revised Statutes (HRS). A Finding Of No Significant Impact (FONSI) is anticipated and therefore an Environmental Impact Statement (EIS) will not be required for the proposed action. In accordance with Title 11, Department of Health, Chapter 200 and Subchapter 6, §11-200-12, Environmental Impact Statement Rules, and based on the detailed analysis contained within this document, the following conclusions are supported.

1. **The proposed action will *not* result in an irrevocable commitment to loss or destruction of natural or cultural resources.**

   Analysis. As documented in this report, the proposed project will take appropriate mitigative measures to prevent the loss or destruction of any natural or cultural resource (**See**: Section III).

2. **The proposed action will *not* curtail the range of beneficial uses of the environment.**

   Analysis. The subject property is within the State's Urban District and is zoned for hotel uses and community planned for multi-family residential development. The property is vacant and adjacent to developed and undeveloped properties with similar land use designations. There are no significant environmental or natural resources on the property.

   The project proposes enhancement of an existing drainageway that receives stormwater from upland areas. The project proposes to capture all stormwater generated by the project plus an additional twenty percent (20%) which will result in protection of nearshore waters from erosion-borne sediment and pollutants. Based upon existing development on neighboring properties, it is unlikely the proposed project will result in significant changes to the environment. Thus, the proposed action will not curtail the range of beneficial uses of the environment.

3. **The proposed action will *not* conflict with State or County long-term environmental policies and goals as expressed in Chapter 344, HRS, and those which are more specifically outlined in the Conservation District Rules.**

Analysis. The project is being developed in compliance with the State's long-term environmental goals. As documented in this report, appropriate mitigation measures will be implemented to minimize the potential for negative impacts to the environment, including near and off-shore coastal waters. The project will not have any impact on flora and fauna, and is not expected to have a negative impact on archaeological or cultural resources.

4. **The proposed action will *not* substantially affect the economic or social welfare and activities of the community, county or state.**

   Analysis. Short-term economic impacts will result from the increase in activity associated with the construction of the project. Long term impacts include increased direct and indirect employment opportunities. Impacts on the socio-economic environment will be minimal (**See**: Section III.B).

5. **The proposed action will *not* substantially affect public health.**

   Analysis. There are no special or unique aspects of the project that will have a direct impact on public health.

6. **The proposed action will *not* result in substantial secondary impacts.**

   Analysis. The proposed project triggers the Maui County residential workforce housing requirements. As noted in the Project Description, the project will comply with Chapter 2.96 "Residential Workforce Housing Policy", Maui County Code (MCC). As such, the proposed development will provide workforce housing by either providing housing and/or contributing to a funding source for future or existing housing.. In the short term, increased activity at the site during the construction phase may result in a marginal increase in traffic. In the long term, the project will generate additional traffic and associated noise and air pollution. However, as analyzed in Section III of this report, the increase in the level of these impacts is minimal and will not substantially impact the environment.

   Based on existing development in the project vicinity, the proposed improvements are not expected to cause any secondary effects that would significantly impact the coastal area.

7. **The proposed action will *not* involve substantial degradation of environmental quality.**

   Analysis. Mitigation measures will be implemented during the construction phase in order to minimize negative impacts on the environment, especially with regards to construction runoff. The design of the proposed project has incorporated

mitigation measures to minimize impacts to nearshore water quality that could arise from an increase in runoff generated on the site as a result of the project (**See**: Section III.D.3 for a discussion of drainage). Other environmental resources such as endangered species of flora and fauna, air and water quality, and archeological resources will not be significantly impacted by the subject project.

8. **The proposed project will not produce cumulative impacts and does *not* have considerable effect upon the environment or involve a commitment for larger actions.**

   Analysis. The proposed project does not involve a commitment for larger action on behalf of the applicant or any public agency. The subject property is State and County zoned and community planned for urban development, and as such, is part of the planned future growth of the region. As described in this report, the project will not significantly impact public infrastructure and services including roadways, drainage facilities, water systems, sewers and educational facilities. In addition, the project is not anticipated to induce an overall significant increase in population growth and will therefore not produce considerable effect on the environment nor require a commitment for larger actions by governmental agencies.

9. **The proposed project will *not* affect a rare, threatened, or endangered species, or its habitat.**

   Analysis. As described in Section III.A.6 of this report, there are no rare, threatened, or endangered species of flora and fauna at the project site.

10. **The proposed action will *not* substantially or adversely affect air and water quality or ambient noise levels.**

    Analysis. As described in Section III of this report, there is a potential for negative impacts to air or water quality and ambient noise levels related to short-term construction activities. Air, noise and dust impacts will be mitigated through implementation of standard mitigation measures as identified previously in this report. It is not anticipated that there will be significant long-term impacts to air or water quality and ambient noise levels due to the operation phase of the development.

11. **The proposed action will *not* substantially affect or be subject to damage by being located in an environmentally sensitive area, such as flood plain, shoreline, tsunami zone, erosion-prone areas, estuary, fresh waters, geologically hazardous land or coastal waters.**

Analysis. According to Panel No. 15003-0264E of the Flood Insurance Rate Map, September 25, 2009, prepared by the United States Federal Emergency Management Agency (FEMA), the project site is situated primarily in flood zone X. The applicant proposes to leave the existing drainage way as is and retain onsite all storm runoff generated by the project plus an additional 20 percent (i.e. 120% of post development runoff will be retained on site). The proposed project, therefore, should not be affected by flood hazard, or have an adverse impact on downstream neighbors with regard to flood hazard potential.

12. The proposed action will *not* substantially affect scenic vistas or view planes identified in county or state plans or studies.

Analysis. As described in Section III.A.10 of this report, there will be no significant change in the project's overall effect on *mauka* or *makai* (to and along the shoreline) views from public roadways; therefore, the proposed project is not expected to have any significant adverse effects on visual resources. Figures Nos. 9.1 – 9.4, "Site Photographs," and No. 10, "Concept Master Plan" document the project's potential impacts on visual resources.

13. The proposed action will not require substantial energy consumption

Analysis. As previously noted, the project proposes to utilize photovoltaic solar panels and will be installing an electric vehicle charging station to reduce the use of fossil fuels. In addition, low E, high efficiency windows and radiant barrier roofing will be installed to reduce cooling costs. It is not anticipated that any increase in energy consumption resulting from build-out of the project will be significant within the context of existing levels of power consumption or vehicular energy usage in the region, and on Maui.

VII. FINDINGS AND CONCLUSIONS

This Draft Environmental Assessment, in support of Special Management Area (SMA) Use Permit and Community Plan Amendment (CPA) applications, examines the environmental and socio-economic impacts associated with the applicant's proposed Nani Loa Hotel Condominium on a 1.44 acre site located in Kihei, Maui, Hawaii.

The proposed development is not anticipated to result in significant environmental impacts to surrounding properties, nearshore waters, natural resources, and/or archaeological and historic resources on the site or in the immediate area. Public infrastructure and services including roadways, sewer and water systems, medical facilities, police and fire protection, parks, and schools are adequate to serve the project and are not anticipated to be significantly impacted by the project. Anticipated requirements for fire protection infrastructure improvements will be met. The proposed project is not anticipated to negatively impact public view corridors and is not anticipated to produce significant adverse impact upon the visual character of the site and its immediate environs. The proposed Nani Loa Hotel Condominium project will help to fill the projected need for approximately 4,400 additional visitor units within the Kihei-Makena by 2030.

The subject property is situated within the State's Urban District and the Maui Island Plan Urban Growth Boundary, Community Planned for Multi-Family use and is County zoned H-2 Hotel District. As such, the CPA is intended to provide land use consistency. Therefore in that context, the proposed use will be in conformance with State and County land use plans and policies including Chapter 205A, HRS, as well as the Kihei-Makena Community Plan Land Use Map.

Based on the foregoing analysis and conclusion, the proposed Nani Loa Hotel Condominium project will not result in significant impacts to the environment, is consistent with the requirements of HRS Chapter 343, and a Finding of No Significant Impact (FONSI) is anticipated.

VIII. REFERENCES

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FIGURES

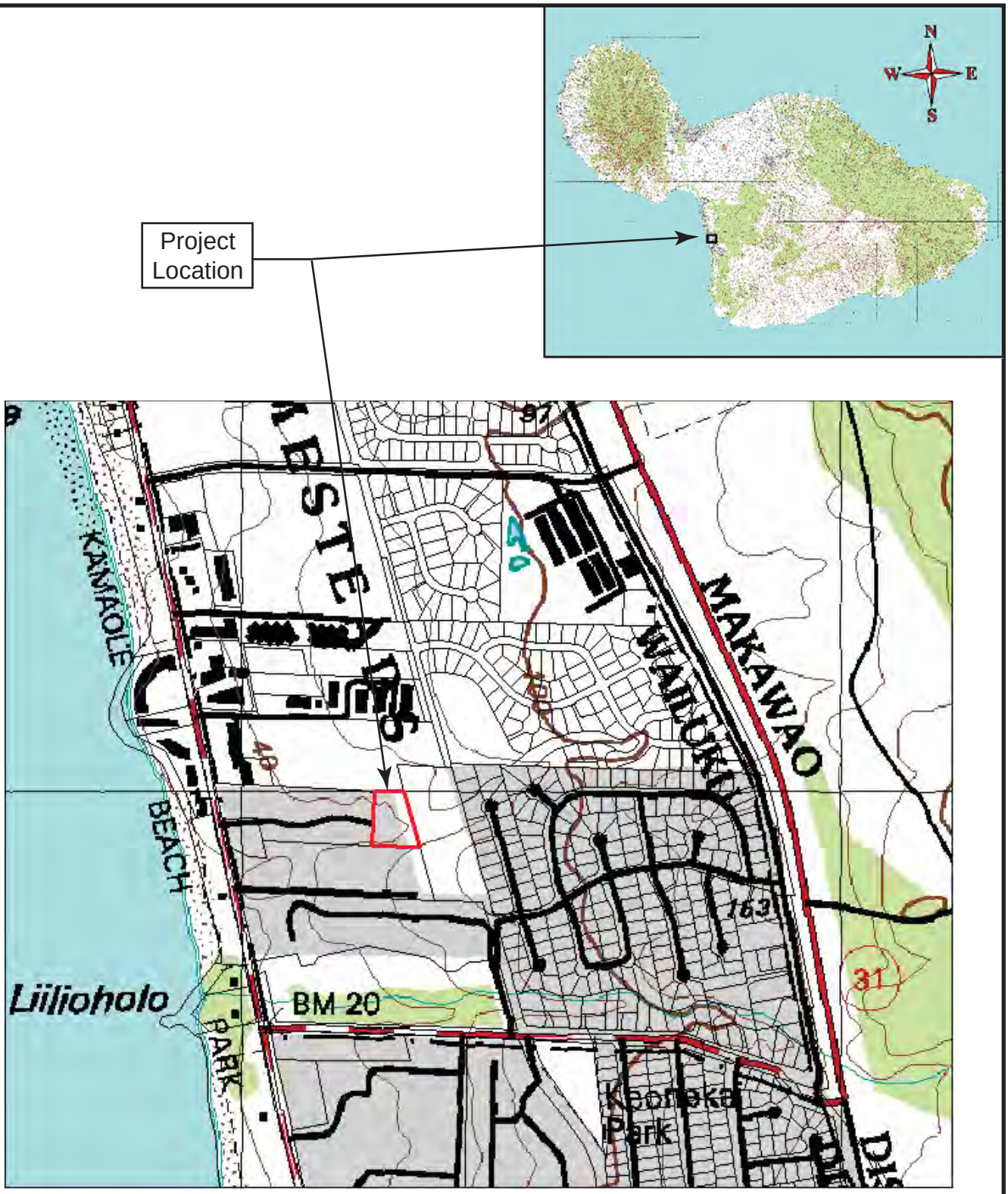


FIGURE 1

Not to Scale	FEBRUARY 2015
REGIONAL LOCATION MAP **Nani Loa Hotel Condominium**	CHRIS HART & PARTNERS, INC.

PROJECT SITE

DEPARTMENT OF THE TAX COMMISSIONER		
TAXATION MAPS BUREAU		
STATE OF HAWAII		
TAX MAP		
SECOND		DIVISION
ZONE	SEC.	PLAT
3	9	20
CONTAINING		PARCELS

FIGURE 2

Parcel 32
Not to Scale

FEBRUARY
2015

TAX MAP

Nani Loa Hotel Condominium

CHRIS HART & PARTNERS, INC.

Source: Google Earth, Image Date: 4/2/2013

FIGURE 3

Parcel 28
Not to Scale

FEBRUARY
2015

AERIAL MAP

Nani Loa
Hotel Condominium

CHRIS HART & PARTNERS, INC.

Photo 1: Looking northwest across South Kihei Road toward the Hale Pau Hana condominium. Driveway to Kihei Kai Nani and proposed project site at lower right. (9/25/14)

Photo 2: Looking south down South Kihei Road at driveway apron to Kihei Kai Nani and proposed project site. Kamaole II Beach Park at right. (9/25/14)

PHOTO KEY

Photo 3: Looking northeast across South Kihei Road at the entrance to Kihei Kai Nani and project site. Parking lot for Kai Nani Center at right. (9/25/14)

Photo 4: Looking west down Kihei Kai Nani driveway and parking lot. (9/25/14)

Photo 5: Six story Kihei Akahi Condominium building south of the project site. (9/25/14)

Photo 6: Looking across 8.396 acre parcel to the north of the proposed project site. The Aloha Village project is proposed on this site. (3/13/14)

FIGURE 4.1

Date of photos as noted	FEBRUARY 2015
PHOTOGRAPHS Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.

Photo 7: Looking east up Kihei Kai Nani driveway towards project site. (9/25/14)

Photo 8: Looking east across project site. (9/25/14)

PHOTO KEY

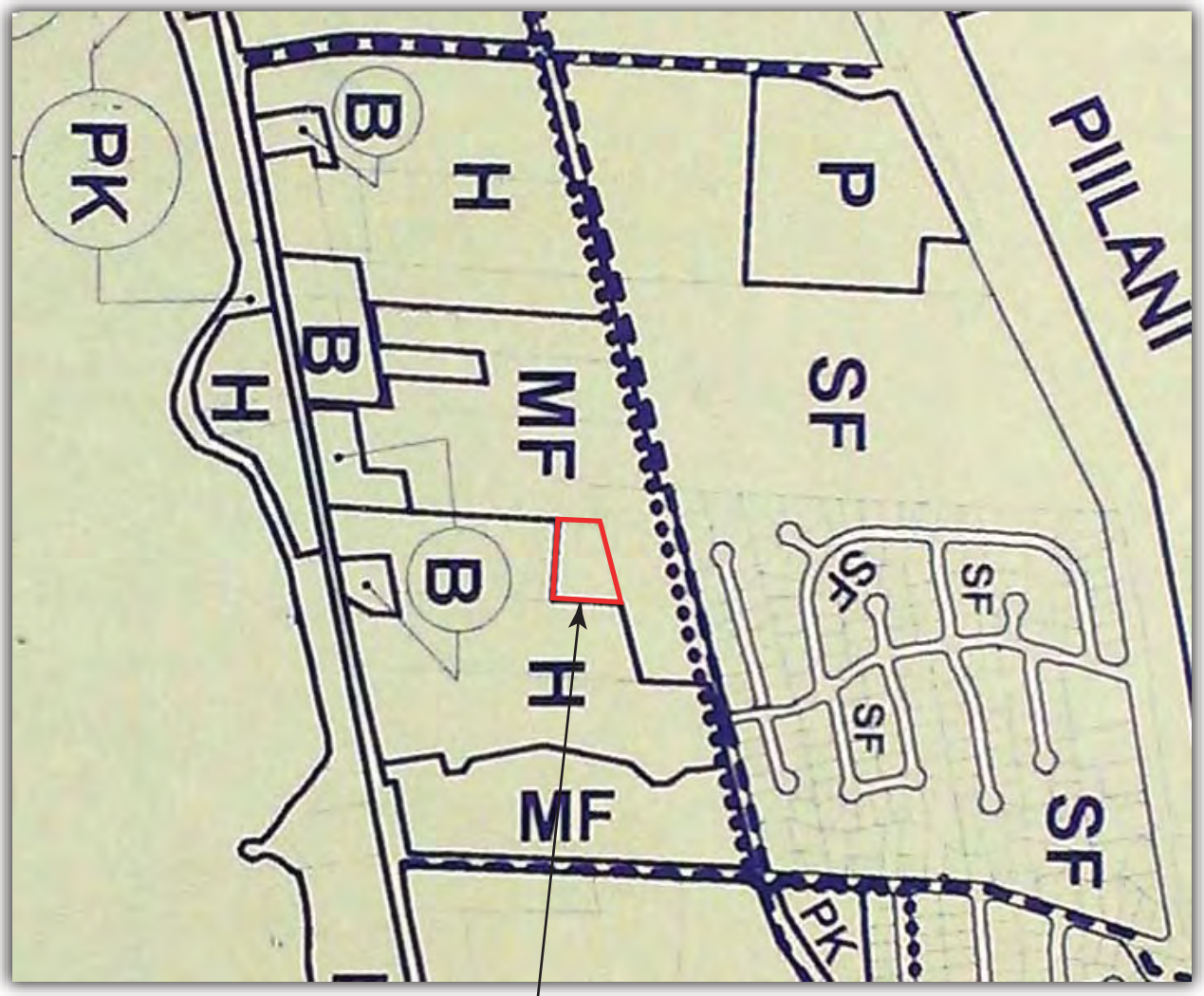
Photo 9: Looking north across proposed project site. (3/13/14)

Photo 10: Looking west across project site. (3/13/14)

Photo 11: Looking southwest across project site. Six-story Kihei Akahi building in the distance. (3/13/14)

FIGURE 4.2

Date of photos as noted	FEBRUARY 2015
PHOTOGRAPHS Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.



LEGEND

SF	Single Family
MF	Multi-family
H	Hotel
B	Commercial
BMF	Business Multi-family
BI	Business/Industrial
SBR	Service Business/Residential
LI	Light Industrial
HI	Heavy Industrial
A	Airport
AG	Agriculture

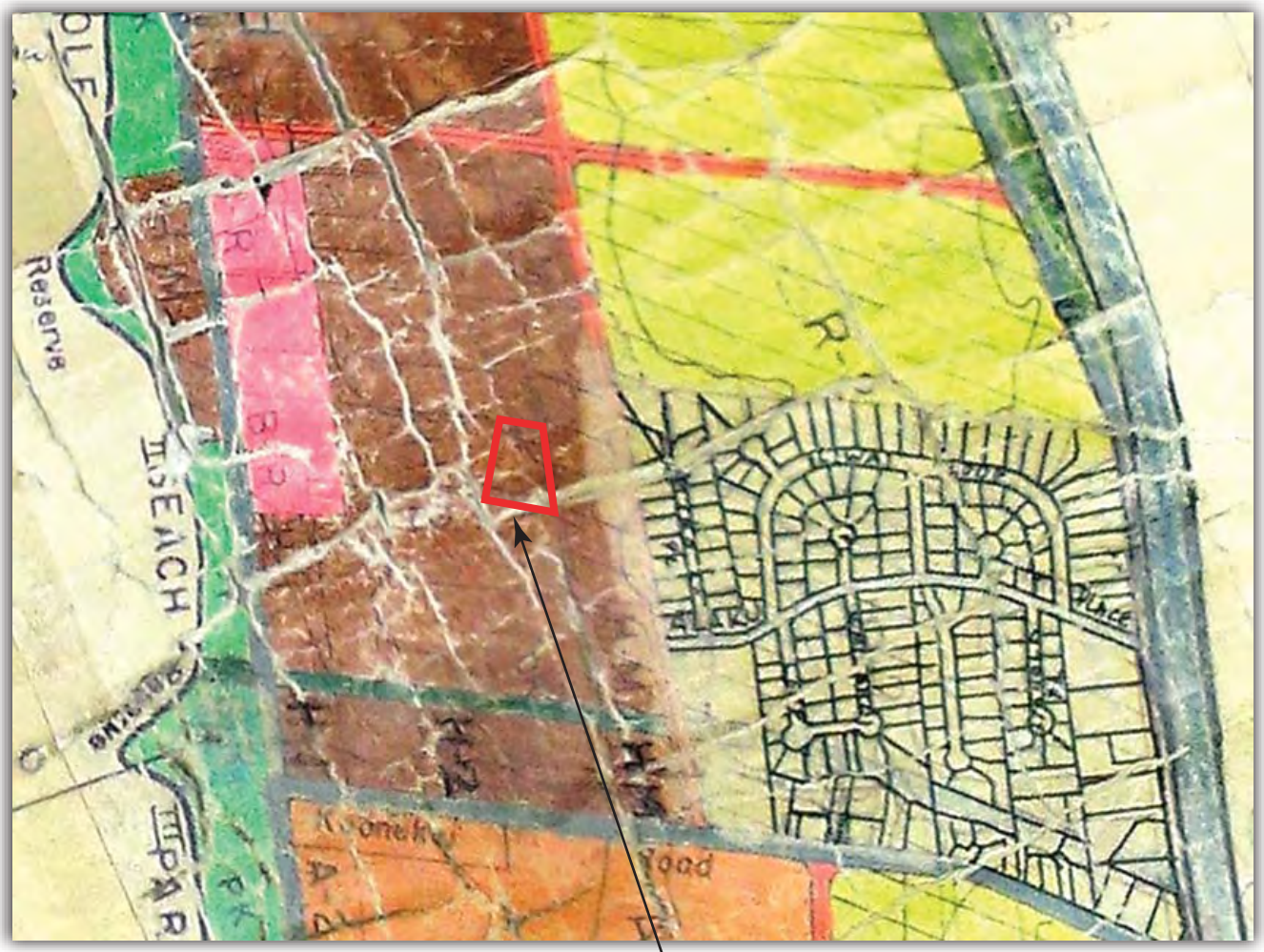
PROJECT SITE

FIGURE 5

FEBRUARY 2015

KIHEI -MAKENA COMMUNITY PLAN
Nani Loa Hotel Condominium

CHRIS HART & PARTNERS, INC.



PROJECT SITE

LEGEND

FIGURE 6

Not to Scale

FEBRUARY 2015

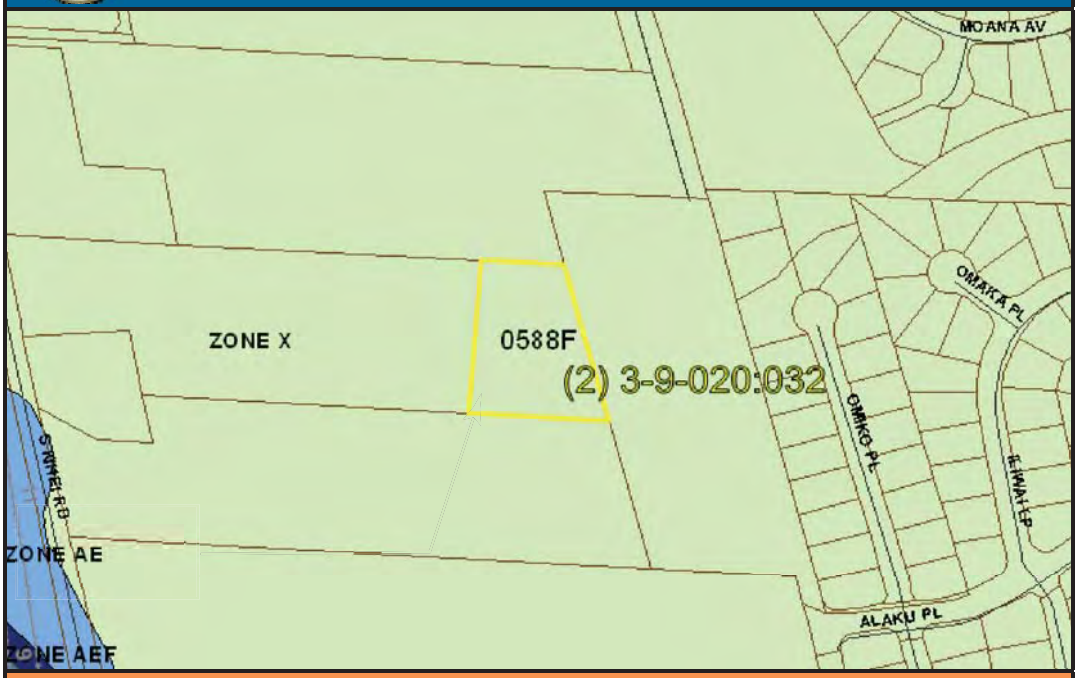
MAUI COUNTY ZONING MAP

Nani Loa Hotel Condominium

CHRIS HART & PARTNERS, INC.

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- Zone A: No BFE determined.
- Zone AE: BFE determined.
- Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	MAUI
TMK NO:	(2) 3-9-020-032
PARCEL ADDRESS:	2505 S KIHEI RD KIHEI, HI 96753
FIRM INDEX DATE:	SEPTEMBER 19, 2012
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	1500030588F
PANEL EFFECTIVE DATE:	SEPTEMBER 19, 2012

PARCEL DATA FROM:	JULY 2013
IMAGERY DATA FROM:	MAY 2005

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
County of Maui	
Carolyn Cortez	(808) 270-7253
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Disclaimer: The Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR from any liability, which may arise from its use.

If this map has been identified as 'PRELIMINARY' or 'UNOFFICIAL', please note that it is being provided for informational purposes and is not to be used for official/legal decisions, regulatory compliance, or flood insurance rating. Contact your county NFIP coordinator for flood zone determinations to be used for compliance with local floodplain management regulations.

FIGURE 7

Not to Scale
FEMA Flood Insurance Map

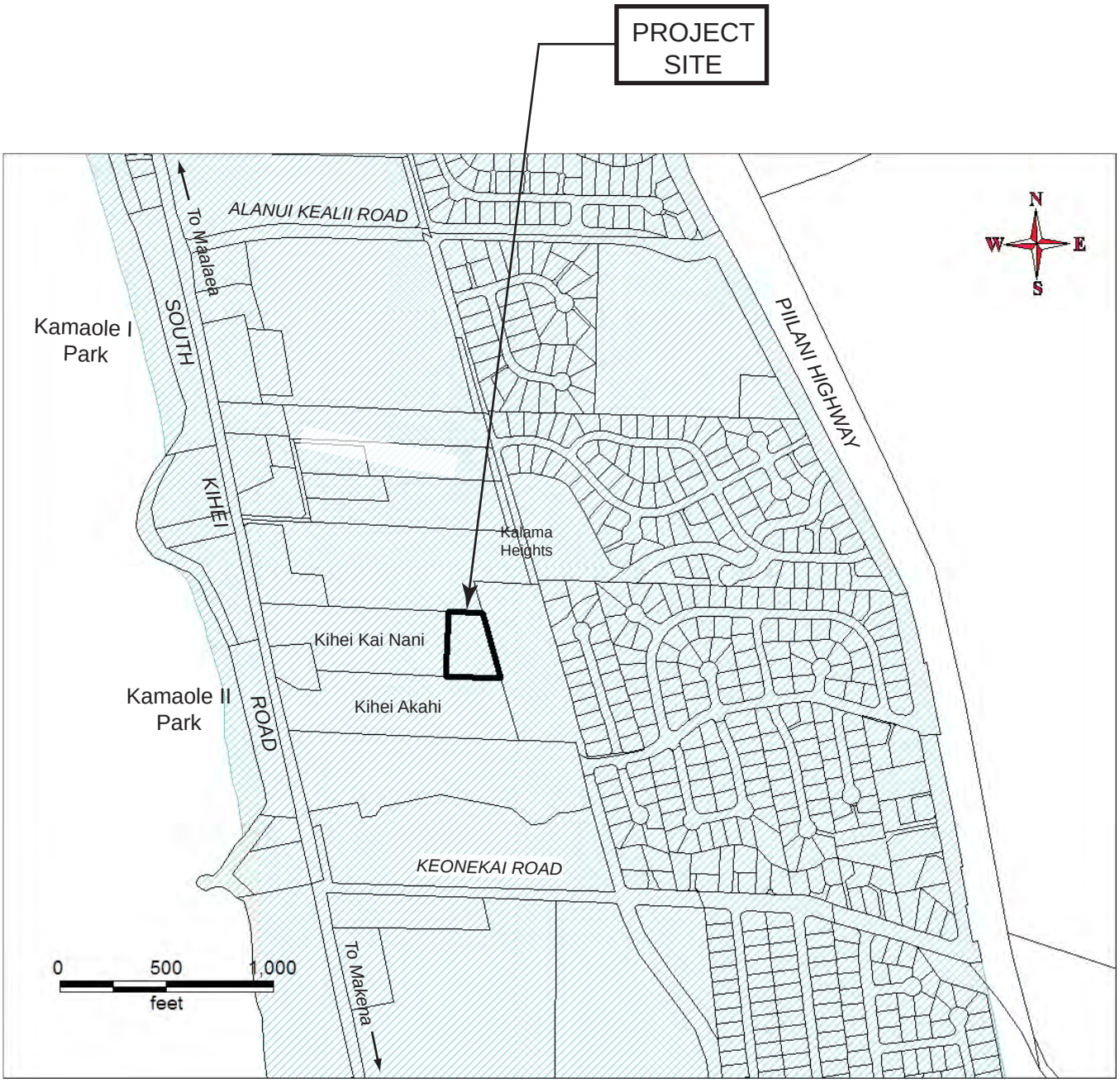
FEBRUARY 2015

FLOOD MAP

Nani Loa Hotel Condominium

CHRIS HART & PARTNERS, INC.

FEMA Panel 1500030588F (9/19/2012)

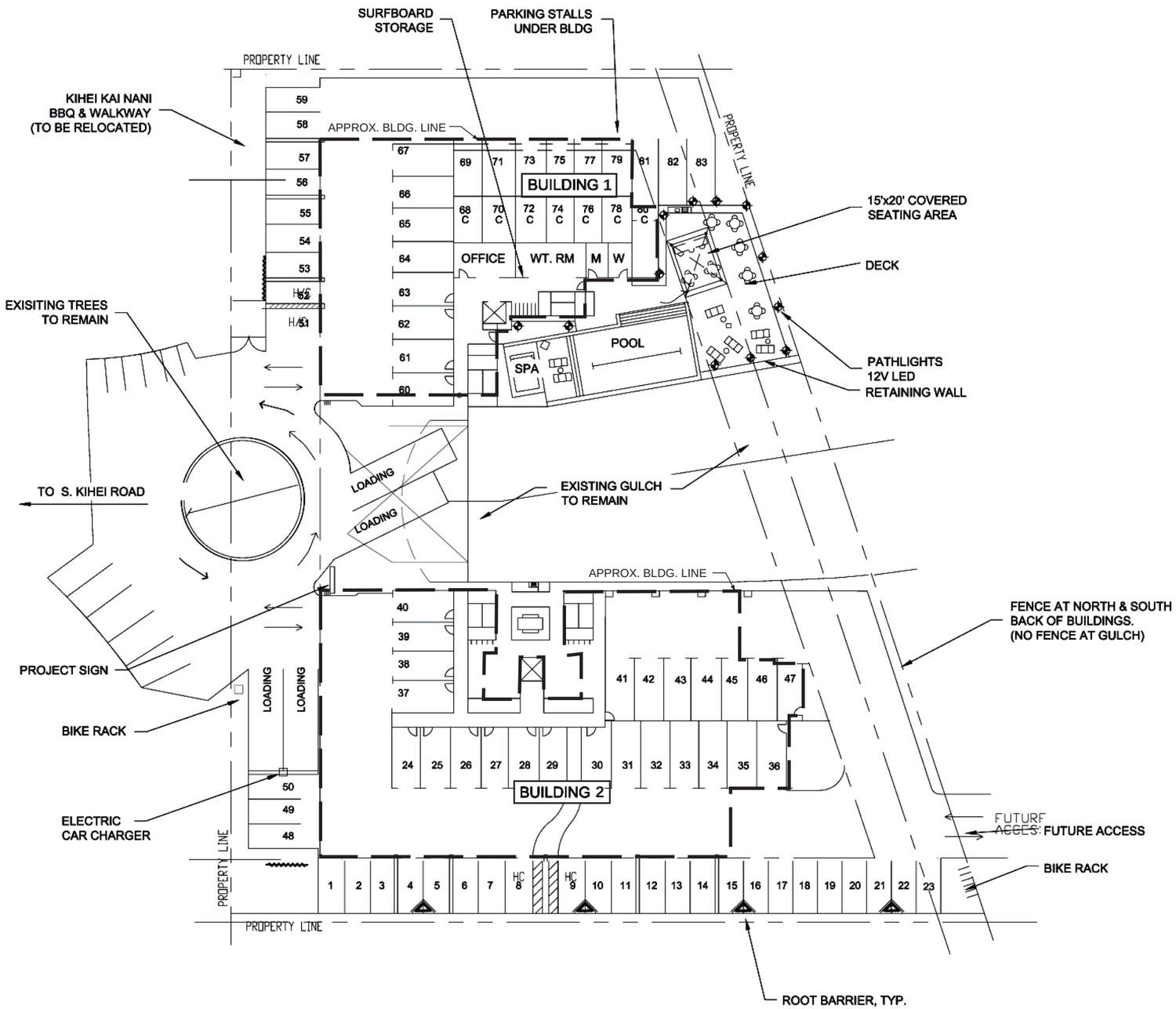


Special Management Area
(SMA)

SMA

FIGURE 8

Scale as shown	FEBRUARY 2015
SPECIAL MANAGEMENT AREA MAP **Nani Loa Hotel Condominium**	CHRIS HART & PARTNERS, INC.



PROJECT: 14-030
DATE: 08/22/14
REV. DATE: 01/20/15

FIGURE 9.1

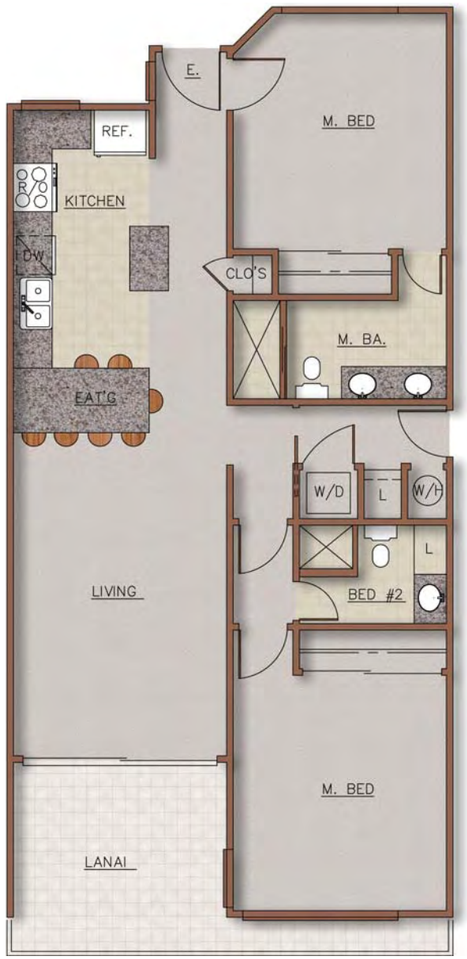
SCALE: 1 IN. = 40 FT.

FEBRUARY 2015

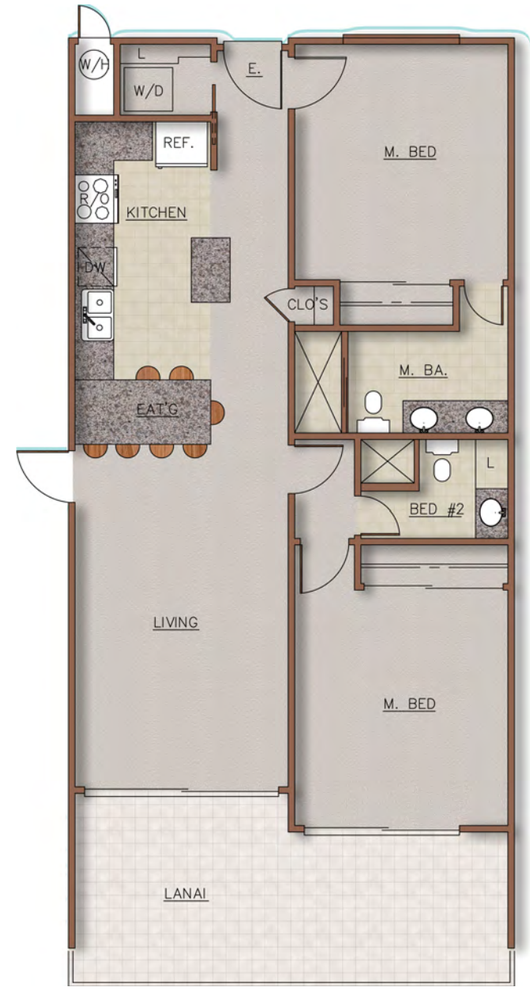
SITE PLAN

Nani Loa Condominium Hotel

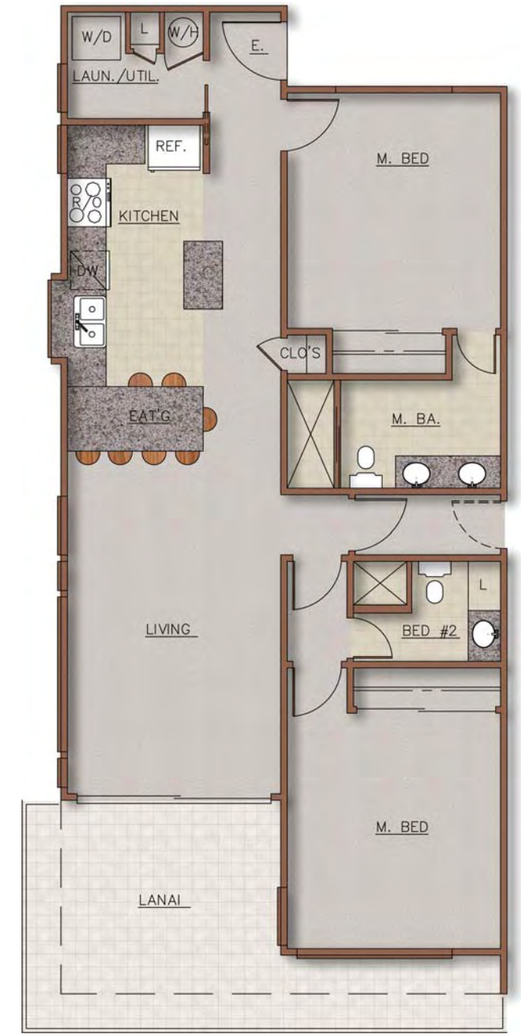
CHRIS HART & PARTNERS, INC.



PLAN 1
963 SF



PLAN 2
922 SF



PLAN 3
963 SF

FIGURE 9.2

Scale: 1/8" = 1'-0"

FEBRUARY
2015

UNIT PLANS

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

PLAN 4
1,462 SF

PLAN 5
837 SF

PLAN 6
780 SF

FIGURE 9.3

Scale: 1/8" = 1'-0"

FEBRUARY 2015

UNIT PLANS

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

EAST

WEST

FIGURE 9.4

SCALE: 1/16" = 1'-0"	FEBRUARY 2015	CHRIS HART & PARTNERS, INC.
BLDG. 1 ELEVATIONS Nani Loa Condominium Hotel		

Hawaii — JERRY F. NARDINI, AIA, ASID Architect
J. F. NARDINI ARCHITECT
Residential & Commercial
1327 S KIHEI RD. #3-102 KIHEI, HAWAII, 96753 — Telephone (808) 875-0846 Fax (808) 875-0847

NORTH

SOUTH

FIGURE 9.5

Hawaii
JERRY F. NARDINI, NCARB
Architect
J. F. NARDINI ARCHITECT
Residential & Commercial
1367 S KIHEI RD. #3-102
KIHEI, HAWAII, 96753
Telephone (808) 875-0846
Fax (808) 875-0871

SCALE: 1/16″ = 1′-0″

FEBRUARY 2015

BLDG. 1 ELEVATIONS

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

EAST

WEST

FIGURE 9.6

SCALE: 1/16″ = 1′-0″

FEBRUARY
2015

BLDG. 2 ELEVATIONS

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

NORTH

SOUTH

FIGURE 9.7

Hawaii
JERRY F. NARDINI, NCARB
Architect
J. F. NARDINI ARCHITECT
Residential & Commercial
1367 S KIHEI RD. #3-102
KIHEI, HAWAII, 96753
Telephone (808) 875-0846
Fax (808) 875-0871

SCALE: 1/16″ = 1′-0″

FEBRUARY 2015

BLDG. 2 ELEVATIONS

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

FIGURE 9.8

Looking Southeast	FEBRUARY 2015
PERSPECTIVE RENDERING Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.

FIGURE 9.9

Looking Southwest	FEBRUARY 2015
PERSPECTIVE RENDERING Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.

FIGURE 9.10

Looking Northwest	FEBRUARY 2015
PERSPECTIVE RENDERING Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.

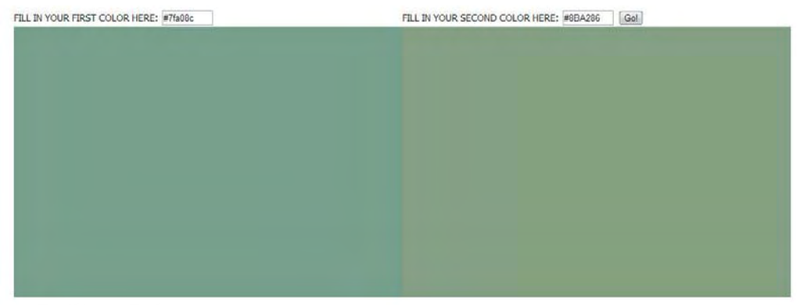
FIGURE 9.11

Looking West	FEBRUARY 2015
PROJECT AERIAL Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.

Roof Solar Photo-voltaic Panels

Electric Vehicle Charging Station

Building Colors



Railing Colors

FIGURE 9.12

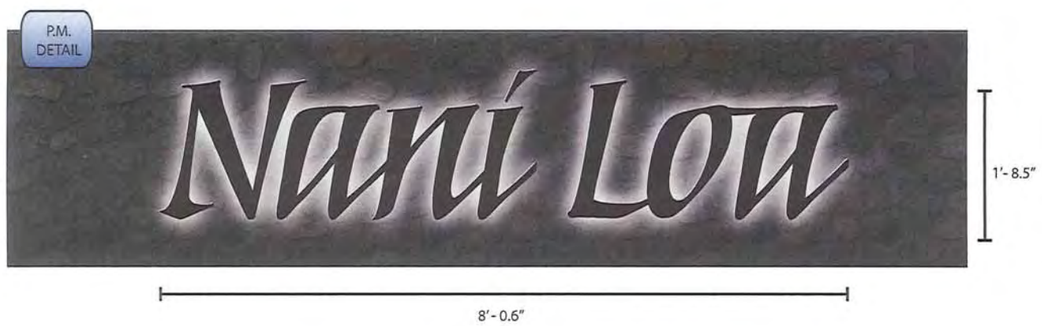
FEBRUARY
2015

FEATURES

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

Nani Loa
Halo Letter Sign



Reverse "Halo" lit LED illuminated
Channel Letter Pin Mounted on

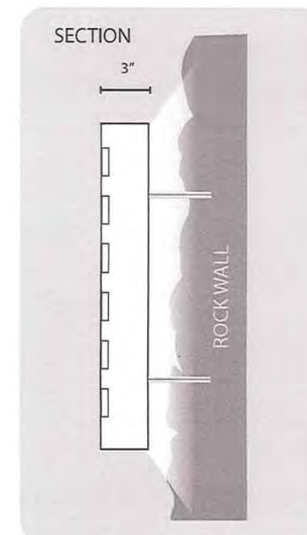


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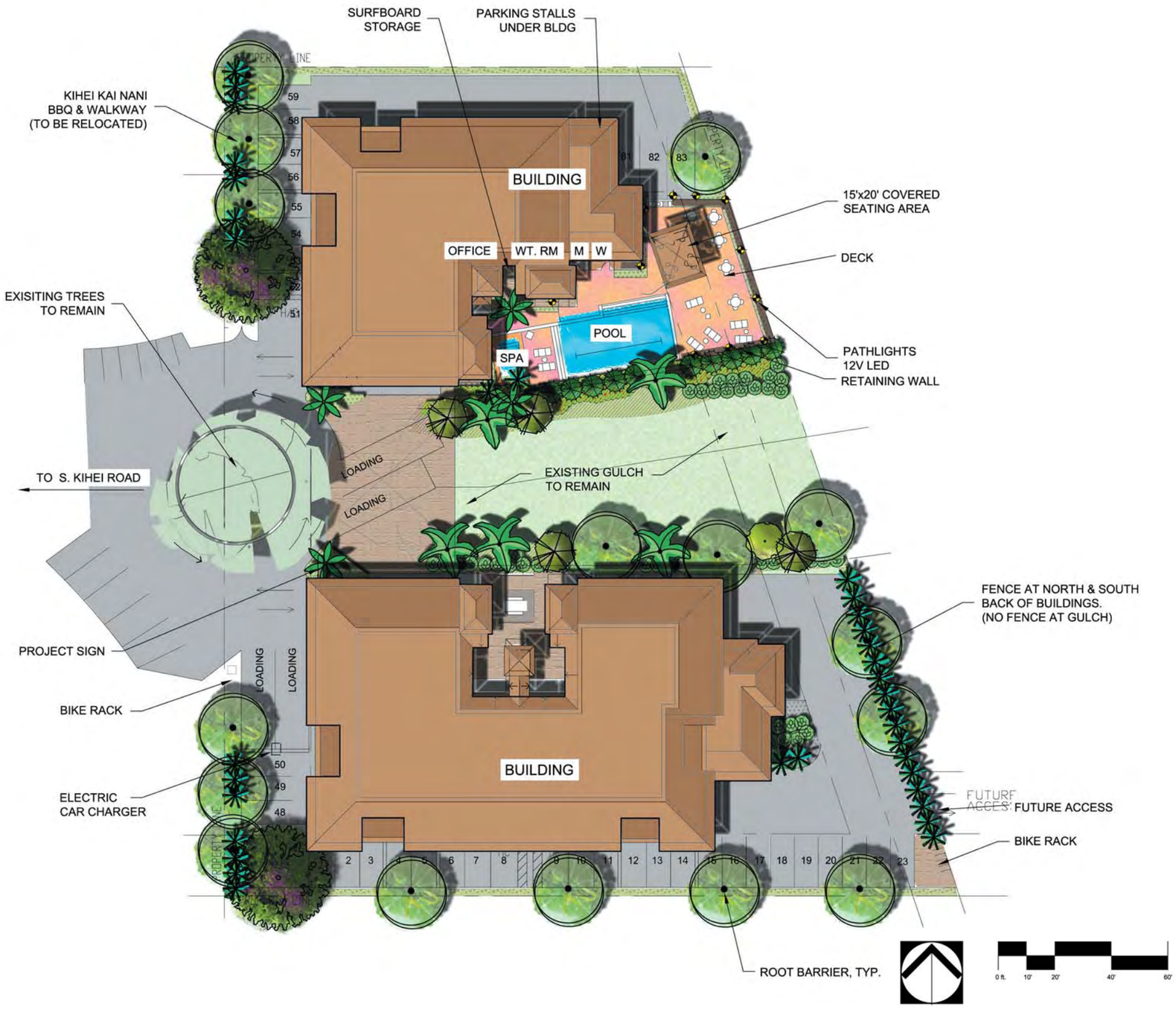
FIGURE 9.13

FEBRUARY
2015

GROUND SIGN

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.



PLANT LEGEND

Symbol	Common Name
TREES AND PALM	
SHADE TREES:	
	Hong Kong Orchid Tree (2" Cal., 6' Planted Ht.)
	Milo - Native (2" Cal., 6' Planted Ht.)
	Geiger
	Dwarf Plumeria
PALM TREES:	
	Coconut Palm
	Areca Palm
	Joannis Palm
	MacArthur Palm - Multi-stem
SHRUBS AND GROUNDCOVER	
SHRUBS:	
	Beach Vitex - Native
	Natal Plum
	Red / Green Ti - Native
	Queen Emma Lily
GROUNDCOVER:	
	Firecracker
	Ilima Papa - Native
	Ice Plant - Native
	12-volt downward-shielded path lights, LED

Notes:

1. All tree locations are approximate & will be adjusted in field by landscape contractor and have 8'-0" clear to all utilities.
2. All street trees to have 10'-0" of rootbarrier installed at back of curb and 10'-0" at sidewalk edge.
3. All landscape material to be watered using an automatic irrigation system.
4. Irrigation system will include a Rain Sensor to avoid over watering.
5. Irrigation system will be designed so as to be compatible with all Reclaimed Water rules and regulations.
6. Irrigation will be via Drip Irrigation (excluding lawn area).
7. Install 18" Maintenance strip with cinder around all buildings.

FIGURE 10

Scale: 1 inch = 40 feet

FEBRUARY 2015

LANDSCAPE CONCEPT PLAN

Nani Loa Condominium Hotel

CHRIS HART & PARTNERS, INC.

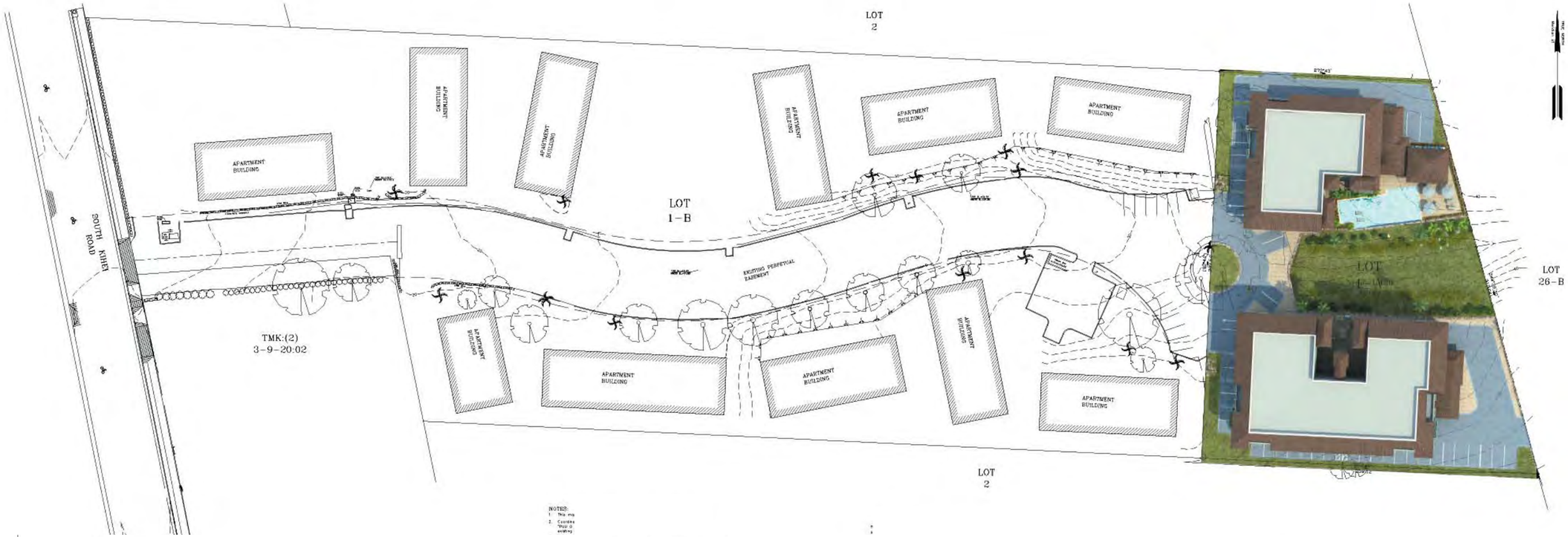
PROJECT: 14-030

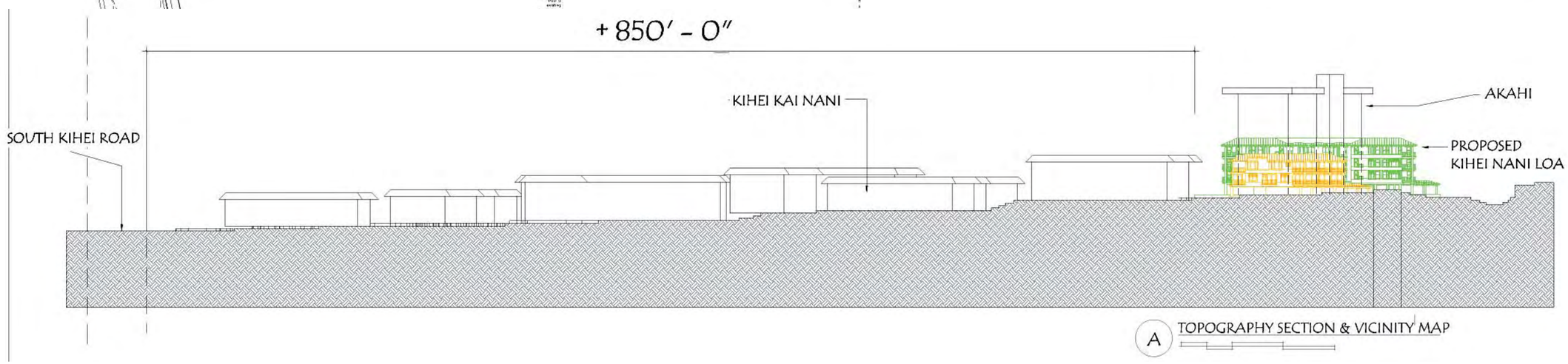
DATE: 08/22/14

REV. DATE: 01/20/15

FIGURE 11

Scale as shown	FEBRUARY 2015
SOILS MAP **Nani Loa Hotel Condominium**	CHRIS HART & PARTNERS, INC.

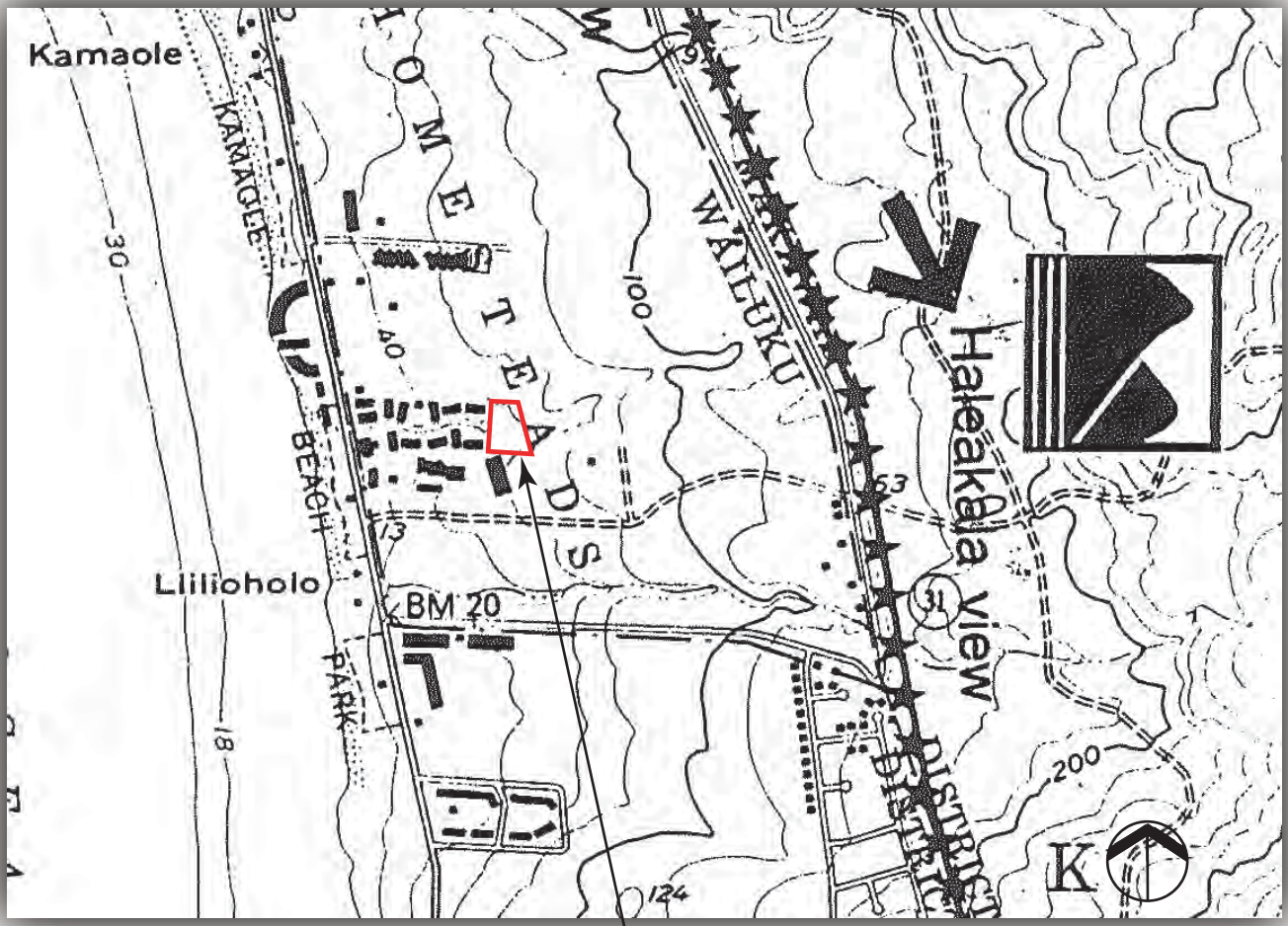




A TOPOGRAPHY SECTION & VICINITY MAP

FIGURE 13

Scale: As shown	FEBRUARY 2015
SITE SECTION Nani Loa Condominium Hotel	CHRIS HART & PARTNERS, INC.



PROJECT SITE

FIGURE 12

Not to Scale	FEBRUARY 2015
SCENIC MAP **Nani Loa Hotel Condominium**	CHRIS HART & PARTNERS, INC.

APPENDICES

APPENDIX A
Pre-Consultation Agency Comments & Responses

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF:

June 26, 2008

Regulatory Branch

File Number POH-2007-294

Mr. Jordan Hart
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

Dear Mr. Davis:

We have received your August 20, 2007, request for early consultation comments in preparation of a Draft Environment Assessment (EA) for the proposed Nani Loa Residential Condominium Project located in Kihei, Maui, Hawaii (TMK: (2) 3-9-020: 032). The file number assigned POH-2007-339 should be referred to in future correspondence with us.

We recommend that the draft EA address whether any potential waters of the U.S., as represented by the presence of perennial, intermittent or ephemeral streams or wetlands, are in, adjacent to or flow through, the land parcel subject to development. The EA should also disclose whether any streams or other aquatic resources that may occur within the land parcel have an existing direct or indirect surface water connection to the Pacific Ocean.

Section 404 of the Clean Water Act requires that a Department of the Army (DA) permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide extending shoreward to the mean high water mark.

We appreciate the opportunity to provide comments on the proposed development project and associated EA. Should you have any questions, please contact Ms. Joy Anamizu of my staff at (808) 438-7023 or at *joy.n.anamizu@usace.army.mil*. For additional information about our Regulatory Program, visit our web site at http://www.poh.usace.army.mil/EC-R/EC-R.htm.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

RECEIVED
JUL 07 2008
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

cc: Jordan

CHRIS HART & PARTNERS INC.

January 6, 2009

Mr. George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
US Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Subject: Response to Pre-Consultation Comments for a Draft Environmental Assessment (EA) for the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui. TMK: (2) 3-9-020: 032. ***POH-2007-339***

Dear Mr. Young:

Thank you for your pre-consultation letter dated June 26, 2008 (**See** Enclosed: Pre-Con letter from the Department of the Army dated June 26, 2008).

The Nani Loa Condominium Project was inactive for a period of time while project architects were changed and the project was re-designed. The architectural revisions to the project do not change the relevant components of the project. Nani Loa remains a 32 unit Hotel project on 1.44 acres.

The EA for the Nani Loa Hotel Condominium Project will discuss the information that has been requested in the attached June 26, 2008 letter. We provide responses to your comments as follows:

1st Comment:
"We recommend that the EA address whether any potential waters of the U.S., as represented by the presence of perennial, intermittent or ephemeral streams or wetlands, are in, adjacent to or flow through, the land parcel subject to development. The EA should also disclose whether any streams or other aquatic resources that may occur within the land parcel have an existing direct or indirect surface water connection to the Pacific Ocean."

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET • WAILUKU, MAUI, HAWAII 96793-1717 • PHONE 808-242-1955 • FAX: 808-242-1956

1st Comment Response:
The EA will discuss the presence of an intermittent seasonal stream that flows through the project site. No other streams or aquatic resources are known to occur within the project site.

2nd Comment:
"Section 404 of the Clean Water Act requires that a Department of the Army (DA) permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344)."

2nd Comment Response:
The proposed project does not intend to discharge dredged and/or fill material into the waters of the U.S., or jurisdictional wetlands.

3rd Comment:
"Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403)."

3rd Comment Response:
No work relating to the proposed project will occur in, or is anticipated to affect navigable waters of the U.S.

In conclusion, thank you for your comments on the proposed Nani Loa Hotel Condominium Project. We look forward to further communication following the submittal of the consolidated application reports for the proposed EA, CPA & SMA. Please contact Jordan Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President, ASLA
Landscape Architect & Planner

Enclosure: (1)
Pre-Con letter from the Department of the Army dated June 26, 2008

CC: Mr. Tim Piasky
Project File (06-060)

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF BUSINESS SERVICES

RECEIVED
SEP 11 2007

September 10, 2007

Mr. Christopher L. Hart, President
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawai`i 96793

Attention: Mr. Jordan Hart

Dear Mr. Hart:

Subject: Early Consultation on Nani Loa Residential Condominium
Kihei, Maui, TMK: 3-9-20:32

The Department of Education (DOE) has reviewed your request for early consultation on a proposed 32-unit residential project called the Nani Loa Residential Condominium (Project).

The 2007 Legislature passed a bill establishing school impact fees. The bill became Act 245 and is in the process of being implemented. Under this new law, we believe the Project will be required to pay an impact fee. We currently do not know the amount of the fee per residential unit, but we should have a better idea after the Project's Environmental Assessment (EA) is circulated.

It would be very useful if the EA includes detailed information on the size of the housing being proposed for the Project. To estimate the student impact of the Project, we will need to know the number of bedrooms anticipated in each type of housing and the general price range for various housing types.

Thank you for this opportunity to offer our early comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 733-4862.

Sincerely yours,

Duane Y. Kashiwai
Public Works Administrator
Facilities Development Branch

DYK:jl

CHRIS HART
& PARTNERS INC.

January 22, 2008

Mr. Duane Y. Kashiwai, Public Works Administrator
State Department of Education,
Office of Business Services
P.O. Box 2360
Honolulu, Oahu, Hawaii 96804

Subject: Response to pre-consultation comments for the
Nani Loa Residential Condominium Projects
Kihei, Maui, TMK: (2) 2-9-020: 032
For an Environmental Assessment (EA), Community Plan Amendment (CPA) & Special Management Area (SMA)

Dear Mr. Kashiwai:

Thank you for your comment letter for the proposed Nani Loa Residential Condominium Project dated September 10, 2007 (**See** enclosed: DOE Pre-consultation comment letter dated September 10, 2007). The following responses to comments are provided for your consideration:

1st Comment:
"The 2007 Legislature passed a bill establishing school impact fees. The bill become Act 245 and is in the process of being implemented. Under this new law, we believe the project will be required to pay an impact fee. We currently do not know the amount of the fee per residential unit, but we should have a better idea after the project's Environmental Assessment (EA) is circulated"

1st Response:
The applicant will follow the evolution of impact fees pursuant to compliance with Act 245 and will look for further information through the EA comment process.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1706 · PHONE 808-242-1955 · FAX: 808-242-1956

2nd Comment:
"It would be very useful if the EA includes detailed information on the size of the housing being proposed for the Project. To estimate the student impact of the Project, we will need to know the number of bedrooms anticipated in each type of housing and the general price range for various housing types."

2nd Response:
The Nani Loa Consolidated Application Report for the processing of an EA, CPA and SMA will include a discussion of the proposed size of units, including unit bedroom counts. The Nani Loa Application Report will include a discussion of the general price range for proposed unit sale.

In conclusion, we appreciate your comments for the proposed Nani Loa Residential Condominiums and look forward to further communication with the submittal of the consolidated application reports for the proposed EA, CPA & SMA.

Thank you for your consideration. Please contact Jordan E. Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosure: (1)
DOE Pre-consultation comment letter dated September 10, 2007

CC: Mr. Tim Piasky
Project File (06-060)

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

August 28, 2007

cc: Jordan
06/040

Mr. Jordan Hart
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawai`i 96793

Dear Mr. Hart:

Subject: **Proposed Nani Loa Residential Condominium Project**
TMK: (2) 3-9-020: 032

Thank you for the opportunity to participate in the pre-consultation process for the proposed Nani Loa Residential Condominium Project. The following comments are offered:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.

2. 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.

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

It is strongly recommended that the Standard Comments found at the Department's website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html be reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: EPO

CHRIS HART
& PARTNERS INC

January 6, 2009

Mr. Herbert S. Matsubayashi
District Environmental Health Program Chief
State of Hawaii, Department of Health
Maui District Health Office
54 High Street
Wailuku, Maui, Hawaii 96793-2102

Subject: Response to Pre-Consultation Comments for a Draft Environmental Assessment (EA) for the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui.
TMK: (2) 3-9-020: 032.

Dear Mr. Matsubayashi:

Thank you for your pre-consultation letter dated August 28, 2007 (**See** Enclosed: Pre-Con letter from the Hawaii State Department of Health dated August 28, 2007).

The Nani Loa Condominium Project was inactive for a period of time while project architects were changed and the project was re-designed. The architectural revisions to the project do not change the relevant components of the project. Nani Loa remains a 32 unit Hotel project on 1.44 acres.

We provide responses to your June 26, 2008 comments by letter as follows:

1st Comment:
"National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309."

1st Comment Response:
The Clean Water Brach will be contacted in order to obtain an NPDES permit for the Nani Loa Condominium Project.

LANDSCAPE ARCHITECTURE
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2nd Comment:
"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."

2nd Comment Response:
A noise permit will be obtained prior to the commencement of work.

3rd Comment:
"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."

3rd Comment Response:
The project will locate stationary equipment appropriately in order to comply with HAR, Chapter 11-46.

Standard comments at the Department of Health website will be reviewed, and all comments applicable to the project will be adhered to.

In conclusion, thank you for your comments on the proposed Nani Loa Hotel Condominium Project. We look forward to further communication following the submittal of the consolidated application reports for the proposed EA, CPA & SMA. Please contact Jordan Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President, ASLA
Landscape Architect & Planner

Enclosure: (1)
Pre-Con letter from the Hawaii State Department of Health dated August 28, 2007

CC: Mr. Tim Piasky
Project File (06-060)

LINDA LINGLE
GOVERNOR

BARRY FUKUNAGA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

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

IN REPLY REFER TO:

STP 8.2600

August 27, 2007

RECEIVED
AUG 31 2007
CHRIS HART & PARTNERS
Landscape Architecture & Planning

cc: Jordan 06/060

Mr. Christopher L. Hart
President
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

Dear Mr. Hart:

Subject: Nani Loa Residential Condominium Project
Pre-Consultation
TMK: 3-9-020: 032

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

The developer of the subject project should provide a traffic assessment report. The traffic report should cover impacts to the local streets and the Piilani Highway intersections expected to be used by occupants and users of the subject project. The report should also include the traffic mitigation measures necessary to address any impacts from the project.

We appreciate the opportunity to provide comments.

Very truly yours,

BARRY FUKUNAGA
Director of Transportation

CHRIS HART & PARTNERS INC.

January 7, 2009

Mr. Brennon Morioka, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Oahu, Hawaii 96813-5097

Subject: Nani Loa Hotel Condominium Project **Response to Pre-Consultation Comments** for an Environmental Assessment (EA), Community Plan Amendment (CPA) & Special Management Area (SMA) Permit. Located at 2505 South Kihei Road, Kihei, Maui. TMK: (2) 3-9-020:032

Dear Mr. Morioka:

Thank you for your comment letter for the proposed Nani Loa Residential Condominium Project dated August 27, 2007 (See Enclosed: Hawaii SDOT Pre-Consultation letter dated August 27, 2007).

The Nani Loa Condominium Project was inactive for a period of time while project architects were changed and the project was re-designed. The architectural revisions to the project did not change the relevant components of the project. Nani Loa remains a 32 unit residential project on 1.44 acres.

The following responses to comments are provided for your consideration:

1st Comment:
"The developer of the subject project should provide a traffic assessment report. The traffic report should cover impacts to the local streets and the Piilani Highway intersections expected to be used by occupants and users of the subject project."

Response:
The applicant has contracted a traffic engineering consultant and will include a traffic assessment report in the EA, CPA & SMA application report. The traffic assessment report will discuss impacts to impacted local roadways.

LANDSCAPE ARCHITECTURE
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2nd Comment:
"The report should also include the traffic mitigation measures necessary to address any impacts from the project."

Response:
The project's traffic assessment report will include traffic mitigation measures necessary to address any impacts from the project.

In conclusion, thank you for your comments on the proposed Nani Loa Condominium Hotel Project. We look forward to further communication following the submittal of the consolidated application reports for the proposed EA, CPA & SMA. Please contact Jordan Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosures: (1)
Hawaii SDOT Pre-Consultation letter dated August 27, 2007

CC: Mr. Tim Piasky
Project File (06-060)

PHONE (808) 594-1888

FAX (808) 594-1865

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

SEP 21 2007
CHRIS HART & PARTNERS
Landscape Architecture & Planning

September 11, 2007

HRD07_3177

Christopher L. Hart, President
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, HI 96793

Dear Mr. Hart:

Re: Environmental Assessment for the proposed Nani Loa Residential Condominium Project at Kamaole, Kihei, Maui, Hawai'i
Tax Map Key (2) 3-9-020:032

The Office of Hawaiian Affairs (OHA) is in receipt of your August 17, 2007 letter initiating consultation for an Environmental Assessment (EA) for the above project, which will involve the construction of new condominium units, a swimming pool, pedestrian court and associated infrastructure.

OHA has no comments at this time, but requests assurances that as this project moves forward, should historic properties, cultural deposits or human skeletal remains be inadvertently discovered during ground disturbance, all work will immediately cease, and the appropriate agencies notified pursuant to applicable laws. OHA also recommends a comprehensive review and discussion of any previous archaeological or cultural reports in and around the subject project area.

Please contact our Maui Island Community Resource Coordinator, Ms. Thelma Shimaoka at (808) 873-3364. Ms Shimaoka may be able to identify individuals who should be contacted and of particular cultural and historic sites or protected traditional and cultural practices which should be considered.

Thank you for initiating consultation at this early stage and we look forward to the opportunity to review and provide comment on the forthcoming EA. Should you have any questions, please contact Keola Lindsey, Lead Advocate-Culture at (808) 594-1904.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

C: Thelma Shimaoka, OHA- Community Resource Coordinator, Maui
140 Hoohana Street, Kahului, HI 96732

CHRIS HART & PARTNERS P.C.

January 7, 2009

Mr. Clyde W. Namu'o, Administrator
State of Hawaii
Office of Hawaiian Affairs
Honolulu, Oahu, Hawaii 96813

Re: Response to Pre-Consultation Comments for an Environmental Assessment (EA) for the proposed Nani Loa Hotel Condominium Project at Kamaole, Kihei, Maui, Hawai'i.
TMK: (2) 3-9-020: 032

Dear Mr. Namu'o:

Thank you for your comment letter for the proposed Nani Loa Residential Condominium Project dated September 11, 2007. The following responses are provided for your consideration:

1st Comment:
"OHA has no comments at this time, but requests assurances that as this project moves forward, should historic properties, cultural deposits or human skeletal remains be inadvertently discovered during ground disturbance, all work will immediately cease, and the appropriate agencies notified pursuant to applicable laws."

1st Comment Response:
The applicant is currently in the pre-consultation phase of the Environmental Assessment (EA), Community Plan Amendment (CPA) and Special Management Area (SMA) Permitting process. An archaeological study and report will be included in the Draft EA, which will be sent to your office for review and comment. Should any historical properties, cultural deposits, or human remains be found during ground-disturbing activities, work will be immediately halted and the appropriated agencies consulted.

2nd Comment:
"OHA also recommends a comprehensive review and discussion of any previous archaeological or cultural reports in and around the subject project area.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET • WAILUKU, MAUI, HAWAII 96793-1717 • PHONE 808-242-1955 • FAX: 808-242-1956

2nd Comment Response:
In meeting the requirements of the EA and SMA review process, the applicant has retained the services of consultant who will prepare an Archaeological Report for the project site, based on pre-consultation with the Department of Land and Natural Resources, State Historic Preservation Division. The applicant has also retained the services of a consultant who will prepare a Cultural Impact Assessment Report for the project site.

In conclusion, thank you for your comments for the proposed Nani Loa Hotel Condominiums and look forward to further communication with the submittal of the consolidated application reports for the proposed EA, CPA & SMA. Please contact Jordan Hart at (808) 242-1955 for any further information.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosure: (1)
Office of Hawaiian Affairs, Pre-Consultation Letter; September 11, 2007

CC: Mr. Tim Piasky
Project File (06-060)

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
SEP 07 2007

September 5, 2007

cc: Jordan 06/060

Chris Hart & Partners
115 N. Market Street
Wailuku, Hawaii 96793

Attention: Mr. Jordon Hart

Gentlemen:

Subject: Pre-Consultation for the Proposed Nani Loa Residential Condominium Project, Kamaole, Maui, Tax Map Key: (2) 3-9-20:32

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 20, 2007

'07 AUG 22 PM 02:20 ENGINEERING

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
x Office of Conservation & Coastal Lands
x Land Division – Morris Atta
- NDLO

FROM: Russell Y. Tsuji
SUBJECT: Pre-Consultation for the Proposed Nani Loa Residential Condominium Project
LOCATION: Kamaole, Maui, Tax Map Key: (2) 3-9-20:32
APPLICANT: Chris Hart & Partners, Inc. on behalf of Tim Piasky

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by September 1, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: [signature]
Date: 8/31/07

RECEIVED
LAND DIVISION
2007 AUG 31 P 3:21
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/RYT
Ref.: PreConNaniLoaReCondoKamaole
Maui.367

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that based on the map provided the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone C. The National Flood Insurance Program does not have any regulations for developments within Zone C.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments:_____

( ) Other:_____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER

Date: 8/31/07

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor

VANESSA A. MEDEIROS
Director

LORI TSUHAKO
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165 • EMAIL director.hhc@mauicounty.gov

September 10, 2007

RECEIVED
SEP 12 2007
CHRIS HART & PARTNERS

cc: Jordan ok/ok

Mr. Jordan Hart
Chris Hart & Partners
115 Market St.
Wailuku, Hawaii 96793

Dear Mr. Hart:

SUBJECT: Proposed Nani Loa Residential Condominium Project, TMK (2) 3-9-020:032

We have reviewed your August 17, 2007 early consultation letter and enclosures for the subject project and would like to offer the following comments:

1. Victory Development Nani Loa, LLC, is proposing to develop 1.44 acres of land for the construction of a 32-unit residential condominium.

2. Since the proposed project will involve the construction of five or more units, the project is subject to the requirements of Chapter 2.96, Maui County Code (MCC).

3. Section 2.96.080A, MCC, states that before final subdivision approval or issuance of a building permit, the developer shall enter into a residential workforce housing agreement with the County of Maui that sets forth the detailed terms and conditions of compliance with the residential workforce policy.

Thank you for the opportunity to comment.

Sincerely,

Vanessa A. Medeiros

VANESSA A. MEDEIROS
Director of Housing and Human Concerns

xc: Assistant Housing Administrator

CHRIS HART
& PARTNERS INC.

January 22, 2008

Ms. Vanessa A. Medeiros, Director
Department of Housing and Human Concerns
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Subject: **Proposed Nani Loa Residential Condominium Project, TMK: (2) 3-9-020: 032**

Dear Ms. Medeiros:

Thank you for your comment letter for the proposed Nani Loa Residential Condominium Project dated September 5, 2007 (**See** enclosed: DHHC, Pre-Consultation Comment Letter dated September 5, 2007). The following responses to comments are provided for your consideration:

1st Comment:
"Victory Development Nani Loa, LLC, is proposing to develop 1.44 acres of land for the construction of a 32-unit residential condominium."

Response:
The applicant is proposing to develop a 32-unit residential condominium project on 1.44 acres of land.

2nd Comment:
"Since the proposed project will involve the construction of five or more units, the project is subject to the requirements of Chapter 2.96, Maui County Code (MCC)."

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1706 · PHONE 808-242-1955 · FAX: 808-242-1956

Response:
The applicant acknowledges that the Nani Loa Project is subject to the requirements of Chapter 2.96 of the Maui County Code (MCC) "Residential Workforce Housing Policy".

3rd Comment:
"Section 2.96.080A, MCC, states that before final subdivision approval or issuance of a building permit, the developer shall enter into a residential workforce housing agreement with the County of Maui that sets forth the detailed terms and conditions of compliance with the residential workforce policy."

Response:
The applicant acknowledges that an agreement for participation with the requirements of Section 2.96 must be executed prior to final subdivision approval.

In conclusion, we appreciate your comments for the proposed Nani Loa Residential Condominiums and look forward to further communication with the submittal of the consolidated application reports for the proposed EA, CPA & SMA.

Thank you very much for your consideration. Please direct any comments you may have by phone, or in writing, to Jordan Hart of this office at (808) 242-1955.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosures: (1)
DHHC, Pre-Consultation Comment Letter dated September 5, 2007

CC: Mr. Tim Piasky
Project File (06-060)

CHARMAINE TAVARES
Mayor

TAMARA HORCAJO
Director

ZACHARY Z. HELM
Deputy Director

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

DEPARTMENT OF PARKS & RECREATION

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

September 5, 2007

RECEIVED
SEP 12 2007
CHRIS HART & PARTNERS
Engineers Architects Planners

cc: Jordan 06/060

Mr. Jordan Hart, Planner
Chris Hart & Partners, Inc.
1955 Main Street; Suite 200
Wailuku, Hawaii 96793-1706

SUBJECT: Nani Loa Residential Condominium Project, TMK: (2)3-9-020:032, Kihei, Maui, Hawaii

The proposed 32 unit condominium project will be subjected to Maui County Code, Title 18.16.320, regarding park assessment fees. Our Department is requiring the applicant to satisfy the parks and playground requirement with a cash contribution in lieu of providing land in perpetuity. The current parks and playgrounds assessment fee rate for Kihei – Makena Community Plan area is $17,510.00 per lot in excess of three (3). This rate is effective until June 30, 2008, therefore the parks and playgrounds assessment fee for the project is 29 units x $17,510.00 = $507,790.00. Be advised that the applicant is required to satisfy the applicable parks and playgrounds requirements at the current rate at the time of final subdivision approval.

Should you have any questions please contact me or Tammy Osurman, Capital Improvement Project Coordinator at (808) 270-7388.

Sincerely,

TAMARA HORCAJO
Director, Parks and Recreation

xc: Patrick Matsui, Chief of Planning and Development
DSA, subdivisions

TH:to

CHRIS HART & PARTNERS INC.

January 7, 2009

Ms. Tamara Horcajo, Director
County of Maui, Dep. of Parks & Rec.
700 Hali'a Nakoa Street, Unit 2
Wailuku, Maui, Hawaii 96793

Subject: Response to Environmental Assessment (EA) Pre-Consultation for Nani Loa Hotel Condominium Project, 2505 South Kihei Road, Kihei, Maui, Hawaii.
TMK: (2) 3-9-020: 032,

Dear Ms. Horcajo:

Thank you for your comment letter on the proposed Nani Loa Hotel Condominium Project, dated September 5, 2007 (**See** Enclosed: Letter from Department of Parks and Recreation dated September 5, 2007).

The Nani Loa Condominium Project was inactive for a period of time while project architects were changed and the project was re-designed. The architectural revisions to the project did not change the relevant components of the project. Nani Loa remains a 32 unit residential project on 1.44 acres.

The Nani Loa Residential Project will comply with all current county requirements, including applicable Parks Assessment Fees for residential development.

In conclusion, we appreciate your comments and look forward to further communication following the submittal of the consolidated Environmental Assessment, Community Plan Amendment and Special Management Area Use Permit Application reports for the Nani Loa Hotel Condominium Project. Thank you for your consideration. Please contact Jordan Hart a (808) 242-1955 for any further information.

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CITY AND REGIONAL PLANNING
115 N. MARKET STREET • WAILUKU, MAUI, HAWAII 96793-1717 • PHONE 808-242-1955 • FAX: 808-242-1956

Sincerely yours,

Christopher L. Hart
President, ASLA
Landscape Architect & Planner

Enclosed: (1)
Letter from Department of Parks and Recreation dated September 5, 2007

CC: Mr. Tim Piasky
Project File (06-060)

CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

COLLEEN M. SUYAMA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

SEP 20 2007
CHRIS HART & PARTNERS
Landscape Architecture & Planning
cc Jordan
06/060

September 14, 2007

Mr. Jordan Hart
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawai'i 96793

Dear Mr. Hart:

SUBJECT: PRE-CONSULTATION COMMENTS IN PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED NANI LOA RESIDENTIAL CONDOMINIUM PROJECT LOCATED AT TMK: (2) 3-3-020:032, KIHEI, ISLAND OF MAUI, HAWAII (EA 2007/0012)

The Maui Planning Department (Department) has reviewed your letter dated August 17, 2007, requesting preconsultation and provides the following comments in preparation of the Draft Environmental Assessment (EA).

1. As your letter notes, "A previous Special Management Area (SMA) Permit was approved for a forty-eight (48) unit project" for the same site on September 4, 1996. If you have not done so already, you could make a "Request to Access a Government Record" and review the files to help you identify appropriate topics for review in a Draft EA, as well as substantial, if in some cases somewhat dated, information on these topics. I expect that a planner in the Department who is assigned to review a preliminary Draft EA for the proposed new project will be reviewing those same files for information during her or his review.

2. The Department has a copy of a letter sent by Patricia Ross to your firm dated July 15, 2007. You may have received other recent comments in response to your June 22, 2007 letters to neighboring property owners. Ms. Ross' letter and other comments you may have received have hopefully identified most of the initial community concerns to be encountered by the proposed project. All of them which can be construed as the normal appropriate subject matter of a Draft EA should be fully addressed within it. Even where they may

not be so construed, it will be important for you to find some other means to address them. In a similar light, have you solicited input from the Kihei Community Association?

3. Should you wish to provide an outline of topics you propose to be addressed in the Draft EA, Department staff should be willing to review such a list and provide any appropriate supplemental comments.

Thank you for your cooperation. Should you require further clarification, please contact Staff Planner Jeffrey Dack, AICP, at jeffrey.dack@co.maui.hi.us, or at 270-6275.

Sincerely,

JEFFREY S. HUNT, AICP
Planning Director

xc: Colleen M. Suyama, Deputy Planning Director
Clayton I Yoshida, Planning Program Administrator
Jeffrey P. Dack, Staff Planner

JSH:JPD:bv

EA File
General File

K:\WP_DOCS\PLANNING\EA\2007\0012_NaniLoaResCondo\preconsultation.wpd

CHRIS HART
& PARTNERS INC.

January 22, 2008

Mr. Jeffery Hunt, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Subject: Response to Pre-Consultation Comments for a Draft Environmental Assessment (EA). **Nani Loa Residential Condominium Project**
Located at TMK: (2) 3-9-020: 032,
Kihei, Island of Maui, Hawaii (EA 2007/0012)

Dear Mr. Hunt:

Thank you for your comment letter for the proposed Nani Loa Residential Condominium Project dated September 14, 2007 as well as our pre-consultation meeting on September 12, 2007 (**See** enclosed: PlnDpt Pre-consultation comment letter dated September 14, 2007). The following responses to your written comments are provided for your consideration:

1st Comment:
"As your letter notes, "A previous Special Management Area (SMA) Permit was approved for a forty-eight (48) unit project." for the same site on September 4, 1996. If you have not done so already, you could make a "request to Access a Government Record" and review the files to help you identify appropriate topics for review in the Draft EA as well as substantial, if in some cases somewhat dated, information on these topics. I expect that a planner in the Department who is assigned to review a preliminary Draft EA for the proposed new project will be reviewing those same files for information during her or his review."

Response:
Chris Hart & Partners (CH&P) has conducted a preliminary review of the County Records for the Parcel. A further review will be conducted to include issues encountered in the attempt to previously develop the

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project site. Comment will be made on the relevance of issues as well as proposed measures to mitigate potential impacts.

2nd Comment:
"The Department has a copy of a letter sent by Patricia Ross to your firm dated July 15, 2007. You may have received other recent comments in response to your June 22, 2007 letters to neighboring property owners. Ms. Ross' letter and other comments you may have received have hopefully identified most of the initial community concerns to be encountered by the proposed project. All of them which can be construed as the normal appropriate subject matter of a Draft EA should be fully addressed within it. Even where they may not be so construed, it will be important for you to find some other means to address them. In a similar light, have you solicited input from the Kihei Community Association?"

Response:
CH&P has collected several telephone comments, as well as written comments from neighboring property owners notified in the pre-consultation process. Written letters as well as transcribed telephone comments will be included in the Draft EA. Issues of concern from Public Agencies, as well as private citizens will be referenced and addressed in the Draft EA for the Nani Loa project. This material will include the July 15, 2007 letter from Ms. Patricia Ross.

CH&P has made contact with the Kihei Community Association (KCA) regarding this project and is moving forward with scheduling the first meeting for the Nani Loa Project.

3rd Comment:
"Should you wish to provide an outline of topics you propose to be addressed in the Draft EA, Department staff should be willing to review such a list and provide any appropriate supplemental comments"

Response:
As discussed in our pre-consultation meeting with Planning Department Staff on September 12, 2007, CH&P has prepared a list of standard issues which must be addressed as part of the EA and SMA process. As referenced above, CH&P will also discuss further issues of interest identified through the pre-consultation process.

In conclusion, we thank you for your consideration and appreciate your comments on the proposed Nani Loa Residential Condominium Project. Please contact Jordan E. Hart at (808) 270-1563 for further information.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosure: (1)
PlnDpt Pre-consultation comment letter dated September 14, 2007

CC: Mr. Tim Piasky
Project File (06-060)

POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

OUR REFERENCE
YOUR REFERENCE

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

THOMAS M. PHILLIPS
CHIEF OF POLICE

GARY A. YABUTA
DEPUTY CHIEF OF POLICE

September 6, 2007

RECEIVED
SEP 12 2007
Community Development
Landscape Architecture & Planning
cc: Jordan 06/060

Christopher L. Hart, President
Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, HI 96793-1706

Dear Mr. Hart:

SUBJECT: Pre-Consultation for the proposed Nani Loa Residential Condominium Project; TMK No.: (2) 3-9-020:032

Thank you for your letter of August 17, 2007, requesting comments on the above subject.

We would like to defer any comments and/or recommendations until a Special Management Area Permit has been submitted for this project.

Thank you for giving us the opportunity to comment on this project.

Very truly yours,

AC Wayne T. Ribao

Assistant Chief Wayne T. Ribao
for: Thomas M. Phillips
Chief of Police

c: Jeffrey Hunt, Maui County Planning Department

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

RECEIVED
NOV - 7 2007
CHRIS HART & PARTNERS
Landscape Architecture + Planning

cc: Jordan
06/0200

November 5, 2007

Mr. Jordan Hart
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793

Dear Mr. Hart,

Subject: Pre-Consultation for the proposed
Nani Loa Residential Condominium Project
Kamaole, Kihei, Maui, Hawaii
TMK: (2) 3-9-020:032

Thank you for allowing us to comment on the pre-consultation phase of the proposed subject project, which was received on August 21, 2007.

In reviewing our records and the information received, Maui Electric Company (MECO) has no objection to the project at this time. However, in addition to an electrical line extension, upgrades to our substation, transmission, and/or distribution system may be necessary to accommodate this project's anticipated load demand. We highly encourage the developer's electrical consultant to submit its electrical demand requirements and project time schedule as soon as practical so that service can be provided on a timely basis.

In addition, may we suggest that the developer and/or their consultant make contact with Sage Kiyonaga of our Demand Side Management (DSM) group at 872-3283 to review potential energy conservation and efficiency opportunities for their project.

Should you have any other questions or concerns, please call Kim Kawahara at 871-2345.

Sincerely,

Neal Shinyama
Manager, Engineering

NS/kk:lh
cc: Sage Kiyonaga – MECO DSM

CHRIS HART & PARTNERS INC.

January 7, 2009

Mr. Greg Kauhi, Manager, Engineering
Maui Electric Company, Ltd.
PO Box 398
Kahului, Maui, HI 96733-6898

Subject: Response to Pre-Consultation Comments for a Draft Environmental Assessment (EA). For the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui.
TMK: (2) 3-9-020: 032

Dear Mr. Kauhi:

Thank you for your pre-consultation letter dated November 5, 2007 (**See** Enclosed: Pre-Con letter from MECO dated November 5, 2007).

The Nani Loa Condominium Project was inactive for a period of time while project architects were changed and the project was re-designed. The architectural revisions to the project did not change the scale or relevant components of the project. Nani Loa remains a 32 unit residential project on 1.44 acres.

The developer will make contact with MECO to review potential energy conservation and efficiency opportunities.

We look forward to further communication following the submittal of the consolidated application reports for the proposed EA, CPA & SMA. Please contact Jordan Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President, ASLA
Landscape Architect & Planner

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Enclosure: (1)
Pre-Con letter from MECO dated November 5, 2007

CC: Mr. Tim Piasky
Project File (06-060)

APPENDIX B
Community Pre-Consultation

List of Pre-Consultation Activities for the Nani Loa Hotel Condominium Project

- February 22, 2007:
  - Meeting with Planning Department Staff.

- June 22, 2007:
  - Neighbor Pre-Consultation Letter Issued.
    - Applicant responses with various dates.

- August 17, 2007:
  - Agency Pre-Consultation Letters Issued.
    - Applicant responses with various dates.

- September 13, 2007:
  - Meeting with Planning Department Staff.

- May 20, 2008:
  - Meeting with KCA Planning & Review Committee.

- September 9, 2008:
  - Meeting with KCA General Membership & Neighbors within 500 feet of project site.

- April 29, 2008:
  - Meeting with Kihei Kai Nani Owner's Association Board.

CHRIS HART & PARTNERS

MEETING MINUTES

PROJECT:	Nani Loa Residential Condominium Project	MEETING DATE:	May 20, 2008
LOCATION:	KCA Office (Kihei, Azeka I)	SUBJECT:	***Pre-Consultation Meeting for EA/CPA/CIZ***

ATTENDEES:
KCA: Michael DiBella, Don Couch, Tom Douma, Barney Eiting, Laura Marzkel, Jon Miller
CH&P: Chris Hart, Jordan Hart

Meeting began at approximately 12:10 PM.

Presentation by Chris Hart:

- Beginning the presentation with the evolution of the Nani Loa Project site and condominium development in the Kihei area.

- Discussion of the State Land Use Designation of Urban, Community Plan Amendment (M-F to H), H-2 Hotel Zoning Designation. Review of other land designations, including the SMA. Review of land use maps, architectural renderings and site photographs.

Questions & Comments by KCA Planning Committee:

- Prefer that trees not be included in the drainage channel running *mauka* to *makai* through project site.
    - It would be preferred that trees be focused around perimeters of project.
    - It was recommended that the drainage channel include an "armored spill-over" to allow drainage in the event that the culvert is clogged during a storm event.

- Access plan for heavy equipment to project site during construction phase was questioned.
    - Comment was made that access via the North-South Collector from South of the Project Site might not be appropriate due to the current state of the Alaku Place access road, North off of Keonekai Road.

- The potential to encounter blue rock should be considered as a noise impact during the construction phase of the project.
    - The soil types within the project site are Dune Land (DL) and Puuone Sand (PZUE), both are sandy type soils (**See**: attached Soil Map Figure).

- Requirements for fencing of drainage channel should be explored.

- LEED certification for project should be considered.
  - CH&P stated that resource conserving policies and features of LEED certification can be installed by the applicant without participating in the LEED certification process.

- The Committee would prefer central AC over individual systems.

- Pedestrian access to the project abutting the south property boundary (Kihei Akahi) was requested to be included. Possibly a gate through the existing fence/wall to enhance connectivity and potential emergency ingress/egress.

- The following amenities were requested to be included in the project:
  - Pool area restrooms
  - Pool area showers
  - BBQ pit
  - Bicycle locking/parking
    - Preferably out of sun and in secure area

- Concern for storage areas by potential residents was raised.
  - CH&P indicated that unit designs contained storage areas. Residents will also be provided enclosed garages.

- Electronic copies of latest renderings were requested via Email by Don Couch and Tom Douma.
  - CH&P completed this transmittal 2008-05-20.

The meeting was concluded at approximately 2:00 PM with cordial conversation following. A copy of the attendance list is enclosed.

Meeting Notes Respectfully
Prepared By:

2008.05.21

Jordan E. Hart

Enclosures: (2)
Attendance list from KCA Planning Committee Meeting Dated May 20, 2008
Soil Map Figure, May 2008

KIHEI COMMUNITY ASSOCIATION
2008 PLANNING & REVIEW COMMITTEE MEMBERS

DATE: 5/20/2008

Bertram III, Joe	
Couch, Don	
DiBella, Michael	
Douma, Tom	
Eiting, Barney	
Frazier, David	Excused Absent
Marzke, Laura	
Miller, Jon	

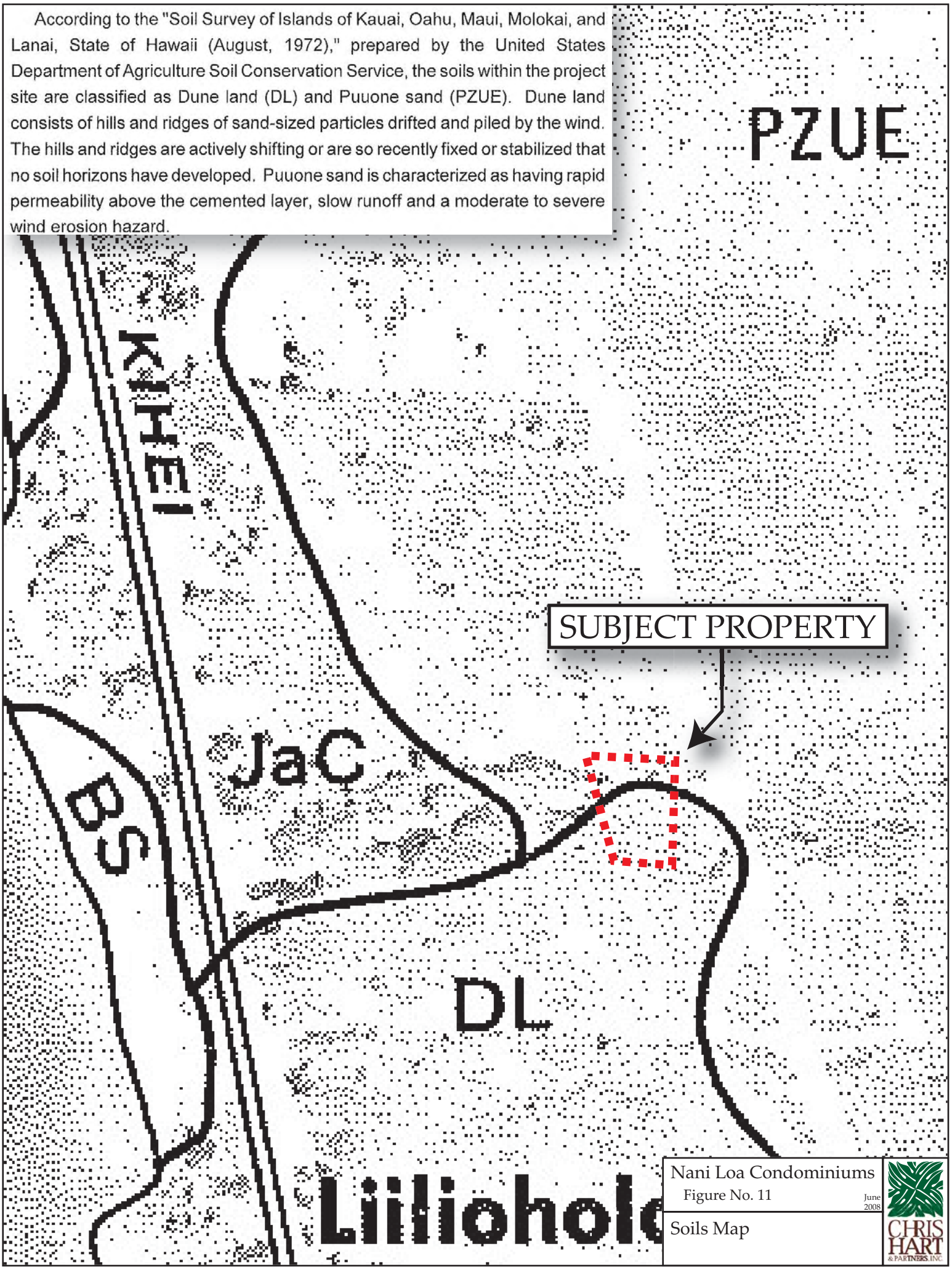
GUESTS:

Mauro Fiz

CHARLS HAR

JORDAN HAR

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 soils within the project site are classified as Dune land (DL) and Puuone sand (PZUE). Dune land consists of hills and ridges of sand-sized particles drifted and piled by the wind. The hills and ridges are actively shifting or are so recently fixed or stabilized that no soil horizons have developed. Puuone sand is characterized as having rapid permeability above the cemented layer, slow runoff and a moderate to severe wind erosion hazard.



Nani Loa Condominiums

Figure No. 11

June 2008

Soils Map

CHRIS HART & PARTNERS, INC.

CHRIS HART
& PARTNERS INC.

June 17, 2008

Mr. Michael DiBella
Kihei Community Association
P.O. Box 662
Kihei, Maui, Hawaii 96753

Regarding: Nani Loa Residential Condominium Project, located at 2505 South Kihei Road, TMK No. (2) 3-9-020: 032, Kihei, Maui, Hawaii.

Dear Mr. ~~DiBella~~ Michael:

This letter is a response to comments received during a KCA Planning and Design Committee Meeting on May 20, 2008 (**See:** "2008-05-20, Meeting Minutes, KCA Planning Committee")

- Prefer that trees not be included in the drainage channel running *mauka* to *makai* through project site.
    - It would be preferred that trees be focused around perimeters of project.

Response:
Shade Trees and Ornamental Shrubs will be strategically placed throughout the project as well as along the perimeter of the drainage and retention area because it is our position that trees will not only prevent erosion, but will contribute to storm water retention through direct absorption and by collecting moisture on leaves and branches to help offset peak flows of stormwater.

The City of Honolulu, Hawaii, Municipal Forest Resource Analysis, November 2007 states the following:

> "Honolulu's inventoried municipal trees intercept rain, reducing stormwater runoff by 35 million gal annually, with an estimated value of $350,104. **Citywide, the average tree intercepts 798 gal of stormwater each year**, valued at $7.99 per tree."

(http://www.fs.fed.us/psw/programs/cufr/products/2/psw_cufr724_HNLMFRA.pdf)

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- It was recommended that the drainage channel include an "armored spill-over" to allow drainage in the event that the culvert is clogged during a storm event.

  Response:
  The Project's Engineering Consultant will assess the site and provide a solution to any drainage issues, which will be technically acceptable to the County of Maui, Department of Public Works.

- Access plan for heavy equipment to project site during construction phase was questioned.
  - Comment was made that access via the North-South Collector from South of the Project Site might not be appropriate due to the current state of the Alaku Place access road, North off of Keonekai Road.

    Response:
    The Applicant will seek to mitigate the impacts of the construction phase, as much as possible. The Applicant will communicate with abutting property owners to identify the best construction staging and access strategy for the Nani Loa Project.

- The potential to encounter blue rock should be considered as a noise impact during the construction phase of the project.
  - The soil types within the project site are Dune Land (DL) and Puuone Sand (PZUE), both are sandy type soils (**See**: attached Soil Map Figure).

    Response:
    The applicant will be conscious of the impacts of the construction phase on neighboring properties and seek to mitigate impacts through construction management.

- Requirements for fencing of drainage channel should be explored.

  Response:
  The Project Architect and Engineering Consultant will identify requirements for fencing around the drainage channel.

- LEED certification for project should be considered.
  - CH&P stated that resource conserving policies and features of LEED certification can be installed by the applicant without participating in the LEED certification process.

    Response:
    As stated during the May 20th meeting, energy conservation measures will be designed into the project. The Applicant is open to including LEED features in the project but does not plan to encumber the project with the cost and time associated with the LEED accreditation process.

- The Committee would prefer central AC over individual systems.

    Response:
    The Applicant is interested in providing the most energy efficient cooling system feasible. The units within the Nani Loa Project will <u>not</u> be served by individual AC systems.

- Pedestrian access to the project abutting the south property boundary (Kihei Akahi) was requested to be included. Possibly a gate through the existing fence/wall to enhance connectivity and potential emergency ingress/egress.

    Response:
    The Applicant is open to providing pedestrian access to neighboring properties and will contact neighboring property owners to assess their interest in such a connection for convenience and unforeseen emergency events.

- The following amenities were requested to be included in the project:
  - Pool area restrooms
  - Pool area showers
  - BBQ pit
  - Bicycle locking/parking
    - Preferably out of sun and in secure area

    Response:
    The Applicant intends to develop the project with pool area restrooms, pool area showers, a BBQ pit and a protected bicycle locking/parking facility.

- Concern for storage areas by potential residents was raised.
  - CH&P indicated that unit designs contained storage areas. Residents will also be provided enclosed garages.

    Response:
    Storage is available for future residents both within units and within ground level enclosed garage areas.

- Electronic copies of latest renderings were requested via Email by Don Couch and Tom Douma.
  - CH&P completed this transmittal 2008-05-20.

    Response:
    This request has been completed.

In conclusion, we thank the KCA Planning and Design Committee for taking the time to review and provide comment on the Nani Loa Residential Condominium Project. We trust that our responses adequately address the Committee's concerns for the Nani Loa Project and look forward to meeting with the KCA General Membership. Please contact Jordan Hart at 270-1563 for further information.

Sincerely yours,

Christopher L. Hart
President
ASLA, Landscape Architect & Planner

Enclosures (1):
2008-05-20, Meeting Minutes, KCA Planning Committee

CC: Mr. Tim Piasky
Project File (06-060)

MEETING MINUTES

PROJECT:	Nani Loa Residential Project	DATE:	September 9, 2008
LOCATION:	Kihei Community Center	SUBJECT:	***Meeting with Neighboring Property Owners Within 500 Feet and the KCA***

PROJECT TEAM ATTENDEES: Todd Libel , Tim Piasky, Howey Kihune, Stacy Otomo, Chris Hart, Jordan Hart

Meeting began at approximately 6:30 PM.

Presentation by Chris Hart:

- Beginning the presentation with the chronology of the project site. Historic relationship between the Kihei Kai Nani (KKN) parcel and project site.

- Discussion of features of proposed project, existing conditions on and around the project site.

- Discussion of Maui hotel moratorium which occurred in 1991, and impact to community plan designation of the project site, resulting in the change from Hotel to Multifamily.

- Discussion of the land use entitlement process for the project.

- The prevailing height restriction is imposed by the Kihei Makena Community Plan, for Makai Resort Development which is seventy-five (75) feet.

6:35 – Conclusion of Presentation by Chris Hart

Discussion:

- It was asked how drainage will be addressed. KKN has an existing storm water drainage issue which begins mauka of the Nani Loa Project Site, runs through the Project Site, down through the KKN parking lot and makai. Residents have seen significant damage to the parking lot/access of KKN as well as South Kihei Road during past storm events. The concern for construction phase erosion impacts was raised.
    - It was stated by the Project Team that the Applicant is aware of previous storm events and impacts, and has engaged the services of a Civil Engineering Consultant, Stacy Otomo. The Project's Civil Engineering Consultant will design

a storm water mitigation plan which must be reviewed and approved by all required federal, state and county agencies, prior to the approval of the project as a whole.

- It was stated by the Project Team that the Nani Loa Project will retain 100% of the increase in storm water runoff resulting from development of the project site, which is the current requirement. Nani Loa will also retain an additional 20% of the increase in runoff resulting from development, beyond current requirement of 100%.
- It was stated by the Project Team that a plan outlining Best Management Practices for the prevention of construction phase erosion impacts will be drafted, and reviewed by the County of Maui Department of Public Works prior to issuance of a Grading and Grubbing Permit for the project.

- It was requested that the Nani Loa Project propose a 2-story structure above ground level parking. The density of the project was requested to be reduced.
  - It was stated by the project team that the additional floors and associated opportunity for additional units are necessary to make development of the project economically feasible.

- Residents of KKN stated that they would have liked to have had the parcel purchased by KKN in the past to control development of the parcel, but were unable to organize the purchase.

- It was stated by that neighboring property owners would prefer to have the density of the project reduced. It was stated that some KKN residents did not want the Hotel Condominium Use to occur at the project site.
  - It was also stated by the project team that an SMA Permit for the development of a 48 unit project was approved for the project site as recently as, 1994 but was not constructed. It was stated that the Nani Loa Parcel had been Community Planned Hotel and is Zoned Hotel District, and that it was subdivided off of the KKN at the time of construction.

- Residents voiced concerns over construction related impacts; particularly important to owners who operate short term rentals within KKN units for use by visitors. Short term visitor rentals are expected be impacted by construction phase activities.
  - It was stated by the Project Team that the applicant has been in contact with the property owner to the East to pursue an agreement to allow construction access through the "Yamani" parcel.

- Concerns over traffic impacts to South Kihei Road resulting form the project were raised. Concerns were raised over the availability of right-of-way on South Kihei Road in the vicinity of the project site, in order to provide a left turn pocket into the project entrance. Concerns were raised over Fire Department and emergency services access.
    - It was stated by the Project Team that the Applicant would include a Traffic Impact Assessment Report in the project's EA.
    - It was stated by the Project Team that proposed mitigation measures would be assessed and approved by the State Department of Transportation and Maui County Departments of Public Works and Fire & Public Safety prior to project approvals.

- Concerns were raised over the availability of water for the project.
    - It was stated by the Project Team that the Applicant plans to proceed into the land use entitlement process to assess the availability of water from the Maui County Department of Water Supply. It was further stated that the project will require an SMA Permit and Building Permits, where the availability of water will be verified.
    - It was stated by the Project Team that the Applicant will likely need to upgrade utilities within the existing easement from South Kihei Road to the Project Site as part of the propose action.

- It was asked if the Nani Loa Project would participate with the Residential Workforce Housing Policy.
    - It was stated by the Project Team that the Nani Loa Project would be contacting the Department of Housing & Human Concerns in order to prepare a Workforce Housing Agreement.

- Residents wished to verify that neighbors from the single-family residents east of the project site were informed of the Nani Loa Project and meeting.
    - It was stated by the Project Team that all neighboring property owners within 500 feet of the project site received information on the project and a meeting notice. Residents of the area in question were in attendance.

The meeting was concluded at approximately 8:40 PM with cordial conversation following. A copy of the attendance list is enclosed.

Meeting Notes Respectfully
Prepared By:

Jordan E. Hart

Enclosures: (1)
KCA Attendance list from Community Meeting Dated September 8, 2008

KCA

Kihei Community Association

1	Name Pat Ross	Phone Email 875-0502	
2	Name Bill Ross	Phone Email	
3	Name Jean Brandin	Phone Email 879-2421	
4	Name Howie Kitang	Phone Email	
5	Name Jean Newman	Phone 879-8166 Email	
6	Name Everett Newman	Phone Email	
7	Name Clair Schwartz	Phone 879-4450 Email	
8	Name Carole Eiserloh	Phone 879-6056 Email ceiserloh@yahoo.com	
9	Name Arthur Eiserloh	Phone 879-6056 Email eiserloh@yahoo.com	
10	Name Gina Ventura	Phone Email 8752032	
11	Name Jill Moe	Phone Email	
12	Name Karen Grafe	Phone Email 874-5625	
13	Name Wetton Kalani	Phone Email wkalani@gmail.com	
14	Name Sheryl Luke-Kalani	Phone Email sherylluke@gmail.com	
15	Name STEVE GOLDSMITH	Phone 879-7576 Email ZGSTEVE@yahoo.com	

PLEASE NOTE: The information above may be provided to the presenter upon request!

KCA

Kihei Community Association

NON-MEMBERS

16	Name Jefferson Stillwell	Phone	
		Email	
17	Name Diana Hayes	Phone	
		Email	
18	Name Dick Hayes	Phone	
		Email	dickanddiane@comcast.net
19	Name LINDA EWING	Phone	
		Email	
20	Name MARTIN CUTHER	Phone	
		Email	martin@destinationmaui.net
21	Name Ethel Belway	Phone	
		Email	ebmaui@hotmail.com
22	Name BARRY EWING	Phone	
		Email	BEEYRE@AOL.COM
23	Name RAY VANWAGNER	Phone	
		Email	Ray@VANWAGNER@Hotmail.com
24	Name Liz Libby	Phone	
		Email	lizlibby@shaw.ca
25	Name Ralph Libby	Phone	
		Email	rlibby@megsonfitzpatrick.com
26	Name Janet Rinner	Phone	
		Email	janrineer@aol.
27	Name Mike Rinner	Phone	"
		Email	
28	Name Hans J Schlegel	Phone	250-9116
		Email	
29	Name Jason + Jacki Caterina	Phone	
		Email	268-3962
30	Name PATRICIA Stillwell	Phone	
		Email	879 5654

PLEASE NOTE: The information above may be provided to the presenter upon request!

KCA

Kihei Community Association

NON-MEMBERS

31	Name GARY JAMES	Phone 520-668-8663 Email gdo.james@ATT.NET
32	Name Takeshi MATSUKATA	Phone Email tmatsu.hnl@gmail.com
33	Name Anne Montgomery	Phone Email grandma26@hawaii.rr.com
34	Name	Phone Email
35	Name	Phone Email
36	Name	Phone Email
37	Name	Phone Email
38	Name	Phone Email
39	Name	Phone Email
40	Name	Phone Email
41	Name	Phone Email
42	Name	Phone Email
43	Name	Phone Email
44	Name	Phone Email
45	Name	Phone Email

PLEASE NOTE: The information above may be provided to the presenter upon request!

RECEIVED
SEP - 5 2008
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning
C.C. Jordan
06/060

Harry C. Davis
29 Mosswood Court
Novato, CA 94947
(415) 892-3952 (Home)
(415) 488-4720 (Work)

September 4, 2008

Mr. Christopher L. Hart, President
Landscape Architecture
115 N. Market Street
Wailuku, HI 96793-1706

RE: Community Meeting for the Nani Loa Residential Condominium Project
At 2505 South Kihei Road, Kihei, Maui, Hawaii

Dear Sirs:

My comments are submitted by letter since I will not be on Maui at the time of your meeting.

As the owner of Unit 203, Building 1 located in the front of the Kihei Kai Nani complex, I am opposed to the development of the subject parcel without the addition of a rear access road for safety reasons. Further, I oppose any further development until the owners of the restaurant complex next door reduce the noise they send into the lower Kai Nani units and replace the landscaping they recently removed while renovating their parking lot (See the enclosed letters to the Maui County Planning Department).

Access Road

There needs to be an alternate route to exit out of the Kai Nani parking lot in case of an emergency. Fire trucks barely fit into the existing front driveway. A fire in one of the lower units could block the exit access out of the above units.

This complex is at sea level. There should be a road at the back of the new development to ensure that residents can escape in the event of an emergency. The front entrance to the Kai Nani is narrow, noisy, and already congested. At present, the County can not insure the safety of everyone who would have to exit onto South Kihei Road in an emergency. South Kihei Road would be grid-locked with all of the existing residences let alone a new development. Further, there should be an exit out of both properties that does not lead to sea level. An access road located behind the new development should become part of the County infrastructure as an alternate route in and out of the parking lots.

Restaurant Noise

There are issues of noise coming from the restaurant building next door that should be addressed before any more development is allowed behind the existing Kai Nani residences. The lower Kai Nani units are already subject to several sources of noises that are generated by the restaurants such as vehicles, delivery trucks with loud compressors, loud fan noises, and breaking glasss. The back property should not be developed until these noises are reduced. Any further development at present will only add to the noise and traffic endured by the lower units. The recent removal of the landscaping between the restaurants and the Kai Nani has only made these matters worse.

Sincerely,

Harry C Davis

Harry C. Davis

2 encls.

County of Maui
Planning Commission

FROM: Kihei Kai Nani Association of Apartment Owners.
2495 South Kihei Road
Kihei , Hawaii 96753

Concerning: Parking Lot Violation Correction at 2511 South Kihei Rd. by
Fred's Mexican Café

Dear Sir,
The Kihei Kai Nani Association of Condo Owners are very concerned about the parking lot construction that is occurring to correct the parking violation served on Fred's Mexican Café at 2511 South Kihei Road, Kihei Hi. by the Planning Department.

The construction includes removing the trees and bushes that borders their upper and lower portions of their property. The bushes were planted as an agreement between KKN and the shopping center to block the lights of the cars as they park in their upper parking lot, which faces ten of our condos at Kihei Kai Nani The bushes also act as a natural fence to insure some security for our property. The two large trees and bushes that were remove also blocked or muffled the noise from the air conditioners, the exhaust fans, loud customers, refrigerator trucks, garbage trucks and the dumping of the glass bottles in the dumpsters at the shopping center. Removal of the trees and bushes has now increased noise, increased the constant annoyance of headlights shining in 10 condo living rooms and increased security problems by removing a natural fence.

We are requesting that a planning inspector come out and inspect the project before the work is completed. They are presently building a 3 foot rock wall to hold back the soil and blacktop because of the height difference of the upper and lower parking lot. While the 3 foot wall may prevent the soil and upper parking lot blacktop from falling down; it will not prevent the cars from driving right over the elevation difference and land on top of cars parked in the lower portion on our side. (a picture of a recent incident is enclosed). To access Fred's lower parking lot cars have to enter Kihei Kai Nani's driveway.

The association would like to request that they build the rock wall higher or install a solid wood fence on top of the small rock wall to prevent or stop the cars in the upper parking lot from causing an accident, block the car lights, reduce noise from the shopping center and increase security for our complex. The fence or wall would stop patrons who have been drinking from jumping over the wall to the lower portion of the parking lot. Changing the height of the wall would be less expensive to correct now rather then wait until the project is complete. Our owners are very concerned and would appreciate your attention to this matter.

Regards,
Ethel Belway
President, KKN Board of Directors

Harry C. Davis
29 Mosswood Court
Novato, CA 94947
(415) 892-3652

July 17, 2008

Mr. Jeffrey Hunt, Director
County of Maui Department of Planning
250 South High Street
Wailuku, HI 96793-2155

RE: Correction of Parking Lot Violation at 2511 South Kihei Road, Moose's Restaurant and Fred's Mexican Cafe

Dear Mr. Hunt:

Please reference the enclosed letter to the Planning Commission from Ethyl Belway, the President of the Kihei Kai Nani Board of Directors. It requests Planning Commission intervention to require the construction of a solid fence or wall between the two properties located at 2495 and 2511 South Kihei Road and identifies noise issues caused by the restaurants at the 2511 commercial property location.

As the owner of Unit 203 in Building 1, the Kihei Kai Nani Building located directly north of the restaurant, I support her request for a solid fence or wall between the properties. I further request the Planning Commission require the property owner at 2511 S. Kihei Road to do the following to preserve the residential character of the Kihei Kai Nani complex and to mitigate noises generated by the restaurant activities:
(1) provide some landscaping along the property line, including preserving the existing ocean views of the units in Building 1,
(2) reduce the noise directed at Building 1 by the large HVAC vent on the restaurant building possibly by venting the noise in a different direction, and
(3) reduce the noise caused by delivery trucks by requesting that delivery trucks drivers turn off engines and refrigerator compressors during deliveries.

Further, I request that the Planning Commission not approve any future requests by the adjacent commercial property owner at 2511 that would permanently increase noise directed toward the Kihei Kai Nani Residential complex.

Wire Fence v. Solid Fence or Rock Wall

The round holes left on the top of the three foot rock wall recently constructed indicate the intent to install a wire fence possibly a steel chain link fence on the top of the wall. This is not adequate for the reasons explained in Ethyl Belway's letter. An open fence will allow the lights of the vehicles parking in the restaurant parking lot to shine into the lower units of KKN Building 1 and will do nothing to reduce the noise from vehicles and

patrons using the restaurant parking lot. I support the request for either a higher rock wall or wood fence on top of the existing rock wall.

Replacement of Landscaping Removed During Construction

Two large trees and a hedge which landscaped the property line between the two properties were removed during construction and replaced with one tree placed at the entrance of the Kai Nani driveway. Because the Kai Nani is unable to landscape its side of the property line, the result is that there is now no landscaping at all between the two properties. Owners of the units in Building 1 now have unobstructed views into the restaurant parking lot along with the restaurant garbage area, receptacles for used bottles, and trucks making deliveries to the restaurants. An additional 6-foot fence is not going to do much to improve this eyesore. Furthermore, the one replacement tree planted at the entrance to the Kai Nani property will block the beach and water views enjoyed by the Building 1 owners since the construction of the Kani complex several decades ago.

I request that you require some landscaping as a remedy to this situation and replacement of the one tree planted with a lower growing endemic planting such as a white hibiscus shrub which will not block the existing views from Building 1 units. I suggest that the hedge that existed between the two properties could be replaced by building a higher rock wall with a hollowed out top and planting a shrub in top of the wall.

Exhaust Fans, Air conditioner Noise

Unit 203 and the other condos in Building 1 are subject to a loud "roaring" noise that comes off the roof of the restaurant building probably from the very large HVAC exhaust vent that has a cap angled at 45 degrees that points the exhaust directly at KKN Building 1. The noise goes on all day and until late at night (midnight). The noise impedes the use of the lanais in Building 1. I request that you require the restaurant property owners to mitigate this noise possibly by turning the cap to another direction so the noise is not directed at Building 1.

Refrigerator Delivery Trucks

I request that you require mitigation of the noise of refrigerated delivery trucks that leave engines and compressors operating during deliveries to the restaurants. They sit in the parking lot directly opposite Building 1 with engines and loud compressors running for up to 30-minutes at a time. There may be several of them a day. Why can't the restaurant complex request the drivers to shut them off. They might post a sign in the driveway.

I spoke with a driver. He told me that whether the refrigeration can be shut off during deliveries by the driver is up to the company. Some like Budweiser will not allow it. Some will.

Summary

The above are not complaints directed at the restaurants themselves. We bought the unit with a restaurant next door. They have no control over the garbage truck noise, loud patrons, or vehicle noise. The noise they make by dumping bottles probably would be present at any restaurant. We are asking that they do some landscaping replacement and mitigate the fan noise and the refrigerator truck noise that they do have control over.

Thank you for your help in proving a remedy for this situation.

Sincerely,

Harry C Davis

Harry C Davis

CHRIS HART
& PARTNERS INC.

January 8, 2009

Harry C. Davis
29 Mosswood Court
Navato, CA 94947

Subject: Response to Comments on the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui.
TMK: (2) 3-9-020: 032

Dear Mr. Davis:

Thank you for your comments received by letter, dated September 4, 2008 (**See**: Attached Letter from Harry C. Davis dated, September 4, 2008.) I apologize for the delay in providing responses to your comments. Please be assured that your comment letter and this response will be included as part of the Draft Environmental Assessment (EA) Report which will be submitted to the County of Maui and State of Hawaii.

We provide responses to your comments as follows:

1st Comment:
"I am opposed to the development of the subject parcel without the addition of a rear access road for safety reasons."

1st Comment Response:
The applicant has been in contact with the property owner of the "Yamani" parcel directly East of the Nani Loa Project site, for the purpose of gaining a an additional access rout. The "Yamani" parcel identified as TMK: (2) 3-9-020: 004, abuts the future North South Collector Road. The applicant will continue to discuss the possibility of obtaining access through the "Yamani" parcel to the future North South Collector Road with the property owner.

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2nd Comment:
"Further, I oppose any further development until the owners of the restaurant complex next door reduce the noise they send into the lower Kai Nani units and replace the landscaping they recently removed while renovating their parking lot."

2nd Comment Response:
Please note the restaurant complex referred to in your letter is not associated with the Nani Loa Project, and that the Nani Loa Hotel Condominium Project will be above and remote from the "lower Kai Nani units".

In conclusion, we thank you for your comments on the proposed project. Please contact Jordan Hart at (808) 242-1955 for further information.

Sincerely yours,

Christopher L. Hart
President, ASLA
Landscape Architect & Planner

Enclosure: (1)
Letter from Harry C. Davis dated, September 4, 2008

CC: Mr. Tim Piasky
Project File (06-060)

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JUL 20 2007
CHRIS HART & PARTNERS
Landscape Architecture & Planning

cc: Jordan
06/040

Chris Hart & Partners Inc.
115 N. Market Street
Wailuku, Hi 96793-1706

7/15/07

Re: Nani Loa Residential Condominium Project
TMK No: (2) 3-9-020:032 at 2505 So. Kihei Road

Response to Letter to Neighboring Property Owners of June 22, 2007.

As the owner of Kihei Kai Nani condominium #363, Building 8, Ross Family Trust, Patricia L. Ross, Surviving Trustee, I object to the efforts to seek an amendment to the Kihei Makena Community Plan(CPA) from (MF) Multi- Family to (H) Hotel.

This Designation in the Kihei/Makena Community Plan was obtained with the assistance of former Mayor, Linda Lingle, and the Kihei Community Association and numerous local owners. Hotel designation would allow construction of 6 to 12 stories buildings under much less restrictive conditions. Impact on the "Super-Block", a shared driveway with Kihei Kai Nani through their parking lot, conjestion on South Kihei Road, over-development in Kihei, a HOTEL on approx. 1 and a third acres? etc. all led to the designation. WHY THE REQUEST FOR CHANGE???

The 2 types of MULTIPLE FAMILY (MF): A-1: two stories or 30 feet from ground level, not to exceed 25% of the lot area, and ground areas not to exceed 40% of the lot area. Set back-15 feet, side yards,10',1 to 2 stories.

THIS IS THE PROJECT GUIDELINES JOE SUGARMAN USED

FOR ALOHA VILLAGES IMMEDIATELY NEXT TO KIHEI KAI NANI (NORTH SIDE) FOR 2 STORIES, 84 UNITS ON 9 ACRES, AND RECEIVED SUPPORT OF KIHEI KAI NANI RESIDENTS.

A-2 APARTMENT DISTRICT: Height limit, 4 stories, Lot coverage 35%. Ground floor not to exceed 90% of lot area in the floor area/lot area ratio. Set back 20' for 3 to 4 story buildings, 15' side yards.

I respectfully request that the County Decision Makers visit the site prior to any hearing, to observe the large drainage channel bisecting the property and the restricted ingress and egress.

Thank you,

Patricia L. Ross, Trustee

Patricia L. Ross, Trustee
2495 So. Kihei Road #363
Kihei, Hi. 96753

cc: Planning Commission

CHRIS HART
& PARTNERS INC.

January 8, 2009

Ms. Patricia Ross
PO BOX 1056
Cedar Glen, California 92312

Subject: Response to Comments on the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui.
TMK: (2) 3-9-020: 032

Dear Ms. Ross:

Thank you for your comments received by letter, dated July 20, 2007 (**See**: Attached Letter from Patricia L. Ross dated, July 20, 2007.) I apologize for the delay in providing responses to your comments. Please be assured that your comments will be taken into consideration, and that the attached letter and this response will be included as part of the Draft Environmental Assessment (EA) Report which will be submitted to the County of Maui and State of Hawaii.

Thank you very much for providing comment on the above referenced project. Please direct any comments you may have by phone, or in writing, to Jordan Hart of this office at (808) 242-1955.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosures: (1)
Letter from Patricia L. Ross dated, July 20, 2007

CC: Mr. Tim Piasky
Project File (06-060)

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CHRIS HART & PARTNERS P.C.

March 20, 2009

Ms. Patricia Ross
PO BOX 1056
Cedar Glen, California 92312

Subject: Response to Comments on the **Nani Loa Hotel Condominium Project** Located at 2505 South Kihei Road, Kihei, Maui. TMK: (2) 3-9-020: 032

Dear Ms. Ross:

Thank you for your comments received by letter, dated July 20, 2007 (**See**: Attached Letter from Patricia L. Ross dated, July 20, 2007.)

I apologize for the delay in providing responses to your comments. Please be aware that your comments and concerns regarding over-development in Kihei have been taken into consideration by Victory Development.

The Nani Loa Project is seeking a Community Plan Amendment, which is a trigger for an HRS 343 Environmental Assessment. The Project site is also located within the Special Management Area which will require an SMA Permit for development. The potential impact of the project as well as proposed mitigation measures, will therefore be analyzed through a variety of technical studies and these studies will be reviewed by County, State and Federal Agencies and will be publically available for further comments by private individuals. Note that your letter and this response will also be included in the Draft Environmental Assessment (EA) Report and the Special Management Area (SMA) Use Permit Application Report. The existing drainage way which passes through the project site is being taken into consideration in project design and subsequent agency review.

Existing land use designations for the Nani Loa Project site are as follows:

State Land Use District Boundary:	Urban
Kihei-Makena Community Plan:	Multi Family (MF)
County Zoning:	H-2 Hotel District
Other Designation:	Special Management Area (SMA)

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Please note, a previous project, at the same location, consisting of 48 units and related improvements did receive an SMA Permit for the development in 1994. The Nani Loa Project is proposing less density than has been previously approved for the project site.

The project is seeking a Community Plan Amendment from Multi Family (MF) to Hotel (H), for the purpose of allowing the option of rental use for less than six months. The Multi Family height limitations also negatively impacted the design of a proper roof when accommodating the quantity of units required making the project feasible. Additionally, an analysis of view impacts will be included in the Draft EA and SMA Reports.

The Nani Loa Project is proposed as follows:

Building Height	56'-11"
Floors	4
Buildings	2
Number of Units	32
Parking Stalls	82

We believe that the reduced density and architectural design will create a project appropriate to its location and in harmony with nearby developments such as the existing Kihei Akahi located directly South of the project site, which is a six (6) story structure and is at a higher elevation than the project site.

Thank you very much for providing comment on the above referenced project. For further information, please contact Jordan Hart at (808) 242-1955.

Sincerely,

for Christopher L. Hart
President
Landscape Architect & Planner

Enclosures: (1)
Letter from Patricia L. Ross dated, July 20, 2007

CC: Mr. Tim Piasky
Project File (06-060)

Jordan Hart
115 N. Market St.
Wailuku
Hi. 96793

RECEIVED
JUL - 9 2007
CHRIS HART & PARTNERS
Landscape Architecture & Planning

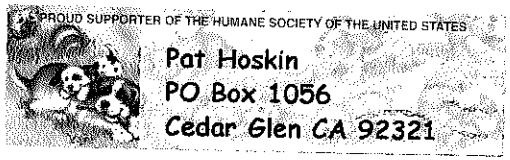
Dear Mr Hart:

My name is Pat Hoskin. I own Kihei Kai Nani unit 163. I have several concerns over the development in your letter.
1) I would like to know if you have the permits to have the units vacation rentable.
2) I would like to know exactly what you are going to do with the currant landscaping at Kihei Kai Nani which may be on your property.
3) I assume your property owners will be using our driveway for egress, how many cars are you going to allow per unit?
4) How is the water situation on Maui going to be effected?
5) I would like information as to which governmental agency I can write to concerning your application to obtain an amendment to the Kihei Makena Community Plan.
6) I have concerns over the increased noise to our association caused by the car traffic to your condominiums.

Are you going to send me a letter with these questions answered?

Thank You,
Pat Hoskin
P.O. Box 1056
Cedarglen
Ca. 92321

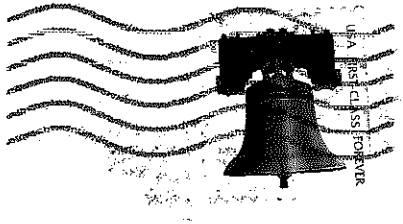
Pat Hoskin



Pat Hoskin
PO Box 1056
Cedar Glen CA 92321

SAN BERNARDINO CA 924

06 JUL 2007 PM 4 T



Jordan Hart
115 N. Market St
Wailuku
Hi.

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CHRIS HART & PARTNERS
Landscape Architecture & Planning
Jordan 06/040

July 31, 2007

Christopher L. Hart
115 N. Market St.
Wailuku, Maui
Hawaii 96793-1706

Dear Sir:

Thank you for responding to my questions. I still would like more information regarding the exact landscaping on the west side of the property for the proposed Nani Loa Project.
My unit is in the building directly adjacent to the west property line on the north side of the complex at Kihei Kai Nani. There are some very nice trees next to my building and next to building 9, but on your property. I would like them to remain standing to keep a visual distance and sound barrier from your projected buildings. I really dread the noise from the vehicles entering and leaving your property. I also think there will be a lot of foot traffic due to walking to the beach. I would like you to be specific as to how far into your property will the parking area, pool, and buildings be located from the west property line it would be in my interest to have a lot of landscaping using the existing trees and have the built structures be as far from the west line as possible. I intend to retire, downsize and live in my condominium full time during the 2008 year.

Thank You,
Pat Hoskin
Owner unit 163

CHRIS
HART
& PARTNERS INC.

January 22, 2008

Ms. Pat Hoskin
PO BOX 1056
Cedar Glen, California 92312

Regarding: Response to Second Comment Letter for Pre-Consultation on the proposed Nani Loa Residential Condominium Project, at 2505 South Kihei Road, Kihei, Maui, Hawaii.
TMK No.: (2) 3-9-020: 032

Dear Ms. Hoskin:

Thank you for providing further input for the proposed Nani Loa Residential Condominium Project on July 31, 2007 (**See** enclosed: Neighbor Comment Letter, FROM – Pat Hoskin, dated July 31, 2007). I apologize for the delay in responding to your comments. The following responses to your comments are provided for consideration:

1st Comment:
"I still would like more information regarding the exact landscaping on the west side of the property for the proposed Nani Loa Project.
My unit is in the building directly adjacent to the west property line on the north side of the complex at Kihei Kai Nani. There are some very nice trees next to my building and next to building 9, but on your property. I would like them to remain standing to keep a visual distance and sound barrier from your projected buildings."

1st Response:
At this time, the Landscape Planting Plan is not completed for the Nani Loa Project. The Landscape Plan is being prepared by Chris Hart & Partners and will be available for review at an upcoming meeting with the Kihei Kai Nani's Owners Association prior to the submittal of the project

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to the County of Maui for review. The Landscape Planting Plan will depict in detail the landscape planting proposed for the project.

Chris Hart & Partners (CH&P) has made contact with a representative of the Owners Association and will be scheduling a meeting date. Adequate notice to Owners Association Members, and residents within 500 fee of the project site will be provided prior to this meeting.

Because of the topography of the project site, grading will be required prior to construction of the Nani Loa Project. Site grading will likely require the removal of existing trees on the project site. As stated in our previous letter, Victory Development Nani Loa LLC., would not be opposed to allowing the Kihei Kai Nani Owners Association to take possession of any trees existing on the project site that are not designated for use in the Nani Loa Landscape Planting Plan. Removed trees could then be transplanted onto the Kihei Kai Nani property to maintain a barrier between the existing Kihei Kai Nani and the proposed Nani Loa Project.

2nd Comment:
"I really dread the noise from the vehicles entering and leaving your property. I also think there will be a lot of foot traffic due to walking to the beach."

2nd Response:
As noted previously, the parcel which is proposed for the Nani Loa Project was subdivided from the Kihei Kai Nani parcel, prior to the sale of any Kihie Kai Nani units. At that time, the owner of the Kihei Kai Nani parcel created a Perpetual Easement for access though the Kihei Kai Nani parking lot/driveway. Though the Perpetual Easement has not been in use, it has existed for approximately thirty-four (34) years (recorded November 13, 1972).

It should be anticipated that vehicle and pedestrian access will pass though the Perpetual Easement to South Kihei Road; however, there is no reason to anticipate that the noise generated from future residents of the Nani Loa Project will be greater than noise generated by an equal number of residents of the existing Kihei Kai Nani.

3rd Comment:
"I would like you to be specific as to how far into your property will the parking area, pool, and buildings be located from the west property line it would be in my interest to have a lot of landscaping using the existing trees and have the built structures be as far from the west line as possible."

3rd Response:
Plans for the Nani Loa Project are currently being re-evaluated by the project developer and architect. The project design proposed for construction will be available for review and comment at the above referenced community meeting.

In conclusion, we appreciate your input regarding the proposed Nani Loa Residential Condominium Project and hope that you will find our responses acceptable. Furthermore, we hope that you will find the proposed project consistent with the Urban pattern of development that exists in the immediate area, including the Kihei Kai Nani, Kihei Akahi and Maui Banyan.

For further information, please contact Jordan E. Hart at (808) 270-1563.

Sincerely yours,

Christopher L. Hart
President
Landscape Architect & Planner

Enclosures: (1)
Neighbor Comment Letter, FROM – Pat Hoskin, dated July 31, 2007

CC: Mr. Tim Piasky
Project File (06-060)

Destination Maui, Inc.:
Martin Cutler, Property Management Representative
Phone: (808) 244-9021
Fax: (808) 243-9883
Email: martin@destinationmaui.net

I received a phone call from Martin Cutler of Destination Maui, Inc., a property management company. Mr. Cutler stated that he is the property manager for Kihei Kai Nani. Mr. Cutler was under the impression that CH&P was owner and developer of the Nani Loa project site. I informed him that we are not. Mr. Cutler asked if Victory Development would like to be contacted by him directly, I stated that I would need to check with Victory Development.

Mr. Cutler had the following comments:
Dirt & debris including trash came down from the Nani Loa project site, lot 1-A into the Kihei Kai Nani, after the large storm that recently occurred on Maui.

Mr. Cutler had the following questions regarding storm runoff & debris.

How will the property owner fix the existing mess from the previous rain storm?

This includes debris caught in the Kihei Kai Nani drainage system at the east end of the property nearest lot 1-A.

How the property owner prevent the situation from occurring again?

I stated that there were no ground disturbing activates occurring on the site currently, but that there was a construction site nearby with a large amount of exposed soil. Mr. Cutler stated that he is sure that debris didn't come from the construction site and was sure debris came from lot 1-A.

Mr. Cuter had further questions regarding shared maintenance of the Kihei Kai Nani access driveway:

If the project is built and gains access through the existing Kihei Kai Nani Driveway.

How will the future residents participate with Kihei Kai Nani residents for the maintenance of the access driveway?

January 21, 2008
Comments Received by:
Jordan E. Hart

APPENDIX C
Draft EA Agency Comments

09/9741

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
Comptroller

SANDI YAHIRO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
LAND SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

Response refer to:
Ma-226(09)

'09 AUG 27 P12:34

August 25, 2009

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMORANDUM

TO: Jeffrey S. Hunt, AICP, Planning Director
Maui County Planning Department

ATTN.: Joseph M. Prutch, Staff Planner

FROM: Reid K. Siarot, State Land Surveyor
DAGS, Survey Division

SUBJECT: EA 2009/0001, CPA 2009/0001 and SM1 2009/0003
TMK: 3-9-20: 32
Project Name: Nani Loa Hotel Condominiums
Applicant: Chris Hart & Partners, Inc. for Victory Development Hawaii, LLC

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.

Should you have any questions, please call me at 586-0390.

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EPO-09-127

September 1, 2009

09 SEP -4 P12:50

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Mr. Joseph M. Prutch, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Prutch:

SUBJECT: EA 2009/0001, CPA 2009/001 & SM1 2009/0003
Application for Environmental Assessment Community Plan Amendment and Special Management Area Permit for Nani Loa Hotel Condominiums
Kihei, Maui, Hawaii
TMK (2) 3-9-020: 032

Thank you for allowing us to review and comment on the subject document. We have no comments at this time. We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist). The Hawaii State Department of Health, Built Environment Working Group, recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

KARL K. MOTOYAMA, ACTING MANAGER
Environmental Planning Office

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 5, 2009

'09 SEP -9 P12:02
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

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

Attention: Mr. Joseph M. Prutch, Staff Planner

Ladies and Gentlemen:

Subject: Nani Loa Hotel Condominiums

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to Division of Aquatic Resources for their review and comment.

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Charlene E. Unoki
for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
DIVISION
2009 SEP -4 P 3:23
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

AQUATIC RESOURCES: 2561	
DIRECTOR	
COMM. FISH.	
AQ RES/ENV	
AQ REC	
PLANNER	
STAFF SVCS	
RCUH/UH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	
TECH ASST	✓
Return to:	
No. Copies	
Copies to:	
Due Date:	

August 17, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
x Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

RECEIVED
AUG 18 2009
AQUATIC RESOURCES

FROM: Morris M. Atta
SUBJECT: Nani Loa Hotel Condominiums
LOCATION: Island of Maui
APPLICANT: Chris Hart & Partners

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by September 2, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 2 Sept. 09

DIVISION OF AQUATIC RESOURCES - MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES
130 Mahalani Street
Wailuku, Hawai'i 96793
September 1, 2009

To: Alton Miyasaka, Aquatic Biologist

From: Skippy Hau, Aquatic Biologist

Subject: Nani Loa Hotel Condominiums
Kihei, Maui TMK (2) 3-9-020:032 (DAR 2231)
(Comments to Morris Atta (Land) by September 2, 2009)

I reviewed the information provided in the CD and would like to comment that the finding of no significant impact still lacks information on the "cumulative impact" on the current demand on water and sewer services. What is the current status of the Mokuhau well? The Water Department is requesting to treat more surface water for the Central Water System. A preliminary decision will be restoring flow to Na Wai Eha Streams in the future.

Can the Water Department handle an increase of 17,920 gallons per day from this development which was based on 2002 water system standards? Can the wastewater system address the 4.6 MGD from this development based on 1993 wastewater flow standards? Are these standards valid for our current weather which seems to be experiencing a third year of drought.

The preliminary drainage determination that development will be responsible for an increase of 3.89 cfs to a total drainage of 5.86 cfs. Does the proposed landscape and excavation of the property address all on site drainage? Will there be any drainage runoff flowing down to adjoining properties?

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

'09 SEP -4 P12:54

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

September 3, 2009

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

Attention: Mr. Joseph M. Prutch, Staff Planner

Ladies and Gentlemen:

Subject: Nani Loa Hotel Condominiums CPA 2009/0001, EA 2009/0001, SM1 2009/0003

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Historic Preservation will be submitting comments through a separate letter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
LAND DIVISION
2009 AUG 31 A 10:40
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

'09 AUG 18 AM 10:54 ENGINEERING

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 17, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
__Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
x Office of Conservation & Coastal Lands
__Land Division –
x Historic Preservation

FROM: Morris M. Atta
SUBJECT: Nani Loa Hotel Condominiums
LOCATION: Island of Maui
APPLICANT: Chris Hart & Partners

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by September 2, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: _____
Date: 8/28/09

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD\MorrisAtta
REF.: EASMANaniLoaHotelCondo
Maui. 472

COMMENTS

(X) **We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone C. The Flood Insurance Program does not have any regulations for developments within Zone C.**

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments:_____

( ) Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 8/28/09

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

December 28, 2009

Mr. Joseph M. Prutch
Staff Planner
County of Maui, Department of Planning
250 South High Street
Wailuku, Hawai‘i 96793
joseph.prutch@mauicounty.gov

LOG NO: 2009.3458
DOC NO: 0912PC72
Archaeology

SUBJECT: Chapter 6E-42 Historic Preservation Review –
Nani Loa Hotel Condominium Environmental Assessment (EA 2009/0001), Community Plan Amendment (CPA 2009/0001), and Special Management Area Use Permit (SM1 2009/0003) Applications
Kama‘ole Ahupua‘a, Wailuku District, Island of Maui
TMK: (2) 3-9-020:032

Thank you for the opportunity to comment on the aforementioned project, correspondence for which we received on August 19, 2009. Please accept our apologies for the lengthy delay in commenting.

Based on the submitted information, the project involves the development of 32 two and three bedroom residential units in two four-story buildings, along with ground level parking, swimming pool, shade pavilion, walkways, administrative offices and associated infrastructure. The 1.44 acre subject parcel is situated at 2505 S. Kihei Road in Kihei.

A search of our records indicates that an archaeological assessment (archaeological inventory survey resulting in an absence of culturally significant and/or historic properties) was conducted of the proposed project area by Scientific Consultant Services, Inc. in 2007, for which a report was accepted by this office in April of 2008 (SHPD LOG NO: 2007.1207/DOC NO: 0804PC32). Even though no historically significant resources were identified, precautionary archaeological monitoring was recommended for future ground altering disturbance in the area. However, we have not yet received the monitoring plan which will need to be reviewed and accepted by this office prior to such work taking place.

Therefore, until the monitoring plan for the proposed project has been submitted to, reviewed and accepted by the SHPD, we **cannot** agree that the proposed project will have no effect on historic properties.

If you have any questions or comments regarding this letter, please contact the SHPD's Lead Maui Archaeologist, Ms. Patty Conte (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jordan Hart: jhart@chpmaui.com
Jeff Hunt, Director, Dept. of Planning, FAX (808) 270-7634

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor

LORI TSUHAKO
Director

JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

2009 SEP 24 PM 2 03
DEPARTMENT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMORANDUM

TO: Joseph M. Prutch, Staff Planner
Department of Planning

FROM: Lori Tsuhako, Director
Department of Housing and Human Concerns

DATE: September 24, 2009

SUBJECT: Draft Environmental Assessment, Community Plan Amendment Application and Special Management Area Permit Application For Nani Loa Hotel Condominiums at TMK (2) 3-9-020: 032, Kihei, Maui, Hawaii (CPA 2009/0001) (EA/2009/0001) (SM1 2009/0003)

The Department has reviewed the Draft Environmental Assessment, Community Plan Amendment Application and Special Management Area Permit Application for the above subject project and would like to offer the following comments:

1. We concur with the applicant's statement that the subject project will be subject to Chapter 2.96, Maui County Code, and that the proposed subject project will be required to provide 16 Residential Workforce Housing units.

2. The Residential Workforce Housing Agreement for the subject project needs to not only be finalized but also fully executed and recorded at the Bureau of Conveyances prior to the issuance of Final Subdivision Approval or Building Permits.

Please call Mr. Wayde Oshiro of our Housing Division at 270-7355 if you have any questions.

cc: Housing Division

CHARMAINE TAVARES
Mayor

TAMARA HORCAJO
Director

ZACHARY Z. HELM
Deputy Director

(808) 270-7230
ax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

'09 AUG 31 A10:49

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

August 24, 2009

MEMO TO: Joseph M. Prutch, Staff Planner
Department of Planning

FROM: Tamara Horcajo, Director

SUBJECT: **NANI LOA HOTEL CONDOMINIUMS**
2505 South Kihei Road
TMK (2) 3-9-020: 032
EA and SMA Permit Application

We have reviewed the Environmental Assessment and Special Management Area permit applications for the proposed 32 unit condominium and offer the following comments.

The Department will require the applicant to satisfy the parks assessment requirement with a cash contribution in lieu of land. The current park assessment fee rate for the Kihei Community Plan Area is $16,075.00 per unit in excess of three (3). Since the 3-unit exemption has not been used, the parks and playground assessment fee for the subject development is (32 minus 3) units times $16,075.00 or $466,175.00. The rate used in the Draft EA dated March 20, 2009 references the 2009 rate which expired on June 30, 2009.

Be advised that the aforementioned rate and fees are valid until June 30, 2010 and are subject to change thereafter. The applicant is required to pay the applicable park assessment fees at the time of building permit issuance.

Should you have any questions or concerns please contact me or Patrick Matsui, Chief of Parks Planning & Development at 270-7931.

xc: Patrick Matsui, Chief of Parks Planning and Development
TM: PTM: bks

09/10130

CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

September 11, 2009

'09 SEP 15 A9:49

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMO TO: JEFFREY S. HUNT, A.I.C.P., PLANNING DIRECTOR

FROM: MILTON M. ARAKAWA, A.I.C.P., DIRECTOR OF PUBLIC WORKS

SUBJECT: NANI LOA HOTEL CONDOMINIUMS FOR VICTORY DEVELOPMENT HAWAII, LLC; KIHEI, MAUI, HAWAII; TMK: (2) 3-9-020: 032 EA 2009/0001, CPA 2009/0001 AND SM1 2009/0003

We reviewed the subject application and have the following comments:

1. We note that the center of the Nani Loa Hotel Condominiums property will be designed to convey the storm water flow. We would recommend caution about landscape planting within this area that could potentially be uprooted/broken off such that the landscape debris would clog the inlet of the two foot (2') by seven foot six inch (7' 6") box culvert. This would result in storm water overtopping the box culvert and causing greater damage to the property and possibly flowing into the underground parking area.

2. The applicant shall be responsible for all required improvements as required by Hawaii Revised Statutes, Maui County Code and rules and regulations.

3. As applicable, construction plans shall be designed in conformance with Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and Standard Details for Public Works Construction, 1984, as amended.

4. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform Traffic Control Devices for Streets and Highways, 2003.

4. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform Traffic Control Devices for Streets and Highways, 2003.

5. In the Traffic Impact Report on Page 3, Section B, second sentence, reference is made that the proposed development will be completed and occupied by Year 2007. As the report was developed in 2006, the data and analysis need to be updated to the current proposal.

   The base data for the Traffic Impact Report is dated May, 2006 making the information three (3) years of age. Please demonstrate that the data is still applicable.

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

MMA:MMM:jc
xc: Highways Division
Engineering Division
S:\LUCA\CZM\Draft Comments\nani_loa_hotel_condominiums_ea_cpa_sm1_39020032_jc.wpd

CHARMAINE TAVARES
Mayor

JEFFREY K. ENG
Director

ERIC H. YAMASHIGE, P.E., L.S.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

September 11, 2009

Mr. Joseph M. Prutch, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku HI 96793

Re: I.D.: EA 2009/0001, CPA 2009/0001, SM1 2009/0003
TMK: 3-9-020:032
Project Name: Nani Loa Hotel Condominiums

Dear Mr. Prutch:

Thank you for the opportunity to comment on this application.

Source Availability and Consumption
The project area is served by the Central Maui System. The main sources of water for this system are the designated Iao aquifer, Waihee aquifer, and the Iao tunnel and Iao-Waikapu Ditch from the designated Na Wai Eha. New source development projects include Maui Lani Wells, Waikapu South well and Waiale Surface Water Treatment Plant. A 2-inch meter has been issued to serve the project site. Water use for the project once built out would be about 17,900 gpd based on per unit standards. However, water use in Kihei tends to be higher than system standards. There is currently no additional source available to accommodate new customers according to system standards on the Central Maui System. Should larger or additional meter be needed, the Department may delay issuance of meters until new sources are on line. Domestic and irrigation calculations to verify meter adequacy will be required in the building permit process. The Department will not issue temporary construction meters for Central Maui projects.

System Infrastructure
The property is served by one fire hydrant, a 12 inch waterline and a 6-inch waterline at 820 feet distance along South Kihei Road. Fire flow, domestic and irrigation calculations will be required in the building permit process where system requirements will be determined.

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Printed on recycled paper

Conservation

We are pleased to note the application material proposes to adapt the following conservation measures in landscaping: use of drought-tolerant landscape plant species consistent with the Maui County Planting Plan and Xeriscaping concepts, including the use of efficient irrigation systems zoned to match the ET requirements of the plant species, drip irrigation wherever possible, rain sensor specified for each irrigation controller, automatic controllers and capacity to utilize reclaimed R-1 water when available. We recommend that the proposed conservation measures as well as the measures listed below be made a condition of the subject permits.

Use Non-potable Water: Use brackish or reclaimed water from the Kihei Wastewater Facility for dust control during construction.

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. The applicant should establish a regular maintenance program.

Pollution Prevention

In order to protect ground and surface water sources, we encourage Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction. To supplement BMPs as required to meet state and county regulations, we recommend that the mitigation measures below be a condition of the subject permits.

1. Prevent cement products, oil, fuel and other toxic substances from falling or leaching into water.
2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
3. Retain ground cover until the last possible date.
4 Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.

Should you have any questions, please contact our Water Resources and Planning Division at 244-8550.

Sincerely,

Jeffrey K. Eng, Director
emb

c: engineering division
attachments:
A Checklist of Water Conservation Ideas for the Condominiums

Nani Loa Hotel Condo EA CPA SM.wpd

A Checklist of Water Conservation Ideas for Condominiums

COOLING

Cooling Towers

Cooling Towers are used to reject heat from air conditioning systems. In a cooling tower, a circulating stream of warm water contacts an air flow, causing evaporation of a portion of the water. When this water evaporates, the water which remains behind is cooled. The cooled water then circulates through a cooling system, warms and then returns to the tower.

- ☞ Understand Your System: Prepare an inventory of each cooling tower you have, its cooling capacity, and the equipment or processes that it serves
- ☞ If you purchase chemicals for the treatment of the recirculating cooling tower water, have the chemical vendor explain the purpose and action of each chemical.
- ☞ Have your chemical vendor provide a written report of each service call, and be sure that the vendor explains the meaning of each analysis performed,as well as the test results.
- ☞ Tell your chemical vendor that water conservation is a priority, and ask about alternatives that may reduce the amount of water bled-off from the towers.
- ☞ Have vendors bid for your facility's water cooling tower water treatment. Require a predetermined minimum level of water efficiency. Have them provide figures showing projected annual water and chemical consumption and costs.
- ☞ Consider incorporating sulfuric acid to reduce carbonate scale and achieve significantly higher cycles of concentration. If you use sulfuric acid, be sure to observe appropriate safety precautions.
- ☞ Ozone is another alternative that can help remove dissolved minerals and act as a biocide. Again, observe the appropriate safety precautions.
- ☞ If available, use reclaimed water as a source of cooling tower make-up water.
- ☞ Blow-down water is the release of some of the circulating water to remove suspended and dissolved solids left behind as pure water evaporates from the system. Re-use blow down where possible for non-potable uses.

Evaporative Coolers

Evaporative coolers lower air temperature by increasing the humidity of incoming air being drawn into a building. The air's ambient or "dry bulb" temperature is lowered when the air absorbs water vapor. After a short period of operation, the recirculating air in the cooler reaches wet bulb temperature, which is theoretically the lowest temperature to which the entering air may be cooled. Some evaporative coolers have recirculation pumps.

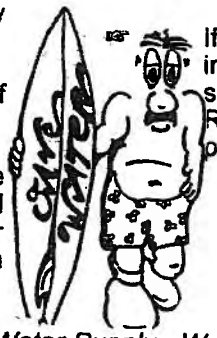
All evaporative coolers require either a small amount of bleed-off or regular cleaning to maintain and prevent damage to the coolers pads. The principle opportunity for conservation in evaporative cooling is to reduce the amount of water bled-off, and to reuse that water wherever possible.

- ☞ Be sure your coolers have pumps to recirculate the water. This decreases water consumption and increases cooling efficiency.
- ☞ Check to make sure you are not bleeding off an excessive amount of water. For a typical small cooler, anything more htan a few gallons per hour may be excessive.
- ☞ Pipe the bleed-off water from your coolers to help water a landscaped area!

Eliminate Once Through Cooling!

Some coolers pass water through the equipment only once, and then discard it. "Single pass" technology is not good for two reasons. First, these single pass coolers use too much water! Secondly, they do not cool as effectively, because the water does not cool to wet bulb temperature. This type of cooling is illegal under Maui County Codes! Make sure your air conditioners, ice makers and other cooling systems are not single pass models!

- ☞ Replace single-pass cooling models with air-cooled or recirculating models
- ☞ Connect to a recirculating cooling water loop. Or retrofit models to be recirculating.
- ☞ If a piece of equipment can not be replaced immediately, remember, it is illegal to dump single pass cooling water into the sewer system. Re-use this water for landscaping or other non-potable uses.



For More Information Contact the Maui County Board of Water Supply - Water Resources & Planning Division @ 243-7199

A Checklist of Water Conservation Ideas for Condominiums

PLUMBING MEASURES FOR EACH UNIT

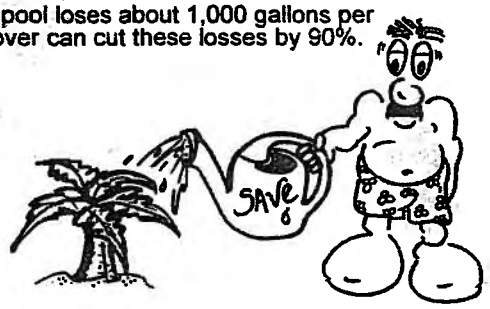
- Replace toilets with Ultra Low Flush Models, or retrofit with low flow flappers. Contact the Maui County Board of Water Supply at 243-7199 or the Wastewater Division at 243-7417 for more information.
- Retrofit faucets with aerators, or consider alternative faucet types such as self closing or, automatic sensor controlled faucets.
- Replace showerheads with low flow models. Contact the Maui County Board of Water Supply at 243-7199, or the Public Works Wastewater Division at 243-7417 to find out how you can get these!
- Check for leaks! Check for leaks! Check for leaks! Do dye tablet or food coloring tests in toilets to check for hidden leaks. Check for dripping faucets indoors and out!

COMMON LAUNDRY AREAS

- Efficient washing machines can save up to 20 gallons per load. These also save on energy. If you are replacing laundry facilities don't even consider anything but the new horizontal axis models. These not ony save up to 40% of water used, but deliver even more substantial energy savings - up to 65%!
- Water boilers also require blow-down, or bleed-off, just like air conditioners. Monitor total dissolved solids, and blow down only when necessary!
- Avoid excessive filter or softener back flush. Back flush only when needed.

NON-LANDSCAPED AREAS OUTDOORS

- Never hose your sidewalks and driveways. This is a complete waste of water, and a hose can use 25 gallons in just 5 minutes. Remember: A broom is best.
- Check for leaks! Note the number of outdoor faucets on the outsides of buildings. Make a list and check every one regularly.
- Cover Pools and Jacuzzis when not in use. An average sized pool loses about 1,000 gallons per day. A pool cover can cut these losses by 90%.



EDUCATION

- Knowledge is power. Educate people about how they can help to save water at your building or facility. You may be surprised at how willing people are to chip in, once they know what to do!

LANDSCAPES

- Understand your system: Develop a schematic of all water entry points. Know where your faucets, time clocks, solenoids, booster pumps, sprinklers, bubblers, valves, pipes and etc. are located.
- Make a checklist of system elements and check each one regularly for leaks! Finding and repairing leaks can lead to big savings, especially in irrigation systems!
- Use turf only where actually necessary. Avoid turf except in picnic or active play areas.
- Choose the right plants. Native plants appropriate for your region are best. These save water, because they are adapted to survive on the natural rainfall of the area. Besides saving water, they also help to avoid the spread of invasive alien plant species which can destroy native ecosystems. And they contribute to the true Hawaiian sense of place.
- Avoid over-watering! Use soil moisture over-rides and rain-shutoffs on all automated systems. Reset controllers at least once per month to account for changing evapotranspiration.
- Zone your plants. This means that plants with similar water needs should be grouped together. This avoids wasting water, overwatering some plants and under-watering others.
- Never water during the heat of the day. The best time to water is just around sunrise. Evenings are also acceptable. Once the sun comes up, the evapotranspiration rate soars, and much of your water is wasted.
- Having your soil tested also helps you to learn what type of watering is needed. Clay soils take from ¼ to ½" of water per hour before water starts running off and being wasted. Sandy soils require somewhat more frequent, shorter watering.
- Mulch, compost or other organic material will help soils hold moisture, keep the ground from overheating and discourage weeds. Loosening the soil while you add the organic matter will also help keep your lawn healthier
- Root feeder or water aerator probes around trees and bushes will help to direct water where it is needed. You can also build a watering basin in the soil around the base of your plants to help the water soak in deeply.

For More Information, Contact the Maui County Board of Water Supply - Water Resources & Planning Division @ 243-7199

Jordan Hart

From: Joseph Prutch [Joseph.Prutch@co.maui.hi.us]
Sent: Wednesday, October 21, 2009 1:08 PM
To: Jordan Hart
Subject: Fwd: EA 2009/0001, CPA 2009/0001 & SM1 2009/0003 Nani LoaHotel Condominiums

Comment from Fire Dept.

Joe Prutch, Staff Planner
Maui County, Current Planning
250 South High Street
Wailuku, HI 96793
office: (808) 270-7512
fax: (808) 270-1775
joseph.prutch@mauicounty.gov

>>> Paul Haake 10/21/2009 1:01 PM >>>
Joseph,

On this subject, the Dept. of Fire & Public Safety has no comment at this time. We do reserve the right to comment on any building permit processed for this parcel (2) 3-9-020:032.

Sorry for the delay.

Thanks,

Captain Paul Haake
Fire Prevention Bureau
244-9161 ext. 22
244-1363 fax

POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

OUR REFERENCE

YOUR REFERENCE

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

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

September 2, 2009

'09 SEP -4 A9:52

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

MEMORANDUM

TO : JOSEPH M. PRUTSCH, STAFF PLANNER
DEPARTMENT OF PLANNING

FROM : GARY A. YABUTA, CHIEF OF POLICE

SUBJECT : I.D. : EA 2009/0001, CPA 2009/0001, & SM1 2009/0003
TMK : (2) 3-9-020: 032
Project Name : Nani Loa Hotel Condominiums
Applicant : Chris Hart & Partners, Inc. for victory Development Hawaii, LLC

____ No recommendation or comment to offer.

__x__ Refer to enclosed comments and/or recommendations.

Thank you for giving us the opportunity to comment on this project.

AC Wayne Ribao

Assistant Chief Wayne Ribao
For: GARY A. YABUTA
Chief of Police

Enclosure

COPY

I CONCUR WITH OFC. HICKLE'S COMMENTS. AC W. [illegible] 9/1/09

TO : **GARY YABUTA, CHIEF OF POLICE, COUNTY OF MAUI**

VIA : **CHANNELS** Capt. [illegible] 08/01/09

FROM : **BRAD HICKLE, POLICE OFFICER III, DISTRICT VI KIHEI**

SUBJECT : **APPLICATION FOR ENVIRONMENTAL ASSESSMENT (EA), COMMUNITY PLAN AMENDMENT (CPA) & SPECIAL MANAGEMENT AREA PERMIT (SMA) FOR THE NANI LOA HOTEL CONDOMINIUMS**

APPLICANT INFORMATION:

The application was prepared by Chris Hart and Partners, Inc. on behalf of the owners, Victory Development Nani Loa, LLC.

The applicant is proposing the development of 32 residential units in two buildings with ground level parking, swimming pool, shade pavilion, walkways and administrative office.

The proposed property is an undeveloped parcel of land bearing the tax map key number of TMK (2)3-9-020: 032. The property is located mauka of the Kihei Kai Nani and will have a physical address of 2595 South Kihei Road.

IMPACT ON POLICE:

The development of any undeveloped property in the south Maui area will have some impact on Police services in south Maui.

Although I do not believe this 32 residential unit hotel condominium will have a great impact on Police services, I do believe this development combined with the many other developments in South Maui will have a measurable impact.

We are already seeing an increase in the number of cases that officers are assigned to in just the past few years. Police calls for service are increasing and response times are slower than they routinely have been only a few years ago. Cases are assigned and handled on a priority level basis and the general public will feel the affect's on a variety of levels if new developments continue to be built. Clearly the new developments, the increase in population and the lack of trained Police officers available to the public are all factors which will determine the impact on Police services in the South Maui area.

RECOMMENDATIONS:

In an attempt to take a more proactive approach to reducing crime and criminal activities in the South Maui area we are recommending the applicant use "best practices" in Crime Prevention Through Environmental Design (CPTED) when developing this property.

CPTED is the framework whereby the design of buildings, proper placement of lighting and use of foliage are combined to discourage crime and criminal activities on your property.

To discover more about the application of the CPTED principals refer to the National Criminal Justice Reference Service web site at, http: www.ncjrs.org.

I further recommend that this application be returned to Mr. Joseph PRUTCH, Staff Planner for the County of Maui Department of Planning for final review and disposition in this matter.

Respectfully Submitted,

Officer Brad Hickle E-9966
08/28/09 14:45 hours

COMMENTS:

CONCUR WITH OFF. B. HICKLE'S CONCERNS. IN ADDITION, I WOULD LIKE TO STATE THAT THIS DEVELOPMENT'S POPULATION DENSITY AND "FLAG-LOT" DESIGN WILL MAKE IT DIFFICULT FOR EMERGENCY SERVICES VEHICLES TO QUICKLY ACCESS ON THE ONE ROAD COMING FROM SOUTH KIHEI ROAD.

T. Rethwum #7440
8/28/09

POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

OUR REFERENCE

YOUR REFERENCE

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

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

September 2, 2009

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DEPARTMENT OF PLANNING

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AC Wayne Ribao

Assistant Chief Wayne Ribao
For: GARY A. YABUTA
Chief of Police

Enclosure

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T. Rustrum #7440
8/28/09

CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

KATHLEEN ROSS AOKI
Deputy Director

RECEIVED

AUG 19 2009

CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

CC: Jordan
061060

COUNTY OF MAUI
DEPARTMENT OF PLANNING

August 14, 2009

Mr. Jordan E. Hart
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

Dear Mr. Hart:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE PROPOSED NANI LOA HOTEL CONDOMINIUMS ON 1.44 ACRES, AT 2505 SOUTH KIHEI ROAD, KIHEI, ISLAND OF MAUI, HAWAII; TMK: (2) 3-9-020:032 (EA 2009/0001)

At its regular meeting on August 11, 2009, the Maui Planning Commission (Commission) reviewed the above-referenced document and provided the following questions:

1. Does the hotel zoning allow for taller buildings than the Multi-Family zoning?

2. Does the hotel zoning allow for short term rentals?

3. Please clarify if the project is a residential condominium or a condominium hotel?

4. Are you running a full service hotel in any way, shape or form? Further, for a full service hotel there is a certain number of employees per room, would there be substantially less employees per room in your condominium proposal?

5. Would the hotel zoning allow this project to be a timeshare? If so, any plans to do so?

6. Does the Workforce Affordable Housing Ordinance apply to this project? If so, how?

7. Are you going to retain all surface runoff generated by the development on-site?

8. How will you deal with the "Show me the Water" bill?

9. Have you considered renewable energy generation, especially since you have beautiful south facing roofs? If so, would you use this to generate electricity?

Should you require further clarification, please contact Staff Planner Joseph Prutch via email at joseph.prutch@mauicounty.gov or by telephone at 270-7512.

Sincerely,

JEFFREY S. HUNT, AICP
Planning Director

xc: Clayton I. Yoshida, AICP, Planning Program Administrator
Joseph M. Prutch, Staff Planner
EA Project File
General File

JSH:JMP:ma
K:\WP_DOCS\PLANNING\EA\2009\0001_NaniLoaCondos\MPCcommentsDEA.wpd

APPENDIX D
Deed and Perpetual Easement

THIS DOCUMENT HAS BEEN RECORDED IN THE
BUREAU OF CONVEYANCES AS DOCUMENT
NO 2006-027147 AND/OR LAND COURT
DOCUMENT NO. ON THIS 18th
DAY OF April 2006
BY
Old Republic Title & Escrow of Hawaii

LAND COURT SYSTEM REGULAR SYSTEM

After Recordation, Return By Mail (XXX) Pickup ( ) To:

Victory Development Nani Loa, LLC
25 N. Santa Anita Ste. A
Arcadia, CA 91006

Escrow No. 6824003472-JW
Total Pgs. 12

TMK No. (2) 3-9-020-032

WARRANTY DEED

THIS DEED, made this 10th day of April 2006, by ACTIF INVESTMENTS, LLC, a Hawaii limited liability company, whose address is 737 Bishop Street, Suite 1455, Honolulu, Hawaii 96813, hereinafter called the "Grantor", in favor of VICTORY DEVELOPMENT NANI LOA, LLC, a Hawaii limited liability company, whose address is 25 N. Santa Anita, Ste A.,Arcadia, California 91006 , hereinafter called the "Grantee",

W I T N E S S E T H :

That in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, the Grantor does hereby grant, bargain, sell and convey unto the Grantee, as Tenant in Severalty, all of the Grantor's right, title and interest in and to that certain property described in Exhibit "A" attached hereto and made a part hereof.

And the reversions, remainders, rents, issues and profits thereof and all the estate, right, title, and interest of the Grantor, both at law and in equity, therein and thereto;

And the reversions, remainders, rents, issues and profits thereof and all the estate, right, title, and interest of the Grantor, both at law and in equity, therein and thereto;

TO HAVE AND TO HOLD the same, together with all buildings, improvements, rights, easements, privileges and appurtenances thereon and thereto belonging or appertaining or held and enjoyed therein, unto the Grantee, in fee simple.

AND, in consideration of the premises, the Grantor does hereby covenant with the Grantee that the Grantor is seized of the property herein described in fee simple; that said property is free and clear of and from all liens and encumbrances, except for the lien of real property taxes not yet by law required to be paid, and except as may be specifically set forth herein; that the Grantor has good right to sell and convey said property, as aforesaid; and, that the Grantor will WARRANT AND DEFEND the same unto the Grantee against the lawful claims and demands of all persons, except as aforesaid.

The rights and obligations of the Grantor and the Grantee shall be binding upon and inure to the benefit of their respective estates, heirs, personal representatives, successors, successors in trust and assigns. All obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention shall be clearly expressed elsewhere herein. The conveyance herein set forth and the warranties of the Grantor concerning the same are expressly declared to be in favor of the Grantee and the Grantee's heirs, personal representatives, successors, successors in trust and assigns.

The terms "Grantor" and "Grantee", as and when used herein, or any pronouns used in place thereof, shall mean and include the masculine or feminine, the singular or plural number, individuals, partnerships, trustees or corporations, and their and each of their respective heirs, personal representatives, successors, successors in trust and assigns, according to the context thereof.

The parties hereto agree that this instrument may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same agreement, binding all of the parties hereto.

IN WITNESS WHEREOF, the undersigned have executed these presents on the day and year first above written.

ACTIF INVESTMENTS, LLC, a Hawaii
Limited liability company

By: WELTON KALANI
Its Managing Member

"Grantor"

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

On this 10th day of April, 2006, before me personally appeared WELTON KALANI, to me known (or proven to me) to be the person described in and who executed the foregoing instrument, and acknowledged that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

Audra A. Palomares

Audra A. Palomares
Notary Public, State of Hawaii
First Judicial Circuit

My commission expires: 4-10-2009

AUDRA A. PALOMARES NOTARY PUBLIC STATE OF HAWAII

ACTIF INVESTMENTS, LLC, a Hawaii
Limited liability company

By: JACOB THORP
Its Managing Member

"Grantor"

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

On this 10th day of April, 2006, before me personally appeared JACOB THORP, to me known (or proven to me) to be the person described in and who executed the foregoing instrument, and acknowledged that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

AUDRA A. PALOMARES NOTARY PUBLIC STATE OF HAWAII

Audra A. Palomares

Notary Public, State of Hawaii
First Judicial Circuit

My commission expires: 4-10-2009

ACTIF INVESTMENTS, LLC, a Hawaii
Limited liability company

By: FRANCIS LEE
Its Managing Member

"Grantor"

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

On this 10th day of April, 2006, before me personally appeared FRANCIS LEE, to me known (or proven to me) to be the person described in and who executed the foregoing instrument, and acknowledged that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

AUDRA A. PALOMARES NOTARY PUBLIC STATE OF HAWAII

Audra A. Palomares

Notary Public, State of Hawaii
First Judicial Circuit

My commission expires: 4-10-2009

ACTIF INVESTMENTS, LLC, a Hawaii
Limited liability company

By Actif, Inc., a Hawaii corporation,
Its Managing Member

By: JACOB THORP
Its Vice President

"Grantor"

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

On this 10th day of April, 2006, before me personally appeared JACOB THORP, to me known (or proven to me) to be the person described in and who executed the foregoing instrument, and acknowledged that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

AUDRA A. PALOMARES NOTARY PUBLIC STATE OF HAWAII

Audra A. Palomares

Audra A. Palomares
Notary Public, State of Hawaii
First Judicial Circuit

My commission expires: 4-10-2009

EXHIBIT "A"

PARCEL I:

All of that certain parcel of land (portion of the land described in and covered by Land Patent Grant Number 10070 to Kaina Hamili) situate, lying and being at Kamaole, District of Kula, Island and County of Maui, State of Hawaii, being LOT 1-A, of the "KAMAOLE HOMESTEADS", and thus bounded and described as per survey of Tatsumi Imada, Registered Professional Land Surveyor, dated April 30, 1969, to-wit:

Beginning at a point on the Northwesterly corner of this parcel of land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU O KALI" being

4,738.13 feet South
19,577.63 feet West

and running by azimuths measured clockwise from true South:

1.	272°	43'	00"	162.00	feet along land owned by Louise Gibson to a point;
2.	344°	39'	30"	313.04	feet along land owned by Yoshiu Yamane to a point;
3.	92°	44'	00"	259.12	feet along Lot 2 to a point;
4.	182°	44'	00"	297.54	feet along Lot 1-B to the point of beginning and containing an area of 1.438 acres, more or less.

PARCEL II:

A perpetual easement for roadway, sanitary sewer, utility and other purposes, appurtenant to and in favor of Lot 1-A, over, under and along the following described parcel of land, subject to the reservation of rights, powers and privileges for the use and benefit of Lot 1-A, as set forth in Deed dated November 13,

1972, recorded in the Bureau of Conveyances of the State of Hawaii in Liber 8780, page 220:

"All of that certain easement being a portion of Land Patent 10070 to Kaina Hamili and also being a portion of Lot 26-B of Kamaole Homesteads, situate at Kamaole, Kula, Maui, Hawaii.

Beginning at a point on the Southwesterly corner of this easement and on the Easterly side of Kihei Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU-O-KALI" being:

4,894.21 feet South
20,411.14 feet West

and running by azimuths measured clockwise from true South:

1.	168°	35'	00"	44.35	feet along Kihei Road to a point;
2.	265°	44'	40"	200.77	feet to a point;
					Thence along an arc of a curve to the right with a radius of 271.45 feet, the chord azimuth and distance being:
3.	275°	00'	30"	87.40	feet to a point;
4.	284°	16'	20"	63.23	feet to a point;
					Thence along an arc of a curve to the left with a radius of 317.00 feet, the chord azimuth and distance being:
5.	269°	09'	10"	165.37	feet to a point;
6.	254°	02'	00"	130.80	feet to a point;
					Thence along an arc of a curve to the right with a radius of 184.00 feet, the chord azimuth and distance being:
7.	273°	59'	00"	125.56	feet to a point;
					Thence along an arc of

a curve to the left with a radius of 73.00 feet, the chord azimuth and distance being:

8. 287° 31' 00" 16.32 feet to a point;

Thence along an arc of a curve to the left with a radius of 37.00 feet, the chord azimuth and distance being:

9. 258° 16' 30" 28.71 feet to a point;

10. 272° 44' 00" 29.35 feet to a point;

11. 2° 44' 00" 153.77 feet along Lot 1-A to a point;

Thence along an arc of a curve to the left with a radius of 141.00 feet, the chord azimuth and distance being:

12. 168° 51' 14" 26.56 feet to a point;

13. 73° 27' 00" 18.00 feet to a point;

Thence along an arc of a curve to the left with a radius of 123.00 feet, the chord azimuth and distance being:

14. 118° 44' 30" 173.06 feet to a point;

15. 74° 02' 00" 130.80 feet to a point;

Thence along an arc of a curve to the right with a radius of 378.00 feet, the chord azimuth and distance being:

16. 89° 09' 10" 197.19 feet to a point;

17. 104° 16' 20" 63.23 feet to a point;

Thence along an arc of

a curve to the left with a radius of 210.45 feet, the chord azimuth and distance being:

18. 95° 17' 58" 65.65 feet to a point;

19. 168° 35' 00" 17.14 feet along land owned by Laura R. Burdick, to a point;

20. 85° 44' 40" 195.24 feet along same to the point of beginning and containing an area of 1.178 acres, more or less."

Being all the property described in Deed dated _____, recorded on _____, in the Bureau of Conveyances of the State of Hawaii as Document No. _____.

SUBJECT, HOWEVER, to the following:

1. Title to all minerals and metallic mines reserved to the State of Hawaii.

2. Terms, provisions, conditions and reservation of rights as set forth in that certain instrument dated June 25, 1969, recorded in the Bureau of Conveyances of the State of Hawaii Liber 6581, page 314, as restated in instrument dated August 13, 2002, recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 2002-165763.

Amendment thereof by instrument dated December 15, 1969, recorded in the Bureau of Conveyances of the State of Hawaii in Liber 6821, page 433.

3. Any facts, rights, interests or claims which a correct survey would show.

END OF EXHIBIT "A"

MAP SHOWING RESURVEY OF

LOT 1-A
KAMAOLE HOMESTEADS

KAMAOLE, KULA, MAUI, HAWAII

TMK:(2) 3-9-20 : 32

PREPARED BY:

VALERA, INC.
1867 VINEYARD STREET, STE. A
WAILUKU, MAUI, HAWAII 96793
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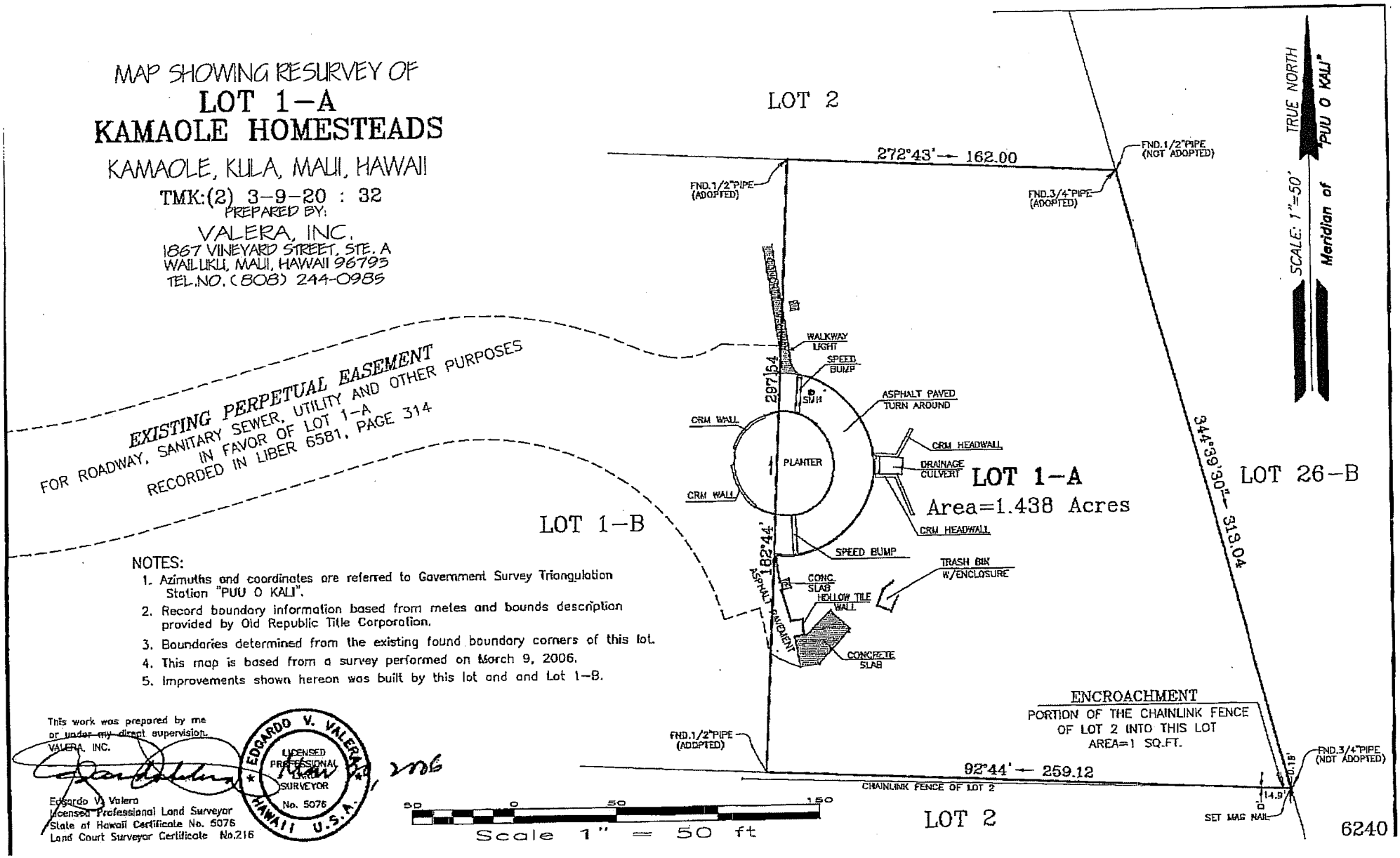

NOTES:

1. Azimuths and coordinates are referred to Government Survey Triangulation Station "PUU O KALI".
2. Record boundary information based from metes and bounds description provided by Old Republic Title Corporation.
3. Boundaries determined from the existing found boundary corners of this lot.
4. This map is based from a survey performed on March 9, 2006.
5. Improvements shown hereon was built by this lot and and Lot 1-B.

This work was prepared by me or under my direct supervision.
VALERA, INC.

EDGARDO V. VALERA
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5076
HAWAII U.S.A.

2006

Edgardo V. Valera
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Land Court Surveyor Certificate No.216

6240

APPENDIX E
Archaeological Assessment Report

SCS Project Number-787-1

AN ARCHAEOLOGICAL ASSESSMENT REPORT FOR A 1.438-ACRE LOT IN SOUTH KIHEI KAMA`OLE AHUPUA`A, WAILUKU DISTRICT ISLAND OF MAUI, HAWAI`I [TMK: (2) 3-9-020:032]

Prepared by:
Shayna L. Cordle
and
Michael F. Dega, Ph.D.

March 2007

Prepared for:
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161 Wailea Ika Place, Suite A-105
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INTRODUCTION

Scientific Consultant Services (SCS), Inc. conducted an Archaeological Inventory Survey on 1.438 acres of undeveloped land in south Kīhei, Kama`ole Ahupua`a, Wailuku District, Maui Island, Hawai`i [TMK: (2) 3-9-20:032] for Mr. Tim Piasky, P.E. of Victory Development, Inc. (Figures 1, 2, and 3). Fieldwork was conducted February 13 and 15, 2007 by SCS archaeologist Tomasi Patolo, B.A., under the direction of Michael Dega, Ph.D., Principal Investigator. The work included a 100 percent systematic pedestrian survey and mechanical subsurface testing (excavation) all of which yielded negative results.

The Kīhei area, in general, was once the location of a traditional Native Hawaiian settlement. An Archaeological Inventory Survey was conducted on the parcel due to the potential for the inadvertant discovery of human remains and traditional or historic cultural deposits. Previous archaeological work conducted in the vicinity of the parcel has documented agricultural sites, habitation loci, and burials (Tome and Dega 2002). However, because no cultural materials were located on the property, SHPD required an abbreviated Inventory Survey report called an Archaeological Assessment.

ENVIRONMENTAL SETTING

The project area is an undeveloped lot located in Kīhei, Kama`ole Ahupua`a, Wailuku District (traditional district of Kula). The project area's west perimeter is marked by Kihei Kai Nani Condominium Complex. The south is delineated by a chain link fence marking the northeast border of the Kihei Akahi Condominium Complex and the north side is bounded by an ongoing development. The east is bordered by an area containing *kiawe* (*Prosopis pallida*) and grass.

The middle section of the project is occupied by a natural drainage. The entire project area is characterized by west north western gentle slopes towards the area of the drainage. The project area is higher along the south side of the drainage and the slope is more moderate than in the north side. The project area is located 238.0 m (meters) *mauka* the ocean. The elevation varies between 9.5 m amsl (above mean sea level) in the drainage swale to 16.5 m amsl in the southeastern and 14.1 m amsl in the northeastern sections of the property. Geologically, the project area is located on the lowermost portion of the Kula Dissected Uplands, the vast network of leeward slopes and drainages of the dormant Haleakala volcano that comprises East Maui. The Kula Dissected Uplands are a gently sloping transitional landscape between the steeper volcanic highlands to the east and the narrow coastal strip to the west. The Kula district ranges

Figure 1: United States Geological Survey Quadrangle (Waiakoa) Map Showing Project Area Location.

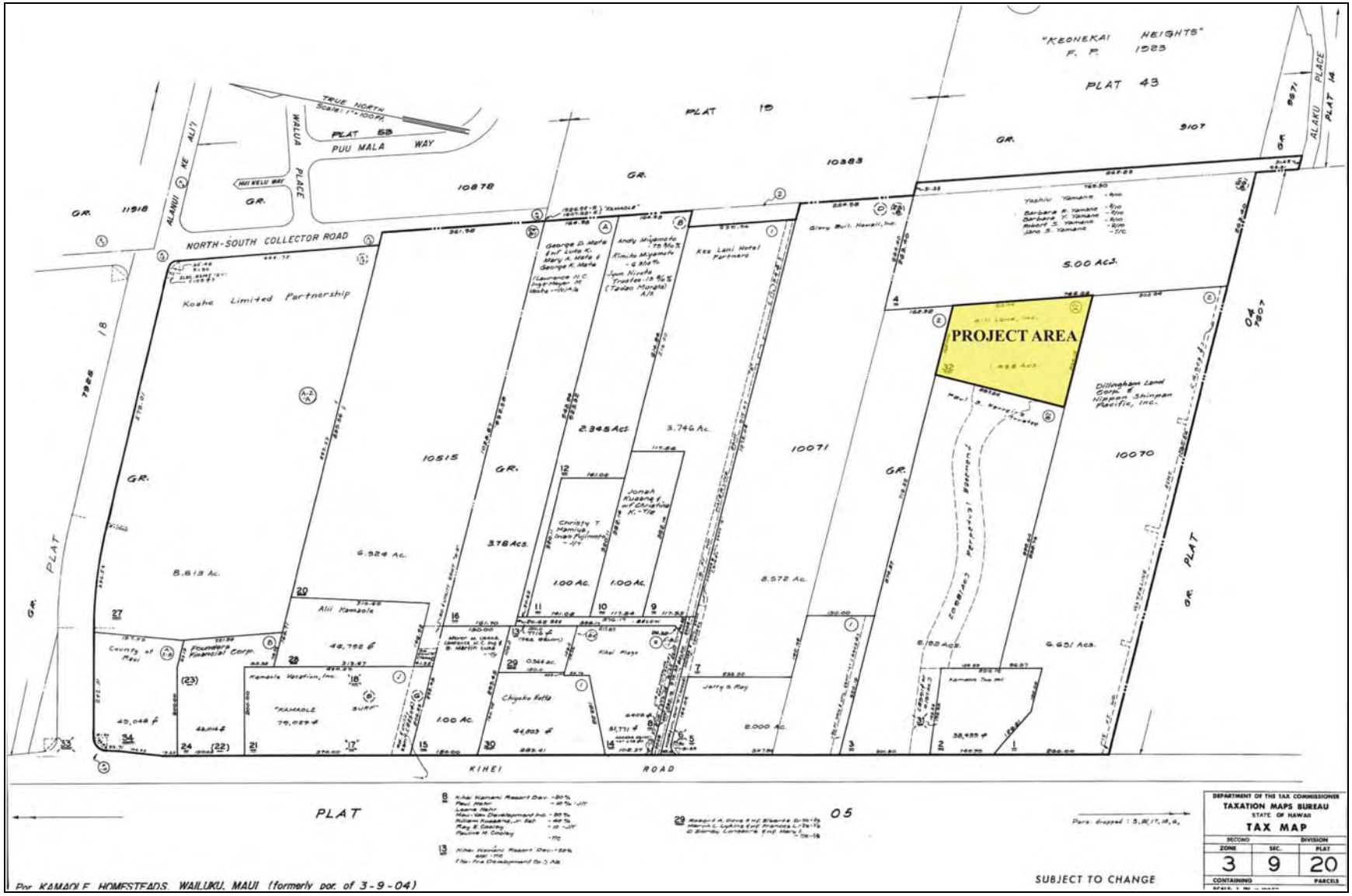

Figure 2: Tax Map Key [TMK] of Subject Parcel Showing Project Area.

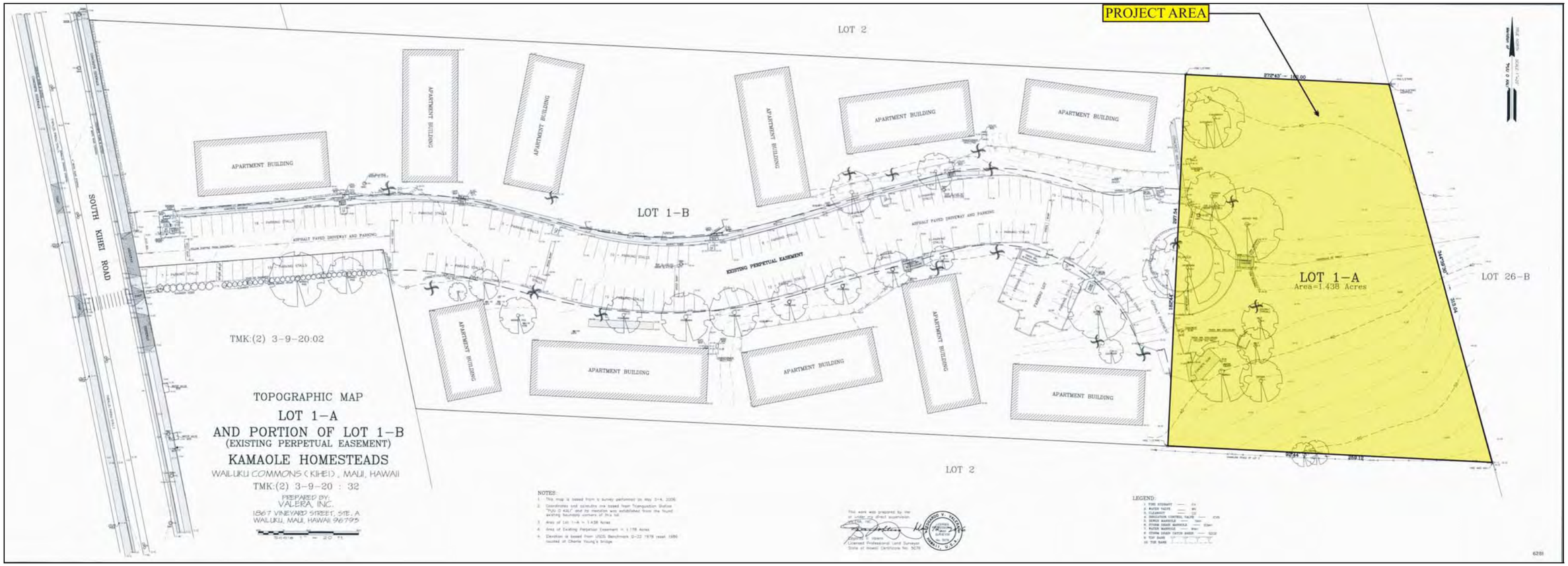

Figure 3: Topographic Map of Lot 1-A (Parcel 32) and 1-B (Parcel 3) Showing Project Area.

from farm and pasture lands to extremely hot and arid region lacking permanent streams. The subject parcel itself is situated at the transition of two major environmental zones, the coast and the so-called 'barren zone' (see below). The area receives between 22 and 33 centimeters of annual rainfall (Armstrong 1983).

According to Foote *et al.* (1972), soils in the project area consist of Jaucas sand (lower portion of parcel) and Puuone sand (upper portion of the site). Jaucas sands are well-drained, calcareous soils occurring in narrow strips along coastal plains. The project area contains Jaucas sand (JaC) with slopes ranging from 0 to 15 percent (*ibid*: 48). Permeability is runoff and runoff is slow. Puuone sands occur as sand hills and dunes near the ocean. The project area contains Puuone sands (PZUE) with 7 to 30 percent slopes, rapid permeability, and slow runoff (*ibid*: 117). Both of these soils develop in material derived from coral and shells. Both were traditionally used for a variety of purposes by Native Hawaiians, including as habitation sites and burial grounds.

Vegetation on this hot and dry parcel is dominated by xerophytic flora including *kiaw*e, lowland shrubs, and grasses. Vegetation in the area consisted predominantly of grass and *`ilima* (*Sida fallax*). Isolated *koa haole* (*Leucaena leucocephala*) is present as well. The border along the west contains monkey pod (*Pithecellobium saman*), *milo* (*Thespesia populnea*), banyan (*Ficus microcarpa*), and coconut (*Cocos nucifera*) and other exotic trees and plants; all these area part of the landscaping for the Kihei Kai Nani Condominium Complex. Additional plant species include *`uhaloa* (*Waltheria americana*), Indian pluchea (*Pluchea indica*) and various grasses and small (unidentified) weedy plants. It is worth noting that photographs from the previous survey by Xamanek Researches (Frederickson *et al.* 1990) show a much more heavily-vegetated landscape.

BACKGROUND

Kama`ole Ahupua`a is one of the hottest and driest parts of Maui, particularly the lower slopes and coastal area in which the subject parcel is located. While upland portions of Kula and Kama`ole Ahupua`a were well known for cultivation of sweet potatoes and other crops in traditional times, the coast and near-coastal inlands were less favorable for planting (Handy and Handy 1972). Fishing was certainly an important component of the traditional subsistence economy in Kama`ole Ahupua`a, and oral history identifies the entire coastal area from Kīhei south to Mākena as particularly favorable fishing grounds (Handy and Handy 1972). Sterling

(1998) lists several offshore fishing grounds known to locals in pre-Contact times, and several fishponds are known from the area (Colin *et al.* 2000).

Archaeological and historical evidence suggests that pre-Contact settlement in Kama`ole *Ahupua`a* generally followed Cordy's (1977, 2000) model of three main environmental zones—coastal, transitional/barren, and upland—each with broadly different resources, climates, and potential for human habitation. The upland zone, 335 to 380 meters above mean sea level, was the most densely populated of the area, mainly due to a greater amount of rainfall and agricultural potential. The coast was less densely populated, and the so-called 'barren zone' consisting of inland areas receiving less than 10 cm of rain annually, was essentially devoid of permanent settlement. As stated above, the subject parcel is situated at the transition of these two latter environmental zones. The distribution of *heiau* (place of worship, shrine), in particular, is consistent with this general settlement model, with most shrines in Kula located in the uplands, fewer at the coast, and none in the barren zone (Walker 1931; Kolb *et al.* 1997). Radiocarbon dating in Kula suggests low intensity occupation of the coast prior to A.D. 1200 with more permanent settlement occurring between A.D. 1200 and 1400.

Starting in the mid-nineteenth century, commercial activities around Kīhei have transformed parts of the coast and upland zones; there has been less impact in the barren zone until very recently. From the 1840s to the 1860s, whaling was based in Kalepolepo (Kīhei). By the 1870s, the Irish potato industry moved to the `Ulupalakua area (Colin *et al.* 2000). After 1900 or so, upland areas of Kula down to the Kīhei area came under intensive sugar cane cultivation; other lands were used as pasture lands for ranching (Cox 1976). During World War II, coastal reaches of Kula were used for military training. The area continued to grow until the 1970s when Kīhei and neighboring coastal areas experienced rapid development of commercial and residential projects associated with the tourism industry.

There are no Land Commission Awards for the subject property or for any surrounding parcels. This may imply that the land in and around the project area was not formally settled at the time of the Great *Māhele* (division) in 1848. If so, this is consistent with the barren zone model of pre-Contact settlement. The subject parcel was, however, a part of L. P. Grant 10071 to William Kuaana, Jr., Kama`ole Homesteads (Kīhei), Kula, Maui, Hawai'i.

Previous archaeological studies in areas surrounding to the subject parcel have not yielded very much evidence of human settlement. Several large-scale archaeological surveys in the barren zone near the project area have recorded only small, temporary habitation or

temporary use sites (*e.g.*, Walton 1972; Cox 1976; and Cordy 1977). Other studies in the barren zone of Kama`ole Ahupua`a reached similar results (Mayberry and Haun 1988; Hammatt and Shideler 1990). Archaeological Reconnaissance, Data Recovery, and Archaeological Inventory Surveys on nearby parcels in similar topographic settings have yielded a limited amount of evidence of pre-Contact temporary habitation and temporary use sites (Hammatt and Shideler 1989, 1992; Tome and Dega 2002, 2003). Historic artifacts related to ranching activities were also recovered in these nearby parcels. Significantly, no evidence of permanent habitation, agricultural features, or burial grounds was recovered in these studies.

According to McEldowney (2003), an Archaeological Inventory Survey on the adjacent parcel [TMK: 3-9-20:007] by Frederickson *et al.* (1990) did not meet the State Historic Preservation Division's (SHPD) minimal standards because it did not adequately investigate the subsurface deposits. Frederickson *et al.* (1990) recorded only one surface feature, a circular arrangement of boulders and cobbles associated with a basalt outcrop. However, as stated above, subsequent construction activities in the 1990s thoroughly remodeled the parcel through major earthmoving activities. An additional Inventory Survey was conducted by SCS in 2003 (Monahan 2003) which yielded negative results; therefore, the Inventory Survey was changed to an Archaeological Assessment.

Based on this background information, the expectation was that few, if any, surface features representing pre-Contact or Historic period activities would remain on the parcel. There was a possibility of finding subsurface deposits such as burials, which are known to occur throughout the Hawaiian Islands in sand dune deposits such as the Puuone sands located in the upper portion of the site.

METHODOLOGY

SCS archaeologist Tomasi Patolo, B.A. conducted a systematic pedestrian survey of the entire project area during February 2007. The objectives of the pedestrian survey were to identify and document any and all historical and archaeological features and to assess the nature and extent of landscape modification. All aspects of the work were photographed and sketched to create a sketch map of the parcel (Figures 4, 5, 6, and 7). Four Stratigraphic Trenches (ST) were positioned at random in order to sample the entire subject parcel and were mechanically excavated using a backhoe. All excavation was monitored by the SCS archaeologist. Excavated sediments were not screened because of the very low probability of finding intact subsurface deposits. All trenches were photographed upon completion. One representative excavation wall

Figure 4: Photograph Depicting an Overview of the North Side of the Project Area.

Figure 5: Photograph Depicting the Central Part of the Project Area Showing Natural Drainage, View to the East.

Figure 6: Photograph Depicting the South Side of the Drainage, View to the East/ Southeast.

in each trench was sketched to illustrate soil stratigraphy. Soil and sediments were described in accordance with standard archaeological procedure (U.S. Department of Agriculture Soil Survey Staff 1951, 1962; Munsell 1951).

Laboratory work, conducted at SCS facilities in Honolulu, consisted of digitally drafting field maps and sketches and digitizing all photographs and maps for archival purposes. Field notes have been maintained and all documentation pertaining to this project is curated at SCS facilities in Honolulu.

FINDINGS

PEDESTRIAN SURVEY RESULTS

The project area was subjected to a pedestrian survey prior to the subsurface testing. No surface archaeological remains were observed; extensive land alteration was apparent throughout the area, probably in association with the construction of the surrounding condominiums. Multiple sand piles were present throughout and modern debris including milled wood and metal pieces were observed in some of the piles. A recent road extends west from the neighborhood to the east onto the south side of the project. This road may have been made as an access for the construction of a fence associated with the ongoing development to the north. The north side of the drainage appears to have been graded extensively, probably as a staging area. Vegetation in this part of the project is sparse and does not have as dense of a grass growth as on the south side, as the project area is primarily sand.

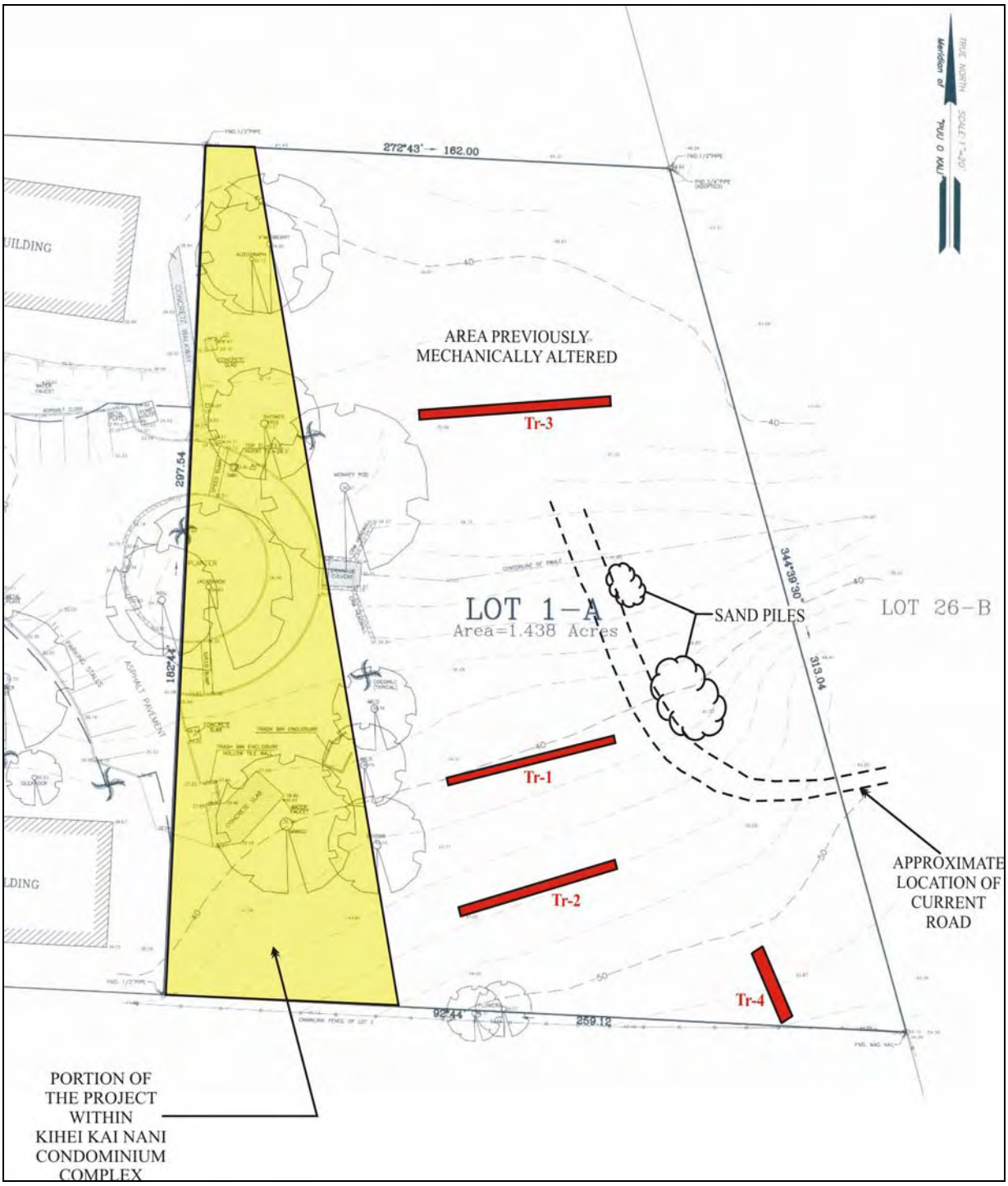

Figure 7: Plan View Map of Subsurface Work Conducted on the Project Area.

SUBSURFACE EXCAVATION

A total of four backhoe trenches were excavated during subsurface testing: three of the trenches were excavated south of the naturally occurring drainage swale and one was excavated on the north side (Table 1) (see Figure 7).

Table 1: Stratigraphic Trench Designation Dimensions and Area Excavated.

Stratigraphic Trench No.	Length (m)	Width (m)	Depth below surface (mbs)	Area (m^2)	Volume (m^3)	Findings
1	18.3	0.7–0.8	1.24	13.725	17.019	Culturally Sterile
2	17	0.8	1.5	13.6	20.4	Culturally Sterile
3	20.5	0.8	1.2	16	19.2	Culturally Sterile
4	7	1	1.56	7	10.92	Extensive land alteration prominent, modern fill dominates stratigraphy extending to 1.28 mbs, numerous plant remains; Culturally Sterile

STRATIGRAPHIC TRENCH 1 (ST-1)

ST-1 was placed to the south of the drainage swale on the subject parcel at an elevation of approximately 12.2 m amsl. ST-1 measured 18.3 m long by 0.7–0.8 m wide; the trench terminated at a depth of 124 centimeters below surface (cmbs). Five strata were present (Figures 8, 9, and 10):

- Layer I (0 to 34–64 cmbs) was a loose, light yellowish brown (2.5 Y 6/3) granular sand with few rocks and roots (5%).
- Layer II (34–80 cmbs) was loose, light yellowish brown (2.5 Y 6/4) sand with very few roots (1%) and no rocks.
- Layer III (56–86 cmbs) was loose, yellow (2.5 Y 7/6) sand that contained few roots (<1%) and no rocks. This layer had a smooth boundary.
- Layer IV (82–98 cmbs) was a slightly compact light olive brown (2.5 Y 5/4) silty sand.
- Layer V (85–124 cmbs) consisted of hard and compacted, pale yellow (2.5 Y 7/4) sand. There were no roots and very few rocks.

STRATIGRAPHIC TRENCH 2 (ST-2)

ST-2 was placed to the south of the drainage swale and south of ST-1 on the subject parcel, at an elevation of approximately 14.0 m amsl. ST-2 measured 17.0 m long by 0.8 m

Figure 8: Photograph Depicting an Overview of Stratigraphic Trench-1. View to West

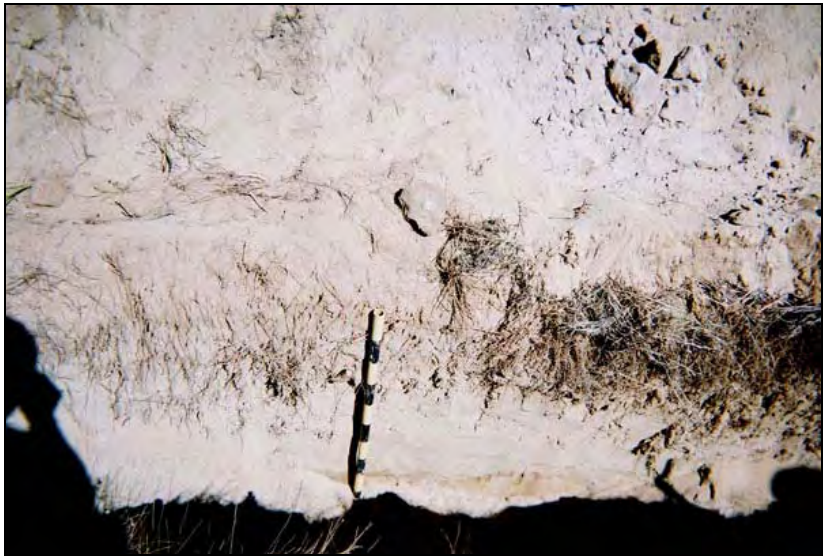

Figure 9: Photograph Depicting Representative Profile of Stratigraphic Trench-1; North Wall Face.

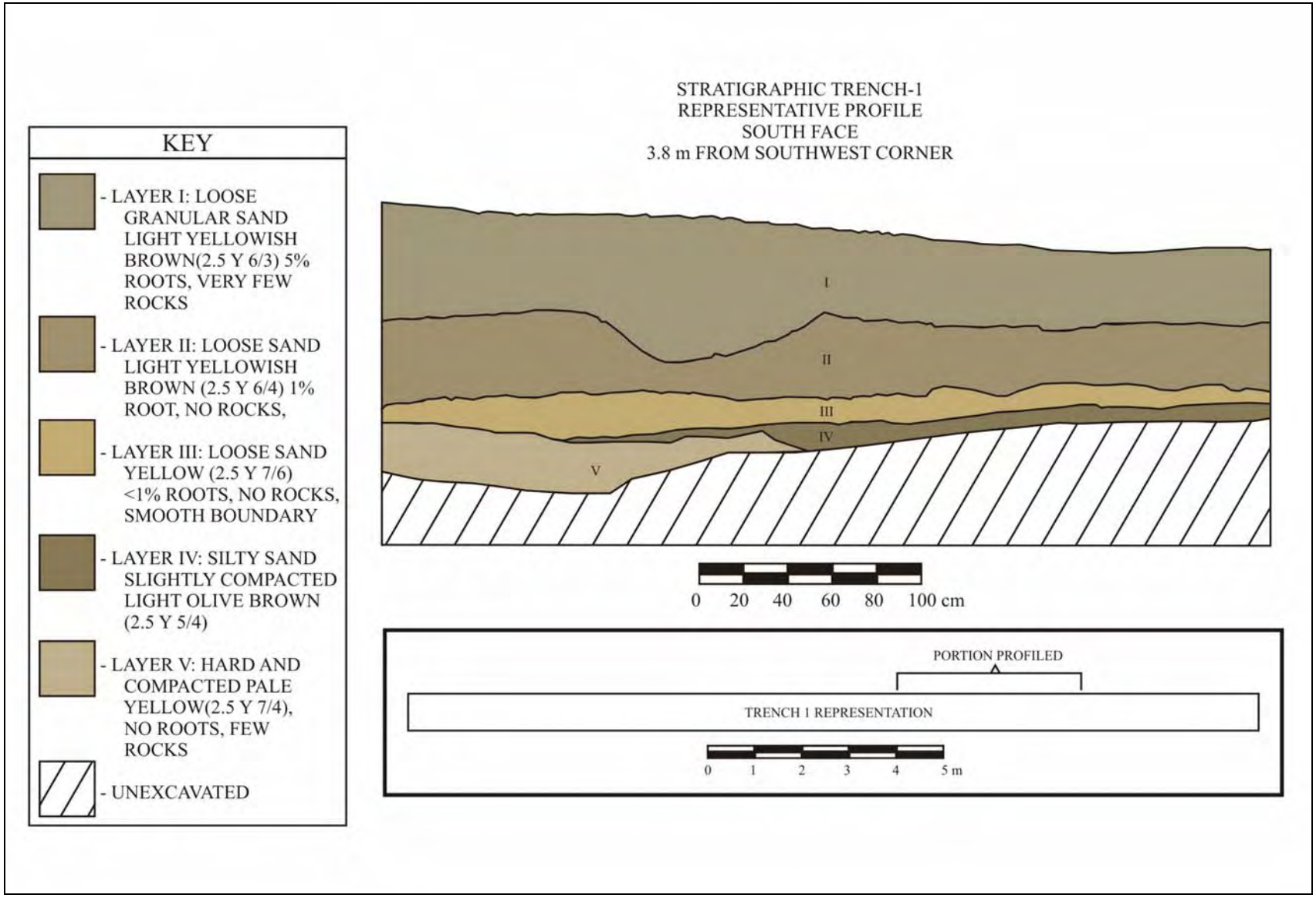

Figure 10: Representative Profile of Stratigraphic Trench-1.

wide; the trench terminated at a depth of 150 cmbs. Five strata were observed (Figures 11, 12, and 13):

- Fill (0–21 cmbs) was a loose, pale yellow (2.5 Y 7/4) silty sand fill composed of crushed gravel and coral with about two percent root structure. This fill layer had a smooth boundary.
- Layer I (0–30 cmbs) consisted of loose, yellow (2.5 Y 7/6) sand, with some roots (10%) and very few gravel rocks.
- Layer II (20–74 cmbs) was a loose, pale yellow (2.5 Y 7/4) sand that contained less than one percent roots and no rocks. This layer had a smooth boundary.
- Layer III (61–82 cmbs) was composed of loose, pale yellow (2.5 Y 8/3) sand. No rocks or roots were observed in this layer; the boundary was slightly wavy.
- Layer IV (68–115 cmbs) was very hard-packed pale yellow (2.5 Y 8/2) sand, sandstone-like, with no roots or rocks.

STRATIGRAPHIC TRENCH 3 (ST-3)

ST-3 was placed to the north of the drainage swale at an elevation of 10.85 m amsl. ST-3 measured 20.5 m long by 0.8 m wide; the trench terminated at a depth of 120 cmbs. Three strata were (Figures 14, 15, and 16) present:

- Fill (0–31 cmbs) consisted of very fine, gray (10 YR 5/1) sand.
- Layer I (0–42 cmbs) was a very pale brown (10 YR 7/4) sand, with some large cobbles and small boulders.
- Layer II (22–120 cmbs) consisted of very hard, light yellowish brown (10 YR 6/4) sand, which resembled sandstone.

STRATIGRAPHIC TRENCH 4 (ST-4)

ST-4 was placed to the south of the drainage swale, in the southeast corner of the lot, running north-south. This trench sat between the elevations of approximately 15.4 m–16.5 m amsl. ST-4 measured 7.0 m long by 1.0 m wide; the trench was terminated at a depth of 156 cmbs and relayed the presence of five strata (Figures 17, 18, and 19).

- Layer I (0–56 cmbs) consisted of loose, light yellowish brown (2.5 Y 6/3), granular sand and crushed coral and contained some roots (10%).
- Fill (45–85 cmbs) consisted of very fine, gray (10 YR 5/1) sand with crushed coral.
- Layer II (41–138 cmbs) was a yellow (2.5 Y 7/6), semi-compact sand with plant remains.

Figure 11: Photograph Depicting an Overview of Stratigraphic Trench-2. View to West.

Figure 12: Photograph Depicting Representative Profile of Stratigraphic Trench-2; South Wall Face.

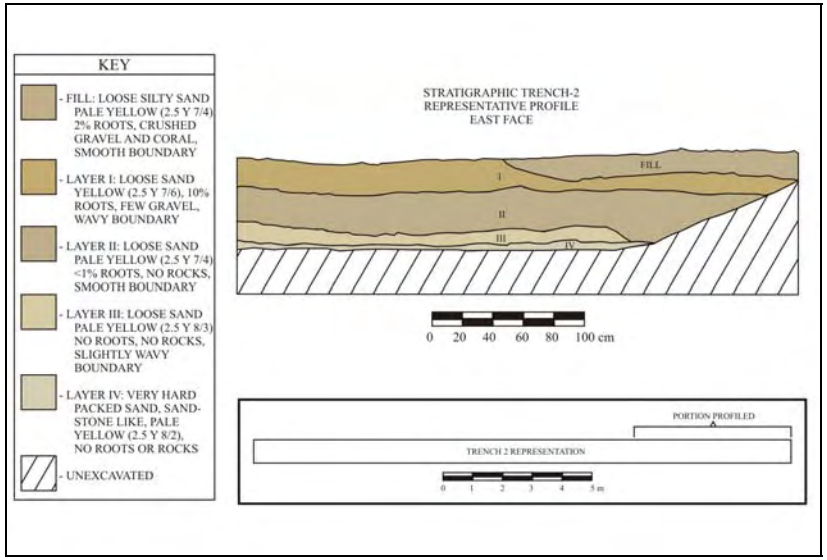

Figure 13: Representative Profile of Stratigraphic Trench-2.

Figure 14: Photograph Depicting an Overview of Stratigraphic Trench-3. View to Northeast.

Figure 15: Photograph Depicting Representative Profile of Stratigraphic Trench-3; North Wall Face.

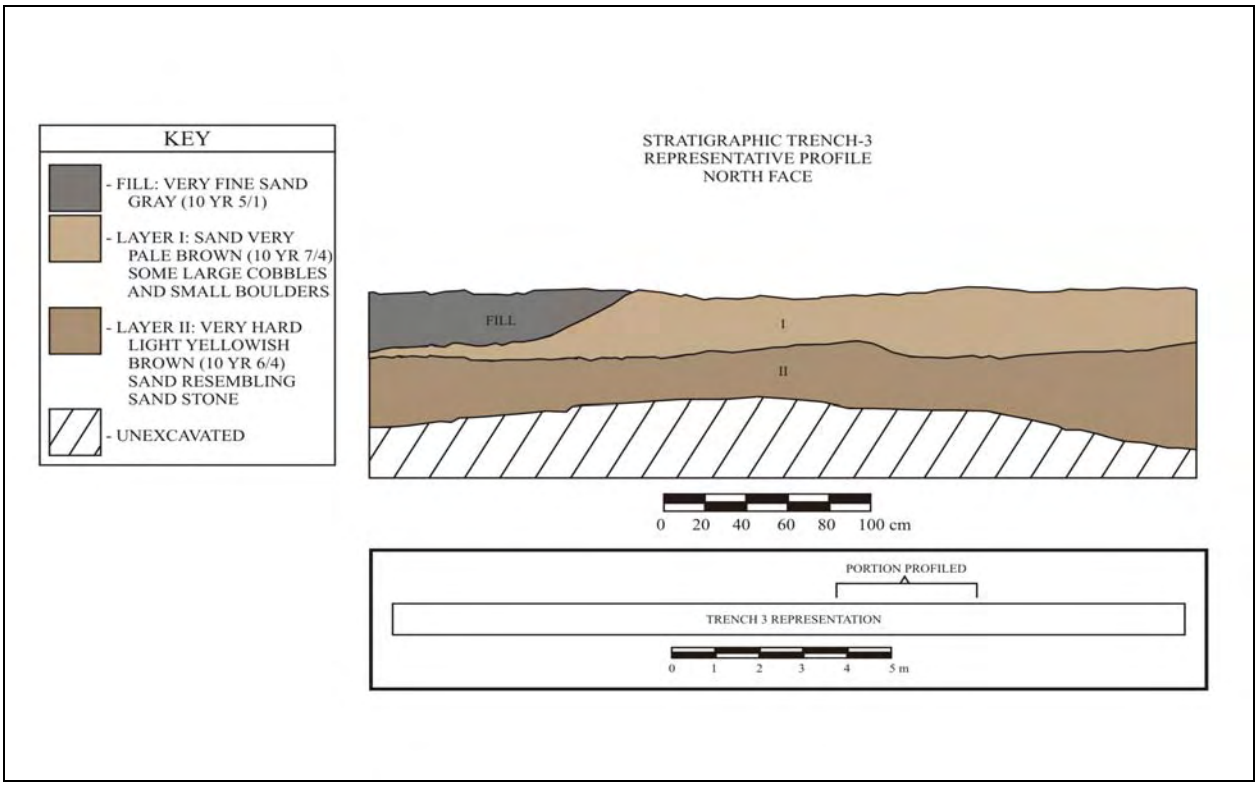

Figure 16: Representative Profile of Stratigraphic Trench-3.

Figure 17: Photograph Depicting an Overview of Stratigraphic Trench-4. View to Southeast.

Figure 18: Photograph Depicting Representative Profile of Stratigraphic Trench-4; East Wall Face.

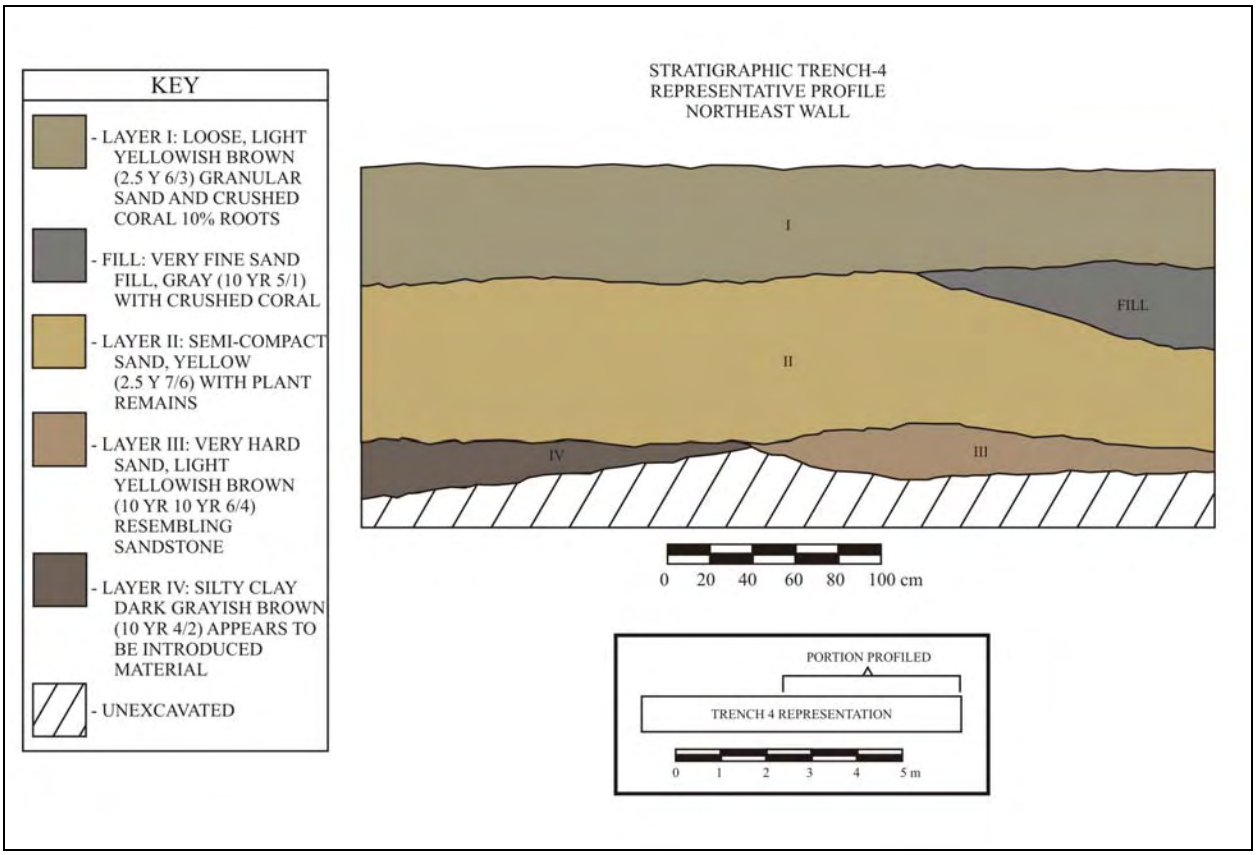

Figure 19: Representative Profile of Stratigraphic Trench-4.

- Layer III (119–156 cmbs) was composed of a very hard, light yellowish brown (10 YR 6/4) sand that resembled sandstone.
- Layer IV (126–156 cmbs) consisted of a dark grayish brown (10 YR 4/2) silty clay which appeared to have been introduced material.

CONCLUSIONS AND RECCOMMENDATIONS

Although subsurface testing did not yield any cultural material or human remains, Monitoring is recommended due to the remaining moderate probability of an inadvertent discovery of Native Hawaiian burials within the sandy substrate. Scientific Consultant Services, Inc. recommends that the Archaeologist(s) conducting the Archaeological Monitoring cease monitoring (following consultation with SHPD) at a point when no less than 1/3 of the total project area's 1.438 acres has been excavated with negative findings. The 1/3 (or greater) amount of earth moved should be distributed evenly enough across the project area that a fair representation of the subsurface matrix will have been sampled.

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APPENDIX F
Archaeological Monitoring Plan

SCS Project Number 1684-AMP-1

AN ARCHAEOLOGICAL MONITORING PLAN FOR THE NANI LOA HOTEL CONDOMINIUM PROJECT KAMA`OLE AHUPUAʻA, WAILUKU DISTRICT ISLAND OF MAUI, HAWAI`I [TMK: (2) 3-9-020:032]

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INTRODUCTION

At the request of Greg Walker, Scientific Consultant Services, Inc. (SCS) has prepared this Archaeological Monitoring Plan (AMP) in advance of all construction related activities associated with the construction of the Nani Loa Hotel Condominiums Project. The Nani Loa Hotel Condominiums will consist of one four-story building and one three-story building containing thirty-nine (39) units. The 1.9438-acre property is owned by Victory Development Nani Loa LLC., and is located in Kīhei, Kama`ole Ahupua`a, Wailuku District, Island of Maui [TMK: (2) 3-9-020:032] (Figures 1and 2).

Archaeological Monitoring will ensure that identified significant cultural resources are sampled, documented, and evaluated for their historical significance, per State Historic Preservation Division (SHPD rules and regulations. This Monitoring program will also ensure that if human skeletal remains are identified during subsurface work, appropriate and lawful protocol is followed concerning the Inadvertent Discovery of Human Remains (pursuant to Hawaii Administrative Rules §13-300-40a-c).

The following text provides more detailed information on the reasons for monitoring, potential site types to be encountered during excavation, monitoring conventions and methods for both field and laboratory work, and curation and reporting.

ENVIRONMENTAL SETTING

PROJECT AREA LOCATION

The current project area is located in the village of Kīhei, Kama`ole Ahupua'a, Wailuku District, Island of Maui [TMK: (2) 3-9-020:032], on the southeastern coast of the island of Maui. The currently vacant and undeveloped 1.9438 acre project area is situated approximately 0.25 miles inland between 40 and 50 feet above mean sea level (AMSL) (see Figures 1 and 2). The project area is located in a residential and commercial area and is currently vacant and undeveloped.

RAINFALL AND CLIMATE

Kamaole Ahupua`a in the Wailuku District, is located on the dry, leeward (southeastern) coast of Maui Island. In the summer and early fall rainfall ranges from approximately 2 to 4 inches. Temperatures during these months range from the low 60s° F to the high 90s° F. Rainfall

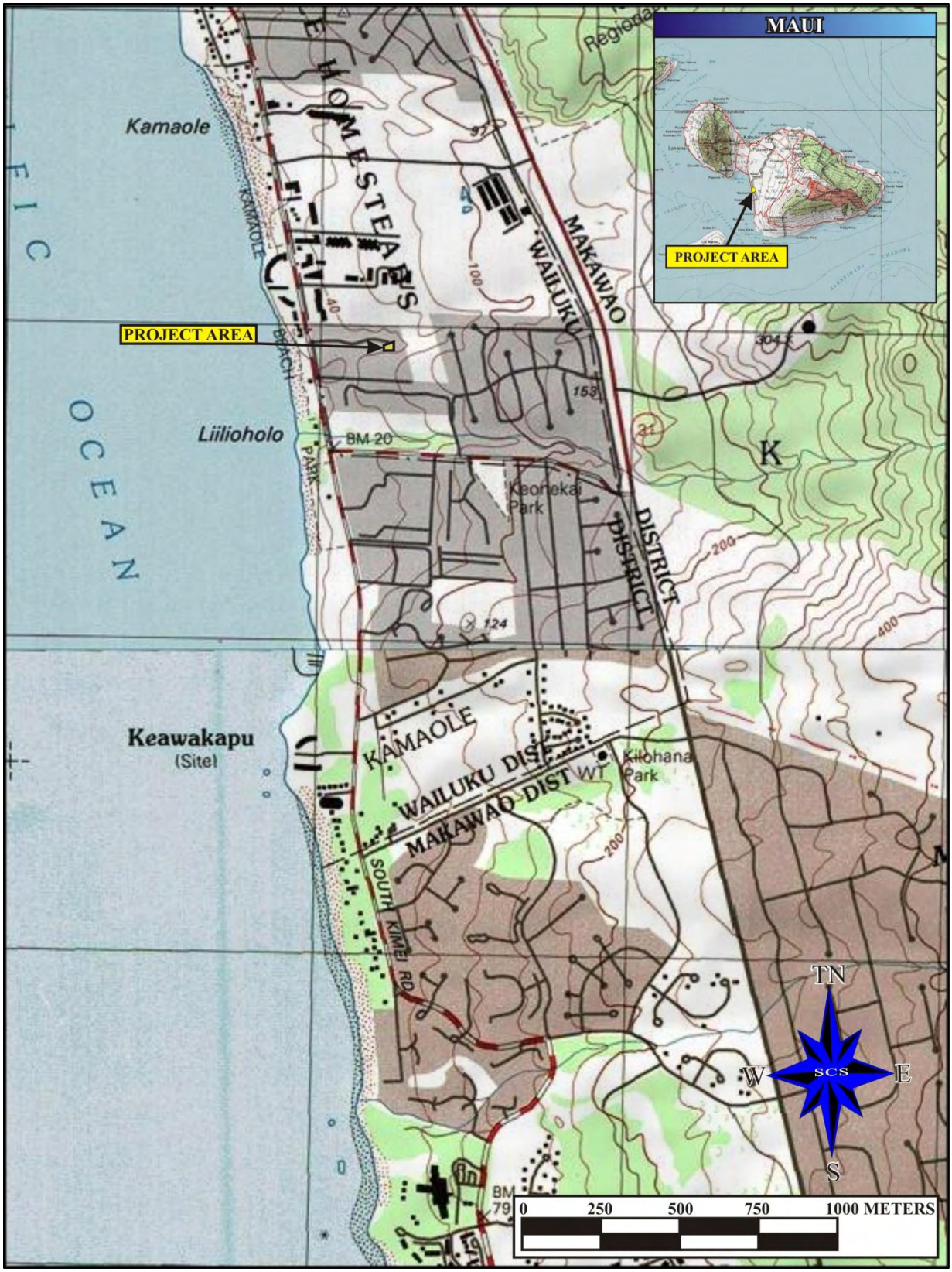

Figure 1: USGS Quadrangle (Puu O Kali 1992) Map Showing Project Area.

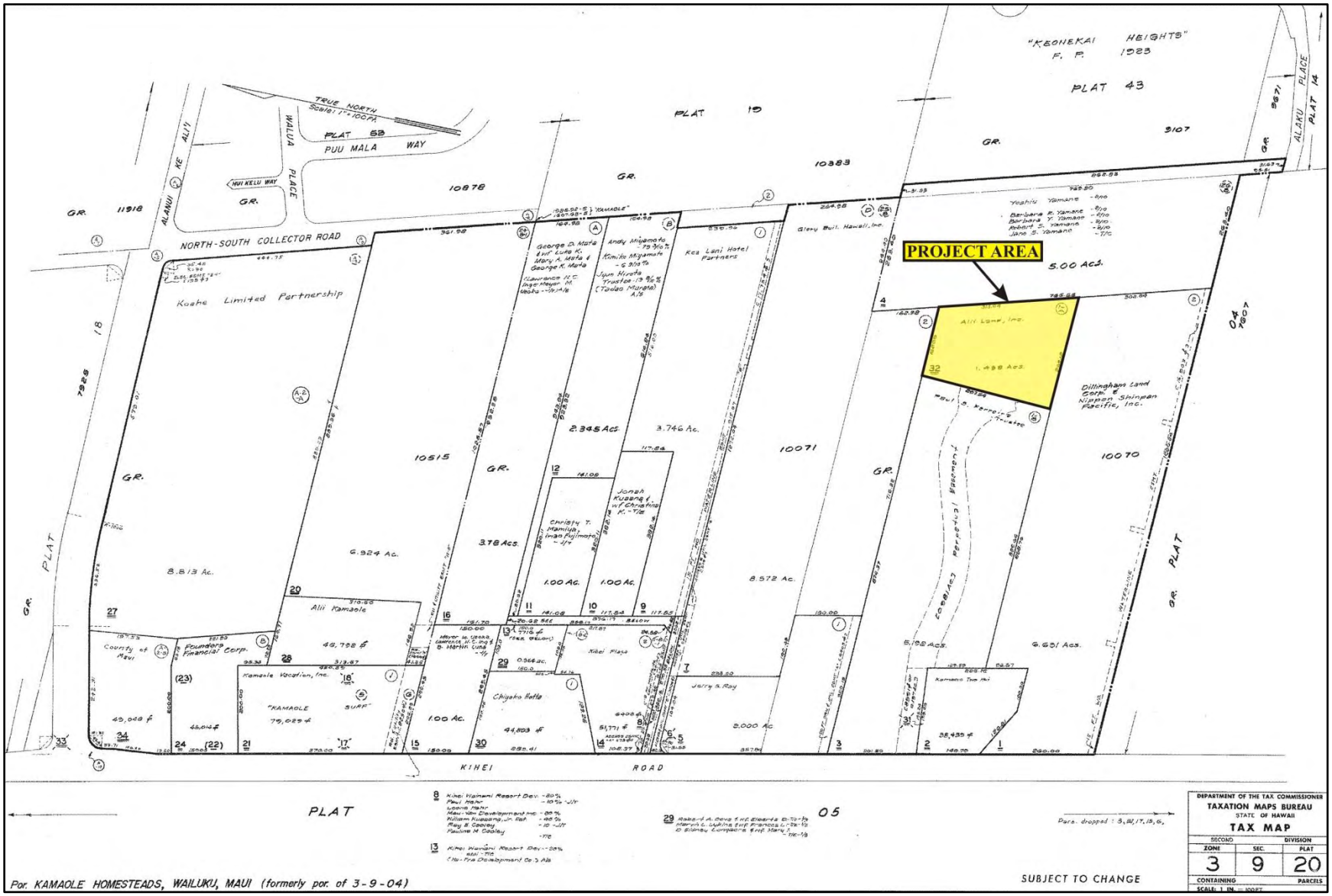

Figure 2: Tax Map Key [TMK: (2) 3-9-020] Showing Project Area.

during the winter months ranges from approximately 10 to 20 inches and temperatures range from the high 50s°F to the high 80°s F (Armstrong 1983: 62, 64).

SOILS

According to Foote *et al*. (1972: Sheet Number 108), soils within the project area are of the Dune land (DL) Soil Series (Figure 3). Dune land soils consist of aeolian deposits of sand-size particles of coral and sea shells that, over time, have formed ridges and hills. Dune lands occur in the coastal regions of the islands of Maui and Kaua`i at elevations between sea level and 150 feet above mean sea level (amsl). Dune lands are "actively shifting or so recently fixed or stabilized" that soil horizons have not developed (*ibid*: 29). Dune lands are frequently used as recreational areas, wildlife habitats, and as a source of liming materials (*ibid*).

TRADITIONAL SETTLEMENT PATTERNS

PRE-CONTACT PERIOD (PRE-1778)

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (A.D. 1200–1400, Kirch 1985). According to Handy, there was "continuous cultivation on the coastal region along the northwest coast" of Maui. He writes:

> On the south side of western Maui the flat coastal plain all the way from Kīhei and Ma`alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish…[1940:159].

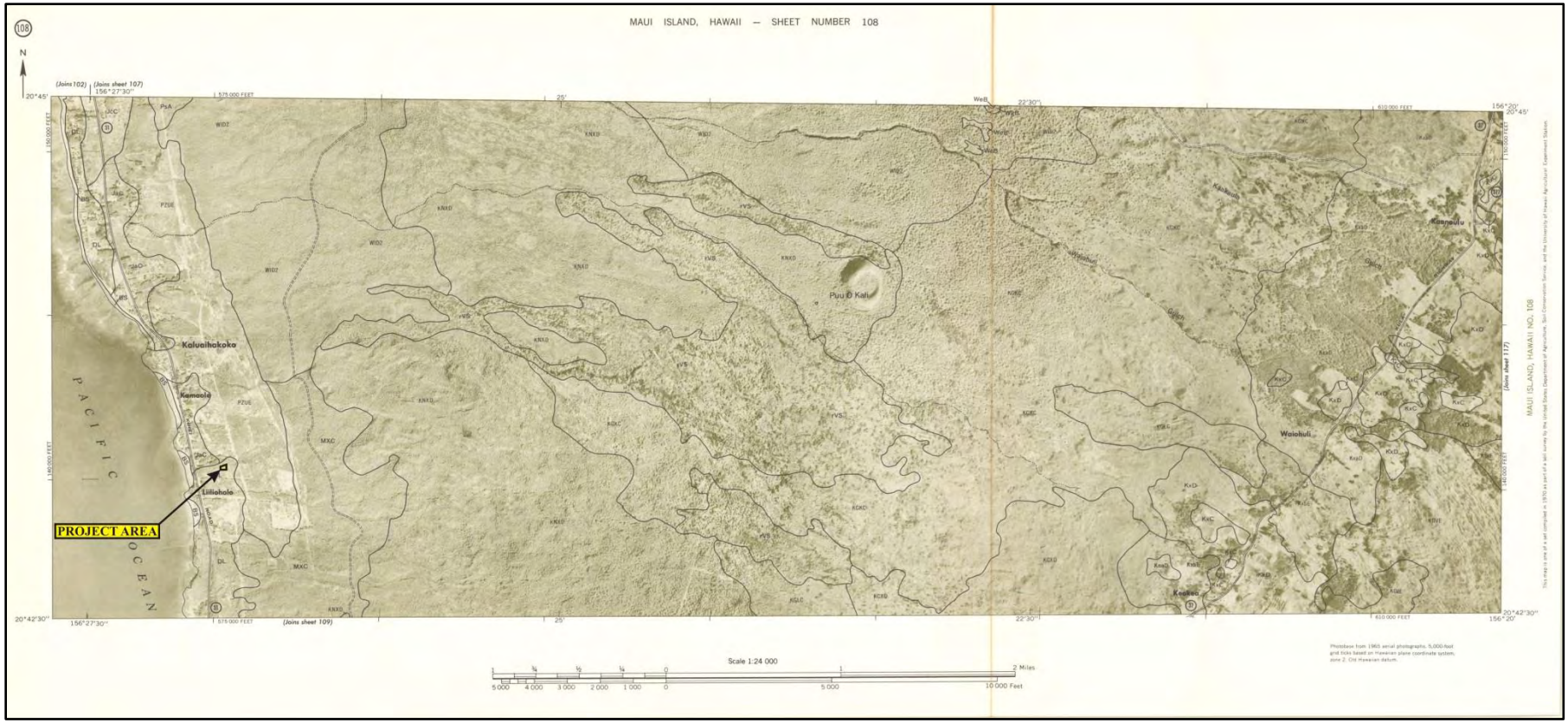

Figure 3: USDA Soil Survey Map (Foote *et al.* 1972: Sheet 108) Showing Soil Type within Project Area.

In the uplands of the Kula district, at elevations higher than *c.* 1,000 feet above mean annual sea level, traditional agriculture was based on dryland field systems. Handy and Handy (1972:488) write:

> The great bulk and altitude of Haleakala makes its southern flank practically a water less desert, and the southeast and west flanks relatively dry, so that there were no lo`i (pond fields) cultivation at all. The arid country below the west and south slopes of Haleakala, including Kula, Honua`ula, Kahikinui, and Kaupo, were dependent on sweet potato.

Handy and Handy (1972:131) also describe the planting methods in the drier sections of Kula:

> Where potatoes are planted in crumbling lava with humus, as on eastern Maui and in Kona, Hawaii, the soil is softened and heaped carelessly in little pockets and patches using favorable spots on slopes the crumbling porous lava gives ample aeration without much mounding.

There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s (Clark 1980). Presently, Kīhei refers to a six-mile section along the coast from the town of Kīhei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the *kama`āina* of the district including at least two *heiau*. In ancient times, there was a small village at Kalepolepo directly based upon marine resources. Occasionally, it has been recorded; the blustery Kaumuku Winds would arrive with amazing intensity along this coast (Wilcox 1921).

There were several fishponds in the vicinity of Kīhei; Waiohuli, Kēōkea-kai, and Kalepolepo Pond (also known by the ancient name of Kō`ie`ie Pond; Kolb *et al*. 1997). Constructed on the boundary between Ka`ono`ulu and Waiohuli Ahupua`a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Kēōkea-kai) has been lost in antiquity, but they were reportedly rebuilt at least three times through history, beginning during the reign of Pi`ilani (1500s; *ibid*; Cordy 2000).

Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi`ilani, the son of the great chief Pi`ilani, who had bequeathed the ponds to Umi, ruler of Hawai`i Island. Umi's *konohik*i (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs couldn't be done without the assistance of the *menehune* who were master builders (Wilcox 1921:66-67). The *konohiki* was furious and Kikau was told he would die once the repairs had been made. Kēōkea-kai was the first to be repaired. When the capstone was carried on a litter to the site, the *konohiki* rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the *konohiki* did the same. As the last pond, then known as Ka`ono`ulu-kai, was completed, the *konohiki* once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and *konohiki* into the dirt. The workers reportedly said "*Ua konohiki Kalepolepo, ua eku i ka lepo*," or, "the manager of Kalepolepo, one who roots in the dirt" (*ibid*: 66). That night a tremendous storm threw down the walls of the fishponds. The *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi`o valley from then on. The region of Kēōkea-kai and Ka`ono`ulu-kai fishpond became known as Kalepolepo fishpond (*ibid*).

The Kalepolepo fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s, at which time it supplied *`ama`ama* (mullet) to Kahekili II. Again, it was restored by Kamehameha I when he ruled as governing chief over Maui and for the last time in the 1840s when prisoners from Kaho`olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing the Maui chiefs. The stream draining into Kealia pond (north of the project area) became sacred to royalty and *kapu* to commoners (Stoddard 1894).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or "King's trail" built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei. One trail, named "*Kekuawaha`ula`ula*" or the "red-mouthed god", extended from Kīhei inland to Kēōkea. Another, the Kalepolepo trail, began at the Kalepolepo fishpond and continued to upland Waiohuli. These trails were not only used in the pre-Contact era, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb *et al*. 1997:61).

POST-CONTACT (POST-1778)

Early records, such as journals kept by explorers, travelers and missionaries, and Hawaiian traditions that survived long enough to be written down, as well as archaeological investigations, have assisted in the understanding of past cultural activities. Unfortunately, early descriptions of this portion of the Maui coast are brief and infrequent. Captain King, Second Lieutenant on the *Revolution* during Cook's third voyage briefly described what he saw from a vantage point of "eight or ten leagues" (approximately 24 miles) out to sea as his ship departed the islands in 1779 (Beaglehole 1967). He mentions Pu`u Ōla`i south of Kīhei and enumerates the observed animals, thriving groves of breadfruit, the excellence of the taro, and almost prophetically, says the sugar cane is of an unusual height. Seen from this distance and the mention of breadfruit suggest the uplands of Kīpahulu-Kaupo and `Ulupalakua were his focus.

In the ensuing years, La Pérouse (1786), Nathaniel Portlock and George Dixon, (also in 1786), sailed along the western coast, but added little to our direct knowledge of Kīhei. During the second visit of Vancouver in 1793, his expedition becalmed in the Ma`alaea Bay close to the project area. (A marker commemorating this visit is located across from the Maui Lu Hotel). He reported:

> The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of [Vancouver 1984:852].

Archibald Menzies, a naturalist accompanying Vancouver stated, "…we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920:102). According to Kahekili, then chief of Maui, the extreme poverty in the area was the result of the continuous wars between Maui and Hawai`i Islands that causing the land to be neglected and human resources wasted (Vancouver 1984:856).

THE MĀHELE

In the 1840s a drastic change in the traditional land tenure resulted in a division of island lands and a system of private ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers,

Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian society to that of a market economy (Daws 1968:111; Kuykendall Vol. I, 1938:145 footnote 47, 152, 165-6, 170; Kame`eleihiwa 1992:169–70, 176).

Among other things, the foreigners demanded private ownership of land to insure their investments (Kuykendall Vol. I, 1938:138, 145, 178, 184, 202, 206, 271; Kame`eleihiwa 1992:178; Kelly 1998:4). Once lands were made available and private ownership was instituted, native Hawaiians including the *maka'āinana* (commoners) were sometimes able to claim the plots they were cultivating and living on, if they had been made aware of the foreign procedures required in which to claim them (*kuleana* lands, LCAs). This land division, or Māhele, occurred in 1848. The awarded parcels were called Land Commission Awards (LCA). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property (Chinen 1961:16). No LCAs were located on or near the present project area.

It is suggested that Kekau`ōnohi (granddaughter of Kamehameha I), was the land owner of the Kula District prior to the Māhele (Kame`eleihiwa 1992). After the Māhele, Kauikeaouli (Kamehameha III) retained ownership of some portions of Kula as government lands. The nearest LCA awards occur directly on the Kalepolepo Village coastline and include house lots, potato gardens, taro lands, and pastures (Colin *et al*. 2000). There are no Land Commission Awards (LCA) for the subject property, which implies that the land was either not formally settled at the time of the Māhele or that residents and those with access to the parcel did not formally claim their land under the foreign system Waihona Aina 2013). The land is on or adjacent to Grant 10257/10287 according to the TMK Map (see Figure 2).

As Western influence grew, Kalepolepo in Kīhei became an important provisioning area. Europeans were now living or frequently visiting the coast and several churches and missionary stations were established. A Mr. Halstead left medical school on the East coast of the continent to become a whaler and, after marrying the granddaughter of Issac Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb *et al*. 1997). His residence and store situated at Kalepolepo landing was known as the Koa House having been constructed of *koa* logs brought from the uplands of Kula. The store flourished due to the whaling and potato industry and provided an accessible port for exported produce. Several of Hawai`i's ruling monarchs stayed at the Koa House, including Kauikeaouli (Kamehameha III), Kamehameha the 1V, Lot Kamehameha (V), and Lunalilo. Wilcox, giving a glimpse of the surroundings before abandonment, stated, "…Kalepolepo was not so barren looking a place. Coconut trees grew

beside pools of clear warm water along the banks of which grew taro and ape…" (1921:67). However, by 1887 this had changed. Wilcox (1921)continues:

> …the Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo…ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand…"

As early as 1828, sugar cane was being grown on Maui (Speakman 1981:114). Sugar was established in the Makawao area in the late 1800s and by 1899, the Kīhei Plantation Company (KPC) was growing cane in the plains above Kīhei. The Kīhei Plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&SC) in 1908, and they continued cultivating what had been the KPC fields into the 1960s. A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973). A landing was built at Kīhei (meaning "cape" or "cloak"; Pukui *et al.* 1974) around 1890. A 1929 map of Maui shows the vicinity of Kīhei landing as a destination for the HC&SC railroad, extending through an underdeveloped terrain.

Ranching was also present in Kula prior to the 1840s (Land Court Awards, State Archives). Large sections of Crown Land were leased for grazing cattle, and, by the 1880s, lower Kula consisted primarily of pastureland for ranching. Archaeological evidence of ranching is present near the subject parcel. In 1888, Edwin H. Baily, Lorrin A. Thurston, W.H. Baily, and Henry P. Baldwin met in Honolulu and purchased Maui ranch lands owned by Charles Alexander for $50,000. The resulting ranch included 33,817 acres with 400 to 500 acres set aside for corn cultivation. Coastal activity remained concentrated in Kalepolepo from the mid 1800s through the early 1900s. Kīhei in coastal Kula was known as a dry, dusty place but Haleakalā Ranch was able to utilize the lands for cattle (Donham 1990). Sugar cultivation continued through the 1970s in the upland areas of the Kula District and down to the Kīhei region. During WWII, the coastal section of Kīhei was used for amphibious training. The area continued to steadily grow until the 1970s when Kīhei and the neighboring coastal areas underwent rapid and prolonged development for residential and commercial projects associated with the tourism industry.

PREVIOUS ARCHAEOLOGICAL RESEARCH

Much of coastal Kīhei was originally developed in the 1970s, prior to the implementation of SHPD requirements in relation to the protection of cultural, historical and archaeological properties of significance. In perhaps direct relation to the early constructed development of coastal Kīhei, previous archaeological studies in the general vicinity of the current subject parcel have yielded only modest evidence of human settlement.

No previous archaeological studies have occurred in the current project area. However, a substantial number of archaeological investigations have been conducted over the past few years near the present project area in the Kīhei-Makena area of Maui. Archaeological studies have been conducted in both upland and coastal Wailuku/Makawao Districts (see Chaffee and Dega 2011). Table 1 presents an overview of projects conducted in the general project area (Makena-Kīhei). Figure 4 shows many of these project locations. A summary of more relevant project are then presented.

Several projects have been conducted near the current project area. In 2000, Fredericksen (2001) conducted monitoring of a waterline replacement project being conducted by the County of Maui Board of Water Supply to the north of the current project area along both Halama Street and Alanui Street. Two site remnants were recorded along Halama Street. Site Number 50-50-09-5003 appears to be an extension of a pre-Contact occupation layer previously identified during an Inventory Survey (Fredericksen and Fredericksen 2001) and was noted near the northern end of Halama Street. A previously unidentified site remnant was seen near the southern extent of the Halama Street waterline installation trench and was designated as State Site 50-50-09-5060. Both State Sites 50-50-09-5003 and -5060 were interpreted to be probable habitation areas. Cultural material observed at Site 5060 included fire cracked rocks (FCR), scattered coral; trace amounts of charcoal flecking, and some shell midden. One urchin spine abrader tip was recovered from the site.

Table 1: List of Sample Archaeological Projects by Ahupua`a Location in Chronological Order. (Note: These are provided as a guide and given their ubiquity, are not cited in the References section).

Location	Report
Kama`ole Ahupua`a	Sinoto 1978
	Keau 1981
	Neller 1982
	Leidemann 1989
	Hammatt and Shideler 1989
	Sinoto 1989
	Fredericksen *et al.* 1989
	Fredericksen *et al.* 1990
	Hammatt and Shideler 1990
	Sinoto 1990
	Kennedy 1991
	Fredericksen *et al.* 1991
	Rotunno-Hazuka and Pantaleo 1991
	Kennedy *et al.* 1992
	Hammatt and Shideler 1992
	Fredericksen *et al.* 1994
	Mayberry and Haun 1998
	Haun 1998
	Fredericksen and Fredericksen 1999
	Calis 2001
	Tome and Dega 2002
Keokea Ahupua`a	Cox 1976
	Brown 1989
	Brown *et al*. 1989
	Donham 1990b
	Kennedy and Breithaupt 1991
	Hibbard 1995
	Hammatt and Shideler 2000
	Fredericksen 2001
	Fredericksen and Fredericksen 2001
Waiohuli Ahupua`a	Cordy 1977
	Miura 1982
	Kennedy 1986
	Watanabe 1987
	Riford 1987
	Kennedy 1988
	Donham 1989
	Donham 1990a
	Fredericksen *et al.* 1993
	Fredericksen *et al.* 1994
	Hibbard 1994
	Fredericksen and Fredericksen 1995a
	Fredericksen and Fredericksen 1995b
	Dunn and Spear 1995
	Chaffee *et al.* 1997
	Sinoto *et al.* 1999
	McDermott and Hammatt 2000
	Kikiloi and Hammatt 2000
	McGerty *et al.* 2000
	McDermott 2001
	Sinoto *et al.* 2001

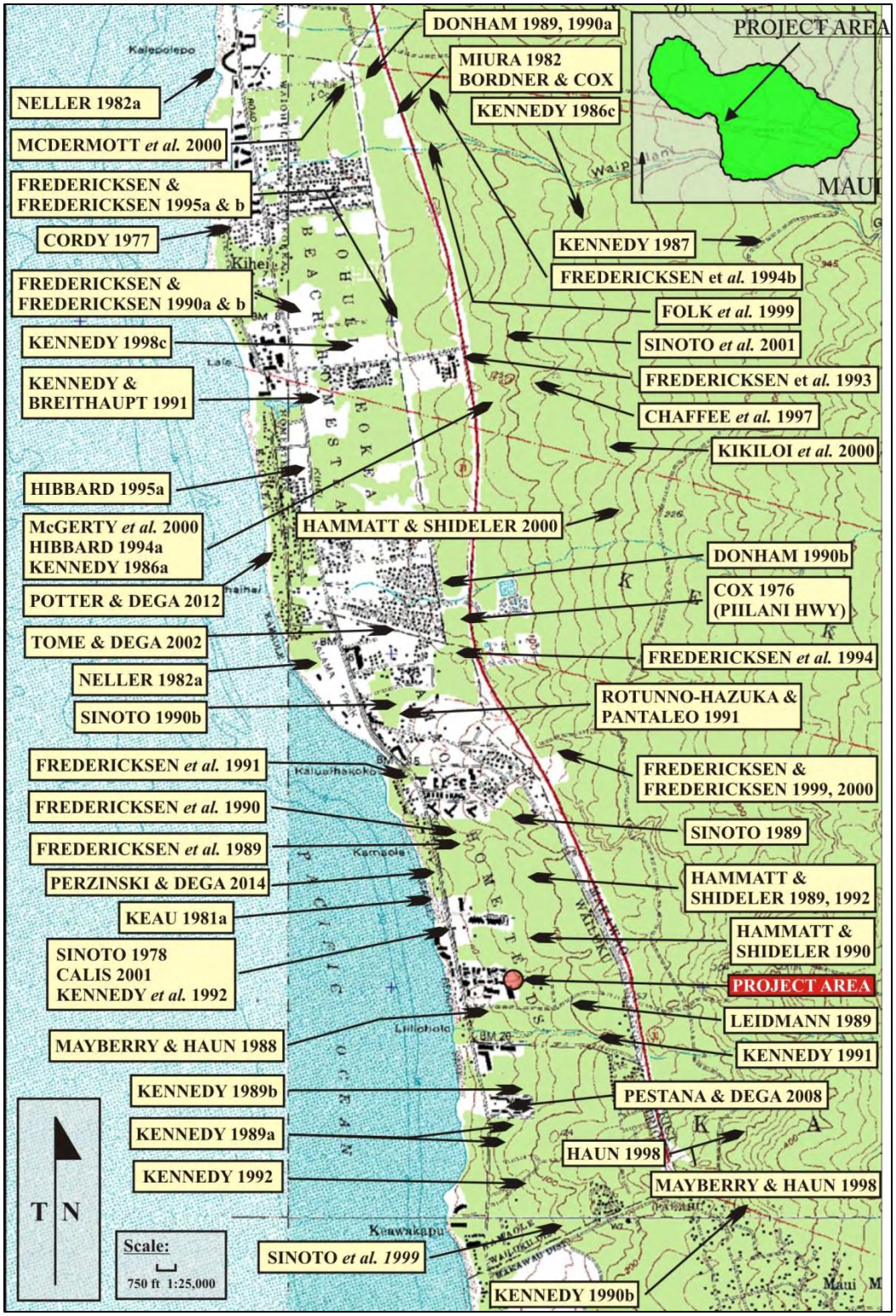

Figure 4: USGS Quadrangle (Puu O Kali 1992) Map Showing Previous Archaeological Work Conducted in the Vicinity of the Project Area.

In the south portion of Kīhei, in the Makena/Makena-Kīhei transition area, isolated, traditional-period habitation deposits (in both intact and remnant condition) occur along the coastal stretch (see Tome and Dega 2002) as do Proto-historic/historic site remnants. For instance, during Archaeological Inventory Survey of TMK: (2) 2-1-007: 008 (Roberts *et al*. 2000), two walls and three terraces were documented (State Site 50-50-09-4818), both interpreted to be associated with temporary occupation of the coastal area. Remnant subsurface deposits yielding small concentrations of midden and charcoal, also reminiscent of temporary use areas, were identified and dated to early historic times (Roberts *et al*. 2000:38). Such remnants often occur beneath existing fill or natural layers. Surface survey was also completed on the same coastal parcel by Lee-Greig (2002). Historic walls associated with State Site 50-50-09-4818 were identified and three new sites, comprising State Site 50-50-09-5182 (human burial), State Site 50-50-09-5414 (cultural deposit), and State Site 50-50-09-5413 (agricultural complex) were also identified (see Lee-Greig 2002).

Scientific Consultant Services, Inc. conducted Monitoring in the Waiohuli-Keokea Beach Lots (Potter and Dega 2012), to the north of the current project area, in a similar subsurface environment. No historic properties were documented during the study. All sediments observed in the project area were a mixture of previously disturbed silty sand and a natural deposit of beach sand. SCS is also in the process of conducting Monitoring across the street from the current parecel (see Dagher and Spear 2014), in Kamaole Beach Park I and Kamaole Beach Park II [TMK: (2) 3-9-005:030 por. and 3-9-005:029 por.]. To date, no historic properties have been identified.

PROJECT AREA EXPECTATIONS

The project area is located in Dune land deposits (Foote *et al.* 1972 Sheet Number 108). Thus, there is a moderate to high probability of the inadvertent finding of traditional Native Hawaiian burials due to the presence of sandy beach deposits which known to contain such evidence throughout the Hawaiian Islands (Kirch 1985). In addition, there is a moderate to high probability of finding subsurface evidence of traditional Native Hawaiian activities including: hearths, postholes, midden deposits, and other occupation debris (*e.g.*, stone tool waste, discarded fishing gear).

MONITORING CONVENTIONS AND METHODOLOGY

This AMP has been prepared in accordance with DLNR-SHPD rules governing standards for Archaeological Monitoring (13-279). Archaeological monitors will adhere to the following guidelines during monitoring:

1. A qualified archaeologist familiar with the project area and the results of previous archaeological work conducted in the general area will monitor all ground altering construction activities along the road corridor. If significant deposits or features are identified and additional field personnel are required, the archaeologist will notify the contractor or representatives before additional personnel are brought to the site.

2. One archaeological monitor will be present for each piece of ground altering machinery within both natural and disturbed contexts. We propose herein, however, given the potential that disturbance is high in the corridor and unlikely to reveal significant cultural deposits, that full-time monitoring be implemented from the commencement of the project. However, after a certain length of time and ground altering work, if no significant historic properties or artifacts, etc. are discovered, the full-time monitoring revert to intermittent or on-call monitoring. The time frame of implementing the change is proposed at two weeks of full-time work, then discussions with the SHPD on an intermittent visitation schedule.

3. If features or cultural deposits are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted. The SHPD will be contacted to establish feature significance and potential mitigation procedures. Treatment activities primarily include documenting the feature/deposit by plotting its location on an overall site map, illustrating a plan view map of the feature/deposit, profiling the deposit in three dimensions, photographing the finds—with the exception of human burials, collecting any artifacts and/or significant soil samples, and triangulating the finds. Construction work and/or back-filling of excavation pits or trenches will only continue in the sample location when all documentation has been completed.

4. Control stratigraphy in association with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and the contracting archaeological firm, these deposits will be sampled.

5. In the event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD Maui-island archaeologist and SHPD-Maui Island Culture History branch will both be immediately contacted about the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Islands Burial Council by the SHPD.

A determination of the minimum number of individuals (MNI), age(s), and ethnicity of the burial(s) will be ascertained in the field. Rules outlined in Chapter 6e, Section 43 shall be followed. Profiles, plan view maps, and illustrative documentation of skeletal parts will be recorded to document the burial(s). The burial location will be identified and marked. If a burial is disturbed during trench excavations, materials excavated from the vicinity of the burial(s) will be manually screened through 1/8-inch wire mesh screens to recover any displaced skeletal material. If the remains are to be removed, the work will be in compliance with HRS 6.E-43.6, Procedures Relating to the Inadvertent Discovery of Human Remains after approval from all parties (SHPD, Burial Council).

6. To ensure that contractors and the construction crew are aware of this Archaeological Monitoring Plan and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.

7. The archaeologist will provide all coordination with the contractor, SHPD, and any other group involved in the project. The archaeological firm will coordinate all monitoring and sampling activities with the safety officers to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.

8. As necessary, verbal reports will be made to SHPD and any other agencies as requested. The contracting archaeologist will notify the SHPD vis written document when the work commences.

LABORATORY ANALYSIS

All samples collected during the project, except human remains, will undergo analysis at the SCS laboratory in Honolulu. In the event that human remains are identified, the SHPD will be immediately consulted per their disposition (remain in place or re-locate).

Photographs, illustrations, and all notes accumulated during the project will be curated at the Honolulu laboratory. All retrieved artifact and midden samples will be thoroughly cleaned, sorted, and analyzed. Significant artifacts will be photographed, sketched, and classified (qualitative analysis). All metric measurements and weights will be recorded (quantitative analysis). These data will be presented in tabular form within the final monitoring report. Midden samples will be minimally identified to major class (*e.g.*, bivalve, gastropod mollusk, echinoderm, fish, bird, mammal). All data will be clearly recorded on standard laboratory forms,

which also include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be prepared in the SCS laboratory and submitted for specialized radiocarbon analysis. While primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other material such as marine shell or nonhuman bone materials. SCS will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. Representative plan view sketches showing the location and morphology of identified sites/features/deposits will be compiled and illustrated.

CURATION

The archaeological firm will curate all recovered materials (except human remains, which would remain on-site in a secure area) until a permanent, more suitable curation center is identified. The land owner (County of Maui) may request to curate all recovered cultural materials once analysis has been completed.

REPORTING

An Archaeological Monitoring report documenting the project findings and interpretation, following SHPD guidelines for Archaeological Monitoring reports, will be prepared and submitted 180 days after the completion of fieldwork. This time line is requested to account for any radiocarbon age determinations (typically 30–45 days), if necessary.

If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal Significance Criteria. The Archaeological Monitoring report will be drafted until accepted by SHPD and will be submitted to both SHPD and to the client.

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APPENDIX G
Cultural Assessment Report

SCS Project Number 878-CIA-1

A CULTURAL IMPACT ASSESSMENT REPORT OF 1.438 ACRES OF LAND IN KAMA`OLE AHUPUA`A, WAILUKU DISTRICT, MAUI ISLAND, HAWAI`I [TMK 3-9-020:32]

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INTRODUCTION

Scientific Consultant Services (SCS), Inc. has been contracted by Victory Development Hawaii, LLC. to conduct a Cultural Impact Assessment of 1.438 acres of land in Kama`ole Ahupua`a, Wailuku District, Maui Island, Hawai`i [TMK: 3-9-020:32] (Figure 1 and 2). According to documents received, the construction of condominiums named the Nani Loa, is proposed.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua`a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights...may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

> ...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights...[H.B. No. 2895].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other

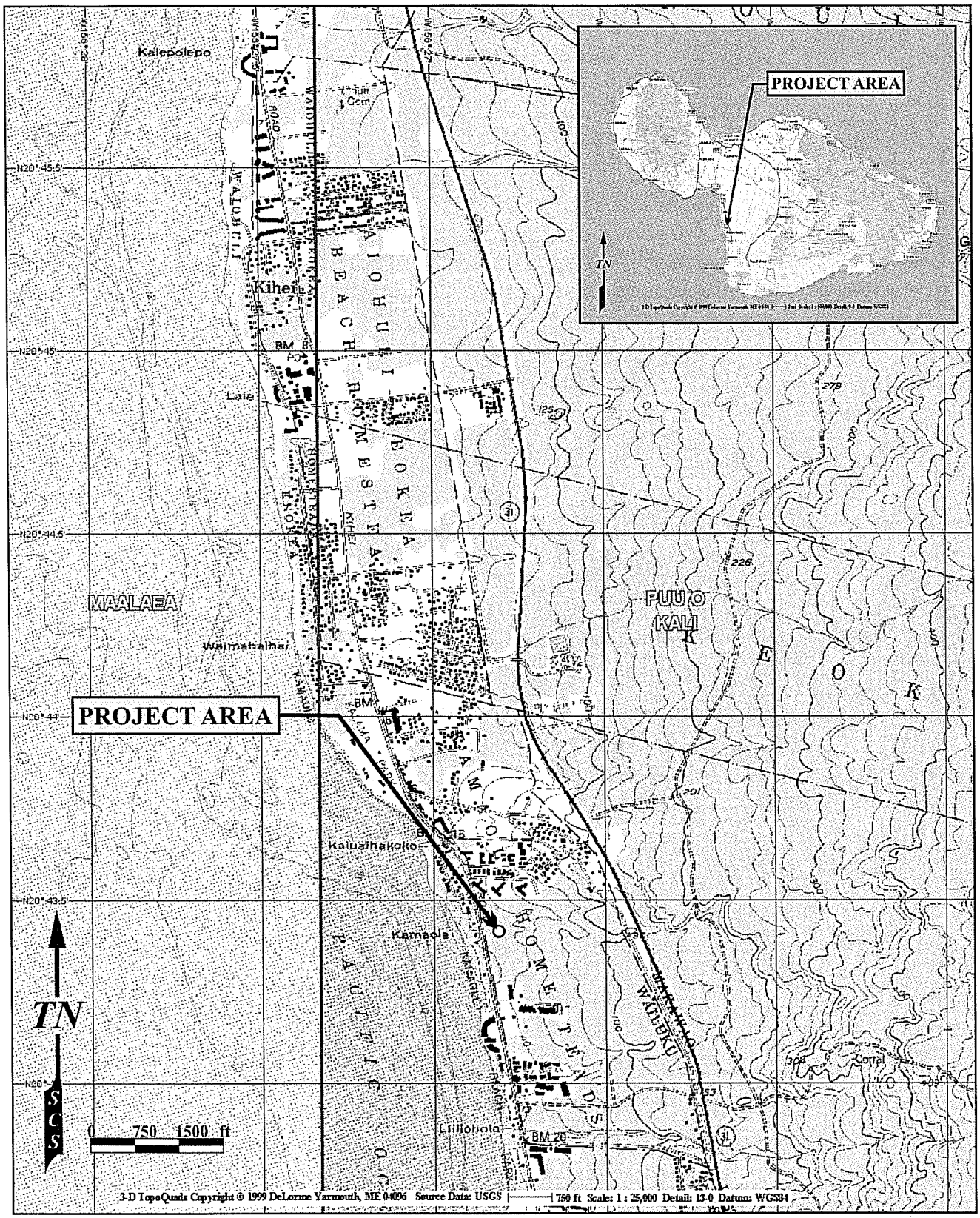

Figure 1: USGS Quadrangle Map Showing the Project Area.

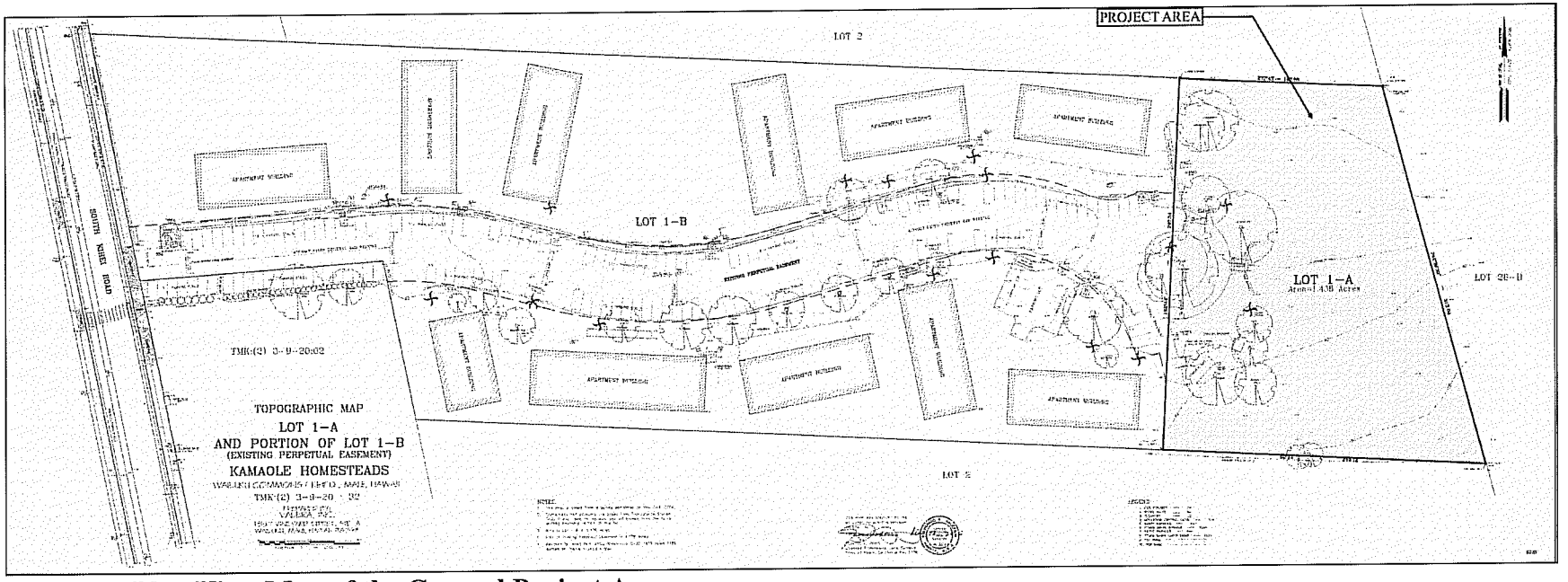

Figure 2: Plan View Map of the General Project Area.

ethnic groups, and it also amends the definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are...contrary to the State's environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000). Thus, not only are properties evaluated for impact to Native Hawaiians, but also for other ethnic groups as well.

Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua`a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on identified cultural resources, including values, rights, beliefs, objects, records, properties, and stories occurring within the project area and its vicinity (H.B. 2895, Act 50, 2000).

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the "Cultural Impact Assessment Methodology", the OEQC state:

> ...information may be obtained through scooping, community meetings, ethnographic interviews and oral histories...[1997].

This report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

(1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints of limitations with might have affected the quality of the information obtained;

(2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;

(3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;

(4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;

(5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;

(6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

(7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;

(8) an explanation of confidential information that has been withheld from public disclosure in the assessment;

(9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;

(10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;

(11) the inclusion of bibliography of references, and attached records of interviews which were allowed to be disclosed.

Based on the inclusion of the above information, assessments of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information. Often people are recommended for their expertise or can be located by visiting the area. Organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs, historical societies, Island Trail clubs, and Planning Commissions are invited

to contribute their input and suggest further avenues of inquiry, as well as specific individuals to interview.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and then incorporated into the document. Key topics discussed with the interviewees vary from project to project, but usually include: personal association to the *ahupua`a*, land use in the project's vicinity; knowledge of traditional trails, gathering areas, water sources, religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous activities identified while in the project vicinity.

In this case initial letters, briefly outlining the development plans along with maps of the project area, were sent to organizations whose jurisdiction includes knowledge of the area with an invitation for consultation. Consultation was sought from the Maui Branch of the Office of Hawaiian Affairs, Community Resource Coordinator; the Office of Hawaiian Affairs, O`ahu; the Cultural Resources Commission for the Maui Planning Department; Cultural Historian for the State Historic Preservation Division, and the Central Maui Civic Club. Based on this research, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT AREA AND VICINITY

The project area is an undeveloped lot located in Kīhei, Kama`ole Ahupua`a, Wailuku District (traditional district of Kula). The project area's west perimeter is marked by Kihei Kai Nani Condominium Complex. The south is delineated by a chain link fence marking the northeast border of the Kihei Akahi Condominium Complex and the north side is bounded by an ongoing development. The east is bordered by an area containing *kiawe* (*Prosopis pallida*) and grass (Figure 3).

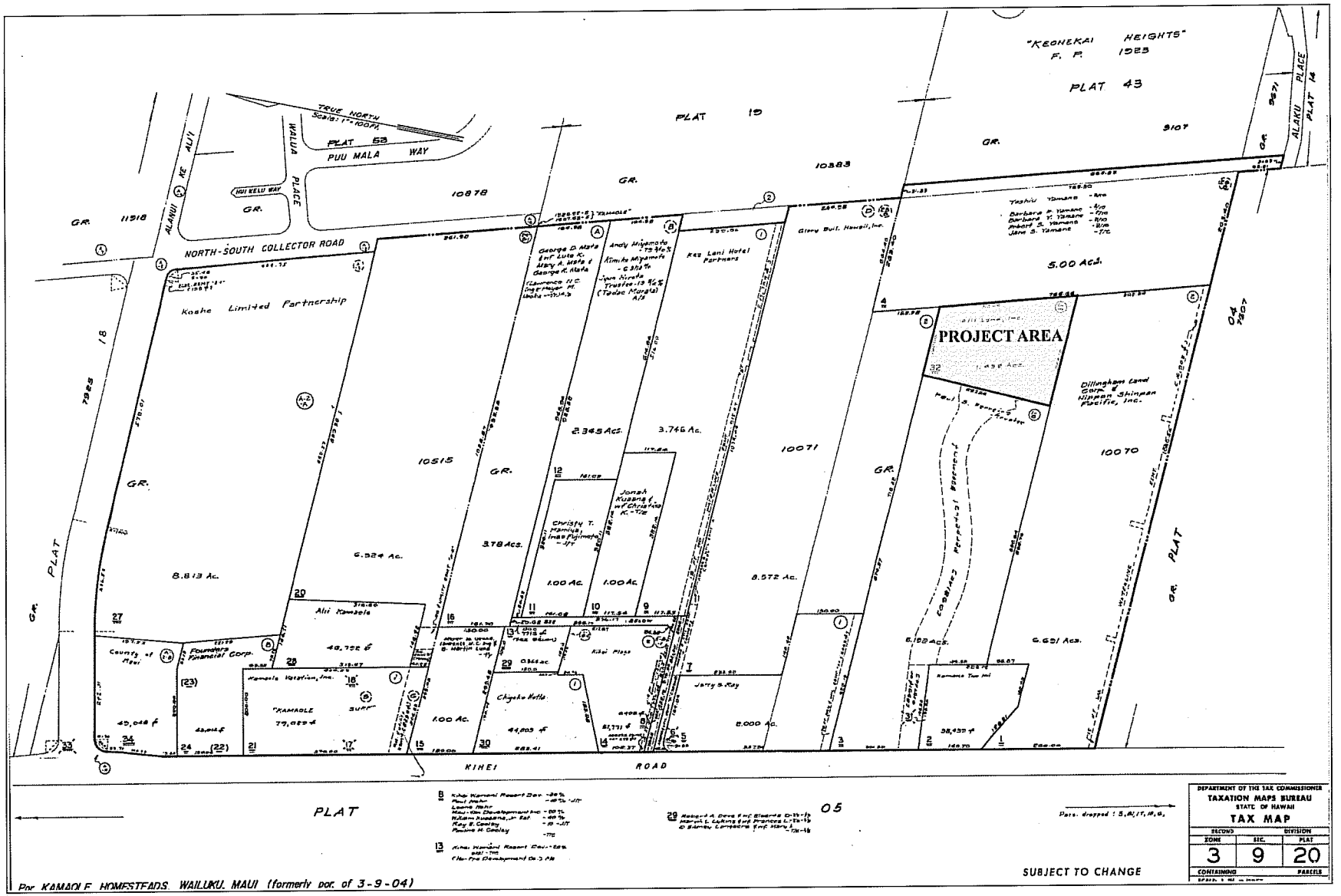

Figure 3: Tax Map Key [TMK] Showing Project Area Location.

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. The Island was formed by two volcanoes, Mount Kukui in the west and Haleakalā in the east. The younger of the volcanic features, Haleakalā, soars 2,727 m (10,023 feet) above sea level and embodies the largest section of the island. Unlike the amphitheater valleys of West Maui, the flanks of Haleakalā are distinguished by gentle slopes. Although it receives more rain than its counterpart in the east, the permeable lavas of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. The few perennial streams found on the windward side of Haleakalā originate from springs located at low elevations. Valleys and gulches were formed by intermittent water run-off. The environment factors and resource availability heavily influenced pre-Contact settlement patterns. Although an extensive population was found occupying the uplands above the 30-inch rainfall line where crops could easily be grown, coastal settlement was also common (Kolb *et al.* 1997). The existence of three fishponds at Kalepolepo, north of the project area, and at least two *heiau* have been identified near the shore.

The literature confirms the presence of a stable population relying mainly on coastal and marine resources. Agriculture may have been practiced behind the dune berms in low-lying marshland or in the vicinity of Kealia Pond. It is suggested that permanent habitation and their associated activities occurred from A.D. 1200 through the present in both the uplands and coastal region (*Ibid.*).

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Fornander places Kaka`alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919–20, Vol. 6:248]). Land was considered the property of the king or *ali`i `ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i `ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, they distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`* *āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) that customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina* or *`ili* were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (Lyons 1875:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa `āina* residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in Kama`ole Ahupua`a, meaning literally "childless" (Pukui *et al.*:81).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture, which included pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (A.D. 1200–1400 [Kirch 1985]). According to Handy, there was "continuous cultivation on the coastal region along the northwest coast" of Maui. He wrote:

> On the south side of western Maui the flat coastal plain all the way from Kihei and Ma`alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish...[1940:159].

WAHI PANA (LEGENDARY PLACES)

There is little specific information pertaining directly to Kīhei where the proposed project is located (Clark 1980). Presently, Kīhei refers a six-mile section along the coast from the town

of Kīhei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the *kama`āina* of the district including at least two *heiau*. In ancient times, there was a small village at Kalepolepo based primarily on marine resources. It was recorded the blustery Kaumuku Winds would occasionally arrive with amazing intensity along the coast (Wilcox 1921).

There were several fishponds in the vicinity of Kīhei; Waiohuli, Kēōkea-kai, and Kalepolepo Pond (also known by the ancient name of Kō`ie`ie Pond; Kolb *et al.* 1997). Constructed on the boundary between Ka`ono`ulu and Waiohui Ahupua`a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Kēōkea-kai) has been lost in antiquity, but they were reportedly rebuilt at least three times through history, beginning during the reign of Pi`ilani (1500s; *ibid*; Cordy 2000).

Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi`ilani, the son of the great chief Pi`ilani, who had bequeathed the ponds to Umi, ruler of Hawai`i Island. Umi's *konohiki* (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs couldn't be done without the assistance of the *menehune* who were master builders (Wilcox 1921:66-67). The *konohiki* was furious and Kikau was told he would die once the repairs had been made. Kēōkea-kai was the first to be repaired. When the capstone was carried on a litter to the site, the *konohiki* rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the *konohiki* did the same. As the last pond, then known as Ka`ono`ulu-kai, was completed, the *konohiki* once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and *konohiki* into the dirt. The workers reportedly said "*Ua konohiki Kalepolepo, ua eku i ka lepo*," or, "the manager of Kalepolepo, one who roots in the dirt" (*ibid*:66). That night a tremendous storm threw down the walls of the fishponds. The *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi`o valley from then on. The region o Kēōkea-kai and Ka`ono`ulu-kai fishpond became known as Kalepolepo fishpond (*ibid*).

The Kalepolepo fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s, at which time it supplied *`ama`ama* (mullet) to Kahekili II. Again, it was restored by Kamehameha I when he ruled as governing chief over Maui and for the last time in the 1840s when prisoners from Kaho`olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing

the Maui chiefs. The stream draining into Kealia pond (north of the project area) became sacred to royalty and *kapu* to commoners (Stoddard 1894).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or "King's trail" built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei. One trail, named "*Kekuawaha`ula`ula*" or the "red-mouthed god", extended from Kīhei inland to Kēōkea . Another, the Kaleplepo trail, began at the Kalepolepo fishpond and continued to upland Waiohuli. These trails were not only used in the pre-Contact era, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb *et al.* 1997:61).

HISTORIC PERIOD

Early records, such as journals kept by explorers, travelers and missionaries, Hawaiian traditions that survived long enough to be written down, and archaeological investigations have assisted in the understanding of past cultural activities. Unfortunately, early descriptions of this portion of the Maui coast are brief and infrequent. Captain King, Second Lieutenant on the *Revolution* during Cook's third voyage briefly described what he saw from a vantage point of "eight or ten leagues" (approximately 24 miles) out to sea as his ship departed the islands in 1779 (Beaglehole 1967). He mentions Pu`u Ōla`i south of Kīhei and enumerates the observed animals, thriving groves of breadfruit, the excellence of the taro, and almost prophetically, says the sugar cane is of an unusual height. Seen from this distance and the mention of breadfruit suggest the uplands of Kīpahulu-Kaupo and `Ulupalakua were his focus.

In the ensuing years, LaPérouse (1786), Nathaniel Portlock and George Dixon, (also in 1786), sailed along the western coast, but added little to our direct knowledge of Kīhei. During the second visit of Vancouver in 1793, his expedition becalmed in the Ma`alaea Bay close to the project area. (A marker commemorating this visit is located across from the Maui Lu Hotel). He reported:

> The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of [Vancouver 1984:852].

Archibald Menzies, a naturalist accompanying Vancouver stated, "...we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920:102). According to Kahekili, then chief of Maui, the extreme poverty in the area was the result of the continuous wars between Maui and Hawai`i Island causing the land to be neglected and human resources wasted (Vancouver 1984:856).

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on Western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame`eleihiwa 1992:169–70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great *Māhele* of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). No LCAs were located near the present project area.

Traditionally, Kama`ole was a part of the Kula District. Kauikeaouli (Kamehameha III) retained ownership of some portions of his Kula lands including Kama`ole Ahupua`a (Kame`eleihiwa (1992). The nearest LCA awards occur directly on the Kalepolepo Village coastline to the north, and include house lots, potato gardens, some taro lands, and pastures (Colin *et al.* 2000).

As western influence grew, Kalepolepo in northern Kīhei became an important provisioning area. Europeans were now living or frequently visiting the coast and several churches and missionary stations were established. A Mr. Halstead left medical school on the East coast of the continent to become a whaler and after marrying the granddaughter of Issac Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb et al. 1997). His

residence and store situated at Kalepolepo landing was known as the Koa House having been constructed of *koa* logs brought from the uplands of Kula. The store flourished due to the whaling and potato industry and provided an accessible port for exported produce. Several of Hawai`i's ruling monarchs stayed at the Koa House, including Kauikeaouli (Kamehameha III), Kamehameha the 1V, Lot Kamehameha (V), and Lunalilo. Wilcox, giving a glimpse of the surroundings before abandonment, stated: "...Kalepolepo was not so barren looking a place. Coconut trees grew beside pools of clear warm water along the banks of which grew taro and ape..." (1921:67). However, by 1887 this had changed. Wilcox continues:

> ...the Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo...ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand..." [1921]

As early as 1828, sugar cane was being grown on Maui (Speakman 1981:114). Sugar was established in the Makawao area in the late 1800s and by 1899, the Kihei Plantation Company (KPC) was growing cane in the plains above Kīhei. The Kihei Plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&SC) in 1908, and they continued cultivating what had been the KPC fields into the 1960s. A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973). A landing was built at Kīhei (meaning "cape" or "cloak"; Pukui *et al.* 1974: 110) around 1890. A 1929 map of Maui shows the vicinity of Kīhei landing as a destination for the HC&SC railroad, extending through an underdeveloped terrain.

Coastal activity remained concentrated in Kalepolepo from the mid 1800s through the early 1900s. Kīhei in coastal Kula was known as a dry, dusty place but Haleakalā Ranch was able to utilize the lands for cattle (Donham 1990). Sugar cultivation continued through the 1970s in the upland areas of the Kula District and down to the Kīhei region. During WWII, the coastal section of Kīhei was used for amphibious training. The area continued to steadily grow until the 1970s when Kīhei and the neighboring coastal areas underwent rapid and prolonged development for residential and commercial projects.

SUMMARY AND CULTURAL ASSESSMEMNT

The "level of effort undertaken" to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the present parcels, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from the Maui Branch Office of Hawaiian Affairs, Community Resource Coordinator; the Office of Hawaiian Affairs, O`ahu; the Maui Planning Department Cultural Resources Commission; the Central Maui Hawaiian Civic Club; and the State Historic Preservation Division Cultural Historian.

Additionally, historical and cultural source materials were also consulted, extensively used, and can be found listed in the References Cited portion of the report. Such scholars as Kamakau (1961), Thrum (1908, 1916 1917), Fornander (1919, 1969), Walker (1930), Kuykendall (1938), Beckwith (1940), Chinen (1961), Handy and Handy (1972), Puku`i *et al.* (1974), Kelly (1983, 1998), and Kame`eleihiwa (1992) have contributed, and continue to contribute, to our knowledge and understanding of Hawai`i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona `Aina Data base (2005).

Analysis of the potential effect of the project on cultural resources, practices or beliefs, the potential to isolate cultural resources, maintain practices or beliefs in their original setting, and the potential of the project to introduce elements that may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). The passing of Act 50 in April 2000 mandates the assessment of impacts on cultural practices by the proposed project. As stated earlier, this includes the cultural resources of the different groups comprising the multi-

ethnic community of Hawai`i. Cultural resources can include sites, behaviors, values, beliefs, rights and stories, among other things.

The project area does not appear to have been used for traditional cultural purposes within recent times. Based on historical research and the lack of response from the Maui Branch of the Office of Hawaiian Affairs, Community Resource Coordinator; the Office of Hawaiian Affairs, O`ahu; the Cultural Resources Commission for the Maui Planning Department; Cultural Historian for the State Historic Preservation Division, and the Central Maui Civic Club, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities will not be affected and there will be no direct adverse effect upon cultural practices or beliefs on Parcel 32. Visual impact would appear to be minimal based on the location of the project area. Because there were no activities identified on Parcel 06, there were no adverse effects.

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APPENDIX H
Preliminary Engineering Report

PRELIMINARY ENGINEERING REPORT

FOR

NANI LOA

Kihei, Maui, Hawaii

T.M.K.: (2) 3-9-020: 032

Prepared for:

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August 2007
Revised July 2014

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PRELIMINARY ENGINEERING REPORT
FOR
NANI LOA
T.M.K.: (2) 3-9-020: 032

1.0 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 anticipated improvements which may be required for the proposed project.

The subject parcel is identified as T.M.K.: (2) 3-9-020: 032 and encompasses an area of 1.438 acres. It is also Lot 1-A of the Kamaole Homesteads. The project site is bordered by the ongoing construction of the Aloha Village project to the north, vacant land to the east, Kihei Akahi the south, and the Kihei Kai Nani to the west.

The development plan includes one three-story building with 11 units and one four-story building with 28 units, a swimming pool, and an outdoor barbeque area and restrooms. Associated improvements include grading, paved parking areas, utility connections, and landscaping.

2.0 EXISTING INFRASTRUCTURE

2.1 ROADWAYS

Piilani Highway is the primary road linking Kihei, Wailea, and Makena to other areas on Maui. Piilani Highway is a four-lane highway, which is owned and maintained by the State.

South Kihei Road is a two-lane, County-owned roadway, which runs parallel to Piilani Highway along the coastline. South Kihei Road

serves most of the commercial and residential communities in the Kihei region.

The proposed North-South Collector Road is located between Piilani Highway and South Kihei Road, approximately 250 feet east of the project site. Portions of this roadway are improved and the County of Maui is in the planning stages of improving additional sections of the North-South Collector Road.

Ke Alii Alanui Road, Kanani Road, Keonekai Road and Kilohana Drive are the nearby roadways running in the east-west direction in the vicinity of the project site. Kanani Road, Ke Alii Alanui and Kilohana Drive are signalized at its intersections with Piilani Highway. With the exception of Kilohana Drive, these roadways are owned by the County.

There is a perpetual access and utility easement in favor of the subject property from South Kihei Road through the Kihei Kai Nani property. The easement traverses through the existing driveway and parking area of the Kihei Kai Nani, which currently provides access to the subject property.

2.2 DRAINAGE

The elevation on the site ranges from elevation 54 feet above mean sea level at the northeasterly corner of the site to 34 feet above mean sea level at the midpoint of the westerly boundary, averaging approximately 9.0%.

There is an existing drainageway traversing through the middle of the site. Presently, runoff in the drainageway flows toward the westerly boundary of the site into an existing 2'-0" x 7'-6" concrete box culvert and outlets below the existing planter at mauka end of the parking lot for the Kihei Kai Nani. The runoff sheet flows

through the existing parking area toward South Kihei Road. According to the *Drainage Master Plan for Kihei, Maui, Hawaii*, August 1997, prepared by Norman Saito Engineering Consultants, Inc., the 100-year flow in the existing drainageway is 660 cfs at the existing 2'-0" x 7'-6" concrete box culvert.

According to Panel Number 150003 0588F of the Flood Insurance Rate Map, September 19, 2012, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone X, which represents areas outside the 0.2% annual chance floodplain.

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 soils within the project site are classified as Dune land (DL) and Puuone sand (PZUE). Dune land consists of hills and ridges of sand-sized particles drifted and piled by the wind. The hills and ridges are actively shifting or are so recently fixed or stabilized that no soil horizons have developed. Puuone sand is characterized as having rapid permeability above the cemented layer, slow runoff and a moderate to severe wind erosion hazard.

It is estimated that the existing 50-year, 1-hour storm runoff from the project site is 1.973 cfs, corresponding to a runoff volume of 1,539 cubic feet.

2.3 SEWER

There is an existing 8-inch sewer stubout within the project site which connects to the existing sewerline in the perpetual easement over the Kihei Kai Nani project site. The sewerline traverses down the driveway and parking area of the Kihei Kai Nani and connects to the existing 24-inch sewer main on South Kihei Road, which

transports sewer to the existing sewer pump station located in Kalama Park. Wastewater collected from the Kihei area is transported to the Kihei Wastewater Treatment Plant located above Piilani Highway and south of the Elleair Maui Golf Course.

2.4 WATER

Domestic water and fire flow will be provided by the County's water system. There is an existing 12-inch waterline along South Kihei Road, which can adequately provide service for the project.

Storage for the project area is provided by a 2.0 million gallon concrete tank, known as the Kamaole tank at an elevation of approximately 311.5 feet. It is located above Piilani Highwway, approximately 3,800 feet to the east of the project site.

The source for the water system is the Mokuhau wells located in Happy Valley.

2.5 ELECTRIC, TELEPHONE, AND CABLE TV

The existing electrical distribution system on South Kihei Road is overhead and on the Makai side of South Kihei Road. All of the electrical, telephone, and cable TV distribution systems in the adjoining developed properties have been installed underground.

3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS

3.1 ROADWAYS

Access for the proposed project will be from the existing concrete and paved driveway for the Kihei Kai Nani. These improvements are located within the existing perpetual access and utility easement.

The Traffic Impact Assessment Report, prepared by the Phillip Rowell and Associates in June 2014 concluded that no mitigation is recommended. The report found that the proposed Nani Loa development is not expected to have a significant impact on traffic operations in the project vicinity. The critical traffic movements at the intersections in the project vicinity (South Kihei Road at Kihei Kai Nani and South Kihei Road at Keonekai Road) are anticipated to operate at similar levels of service with or without the project traffic.

3.2 DRAINAGE

After the development of the proposed project, it is estimated that the 50-year, 1-hour storm runoff will be 5.86 cfs, a net increase of 4.209 cfs. The corresponding increase in runoff volume will be 686 cubic feet (2,225 cubic feet – 1,539 cubic feet). Onsite runoff will be intercepted by grated catch basins located within the paved parking and landscape areas. The runoff will be conveyed to an onsite subsurface drainage system, which will be located in the pavement and landscaped areas. The subsurface drainage system consists of a perforated drainline embedded in crushed rock which will be wrapped with a layer of filter fabric. Surface runoff entering the perforated pipe will be allowed to infiltrate into the ground. The subsurface drainage system will be designed and sized to accommodate the increase in surface runoff volume from a 50-year, 1-hour storm created by the proposed project plus an additional 20 percent of the increase in runoff.

The drainage design criteria will be to minimize any alterations to the natural pattern of the existing onsite surface runoff and reduce the quantity of runoff sheet flowing from the project to the downstream properties. The proposed drainage system will be designed in accordance with Chapter 4, “Rules for the Design of Storm Drainage Facilities in the County of Maui.”

3.3 SEWER

The proposed 39-unit apartment complex will generate approximately 9,945 gallons of wastewater daily. The onsite sewerage collection system will be designed to accommodate this flow. At the present time, the existing collection and transmission systems, pumping facilities and treatment plant have the capacity to handle the anticipated wastewater generated by the project.

According to the Wastewater Reclamation Division, County of Maui, as of August 27, 2013, the KWRF has a capacity of 8.0 million gallons per day (mgd). The average flow into the KWRF is 3.5 mgd and the allocated capacity is 6.805 mgd. The remaining capacity at the KWRF is approximately 1.2 mgd.

The onsite sewer system will consist of a gravity flow system which will connect to the existing 8-inch sewerline on within the perpetual access and utility easement and to the 24-inch sewerline on South Kihei Road.

The subject project is located within the Kihei Assessment Area 7. At the present time, the County is assessing sewer fees of $210.00 per apartment unit for the collection system upgrade and $1,185.75 per apartment unit for the treatment plant facility expansion.

3.4 WATER

In accordance with the Department of Water Supply's Domestic Consumption Guidelines for multi-family residential development, the average daily demand for the 39-unit apartment is approximately 21,840 gallons per day. Fire flow demand for multi-family residential development is 2,000 gallons per minute for a 2-hour duration. Fire hydrants will be installed with a maximum spacing of 250 feet.

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.

3.5 ELECTRIC, TELEPHONE, AND CABLE TV

The proposed electrical, telephone and cable TV distribution systems in the subject development will be installed underground from South Kihei Road. Interior project lighting will be provided as approved by the Department of Planning.

APPENDIX A

HYDROLOGIC CALCULATIONS

Hydrologic Calculations

Purpose: Determine the increase in onsite surface runoff due to the development of the project site based on a 50-year, 1-hour storm.

A. Determine the Runoff Coefficient (C):

EXISTING CONDITIONS:

Infiltration (Medium)	=	0.07
Relief (Rolling)	=	0.03
Vegetal Cover (Good)	=	0.03
Development Type (Open)	=	0.15
C	=	0.28

DEVELOPED CONDITIONS:

ROOF AREAS:

Infiltration (Negligible)	=	0.20
Relief (Hilly)	=	0.06
Vegetal Cover (None)	=	0.07
Development Type (Roof)	=	0.55
C	=	0.88

PAVED AREAS:

Infiltration (Negligible)	=	0.20
Relief (Flat)	=	0.00
Vegetal Cover (None)	=	0.07
Development Type (Pavement)	=	0.55
C	=	0.82

LANDSCAPE AREAS:

Infiltration (Medium)	=	0.07
Relief (Flat)	=	0.00
Vegetal Cover (Good)	=	0.03
Development Type (Open)	=	0.15
C	=	0.25

DEVELOPED CONDITIONS:

Paved Area = 0.569 Acres

Roof Area = 0.510 Acres

Landscaped Area = 0.359 acres

WEIGHTED C = 0.70

B. Determine the 50-year 1-hour rainfall:

i_{50} = 2.5 inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition:

T_c = 13 minutes

I = 4.901 inches/hour

Developed Condition:

T_c = 6 minutes

I = 6.133 inches/hour

C. Drainage Area (A) = 1.438 Acres

D. Compute the 50-year storm runoff volume (Q):

Q = CIA

Existing Conditions:

Q = (0.28)(4.901)(1.438)

= 1.973 cfs

Developed Conditions:

Q = (0.69)(6.133)(1.438)

= 6.182 cfs

The increase in runoff due to the proposed development is 6.182 - 1.973 = 4.209 cfs. The increase in runoff volume due to the proposed development is 2,225 cubic feet – 1,539 cubic feet = 686 cubic feet.

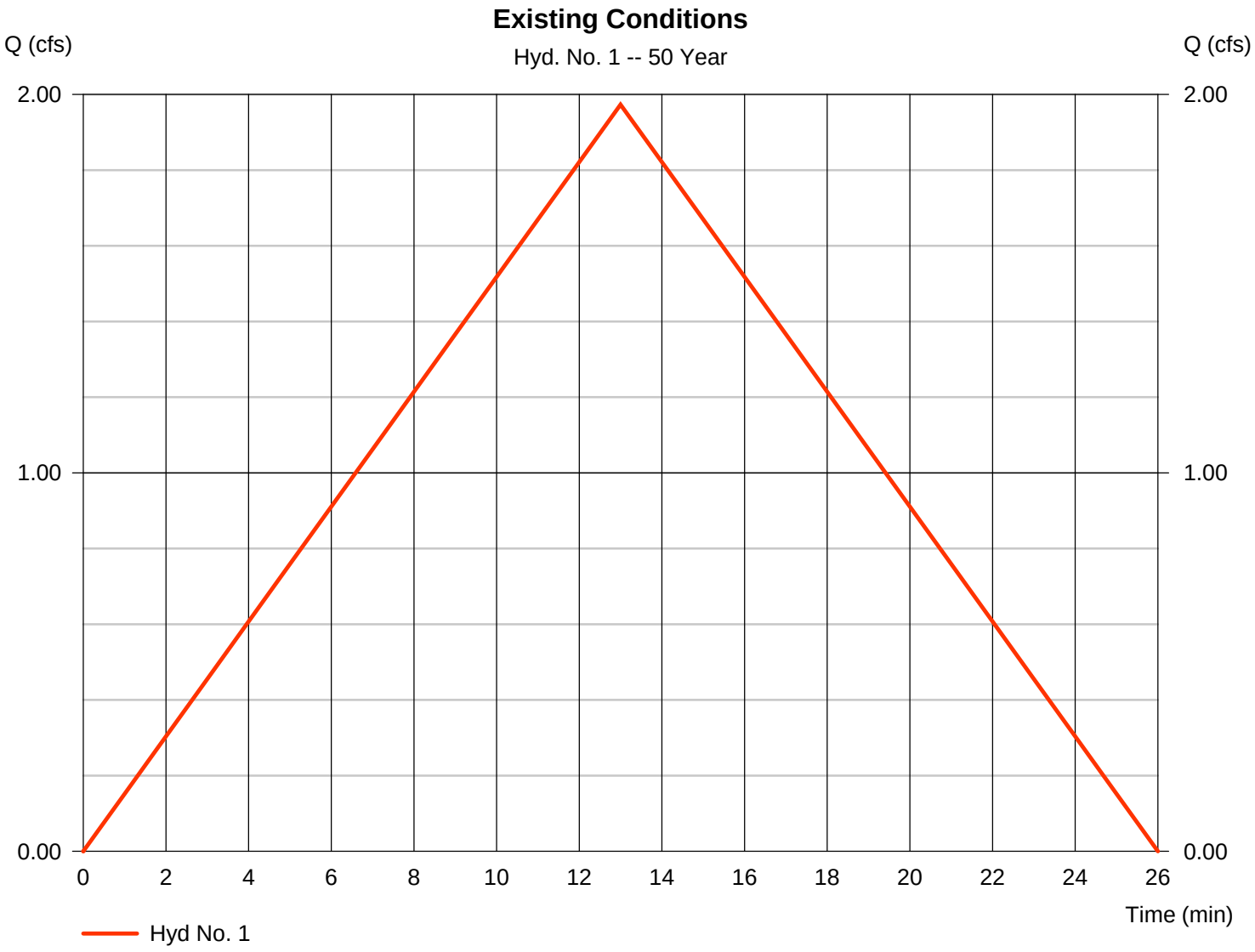
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Wednesday, 07 / 9 / 2014

Hyd. No. 1

Existing Conditions

Hydrograph type	=	Rational	Peak discharge	=	1.973 cfs
Storm frequency	=	50 yrs	Time to peak	=	13 min
Time interval	=	1 min	Hyd. volume	=	1,539 cuft
Drainage area	=	1.438 ac	Runoff coeff.	=	0.28
Intensity	=	4.901 in/hr	Tc by User	=	13.00 min
IDF Curve	=	2-5.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

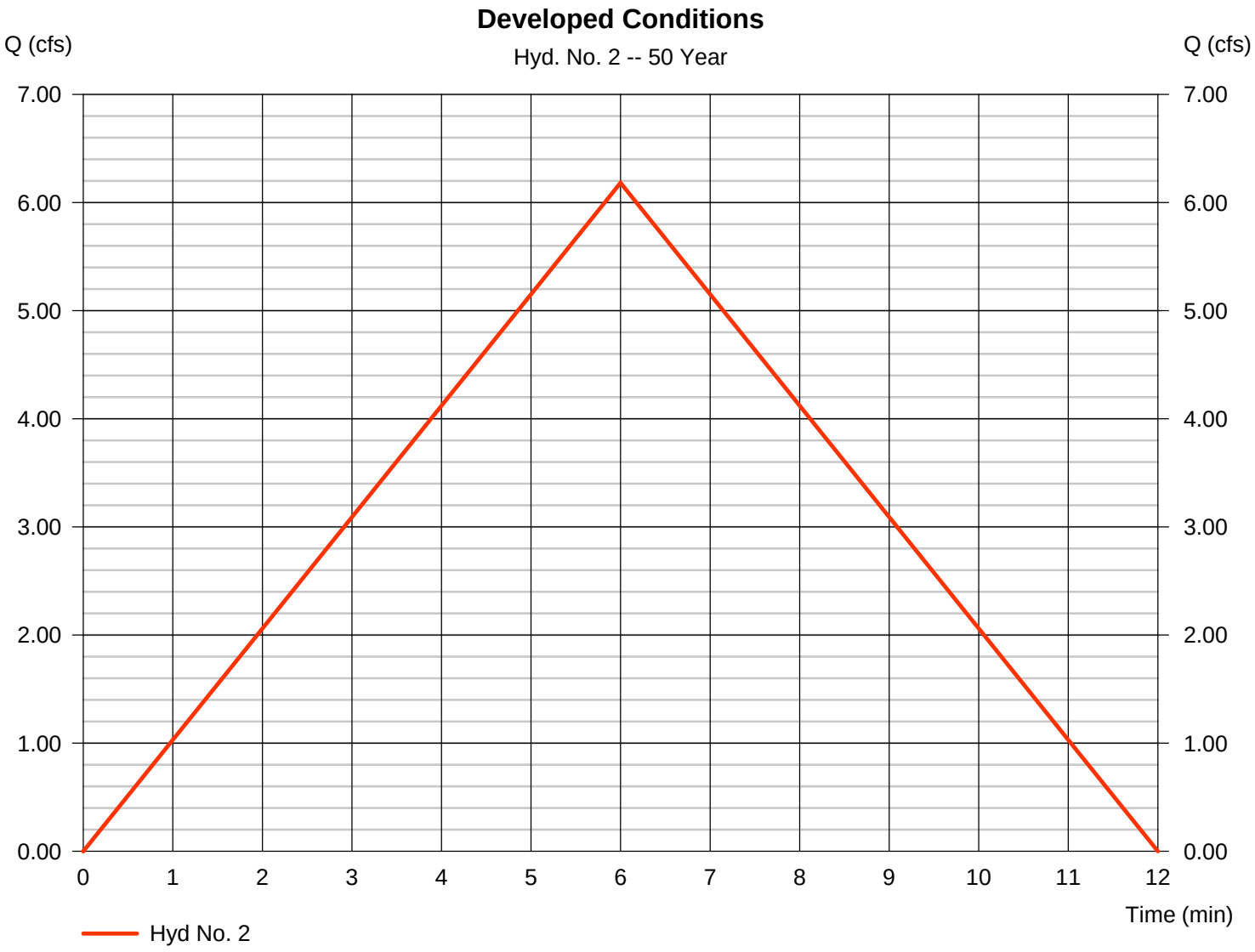
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Wednesday, 07 / 9 / 2014

Hyd. No. 2

Developed Conditions

Hydrograph type	=	Rational	Peak discharge	=	6.182 cfs
Storm frequency	=	50 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	2,225 cuft
Drainage area	=	1.440 ac	Runoff coeff.	=	0.7*
Intensity	=	6.133 in/hr	Tc by User	=	6.00 min
IDF Curve	=	2-5.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(0.510 x 0.88) + (0.359 x 0.25) + (0.569 x 0.82)] / 1.440



APPENDIX B

WATER DEMAND CALCULATIONS

WATER DEMAND CALCULATIONS

Per 2002 Water System Standards:

Average Daily Demand (ADD) = 560 gallons per unit or 5,000 gallons per acre

ADD = (560 gallons/unit) x (39 units) = 21,840 gallons per day

ADD = (5,000 gallons/acre) X (1.438 acres) = 7,190 gallons per day

Average Daily Demand is 21,840 gallons (Greater of the two consumption)

APPENDIX C

WASTEWATER CALCULATIONS

WASTEWATER CALCULATIONS

Per the 1993 Wastewater Flow Standards:

Wastewater Contribution for a Multi-Family Unit is 255 gallons/day/unit

Contribution = (39units) x (255 gallons/unit/day) = 9,945 gallons per day

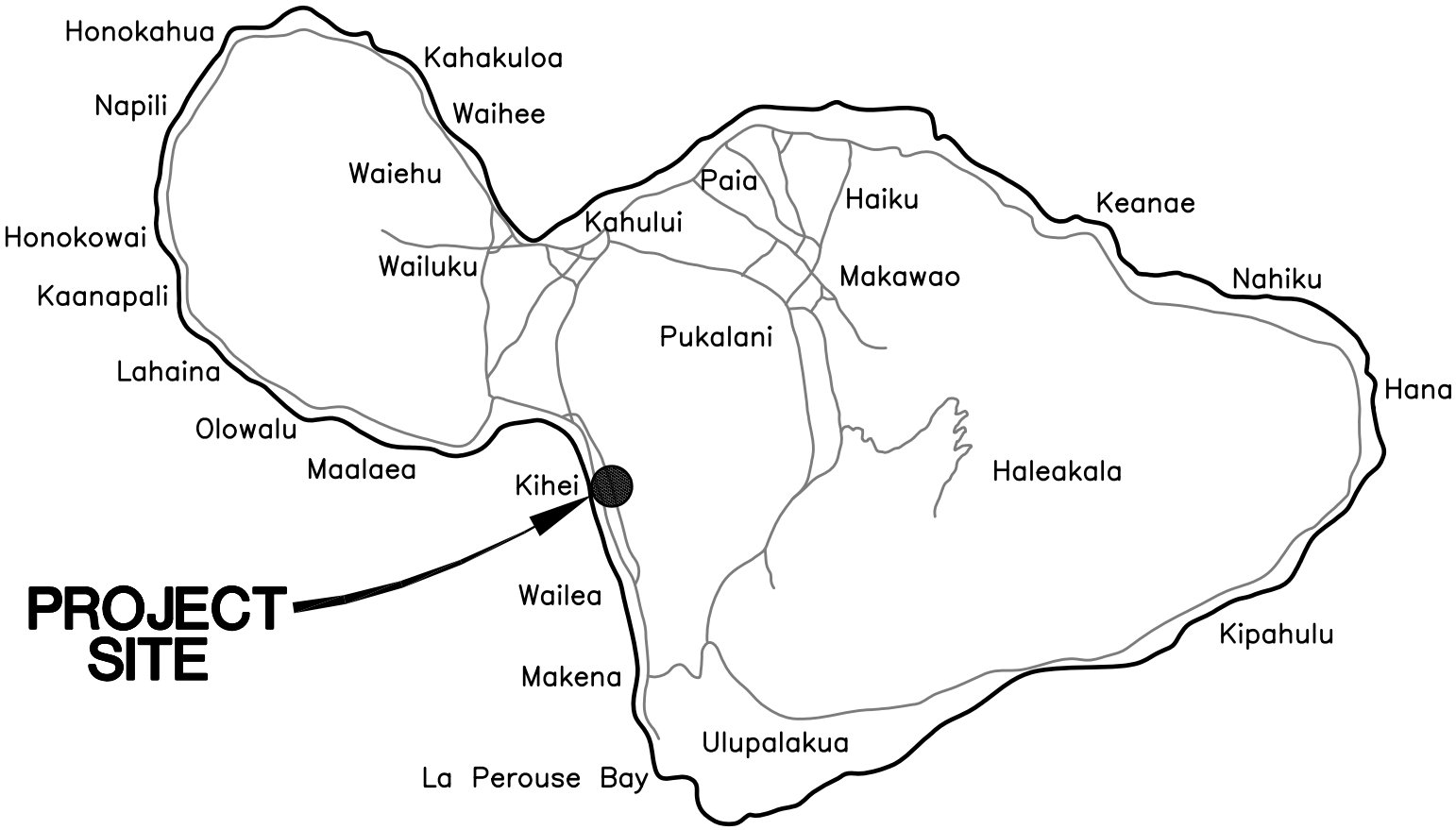
EXHIBITS

1 Location Map

2 Vicinity Map

3 Soil Survey Map

4 Flood Insurance Rate Map

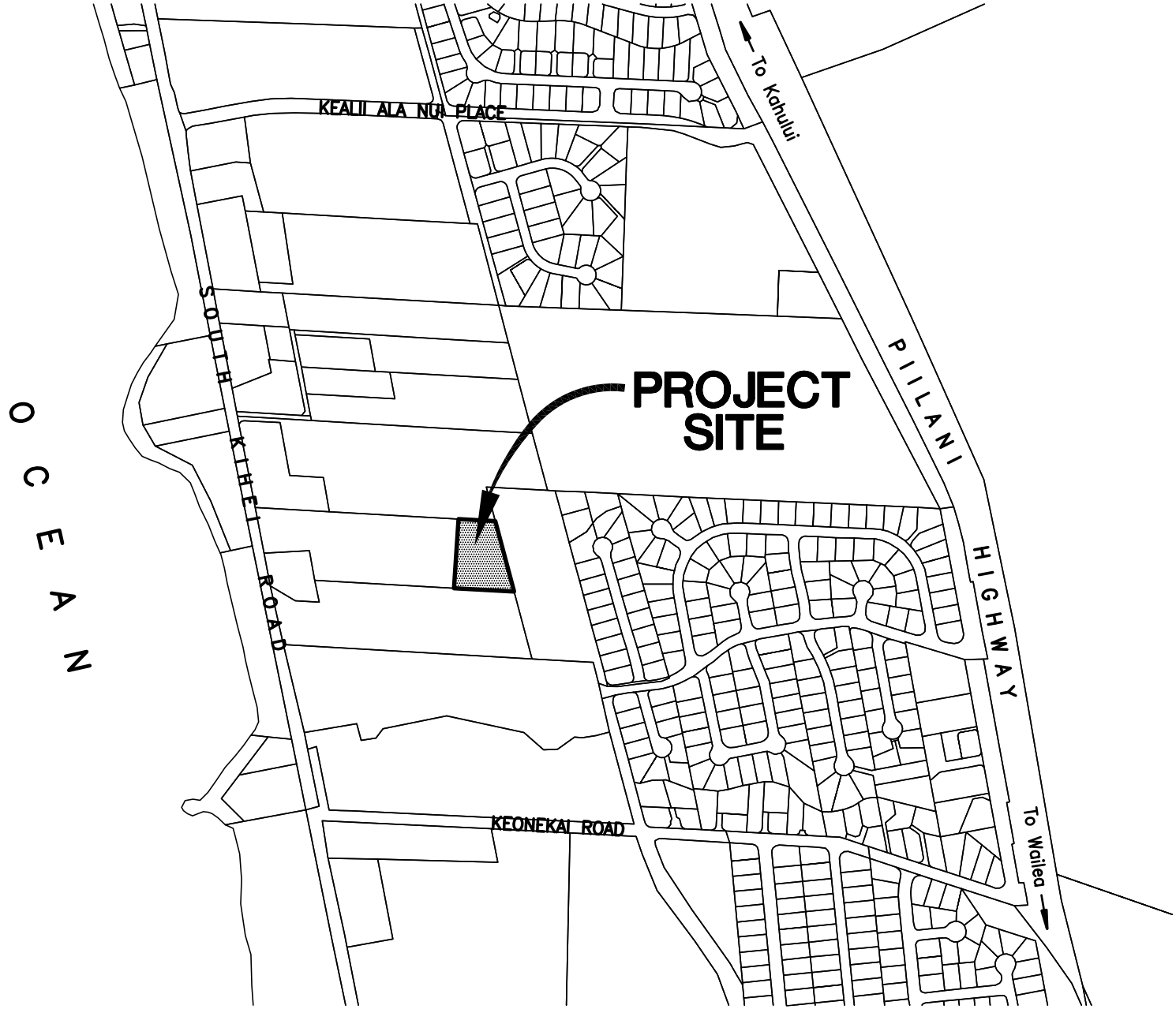


N

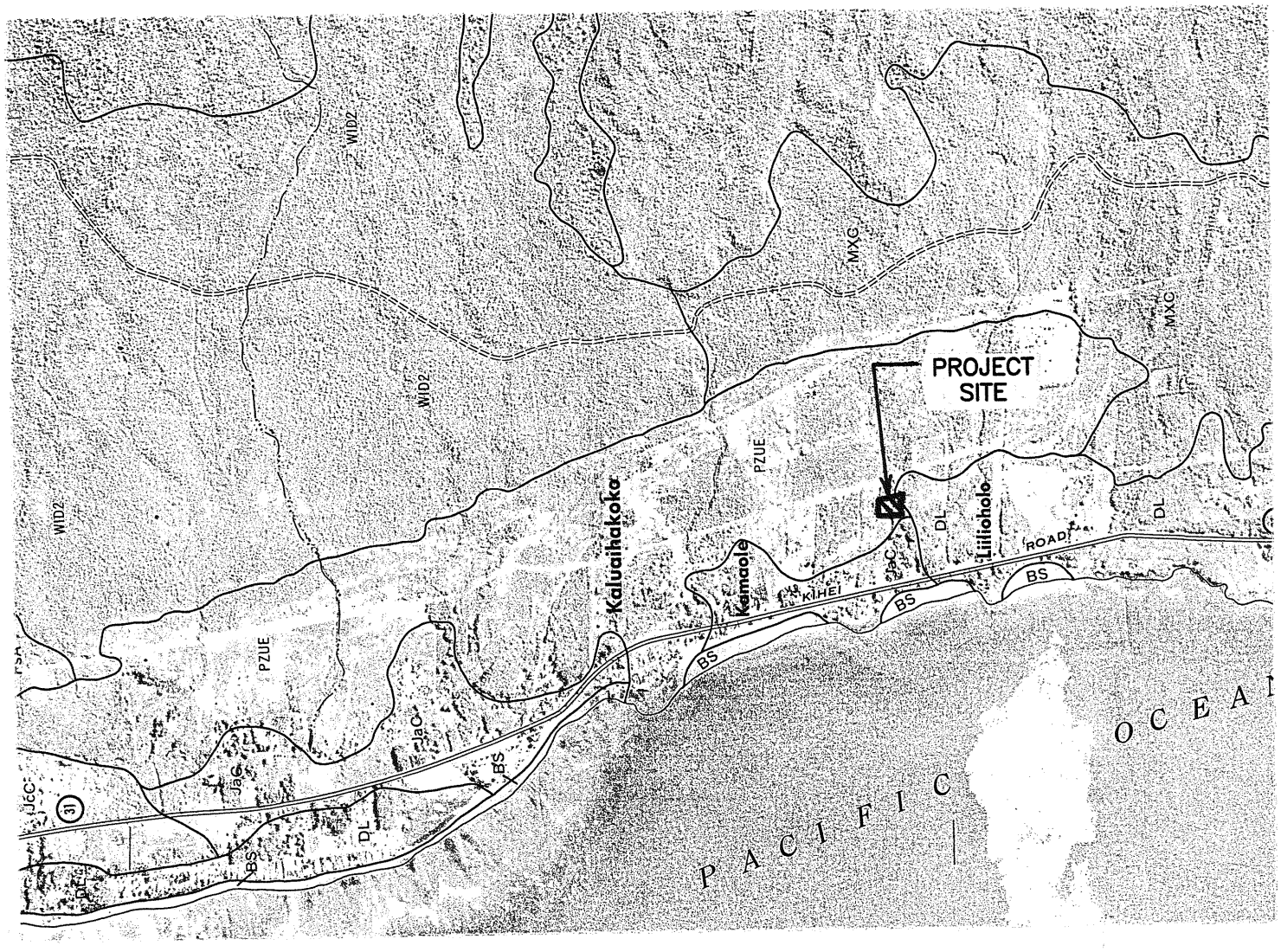
ISLAND OF MAUI

NOT TO SCALE

LOCATION MAP
EXHIBIT 1



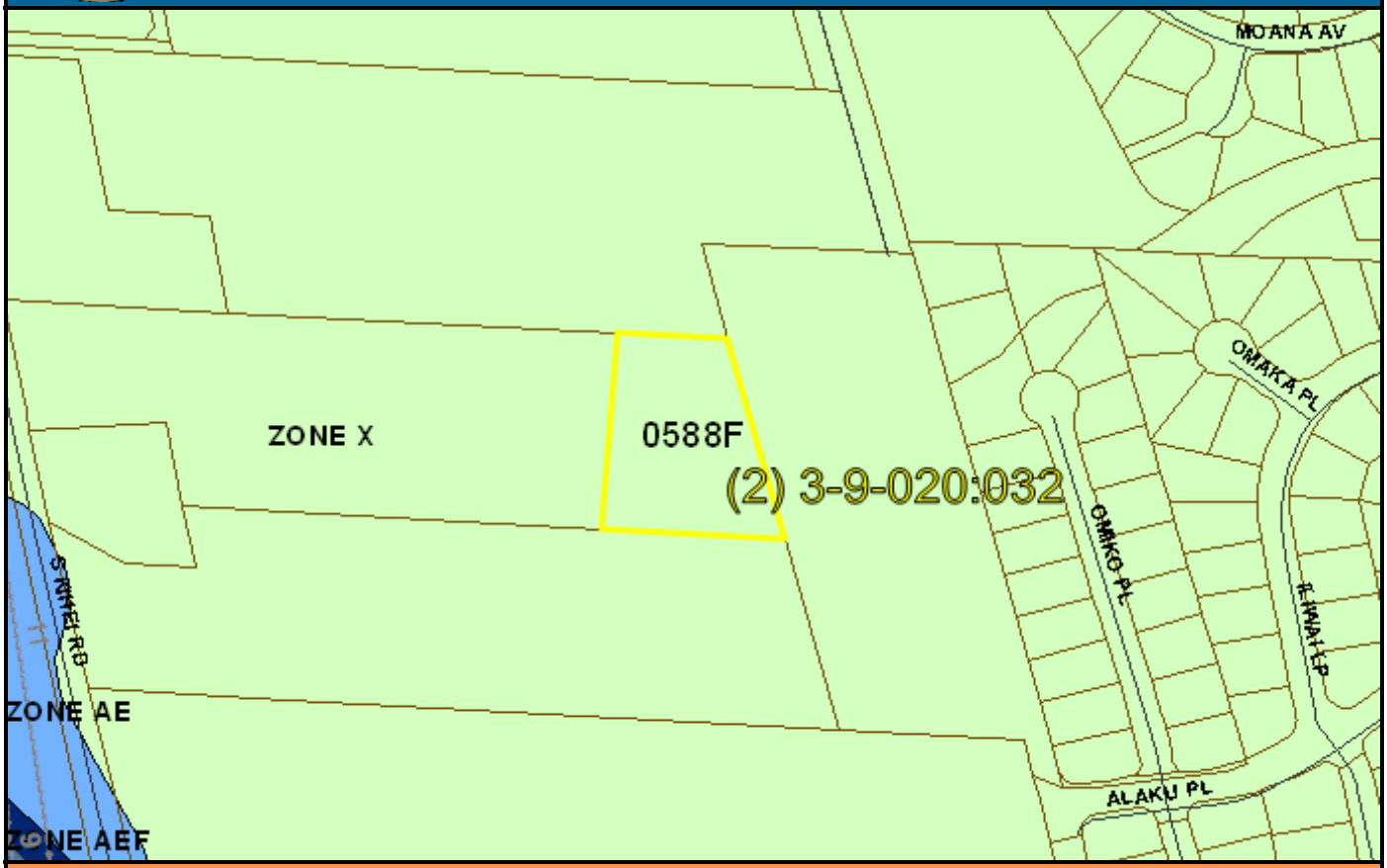
VICINITY MAP
EXHIBIT 2



SOIL SURVEY MAP
EXHIBIT 3

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- Zone A: No BFE determined.
- Zone AE: BFE determined.
- Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	MAUI
TMK NO:	(2) 3-9-020-032
PARCEL ADDRESS:	2505 S KIHEI RD KIHEI, HI 96753
FIRM INDEX DATE:	SEPTEMBER 19, 2012
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	1500030588F
PANEL EFFECTIVE DATE:	SEPTEMBER 19, 2012

PARCEL DATA FROM:	JULY 2013
IMAGERY DATA FROM:	MAY 2005

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
County of Maui	
Carolyn Cortez	(808) 270-7253
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Disclaimer: The Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR from any liability, which may arise from its use.

If this map has been identified as 'PRELIMINARY' or 'UNOFFICIAL', please note that it is being provided for informational purposes and is not to be used for official/legal decisions, regulatory compliance, or flood insurance rating. Contact your county NFIP coordinator for flood zone determinations to be used for compliance with local floodplain management regulations.

EXHIBIT 4

FLOOD INSURANCE RATE MAP

APPENDIX I

Traffic Impact Analysis Report

Phillip Rowell and Associates
47-273 'D' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8206 FAX: (808) 239-4175 Email:prowell@hawii.rr.com

December 30, 2014

Victory Development, Inc.
c/o Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Maui, HI 96793

Attn: Raymond Cabebe

Re: **Traffic Impact Assessment Report**
Nani Loa Condominiums, 2505 South Kihei Road, Kihei, Maui, Hawaii

Dear Raymond:

Phillip Rowell and Associates have completed the following Traffic Impact Assessment Report (TIAR) for Nani Loa Condominiums, a proposed multi-family residential project in Kihei. The report is presented in the following format:

A. Project location and Description
B. Purpose and Objective of Study
C. Study Approach
D. Description of Existing Roadways and Intersections
E. Existing Peak Hour Traffic Volumes
F. Public Transportation
G. Level-of-Service Concept
H. Existing (2014) Levels-of-Service
I. Existing Deficiencies
J. 2020 Background Traffic Conditions
K. Project Trip Generation
L. Background Plus Project Projections
M. Traffic Impact Assessment
N. Mitigation
O. Summary and Recommendations

A. Project location and Description

The proposed action is the construction of 39 multi-family residential condominiums. The project is located at the east end of the driveway of Kihei Kai Nani. The address is 2505 South Kihei Road. The site is currently vacant.

A site plan is provided as Attachment A. Access and egress will be provided by the existing Kihei Kai Nani Driveway.

B. Purpose and Objective of Study

The objective of this traffic assessment is to confirm that any traffic operational problems in the immediate vicinity of the project are identified, assessed and mitigated as needed to provide acceptable access and egress levels-of-service for the project.

C. Study Approach

1. A preliminary trip generation analysis was performed to determine the scope of the traffic analysis required and the intersections to be studied. This analysis estimated that the project could generate 24 trips during the morning peak hour and 28 trips during the afternoon peak hour. Therefore, the scope of work should be consistent with an "access location and design review." The study area includes the following intersections:

    a. South Kihei Road at Kealii Alanui
    b. Nani Loa Driveway Entrance and Exit
    c. South Kihei Road at Keonekai Road
    d. South Kihei Road at Kamaole Shopping Center Side Street

2. A field reconnaissance was performed to confirm existing roadway cross-sections, intersection lane configurations, right-of-way controls, traffic control devices, bus stops and surrounding land uses.

3. Existing weekday morning and afternoon peak hour traffic volumes for the study intersections were obtained from manual traffic counts of the study intersections. The intersections were counted manually because turning movement volumes are required to perform the level-of-service analysis. Public schools were in session during the counts.

4. A level-of-service analysis of the study intersections was performed using the methodology described in the *Highway Capacity Manual* (HCM). The purpose of this analysis was to identify any existing traffic operating deficiencies.

5. A list of other known development projects within and adjacent to the study area that will impact traffic conditions at the study intersections was compiled. Estimated peak hour traffic volumes that the other know development projects will generate were estimated from data provided in the traffic impact studies for each project. Future traffic projections including traffic generated by the other known development projects but without project generated traffic at the study intersections were estimated.

6. A level-of-service analysis of future traffic conditions, including traffic generated by the other known developments, at the study intersections without project generated traffic was performed. This analysis was performed to estimate traffic operating levels-of-service and identify any operational deficiencies that may exist whether the proposed project is constructed or not. This process insures that any required mitigation improvements will be assessed against the appropriate project.

7. Peak hour traffic volumes that the proposed project will generate were estimated using procedures described in the *Trip Generation Handbook* [1] and data provided

[1] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., , p. 7-12

in *Trip Generation*.[2] Project generated trips were distributed and assigned to the appropriate movements at the study intersections. Future traffic projections at the study intersections with project generated traffic were then estimated.

8. The impacts of traffic generated by the proposed project at the study intersections were quantified by analyzing the changes in peak hour traffic volumes and by performing a level-of-service analysis of future traffic conditions without and with project generated traffic.

D. Description of Existing Roadways and Intersections

Attachment B is a schematic drawing indicating the right-of-way controls and lane configurations of the study intersections.

Existing Roadways

Within the study area, South Kihei Road is a two-lane, two-way, major County roadway, generally with a north-south orientation. There are sidewalks, curbs and gutters along both sides. There is also a bicycle lane along both sides. Unmetered parallel parking is allowed along the west side of the street. The posted speed limit along South Kihei Road is generally 20 miles per hour.

Keonekai Road is a two-lane, two-way roadway with an east-west orientation approximately 1,155 feet south of the Kihei Kai Nani Driveway. Keonekai Road connects South Kihei Road and Piilani Highway.

The Kamaole Shopping Center side street is a two-lane, two-way roadway approximately 600 feet north of Kihei Kai Nani driveway. The roadway runs along the north side of Kamaole Shopping Center. This roadway provides access from South Kihei Road to Kihei Regency Apartments, the shopping centers and retail development along both side of the street. This roadway will also provide access to two new residential developments planned for the vacant parcels in the area.

Kealii Alanui is a two-lane, two-way roadway with an east-west orientation approximately 570 feet north of the Shopping Center side street. Kealii Alanui connects South Kihei Road and Piilani Highway. Parking is allowed along both sides. Kealii Alanui also provides access to Kamalii Elementary School which is located in the southwest quadrant of the intersection of Kealii Alanui at Kanakanui Road.

Existing Intersections

The intersection of South Kihei Road at Kihei Kai Nani is an unsignalized T-intersection. The northbound and southbound approaches are South Kihei Road and are the uncontrolled approaches. Kihei Kai Nani is the westbound approach and is the STOP sign controlled approach. All approaches are one lane each. There is a cross-walk across the north leg of the intersection.

The intersection of South Kihei Road at Keonekai Road is an unsignalized T-intersection. The northbound and southbound approaches are South Kihei Road and are the uncontrolled

[2] Institute of Transportation Engineers, *Trip Generation, 8th Edition*, Washington, D.C., 2008

approaches. Keonekai Road is the westbound approach and is the STOP sign controlled approach. The northbound approach is an optional through or right turn lane. The southbound approach has a separate left turn lane and a through lane. The westbound approach has a left turn lane and a right turn lane. There are cross-walks across the east and south legs of the intersection.

The intersection of South Kihei Road at the Kamaole Shopping Center side street is a four-way, STOP sign controlled intersection. The northbound and southbound approaches are South Kihei Road and are the uncontrolled approaches. The eastbound and westbound approaches are STOP sign controlled. The eastbound approach is the exit from the Kamaole Nalu and the westbound approach is the side street along the north side of the Kamaole Shopping Center. The northbound, eastbound and westbound approaches are each one lane, an optional left turn, through or right turn lane. The southbound approach has one left turn lane and an optional through or right turn lane. There are cross-walks across the east and south legs of the intersection.

The intersection of South Kihei Road at Kealii Alanui is a four-way, signalized intersection. The northbound and southbound approaches are South Kihei Road and the westbound approach is Kealii Alanui. There is no eastbound approach. The west leg to the intersection is the entrance to the beach park. The northbound approach has one left turn lane, one through lane and one right turn lane. The southbound approach is one left turn lane and an optional through or right turn lane. The westbound approach is one left turn or through lane and one right turn lane. There are pedestrian cross-walks across the north, east and south legs of the intersection.

E. Existing Peak Hour Traffic Volumes

Current weekday peak hour traffic volumes at the study intersections were obtained from manual traffic counts. The intersections of South Kihei Road at Kihei Kai Nani and South Kihei Road at Keonekai Road were counted during March and April, 2014. The two remaining intersections were counted during September, 2014. The AM and PM peak hour counts are summarized on Attachment B. The traffic counts include mopeds, motorcycles, buses, trucks and other large vehicles.

The traffic counts were performed between 7:00 AM and 9:00 AM and between 3:30 PM and 5:30 PM on either a Tuesday or Thursday.

Pedestrians

Since pedestrian traffic along South Kihei Road is heavy, pedestrians at the intersections of South Kihei Road at Kihei Kai Nani and South Kihei Road at Keonekai Road were counted concurrently with the vehicular counts. Bicyclists were counted as pedestrians. The pedestrian counts determined that approximately 245 pedestrians use the intersection of South Kihei Road at Kihei Kai Nani during the morning peak hour and 135 pedestrians use the intersection during the afternoon peak hour. The count also determined that approximately 223 pedestrians use the intersection of South Kihei Road at Keonekai Road during the morning peak hour and 130 use the intersection during the afternoon peak hour.

F. Public Transportation

A review of Maui Bus routes determined that at the time this report is being written, the Maui Bus operates Route 10, the Kihei Islander along South Kihei Road. This route connects Wailea Iki Drive

in Wailea with Queen Kaahumanu Shopping Center in Kahului. There are bus stops at Keonekai Road and at Kamaole Shopping Center.

G. Level-of-Service Concept

Signalized Intersections

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-Service D is typically considered acceptable for peak hour conditions in urban areas.[3]

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

Table 1 Level-of-Service Definitions for Signalized Intersections(1)

Level of Service	Interpretation	Volume-to-Capacity Ratio(2)	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<10.0
C	Light congestion; occasional backups on critical approaches.	0.701-0.800	10.1-20.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	20.1-35.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	35.1-80.0
F	Total breakdown with stop-and-go operation.	>1.001	>80.0

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

[3] Institute of Transportation Engineers, *Traffic Access and Impact Studies for Site Development, A Recommended Practice*, Washington, D.C., 1991, p.39.

Unsignalized Intersections

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 2 summarizes the definitions for level-of-service and the corresponding delay.

Table 2 Level-of-Service Definitions for Unsignalized Intersections(1)

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	>10
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

H. Existing (2014) Levels-of-Service

The existing levels-of-service of the signalized study intersection of South Kihei Road at Kealii Alanui are summarized in Table 3. Volume-to-capacity ratios, delays and levels-of-service are shown for the overall intersection and each lane group. Even though level-of-service is defined by the delay, the volume-to-capacity ratios are shown as this is a factor in determining whether the traffic signal timing is a factor in estimating the level-of-service of a particular lane group.

Table 3 Existing (2014) Levels-of-Service - Signalized Intersections

Intersection and Movement	AM Peak Hour[1]			PM Peak Hour[2]		
	V/C[3]	Delay[4]	LOS[5]	V/C	Delay	LOS
South Kihei Road at Kealii Alanui	Cycle Length = 60 Seconds[5]			Cycle Length = 60 Seconds		
	0.36	***8.6***	***A***	***0.37***	***8.7***	***A***
Westbound Left & Thru	0.34	25.6	C	0.33	27.8	C
Westbound Right	0.09	24.1	C	0.06	26.1	C
Northbound Left	0.00	0.0	A	0.01	4.1	A
Northbound Thru	0.25	7.3	A	0.36	6.8	A
Northbound Right	0.06	6.1	A	0.07	4.9	A
Southbound Left	0.14	2.5	A	0.09	2.6	A
Southbound Thru & Right	0.30	3.3	A	0.35	5.3	A

NOTES:
(1) See Appendix C for Level-of-Service Worksheets for existing AM peak hour traffic conditions.
(2) See Appendix D for Level-of-Service Worksheets for existing PM peak hour traffic conditions.
(3) Volume-to-Capacity ratio.
(4) Delay in seconds per vehicle.
(5) Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.
(6) Traffic signal cycle length estimated by timing the traffic signal during peak hours.

The conclusions of the level-of-service analysis of the signalized intersection are that the intersection operates at Level-of-Service A during both peak periods. The westbound approach lane groups operate at Level-of-Service C and the lane groups along South Kihei Road operate at Level-of-Service A.

Unsignalized Intersections

The results of the level-of-service analysis of the unsignalized study intersections are summarized in Table 4. For the unsignalized intersections, delays and levels-of-service of the controlled lanes groups are shown. The *Highway Capacity Manual* does not estimated delays or levels-of-service of uncontrolled lane groups. Also shown in the table are the estimated queue lengths for the controlled lane groups. The queue lengths shown in the table are estimated vehicles using an average vehicle length of 25 feet.

Table 4 Existing (2014) Levels-of-Service - Unsignalized Intersections

Intersection, Approach and Movement	AM Peak Hour[1]			PM Peak Hour[2]		
	Delay [3]	LOS [4]	95th Queue[5]	Delay	LOS	95th Queue
South Kihei Road at Kihei Kai Nani	***0.5***	***A***	***NC[6]***	***0.8***	***A***	***NC***
Westbound Left & Right	15.1	C	<1	16.8	C	<1
Northbound Thru & Right	Uncontrolled Lane Group[7]			Uncontrolled Lane Group		
Southbound Left & Thru	0.2	A	<1	0.6	A	<1
South Kihei Road at Keonekai Road	***2.9***	***A***	***NC***	***3.1***	***A***	***NC***
Westbound Left	19.0	C	<1	34.7	D	<2
Westbound Right	10.8	B	<1	14.6	B	<1
Northbound Thru & Right	Uncontrolled Lane Group			Uncontrolled Lane Group		
Southbound Left	8.1	A	<1	9.3	A	<1
Southbound Thru	Uncontrolled Lane Group			Uncontrolled Lane Group		
South Kihei Road at Shopping Center Side Street	***1.3***	***A***	***NC***	***4.7***	***A***	***NC***
Eastbound Left, Thru & Right	15.1	C	<1	14.8	B	<1
Westbound Left, Thru & Right	12.6	B	<1	41.9	E	<4
Northbound Left, Thru & Right	0.1	A	<1	0.1	A	<1
Southbound Left	8.0	A	<1	8.8	A	<1
Southbound Thru & Right	Uncontrolled Lane Group			Uncontrolled Lane Group		

NOTES:
(1) See Appendix C for Level-of-Service Worksheets for existing AM peak hour traffic conditions.
(2) See Appendix D for Level-of-Service Worksheets for existing PM peak hour traffic conditions.
(3) Delay in seconds per vehicle.
(4) LOS denotes Level-of-Service.
(5) 95th percentile queue in vehicles.
(6) NC = Not calculated
(7) Levels-of-service are not calculated for uncontrolled lane groups.

The conclusions of the level-of-service analysis of the unsignalized intersection are:

1. The overall intersection of South Kihei Road at Kihei Kai Nani operates at Level-of-Service A during both peak hours. The southbound approach of South Kihei Road operates at Level-of-Service A and the westbound approach of Kihei Kai Nani operates at Level-of-Service C.

2. The overall intersection of South Kihei Road at Keonekai Road operates at Level-of-Service A during both peak hours. The left turn from southbound South Kihei Road to eastbound Keonekai Road operates at Level-of-Service A. The westbound right turn from Keonekai Road to northbound South Kihei Road operates at Level-of-Service B. The westbound left turn from Keonekai Road to southbound South Kihei Road operates at Level-of-Service C during the morning peak hour and Level-of-Service D during the afternoon peak hour. As the overall intersection operates at Level-of-Service A, the delay of the westbound left turn in not long enough to affect the overall intersection level-of-service.

3. The overall intersection of South Kihei Road at the shopping center side street operates at Level-of-Service A during both peak hours. The eastbound approach operates at Level-of-Service C during the morning peak hour and Level-of-Service B during the afternoon peak hour. The westbound approach operates at Level-of-Service B during the morning peak hour and Level-of-Service E during the afternoon peak hour. The northbound and southbound approaches operate at Level-of-Service A during both peak hour. Since the overall intersection operates at Level-of-Service

A, the delay of the westbound approach is not long enough to affect the overall intersection level-of-service.

I. Existing Deficiencies

For signalized intersections, Level-of-Service D is the minimum acceptable Level-of-Service[4] and that this standard is applicable to the overall intersection and major through movements. Minor movements, such as left turns, and minor side street approaches may operate at Level-of-Service E or F for short periods of time during the peak hours so that the overall intersection and major movements along the major highway will operate at Level-of-Service D, or better. All volume-to-capacity ratios must be 1.00 or less[5].

A standard has not be established for unsignalized intersections. Therefore, we have used a standard that Level-of-Service D is an acceptable level-of-service for major controlled lane groups, such as left turns from a major street to a minor street. Side street approaches may operate at Level-of-Service E or F for short periods of time. This is determined from the delays of the individual lane groups. If the delay of any of the side street approaches appears to be so long that it will affect the overall level-of-service of the intersection, then mitigation measures should be accessed.

Using the above standards, no existing deficiencies were identified at the study intersections.

J. 2020 Background Traffic Conditions

Horizon Year

The horizon year is the date for which future background traffic projections were estimated. Future background projections include traffic generated by other known projects within and adjacent to the study area and background traffic growth, for which a future year must be selected. Future background traffic projections do not include traffic generated by the study project.

For projects that will generate less than 500 peak hour trips, the suggested horizon year is the "anticipated opening year, assuming full build out and occupancy."[6] Otherwise, the horizon year should be at least five years after completion of the study project.

Since a completion date for the project is unknown and since it is understood that the permitting process may take several years, a horizon year of 2020 was selected for this TIAR. This should be approximately five years after completion of the project.

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[4] Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development: A Recommended Practice*, 2006, page 60.

[5] Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, p. 16-35.

[6] Institute of Transportation Engineers, *Transportation and Land Development*, Washington, D.C., 2002, page 3-13

Background Traffic Growth

Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. This growth factor also considers traffic associated with minor, or small, projects for which no traffic data are available.

The *Maui Long Range Transportation Plan*[7] concluded that traffic in Maui would increase an average of 1.6% per year from 1990 to 2020. This growth rate was used to estimate the background growth between 2014 and 2020, which is the design year for this project. The growth factor was calculated using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor
i = Average annual growth rate, or 0.016
n = Growth period, or 5 years

This growth factor was applied to all traffic movements except turning movements into and out of Kihei Kai Nani driveway.

Related Projects

The second component in estimating background traffic volumes is traffic generated by other development projects, also referred to as related projects. Related projects are defined as those projects in the immediate vicinity of the study project that would significantly impact traffic in the study area. Related projects are typically projects that are under construction or have been approved for construction, but often includes adjacent vacant parcels that have a high probability of being developed within the design period. Related projects may be development projects or roadway improvements.

Five projects were identified that will have a direct impact on the study intersections. These projects and the estimated number of peak hour trips generated by each are summarized in Table 5. Traffic generated by these projects was assigned to the appropriate traffic movements at the study intersections.

Table 5 Trip Generation Summary of Related Projects

			AM Peak Hour			PM Peak Hour		
	Related Project	Description	Total	In	Out	Total	In	Out
A	Cove Beach Villas	32 Condos	25	4	21	28	19	9
B	Kalama Heights	40 Condos	25	4	21	28	19	9
C	Alahele Subdivision	48 Single Family + 48 Ohana	63	18	45	81	51	30
D	Aloha Mansions	180 Condos	83	14	69	97	65	32
E	Kamaole Heights	150 Condos	71	12	59	84	56	28
	Totals		267	52	215	318	210	108

[7] Kaku Associates, *Maui Long Range Land Transportation Plan*, October 1996

Cove Beach Villas

Cove Beach Villas will be located along the south side of Kanani Road across from the existing Kalama Heights Senior Housing project. Cove Beach Villas will consist of 32 condominium units. The traffic assignments for the project were obtained from the TIAR[8] for the project.

Expansion of Kalama Heights Senior Housing

This project will be located along the north side of Kanani Road between Kanoe Street and the existing Kalama Heights Senior Housing project. The expansion will consist of 40 condominium units. The traffic assignments for the project were obtained from the TIAR[9] for the project.

Alahele Subdivision

The Alahele Subdivision, also known at the Fairbanks Subdivision, is located along the west side of Piilani Highway and north of Auhana Road. The project will consist of 48 single-family units and 48 ohana units. The traffic assignments for the project were obtained from the TIAR[10] for the project.

Aloha Mansions

Aloha Mansions is a multi-family residential development to be located between the Kamaole Shopping Center and the future North-South Collector Road. The proposed action is the construction of 150 to 180 condominium residential units. A completion date was not available. Access to and egress from the project will be via the roadway along the north side of the shopping center and the North-South Collector Road. The TIAR is currently being prepared.

Kamaole Heights

Kamaole Heights is also a multi-family residential development to be located between the Kamaole Shopping Center and the future North-South Collector Road. The proposed action is the construction of 150 condominium residential units. A completion date was not available. Access to and egress from the project will be via the roadway along the north side of the shopping center and the North-South Collector Road. The TIAR is currently being prepared.

Traffic from these projects was assigned to the appropriate traffic movements at the study intersections. Background growth and trip assignments of the other known projects were added to 2020 background peak hour traffic projections. The resulting 2020 background traffic projections are summarized on Attachment D. These projections assume that the peak hours of all the other known projects coincide with the existing peak hours. The result is a worst-case condition.

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[8] Phillip Rowell and Associates, *TIAR for Cove Beach Villas*, April 2003

[9] Phillip Rowell and Associates, TIAR for Expansion of Kalama Height Senior Housing Project, August 2013

[10] Phillip Rowell and Associates, *TIAR for Alahele Subdivision*, April 2014

K. Project Trip Generation

Future traffic volumes that will be generated by the proposed project were estimated using the methodology described in the *Trip Generation Handbook*[11] and data provided in *Trip Generation*[12]. This method uses trip generation equations or rates to estimate the number of trips that the project will generate during the peak hours of the project and along the adjacent street.

The proposed action is the construction of 39 multi-family residential units. For this traffic study, it is assumed that the units will be condominiums. *Trip Generation* defines condominiums as follows:

> *Residential condominiums/townhouses are defined as ownership units that have at least one other owned unit within the same building structure*.[13]

Trip Generation provides rates and equations to estimate the number of peak hour trips during the peak hours of the adjacent street and the peak hours of the generator, which may or may not coincide. The AM peak hour of the adjacent street is typically between 7:00 AM and 9:00 AM and PM peak hour is between 4:00 PM and 6:00 PM, typical commute hours. *Trip Generation* does not note the peak hours of the generators. The trip generation rates and equations are based on the number of condominium/townhouse units proposed. For this project, the trip generation equations for the adjacent street have been used so that the trip generation estimates will be concurrent with the peak hours of the adjacent street.

The trip generation rates used for the trip generation analysis and the results are summarized in Table 6. The trip generation analysis estimated that the project will generate a total of 24 trips during the morning peak hour and 28 trips during the afternoon peak hour.

Table 6 Trip Generation Analysis

Period & Direction		Condominiums (Land Use Code 230)		
		Trips per Unit or Percent(1),(2)	Units	Trips
AM Peak Hour of Adjacent Street	Total	Ln(T) = 0.80Ln(X) + 0.26	39	24
	Inbound	17%		4
	Outbound	83%		20
PM Peak Hour of Adjacent Street	Total	Ln(T) = 0.82Ln(X) + 0.32		28
	Inbound	67%		19
	Outbound	33%		9

Notes:
(1) Source: Institute of Transportation Engineers, *Trip Generation 8th Edition*, 2008, pages 389 and 390.
(2) T=trips, X=number of dwelling units

[11] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 2004, p. 7-12

[12] Institute of Transportation Engineers, *Trip Generation, 8th Edition,* Washington, D.C., 2003

[13] Institute of Transportation Engineers, *Trip Generation, 8th Edition*, Washington, D.C., 2003, page 387

Project trips were distributed and assigned based on existing traffic patterns as estimated from the traffic counts. The trip distribution pattern based on existing traffic patterns in the study area is summarized in Table 7. The resulting traffic assignments are shown as Attachment E.

Table 7 Trip Distribution

To/From	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
S. Kihei Road North	50%	40%	70%	65%
S. Kihei Road South	35%	50%	20%	25%
Keonekai Road	15%	10%	10%	10%
Totals	100%	100%	100%	100%

L. Background Plus Project Projections

Background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the background (without project) peak hour traffic projections. This assumes that the peak hourly trips generated by the project coincide with the peak hour of the adjacent street. This represents a worse-case condition as it assumes that the peak hours of the intersections coincide with the the peak hour of the study project. The resulting background plus project peak hour traffic projections are shown in Attachment F.

M. Traffic Impact Assessment

The traffic impacts of the project was assessed by analyzing the changes in traffic volumes and levels-of-service at the study intersections.

Changes in Total Intersection Volumes

An analysis of the project's share of 2020 background plus project intersection approach volumes at the study intersections is summarized in Table 8. The table summarizes the project's share of total 2020 peak hour approach volumes at each intersection. Also shown are the percentages of 2020 background plus project traffic that is the result of background growth and traffic generated by related projects. The conclusions of this analysis are:

1. At the intersection of South Kihei Road at Kealii Alanui, project generated traffic will represent 0.6% of the morning peak hour traffic and 0.9% of the afternoon peak hour traffic.

2. At the intersection of South Kihei Road at Kihei Kai Nani, project generated traffic will represent 2.4% of the morning peak hour traffic and 2.1% of the afternoon peak hour traffic.

3. At the intersection of South Kihei Road at Keonekai Road, project generated traffic will represent 1.2% of the morning peak hour traffic and 0.6% of the afternoon peak hour traffic.

4. At the intersection of South Kihei Road at Kamaole Shopping Center side street, project generated traffic will represent 0.7% of the morning peak hour traffic and 1.1% of the afternoon peak hour traffic.

Table 8 Analysis of Project's Share of Total Intersection Approach Volumes (1)

Intersection	Period	Existing	2020 Background	2020 Background Plus Project	Background Growth		Project Traffic	
					Trips	Percent of Total Traffic (2)	Trips	Percent of Total Traffic (2)
South Kihei Rd at Kealii Alanui	AM	963	1181	1188	218	18.4%	7	0.6%
	PM	1121	1368	1381	247	17.9%	13	0.9%
South Kihei Rd at Kihei Kai Nani	AM	870	1010	1034	140	13.5%	24	2.3%
	PM	1144	1327	1355	183	13.5%	28	2.1%
South Kihei Rd at Keonoekl Rd	AM	892	1039	1051	147	14.0%	12	1.1%
	PM	1261	1465	1474	204	13.8%	9	0.6%
South Kihei Rd at Shopping Center Side Street	AM	775	978	985	203	20.6%	7	0.7%
	PM	1158	1416	1432	258	18.0%	16	1.1%

Notes:
(1) Volumes shown are total intersection approach volumes or projections.
(2) Percentage of total 2015 background plus project traffic.

Level-of-Service Analysis

The level-of-service analysis was performed for "without project" and "with project" conditions. The incremental difference the two conditions quantifies the impacts of the project generated traffic. The results of the level-of-service of the signalized study intersection is summarized in Table 9. Volume-to-capacity ratios, delays and levels-of-service are shown for the overall intersection and each lane group. Even though level-of-service is defined by the delay, the volume-to-capacity ratios are shown as this is a factor in determining whether the traffic signal timing is a factor in estimating the level-of-service of a particular lane group.

The level-of-service analysis concluded that the intersection will operate at Level-of-Service A during both peak hour, without and with project traffic. The westbound lane groups will operate at Level-of-Service C and the northbound and southbound lane groups along South Kihei Road will operate at Level-of-Service A. There is no change in the level-of-service of any lane group as a result of project traffic. The results are also consistent with the existing levels-of-service discussed previously in this report.

Table 9 2020 Levels-of-Service - Signalized Intersections

Intersection and Movement	AM Peak Hour						PM Peak Hour					
	Without Project[1]			With Project[3]			Without Project[2]			With Project[4]		
	V/C[5]	Delay[6]	LOS[7]	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
South Kihei Road at Kealii Alanui	Cycle Length = 60 Seconds[8]						Cycle Length = 60 Seconds					
	0.43	***8.7***	***A***	***0.45***	***8.5***	***A***	***0.47***	***8.8***	***A***	***0.47***	***8.9***	***A***
Westbound Left & Thru	0.39	24.0	C	0.38	22.1	C	0.36	28.5	C	0.37	28.6	C
Westbound Right	0.11	22.3	C	0.11	20.6	C	0.08	26.7	C	0.08	26.7	C
Northbound Left	0.00	0.0	A	0.00	0.0	A	0.01	3.8	A	0.01	3.8	A
Northbound Thru	0.35	8.0	A	0.37	8.4	A	0.42	6.5	A	0.42	6.6	A
Northbound Right	0.07	6.0	A	0.07	6.3	A	0.08	4.4	A	0.08	4.4	A
Southbound Left	0.20	2.8	A	0.20	2.9	A	0.13	3.1	A	0.13	3.1	A
Southbound Thru & Right	0.31	3.2	A	0.31	3.4	A	0.44	5.8	A	0.44	5.9	A

NOTES:
(1) See Appendix H for Level-of-Service Worksheets for 2020 background AM peak hour traffic conditions without project.
(2) See Appendix I for Level-of-Service Worksheets for 2020 background PM peak hour traffic conditions without project.
(3) See Appendix J for Level-of-Service Worksheets for 2020 background AM peak hour traffic conditions without project.
(4) See Appendix K for Level-of-Service Worksheets for 2020 background PM peak hour traffic conditions without project.
(5) Volume-to-Capacity ratio.
(6) Delay is in seconds per vehicle.
(7) Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.
(8) Traffic signal cycle length is the existing cycle length which is estimated by timing the traffic signal during peak hours.

The results of the level-of-service analysis of the unsignalized intersections are summarized in Table 10. Shown are the delays and levels-of-service of the overall intersection and each controlled lane group. The methodology for unsignalized intersections does not estimate delays and levels-of-service for uncontrolled movements. Also shown in the table are the estimated queue lengths without and will project generated traffic. The queue lengths shown in the table are estimated ve icles using an average vehicle length of 25 feet.

Table 10 2020 Levels-of-Service - Unsignalized Intersections

	AM Peak Hour						PM Peak Hour					
	Without Project(1)			With Project(3)			Without Project(2)			With Project(4)		
Intersection & Lane Group	Delay (5)	LOS (6)	95th Queue(7)	Delay	LOS	95th Queue	Delay	LOS	95th Queue	Delay	LOS	95th Queue
S. Kihei Rd at Kihei Kai Nani	***0.5***	***A***	***NC***	***0.9***	***A***	***NC***	***0.8***	***A***	***NC***	***1.2***	***A***	***NC***
Westbound Left & Right	17.2	C	<1	18.4	C	<1	20.1	C	<1	21.6	C	<1
Northbound Thru & Right	Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group		
Southbound Left & Thru	0.2	A	<1	0.2	A	<1	0.6	A	<1	1.0	A	<1
S. Kihei Road at Keonekai Rd	***3.5***	***A***	***NC***	***3.5***	***A***	***NC***	***4.3***	***A***	***NC***	***4.4***	***A***	***NC***
Westbound Left	25.2	D	<2	25.8	D	<2	54.6	F	<2	55.8	F	<2
Westbound Right	11.3	B	<1	11.3	B	<1	17.7	C	<2	17.9	C	<2
Northbound Thru & Right	Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group		
Southbound Left	8.3	A	<1	8.3	A	<1	9.8	A	<1	9.8	A	<1
Southbound Thru	Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group		
S. Kihei Rd at Shopping Center Side Street	***3.2***	***A***	***NC***	***3.2***	***A***	***NC***	***26.6***	***C***	***NC***	***30.2***	***C***	***NC***
Eastbound Left, Thru & Right	19.4	C	<1	19.5	C	<1	19.9	C	<1	20.4	C	<1
Westbound Left, Thru & Right	18.1	C	<2	18.3	C	<2	229.8	F	<11	261.9	F	<12
Northbound Left, Thru & Right	0.1	A	<1	0.1	A	<1	0.1	A	<1	0.1	A	<1
Southbound Left	8.2	A	<1	8.2	A	<1	9.5	A	<	9.5	A	<1
Southbound Thru & Right	Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group			Uncontrolled Lane Group		

NOTES:
(1) See Appendix H for Level-of-Service Worksheets for 2020 background AM peak hour traffic conditions without project.
(2) See Appendix I for Level-of-Service Worksheets for 2020 background PM peak hour traffic conditions without project.
(3) See Appendix J for Level-of-Service Worksheets for 2020 background AM peak hour traffic conditions without project.
(4) See Appendix K for Level-of-Service Worksheets for 2020 background PM peak hour traffic conditions without project.
(5) Delay is in seconds per vehicle.
(6) Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.
(7) 95th percentile queue in vehicles.
(8) NC = Not Calculated

The conclusions of the level-of-service analysis of the unsignalized intersections are:

1. The overall intersection of South Kihei Road at Kihei Kai Nani will operate at Level-of-Service A, without and with project traffic. The eastbound approach will operate at Level-of-Service C, without and with project traffic, and the southbound left and through lane group will operate at Level-of-Service A, without and with project traffic. There is no change in the level-of-service of queue of any lane group as a result of project generated traffic.

2. The overall intersection of South Kihei Road at Keonekai Road will operate at Level-of-Service A, without and with project traffic. The left turn from westbound Keonekai Road to southbound South Kihei Road will operate at Level-of-Service D during the morning peak hour and Level-of-Service F during the afternoon peak hour, without and with project traffic. The right turn from westbound Keonokai Road to northbound South Kihei Road will operate at Level-of-Service B during the morning peak hour and Level-of-Service C during the afternoon peak hour, without and with project traffic. The southbound left turn will operate at Level-of-Service A during both peak hours, without and with project traffic. There are no changes in the level-of-service or queues of any lane group as a result of project traffic. Lastly, the delay of the westbound left turn from Keonokai Road is not long enough to affect the level-of-

service of the overall intersection as the overall level-of-service is Level-of-Service A.

3. The overall intersection of South Kihei Road at the shopping center side street will operate at Level-of-Service A during the morning peak hour and Level-of-Service C during the afternoon peak hour. During the morning peak hour, the eastbound and westbound approaches will operate at Level-of-Service C and the northbound and southbound approaches along South Kihei Road will operate at Level-of-Service A. The westbound approach will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour, without and with project traffic.

   As the level-of-service of the westbound lane group is F without project traffic, the poor level-of-service is the result of the additional traffic generated along the leg of the roadway by the two multi-family residential developments along this roadway. This was confirmed by performing a level-of-service analysis of the intersection without traffic generated by these two projects. The analysis concluded that the westbound approach of the intersection will operate at Level-of-Service B during the morning peak hour and Level-of-Service C during the afternoon peak hour. Any mitigation required at this intersection should be assessed against these other development projects. An assessment of the impacts of installing a left turn refuge lane for westbound left turns onto southbound South Kihei Road concluded that the left turns would operate at Level-of-Service D. The conclusion is that the poor level-of-service can be mitigated when these two project move forward.

N. Mitigation

Based on the standards discussed in Section I, no mitigation is recommended.

O. Summary and Recommendations

1. The proposed action is the construction of 39 residential condominium units. The project is located at the east end of the driveway of Kihei Kai Nani. The address is 2025 South Kihei Road. The site is currently vacant.

2. Access and egress will be via the existing Kihei Kai Nani driveway.

3. The trip generation analysis estimated that the project will generate a total of 24 trips during the morning peak hour and 28 trips during the afternoon peak hour.

4. The level-of-service analysis of 2020 background plus project conditions concluded the following:

   a. The overall intersection of South Kihei Road at Kealii Alanui will operate at Level-of-Service A during both peak hour, without and with project traffic. The westbound lane groups will operate at Level-of-Service C and the northbound and southbound lane groups along South Kihei Road will operate at Level-of-Service A. There is no change in the level-of-service of any lane group as a result of project traffic. The

results are also consistent with the existing levels-of-service discussed previously in this report.

b. The overall intersection of South Kihei Road at Kihei Kai Nani will operate at Level-of-Service A, without and with project traffic. The eastbound approach will operate at Level-of-Service C, without and with project traffic, and the southbound left and through lane group will operate at Level-of-Service A, without and with project traffic. There is no change in the level-of-service of queue of any lane group as a result of project generated traffic.

c. The overall intersection of South Kihei Road at Keonekai Road will operate at Level-of-Service A, without and with project traffic. The left turn from westbound Keonekai Road to southbound South Kihei Road will operate at Level-of-Service D during the morning peak hour and Level-of-Service F during the afternoon peak hour, without and with project traffic. The right turn from westbound Keonekai Road to northbound South Kihei Road will operate at Level-of-Service B during the morning peak hour and Level-of-Service C during the afternoon peak hour, without and with project traffic. The southbound left turn will operate at Level-of-Service A during both peak hours, without and with project traffic. There are no changes in the level-of-service or queues of any lane group as a result of project traffic. Lastly, the delay of the westbound left turn from Keonekai Road is not long enough to affect the level-of-service of the overall intersection as the overall level-of-service is Level-of-Service A.

d. The overall intersection of South Kihei Road at the shopping center side street will operate at Level-of-Service A during the morning peak hour and Level-of-Service C during the afternoon peak hour. During the morning peak hour, the eastbound and westbound approaches will operate at Level-of-Service C and the northbound and southbound approaches along South Kihei Road will operate at Level-of-Service A. The westbound approach will operate at Level-of-Service C during the morning peak hour and Level-of-Service F during the afternoon peak hour, without and with project traffic.

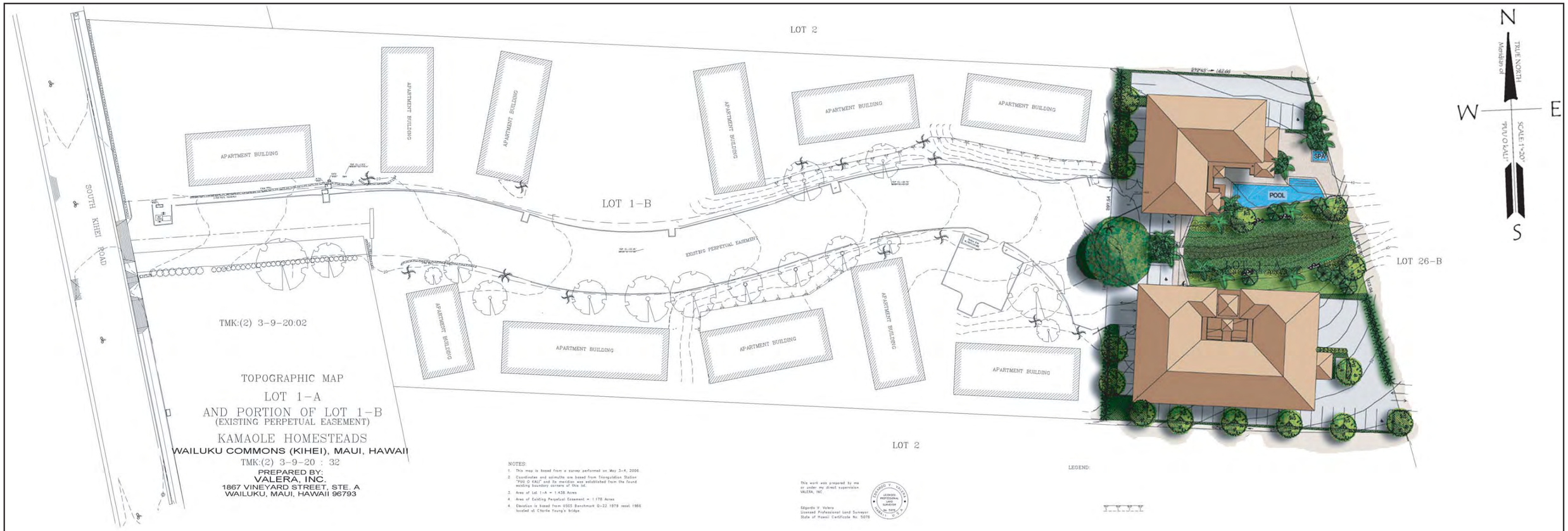
As the level-of-service of the westbound lane group is F without project traffic, the poor level-of-service is the result of the additional traffic generated along the leg of the roadway by the two multi-family residential developments along this roadway. This was confirmed by performing a level-of-service analysis of the intersection without traffic generated by these two projects. The analysis concluded that the westbound approach of the intersection will operate at Level-of-Service B during the morning peak hour and Level-of-Service C during the afternoon peak hour. Any mitigation required at this intersection should be assessed against these other development projects. An assessment of the impacts of installing a left turn refuge lane for westbound left turns onto southbound South Kihei Road concluded that the left turns would operate at Level-of-Service D. The conclusion is that the poor level-of-service can be mitigated when these two project move forward.

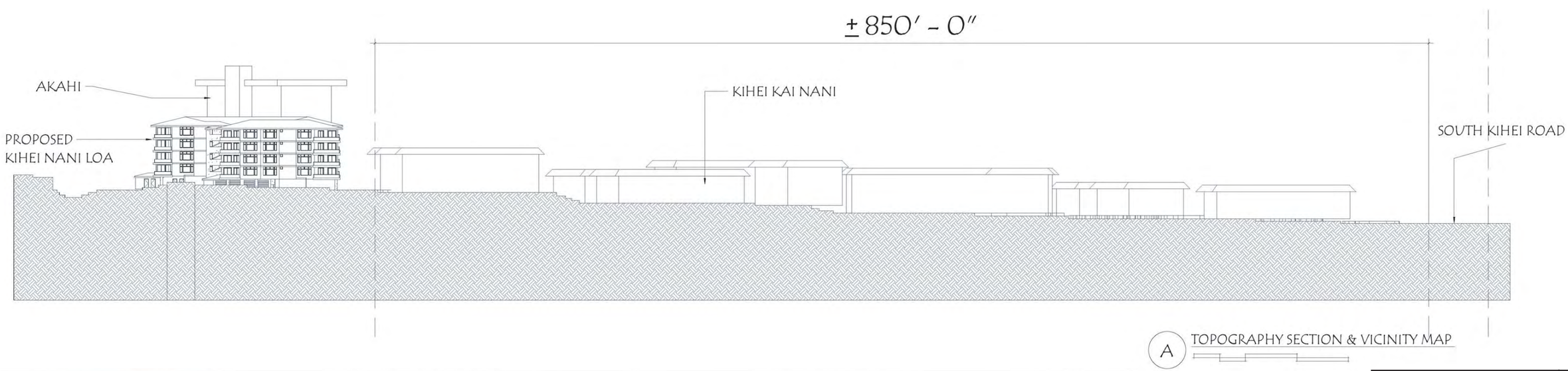
Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell, P.E.
Principal

PHILLIP JAMES ROWELL
LICENSED PROFESSIONAL ENGINEER
No. 6676 - C
HAWAII U.S.A.
EXPIRATION DATE: 30 APRIL 2016
THIS WORK WAS PREPARED BY
ME OR UNDER MY DIRECT SUPERVISION

Attachment A
Project Site Plan
(Provided By Chris Hart & Partners, Inc.)





A TOPOGRAPHY SECTION & VICINITY MAP

VICTORY DEVELOPMENT HAWAII

Victory Development Nani Loa, LLC
161 Wailea Ike Place, Suite A-105
Wailea, Hawaii 96573
(808)-875-0646

KIHEI NANI LOA

2505 South Kihei Rd.

SECTION LAYOUTS

08/25/08

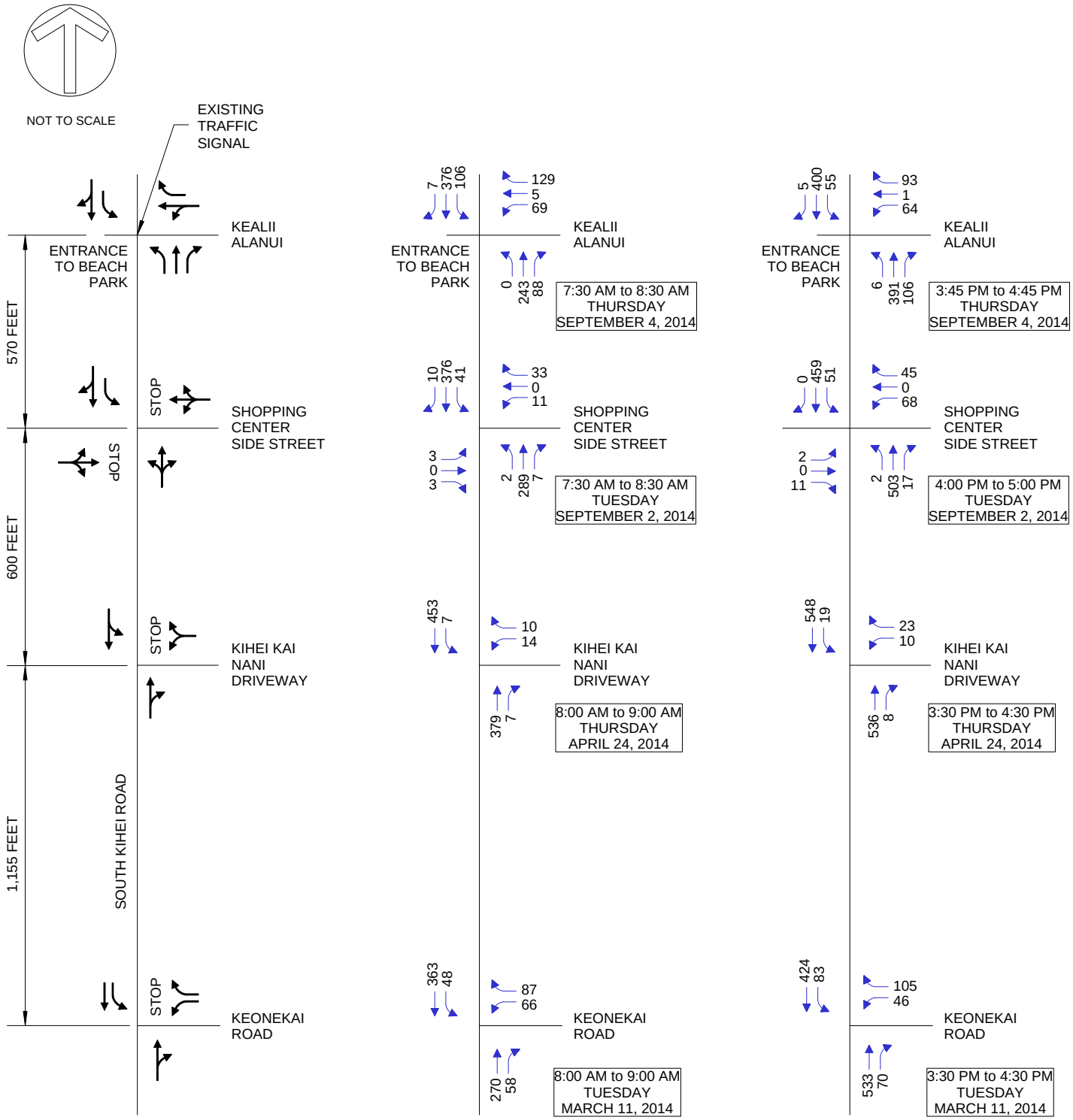
A04

Sheet Number:

Nani Loa Hotel Condominiums
Figure No. 12g
March 2009

Architectural Plans

CHRIS HART & PARTNERS, INC.



EXISTING LANE CONFIGURATIONS AND RIGHT-OF-WAY CONTROLS

AM PEAK HOUR TRAFFIC VOLUMES

PM PEAK HOUR TRAFFIC VOLUMES

NOTE

1. ALL DISTANCES WERE SCALED FROM AN AEREAL PHOTOGRAPH.

Attachment B
EXISTING INTERSECTION LANE CONFIGURATIONS AND RIGHT-OF-WAY CONTROLS AND EXISTING (2014) PEAK HOUR VOLUMES

Attachment C
Level-of-Service Worksheets for Existing (2014) AM Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Frt					1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected					0.96	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1779	1583		1863	1583	1770	1857	
Flt Permitted					0.96	1.00		1.00	1.00	0.53	1.00	
Satd. Flow (perm)					1779	1583		1863	1583	981	1857	
Volume (vph)	0	0	0	69	5	129	0	243	88	106	376	7
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	75	5	140	0	264	96	115	409	8
RTOR Reduction (vph)	0	0	0	0	0	121	0	0	41	0	1	0
Lane Group Flow (vph)	0	0	0	0	80	19	0	264	55	115	416	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					8.3	8.3		35.8	35.8	46.5	46.5	
Effective Green, g (s)					8.3	8.3		35.8	35.8	46.5	46.5	
Actuated g/C Ratio					0.13	0.13		0.57	0.57	0.74	0.74	
Clearance Time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					235	209		1062	902	811	1375	
v/s Ratio Prot								0.14		0.02	c0.22	
v/s Ratio Perm					0.04	0.09			0.06	0.09		
v/c Ratio					0.34	0.09		0.25	0.06	0.14	0.30	
Uniform Delay, d1					24.8	23.9		6.8	6.0	2.5	2.7	
Progression Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2					0.9	0.2		0.6	0.1	0.1	0.6	
Delay (s)					25.6	24.1		7.3	6.1	2.5	3.3	
Level of Service					C	C		A	A	A	A	
Approach Delay (s)		0.0			24.7			7.0			3.1	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

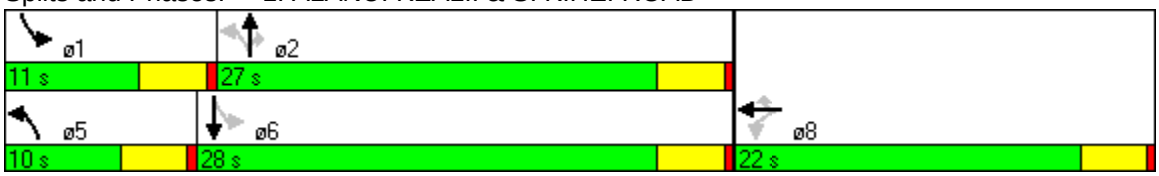
c Critical Lane Group

Lane Group	WBT	WBR	NBT	NBR	SBL	SBT	ø5
Lane Configurations							
Volume (vph)	5	139	243	88	106	376	
Lane Group Flow (vph)	80	151	264	96	115	417	
Turn Type		Perm		Perm	pm+pt		
Protected Phases	8		2		1	6	5
Permitted Phases		8		2	6		
Detector Phases	8	8	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	8.0
Total Split (s)	22.0	22.0	27.0	27.0	11.0	28.0	10.0
Total Split (%)	36.7%	36.7%	45.0%	45.0%	18.3%	46.7%	17%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	Max	None
v/c Ratio	0.32	0.43	0.25	0.10	0.15	0.30	
Control Delay	19.1	5.6	8.8	2.7	3.4	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.1	5.6	8.8	2.7	3.4	3.9	
Queue Length 50th (ft)	21	0	43	0	8	35	
Queue Length 95th (ft)	51	37	92	19	23	80	
Internal Link Dist (ft)	1300		706			540	
Turn Bay Length (ft)							
Base Capacity (vph)	486	542	1061	943	778	1375	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.28	0.25	0.10	0.15	0.30	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 58.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	66	87	270	58	48	363
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	95	293	63	52	395
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	824	325			357	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	824	325			357	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	87			96	
cM capacity (veh/h)	328	716			1202	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	72	95	357	52	395
Volume Left	72	0	0	52	0
Volume Right	0	95	63	0	0
cSH	328	716	1700	1202	1700
Volume to Capacity	0.22	0.13	0.21	0.04	0.23
Queue Length 95th (ft)	20	11	0	3	0
Control Delay (s)	19.0	10.8	0.0	8.1	0.0
Lane LOS	C	B		A	
Approach Delay (s)	14.3		0.0	0.9	
Approach LOS	B				

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	14	10	379	7	7	453
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	11	412	8	8	492
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	923	416			420	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	923	416			420	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			99	
cM capacity (veh/h)	297	637			1140	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	420	500
Volume Left	15	0	8
Volume Right	11	8	0
cSH	382	1700	1140
Volume to Capacity	0.07	0.25	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	15.1	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	15.1	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	3	11	0	33	2	289	7	41	376	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	12	0	36	2	314	8	45	409	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											786	
pX, platoon unblocked												
vC, conflicting volume	861	829	414	823	831	318	420			322		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	861	829	414	823	831	318	420			322		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	96	100	95	100			96		
cM capacity (veh/h)	254	294	638	282	294	723	1140			1238		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	48	324	45	420
Volume Left	3	12	2	45	0
Volume Right	3	36	8	0	11
cSH	364	520	1140	1238	1700
Volume to Capacity	0.02	0.09	0.00	0.04	0.25
Queue Length 95th (ft)	1	8	0	3	0
Control Delay (s)	15.1	12.6	0.1	8.0	0.0
Lane LOS	C	B	A	A	
Approach Delay (s)	15.1	12.6	0.1	0.8	
Approach LOS	C	B			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment D

Level-of-Service Worksheets for Existing (2014) PM Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt					1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1775	1583	1770	1863	1583	1770	1860	
Flt Permitted					0.95	1.00	0.51	1.00	1.00	0.44	1.00	
Satd. Flow (perm)					1775	1583	945	1863	1583	814	1860	
Volume (vph)	0	0	0	64	1	93	6	391	106	55	400	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	70	1	101	7	425	115	60	435	5
RTOR Reduction (vph)	0	0	0	0	0	89	0	0	43	0	0	0
Lane Group Flow (vph)	0	0	0	0	71	12	7	425	72	60	440	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					8.1	8.1	43.5	42.1	42.1	49.9	45.3	
Effective Green, g (s)					8.1	8.1	43.5	42.1	42.1	49.9	45.3	
Actuated g/C Ratio					0.12	0.12	0.65	0.63	0.63	0.75	0.68	
Clearance Time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					215	192	633	1174	998	674	1261	
v/s Ratio Prot							0.00	0.23		c0.01	c0.24	
v/s Ratio Perm					0.04	0.06	0.01		0.07	0.06		
v/c Ratio					0.33	0.06	0.01	0.36	0.07	0.09	0.35	
Uniform Delay, d1					26.9	26.0	4.1	5.9	4.8	2.6	4.5	
Progression Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2					0.9	0.1	0.0	0.9	0.1	0.1	0.8	
Delay (s)					27.8	26.1	4.1	6.8	4.9	2.6	5.3	
Level of Service					C	C	A	A	A	A	A	
Approach Delay (s)		0.0			26.8			6.4			5.0	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

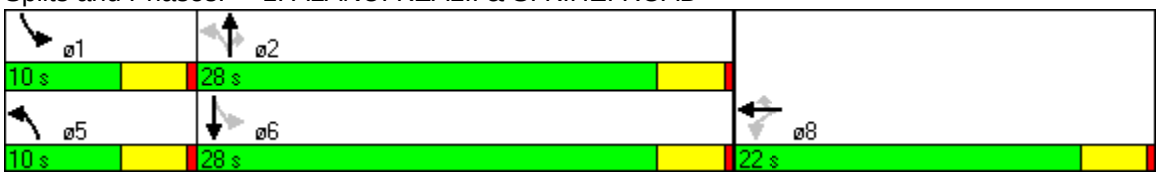
c Critical Lane Group

Lane Group	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	1	93	6	391	106	55	400
Lane Group Flow (vph)	71	101	7	425	115	60	440
Turn Type		Perm	pm+pt		Perm	pm+pt	
Protected Phases	8		5	2		1	6
Permitted Phases		8	2		2	6	
Detector Phases	8	8	5	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	22.0	22.0	10.0	28.0	28.0	10.0	28.0
Total Split (%)	36.7%	36.7%	16.7%	46.7%	46.7%	16.7%	46.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	None	Max
v/c Ratio	0.30	0.34	0.01	0.36	0.11	0.10	0.33
Control Delay	18.7	6.0	4.3	8.5	2.3	3.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	6.0	4.3	8.5	2.3	3.5	5.9
Queue Length 50th (ft)	19	0	1	74	0	4	37
Queue Length 95th (ft)	46	31	3	147	20	14	152
Internal Link Dist (ft)	1300			716			540
Turn Bay Length (ft)							
Base Capacity (vph)	467	491	500	1172	1038	574	1320
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.01	0.36	0.11	0.10	0.33

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 64.5
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	46	105	533	70	83	424
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	114	579	76	90	461
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1259	617			655	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1259	617			655	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	77			90	
cM capacity (veh/h)	170	490			932	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	50	114	655	90	461
Volume Left	50	0	0	90	0
Volume Right	0	114	76	0	0
cSH	170	490	1700	932	1700
Volume to Capacity	0.29	0.23	0.39	0.10	0.27
Queue Length 95th (ft)	29	22	0	8	0
Control Delay (s)	34.7	14.6	0.0	9.3	0.0
Lane LOS	D	B		A	
Approach Delay (s)	20.7		0.0	1.5	
Approach LOS	C				

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	23	536	8	19	548
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	25	583	9	21	596
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1224	587			591	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1224	587			591	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	95			98	
cM capacity (veh/h)	194	510			984	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	36	591	616
Volume Left	11	0	21
Volume Right	25	9	0
cSH	341	1700	984
Volume to Capacity	0.11	0.35	0.02
Queue Length 95th (ft)	9	0	2
Control Delay (s)	16.8	0.0	0.6
Lane LOS	C		A
Approach Delay (s)	16.8	0.0	0.6
Approach LOS	C		

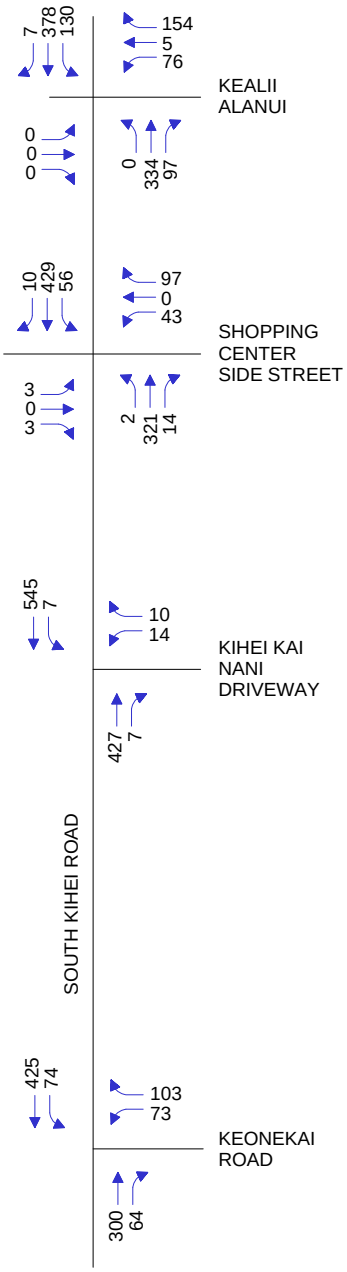
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	11	68	0	45	2	503	17	51	459	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	12	74	0	49	2	547	18	55	499	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											796	
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	1219	1179	499	1182	1170	556	499			565		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1221	1181	495	1184	1171	556	495			565		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	52	100	91	100			94		
cM capacity (veh/h)	135	178	570	154	180	531	1060			1007		

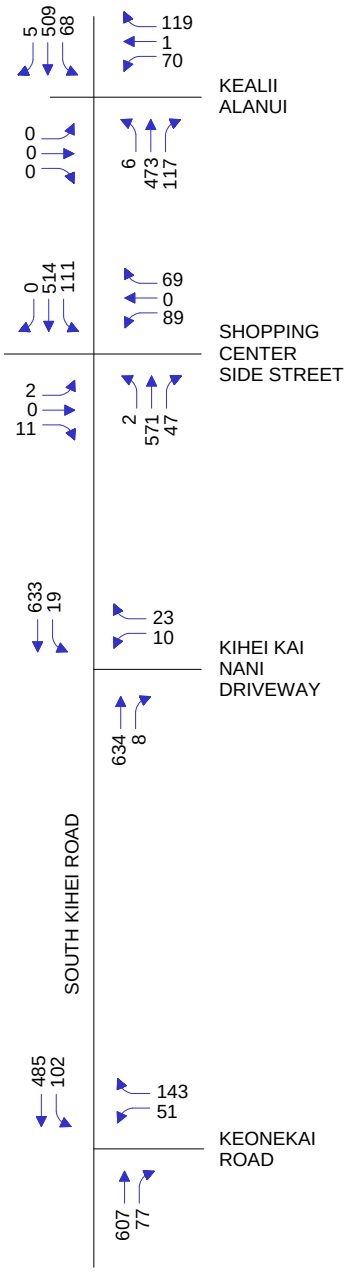
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	14	123	567	55	499
Volume Left	2	74	2	55	0
Volume Right	12	49	18	0	0
cSH	381	215	1060	1007	1700
Volume to Capacity	0.04	0.57	0.00	0.06	0.29
Queue Length 95th (ft)	3	78	0	4	0
Control Delay (s)	14.8	41.9	0.1	8.8	0.0
Lane LOS	B	E	A	A	
Approach Delay (s)	14.8	41.9	0.1	0.9	
Approach LOS	B	E			

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

NOT TO SCALE



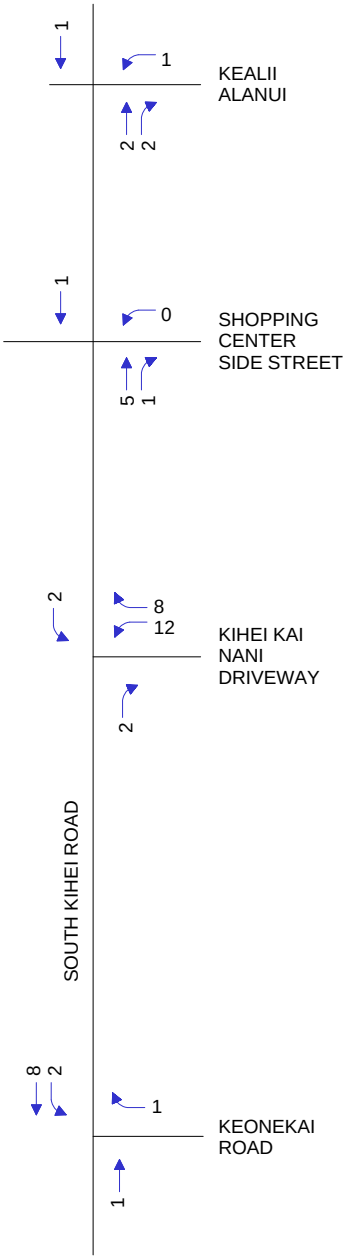
AM PEAK HOUR
TRAFFIC PROJECTIONS



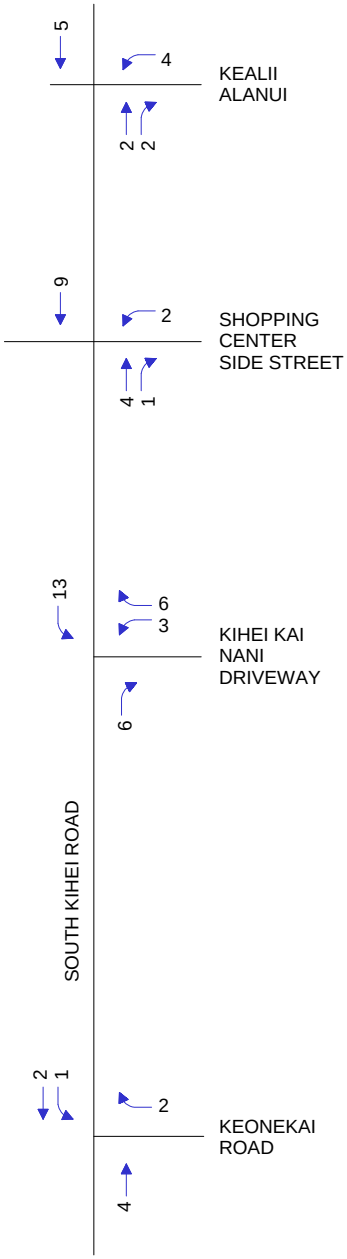
PM PEAK HOUR
TRAFFIC PROJECTIONS

Attachment E
2020 PEAK HOUR TRAFFIC PROJECTIONS
WITHOUT PROJECT GENERATED TRAFFIC

NOT TO SCALE



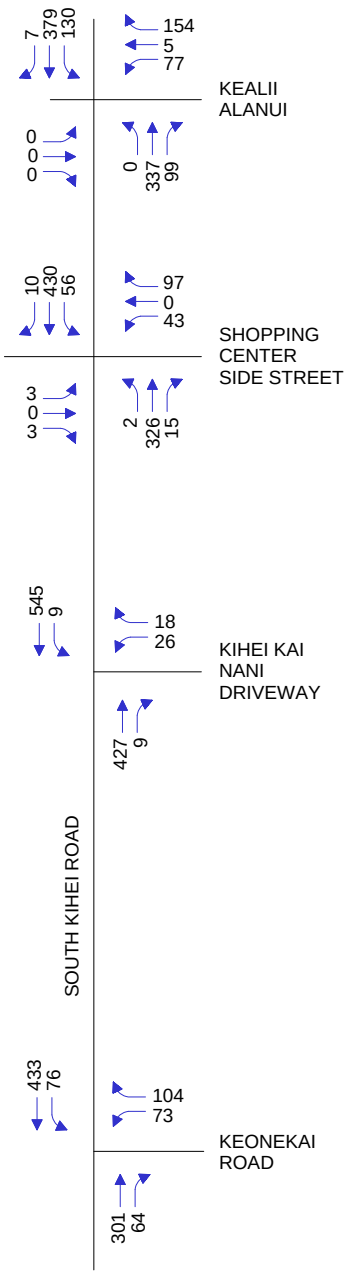
AM PEAK HOUR
TRIP ASSIGNMENTS



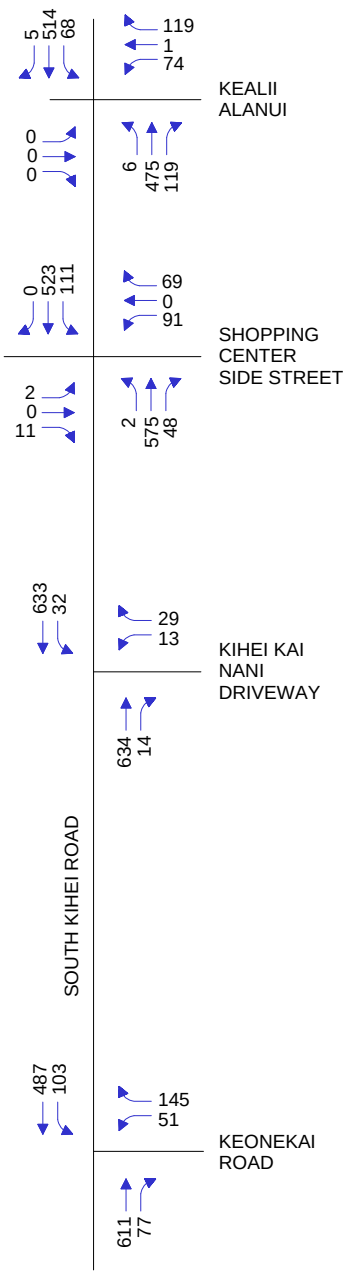
PM PEAK HOUR
TRIP ASSIGNMENTS

Attachment F
PROJECT TRIP ASSIGNMENTS

NOT TO SCALE



AM PEAK HOUR
TRAFFIC PROJECTIONS



PM PEAK HOUR
TRAFFIC PROJECTIONS

Attachment G
2020 PEAK HOUR TRAFFIC PROJECTIONS
WITH PROJECT GENERATED TRAFFIC

Attachment H

Level-of-Service Worksheets for 2020 Background AM Traffic Projections Without Project Generated Traffic

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Frt					1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected					0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1779	1583		1863	1583	1770	1857	
Flt Permitted					0.95	1.00		1.00	1.00	0.45	1.00	
Satd. Flow (perm)					1779	1583		1863	1583	832	1857	
Volume (vph)	0	0	0	76	5	154	0	334	97	130	378	7
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	83	5	167	0	363	105	141	411	8
RTOR Reduction (vph)	0	0	0	0	0	146	0	0	47	0	1	0
Lane Group Flow (vph)	0	0	0	0	88	21	0	363	58	141	418	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					7.3	7.3		31.7	31.7	41.9	41.9	
Effective Green, g (s)					7.3	7.3		31.7	31.7	41.9	41.9	
Actuated g/C Ratio					0.13	0.13		0.55	0.55	0.73	0.73	
Clearance Time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					227	202		1032	877	711	1360	
v/s Ratio Prot								c0.19		0.02	c0.23	
v/s Ratio Perm					0.05	0.11			0.07	0.12		
v/c Ratio					0.39	0.11		0.35	0.07	0.20	0.31	
Uniform Delay, d1					22.9	22.1		7.1	5.9	2.6	2.6	
Progression Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2					1.1	0.2		0.9	0.1	0.1	0.6	
Delay (s)					24.0	22.3		8.0	6.0	2.8	3.2	
Level of Service					C	C		A	A	A	A	
Approach Delay (s)		0.0			22.9			7.6			3.1	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

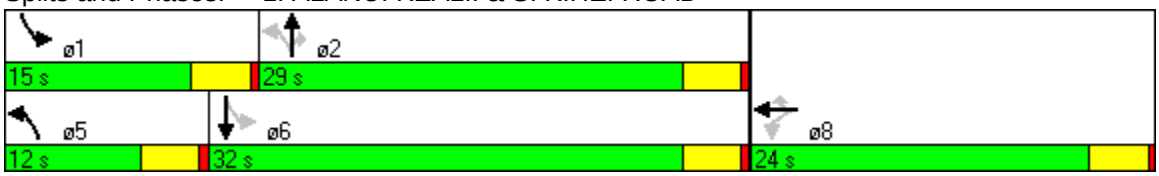
c Critical Lane Group

Lane Group	WBT	WBR	NBT	NBR	SBL	SBT	ø5
Lane Configurations							
Volume (vph)	5	154	334	97	130	378	
Lane Group Flow (vph)	88	167	363	105	141	419	
Turn Type		Perm		Perm	pm+pt		
Protected Phases	8		2		1	6	5
Permitted Phases		8		2	6		
Detector Phases	8	8	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	8.0
Total Split (s)	24.0	24.0	29.0	29.0	15.0	32.0	12.0
Total Split (%)	35.3%	35.3%	42.6%	42.6%	22.1%	47.1%	18%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	Max	None
v/c Ratio	0.34	0.45	0.34	0.11	0.23	0.30	
Control Delay	20.7	5.7	10.0	2.8	3.8	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.7	5.7	10.0	2.8	3.8	3.9	
Queue Length 50th (ft)	24	0	65	0	11	37	
Queue Length 95th (ft)	59	41	141	21	28	83	
Internal Link Dist (ft)	1300		736			540	
Turn Bay Length (ft)							
Base Capacity (vph)	520	581	1077	960	641	1391	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.29	0.34	0.11	0.22	0.30	

Intersection Summary

Cycle Length: 68
Actuated Cycle Length: 56
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	73	103	300	64	74	425
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	112	326	70	80	462
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	984	361			396	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	984	361			396	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	84			93	
cM capacity (veh/h)	257	684			1163	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	79	112	396	80	462
Volume Left	79	0	0	80	0
Volume Right	0	112	70	0	0
cSH	257	684	1700	1163	1700
Volume to Capacity	0.31	0.16	0.23	0.07	0.27
Queue Length 95th (ft)	32	15	0	6	0
Control Delay (s)	25.2	11.3	0.0	8.3	0.0
Lane LOS	D	B		A	
Approach Delay (s)	17.1		0.0	1.2	
Approach LOS	C				

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	14	10	427	7	7	545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	11	464	8	8	592
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1076	468			472	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1076	468			472	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	98			99	
cM capacity (veh/h)	241	595			1090	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	472	600
Volume Left	15	0	8
Volume Right	11	8	0
cSH	321	1700	1090
Volume to Capacity	0.08	0.28	0.01
Queue Length 95th (ft)	7	0	1
Control Delay (s)	17.2	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	17.2	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	3	43	0	97	2	321	14	56	429	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	47	0	105	2	349	15	61	466	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											816	
pX, platoon unblocked												
vC, conflicting volume	1060	962	472	952	960	357	477			364		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1060	962	472	952	960	357	477			364		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	80	100	85	100			95		
cM capacity (veh/h)	164	242	592	228	243	688	1085			1194		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	152	366	61	477
Volume Left	3	47	2	61	0
Volume Right	3	105	15	0	11
cSH	257	425	1085	1194	1700
Volume to Capacity	0.03	0.36	0.00	0.05	0.28
Queue Length 95th (ft)	2	40	0	4	0
Control Delay (s)	19.4	18.1	0.1	8.2	0.0
Lane LOS	C	C	A	A	
Approach Delay (s)	19.4	18.1	0.1	0.9	
Approach LOS	C	C			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Attachment I

Level-of-Service Worksheets for 2020 Background PM Traffic Projections Without Project Generated Traffic

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt					1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1775	1583	1770	1863	1583	1770	1860	
Flt Permitted					0.95	1.00	0.42	1.00	1.00	0.40	1.00	
Satd. Flow (perm)					1775	1583	780	1863	1583	745	1860	
Volume (vph)	0	0	0	70	1	119	6	473	117	68	509	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	76	1	129	7	514	127	74	553	5
RTOR Reduction (vph)	0	0	0	0	0	113	0	0	43	0	0	0
Lane Group Flow (vph)	0	0	0	0	77	16	7	514	84	74	558	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					8.3	8.3	45.9	44.9	44.9	49.9	46.9	
Effective Green, g (s)					8.3	8.3	45.9	44.9	44.9	49.9	46.9	
Actuated g/C Ratio					0.12	0.12	0.67	0.66	0.66	0.73	0.69	
Clearance Time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					216	193	539	1227	1042	590	1279	
v/s Ratio Prot							0.00	0.28		c0.01	c0.30	
v/s Ratio Perm					0.04	0.08	0.01		0.08	0.09		
v/c Ratio					0.36	0.08	0.01	0.42	0.08	0.13	0.44	
Uniform Delay, d1					27.5	26.6	3.8	5.5	4.2	3.0	4.8	
Progression Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2					1.0	0.2	0.0	1.1	0.2	0.1	1.1	
Delay (s)					28.5	26.7	3.8	6.5	4.4	3.1	5.8	
Level of Service					C	C	A	A	A	A	A	
Approach Delay (s)		0.0			27.4			6.1			5.5	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

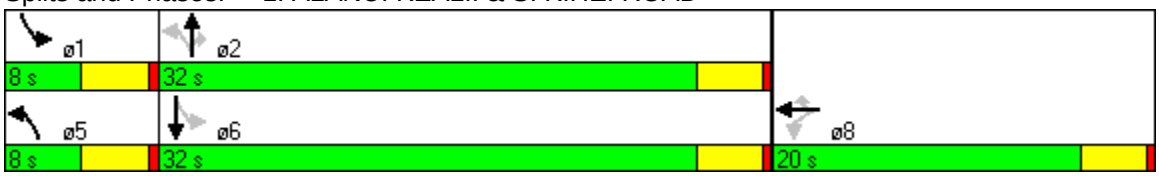
c Critical Lane Group

Lane Group	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	1	119	6	473	117	68	509
Lane Group Flow (vph)	77	129	7	514	127	74	558
Turn Type		Perm	pm+pt		Perm	pm+pt	
Protected Phases	8		5	2		1	6
Permitted Phases		8	2		2	6	
Detector Phases	8	8	5	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	8.0	32.0	32.0	8.0	32.0
Total Split (%)	33.3%	33.3%	13.3%	53.3%	53.3%	13.3%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	None	Max
v/c Ratio	0.32	0.40	0.02	0.42	0.12	0.15	0.42
Control Delay	20.1	6.2	4.2	7.9	1.9	3.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	6.2	4.2	7.9	1.9	3.8	6.1
Queue Length 50th (ft)	21	0	1	87	0	5	53
Queue Length 95th (ft)	52	36	3	172	19	16	193
Internal Link Dist (ft)	1300			736			540
Turn Bay Length (ft)							
Base Capacity (vph)	420	473	414	1230	1088	498	1343
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.27	0.02	0.42	0.12	0.15	0.42

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 65.7
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	11	89	0	69	2	571	47	111	514	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	12	97	0	75	2	621	51	121	559	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											816	
pX, platoon unblocked	0.96	0.96	0.96	0.96	0.96		0.96					
vC, conflicting volume	1526	1476	559	1462	1451	646	559			672		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1547	1496	540	1482	1469	646	540			672		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	0	100	84	100			87		
cM capacity (veh/h)	67	102	520	87	106	471	987			919		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	14	172	674	121	559
Volume Left	2	97	2	121	0
Volume Right	12	75	51	0	0
cSH	256	135	987	919	1700
Volume to Capacity	0.06	1.27	0.00	0.13	0.33
Queue Length 95th (ft)	4	266	0	11	0
Control Delay (s)	19.9	229.8	0.1	9.5	0.0
Lane LOS	C	F	A	A	
Approach Delay (s)	19.9	229.8	0.1	1.7	
Approach LOS	C	F			

Intersection Summary			
Average Delay	26.6		
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	23	634	8	19	633
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	25	689	9	21	688
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1423	693			698	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1423	693			698	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	94			98	
cM capacity (veh/h)	146	443			899	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	36	698	709
Volume Left	11	0	21
Volume Right	25	9	0
cSH	274	1700	899
Volume to Capacity	0.13	0.41	0.02
Queue Length 95th (ft)	11	0	2
Control Delay (s)	20.1	0.0	0.6
Lane LOS	C		A
Approach Delay (s)	20.1	0.0	0.6
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	51	143	607	77	102	485
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	155	660	84	111	527
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1451	702			743	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1451	702			743	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	56	65			87	
cM capacity (veh/h)	126	438			864	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	55	155	743	111	527
Volume Left	55	0	0	111	0
Volume Right	0	155	84	0	0
cSH	126	438	1700	864	1700
Volume to Capacity	0.44	0.35	0.44	0.13	0.31
Queue Length 95th (ft)	49	39	0	11	0
Control Delay (s)	54.6	17.7	0.0	9.8	0.0
Lane LOS	F	C		A	
Approach Delay (s)	27.4		0.0	1.7	
Approach LOS	D				

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

Attachment J
Level-of-Service Worksheets for 2020 Background AM Traffic Projections
With Project Generated Traffic

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Frt					1.00	0.85		1.00	0.85	1.00	1.00	
Flt Protected					0.95	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1779	1583		1863	1583	1770	1857	
Flt Permitted					0.95	1.00		1.00	1.00	0.44	1.00	
Satd. Flow (perm)					1779	1583		1863	1583	811	1857	
Volume (vph)	0	0	0	77	5	154	0	337	99	130	379	7
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	84	5	167	0	366	108	141	412	8
RTOR Reduction (vph)	0	0	0	0	0	145	0	0	51	0	1	0
Lane Group Flow (vph)	0	0	0	0	89	22	0	366	57	141	419	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					7.1	7.1		28.3	28.3	38.3	38.3	
Effective Green, g (s)					7.1	7.1		28.3	28.3	38.3	38.3	
Actuated g/C Ratio					0.13	0.13		0.53	0.53	0.72	0.72	
Clearance Time (s)					4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					237	210		987	839	689	1332	
v/s Ratio Prot								c0.20		0.02	c0.23	
v/s Ratio Perm					0.05	0.11			0.07	0.12		
v/c Ratio					0.38	0.11		0.37	0.07	0.20	0.31	
Uniform Delay, d1					21.1	20.4		7.3	6.1	2.8	2.8	
Progression Factor					1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2					1.0	0.2		1.1	0.2	0.1	0.6	
Delay (s)					22.1	20.6		8.4	6.3	2.9	3.4	
Level of Service					C	C		A	A	A	A	
Approach Delay (s)		0.0			21.1			7.9			3.3	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

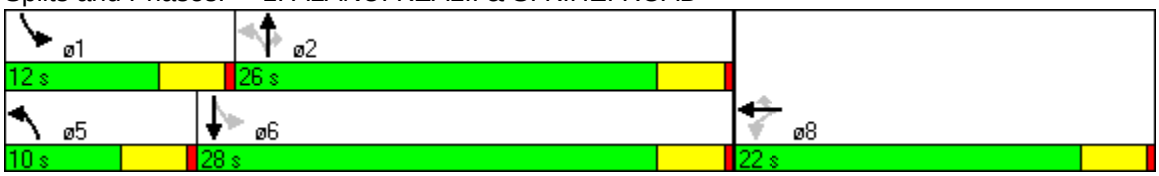
c Critical Lane Group

Lane Group	WBT	WBR	NBT	NBR	SBL	SBT	ø5
Lane Configurations							
Volume (vph)	5	154	337	99	130	379	
Lane Group Flow (vph)	89	167	366	108	141	420	
Turn Type		Perm		Perm	pm+pt		
Protected Phases	8		2		1	6	5
Permitted Phases		8		2	6		
Detector Phases	8	8	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	8.0
Total Split (s)	22.0	22.0	26.0	26.0	12.0	28.0	10.0
Total Split (%)	36.7%	36.7%	43.3%	43.3%	20.0%	46.7%	17%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	Max	None
v/c Ratio	0.33	0.44	0.35	0.12	0.23	0.31	
Control Delay	19.1	5.5	10.5	2.9	4.0	4.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.1	5.5	10.5	2.9	4.0	4.1	
Queue Length 50th (ft)	23	0	66	0	10	37	
Queue Length 95th (ft)	55	39	138	21	28	84	
Internal Link Dist (ft)	1300		696			540	
Turn Bay Length (ft)							
Base Capacity (vph)	509	572	1034	927	629	1364	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.29	0.35	0.12	0.22	0.31	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 52.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	3	43	0	97	2	326	15	56	430	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	47	0	105	2	354	16	61	467	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											776	
pX, platoon unblocked												
vC, conflicting volume	1067	970	473	959	967	362	478			371		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1067	970	473	959	967	362	478			371		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	79	100	85	100			95		
cM capacity (veh/h)	162	240	591	226	241	682	1084			1188		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	152	373	61	478
Volume Left	3	47	2	61	0
Volume Right	3	105	16	0	11
cSH	254	421	1084	1188	1700
Volume to Capacity	0.03	0.36	0.00	0.05	0.28
Queue Length 95th (ft)	2	41	0	4	0
Control Delay (s)	19.5	18.3	0.1	8.2	0.0
Lane LOS	C	C	A	A	
Approach Delay (s)	19.5	18.3	0.1	0.9	
Approach LOS	C	C			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	26	18	427	9	9	545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	20	464	10	10	592
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1081	469			474	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1081	469			474	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	97			99	
cM capacity (veh/h)	239	594			1088	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	474	602
Volume Left	28	0	10
Volume Right	20	10	0
cSH	316	1700	1088
Volume to Capacity	0.15	0.28	0.01
Queue Length 95th (ft)	13	0	1
Control Delay (s)	18.4	0.0	0.2
Lane LOS	C		A
Approach Delay (s)	18.4	0.0	0.2
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	73	104	301	64	76	433
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	113	327	70	83	471
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	998	362			397	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	362			397	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	83			93	
cM capacity (veh/h)	251	683			1162	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	79	113	397	83	471
Volume Left	79	0	0	83	0
Volume Right	0	113	70	0	0
cSH	251	683	1700	1162	1700
Volume to Capacity	0.32	0.17	0.23	0.07	0.28
Queue Length 95th (ft)	33	15	0	6	0
Control Delay (s)	25.8	11.3	0.0	8.3	0.0
Lane LOS	D	B		A	
Approach Delay (s)	17.3		0.0	1.2	
Approach LOS	C				

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment K
Level-of-Service Worksheets for 2020 Background PM Traffic Projections
With Project Generated Traffic

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt					1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)					1775	1583	1770	1863	1583	1770	1860	
Flt Permitted					0.95	1.00	0.41	1.00	1.00	0.40	1.00	
Satd. Flow (perm)					1775	1583	772	1863	1583	742	1860	
Volume (vph)	0	0	0	74	1	119	6	475	119	68	514	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	80	1	129	7	516	129	74	559	5
RTOR Reduction (vph)	0	0	0	0	0	113	0	0	44	0	0	0
Lane Group Flow (vph)	0	0	0	0	81	16	7	516	85	74	564	0
Turn Type				Perm		Perm	pm+pt		Perm	pm+pt		
Protected Phases					8		5	2		1	6	
Permitted Phases				8		8	2		2	6		
Actuated Green, G (s)					8.4	8.4	45.9	44.9	44.9	49.9	46.9	
Effective Green, g (s)					8.4	8.4	45.9	44.9	44.9	49.9	46.9	
Actuated g/C Ratio					0.12	0.12	0.67	0.66	0.66	0.73	0.69	
Clearance Time (s)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)					218	195	533	1225	1041	587	1277	
v/s Ratio Prot							0.00	0.28		c0.01	c0.30	
v/s Ratio Perm					0.05	0.08	0.01		0.08	0.09		
v/c Ratio					0.37	0.08	0.01	0.42	0.08	0.13	0.44	
Uniform Delay, d1					27.5	26.5	3.8	5.5	4.2	3.0	4.8	
Progression Factor					1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2					1.1	0.2	0.0	1.1	0.2	0.1	1.1	
Delay (s)					28.6	26.7	3.8	6.6	4.4	3.1	5.9	
Level of Service					C	C	A	A	A	A	A	
Approach Delay (s)		0.0			27.4			6.1			5.6	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

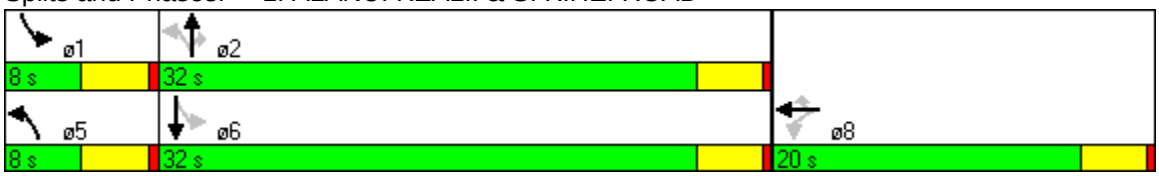
c Critical Lane Group

Lane Group	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	1	119	6	475	119	68	514
Lane Group Flow (vph)	81	129	7	516	129	74	564
Turn Type		Perm	pm+pt		Perm	pm+pt	
Protected Phases	8		5	2		1	6
Permitted Phases		8	2		2	6	
Detector Phases	8	8	5	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	8.0	20.0
Total Split (s)	20.0	20.0	8.0	32.0	32.0	8.0	32.0
Total Split (%)	33.3%	33.3%	13.3%	53.3%	53.3%	13.3%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	Max	None	Max
v/c Ratio	0.33	0.39	0.02	0.42	0.12	0.15	0.42
Control Delay	20.1	6.1	4.2	8.0	1.9	3.8	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	6.1	4.2	8.0	1.9	3.8	6.2
Queue Length 50th (ft)	22	0	1	88	0	5	55
Queue Length 95th (ft)	53	36	3	174	19	16	197
Internal Link Dist (ft)	1300			716			540
Turn Bay Length (ft)							
Base Capacity (vph)	421	474	408	1227	1086	496	1340
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.27	0.02	0.42	0.12	0.15	0.42

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 65.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: ALANUI KEALII & S. KIHEI ROAD



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	11	91	0	69	2	575	48	111	523	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	12	99	0	75	2	625	52	121	568	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		0			3							
Upstream signal (ft)											796	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1540	1491	568	1477	1465	651	568			677		
vC1, stage 1 conf vol	810	810		655	655							
vC2, stage 2 conf vol	730	682		822	810							
vCu, unblocked vol	1585	1532	533	1517	1504	651	533			677		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	98	64	100	84	100			87		
cM capacity (veh/h)	108	142	505	271	294	468	956			915		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	14	99	75	679	121	568
Volume Left	2	99	0	2	121	0
Volume Right	12	0	75	52	0	0
cSH	323	271	468	956	915	1700
Volume to Capacity	0.04	0.36	0.16	0.00	0.13	0.33
Queue Length 95th (ft)	3	40	14	0	11	0
Control Delay (s)	16.6	25.7	14.1	0.1	9.5	0.0
Lane LOS	C	D	B	A	A	
Approach Delay (s)	16.6	20.7		0.1	1.7	
Approach LOS	C	C				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	13	29	634	14	32	633
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	32	689	15	35	688
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1454	697			704	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1454	697			704	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	93			96	
cM capacity (veh/h)	138	441			893	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	704	723
Volume Left	14	0	35
Volume Right	32	15	0
cSH	262	1700	893
Volume to Capacity	0.17	0.41	0.04
Queue Length 95th (ft)	15	0	3
Control Delay (s)	21.6	0.0	1.0
Lane LOS	C		A
Approach Delay (s)	21.6	0.0	1.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	51	145	611	77	103	487
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	158	664	84	112	529
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1459	706			748	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1459	706			748	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	64			87	
cM capacity (veh/h)	124	436			861	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	55	158	748	112	529
Volume Left	55	0	0	112	0
Volume Right	0	158	84	0	0
cSH	124	436	1700	861	1700
Volume to Capacity	0.45	0.36	0.44	0.13	0.31
Queue Length 95th (ft)	49	41	0	11	0
Control Delay (s)	55.8	17.9	0.0	9.8	0.0
Lane LOS	F	C		A	
Approach Delay (s)	27.7		0.0	1.7	
Approach LOS	D				

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		