

Appendices

- A. Preliminary Engineering Report for Nanakuli Community Baseyard. Hida, Okamoto & Associates, Inc. January 2010
- B. Market Analysis and Employment Forecast, Proposed Tropic Land LLC Industrial Park. Hastings, Conboy, Braig & Associates, Ltd. March 2008
- C. Agricultural Feasibility Report, TMK 8-7-009: 002, Nanakuli, Oahu, Hawaii. John J. McHugh, Jr. Ph.D., May 2008
- D. Biological Surveys Conducted on the Tropic-Land LLC, Nānākuli Light Industrial Park Site, Waiʻanae District, Oʻahu, Hawaiʻi. Reginald E. David and Eric Guinther, June 2008
- E. Traffic Impact Analysis Report for the Proposed Nanakuli Industrial Park. Traffic Management Consultant, January 2010
- F. An Archaeological Inventory Survey for the Proposed Lualualei Golf Course, Lualualei, Waiʻanae, Oʻahu. Hallet H. Hammatt, Ph.D., Jennifer J. Robins, and Mark Stride, January 1991
- G. Cultural Impact Assessment—Final Report. Janelle L. Kaohu, Angelita S. Aipoalani, and Hanalei Y. Aipoalani, July 2009
- H. Correspondence related to Chapter 6E-42, Historic Preservation Review for TMK: (1) 8-7-009: 002
- I. Nānākuli/Māʻili Neighborhood Board Resolutions
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APPENDIX A

Preliminary Engineering Report for Nanakuli Community Baseyard.
Hida, Okamoto & Associates, Inc., January 2010

PRELIMINARY ENGINEERING REPORT

for

NANAKULI COMMUNITY BASEYARD

Lualualei, Nanakuli, Oahu, Hawaii

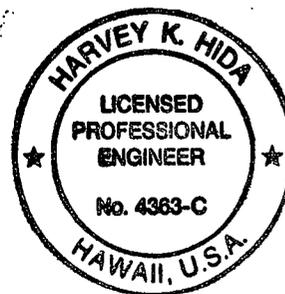
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Prepared for

Tropic Land, LLC

By:

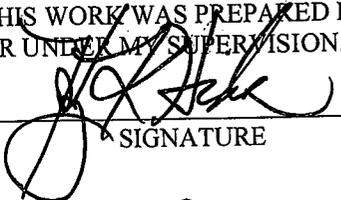
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January 2010

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I. INTRODUCTION

Nanakuli Community Baseyard project, proposed by Tropic Land, LLC, is an approximately 41 lots light industrial horizontal condominium development in Lualualei Valley, Nanakuli, situated just makai of the Lualualei Naval Ammunition Depot and lies approximately 9000 feet into Lualualei Naval Access Road (Lualualei Road) from Farrington Highway intersection. It is bounded along its southerly (makai) and westerly boundary by the Lualualei Road. The northerly (mauka) and northeasterly boundary of the site runs along the edge of Lualualei Naval Ammunition Depot complex. To the east, the project is bounded by privately-owned and State lands comprising Puu Haleakala ridge. (see Figure 1–Location Map). The project area is approximately 96 acres on the east side of Lualualei Road (TMK: 8-7-09: portion 02).

This report will present information on infrastructure requirements for the proposed Nanakuli Community Baseyard. Specifically, this report will address:

1. Background information on the proposed project;
2. Existing conditions;
3. Modifications after development; and
4. Potential impact due to development and proposed mitigation measures.

II. PROJECT BACKGROUND

2.1 Proposed Project

The proposed industrial park would consist of approximately 41 lots, averaging two acres each. The project would have a single secured entry off of Lualualei Road and secondary access for fire and emergency purposes. The existing linear tree farm along the Lualualei Road will remain as a 30-foot landscaped setback area. The north and south property lines have 15-foot setbacks. An additional strip of land, approximately 100feet wide and mauka of the industrial lots, will be used for drainage improvements and rock fall hazard mitigation measure.

2.2 Topographic Features

The project site ranges in elevation from about 60 feet mean sea level (MSL) at Lualualei Road, to an elevation of 1,864 feet at Puu Haleakala ridge. Generally, the project site slopes in a southwesterly direction towards the Lualualei Road (see Figure 2 – Topographic Map). Approximately 1/3 of the site, situated below the 200 foot above sea level elevation, is relatively flat, sloping at a 12% rate from Lualualei Road upward to the foothills of Puu Heleakala ridge. Ulehawa Stream, an intermittent stream, may cross the site along a course that is generally parallel to Lualualei Road.

Above the 200-foot elevation level, the site takes on a more abrupt slope upward toward the back of the subject site. It is estimated that the slope within this "second tier" of the subject site is within the 10-30% range. The rest of the site along the foothills of Puu Haleakala ridge and the rear portions of the project site slope radically upward towards the peak of the ridge; however, no construction will occur on this portion of the site as it will be left in its current, undeveloped state and will remain in the preservation zone.

2.3 Existing Uses

The project site is currently undeveloped land. The site is vacant and covered mostly with grasses, haole koa bushes, and isolated kiawe trees. The property has remained largely vacant and unused. A truck farm operated on 15 acres for a brief period in the 1980s, closed voluntarily in 1988. There is limited use of the property at present time. Grasses are mowed periodically for fire control purpose. 30-foot wide landscape buffer on the east side of Lualualei Road is provided, trees were planted in a linear strip fronting the roadway in the summer of 2007.

2.4 Climate

The climate in the Lualualei region is relatively warm and dry. Trade winds from the north east occur much of the time, with occasional Kona winds. Temperature range in this area usually varies between the lower 60's (degrees Fahrenheit) to the upper 80's. rainfall in the region is generally light, with a mean annual rainfall of approximately 26 inch near the project site.

2.5 Land Use and Zoning

The proposed Nanakuli Community Baseyard will require zoning changes from P-2 (Preservation) to an I-1 (Limited Industrial) and State Land Use Re-classification from Agricultural to Urban for approximately 96 acres. The remaining acreage will remain in Preservation use. The proposed changes in land use require change to the Land Use Map of Waianae Sustainable Communities Plan and amend to Urban District boundary by the State Land Commission.

2.6 Soils

The soil types within the project site are identified in the U.S. Department of Agriculture, Soil Conservation Service, Soil Survey. The soil types are listed below and depicted on Figure 3 – Soils Map.

Lualualei extremely stony clay (LPE)
Lualualei clay (LuB)
Rock land (rRK)
Pulehu very stony clay loam (PvC)
Lualualei stony clay (LvA)

III. DRAINAGE

3.1 Watershed Hydrology

The proposed development is situated within a 3,178-acre watershed in southwestern Oahu. Located on the leeward side of the island, the climate is warm and relatively dry with an annual average of 26 inches of rainfall across the watershed. Originating in the Waianae mountain ridge at the 3,098 feet elevation of Palikea, the watershed slopes westerly towards its lower bound at Ulehawa Beach Park a distance of over 4.5 miles.

Land use in the watershed is primarily undeveloped, the lower valley is characterized by a mix of residential and commercial area along Farrington Highway. The upper valley is occupied by the Naval Magazine – Lualualei. The western area is dominated by numerous agricultural lots and lower Lualualei Road corridor has an industrial character including landfill and a waste processing facility.

3.2 Drainage Criteria/Standards

The City and County of Honolulu Drainage Standards (Drainage Standards) will apply to this development. Rainfall intensity Plate Maps from Drainage Standards were used to calculate rainfall intensities. These intensities were then used to estimate peak flows for a 10-year, 50-year and 100-year period event.

The rational Method was used to calculate peak flows for the 10-year and 50-year event, based on a 1-hour rainfall duration with rainfall intensities of 1.8 inches/hour and 2.7 inches/hour, respectively (as per Plate 1 and 2 of the Drainage Standards). Using these 1-hour intensities, a correction factor was applied (as per Plate 4 of Drainage Standards) to estimate peak intensities for varying time of concentrations as summarized in Table 1.

**TABLE 1
RAINFALL INTENSITY FOR VARIOUS DURATIONS**

Time of Concentration (min)	Correction Factor	Intensity (inches/hour)	
		10-Year	50-year
5	2.8	5.0	7.6
10	2.35	4.2	6.4
15	1.9	3.4	5.1
30	1.45	2.6	3.9
60	1.0	1.8	2.7

Peak flow estimates with tributary area greater than 100 acres, were developed using Plate 6 from Drainage Standards.

In this report, the peak flow estimate using Plate 6 are referred to as the “100-year” event. Table 2 below summarizes the peak discharge versus area relationship obtained from Plat 6, with the proposed site being located in the Group C area.

**TABLE 2
“100-YEAR” PEAK DISCHARGE VS. AREA RELATIONSHIP
(FOR AREAS LARGER THAN 100 ACRES)**

Area (acres)	“100-year” Peak Discharge (cfs)
100	500
200	825
400	1,400
600	1,850
800	2,250
1,000	2,700
1,500	3,600
2,000	4,500

Time of concentration was estimated for a subcatchment, based on the overland slope and length; as well as Plates 3 and 5 in the Drainage Standards.

3.3 Existing Conditions

The watershed originates above the proposed development site and runoff from offsite area is conveyed through the development via the gulchs and overland flow. Runoff from the site and upstream offsite regions is conveyed across Lualualei Road through 4 culverts, eventually draining on to Ulehawa stream. The existing Ulehawa Stream pass through north-east tip of the project site. The drainage basin for Ulehawa Stream covers over 1,000 acres and that the Q_{100} is about 2,800 cfs.

The watershed was divided into 3 subcatchment areas in an effort to determine the peak discharge using the Drainage Standards. Figure 4 illustrates the pre-development subcatchments' boundaries and corresponding drainage area ID's. Runoff peak flow estimates were developed for each subcatchment areas for the 100-year recurrence events. The peak flow estimates are summarized in Table 3.

**TABLE 3
PRE-DEVELOPMENT PEAK FLOW**

Tributary Area ID	Area (acres)	100-year Flow (cfs)¹
A	1,084	2,800
B-1	370	1,350
B-2	236	840
C	1,488	3,600
Total	3,178	8,590

1. "100-year"flows were determined using Plate 6 from Drainage Standards.

3.4 Modifications After Development

Development will impact the hydrology of the watershed as sections of undeveloped areas and land will be replaced with impervious surfaces (roads, building, parking, etc.) and the vegetative surface cover will be altered. The corresponding impact will result in higher runoff volumes and peak flows. Since large areas in the upper watershed will remain undeveloped, the impact on peak flows downstream of the site should not be significant.

Building setback encompassing Ulehawa Stream will be delineated and established. Setback distance will be determined from the inundated areas impacted from Ulehawa Stream runoff volume.

The construction of new roadways and industrial subdivision transecting across the hillside, however, the existing drainage patterns and subcatchment areas will likely be remained. Figure 5 illustrates the post-development subcatchment area for B-2 and drainage node ID's with proposed road network and lot layout superimposed. The estimated 10-year, 50-year and 100-year peak flows through the development are summarized below in Table 4.

**TABLE 4
POST-DEVELOPMENT PEAK FLOWS**

Area ID	Tributary Area (acres)	10-year Flow (cfs)	50-year Flow (cfs)	100-year Flow (cfs)
A	1084			2,800
B-1	370			1,350
B-2-1	52	72	90	
B-2-2	88	121	152	
B-2-3	52	135	169	
B-2-4	44	115	143	
C	1,488			3,600
Total	3,178			

3.5 Impacts and Mitigation Measures

Retention (or detention) facilities are typically constructed to retain increases in storm drainage runoff that occurs as a result of development. These facilities include: open basins, detention ponds, underground storage tanks and lakes. Drainage improvements in approximately 100 feet wide strip of land mauka of the industrial lots will be designed to accommodate peak runoff from the hillside. It is intended that the strip of land serve as detention facilities, dampening the peak runoff generated from hillside. By incorporating these improvements into industrial park design, the discharge of peak storm runoff from the project site is not expected to increase from the existing conditions.

3.6 Stormwater Quality

The project will be meet the City and County of Honolulu stormwater quality requirements as outlined in the Rules Relating to Storm Drainage Standards, dated January 2000.

During the more detailed design of the infrastructures to service the site, engineer will work with the City and County of Honolulu to determine the necessary water quality standards and which BMP's would be most effective for the project. The objectives of the water quality BMP's would be to mitigate the impact of pollutants (sediment, grit, oil, heavy metals) that enter the drainage system from the frequent, smaller rainfall. Plants and landscaping can be incorporated into the design to absorb particles and filter heavy metals. Additional water quality BMP's includes construction of infiltration swales alongside the roadway. These swales collect runoff, filter particles and provide infiltration to recharge the groundwater.

3.7 Off-Site Improvements

Runoff from the proposed development will be conveyed across Lualualei Road through the existing culverts. On the northern side of Lualualei Road, runoff flow through Ulehawa Stream. Capacity of the culverts across Lualualei Road will be examined during the preliminary design stage to assess whether improvements are required to convey peak flows from the project site.

IV. GRADING AND SOIL EROSION

4.1 Grading

The grading concept for lots will be to provide relatively level lot. Total earthwork quantities of cut and fill for the development is anticipated to be approximately 450,000 cu. yds. An effort to balance earthwork quantities is expected to minimize the cost of purchasing offsite borrow material and disposing excess excavated material at an offsite location. Grading operations will be in conformance with the applicable ordinances of the City and County of Honolulu. Soils investigations will be performed as the project proceeds. The project soils engineers will recommend mitigation measures as roadway and lot locations are further defined.

4.2 Site Characteristics

The project site is divided into two subareas for the purpose of calculating soil erosion potential (see Figure 6). These subareas represent sites within the project area that vary in soil erosion potential characteristics such as terrain and/or drainage network.

Subarea A, a part of the Ulehawa Stream drainage basin, is directly abutting the Lualualei Road and covering the flatter portion of the project site. The subarea occupies approximately 96 acres and is bounded north by Lualualei Naval Ammunition Depot, south by the ridge line of Puu Haleakala and west by the Lualualei Road and east by an approximately 190 foot contour. The entire area of subarea A will be graded for industrial park development.

Subarea B is located south of subarea A and is bounded on south and east by ridge line, and north by 190 foot contour and occupies approximately 140 acres. The subarea is currently a medium-dense and rocky outcropping becoming numerous with slopes ranging 25 to 60 percent. The development is not planned for this subarea and will remain for preservation.

4.3 Calculation of Soil Erosion Potential

The U.S. Department of Agriculture, Soil Conservation Service, uses the Universal Soil Loss Equation (USLE) to estimate long-term average annual soil losses from sheet and rill erosion. It is used to estimate erosion on forest land, farm fields, construction/development sites, and other areas. Soil losses can be estimated for present conditions or for a future condition. The soil loss equation is –

	A	=	RKLSCP
where:	A	=	soil loss (tons per acre per year)
	R	=	rainfall factor
	K	=	soil erodability factor
	L	=	slope length factor
	S	=	slope gradient factor
	C	=	cover and management factor
	P	=	erosion control practice factor

Based on the U.S. Soil Conservation Service (SCS) Erosion and Sediment Control Guide for Hawaii, the rainfall factor (R) is 220. A soil readability factor (K) was selected for each subarea after evaluating the U.S. Department of Agricultural Soil Survey and the City and County of Honolulu Soil Erosion Standards and Guidelines. The K values for the site are based on a weighted average of all K values for soil types in each subarea.

The cover and management factor (C) is also based on a weighted average for C values within each subarea and will be recalculated accordingly after development. Both R and K factors will remain the same for the site before and after the proposed industrial park is constructed. The slope length factor (L) and slope gradient factor (S) are combined into a LS factor for calculations. This factor also remains constant before and after development. However, each subarea will have different factors to reflect the differences in topography.

4.4 Existing Soils Erosion Potential

The existing soil erosion potential for the site can be estimated by the USLE using the following parameters:

USLE		SUBAREA	
Parameters	A	B	
R	220	220	

K	0.20	0.28
LS	6.3	56
C	0.015	0.011
P	1	1

The existing soil erosion potential for each subarea is listed below.

TABLE 4
Soil Erosion Potential (Existing Conditions)

Subarea	Acres	Tons/Acre/Yr	Tons/Yr
A	96	4.2	403
B	140	37.9	5,306
Total	236		5,706

Thus, for the entire project, the existing erosion potential is 5,709 tons/year.

4.5 Soil Erosion Potential After Development

The long-term change in soil erosion potential can be estimated by the USLE for the new land use at the site. Appropriate USLE factors for the site after industrial park development are –

USLE Parameters	SUBAREA	
	A	B
R	220	220
K	0.20	0.28
LS	2.82	56
C	0.005	0.011
P	1	1

The C factor for subareas have decreased to account for industrial park development.

TABLE 5
Soil Erosion Potential (Developed Conditions)

Subarea	Acres	Tons/Acre/Yr	Tons/Yr
A	96	0.62	60
B	140	37.9	5,306
Total	236		5,366

Thus, for the entire project, the estimated soil erosion potential after development is 5,366 tons/year.

4.6 Impacts and Mitigation Measures

4.6.a Long-Term Impacts

Based on the USLE, soil erosion potential at the project site should decrease after development of the industrial park. The erosion potential of subarea A is estimated to decrease by 3.58 tons/acre/year (343 tons/year), or 85 percent. Thus, sediment transport to the Ulehawa Stream should decrease after development.

TABLE 6
Summary of Soil Erosion Potential

Subarea	Existing Conditions (ton/yr)	Developed Conditions (ton/yr)	Percent Decrease (%)
A	403	60	85
B	5,306	5,306	0
Total	5,709	5,366	6.0

4.6.b Short-Term Impacts and Mitigation Measures

Construction of the industrial park will involve land disturbing activities that result in soil erosion. These land disturbing activities include removal of existing vegetation (clearing and grubbing) and leveling, removing, and replacing soil. Short-term impacts due to construction are estimated to last 18 months.

The USLE can be used to estimate soil erosion potential based on these short-term construction impacts. For purposes of calculation, it is assumed that the areas will be exposed for a period of one year (January through December). The rainfall factor, R, is revised to represent the fraction of annual rainfall falling within the grading period. The CP factor is 0.7 for bare soil without mitigation measures.

Thus, in the short term 36,861 tons of soil erosion are calculated for a one-year period. Of this amount, approximately 10 percent (3,690 tons) will impact Ulehawa Stream.

Mitigation measures can be implemented to reduce short-term soil erosion. For example, limiting grading to not more than 15 consecutive acres at a time and installation of a

sedimentation basin at least 12,000 square feet in size at the onsite of grading will reduce estimated soil erosion potential for the site by 89 percent to 29 tons. Thus, the estimated impact on the Ulehawa Stream is reduced by 2.5 tons/acres/year (235 tons).

Additional control measures could be taken to lessen construction impacts even further. These are –

1. Minimize time of construction.
2. Retain existing ground cover until latest date before construction.
3. Early construction of drainage control features.
4. Use of temporary area sprinklers in nonactive construction areas when ground cover is removed.
5. Station water truck on site during construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).
6. Use temporary berms and cutoff ditches, where needed, for control of erosion.
7. Thorough watering of graded areas after construction activity has ceased for the day and on weekends.
8. Sod or plant all cut and fill slopes immediately after grading work has been completed.
9. Implementing Sedimentation basins.
10. Use of slope stabilization materials where needed.

Grading and Erosion Control Plans will be prepared in compliance with Chapter 14, Revised Ordinances of Honolulu. Further, the contractor will be required to perform all grading and stockpiling operation in conformance with the applicable provisions of Chapter 54 (Water Quality Standards) and Chapter 55 (Water Pollution Control) of Title 11 Administrative Rules of the State Department of Health.

V. ROADS

5.1 Existing Conditions

The project site is located in the Lualualei Valley, north of Farrington Highway and south of U.S. Naval Magazine Lualualei. The property is approximately 2.2 miles north of Lualualei Road and Farrington Highway intersection. Current formal access to the property is via Hakimo Road. An easement from the Navy links the property across Lualualei Road. The City and County of Honolulu formally declined to acquire Lualualei Road from the Navy. The current status is that the Navy has granted Tropic Land, LLC access through Lualualei Road as a direct access route from Farrington Highway. Tropic Land, LLC is currently working with the Navy (NAVFAC) to obtain for a definitive long term agreement.

5.2 Modifications After Development

A Traffic Impact Assessment Report (TIAR) will be prepared for this project. The TIAR will outline the requirements and impacts for access to the development and improvements to supporting infrastructure.

On site roadways will consist of a collector road serving local roadway within the industrial park. A collector road will have a single secured connection to the Lualualei Road. It is also planned to provide secondary access for fire and emergency purposes.

5.3 Impacts and Mitigation Measures

Impact and mitigation will be identified in the TIAR. The project will generate additional traffic on the roadways in the vicinity of the project site. The TIAR will indicate impact to the existing traffic along Lualualei Road and Farrington Highway, also will address the roadway improvements if necessary.

VI. WATER

6.1 Existing Condition

The property is vacant and covered with a weedy mixture of grasses and haole koa shrubs, and isolated kiawe trees. About 15 acres within the lower level portions of the site were cultivated for vegetable crops until early 1988. Currently, the property is not cultivated and there are no existing residences.

The Board of Water Supply’s (BWS) Puu-O-Hulu systems services the properties along Hakimo Road. The storage facility located closest to the project site is Puu-O-Hulu Reservoir, with a 1.5 MG capacity and spillway elevation at 241.75 feet. The reservoir services through a 20-inch transmission line and 8-inch distribution main along Hakimo Road (see Figure 7 – Existing Water Transmission and Storage Map)). Currently, the Lualualei Booster Station has limited capacity of 25,000 gallon per day (GPD). The existing water system can only provide a flow of approximately 2,200 gallons per minute (gpm) to a fire hydrant at the intersection of Paakea road and Hakimo Road.

6.2 Projected Demand

**TABLE 7
ESTIMATED POTABLE WATER USE DEMAND**

Land Use	No. of Lot	Average No. of Employees	(gpd/capita)	Other Usage (gpd/lot)	Average Daily Demand (gpd)
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Industrial Subdivision	41	10	25	300	22,550
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Based on the development information in the above Table 7, the Average Daily Demand for the development is estimated to be 22,550 GPD. The Maximum Daily Demand is estimated to be 45,100 GPD and a Peak Hour Demand of 67,650 GPD.

Since the Nanakuli Community Baseyard will be developed as a condominium, its CC&R (Covenants, Conditions and Restrictions) will control the type of the businesses and limit the water use demand for each lot and the total demand for the project. The Association of Owners will implement and enforce the CC&R.

The projected water demand for fire protection is 4,000 gallons per minute (GPM) over three-hour duration for the light industrial park and a fire hydrant to be located within 125 linear feet of each subdivided lot. This demand is based on the BWS Standards' Table 100-19, Fire Flow Requirement.

6.3 Proposed Potable Water System

The proposed potable water system will be connected to the existing 20-inch BWS water main at the intersection of Paakea Road and Hakimo Road. A new 16-inch transmission line with new service road will be located along Paakea Road extension and cross the Lualualei Road and enter into the project site. BWS indicated that the installation of a new 16-inch watermain will provide adequate fire flow to the proposed industrial development. Design and construction of the potable water distribution system will be in accordance with the Board of Water Supply (BWS) Standards and the easements and the systems will be dedicated to the BWS. Refer to Figure 8 for the proposed potable water transmission and distribution system.

6.4 Potential Impact and Mitigation Measures

Nanakuli Community Baseyard will impact the Waianae regional water system by increasing the demand for potable water. Introducing a dual water system; using non-portable water for irrigation, reduce the water demand. In addition, proposed project will upgrade the fire protection system for the vicinity. The development schedule for Nanakuli Community Baseyard will be governed by implementation of the BWS improvements in the Waianae region and will be coordinated with the Board of Water Supply.

VII. WASTEWATER

7.1 Existing Conditions

To date, there are no existing wastewater facilities within the project site. The adjoining residential areas between the project site and the junction of Waiolu Street and Hakimo Road are mainly served by the cesspools. Wastewater disposal by the cesspools is a major issue within the Waianae Sustainable Communities Plan areas. The City and County, Department of Environmental Services has no plans to serve the Agricultural District surrounding the proposed project areas.

The municipal sewer main nearest to the project site is 8-inch gravity sewer at Mohihi Street, some 2 mile south of the project site along Lualualei Road.

7.2 Projected Wastewater Flows

Wastewater will be generated from the various facilities within the proposed Nanakuli Community Baseyard at an estimated average rate of 22,550 GPD or 0.023MGD and will be typical of domestic wastewater in composition. Projected wastewater flows are based on a de facto population of 410 with 25 GPD / capita and 300 gpd/lot. Since the project will be developed as a condominium, its CC&R will control the type of the businesses and limit the wastewater discharge for each lot and total discharge from the project. The Association of Owners will implement and enforce the CC&R.

7.3 Proposed Wastewater Infrastructures

The major components of the proposed wastewater infrastructures are: (1) the gravity wastewater collection system; (2) the wastewater treatment unit; (3) the wastewater effluent disposal system. The proposed wastewater infrastructures will serve only the Nanakuli Community Baseyard project.

7.3.a Collection System

The proposed on-site wastewater collection system for the project is illustrated on Figure 10. The collection system will consist of gravity sewers, and sewer easements. Preliminary size sizes range from 8" to 10" mains. Design and construction of the system will be in accordance with City and County Standards. The on-site wastewater collection system will be privately operated and maintained.

7.3.b Wastewater Treatment Unit

The proposed location of wastewater treatment unit is shown in Figure 10. The cyclic biological treatment (CBT) is a single basin reactor with continuous activated sludge system. The treatment unit processes all the steps of flow equalization, biological oxidation, nitrification, denitrification and solids-liquids separation in the same basin. Thus, extensive piping and multiple task for those processes are not required. The clock/microprocessor automatically coordinates all the equipment and phases of each cycle.

In addition to the CBT unit, filtration and chlorination units, storage buildings, pumps, piping, and appurtenances will be required. A total fenced area of approximately 10,000 square feet should be sufficient for the wastewater treatment facility.

7.3.c Effluent Disposal

The treated wastewater effluent will be chlorinated, disinfected and pumped to a non-potable water irrigation system. Effluent may be diluted with potable water for irrigation purpose. Ultimately 100 percent of the estimated irrigation water requirement can be supplied by the treated effluent.

7.4 Impacts and Mitigation Measures

Irrigation of the project site with treated effluent will reduce the demand for irrigation water from potable sources.

With the proper operation, objectionable odors will not be generated from the WWTP. Pumps and blowers normally associated with WWTP will be enclosed within a control building to reduce the impact of operating noises.

Placement of the WWTP below ground level and landscaping the perimeter fence, the area will reduce the visual impact on the general public passing on Lualualei Road.

VIII. NON-POTABLE WATER

8.1 Existing Condition

The State of Hawaii Department of Health Wastewater Branch is the jurisdictional agency for the

application of recycled water under HAR 11-62-27. According to the Guidelines for Treatment and Use of Recycled Water (hereinafter referred to as Guidelines), allowable R-1 irrigation uses include the following areas: golf courses, parks, playgrounds, schoolyards, athletic fields, residential property where managed by an irrigation supervisor, and roadside and medians. There is not existing R- 1 distribution system or non-potable water tank located within the vicinity of the project site. BWS does not have any capital improvement project in the near future to develop the R-1 distribution system.

8.2 Proposed Non-Potable Water System

Ultimately 100 percent of the estimated irrigation water demand can be supplied by the treated effluent from wastewater treatment unit. A proposed pump system and non-potable water distribution main will dispense non-potable water for irrigation (see Figure 9). Pipes and pump shall be sized to accommodate maximum daily irrigation flow with the residual pressure of 20 psi at the critical location.

8.3 Projected Demand

The potential non-potable water uses for this project include irrigation of the buffer area, commercial landscape, and roadway medians. This non-potable water demand is estimated to be 0.023 MGD. See Table 8 below. To accommodate the irrigation flow requirement for duration of one day the minimum irrigation water storage tank will be 0.03 MG.

**TABLE 8
ESTIMATED NON-POTABLE WATER USE DEMAND**

Land Use	Acre	gpd/acre	Daily Demand (gpd)
Landscaped Setback Area	3.5	1,440	5,040
Roadway Median/Commercial Landscape Area	5.0	1,440	7,200
Rock Fall Hazard Mitigation Area	7.3	1,440	10,512
		TOTAL	22,750
		CALL	0.023 MGD

8.4 Impacts and Mitigation Measures

Positive impacts resulting from the proposed non-potable water system include: (1) using non-potable sources for irrigation and landscaping.

A water reuse plan will be developed since effluent water from the wastewater treatment plant will be used for irrigation. This plan would include additional information about the irrigation,

management, public education, and other required information per the Recycled Water Guidelines.

IX. SOLID WASTE

9.1 Existing Condition

Currently, the site is undeveloped and does not generate solid waste. A refuse service does not presently serve the project site.

9.2 Projected Solid Waste Generation and Characteristics

The proposed project will generate solid waste during construction and after development. The construction wastes will primarily be made up of vegetation and debris resulting from clearing the site prior to grading. Most of these wastes will be combustible. The typical range of per capita solid waste generated from occupancy source is approximately 2.0 to 5.0 pounds per capita per day (lb/capita/day).

It is anticipated that at full development the project site induce a de factor population of 410, who will generate approximately 2.0 pounds of refuse per capita, for a total 820 pound of solid waste per day. The solid waste composition is expected to be typical for a municipal source.

9.3 Modifications After Development

It is anticipated that refuse generated by the proposed Nanakuli Community Baseyard development will be collected by a private refuse collection company. It is estimated that refuse collection from the site will necessitate 1 truck trip per week. The number of truck trip is based on a manually loaded 20 cubic yard compactor truck capable of achieving a typical compaction density of 500 pounds per cubic yard.

9.4 Impacts and Mitigation Measures

Proposed development will be a new solid waste generator. Disposal of construction wastes due to clearing and grubbing of the site will be a short term impact. The contractor will be required to remove all debris from the project site to mitigate the environmental impact.

The City and County is currently operating a landfill site in Waimanalo Gulch and the H-Power waste energy recovery facility on the Campbell Industrial Park. The Land Use Commission has partially approved the City's request and has extend the life of the Waimanalo Gulch landfill from current 2008 permit expiration to 2011 (18 months). The City is currently exploring

alternative means of handling solid waste since it is an ongoing island wide concern. Other programs being implemented are recycling and reuse of green waste.

X. ELECTRIC AND TELEPHONE SERVICES

10.1 Existing Conditions

There is an existing wood joint pole line along the Honolulu side of the Lualualei Road right-of-way that abuts the project site. All the poles contain HECO 3 ph, 11.5 kV, HTCOCOM, and OTWC lines. Power to this primary line is supplied by the Mikilua Substation feeder No. 3 on Paakea Road which has available capacity to serve the subject expansion.

10.2 Modification After Development

It is anticipated that Hawaiian Electric Company, (HECO), Hawaiian Telcom (HTCOM), and Oceanic Time Warner Cable (OTWC), will provide the necessary electrical, telephone, cable TV, and high-speed internet services to the project site. The total diversified electrical demand for the entire development is estimated to be 1.05 MVA. Power is planned to be supplied to the site via existing substation at Mikilua Substation. The project site will not require its own substation.

10.3 Impacts and Mitigating Measures

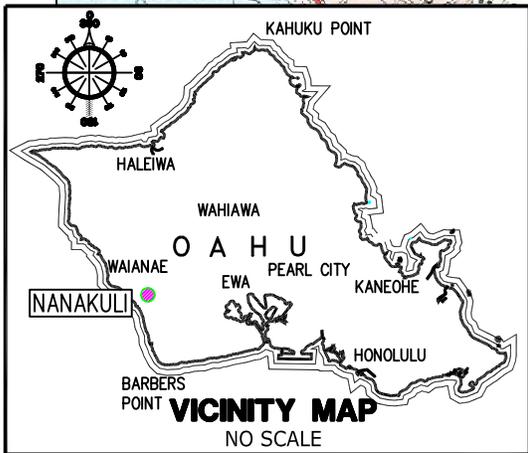
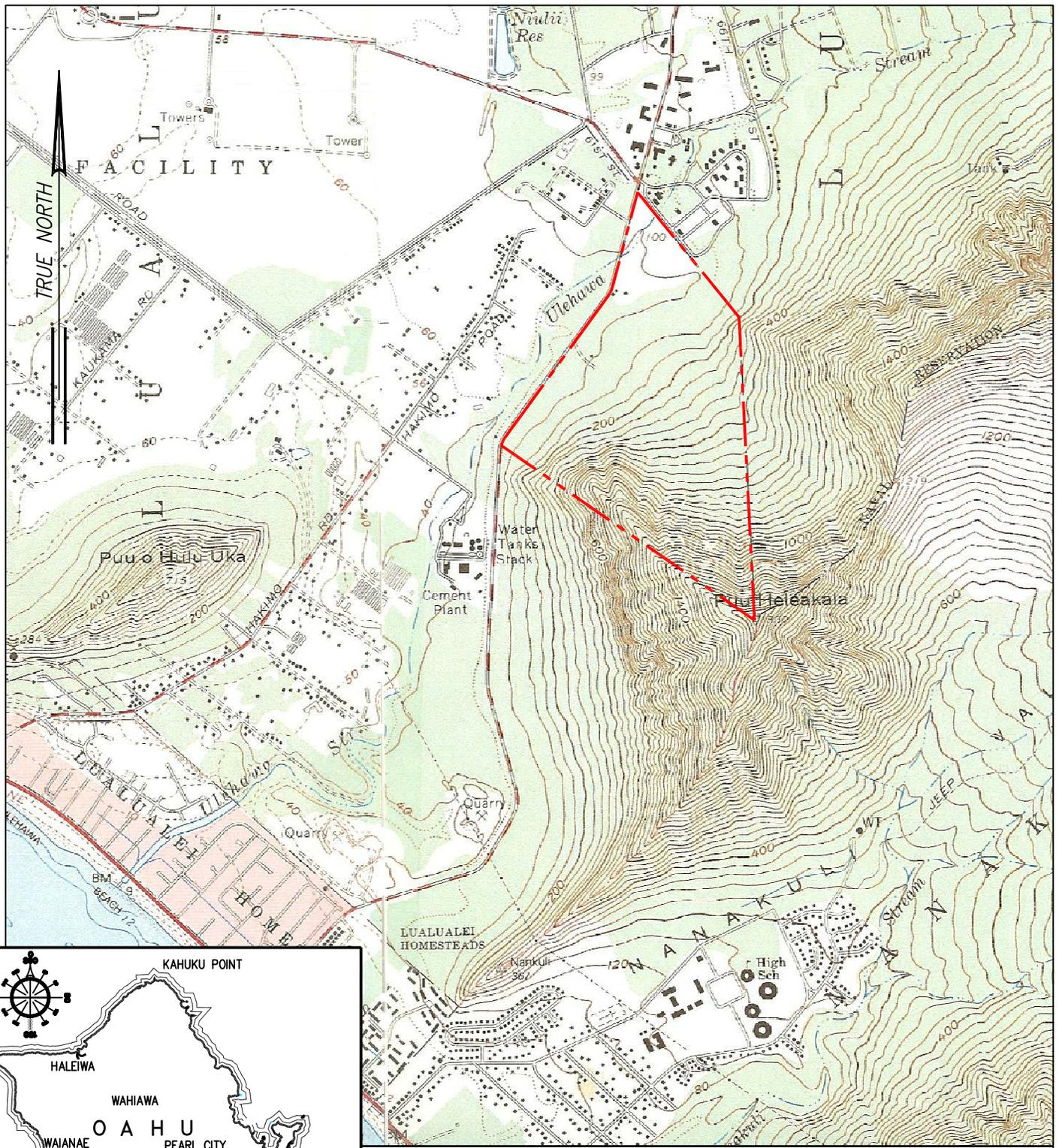
The proposed Nanakuli Community Baseyard will place additional demands on the utilities. The developer will work closely with HECO for timely design and construction of the utility infrastructure and delivery of required services.

No other mitigating measures are necessary since HECO has indicated that adequate service can be provided. However, the project will promote to use of alternative, renewable energy source such as the photovoltaic to reduce energy demand from HECO.

Utility lines will be placed underground to mitigate any visual impacts.

The developer will maintain contact with HTCOCOM and OTWC to assure necessary service levels.

FIGURES



GRAPHIC SCALES 1:24000 (APPROX.)

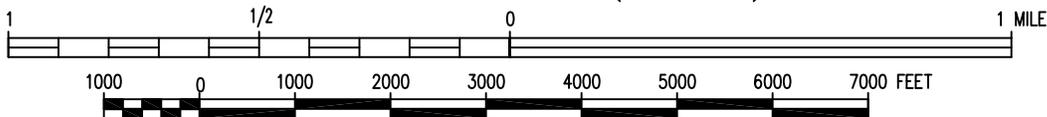
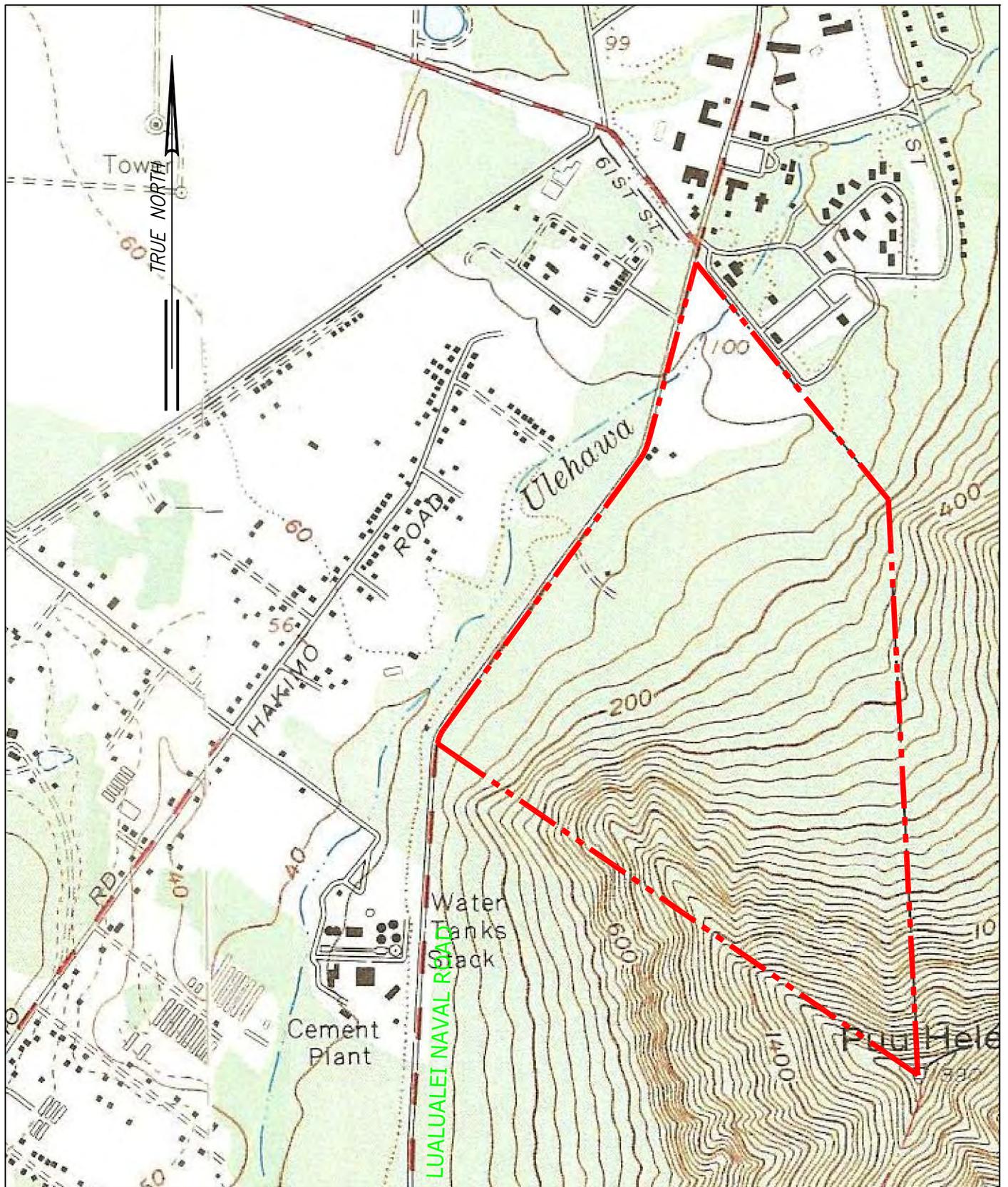


FIGURE 1
LOCATION MAP



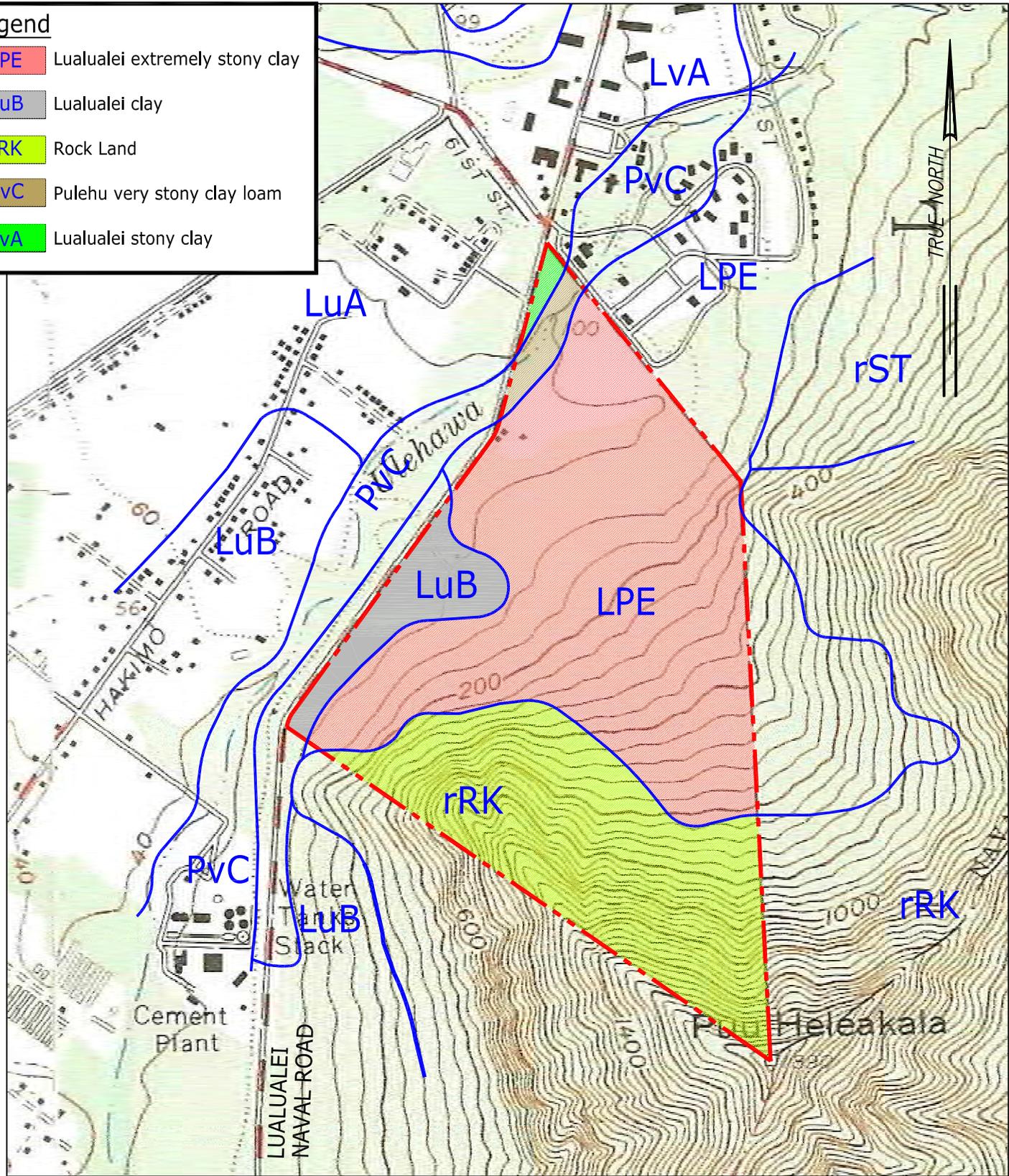
GRAPHIC SCALES 1:12000 (APPROX.)



FIGURE 2
TOPOGRAPHIC MAP

Legend

- LPE Lualualei extremely stony clay
- LuB Lualualei clay
- rRK Rock Land
- PVC Pulehu very stony clay loam
- LvA Lualualei stony clay



Source: Soil Map, NRCS, September 19, 2006
 The Background Digital Raster Graphics was published by U.S.G.S. on August 2003.

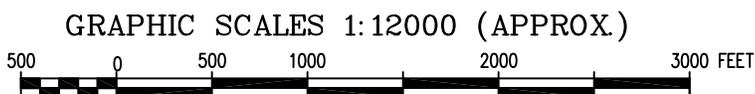
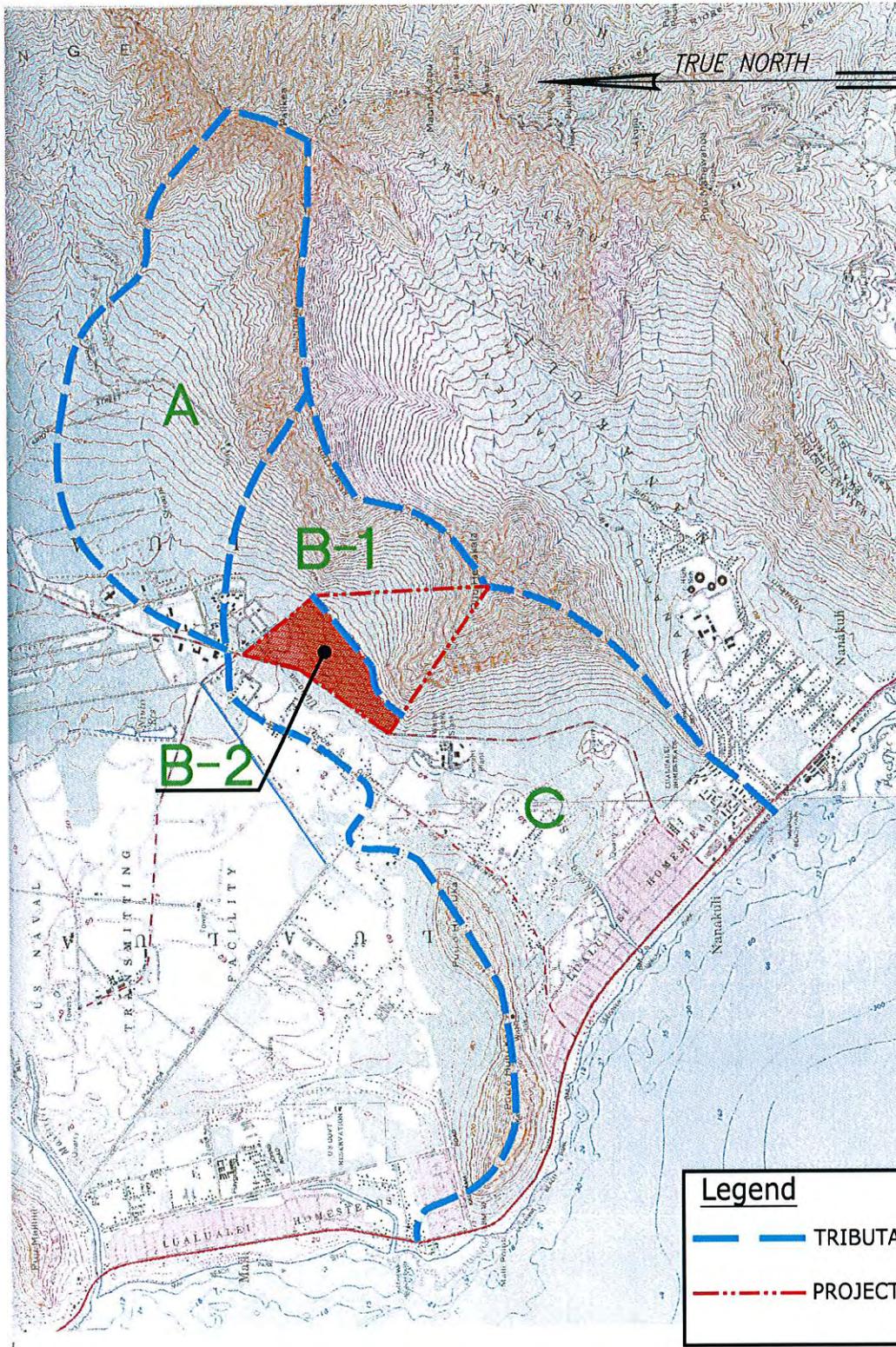


FIGURE 3
SOILS MAP



GRAPHIC SCALES 1: 48000

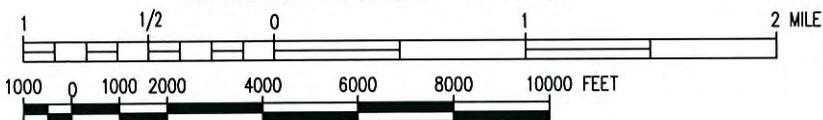
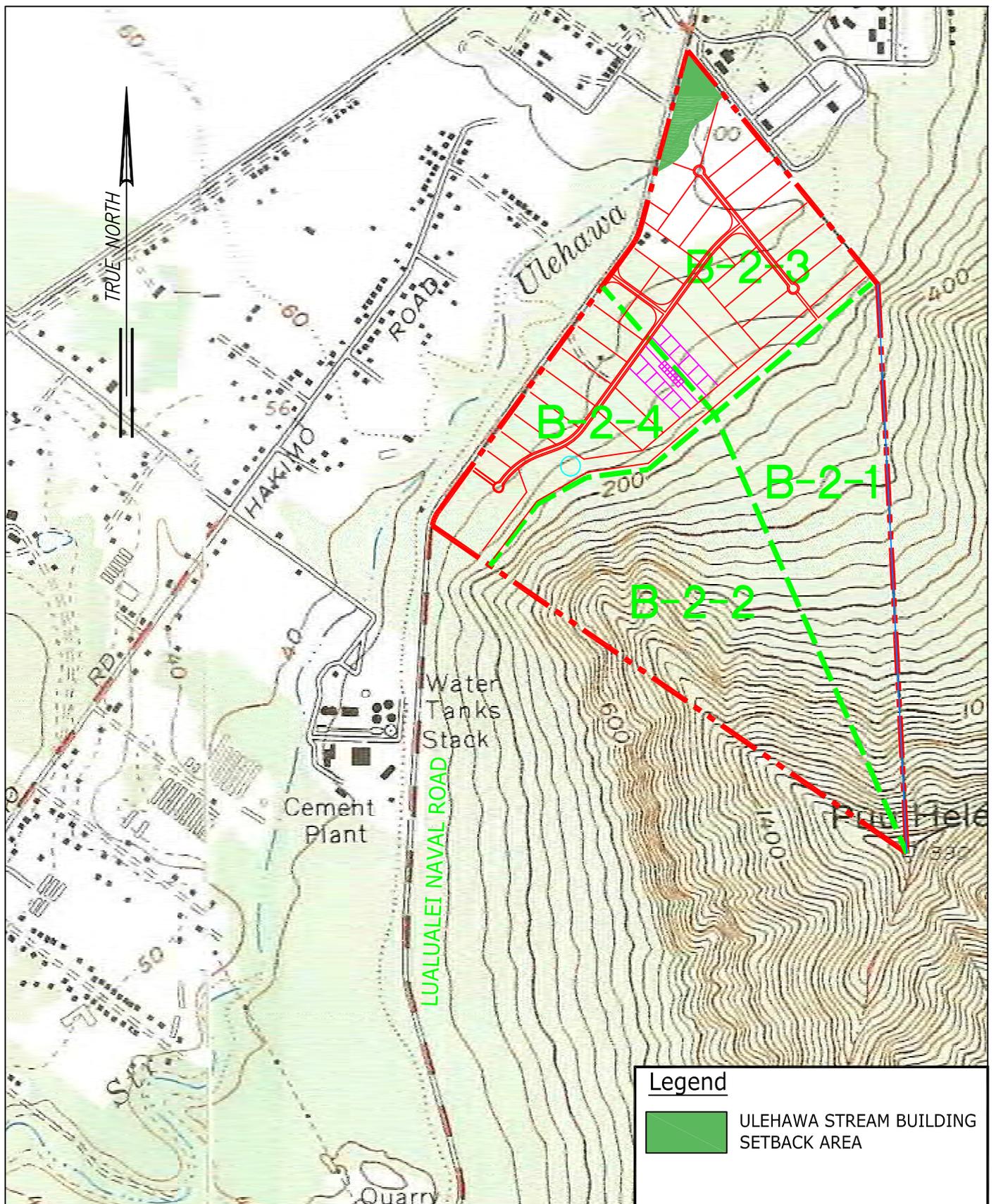


FIGURE 4
PRE-DEVELOPMENT
CATCHMENT AREAS



GRAPHIC SCALES 1:12000 (APPROX.)

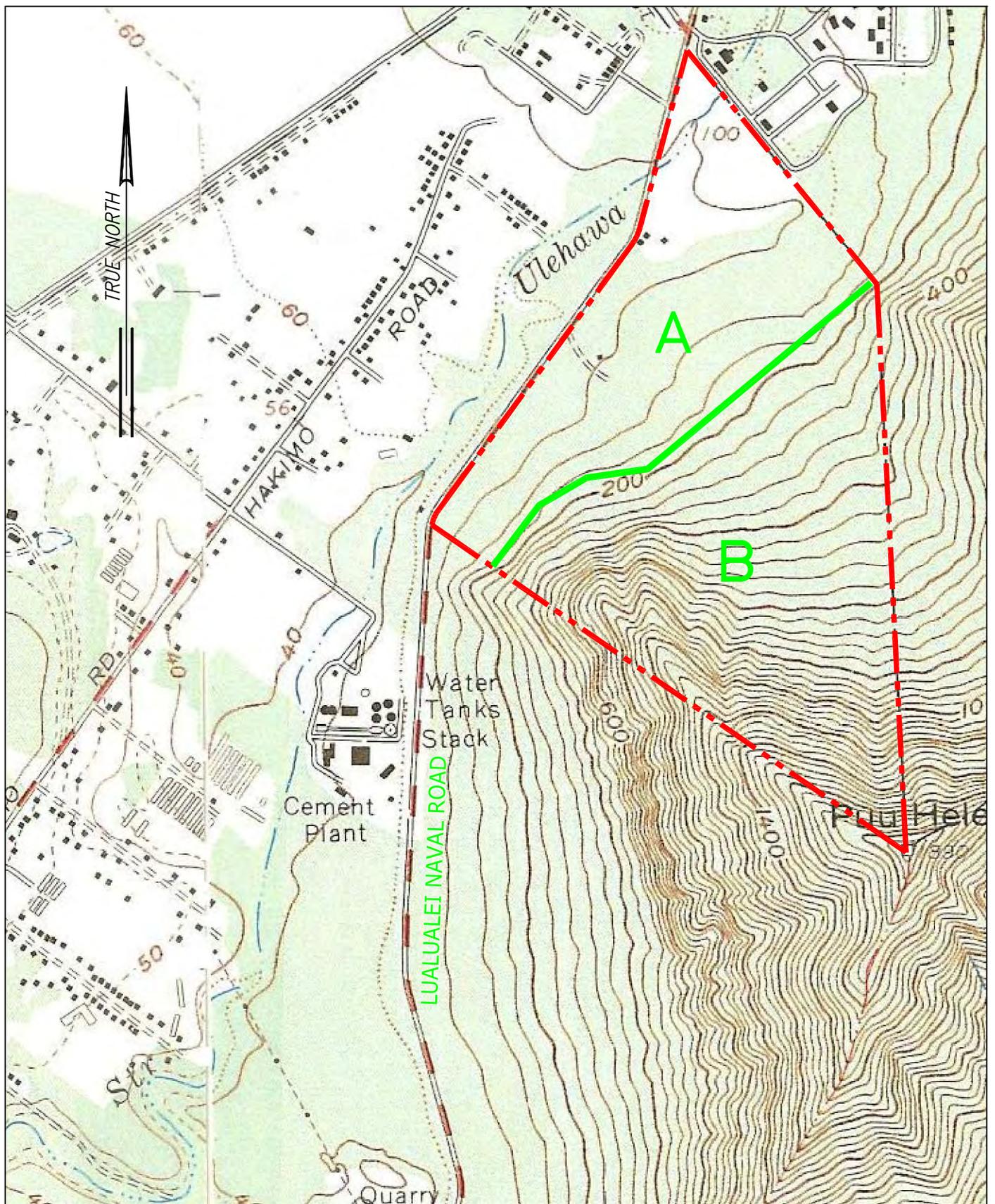


Legend

 ULEHAWA STREAM BUILDING SETBACK AREA

FIGURE 5

**DEVELOPMENT
CATCHMENT AREAS**



GRAPHIC SCALES 1:12000 (APPROX.)



FIGURE 6
SUBAREAS FOR
CALCULATION OF
SOIL EROSION
POTENTIAL

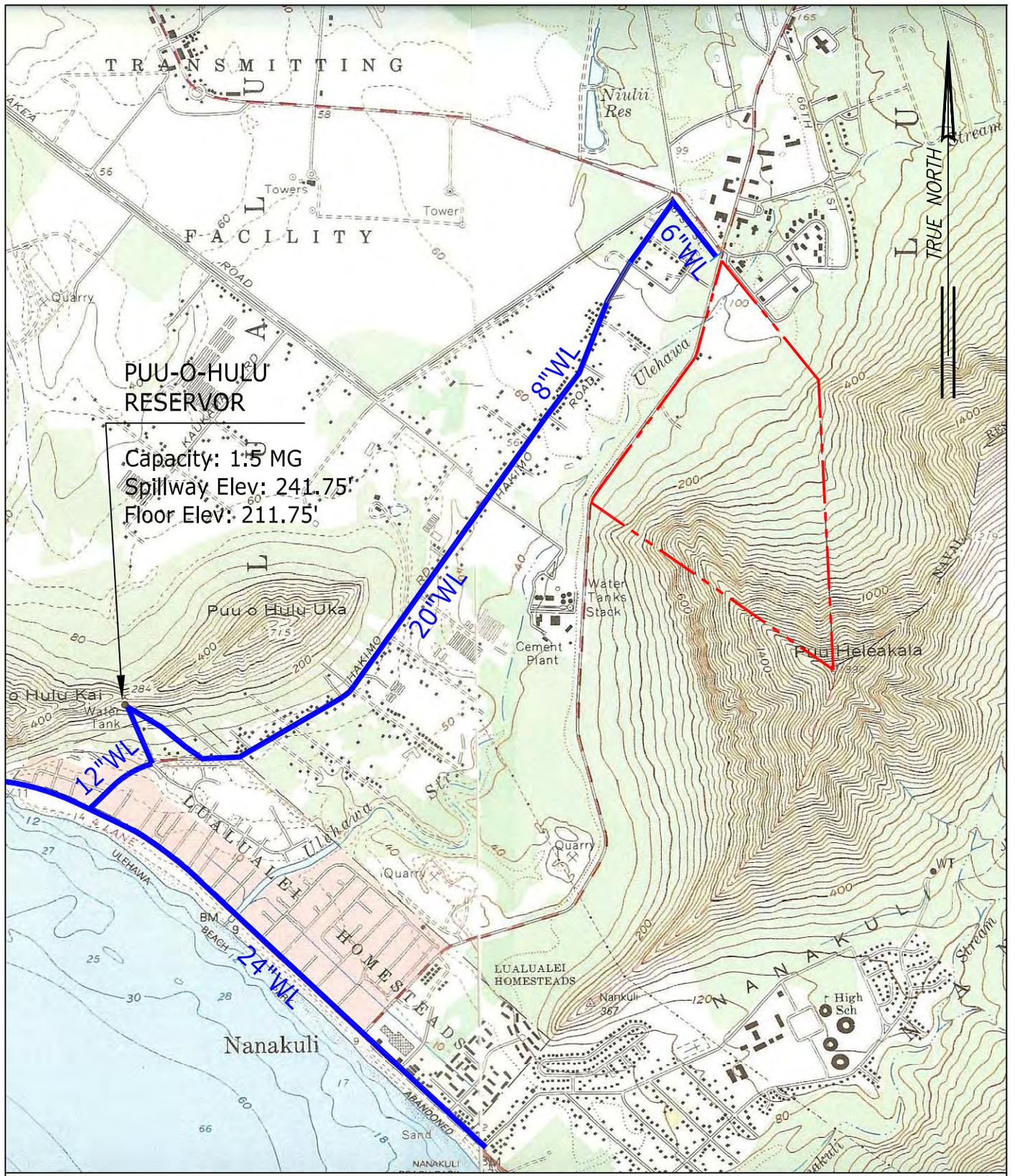


FIGURE 7
EXISTING
WATER TRANSMISSION
AND STORAGE MAP

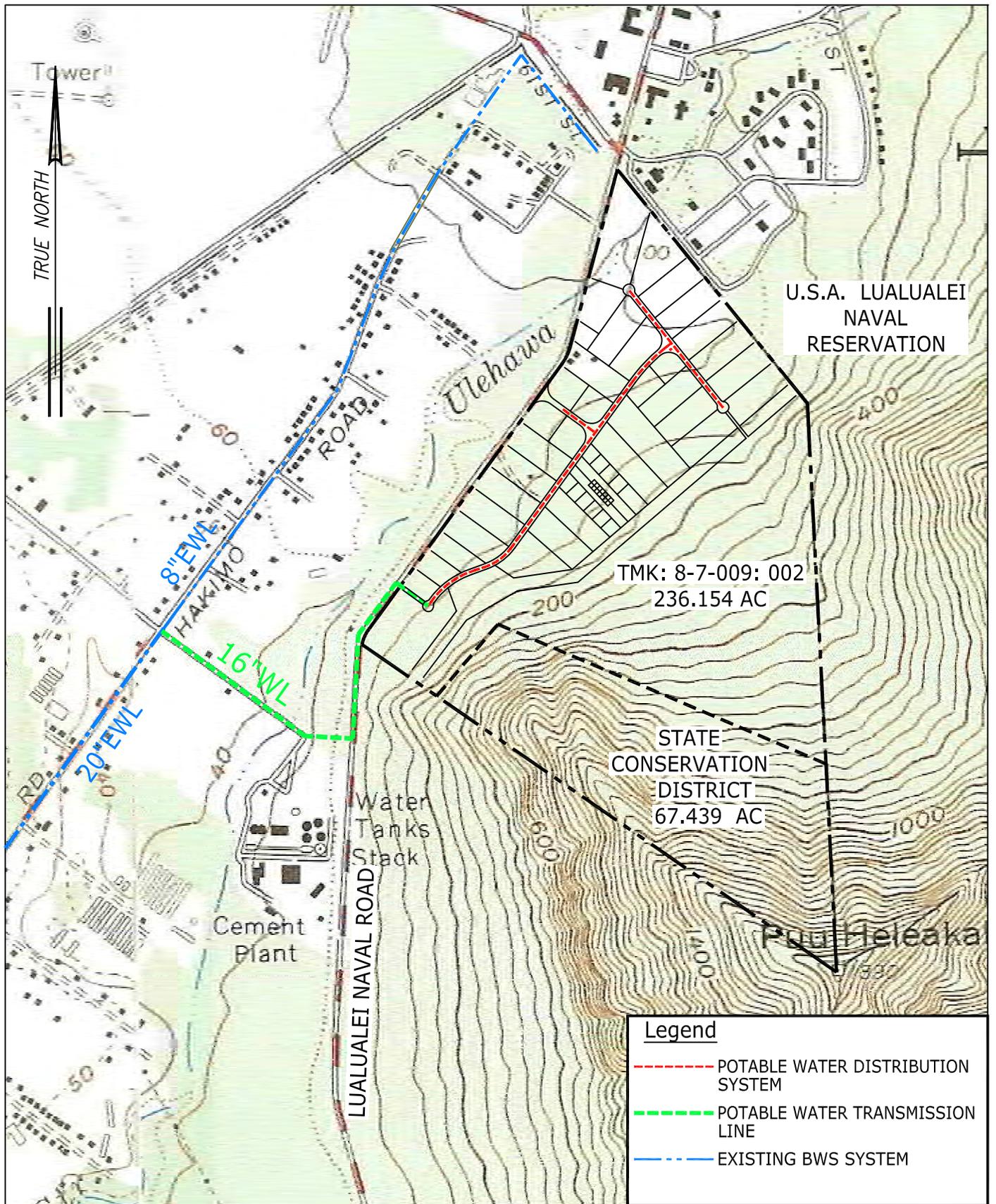
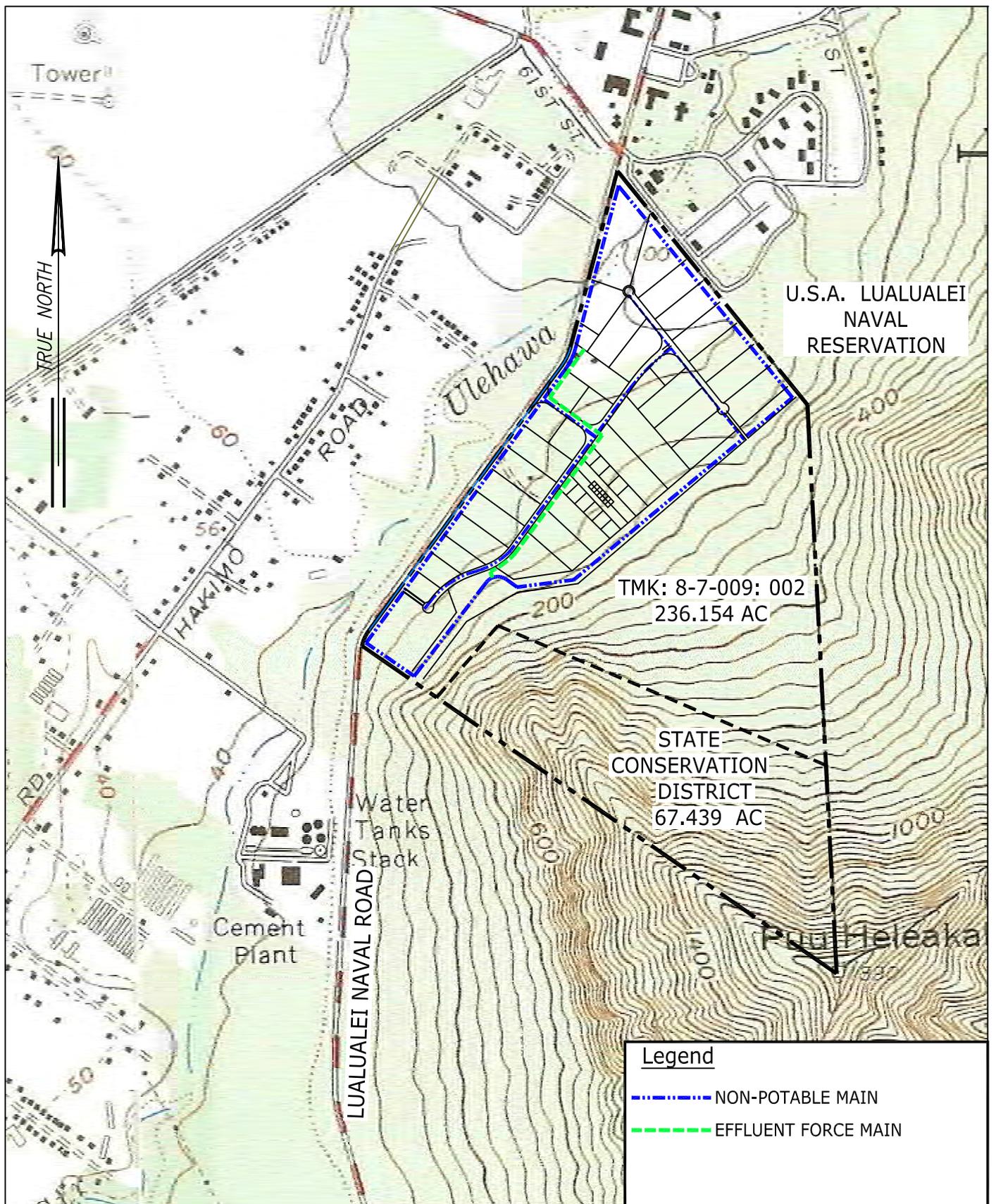


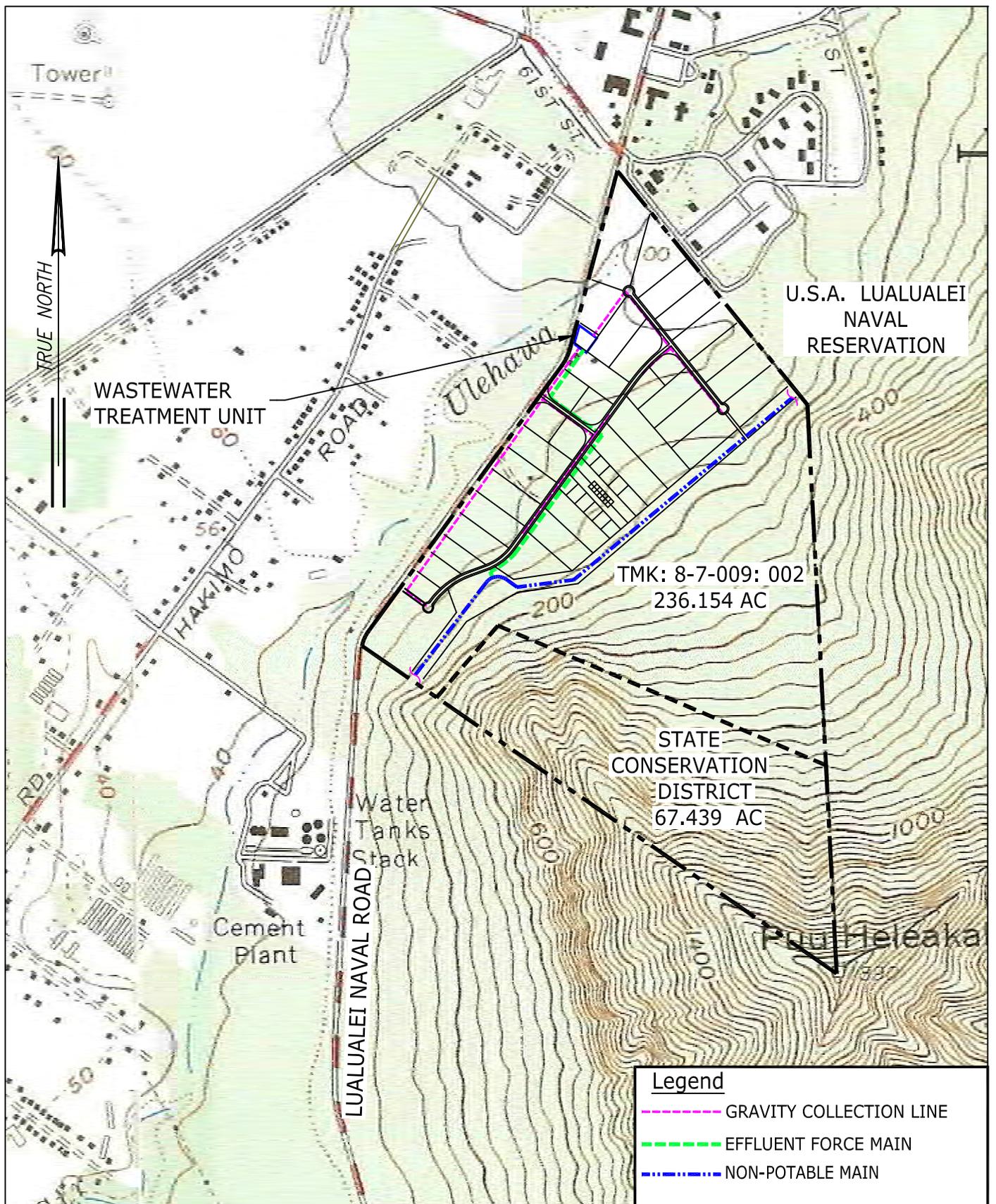
FIGURE 8
PROPOSED POTABLE WATER DISTRIBUTION SYSTEM



GRAPHIC SCALES 1:12000 (APPROX.)



FIGURE 9
PROPOSED NON-POTABLE WATER INFRASTRUCTURES



APPENDIX B

Market Analysis and Employment Forecast, Proposed Tropic Land
LLC Industrial Park. Hastings, Conboy, Braig & Associates, Ltd.,
March 2008

**Market Analysis and
Employment Forecast**

**PROPOSED TROPIC LAND LLC
INDUSTRIAL PARK**

**Located at
Lualualei, Waianae District,
Island of Oahu, State of Hawaii**

As of March 2008

April 3, 2008

Ms. Nancy Nishikawa
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Ms. Nishikawa:

We have completed a market analysis and employment forecast for a proposed industrial park development located in Lualualei Valley, Waianae District, Island of Oahu, State of Hawaii. The proposed subject development is identified herein as the Proposed Tropic Land LLC Industrial Park. The effective date of our market analysis and employment forecast for the proposed subject development is March 31, 2008.

The subject property is located along the eastern side of Lualualei Naval Access Road, inland of Farrington Highway and south of the U.S. Navy Magazine Lualualei. The proposed subject development site encompasses a land area of approximately 96 acres and is identified on State of Hawaii Tax Maps as First Division, Tax Map Key 8-7-09, Parcel 2 (Portion).

The Proposed Tropic Land LLC Industrial Park is slated to be a 35-lot subdivision with an average lot size of two acres. Anticipated uses at the proposed development will consist of light industrial activities. It is our understanding the proposed industrial park will require a State Land Use district boundary amendment to Urban District and a City and County zoning change to I-1 in order to accommodate its future development.

Our analysis and conclusions regarding the Proposed Tropic Land LLC Industrial Park are set forth in the accompanying report. Based on our research and investigation, it is our opinion that the proposed subject development represents a significant potential benefit to the local community from an economic land use and future employment perspective.

We appreciate the opportunity to have undertaken this counseling assignment.

Sincerely,

**HASTINGS, CONBOY, BRAIG
& ASSOCIATES, LTD.**

Robert R. Braig, MAI, SRA
Executive Vice President

/7371

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ADDENDA

EXHIBIT I - Maps and Photographs of the Subject Property

Professional Qualifications

I. INTRODUCTION AND EXECUTIVE SUMMARY

A. Introduction

Our firm, Hastings, Conboy, Braig & Associates, Ltd., has been contracted by Kimura International, Inc. to conduct a real estate counseling analysis of the Proposed Tropic Land LLC Industrial Park development located at Lualualei, Waianae District, Island of Oahu, State of Hawaii. The subject site encompasses a land area of approximately 96 acres and is identified on State of Hawaii Tax Maps as First Division, Tax Map Key 8-7-09, Parcel 2 (Portion).

The site of the proposed development is located along the eastern side of Lualualei Naval Access Road, approximately 1.5 miles inland of Farrington Highway. As contemplated, the proposed subject development will be a 35-lot, light industrial subdivision with an average subdivision lot size of two acres. The proposed project will be developed and marketed under a condominium form of fee simple ownership.

It is our understanding the Proposed Tropic Land LLC Industrial Park will require a number of land use entitlement approvals at various levels of local government. Necessary government approvals include, but are not limited to, a Sustainable Communities Plan (SCP) amendment, a State Land Use (SLU) district boundary amendment from Agricultural to Urban District, and a City and County zoning change to I-1, Limited Industrial District.

As part of the application processes relating to these desired governmental approvals, our firm has been contracted to prepare a market analysis, land use demand forecast, and manpower/employment forecast for the Proposed Tropic Land LLC Industrial Park. The effective date of this counseling analysis is March 31, 2008.

B. Executive Summary

A summary of some of the more pertinent characteristics and conclusions resulting from our research, investigation and market analysis of the Proposed Tropic Land LLC Industrial Park development at Lualualei is presented as follows.

- Tropic Land LLC proposes to develop an industrial park that would occupy approximately 96 acres on TMK 8-7-9: 02, on the east side of Lualualei Naval Access Road. The industrial park would consist of approximately 35 lots, averaging two acres each. The project will be structured under a condominium form of ownership with individual lots and common ownership of internal roads and infrastructure. The anticipated opening is approximately 18 months from receipt of government approvals. The preliminary cost of the light industrial park is estimated at \$29 million.

- Among the references to industrial land use within Section 3.9 of the Waianae Sustainable Communities Plan is the following statement: “The projected growth in population may create a need for more support retail commercial and industrial acreage, although recent trends indicate a shifting of shopping habits away from local stores to the larger commercial centers in the Ewa District. Some local leaders have voiced the need for more local industrial parks.”
- Our assignment was to prepare a market demand analysis and employment forecasts associated with the Proposed Tropic Land LCC Industrial Park development. The effective date of the analysis is March 31, 2008.
- Primary emphasis for this assignment was placed on the research and collection of current socioeconomic forecast data pertaining to the State of Hawaii and the City and County of Honolulu. Data sources at the State level, as reported by the State Department of Business Economic Development and Tourism (DBEDT), include: *Population and Economic Projections for the State of Hawaii to 2035; 2002 State Input-Output Study; and Report on Urban Lands in the State of Hawaii (2006)*. Data sources at the City and County level, as reported by the City and County Department of Planning and Permitting (DPP), include: *Year 2000 Community Profiles; Socioeconomic Projections 2000 - 2030 by Development Plan Area and Subarea; and Waianae Sustainable Communities Plan (July 2000)*.
- According to data compiled as of Year-End 2007 by Colliers Monroe Friedlander (Colliers), the total supply of existing industrial space on the Island of Oahu is estimated at approximately 36.4 million square feet of floor area within 1,668 buildings. The indicated overall vacancy rate within Oahu’s industrial marketplace is three percent. An additional supply of approximately 750,000 square feet of industrial floor space would be the estimated requirement to effectuate a normal, equilibrium vacancy rate of five percent.
- Existing industrial development on Oahu is overwhelmingly concentrated within three designated Development Plan Areas, namely, the Primary Urban Center, Ewa, and Central Oahu. Based on the Colliers data, the combined inventory of industrial space within the remaining Development Plan Areas of East Honolulu, Koolaupoko, Koolauloa, North Shore, and Waianae totals less than 1.0 million square feet, or only 2.7 percent of the island-wide total.
- The subject property’s regional setting and relevant surrounding market area is defined as the Waianae Development Plan Area. The Waianae Development Plan Area is characterized as an outlying, rural-agricultural district for the Island of Oahu. Almost one-fourth of the total land area within this Waianae market area is categorized as agricultural. Only about five percent of the total land area is categorized as urban, with most of the urban designated land devoted to single-family residential use.

- The Department of Planning and Permitting Socioeconomic Projections for the Waianae Development Plan Area forecast a steady and moderate growth in population for the area but a contrasting, no-growth/declining scenario regarding the future outlook for job opportunities in the area. The population forecast for Waianae increases from 44,656 in 2005 to 52,285 in 2030 while the job/employment forecast for Waianae fluctuates at a modest level from 7,253 in 2005 to 7,126 in 2030.
- There is a disparity in population and job distribution associated with the Waianae area. Although the Waianae Development Plan Area accounts for almost 5.0 percent of the total population count on the Island of Oahu, Waianae has less than 1.5 percent of Oahu's total island-wide job count. This disparity is even greater with respect to jobs within the traditional industrial sectors of employment (represented by the employment categories of Transportation, Communications, Utilities; Industrial; and Construction). For industrial sector jobs, Waianae barely accounts for 1.0 percent of Oahu's island-wide total.
- The available market data indicate the existence of a geographic disconnect between a growing resident population and potential industrial labor force residing within the Waianae market area and the scarcity of any discernable new industrial development and employment opportunities within the same market area. The Proposed Tropic Land LLC Industrial Park has the potential to alleviate or mitigate some of the effects of this ongoing disconnect between labor force and job market locations.
- The Department of Planning and Permitting Socioeconomic Projections industrial sector job forecast for Waianae indicates an anticipated downward trend marked by a dramatic decline in projected construction employment. Obviously, if this forecasted decline in industrial employment were proven to be accurate there would be no compelling requirement or need for any new industrial development within the Waianae market area.
- Rather than accepting the Department of Planning and Permitting assertion of a less than one percent capture rate of Oahu's total industrial sector jobs to the Waianae market area, we have substituted a proposed range of alternative, increased capture rates of 1.5 to 2.0 percent. An industrial employment capture rate of 1.5 percent results in a forecasted industrial sector employment increase for the Waianae area of roughly 50 percent, from 1,109 jobs in 2005 to 1,682 jobs in 2030. A 2.0 percent capture rate of Oahu's island-wide total results in a forecast that approximately doubles the amount of industrial sector jobs from 1,109 in 2005 to 2,242 in 2030. An approximate mid-range capture rate of 1.7 percent results in a forecasted employment increase from 1,109 in 2005 to 1,906 in 2030.
- At the high end forecast, based on a 2.0 percent capture rate of Oahu's industrial sector jobs to the Waianae area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 100 to 115 net

acres of additional industrial land between 2010 and 2020. By comparison, the proposed subject project is anticipated to introduce 70 acres of new industrial land onto the market during this same approximate time period.

- At the mid-range forecast, based on a 1.7 percent capture rate of Oahu's industrial sector jobs to the Waianae DP Area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 65 to 80 net acres of additional industrial land between 2010 and 2020. Again, the proposed subject project is anticipated to introduce 70 acres of new industrial land onto the market during this same approximate time period.
- At the low end forecast, based on a 1.5 percent capture rate of Oahu's industrial sector jobs to the Waianae DP Area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 45 to 55 net acres of additional industrial land between 2010 and 2020. Under this scenario, the effective market absorption of the proposed subject project is anticipated to extend beyond a 15 to 20-year time horizon, and this would clearly represent an undesirable outcome.
- In our opinion, the future success or failure of the Proposed Tropic Land LLC Industrial Park is probably more directly related to the government approval process involving current land use entitlement issues than it is to potential private sector marketing issues.
- If the Proposed Tropic Land LLC Industrial Park were to be successful in obtaining the necessary land use entitlement approvals, it is our opinion that there is sufficient potential demand in the marketplace to achieve project absorption within, perhaps, a three- to five-year time frame.
- The Proposed Tropic Land LLC Industrial Park is anticipated to open approximately 18 months following the receipt of government approvals. Given this projected timetable and assuming a two- to four-month planning period prior to the start of actual construction, we estimate the construction period of the Proposed Tropic Land LLC Industrial Park to be approximately 15 months.
- During the 15-month construction period, the on-site job requirement forecast for the proposed project ranges from 100 to 125 person-years, and the off-site job requirement forecast ranges from 20 to 25 person-years. The overall short-term employment forecast for the proposed project during its construction period is equal to the sum of the on-site and off-site job requirement forecasts. Therefore, the total short-term employment forecast for the Proposed Tropic Land LLC Industrial Park is estimated at 120 to 150 person-years.
- On an assumed, stabilized operational basis, the total long-term employment forecast for the Proposed Tropic Land LLC Industrial Park is estimated at 840 to 1,260 jobs. This total long-term operational job forecast includes all forecasted direct, indirect, and induced employment effects attributable to the proposed

project. The forecast is based on an estimated range of 560 to 840 full-time, direct jobs created by the project, at operational status, in conjunction with a selected employment multiplier factor of 1.50. The employment multiplier factor accounts for potential indirect and induced job creation effects associated with the subject project.

II. ASSIGNMENT AND PROJECT DESCRIPTION

A. Assignment

Our assignment was to prepare a market demand analysis and employment forecasts associated with a proposed industrial park development located within Lualualei Valley in the Waianae District of the Island of Oahu. The effective date of the analysis is March 31, 2008.

The subject property has a gross land area of approximately 96 acres and is identified on State of Hawaii Tax Maps as First Division, Tax Map Key 8-7-09, Parcel 2 (Portion). The industrial park concept under consideration for the subject property is being proposed by the current property owner, Tropic Land LLC. Our client for this assignment is Kimura International, Inc., a contracted representative of Tropic Land LLC.

B. Scope of Work

This counseling analysis has been prepared in conformance with the Uniform Standards of Professional Appraisal Practice (USPAP) of the Appraisal Foundation and the Code of Professional Ethics and Standards of Professional Practice of the Appraisal Institute. The use of this report is subject to the requirements relating to review by duly authorized representatives of the Appraisal Institute.

The primary objectives of this assignment involve the following two areas of analysis:

1. Prepare a Market Demand Forecast/Analysis for the Proposed Tropic Land LLC Industrial Park.
2. Provide an Employment/Manpower Forecast for the Proposed Tropic Land LLC Industrial Park.

In order to complete this assignment, we have undertaken a series of independent investigations and analyses, and have relied upon selected information and data from office files that are updated on a recurring basis. A summary of the investigations conducted and the primary data sources researched in conjunction with this analysis are presented in the following paragraphs.

Primary emphasis for this assignment was placed on the research and collection of current socioeconomic forecast data pertaining to the State of Hawaii and the City and County of Honolulu. Data sources at the State level, as reported by the State Department of Business Economic Development and Tourism (DBEDT), include: Population and Economic Projections for the State of Hawaii to 2035; 2002 State Input-Output Study; and Report on Urban Lands in the State of Hawaii (2006).

Data sources at the City and County level, as reported by the City and County Department of Planning and Permitting (DPP), include: *Year 2000 Community Profiles; Socioeconomic Projections 2000 - 2030 by Development Plan Area and Subarea; and Waianae Sustainable Communities Plan (July 2000)*. The State and County macro-economic forecast data referenced herein as the primary basis of our analysis are considered particularly relevant since this assignment, in part, is directly related to a Waianae Sustainable Communities Plan, Five-Year Review Amendment Application involving the subject property.

C. Intended Use of the Report

The “Intended Use” of this report is to assist the client in decision making purposes relating to the subject property. The client and intended user of this report is Kimura International, Inc., a contracted representative of the current subject property owner, Tropic Land LLC. The date of the report is April 3, 2008.

This report has been prepared for the sole and exclusive use of the client. No unrelated third party is authorized to rely upon this report without the expressed, written consent of the signers of this report. No liability is assumed, expressed or implied by Hastings, Conboy, Braig & Associates, Ltd., or the signers of this report, for unauthorized use of the report.

D. Project Description

The following descriptions and characterizations of the Proposed Tropic Land LLC Industrial Park are excerpted from a Waianae Sustainable Communities Plan (SCP), Five-Year Review Amendment Application submitted on behalf of the subject property.

“This SCP application involves three parcels located in the Lualualei Valley, mauka of Farrington Highway and south of U.S. Naval Magazine Lualualei. The properties are approximately 2.5 miles north of Nanakuli town and 7.5 miles from Waianae town. They are owned by Tropic Land LLC” [Page 1]

“Tropic Land LLC proposes to develop an industrial park that would occupy approximately 96 acres on TMK 8-7-9: 02, on the east side of Lualualei Naval Access Road (see Figure 6, Site Plan). The industrial park would consist of approximately 35 lots, averaging two acres each. The project would have a single secured entry off of Lualualei Naval Access Road and a secondary access for fire and emergency purposes. The existing linear tree farm will remain as a 30-foot landscaped setback along the Lualualei Road frontage. The north and south property lines have 15-foot setbacks. An additional strip of land, approximately 100 feet wide and mauka of the industrial lots, will be used for drainage improvements and rockfall hazard mitigation.” [Page 14]

“The project will be structured under a condominium form of ownership with individual lots and common ownership of internal roads and infrastructure. Tropic Land LLC is planning to seek an I-1 zone for the area that is planned for industrial use. The remainder of TMK 8-7-9: 02 will remain in the preservation zone.” [Page 14]

“The amendment will provide an inventory of industrial space on the Waianae Coast, which does not have a similar facility. The proposed project will be attractive to a mix of light industrial businesses and provide open yard space for storing materials, trucks, and heavy equipment.” [Page 6]

“The proposed light industrial park and baseyard is a job-producing and economy sustaining land use. The industrial park has the potential to become an employment center offering well-paid jobs that are within convenient commuting distance of Waianae Coast communities.” [Page 9]

“The anticipated opening is approximately 18 months from receipt of government approvals.” [Page 15]

“The preliminary cost of the light industrial park, based on the conceptual site plan, is estimated at \$29 million.” [Page 15]

III. INDUSTRIAL MARKET ANALYSES AND DEMAND FORECASTS

This section of the report provides a presentation of our industrial market analyses and industrial land use demand forecasts for both the Island of Oahu, as a whole, and the Waianae Development Plan (DP) Area, which represents the relevant regional market area of the Proposed Tropic Land LLC Industrial Park development at Lualualei.

Our industrial market analyses include a profile of supply and demand conditions in the local marketplace and the implications of these prevailing market conditions with respect to the potential marketability of proposed, future industrial subdivision development at the subject property. Our industrial land use demand forecasts provide quantitative estimates regarding the future outlook for possible land use requirements based on anticipated economic growth.

A. Industrial Market Analysis, Island of Oahu

A general profile of the industrial market on the Island of Oahu is presented in Table III-1. The information summarized in this table reflects data compiled as of Year-End 2007 by Colliers Monroe Friedlander (Colliers). Based on this information, the total supply of existing industrial space on the Island of Oahu is estimated at approximately 36.4 million square feet of floor area within 1,668 buildings. The indicated overall vacancy rate within Oahu's industrial marketplace is three percent.

The geographic distribution of industrial space on Oahu is also allocated among 11 major sub-markets, with the four largest market areas identified as: Kalihi/Sand Island (8.47 million square feet); Airport/Mapunapuna (8.26 million square feet); Campbell Industrial Park/Kapolei Business Park (5.6 million square feet); and Bougainville/Halawa (3.23 million square feet). The seven remaining market areas have smaller inventories of industrial space ranging from as low as 467,000 square feet in Kailua to just over 2.4 million square feet in Iwilei. The subject property's Waianae market area does not merit inclusion within the tabular data published by Colliers.

Among the more notable aspects or characteristics of Oahu's industrial marketplace is the geographic concentration of its existing supply. Existing industrial development is overwhelmingly concentrated within three of Oahu's eight designated Development Plan (DP) Areas, namely, the Primary Urban Center, Ewa, and Central Oahu. Based on the Colliers data, the combined inventory of industrial space within the other five DP Areas of East Honolulu, Koolaupoko, Koolauloa, North Shore, and Waianae totals less than 1.0 million square feet, or only 2.7 percent of the island-wide total.

The Primary Urban Center is characterized as a predominantly built-out market, with potential redevelopment as a possible key component of future opportunities for industrial growth. Ewa and Central Oahu are characterized more as developing

areas where the availability of land capable of accommodating continued expansion is the primary driving force regarding future opportunities for growth in the supply of additional industrial land and buildings. Increased industrial development in Ewa and Central Oahu is also an appropriate response to the continued growth and development of substantial residential communities located within these two areas of the Island of Oahu.

Another significant feature of Oahu's industrial marketplace is its relatively low vacancy rate as it relates to pent-up demand. Pent-up demand is defined as the component or quantity of additional market demand that would need to be absorbed or otherwise introduced in the marketplace to restore normal equilibrium between supply and demand during periods of unusually low vacancy. Typically, normal equilibrium between supply and demand is reflected by an overall vacancy rate of, say, five percent. The Colliers data indicate that Oahu's overall vacancy rate for industrial space is 3.0 percent. The indicated vacancy rates within some selected market areas are calculated at less than one percent.

Oahu's vacancy rate of three percent equates to approximately 1.1 million square feet of available floor space amongst a total building inventory of 36.4 million square feet of floor space. Under these conditions, an additional supply of approximately 750,000 square feet of industrial floor space would be the implied requirement to effectuate a normal, equilibrium vacancy rate of five percent. This estimated amount of pent-up industrial demand is equivalent to roughly 50 percent, or one-half, of the total inventory of industrial floor space currently developed at the Gentry Business Park in Waipio.

B. Industrial Market Analysis, Waianae Development Plan Area

The subject property's regional setting and relevant market area is defined as the Waianae Development Plan (DP) Area. The Waianae DP Area extends along the leeward coast of the Island of Oahu, west of the Waianae Mountain Range, and encompasses the valleys of Nanakuli, Lualualei, Waianae, Makaha, and Makua and the residential communities of Nanakuli, Maili, Waianae, and Makaha. A portion of Farrington Highway provides the only access to and from the Waianae Development Plan Area. The subject property is located within Lualualei Valley approximately 1.5 miles east of Farrington Highway.

The Waianae market area is characterized as an outlying, rural-agricultural district for the Island of Oahu. A breakdown of existing land uses within the Waianae DP Area as of 1997, as reported by the City and County of Honolulu Department of Planning and Permitting (DPP), is presented in Table III-2. Although the information was compiled over a decade ago and, therefore, is comparatively dated, the data verify the rural-agricultural nature of the subject's market surroundings.

Almost one-fourth of the total land area within the Waianae DP Area is categorized as agricultural. Only about five percent of the total land area is categorized as urban,

with most of the urban designated land devoted to single-family residential use. According to the DPP data, almost two-thirds of the total land area in the Waianae DP Area is categorized as either Preservation or Military. This latter category of land use includes the U. S. Naval Magazine Lualualei tract located directly inland from the subject property.

The data presented in Table III-3 provide dramatic evidence of why there is an apparent lack of anticipation associated with government forecasting models dealing with future industrial land use demand within the Waianae market area. According to an urban land use inventory analysis undertaken by the DBEDT Office of Planning, the total acreage of vacant land zoned for commercial and/or industrial use within the Waianae DP Area as of 2004 was reported to be statistically equal to zero.

In essence, the data generated by the DBEDT Office of Planning indicate that opportunities for significant new industrial development within outlying, satellite areas such as Waianae are basically non-existent due to a pronounced scarcity of vacant industrial-zoned acreage. With the noted exception of the proposed subject project, we are not aware of any major new industrial land developments planned for the Waianae market area with the foreseeable future.

The existing supply of industrial land use within the Waianae DP Area remains extremely limited. As stated within Section 3.9, Commercial and Industrial Uses, of the Waianae Sustainable Communities Plan:

“Most of the District’s existing commercial and industrial uses are small in scale and are therefore included within the general designation of ‘Rural Community Development’. One significant industrially-zoned area in the vicinity of the Waianae wastewater treatment plant is shown as ‘Industrial’.”

Other notable references to industrial land use within Section 3.9 of the Waianae Sustainable Communities Plan include the following statements:

“The projected growth in population may create a need for more support retail commercial and industrial acreage, although recent trends indicate a shifting of shopping habits away from local stores to the larger commercial centers in the Ewa District. Some local leaders have voiced the need for more local industrial parks.”

“Local small businesses and light industrial operations are an important source of jobs for Waianae’s people. A healthy level of small local businesses is essential for the local economy and also lessens the volume of commuter traffic that causes severe congestion on Farrington Highway during morning peak traffic periods.”

“Encourage the establishment of light industrial businesses that provide jobs for local people, and that are generally compatible with the predominantly

residential uses of the Rural Community areas along the coast, but not in Makaha Valley.”

“Heavy industrial uses should not be permitted in the Waianae District. Such uses should be sited in the Campbell Industrial Park.”

From an existing demand perspective, it is important to realize that the Waianae DP Area accounts for roughly five percent of Oahu’s total resident population and that continued population growth is projected for the area over the next twenty years. Also, demographic and socioeconomic data from the 2000 Census indicate a significant level of industrial jobholders residing within the Waianae DP Area. Table III-4 is a presentation of selected employment characteristics reported by the 2000 Census.

An important, potential marketing implication of these statistics is the exhibited presence of a resource of available labor force with industrial job training and experience already residing within the Waianae market area. A more detailed presentation of forecasted industrial land use demand within the Waianae market area follows.

C. Industrial Land Use Demand Forecasts

Background -- In its simplest expression, future net increases in industrial land use demand within any given geographic area are purely a function of economic growth. In essence, without continued economic expansion there would be no compelling reason or need for significant, additional development of industrial inventory or supply.

Regional economic growth can be measured by various means, using alternative standards of measurement. Typically, economic growth over time is measured in terms of periodic increases in population, employment, and/or personal income. It should be noted, however, that any measurable increases in population, employment and income are generally the resulting effects of economic growth and not the underlying cause of such growth.

The driving force behind regional economic growth and expansion is a healthy economic base, or export, industry. For the State of Hawaii, the traditional base industries or export commodities have been tourism, agriculture, and Federal government expenditures. Tourism, or the visitor industry, is widely recognized as the primary generator of economic expansion in Hawaii. The former importance of large-scale specialized agriculture, in the form of sugar cane and pineapple production, has been replaced in a reduced capacity by small-scale, diversified agricultural pursuits. Federal government expenditures, in the form of military spending and transfer payments, also continue to be an important source of exogenous income for Hawaii.

Baseline Population and Employment Forecasts -- The basis or foundation of our industrial land use demand forecasts corresponds to various government-sponsored/officially recognized regional population and employment projections for the State of Hawaii, City and County of Honolulu (i.e., Island of Oahu), and Waianae Development Plan (DP) Area. These baseline forecasts or measurements of future economic growth are presented in Tables III-5, III-6, and III-7.

Table III-5 summarizes population and employment forecasts for the City and County of Honolulu as published by the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT) in its Population and Economic Projections for the State of Hawaii to 2035 (DBEDT 2035 Series), dated January 2008. Brief descriptions and characterizations of the DBEDT 2035 Series projections, as excerpted from the published document are presented as follows.

“As in the 2020 projection series, the model contains five blocks: final demand, income, output, employment, and population. The final demand components were either projected by a set of econometric equations or exogenously given. The statewide projected final demands were allocated to each industry of each county using the relevant final demand vectors in the 2002 inter-county I-O [Input-Output] table. Industrial outputs of each county were then derived by multiplying the projected final demands by the total requirements matrix of the 2002 inter-county I-O table. Jobs were derived by dividing each industry’s projected output by job-to-output ratio. Once jobs were projected, labor income was estimated as a function of total jobs. Population projection was done separately using the cohort component method, but was linked with econometric module through migration.” [Page 12]

“It must be noted that, despite comprehensive data analysis and the precision of the model calculations, there is no unique solution to the projection of Hawaii’s future population and economy. If there is no change in the structure and behavior of the economy over time, analysis of the past would provide an accurate guide to the future. Unfortunately, the future trends in important factors such as fertility, mortality, migration, labor productivity, and labor force participation are inherently uncertain. The future growth of final demand and industrial structure may follow different patterns from the past. Therefore, in addition to analysis of historical economic relationships among variables many subjective judgments on future trends had to be entered to produce the current set of projections.” {Page 13]

As alluded to in these excerpts, the forecast methodology of the DBEDT 2035 Series utilizes an inter-county input-output econometric model in conjunction with an age-and-sex-specific, cohort survival/demographic module. The fundamental input-output model is The 2002 State Input-Output Study for Hawaii, published by DBEDT in June 2006. Brief descriptions and characterizations of The 2002 State

Input-Output Study for Hawaii, as excerpted from the published document are presented as follows.

“An input-output (I-O) model depicts a comprehensive and detailed set of accounts of sales and purchases of goods and services among the producing industries, final consumers (households, visitors, exports, and government), and resource owners (labor, capital, and land) during a particular time period (usually a year) for a specific economy or region. The information from the I-O model is presented in a format called the I-O table. This framework was developed by Wassily Leontief in the 1930’s, for which he was awarded the 1973 Nobel Prize in Economics.” [Page 3]

“By providing the comprehensive and detailed information on sales and purchases of goods and services among the various sectors in the economy, the I-O tables provide a useful analytical tool for economists, planners, and policy-makers in: (i) analyzing a wide range of problems related to regional and community economic development; (ii) formulating new economic and environmental policies and assessing their effects on industry output and input patterns; and (iii) assessing impacts of new economic development efforts and exogenous (external) changes on the economy (e.g., development of new exports). More specifically, the I-O tables form the factual basis for estimating output, income, employment, and other multipliers, which are frequently used in economic impact analyses. The I-O model also provides critical information for long-range economic and demographic projections, as well as for social accounting matrixes (SAM) and computable general equilibrium (CGE) modeling for public policy and alternative economic scenario simulations.” [Page 1]

Table III-6 presents a breakdown of the population and job forecasts for the Island of Oahu by designated Development Plan Areas. These allocated population and employment forecasts to the year 2030 are prepared by the City and County of Honolulu Department of Planning and Permitting (DPP) and published in tabular format as Socioeconomic Projections, 2000-2030 By Development Plan Area, dated November 2007.

The City and County’s allocated population and job count forecasts by Development Plan Area have yet to be updated to coincide with the more recent DBEDT 2035 Series projections. For example, the DBEDT 2035 Series projections indicate Oahu’s resident population forecast increasing from 902,035 in 2005 to 1,080,700 in 2030. For the same time period, the DPP Socioeconomic Projections reflect a slightly higher forecast level, indicating an increase in Oahu’s resident population from 912,913 in 2005 to 1,117,322 in 2030. For purposes of this analysis, the existing differences in the forecasts equate to less than four percent and are considered to be statistically insignificant.

The DPP Socioeconomic Projections for the Waianae Development Plan (DP) Area forecast a steady and moderate growth in population for the area but a contrasting, no-growth/declining scenario regarding the future outlook for job opportunities in the area. The population forecast for Waianae increases from 44,656 in 2005 to 52,285 in 2030 while the job/employment forecast for Waianae fluctuates at a modest level from 7,253 in 2005 to 7,126 in 2030.

Within the DPP projection model, significant job growth to the year 2030 is forecast to occur within three Development Plan Areas: Primary Urban Center, Ewa, and Central Oahu. All remaining Development Plan Areas, encompassing East Honolulu, Koolaupoko, Koolauloa, North Shore and Waianae, are projected to have relatively limited prospects for widespread increases in future job opportunities.

Table III-7 presents a more detailed breakdown of the DPP job projections to 2030 by various employment categories. Of particular note is a marked decline in forecasted construction jobs for the Waianae DP Area, from 801 in 2005 to 368 in 2030. This represents more than a 50 percent loss in jobs for the construction industry within the subject market area. The forecasted decline in construction jobs appears to reflect a perceived lack of anticipated new development within the Waianae DP Area.

Land Use Demand Forecast Model -- Our analysis of forecasted industrial land use demand for the Waianae DP Area to the year 2030 is presented in Tables III-8 and III-9. Table III-8 provides a comparison between the DPP Socioeconomic Projections for the Waianae DP Area and corresponding DPP projections for the City and County of Honolulu, or Island of Oahu, as a whole. Table III-9 is a presentation of our quantitative industrial land use demand forecasts for the subject property's Waianae Development Plan Area.

The data presented in Table III-8 demonstrate the disparity in population and job distribution associated with the Waianae area. Although the Waianae DP Area accounts for almost 5.0 percent of the total population count on the Island of Oahu, Waianae has less than 1.5 percent of Oahu's total island-wide job count. This disparity is even greater with respect to jobs within the traditional industrial sectors of employment (represented by the employment categories of Transportation, Communications, Utilities; Industrial; and Construction). For industrial sector jobs, the Waianae DP Area barely accounts for 1.0 percent of Oahu's forecasted island-wide total.

Our quantitative land use demand forecasts presented in Table III-9 are based, in part, on projected modifications to this prevailing disparity between population distribution and job count distribution in the subject's Waianae market area. The other major facet of our land use demand forecasts is the utilization of an employment-driven model as the basis for our quantitative results.

As shown in Table III-9, the primary baseline forecast utilized to generate land use demand implications within the context of our employment model is the “Industrial Sector Job Forecast” for the City and County of Honolulu, or Island of Oahu. The industrial sector job forecast for Oahu starts at 94,760 in 2005 and expands by almost 20 percent to 112,108 in 2030. This employment/job forecast is then converted to a corresponding industrial land use requirement based on an estimated conversion factor of 2,500 square feet of land area per employee/job. A conversion factor, or land use ratio, of 2,500 square feet per employee is approximately the mid-range equivalent to an average range of 15 to 20 employees per acre.

Industrial land use ratios can vary dramatically depending upon the specific type or form of industrial use involved. Land-intensive uses, such as those typically associated with heavy industrial activities, tend to reflect relatively higher land use ratios, or lesser numbers of employees per acre on average. Labor-intensive uses, such as those typically associated with light industrial activities, tend to reflect relatively lower land use ratios, or greater numbers of employees per acre on average. For example, land use requirement forecast models applicable to Honolulu’s higher-density, Primary Urban Center typically reflect industrial land use ratios of less than 1,000 square feet per employee.

The next step in our forecast model involves a modification to the existing DPP Socioeconomic Projections industrial job forecast for the Waianae DP Area. As presented previously in this report, the DPP industrial sector job forecast for Waianae indicates an anticipated downward trend marked by a dramatic decline in projected construction employment. Obviously, if this forecasted decline in industrial employment were proven to be accurate there would be no compelling requirement or need for any new industrial development within the Waianae market area.

It is our belief, however, that the projected decline in industrial employment for the Waianae DP Area as set forth in the DPP Socioeconomic Projections is a direct reflection of a total absence of anticipated, future industrial land use development for the Waianae area, as embodied within that specific forecasting model. From a market demand perspective, this type of underlying assumption tends to result in a somewhat self-fulfilling or self-perpetuating cycle of forecasted stagnancy. The continuous cycle can be characterized as follows: no anticipated new development in the area results in no projected increase in employment for the area which results in no projected demand for new development in the area, and so forth.

Based on this understanding, we have implemented a series of modifications to the industrial sector employment forecast applicable to the Waianae DP Area. Again, DPP projections of industrial sector employment for the Waianae area represent only 0.7 to 1.2 percent of the corresponding total of the entire City and County of Honolulu during the 2005 to 2030 forecasting period.

Rather than accepting the DPP assertion of a less than one percent capture rate of industrial sector jobs to the subject market area, we have substituted a proposed range of alternative, increased capture rates of 1.5 to 2.0 percent. A proposed capture rate/allocation of 1.5 to 2.0 percent of all future industrial sector jobs on the Island of Oahu to the Waianae DP Area is still significantly lower than Waianae's projected 4.7 percent share of Oahu's total resident population forecast to the year 2030.

An alternative industrial employment capture rate of 1.5 percent results in a forecasted industrial sector employment increase for the Waianae DP Area of roughly 50 percent, from 1,109 jobs in 2005 to 1,682 jobs in 2030. The alternative capture rate at 2.0 percent of Oahu's island-wide total results in a forecast that approximately doubles the amount of industrial sector jobs within the Waianae market area from 1,109 in 2005 to 2,242 in 2030. An approximate mid-range capture rate forecast of, say, 1.7 percent results in a forecasted employment increase of between 70 and 75 percent, from 1,109 in 2005 to 1,906 in 2030.

The final step in our forecasting model is the conversion of the modified industrial employment forecasts for the Waianae DP Area to corresponding land use demand forecasts. For this step of the analysis, the selected conversion factor, or land use ratio, is 5,000 square feet of land area per employee/job. A conversion factor/land use ratio of 5,000 square feet per employee is approximately the mid-range equivalent to an average range of 8 to 10 employees per acre. A comparatively higher industrial land use ratio (implying a comparatively lower number of employees per acre) is considered reasonable and appropriate for the subject's Waianae market area.

Market Analysis Implications and Conclusions -- The various modified employment projections and land use conversion ratios outlined previously are incorporated into our demand forecasting model as summarized in Table III-9. Based on this forecasting model, it is our conclusion that there is a reasonable expectation for sufficient market demand to support the potential development of the Proposed Tropic Land LLC Industrial Park at Lualualei.

At the high end forecast, based on a 2.0 percent capture rate of Oahu's industrial sector jobs to the Waianae DP Area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 100 to 115 net acres of additional industrial land between 2010 and 2020. By comparison, the proposed subject project is anticipated to introduce 70 acres of new industrial land onto the market during this same approximate time period.

At the mid-range forecast, based on a 1.7 percent capture rate of Oahu's industrial sector jobs to the Waianae DP Area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 65 to 80 net acres of additional industrial land between 2010 and 2020. Again, the proposed subject

project is anticipated to introduce 70 acres of new industrial land onto the market during this same approximate time period.

At the low end forecast, based on a 1.5 percent capture rate of Oahu's industrial sector jobs to the Waianae DP Area, industrial land use demand within the subject market area is forecast to be sufficient to absorb approximately 45 to 55 net acres of additional industrial land between 2010 and 2020. Under this scenario, the effective market absorption of the proposed subject project is anticipated to extend beyond a 15 to 20-year time horizon, and this would clearly represent an undesirable outcome.

The rationale behind the use of modified industrial sector job forecasts for the Waianae DP Area is based on a realistic expectation that a significant level of relocation demand (also referred to as transient demand) could potentially be attracted to the subject market area. This potential form of demand might well be the future result of selected industrial businesses acting upon a desire to relocate their operations to a lower-cost option located in an area offering better proximity to available labor force resources.

Pent-up business demand for industrial space on the Island of Oahu was addressed previously in this report. Based on our interpretation of the available statistical data, we believe there exists within the Waianae DP Area a somewhat parallel situation of pent-up labor force demand for additional industrial employment opportunities within the immediate Waianae Development Plan Area, itself.

Available market data indicate the existence of a geographic disconnect between a growing resident population and potential industrial labor force residing within the Waianae market area and the scarcity of any discernable new industrial development and employment opportunities within the same market area. The Proposed Tropic Land LLC Industrial Park has the potential to alleviate or mitigate some of the effects of this ongoing disconnect between labor force and job market locations.

In the final analysis, it is our opinion that the future success or failure of the Proposed Tropic Land LLC Industrial Park is probably more directly related to the government approval process involving current land use entitlement issues than it is to potential, private sector marketing issues.

If respective public sector policy boards at the local government level were to ultimately decide to maintain the constraints on lands available for industrial development within the Waianae DP Area, then the proposed subject project will have no relevance in the marketplace.

However, if the Proposed Tropic Land LLC Industrial Park were to be successful in obtaining the necessary land use entitlement approvals, it is our opinion that there is sufficient potential demand in the marketplace to achieve project absorption within, perhaps, a three- to five-year time frame.

IV. EMPLOYMENT FORECASTS

This section of the report provides a presentation of our employment forecasts for the Proposed Tropic Land LLC Industrial Park development at Lualualei. In general, employment opportunities generated by any given new development, or project, consist of jobs created during the construction period of the project followed by jobs created during the operational existence of the project. Potential job creation as associated with any given new development can also be differentiated or categorized in terms of direct employment, indirect employment, and induced employment effects.

The employment forecasts presented in this section of the report provide estimates of both the short-term and long-term potential impacts on employment associated with the Proposed Tropic Land LLC Industrial Park. Short-term, or interim, employment refers to the estimated number of jobs, or manpower requirement, of the proposed development during the specific period of time corresponding to the project’s anticipated construction period. Long-term, or stabilized, employment refers to the numbers of jobs generated by the proposed development under its assumed operational status.

A. Interim, Construction Employment

Our short-term, interim employment forecast for the Proposed Tropic Land LLC Industrial Park during the project’s estimated 15-month construction period is presented within Table IV-1. As shown in Table IV-1, the total short-term employment forecast associated with the proposed subject project during its anticipated construction period is estimated to range from 120 to 150 person-years. An explanation of this forecast estimate is presented within the following paragraphs.

According to the Waianae Sustainable Communities Plan (SCP), Five-Year Review Amendment Application submitted on behalf of the subject property, the Proposed Tropic Land LLC Industrial Park is anticipated to open approximately 18 months following the receipt of government approvals. The preliminary cost estimate associated with the proposed project is \$29 million. The project will consist of 35 industrial lots with an average lot size of two acres. The total land area associated with the proposed project is approximately 96 acres.

Given the projected timetable set forth in the SCP Amendment Application and assuming a two- to four-month planning period prior to the start of actual construction, we estimate the construction period of the Proposed Tropic Land LLC Industrial Park to be approximately 15 months. Also, in the absence of any alternative cost estimates, we assume the project’s preliminary cost estimate of \$29 million to be reasonably accurate for purposes of this analysis.

On-Site Employment Forecast -- Based on the preliminary project information available at this point in time, we estimate the average daily, on-site job requirement of the subject development during the 15-month construction period at between 80

to 100 workers. This average manpower forecast is roughly equivalent to an average of one on-site worker per acre of gross land area for the project site.

During the construction period, the daily on-site job count will probably vary significantly depending upon factors such as the phasing and scheduling of construction work; the scheduling and availability of work crews and possible sub-contracted workers; lost worker time due to sick leave and/or injury; and weather conditions. In our opinion, an average labor force or manpower requirement of 80 to 100 workers per year is considered reasonable and supportable in comparison to other subdivision lot developments. A more precise or detailed breakdown of interim manpower requirements should be available once a construction contract for the proposed project is put out to bid.

The initial on-site job estimate is then converted into a corresponding person-year employment estimate. The term “person-year” refers to the equivalent of one year of full-time work for one worker. For example, two different workers with the same job description working on a part-time basis for six months each would be the mathematical equivalent to one “person-year”.

In this analysis, our estimated average on-site employment range of 80 to 100 workers is converted into a corresponding person-year forecast based on a multiplication factor equal to the length of the construction period, as expressed in numbers of years. The appropriate conversion factor for the length of time associated with the project’s 15-month construction period is 1.25 (i.e., 15 months divided by 12 months). Based on this factor, the forecasted number of on-site jobs, or manpower requirement, at the subject property during the project’s construction period is estimated to range from 100 to 125 person-years.

Off-Site Employment Forecast -- In addition to on-site job requirements, there is a reasonable expectation of related off-site job creation associated with the future construction of the proposed project. Off-site jobs might potentially include work relating to office and administrative matters, construction material suppliers, and transportation services. In this analysis, the extent of potential off-site job requirement is estimated at 20 percent of the on-site job requirement, or roughly equivalent to an additional 20 to 25 person-years.

Total Construction Period Employment Forecast -- The sum of the on-site and off-site job requirement estimates represents our short-term employment forecast for the proposed subject project during its anticipated construction period of development. Our on-site job requirement forecast ranges from 100 to 125 person-years, and our off-site job requirement forecast ranges from 20 to 25 person-years. Therefore, based on the analysis outlined within Table IV-1, the total short-term employment forecast for the Proposed Tropic Land LLC Industrial Park is estimated at 120 to 150 person-years.

B. Stabilized Operational Employment Forecast

Our long-term employment forecast for the Proposed Tropic Land LLC Industrial Park development under an assumed operational status at stabilized capacity is also presented within Table IV-1. As shown in Table IV-1, the total long-term employment impact associated with the proposed subject project on a stabilized operational basis is forecast to range from 840 to 1,260 jobs. An explanation of this employment forecast is presented within the following paragraphs.

Our stabilized operational employment forecast for the Proposed Tropic Land Industrial Park is equal to the sum of all direct, indirect, and induced job creation effects attributable to the project. Direct job creation is generally synonymous with primary, on-site employment generated by businesses operating or based at the proposed industrial park. Indirect job creation is associated with a secondary level of jobs generated as a result of the purchases of goods and services by businesses operating at the proposed industrial park. Induced job creation is associated with a tertiary level of jobs generated as a result of the purchases of goods and services from the personal incomes of people whose jobs are either directly or indirectly created by the operation of the proposed industrial park.

Direct Jobs Forecast -- The number of direct jobs created by the proposed project is forecast at 560 to 840 full-time jobs. Our direct job forecast is based on the project's estimated amount of developed industrial land multiplied by a factor expressed as the average number of employees per land area.

The project's total amount of developed industrial land is estimated at 70 acres based on the conceptual development plan of 35 subdivision lots with an average lot size of two acres. Our selected factor, or ratio, of the average number of employees per acre ranges from 8 to 12 employees per acre.

Eight jobs, or employees, per acre equates to an average land use ratio of approximately 5,500 square feet per employee. At a ratio of eight employees/jobs per acre, the forecasted number of direct jobs created by the project is 560. Twelve jobs, or employees, per acre equates to an average land use ratio of approximately 3,600 square feet per employee. At a ratio of twelve employees/jobs per acre, the forecasted number of direct jobs created by the project is 840.

It should be noted, the estimated range of forecasted direct employment is necessarily subjective in nature given the preliminary concept of the proposed development. If the Proposed Tropic Land LLC Industrial Park were to attract a proportionately higher concentration of land-intensive industrial activities, the effective ratio of the average number of employees per acre would be relatively low. Conversely, if the Proposed Tropic Land LLC Industrial Park were to attract a proportionately higher concentration of labor-intensive industrial activities, the effective ratio of the average number of employees per acre would be relatively

high. At this preliminary stage of the development process, the possible character of the future tenant mix at the proposed project remains open to wide speculation.

Indirect and Induced Jobs Creation -- The basis for forecasting indirect and induced employment effects associated with the proposed subject project are industry-specific employment multipliers reported within the 2002 State Input-Output Study, published by the State Department of Business Economic Development and Tourism (DBEDT) in June 2006. The following excerpt from the 2002 State Input-Output Study provides a brief description of the general nature of multiplier factors derived from the study.

“Multipliers are derived based on direct and indirect effects arising from an exogenous change in an industry’s final demand. The direct effect measures the initial effect attributable to the exogenous change, while the indirect effect measures the subsequent intra-and inter-industry purchases of inputs as a result of the initial change in output of the directly affected industry. If earnings and personal consumption expenditures (PCEs) are also included in the model as an additional endogenous sector, the resultant multipliers can measure the effects of demand changes on household spending (PCEs) that result from changes in earnings through direct and indirect effects. These additional effects are known as the induced effects.” [Page 14]

As shown in Table IV-1, the employment multiplier utilized in this analysis of the proposed subject project is 1.50. The concept of this selected multiplier mimics that of the Type II multipliers reported within the 2002 State Input-Output Study. Type II multipliers take into account the combined impact of both indirect effects and induced effects. The following industry-specific, Type II multipliers are reported in Table 2.4 of the 2002 State Input-Output Study: Mining and Construction - 2.44; Other Manufacturing - 2.36; Transportation - 2.55; Wholesale Trade - 1.96.

Total Operational Employment Forecast -- We have selected a comparatively lower employment multiplier factor of 1.5 based on a belief that a significant proportion of potential businesses operating at the subject project might well be pre-existing entities that will have relocated to the subject site from other areas of the Island of Oahu. The forecasted range of direct jobs created by the subject project on an assumed stabilized operational basis is 560 to 840 jobs. Therefore, based on an employment multiplier of 1.5, the total long-term employment forecast for the Proposed Tropic Land LLC Industrial Park is estimated at 840 to 1,260 jobs, including forecasted direct, indirect, and induced employment effects.

V. LIMITING CONDITIONS AND ASSUMPTIONS

The following conditions and assumptions embodied in this report constitute the framework of our analysis and conclusions.

- This appraisal is based upon the condition of the national economy and the purchasing power of the dollar as of the date of the appraisal report.
- This report expresses the opinion of the signers as of the date of the report; in no way has it been contingent upon the reporting of specified values or findings.
- The appraisers have extensive experience in the valuation of proposed subdivision development properties and are considered competent to undertake and complete this appraisal assignment. A summary of the appraisers' qualifications is included in the Addenda of this report.
- It is assumed that the subject property is free and clear of any and all encumbrances other than those referred to herein, and no responsibility is assumed for matters of a legal nature. This report is not to be construed as rendering any opinion of title, which is assumed to be good and marketable. Responsible ownership and competent management of the subject property is also assumed, unless otherwise stated within the report.
- It is assumed that any existing or proposed uses of the subject property's land and improvements will occur within the legal boundaries or property lines of the subject property and that no encroachment or trespass exists, now or in the future, unless otherwise stated within the report.
- It is assumed that any and all required licenses, certificates of occupancy and/or other legislative or administrative authorizations relating to any existing or proposed uses of the subject property upon which our value conclusion is based will be obtained readily from the appropriate local, state, or federal government agencies, private institutions, or other organizational entities that exercise jurisdiction over these types of licensing and administrative matters.
- Any maps or plot plans reproduced and included in this report are intended only for the purpose of showing spatial relationships. These maps do not necessarily represent measured surveys or measured maps, and the appraiser is not responsible for the possible existence of any topographic or surveying errors within such maps. No engineering tests were furnished, and, therefore, no liability is assumed for the soil conditions, bearing capacity of the subsoil or building engineering matters relating to the subject property.
- Information provided by informed local sources such as governmental agencies, financial institutions, realtors, buyers, sellers and others, was interpreted in the manner in which it was supplied and, whenever possible or practical, was checked and verified by secondary means. However, no responsibility is assumed for any possible misinformation contained in these sources of information.

- The presence of hazardous wastes or toxic materials such as underground storage tanks, asbestos, urea-formaldehyde foam insulation or other potentially harmful substances may have an adverse affect on the value of a given property. The value conclusions reported herein are predicated on the assumption that there is no such hazardous material on or in the subject property that would result in this type of loss in value. No responsibility is assumed for any potentially adverse environmental conditions or for the lack of any expertise or engineering knowledge required to discover such conditions.
- The appraisers are not required to give testimony or appear in court because of having made this appraisal unless arrangements for the appearance and the fee for such appearance have been agreed upon by the person or corporation requiring such testimony.
- The appraisers' prior written consent and approval must be obtained in the event that the appraisal report should be conveyed by anyone to the public through advertising, public relations, news, sales, or other media.
- The appraisers will not disclose the contents of the appraisal report except as provided for in the Uniform Standards of Professional Appraisal Practice.

VI. CERTIFICATION

The undersigned hereby certifies that, to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial and unbiased professional analyses, opinions, and conclusions.
- We have no present or prospective interest in the property that is the subject of this report, and have no personal interest with respect to the parties involved.
- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which include the Uniform Standards of Professional Appraisal Practice (USPAP).
- Robert R. Braig, MAI, SRA and Ricky P. Minn have conducted a personal inspection of the property that is the subject of this report.
- No one provided significant real property appraisal assistance to the person signing this certification.
- As of the date of this report Robert R. Braig, MAI, SRA has completed the requirements of the continuing education program of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

April 3, 2008

Robert R. Braig, MAI, SRA
State Certified General Appraiser CGA-149
Certificate Expires: December 31, 2009

/7371

Ricky P. Minn

Table III-1**YEAR-END 2007 OAHU INDUSTRIAL MARKET STATISTICS**

Area/Location	Number of Buildings	Building Area (Sq. Ft.)	Available Space (Sq. Ft.)	YTD Absorption (Sq. Ft.)	Vacancy Rate
Kalihi/Sand Island	668	8,471,116	332,249	(147,899)	3.92%
Kapalama Military Reserve	19	1,250,000	-	-	0.00%
Iwilei	92	2,433,603	21,389	77,883	0.88%
Airport/Mapunapuna	209	8,261,305	67,427	(41,360)	0.82%
Bougainville/Halawa	104	3,231,187	166,645	(24,024)	5.16%
Pearl City/Pearl City Industrial/Aiea	70	2,276,137	56,380	(24,554)	2.48%
Waipahu/Milltown	113	2,355,845	86,501	(2,078)	3.67%
Gentry Business Park	64	1,523,125	9,395	(6,041)	0.62%
Campbell Industrial Park/Kapolei Business Park	251	5,605,778	335,318	(87,120)	5.98%
Kailua	37	467,164	3,200	(3,200)	0.68%
Kaneohe	41	512,187	16,452	(10,804)	3.21%
TOTALS	1,668	36,387,447	1,094,956	(269,197)	3.01%

Source: Colliers Monroe Friedlander, 2007.

Table III-2**EXISTING LAND USE MAP CATEGORIES FOR THE
WAIANA E DEVELOPMENT PLAN AREA AS OF 1997**

Land Use Categories	Acreage	Commercial/ % of Total	Vacant Acres 1996
Single-Family Residential	1,991	5.23%	652
Low-Density Apartment	5	0.01%	-
Medium-Density Apartment	70	0.18%	-
Commercial	85	0.22%	13
Industrial	49	0.13%	15
Resort	92	0.24%	26
Agriculture	8,777	23.04%	5,318
Public & Quasi-Public	531	1.39%	-
Parks & Recreation	492	1.29%	-
Golf Courses	582	1.53%	242
Preservation	12,148	31.89%	-
Military	13,036	34.23%	-
Undesignated	231	0.61%	-
TOTALS	38,089	100.00%	

Source: Department of Planning and Permitting (DPP),
Waianae Sustainable Communities Plan, July 2000.

Table III-3

TOTAL ACREAGE OF VACANT LAND BY COUNTY ZONING AND GEOGRAPHIC PLANNING AREA AS OF 2004

	Residential	Commercial/ Industrial	Agricultural	Mixed Use	Resort	Conservation	Other
City and County of Honolulu/ Island of Oahu	3,591	1,280	3,734	345	312	3,399	6,718
Primary Urban Center	279	280	26	31	-	126	1,038
Ewa	1,506	689	2,150	314	101	865	5,447
Central Oahu	1,109	311	677	-	-	766	210
East Honolulu	98	-	-	-	-	351	-
Koolaupoko	187	-	214	-	-	647	23
Koolauloa	37	-	82	-	167	378	-
North Shore	13	-	194	-	-	53	-
Waianae	362	-	391	-	44	213	-
Source: State Office of Planning, DBEDT, Report On Urban Lands In The State Of Hawaii, Part I: Supply Of Urban Lands, May 2006.							

Table III-4

**SELECTED ECONOMIC CHARACTERISTICS: 2004
NEIGHBORHOOD AREA 24: WAIANAE COAST**

	Number	Percent
<u>EMPLOYMENT STATUS</u>		
Population 16 Years and Over	29,444	100.0
In Labor Force	17,353	58.9
Civilian Labor Force	17,137	58.2
Employed	14,580	49.5
Unemployed	2,557	8.7
(Percent of Civilian Labor Force)	(14.9)	
Armed Forces	216	0.7
Not in Labor Force	12,091	41.1
<u>COMMUTING TO WORK</u>		
Workers 16 Years and Over	14,314	100.0
Car, Truck, or Van -- Drove Alone	8,321	58.1
Car, Truck, or Van -- Carpooled	3,663	25.6
Public Transportation (Including Taxicab)	1,276	8.9
Walked	438	3.1
Other Means	313	2.2
Worked at Home	303	2.1
Mean Travel Time to Work, In Minutes	41.9	
<u>EMPLOYED CIVILIAN POPULATION</u>		
16 YEARS AND OVER:	14,580	100.0
<u>OCCUPATION</u>		
Management, Professional, and Related Occupations	3,183	21.8
Service Occupations	3,205	22.0
Sales and Office Occupations	3,898	26.7
Farming, Fishing, and Forestry Occupations	221	1.5
Construction, Extraction, and Maintenance Occupations	1,893	13.0
Production, Transportation, and Material Moving Occupations	2,180	15.0
<u>INDUSTRY</u>		
Agriculture, Forestry, Fishing and Hunting, and Mining	404	2.8
Construction	1,250	8.6
Manufacturing	654	4.5
Wholesale Trade	633	4.3
Retail Trade	1,921	13.2
Transportation and Warehousing, and Utilities	1,293	8.9
Information	196	1.3
Finance, Insurance, Real Estate, and Rental and Leasing	778	5.3
Professional, Scientific, Management, Administrative, and Waste Management Services	1,327	9.1
Educational, Health and Social Services	2,587	17.7
Arts, Entertainment, Recreation, Accommodation and Food Service	1,797	12.3
Other Services (Except Public Administration)	685	4.7
Public Administration	1,055	7.2
Source: DPP, Year 2000 Community Profiles (2000 U.S. Census Data).		

Table III-5

**FORECASTED RESIDENT POPULATION AND JOBS BY SECTOR
FOR THE CITY AND COUNTY OF HONOLULU TO THE YEAR 2035**

	2005	2010	2015	2020	2025	2030	2035
<u>Resident Population</u>							
Civilians	808,384	835,260	873,630	910,290	945,960	980,620	1,013,250
Military & Dependents	93,651	96,860	100,080	100,080	100,080	100,080	100,080
Total Population, Civilian + Military	902,035	932,120	973,710	1,010,370	1,046,040	1,080,700	1,113,330
	2006	2010	2015	2020	2025	2030	2035
<u>Jobs By Sector, Including Self-Employed (1)</u>							
Agriculture	5,280	5,380	5,520	5,570	5,600	5,610	5,570
Mining & Construction	31,840	31,850	33,880	33,780	34,570	35,410	36,570
Food Processing	4,490	4,580	4,710	4,770	4,820	4,830	4,830
Other Manufacturing	9,370	9,500	9,780	9,890	10,010	10,060	10,090
Transportation	24,580	25,750	27,470	28,990	30,510	31,990	33,450
Information	10,360	10,740	11,290	11,680	12,090	12,450	12,810
Utilities	1,820	1,890	2,000	2,070	2,160	2,240	2,310
Wholesale Trade	17,910	18,590	19,700	20,480	21,370	22,250	23,130
Retail Trade	62,290	64,380	67,430	69,350	71,380	73,230	74,860
Finance & Insurance	22,040	22,910	24,170	25,080	26,000	26,860	27,640
Real Estate & Rentals	28,900	30,080	31,680	32,790	33,880	34,850	35,670
Professional Services	34,510	37,050	40,920	44,700	49,170	54,070	59,670
Business Services	50,090	53,950	59,710	65,320	71,660	78,640	86,340
Educational Services	14,570	15,470	16,750	17,890	19,120	20,400	21,730
Health Services	53,840	57,390	62,370	66,840	71,740	76,890	82,260
Arts & Entertainment	12,800	13,600	14,720	15,740	16,810	17,910	19,030
Hotels	14,480	14,880	15,380	15,770	16,010	16,130	16,140
Eating & Drinking	41,140	42,920	45,370	47,350	49,340	51,250	53,090
Other Services	35,540	37,840	41,120	44,040	47,230	50,570	54,040
Government	101,840	105,200	109,740	113,490	117,320	121,060	124,620
Total Jobs, Wage & Salary + Self-Employed (2)	577,640	603,910	643,670	675,560	710,790	746,660	783,830

(1) Jobs By Sector rounded to the nearest 10.

(2) Total Jobs may not add due to rounding.

Source: Department of Business Economic Development and Tourism (DBEDT), Population and Economic Projections for the State of Hawaii to 2035.

Table III-6

**FORECASTED POPULATION AND JOBS BY DEVELOPMENT PLAN (DP) AREA
FOR THE CITY AND COUNTY OF HONOLULU TO THE YEAR 2030**

	2005	2010	2015	2020	2025	2030
<u>POPULATION FORECAST:</u>						
City and County of Honolulu	912,913	952,661	995,562	1,037,252	1,078,058	1,117,322
Primary Urban Center	423,621	440,981	452,048	463,335	475,700	487,148
Ewa	84,015	97,111	116,183	137,125	156,302	177,026
Central Oahu	159,018	163,153	170,643	179,833	188,719	195,617
East Honolulu	49,748	52,387	53,436	52,642	51,952	51,304
Koolaupoko	118,763	119,856	121,292	119,567	118,062	116,676
Koolauloa	14,697	15,014	15,422	15,824	16,188	16,516
North Shore	18,395	18,987	19,547	20,035	20,450	20,750
Waianae	44,656	45,172	46,991	48,891	50,685	52,285
<u>EMPLOYMENT/JOB FORECAST:</u>						
City and County of Honolulu	522,851	545,229	566,862	588,030	610,113	632,711
Primary Urban Center	379,355	391,512	398,747	407,927	417,758	426,591
Ewa	27,542	36,863	48,168	56,209	64,201	73,370
Central Oahu	55,838	55,296	59,090	62,599	66,341	70,031
East Honolulu	6,931	6,907	6,622	6,650	6,676	6,795
Koolaupoko	36,140	36,764	36,792	36,923	37,172	37,498
Koolauloa	5,883	6,480	6,294	6,500	6,684	6,945
North Shore	3,909	4,201	4,208	4,235	4,261	4,355
Waianae	7,253	7,206	6,941	6,987	7,020	7,126

Source: Department of Planning and Permitting (DPP), Socioeconomic Projections, 2000-2030 By Development Plan Area.

Table III-7

**FORECASTED JOBS BY EMPLOYMENT CATEGORY TO THE YEAR 2030
FOR THE CITY AND COUNTY OF HONOLULU AND WAIANAE DP AREA**

	2005	2010	2015	2020	2025	2030
<u>City and County of Honolulu</u>						
Armed Forces	40,368	40,368	40,370	40,370	40,370	40,370
Public Administration	36,703	37,606	38,601	39,392	40,304	41,282
Hotel	16,795	17,399	17,900	18,500	18,998	19,500
Agriculture	4,627	4,769	4,854	4,945	5,110	5,255
Transportation, Communication, Utilities	39,531	41,599	43,591	45,711	47,816	49,997
Industrial	30,143	31,094	32,052	32,873	33,715	34,636
Construction	25,086	26,187	26,281	26,464	26,975	27,475
Finance, Insurance, Real Estate	33,965	35,611	37,311	38,910	40,603	42,299
Services	201,186	211,296	221,665	231,745	242,163	252,844
Retail	94,447	99,300	104,237	109,120	114,059	119,053
Total Jobs, C & C of Honolulu	522,851	545,229	566,862	588,030	610,113	632,711
<u>Waianae Development Plan (DP) Area</u>						
Armed Forces	47	47	47	47	47	47
Public Administration	401	401	401	405	414	421
Hotel	26	109	109	109	109	110
Agriculture	534	553	569	581	607	620
Transportation, Communication, Utilities	193	196	208	221	224	234
Industrial	115	115	115	115	115	115
Construction	801	649	356	373	368	443
Finance, Insurance, Real Estate	245	245	245	245	245	245
Services	3,586	3,586	3,586	3,586	3,586	3,586
Retail	1,305	1,305	1,305	1,305	1,305	1,305
Total Jobs, Waianae DP Area	7,253	7,206	6,941	6,987	7,020	7,126

Source: Department of Planning and Permitting (DPP), Socioeconomic Projections, 2000-2030 By Development Plan Area.

Table III-8

**COMPARISON OF POPULATION AND EMPLOYMENT FORECASTS FOR THE
CITY AND COUNTY OF HONOLULU & WAIANAE DEVELOPMENT PLAN AREA**

Year	2005	2010	2015	2020	2025	2030
<u>Resident Population Forecast</u>						
City and County of Honolulu (Island of Oahu)	912,913	952,661	995,562	1,037,252	1,078,058	1,117,322
Percent of City & County/Island Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Waianae Development Plan Area	44,656	45,172	46,991	48,891	50,685	52,285
Percent of City & County/Island Total	4.9%	4.7%	4.7%	4.7%	4.7%	4.7%
<u>Employment/Job Forecast (Total Jobs)</u>						
City and County of Honolulu (Island of Oahu)						
Total Jobs	522,851	545,229	566,862	588,030	610,113	632,711
Percent of City & County/Island Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Waianae Development Plan Area						
Total Jobs	7,253	7,206	6,941	6,987	7,020	7,126
Percent of City & County/Island Total	1.4%	1.3%	1.2%	1.2%	1.2%	1.1%
<u>Employment/Job Forecast of Industrial Sector Jobs(1)</u>						
City and County of Honolulu (Island of Oahu)						
Industrial Sector Jobs(1)	94,760	98,880	101,924	105,048	108,506	112,108
Percent of City & County/Island Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Waianae Development Plan Area						
Industrial Sector Jobs(1)	1,109	960	679	709	707	792
Percent of City & County/Island Total	1.2%	1.0%	0.7%	0.7%	0.7%	0.7%

(1) Industrial Sector Jobs include all jobs within the following DPP employment categories: Transportation, Communications, Utilities; Industrial; and Construction

Source: Department of Planning and Permitting (DPP), Socioeconomic Projections, 2000-2030 By Development Plan Area.

Table III-9

INDUSTRIAL LAND USE DEMAND FORECASTS, 2005-2030
Proposed Tropic Land LLC Industrial Park
Lualualei, Waianae, Island of Oahu

Year	2005	2010	2015	2020	2025	2030
<u>Industrial Land Use Demand Forecast -- Employment Model</u>						
City and County of Honolulu (Island of Oahu)						
Industrial Sector Job Forecast	94,760	98,880	101,924	105,048	108,506	112,108
Land Use Conversion Factor (Land Area Per Employee/Job)	2,500 SF/Job					
Industrial Land Use Demand (Acres)	5,438	5,675	5,850	6,029	6,227	6,434
Cumulative Additional Land Use Demand (Acres)	-	236	411	590	789	996
Waianae Development Plan Area						
Modified Industrial Job Forecast @ 2.0% of Island of Oahu	1,109	1,978	2,038	2,101	2,170	2,242
Land Use Conversion Factor (Land Area Per Employee/Job)	5,000 SF/Job					
Industrial Land Use Demand (Acres)	127	227	234	241	249	257
<i>Cumulative Additional Land Use Demand (Acres) HIGH END</i>	-	100	107	114	122	130
Waianae Development Plan Area						
Modified Industrial Job Forecast @ 1.7% of Island of Oahu	1,109	1,681	1,733	1,786	1,845	1,906
Land Use Conversion Factor (Land Area Per Employee/Job)	5,000 SF/Job					
Industrial Land Use Demand (Acres)	127	193	199	205	212	219
<i>Cumulative Additional Land Use Demand (Acres) MID-RANGE</i>	-	66	72	78	85	92
Waianae Development Plan Area						
Modified Industrial Job Forecast @ 1.5% of Island of Oahu	1,109	1,483	1,529	1,576	1,628	1,682
Land Use Conversion Factor (Land Area Per Employee/Job)	5,000 SF/Job					
Industrial Land Use Demand (Acres)	127	170	176	181	187	193
<i>Cumulative Additional Land Use Demand (Acres) LOW END</i>	-	43	49	54	60	66

Source: Hastings, Conboy, Braig & Associates, Ltd., March 2008.

Table IV-1

SHORT-TERM AND LONG-TERM EMPLOYMENT FORECASTS
Proposed Tropic Land LLC Industrial Park
Lualualei, Waianae, Island of Oahu

Short-Term, Interim Forecast (15-Month Construction Period):	Low		High	
Average Number of On-Site Jobs/Workers	80	to	100	Persons
Multiplied by Length of Construction Period, In Years	<u>x 1.25</u>		<u>x 1.25</u>	
Equals Number of Person-Years	100.0	to	125.0	Person-Years
On-Site Job Requirement, In Person-Years	100.0	to	125.0	Person-Years
Plus Off-Site Job Requirement @ 20%	<u>20.0</u>	to	<u>25.0</u>	Person-Years
Total Short-Term Employment Forecast	120.0	to	150.0	Person-Years
Long-Term, Stabilized Operational Forecast:	Low		High	
Amount of Developed Industrial Land, In Acres	70		70	Acres
Multiplied by Number of Employees/Jobs Per Acre	<u>x 8</u>	to	<u>x 12</u>	Jobs Per Acre
Equals Number of Direct Jobs Created (On-Site)	560	to	840	Jobs
Direct Jobs Created (On-Site)	560	to	840	Jobs
Employment Multiplier (Indirect and Induced Job Creation)	<u>x 1.50</u>		<u>x 1.50</u>	
Total Long-Term Employment Forecast	840	to	1,260	Jobs

Source: Hastings, Conboy, Braig & Associates, Ltd., March 2008.

APPENDIX C

Agricultural Feasibility Report, TMK 8-7-009: 002, Nanakuli, Oahu,
Hawaii. John J. McHugh, Jr. Ph.D., May 2008

Agricultural Feasibility Report
TMK 8-7-009-002
Nanakuli, Oahu, Hawaii

Prepared for

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May 2, 2008

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INTRODUCTION

This Agricultural Feasibility Report relates to TMK 8-7-009-002 located in Nanakuli on the island of Oahu, hereafter referred to as the “Property”. The purpose of this report is to demonstrate that the property is unsuitable for agricultural uses. The Property consists of a total of 236.154 acres and is bounded by land zoned to a combination of preservation and agriculture. The Property has not been actively used for many years and is overgrown with non-native trees, shrubs, and grasses.

PROPERTY DESCRIPTION

The Property is located in West Oahu, to the east of Farrington Highway in Nanakuli with frontage along Lualualei Naval Road (**ATTACHMENT A**). This Property is identified as TMK 8-7-009-002 and consists of a total of 236.154 acres.

1. Land Use Classification

The Property is within an area zoned P-2 General Preservation by the City and County of Honolulu and includes land also zoned P-1 Restricted Preservation.

2. Existing Uses and Site Conditions

The Property is undeveloped and not currently being used for agriculture. It is overgrown with non-native trees, shrubs, and grasses. There are no improvements on the Property. Much of the Property is heavily sloped with a gradient rise of over 70% in some sections. The lowest sections of the Property contain slopes of greater than 10%. Rainfall in the area is less than 20 inches annually which makes it difficult to graze animals without the use of expensive irrigation water.

3. Soil Analysis (**ATTACHMENT B**)

Half of the Property is Lualualei extremely stony clay soil (LPE) which is characterized by slopes of 3 to 35%. In most places the soil is moderately sloping to steep. Erosion hazard is moderate to severe. The natural vegetation consists of kiawe, haole koa, guinea grass, bristly foxtail, and swollen fingergrass. The LPE soil has a Capability Classification of VIIs which has very severe limitations rendering it unsuitable for cultivation because of unfavorable texture as well as being extremely stony or rocky.

Approximately 30% of the Property is considered to be Rock Land (rRK) with slopes of 5 to 70%. This soil type contains areas where exposed rock covers 25 to 90% of the surface. Rock outcrops and very shallow soils are the main characteristics. The land is nearly level to very steep. Natural vegetation at the elevation of the Property consists of kiawe, Japanese tea, koa haole, and guinea grass. A total of 80% of the Property is unusable for any type of agriculture because of the presence of the two dominant soil types.

The remainder of the soil is composed of 15% Lualualei clay (LuB) which has a slope of 2 to 6%, Lualualei clay of 0% slope (LuA) which makes up 2% of the

overall soil component, and Pulehu very stony clay loam (PvC), with slopes of 0 to 12%, comprises the remaining 3% of the total soil on the Property.

LuA and LuB soils, if not irrigated, have a Capability Classification of VIs which has extreme limitations that make them generally unsuited to cultivation and have a stony or rocky texture. If irrigated, the Capability Classification improves to IIIs for the LuA soil and IIIe for the LuB. Class III soils can have severe limitations that reduce the choice of crop plants. IIIs soils are challenged because of stoniness and/or unfavorable texture, resulting in poor water holding capacity, while IIIe soils are subject to severe erosion if cultivated and not protected. PvC soils have a Capability Classification of IVs which has very severe limitations that also can reduce the choice of crop plants, require very careful management, and are stony, shallow with unfavorable texture, and have low water holding capacity coupled with severe shrink/swell characteristics. Irrigation does not improve the Capability Classification of PvC soil.

Because of the high percentage of rocks, stony ground, poor soil texture, low water holding capacity, severe shrink/swell properties, steep slope, and severe erosion hazard agricultural options for the Property are extremely limited.

4. Slope Conditions (ATTACHMENT C)

The side of the Property that abuts Lualualei Naval Rd is about 60 to 80 feet above sea level. From that location the land rises slowly at first to 90 feet and then abruptly exceeds a 10% rise in gradient. The highest point on the property is approximately 1,870 feet above sea level in the southern corner of the lot.

LAND CLASSIFICATION AND CROP PRODUCTIVITY RATINGS BY THE LAND STUDY BUREAU, UNIVERSITY OF HAWAII (ATTACHMENTS D)

The Property has an overall agricultural productivity rating of E, as determined by the University of Hawaii Land Study Bureau, on 80% of the area. In general, the soils in their native state have serious limitations relative to agricultural productivity. Because much of the parcel is stony, agricultural options for the Property, without amendment or modification, are considered to be minimal. That portion of the Property with an overall agricultural productivity rating of B is accorded that rating if it is irrigated. The limitations of that particular piece, without irrigation, have been addressed in the preceding section.

LAND AS RATED UNDER THE ALISH SYSTEM (ATTACHMENT E & F)

Maps detailing Agricultural Lands of Importance to the State of Hawaii (ALISH) were first created in 1977 and was a joint effort between the USDA – Soil Conservation Source (now know as the Natural Resource Conservation Services – NRCS) and the College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawaii. Land was broken down into 4 categories: 0 = Unclassified, 1 = Prime

Agricultural Lands, 2 = Unique Lands, 3 = Other Lands
(http://www.hawaii.gov/dbedt/gis/data/alish_n83.txt).

The ALISH classification system was devised to identify lands which were agriculturally important with the intention of providing a break down of type of agricultural lands based on soil characteristics, establishing a process for classifying the lands, and ultimately identifying those lands which met specific criteria for their respective classes. Those lands that were not considered for designation of agricultural status were: developed urban land; natural or artificial bodies of water over 10 acres in size; forest reserves; public use lands such as parks; lands with slopes in excess of 35%; and military installations. The classification of any land to important agricultural status does not constitute a specific land use for that designation. The main objective for the process was to identify those lands for planning purposes.

A designation of Prime Agricultural Lands (PAL) is associated for those areas that are best suited for the production of food, feed, forage, and fiber. Soil quality, moisture (or availability of water), and length of growing season needed to obtain high yields were considered in PAL determination. Specific criteria used to evaluate land for PAL use include: soils with a good moisture holding capacity and good drainage; land with accessible water supply for irrigation purposes where the quality of the water is also appropriate for crop production; a very narrow range in variation of soil temperature between the warmest and coldest times of the year (less than 9°F) and with a minimum temperature of 47°F; soil chemistry, as expressed by pH, between 4.5 and 8.4 within 40 inches of the soil surface; soil with a water table far enough below the surface that it would not encroach on the crop root zone; soil that does not have a high sodium or salt content within a 40 inch root zone; soils that are not subject to frequent and regular flooding (less often than one every 2 years); soils without a serious erosion hazard; soil with a water permeability rate of at least 0.06 inches per hour; less than 10% of the soil surface layer consists of rock or stone fragments greater than 3 inches; soils must be stable (not subject to sliding).

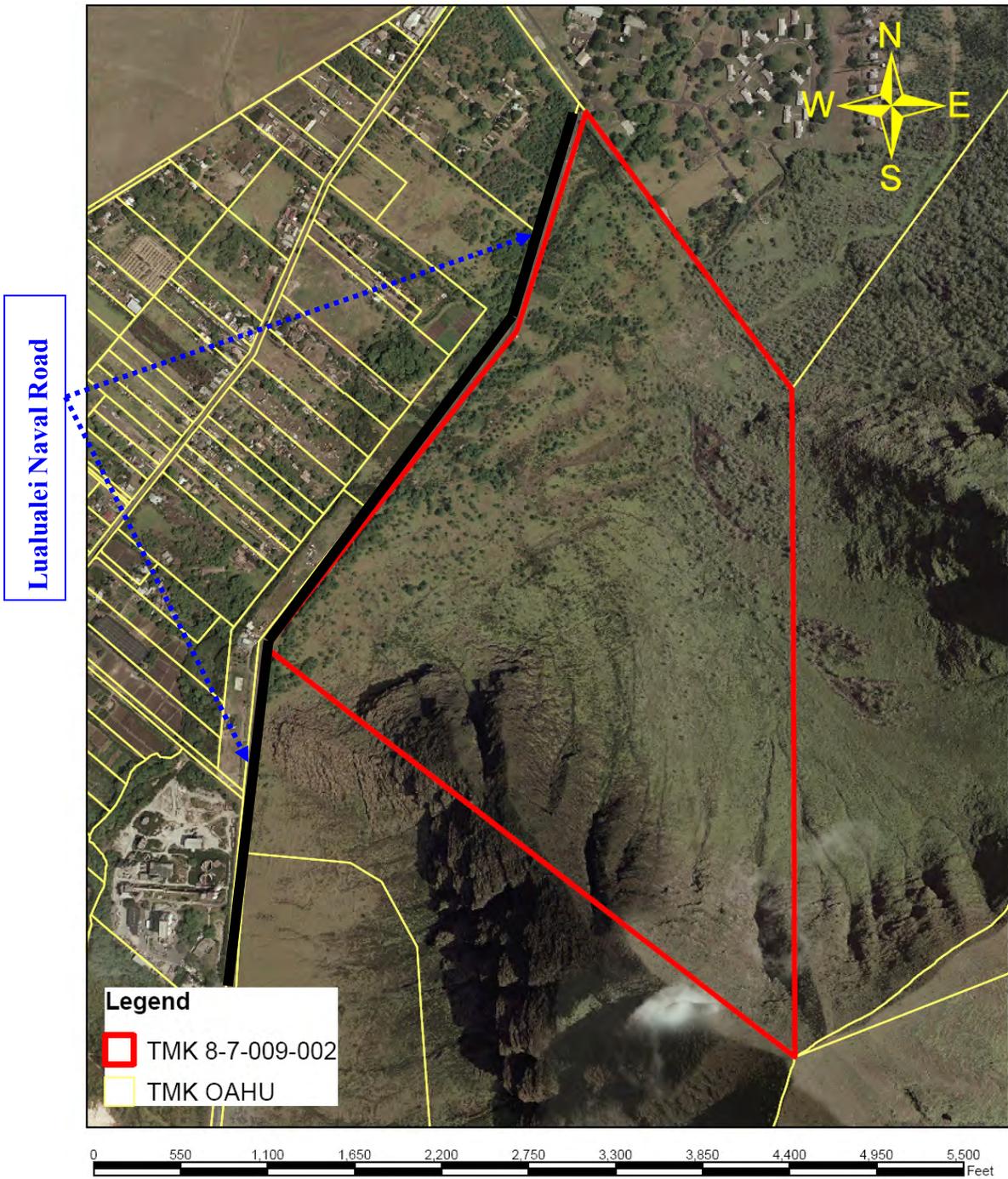
The Unique Agricultural Land (UAL) designation applies to those lands other than PAL which are used for production of specific high value crops such as coffee, taro, rice, and watercress. UAL lands have a special combination of soil quality, growing season, sunlight, elevation, moisture supply, temperature, and nearness to market place such that the year round production of specific commodities can remain unabated. Other Important Agricultural Land (OIAL) is land other than PAL and UAL on which agricultural crops can be farmed but they may be subjected to frequent flooding, drought, excessive rainy season moisture, or has slopes in excess of 35°. Inadequate moisture supply could include OIAL lands which might otherwise be considered to be PAL. However, these lands could be brought into productive agricultural use if an irrigation source is available. Generally OIAL may require additional inputs and management intensity beyond those required for farming PAL. Some of those additional inputs may include additional fertilizer, erosion control measures, improved drainage, flood protection and produce fair to good crops if managed properly.

The LuA, LuB, and PVC soils combine to form that portion of the property (approximately 17%) that is considered to be Other Ag Lands under the ALISH system (**ATTACHMENT F**). These soils have serious agricultural limitations as described under the Soil Analysis portion of this report. Their use for agriculture is further limited by the availability of affordable irrigation water. Water availability for new agricultural land on the leeward coast of Oahu is extremely limited and expensive (currently at \$2.46/1,000 gallons for the first 13,000 gallons and \$1.05/1,000 gallons for any amount over 13,000 gallons) and thus is not considered to be economically viable for agriculture because of the availability of large tracts of agricultural land located in Kunia (4,000 acres+), Waialua, and Wahiawa where agricultural water rates range from \$0.41 to \$0.55/1,000 gallons and land is plentiful.

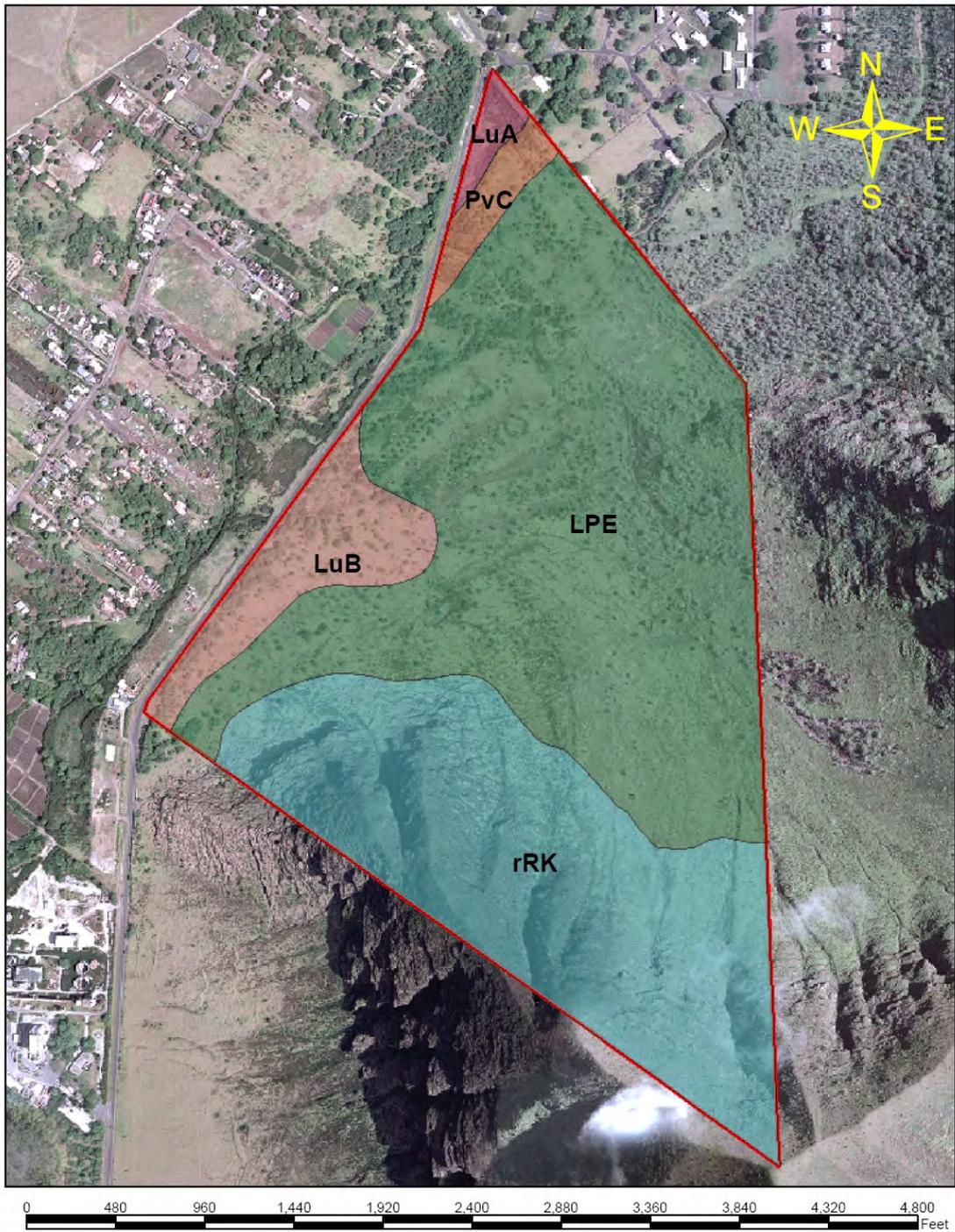
CONCLUSION

The overall poor condition of the soil combined with topography and the lack of affordable irrigation water makes this Property poorly suited for agricultural operations. To bring the more agriculturally suitable 17% of the Property into agricultural use would require water resources which are not readily available to new agricultural operations on the leeward coast of Oahu. For the approximately 40 acres of farmable land the water requirement, in the hot and dry climate of Nanakuli, would be 5,400 gallons per acre a day using drip irrigation technology. This amounts to a water demand for crops grown on those acres of 216,000 gallons per day. This type of water consumption would be difficult to provide which further renders the property unsuitable to agricultural production. The combination of poor soil conditions and high water requirement would make it unlikely that any prospective farming operators would consider this property for active agriculture. Currently much more favorable options are available including several thousand acres of James Campbell Company land in Kunia recently sold to various agricultural businesses, Dole land in Wahiawa and Waialua, and the Galbraith Estate property in Wahiawa which have more affordable irrigation water options than are present on the leeward coast of Oahu.

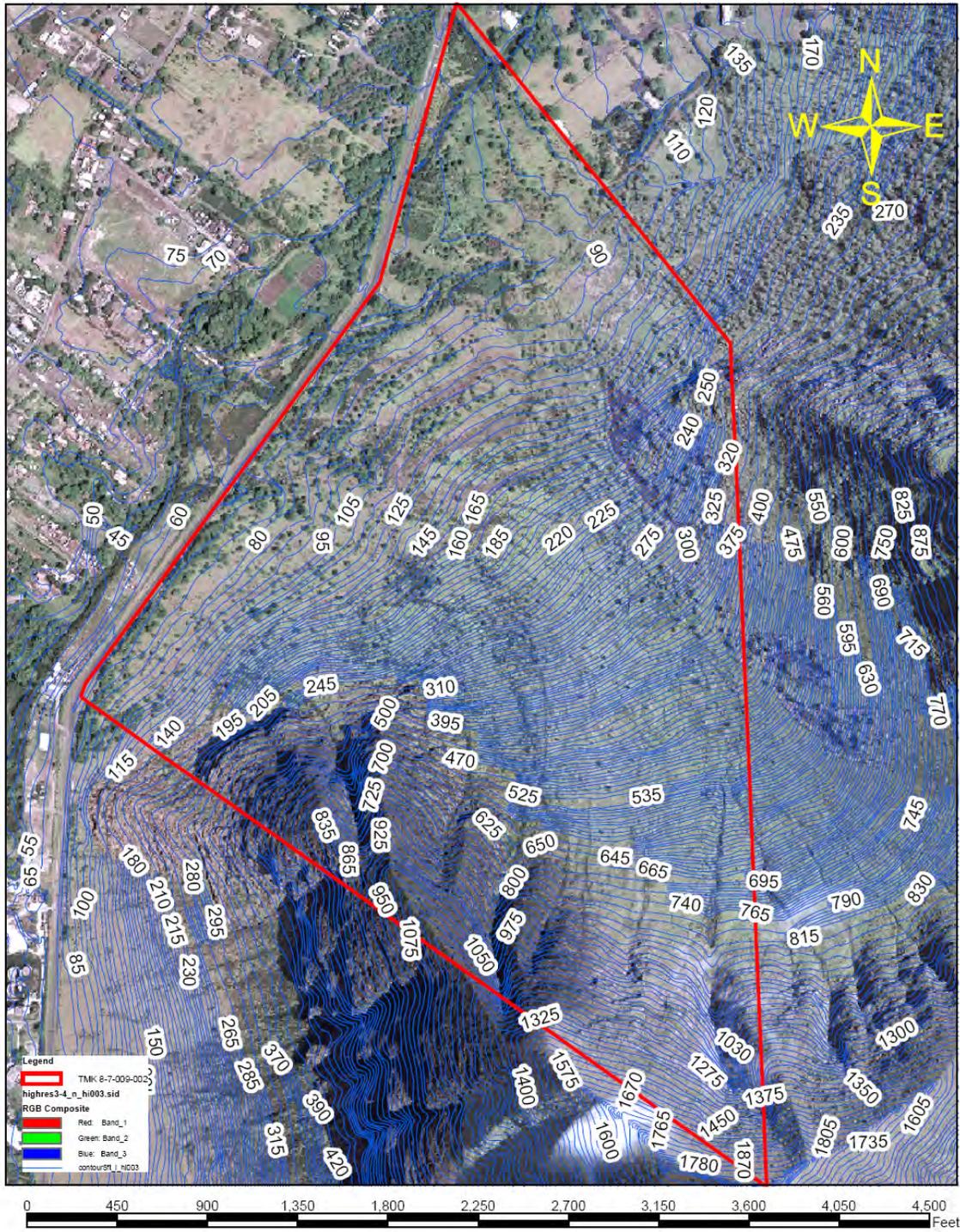
ATTACHMENT A – Property Location



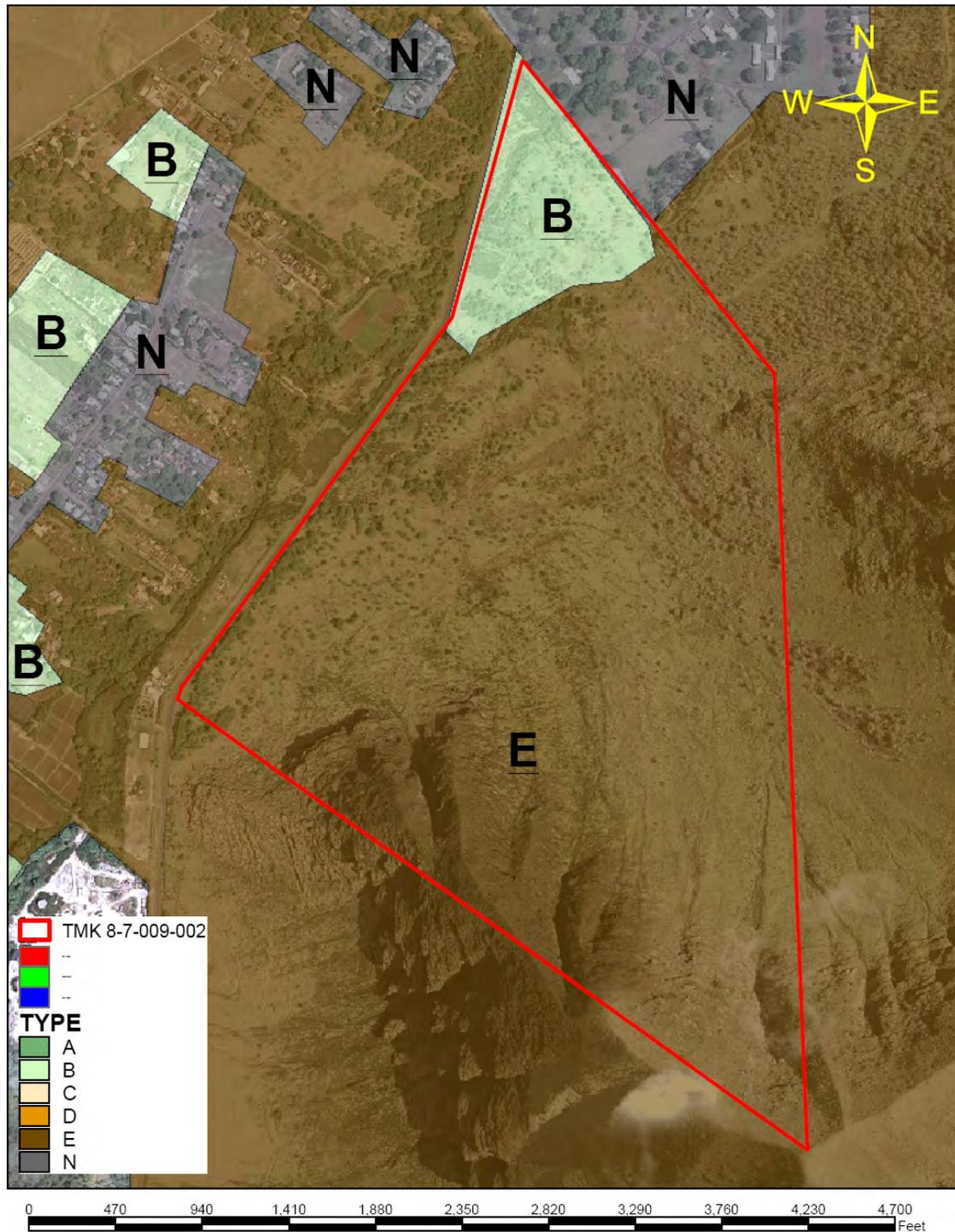
ATTACHMENT B – Soil Map



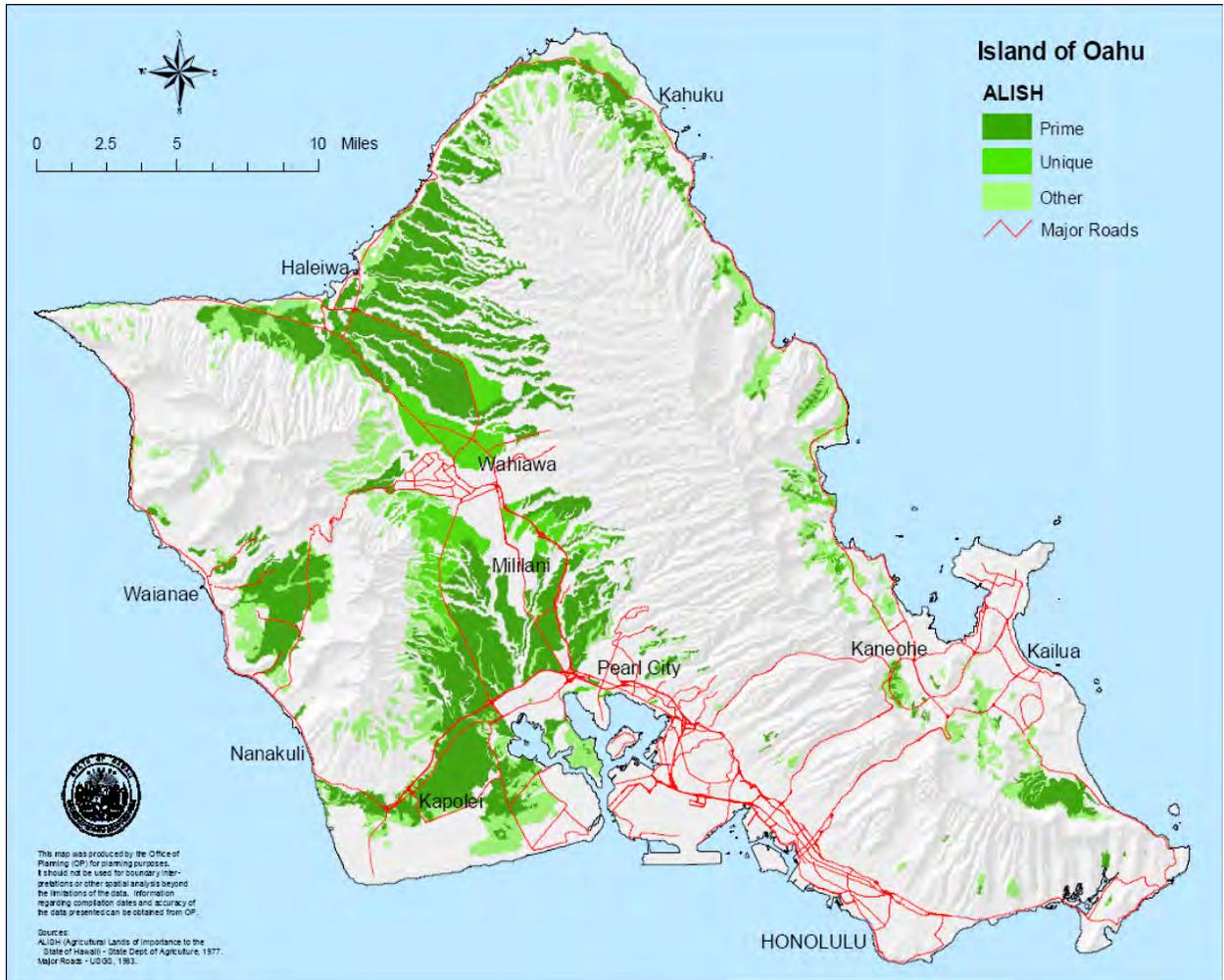
ATTACHMENT C – Topographical Map (5 ft. contour)



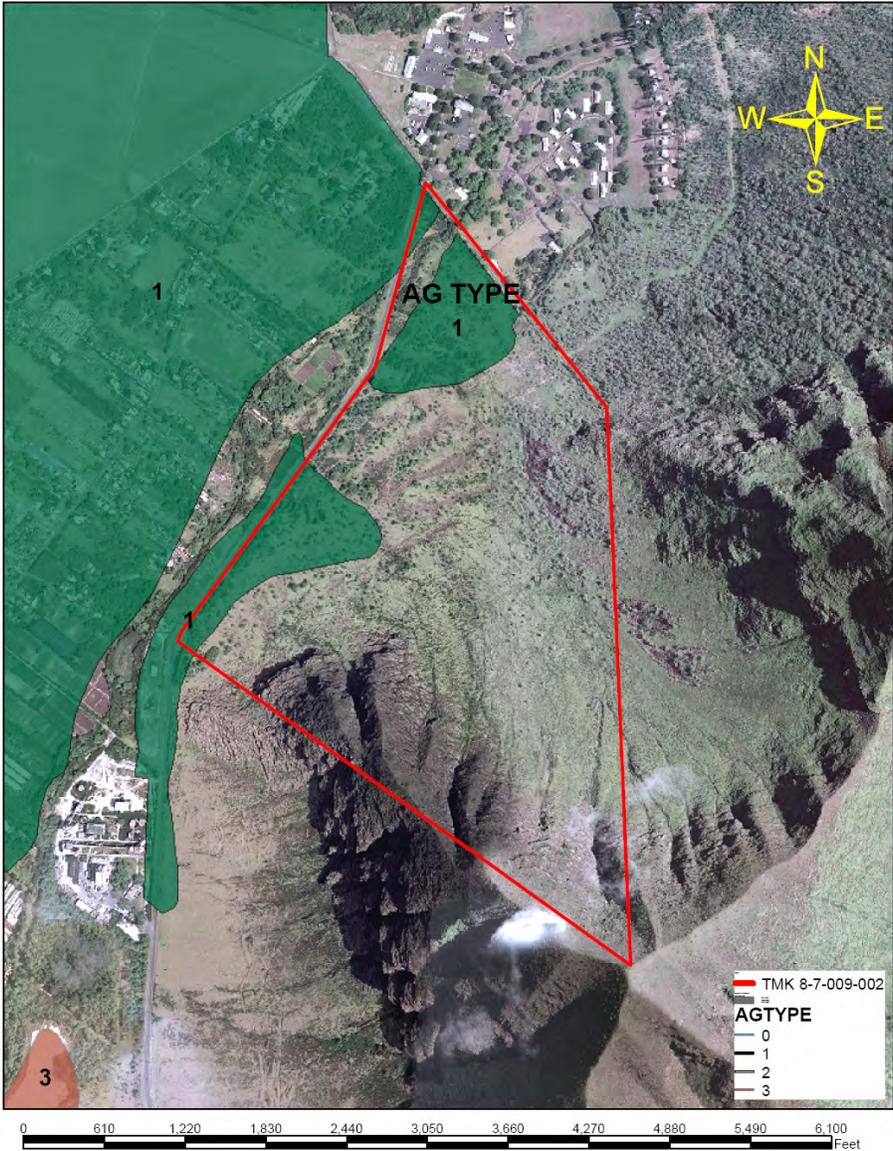
ATTACHMENT D – Land Study Bureau Productivity Rating for Subject Property



ATTACHMENT E – ALISH Classification for the Island of Oahu



ATTACHMENT F – Alish Classification for Subject Property



APPENDIX D

Biological Surveys Conducted on the Tropic-Land LLC, Nānākuli
Light Industrial Park Site, Waiʻanae District, Oʻahu, Hawaiʻi. Reginald
E. David and Eric Guinther, June 2008

**Biological Surveys Conducted on the
Tropic-Land LLC, Nānākuli Light Industrial
Park Site, Wai‘anae District, O‘ahu, Hawai‘i.**

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June 30, 2008

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Introduction

Tropic-Land LLC is proposing to develop a light industrial park on approximately 96-acres of a 236.154-acre parcel of land identified as TMK: 8-7-009:002. The currently undeveloped property is located in Nānākuli, Wai‘anae District, Island of O‘ahu (Figure 1). This report documents the methodologies used and the results of the botanical, avian and mammalian surveys that were conducted on the site as part of the environmental disclosure process,

The primary purpose of the surveys was to determine if there were any botanical, avian or mammalian species currently listed, or proposed for listing under either federal or State of Hawai‘i endangered species statutes within or adjacent to the study area. We were also asked to evaluate the potential impacts that the development of the project might pose to any sensitive or protected native botanical, avian or mammalian species, and to propose appropriate minimization and or mitigative measures that could be implemented to reduce or eliminate any such impacts. The federal and State of Hawai‘i listed species status follows species identified in the following referenced documents, (Division of Land and Natural Resources (DLNR) 1998, Federal Register 2005, U. S. Fish & Wildlife Service (USFWS) 2005, 2008). Fieldwork was conducted on the site on June 25, 2008.

The avian phylogenetic order and nomenclature used in this report follows *The American Ornithologists’ Union Checklist of North American Birds 7th Edition* (American Ornithologists’ Union 1998), and the 42nd through the 48th supplements to *Check-list of North American Birds* (American Ornithologists’ Union 2000; Banks et al. 2002, 2003, 2004, 2005, 2006, 2007). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Hawai‘i’s Ferns and Fern Allies* (Palmer 2003) for ferns, *Manual of the Flowering Plants of Hawai‘i* (Wagner et al., 1990, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for crop and ornamental plants. Place names follow *Place Names of Hawaii* (Pukui et al., 1974).

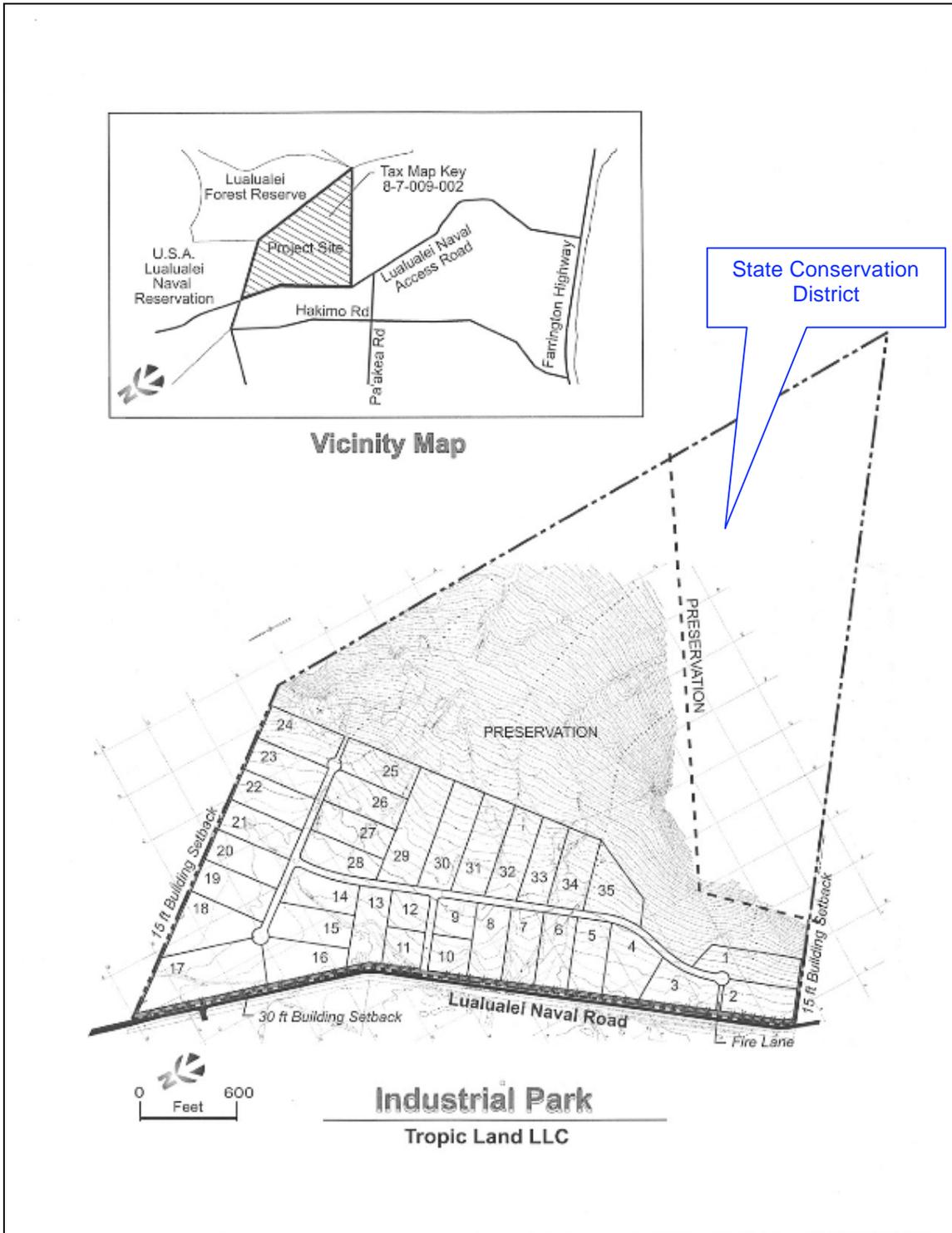
Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text on Page 17.

General Site and Project Description

The site is bound to the west by the existing Lualualei Naval Road, to the north and east by the U.S. Naval Magazine Lualualei, and to the south by Pu‘uheleakalā ridge, and undeveloped land (Figure 1). The terrain slopes from the southeast to the northwest, from a maximum elevation of approximately 566 meters (1859 feet) above mean sea level, at the summit of Pu‘uheleakalā, down to 28 meters (92 feet) above mean sea level at the northwest corner the site, at the intersection of Lualualei Naval Road and 61st street (Figure 1).

As previously mentioned Tropic-Land LLC is proposing to develop approximately 96-acres of a 236.154-acre parcel of land. The bulk of the site is too steep to allow development, as can be seen in Figure 1 and 2, development will occur on 96-acres of the site, essentially all lands that

Figure 1



fall below the 200 foot (61 meter) elevational contour (Figure 1). Additionally, 67.439-acres of land on the northern face of Pu‘uheleakalā is within the State of Hawai‘i Conservation District and thus will not be developed (Figure 1).

The environment present at the project site is highly disturbed, with abundant signs of fires, bulldozed firebreaks/roads and the like. The vegetation is dominated by buffel grass and Guinea grass (*Cenchrus ciliaris* and *Urochloa maxima*), *kiawe* (*Prosopis pallida*) trees forming a savanna in the upper parts of the parcel (Figure 2) and a somewhat open forest in the lower parts. Both *koa haole* (*Leucaena leucocephala*) and the much smaller virgate mimosa (*Desmanthus pernambucanus*) shrubs are common to abundant across the mostly grassy landscape. Additionally there are numerous alien weedy species present, especially along the various scrapes and unimproved roads within the site. The vegetation is typical of disturbed, xeric areas on the leeward slopes of the island.



Figure 2. Typical aspect of the Tropic Land site with modest, grass-covered slopes and scattered kiawe trees. Pu‘u Kaua towers over Lualualei Valley in the background.

Botanical Survey Methods

The botanical survey was undertaken on June 25, 2008 following a wandering transect that traversed all parts of the subject parcel up to about the 200-foot (60-m) elevation. The survey was

conducted early in the dry season and therefore a few plants typical of this site, especially annuals, might have completed their life cycle and been missed or gone dormant. The dominant herbaceous plants (buffel and Guinea grass) were still showing some green leaves, but had completed flowering and fruiting.

Botanical Survey Results

The results of the botanical survey are provided as a table of the flora of the site (Table 1). In this case, the table includes both plant species identified on June 25, 2008 with relative abundances, and species previously reported from the property by Char (1990). In the case of the latter survey, no abundance estimates were made. Species listed in the table without an abundance value were observed by Char and not seen in the more recent survey.

Table 1 - Listing of plants (flora) for the Tropic Land, Light Industrial Park Site

<i>Species listed by family</i>	<i>Common name</i>	<i>Status</i>	<i>Relative Abundance</i>	<i>Notes</i>
FLOWERING PLANTS				
DICOTYLEDONES				
ACANTHACEAE				
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	Nat.	U1	(2)
AIZOACEAE				
<i>Trianthema portulacastrum</i> L.	---	Nat.	U2	(1)
AMARANTHACEAE				
<i>Achyranthes aspera</i> L.	---	Nat.	---	(2)
<i>Alternanthera pungens</i> Kunth	khaki weed	Nat.	R	(1,2)
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat.	O	(1,2)
<i>Amaranthus viridis</i> L.	slender amaranth	Nat.	R	(1)
ASTERACEAE (COMPOSITAE)				
<i>Ageratim conyzoides</i> L.	<i>maile hohono</i>	Nat.	---	(2)
<i>Bidens pilosa</i> L.	beggar's tick	Nat.	---	(2)
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	Nat.	U	(2) †
<i>Eclipta prostrata</i> (L.) L.	---	Nat.	R3	
<i>Emilia fosbergii</i> Nicolson	<i>pualele</i>	Nat.	R	(2)
<i>Pluchia carolinensis</i> (Jacq.) G. Don	sourbush	Nat.	R1	(2)
<i>Sonchus oleraceus</i> L.	sow thistle	Nat.	R	(2)
<i>Tridax procumbens</i> L.	coat buttons	Nat.	U2	(2)
<i>Verbesina encelioides</i> (Cav.) Benth.	golden crownbeard	Nat.	---	(2)
<i>Xanthium strumarium</i> var. <i>canadense</i> (Mill.) Torr. ex A. Gray	cocklebur	Nat.	---	(2)
BIGNONIACEAE				
<i>Spathodea campanulata</i> P. Beauv.	African tulip tree	Orn.	R2	
BORAGINACEAE				
<i>Heliotropium procumbens</i> Mill.	---	Nat.	R2	
BUDDLEIACEAE				
<i>Buddleia asiatica</i> Lour.	dog tail	Nat.	---	(2)

Table 1 Continued.

<i>Species listed by family</i>	<i>Common name</i>	<i>Status</i>	<i>Relative Abundance</i>	<i>Notes</i>
CACTACEAE				
<i>Opuntia ficus-indica</i> (L.) Mill.	prickly pear	Nat.	---	(2)
CHENOPODIACEAE				
<i>Atriplex semibaccata</i> R. Br.	Australian saltbush	Nat.	R2	
<i>Chenopodium murale</i> L.	'aheahea	Nat.	---	(2)
CONVOLVULACEAE				
<i>Ipomoea indica</i> (J. Burm.) Merr.	koali 'awa	Ind.	---	(2)
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	field bindweed	Nat.	U	(2)
<i>Ipomoea triloba</i> L.	little bell	Nat.	U	
<i>Jacquemontia ovalifolia</i> (Choisy) H. Hallier	pā'ū-o-Hi 'iaka	Ind.	U2	(2)
<i>Merremia aegyptica</i> (L.) Urb.	hairy merremia	Nat.	---	(2)
CUCURBITACEAE				
<i>Cucumis dipsaceus</i> Ehrenb. ex Spach	teasel goard	Nat.	R	
EUPHORBIACEAE				
<i>Chamaesyce hirta</i> (L.) Millsp.	garden spurge	Nat.	R	(2)
<i>Chamaesyce hypericifolia</i> (L.) Millsp.	graceful spurge	Nat.	U2	(2)
<i>Euphorbia lactea</i> Haworth	mottled-candlestick	Orn.	R	
<i>Ricinus communis</i> L.	castor bean	Nat.	U	(2)
FABACEAE				
<i>Acacia farnesiana</i> (L.) Willd.	klu	Nat.	O	(2)
<i>Crotalaria incana</i> L.	fuzzy rattlepod	Nat.	O	(2)
<i>Desmanthus pernambucanus</i> (L.) Thellung	virgate mimosa	Nat.	A	(2)
<i>Erythrina sandwicensis</i> Degener	wili wili	End	---	(2)
<i>Leucaena leucocephala</i> (Lam.) deWit	koa haole	Nat.	C	(2)
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	Nat.	R2	
<i>Indigofera suffruticosa</i> Mill.	indigo	Nat.	U	(2)
<i>Macroptilium lathyroides</i> (L.) Urb.	cow pea	Nat.	U	(2)
<i>Pithecelobium dulce</i> (Roxb.) Benth.	'opiuma	Nat.	R	
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	kiawe	Nat.	A	(2)
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	Nat.	R	(2)
LAMIACEAE				
<i>Hyptis pectinata</i> (L.) Poit.	comb hyptis	Nat.	O3	(2)
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	Nat.	A	(2)
<i>Ocimum gratissimum</i> L.	wild basil	Nat.	R	(2)
MALVACEAE				
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	Nat.	---	(2)
<i>Abutilon incanum</i> (Link) Sweet	hoary abutilon	Ind.	---	(2)

Table 1 Continued.

<i>Species listed by family</i>	<i>Common name</i>	<i>Status</i>	<i>Relative Abundance</i>	<i>Notes</i>
<i>Malvastrum coromandelianum</i> (L.) Garck	false mallow	Nat.	O	(1,2)
<i>Malva parviflora</i> L.	cheeseweed	Nat.	R	(1)
<i>Sida ciliaris</i> L.	---	Nat.	U	(1)
<i>Sida fallax</i> Walp.	'ilima	Ind.	O3	(2)
<i>Sida rhombifolia</i> L.	Cuba jute	Nat.	---	(2)
<i>Sida spinosa</i> L.	prickly sida	Nat.	U2	(2)
MORACEAE				
<i>Ficus microcarpa</i> L.	Chinese banyan	Nat.	R	(2)
NYCTAGINACEAE				
<i>Boerhavia coccinea</i> Mill.	false alena	Nat.	---	(2)
PASSIFLORACEAE				
<i>Passiflora foetida</i> L.	love-in-a-mist	Nat.	---	(2)
PORTULACACEAE				
<i>Portulaca oleracea</i> L.	pigweed	Nat.	R	
SOLANACEAE				
<i>Nicandra physalodes</i> (L.) Gaertn.	apple-of-Peru	Nat.	R	(2)
<i>Solanum americanum</i> Mill.	pōpolo	Ind.	---	(2)
<i>Solanum lycopersicum</i> var. <i>cerasiforme</i> (Dunal) Spooner, G. Anderson, & Jansen	wild cherry tomato	Nat.	U	(2)
STERCULIACEAE				
<i>Waltheria indica</i> L.	'uhaloa	Ind.	U	(2)
VERBENACEAE				
<i>Lantana camara</i> L.	lantana	Nat.	---	(2)
MONOCOTYLEDONES				
COMMELINACEAE				
<i>Commelina benghalensis</i> L.	hairy honohono	Nat.	---	(2)
POACEAE				
<i>Bothriochloa pertusa</i> (L.) A Camus	pitted beardgrass	Nat.	---	(2)
<i>Cenchrus ciliaris</i> L.	buffelgrass	Nat.	AA	(2)
<i>Cenchrus echinatus</i> L.	sand bur	Nat.	R	
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	Nat.	O3	(2)
<i>Chloris radiata</i> (L.) Sw.	radiate fingergrass	Nat.	---	(2)
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	Nat.	---	(2)
<i>Digitaria insularis</i> (L.) Mez. ex Ekman	sourgrass	Nat.	---	(2)
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat.	R	(1,2)
<i>Melinis minutiflora</i> P. Beauv.	molasses grass	Nat.	R	

Table 1 Continued.

<i>Species listed by family</i>	<i>Common name</i>	<i>Status</i>	<i>Relative Abundance</i>	<i>Notes</i>
<i>Melinis repens</i> (Willd.) Zizka	Natal redtop	Nat.	---	(2)
<i>Setaria verticillata</i> (L.) P. Beauv.	bristly foxtail	Nat.	U	(2)
<i>Urochloa maxima</i> (Jacq.) Webster	Guinea grass	Nat.	AA	(2)

Legend to Table 1

STATUS = distributional status for the Haaiian Islands:	
ind. =	indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
nat. =	naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
ABUNDANCE = occurrence ratings for plants by area:	
R - Rare	seen in only one or perhaps two locations.
U - Uncommon-	seen at most in several locations
O - Occasional	seen with some regularity
C - Common	observed numerous times during the survey
A - Abundant	found in large numbers; may be locally dominant.
AA - Very abundant	abundant and dominant; defining vegetation type.
Numbers following an occurrence rating indicate clusters within the survey area. The ratings above provide an estimate of the likelihood of encountering a species within the specified survey area; numbers modify this where abundance, where encountered, tends to be greater than the occurrence rating:	
	1 - several plants present
	2 - many plants present
	3 - locally abundant
NOTES:	(1) - Generally associated with unimproved roads and other recently disturbed sites.
	(2) - Previously reported by Char () from the property. .
	(3) - Plant lacking key diagnostic characteristics (flower, fruit).
	† -- Seen only as dead plant matter.

A total of 52 species were observed during the survey on June 25. All but 2 species are introduced (not native), putting the percentage of native species at 4%. A total of 76 species have identified from the site when combing the results from Char (1990) with the most recent survey data.

Avian Survey Methods

Eight avian count stations were evenly spaced across the approximately 100-acre proposed development area. Each station was counted once. Field observations were made with the aid of Leitz 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated in the early morning hours, the time of day that bird activity is typically at its peak. Time not spent counting was used to search the site and the surrounding area for species and habitats not detected during count sessions. We took particular care to cover areas upslope of the proposed development area to ensure that no additional habitats or species were present on the owners property upslope of the proposed disturbance area.

Avian Survey Results

A total of 227 individual birds of 17 species, representing 12 separate families, were recorded during station counts (Table 2). All of the 17 species detected are considered to be alien to the

Hawaiian Islands (Table 2). No avian species currently protected, or proposed for protection under either the Federal or State of Hawai‘i endangered species programs were detected during the course of this survey (DLNR 1998, Federal Register 2005, USFWS 2005, 2008).

Avian diversity and densities were in keeping with the location and the depaureate and xeric habitat present on the site. Four species, House Sparrow (*Passer domesticus*), Spotted Dove (*Streptopelia chinensis*), Common Waxbill (*Estrilda astrild*) and Zebra Dove (*Geopelia striata*), accounted for slightly more than 54% of the total number of all birds recorded during station counts. The most commonly recorded species was House Sparrow, which accounted for slightly less than 17% of the total number of individual birds recorded. An average of 28 birds were detected per station count.

Table 2 - Avian Species Detected on the Tropic-Land Light Industrial Park Site			
<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Erckel's Francolin	<i>Francolinus erckelii</i>	A	1.38
COLUMBIFORMES			
COLUMBIDAE - Pigeons & Doves			
Rock Pigeon	<i>Columba livia</i>	A	0.13
Spotted Dove	<i>Streptopelia chinensis</i>	A	4.13
Zebra Dove	<i>Geopelia striata</i>	A	2.88
STRIGIFORMES			
TYTONIDAE - Barn Owls			
Barn Owl	<i>Tyto alba</i>	A	0.13
PASSERIFORMES			
PYCNONOTIDAE - Bulbuls			
Red-vented Bulbul	<i>Pycnonotus cafer</i>	A	1.63
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	1.38
MIMIDAE - Mockingbirds & Thrashers			
Northern Mockingbird	<i>Mimus polyglottos</i>	A	1.13
STURNIDAE - Starlings			
Common Myna	<i>Acridotheres tristis</i>	A	0.63
EMBERIZIDAE - Emberizids			
Red-crested Cardinal	<i>Paroaria coronata</i>	A	0.25
CARDINALIDAE - Cardinals Saltators & Allies			
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	1.50
FRINGILLIDAE - Fringilline and Carduline Finches & Allies			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	1.63
PASSERIDAE - Old World Sparrows			
House Sparrow	<i>Passer domesticus</i>	A	4.75
ESTRILDIDAE - Estrildid Finches			

Table 2 Continued.

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
Estrildinae - Estrildine Finches			
Common Waxbill	<i>Estrilda astrild</i>	A	3.63
Nutmeg Mannikin	<i>Lonchura punctulata</i>	A	2.75
Chestnut Munia	<i>Lonchura atricapilla</i>	A	0.25
Java Sparrow	<i>Padda oryzivora</i>	A	0.25

Key to Table 1.

- ST** Status
A Alien species – introduced to Hawai‘i by humans
RA Relative Abundance: Number of birds detected divided by the number of count stations (8)

Mammalian Survey Methods

With the exception of the endemic, endangered Hawaiian hoary bat, or ‘*ōpe‘ape‘a*, as it is known locally, all terrestrial mammals currently found on the island of O‘ahu are alien species. Most are ubiquitous; no trapping program was proposed or undertaken to quantify the use of the study site by alien mammalian species. The survey of mammals was limited to visual and auditory detection, coupled with observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the project sites.

Mammalian Survey Results

Three mammalian species; domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auropunctatus*), and cat (*Felis catus*), were detected within the study site. There were several pit bulls chained up around the trucks, heavy equipment and sheds immediately *mauka* of the entrance gate. Additionally, one pit bull was running loose on the property. One small Indian mongoose was seen on the west end of the site, and scat, tracks, and sign of both dog and cat was encountered in several locations within the project site.

Discussion

Botanical Resources

A majority of the property to be developed as an industrial park supports a Kiawe-Buffel Grass Association (Char, 1990), although significant areas support Guinea grass as a dominant or co-dominant with buffel grass. From a floristic standpoint, the site below the preservation and conservation zone lacks habitat for valuable native plants. This area has seen various uses and activities over the years (rock quarrying, rangeland, agricultural cropping) and a portion is presently used as a trucking base yard. The property has been subjected to one or more wildfires; Char (1990) reporting the site as partly burned during her survey.

It is unclear from Char’s (Char & Assoc., 1990) description of the site and her survey method as to just how much of the parcel was surveyed in August 1990. The reports notes that land slopes become steep (12 to 30%) above the 200-foot contour and then “rise abruptly and steeply” in the

rear portions of the project site leading to Pu‘uheleakalā ridge. The statement is made that “[n]o golf course construction is planned for these steeply sloping areas,” a generalization that implies the 1990 botanical survey may not have included areas above an unspecified steepness. One significance here is that steeper areas tend to be very rocky with a sparse growth of buffel grass, and therefore are less likely to support devastating wildfires that remove native plants from the environment. In addition, of course, is the fact that direct impacts of the proposed Tropic Land project, would not occur above about 200 feet elevation because the industrial lots will not extend to the slopes above about the 200 foot elevation contour.

Char (1990) developed a longer plant species list (76 species vs. 52 species) than that resulting from the present survey, although the latter included 15 species not reported in 1990. The 24 plants listed as present in 1990 and not observed in 2008 are mostly common weedy species that certainly should be expected on or near the project area. Possibly had our survey extended further upslope or included parcels along Ulehawa Stream as was the case in 1990, many of these species would have been encountered. Seasonal conditions appear not to be a factor, since Char conducted her survey during the typically dry month of August. Char notes that her survey was more intense “[w]here Ulehawa Stream crosses the property” to rule out the presence of the endangered fern, *Marsillea villosa*, known from the nearby Naval Radio Transmitting Facility (Botanical Consultants, 1984; Traverse Group, 1987). Parcels to the west of Lualualei Naval Road were not included in the present survey area.



Figure 3. Unnamed ridge rising over 1800 ft (550 m) to the east above the project site. Note that the steep slopes are still green.

Char noted the native *wiliwili* tree (*Erythrina sandwicensis*) as present in the dry stream bed near the road to an old quarry. The tree was not seen in 2008, either because it is no longer there, was growing above the upper elevation limit of our survey (although a quarry and well site as described was part of our survey area), or missed against the backdrop of the kiawe trees in the gulch—*wiliwili* are deciduous in the dry season and a single tree could be overlooked if absent all of its leaves. Although an endemic species, the *wiliwili* is not listed as threatened or endangered. All of the native plants encountered on the property in 1990 and 2008 are common species in the Hawaiian Islands.

Although no part of the project area is included in the federally designated plant critical habitat Unit 15 encompasses adjacent Pu‘uheleakalā and the ridgeline above the project area extending to the northeast (Figure 3) (Federal Register, 2003). Unit 15 extends all along the Wai‘anae ridge here to the upper end of Lualualei Valley. In the project area, the boundary of this unit descends to around the 500-ft (152-m) elevation on the ridges to the northeast and southwest, rising to the 1000-ft (305-m) contour in the valley behind the proposed industrial park. Within the property boundaries, the area of critical habitat is entirely within the State Conservation District as depicted in Figure 1.

The portion of Unit 15 (Pu‘uheleakalā) closest to the project includes critical habitat for an endangered species of ‘akoko (*Chamaesyce kuwaleana*; see page 33) and *Lipochaeta lobata* var. *leptophylla* at the top of the ridgeline to the east. The following descriptions from Guinther (2007, p. 33-34) summarize information on these and other listed plant species in the area:

Chamaesyce kuwaleana is a species of ‘akoko listed as endangered (Federal Register, 1991). Critical habitat for this species has been designated in seven units. Unit 15 encompasses 454 ac (184 ha) of Pu‘u Heleakalā and is thought to presently harbor 300 individual plants (Federal Register, 2003). ... The plant is a small shrub between 0.2 and 0.9 m (8 to 35 in) high, known only from “arid volcanic cliffs, 250 m [820 ft high], Wai‘anae Mountains, and also known from one specimen from Mokumanu, Kāne‘ohe, O‘ahu” (Wagner, Herbst, and Sohmer, 1990).

Schiedea ligustrina is indicated as having been reported from near the peak (northeast slope) of Pu‘u Heleakalā....

Nehe (*Lipochaeta lobata*) is presently considered to be found in the wild as two distinguishable varieties (Wagner, Herbst, and Sohmer, 1990). *Lipochaeta lobata* var. *leptophylla* is a listed variety (Federal Register, 1991); The few remaining plants of *L. l.* var. *leptophylla* are located above Lualualei Valley but the known elevation range of this variety is well above the [proposed industrial park site].... The lowland or coastal variety, *L. l.* var. *lobata* is not listed and not presently regarded for listing consideration.

Marsilea villosa or ‘ili‘ihi is a small aquatic or semi-aquatic fern resembling a clover (Fig. [4]). The fern requires periodic flooding and drying of the ground to complete its short life cycle, and thus is confined to shallow basins subjected to brief periods of flooding during the wet season.

The following description is from the Recovery Plan for the *Marsilea villosa* as given by USFWS (undated):

“This fern requires periodic flooding for spore release and fertilization, then a decrease in water levels for the young plants to establish. It typically occurs in shallow depressions in clay soil, or lithified sand dunes overlaid with alluvial clay. All reported populations occur at or below 500 feet (150 meters) elevation. While *M. villosa* can withstand minimal shading, it appears most vigorous growing in open areas.”



Figure 4. The fern, *Marsilea villosa* or ‘ili‘ihilauākea, is an endangered species, here growing among grasses at Naval Transmitting Facility property at Lualualei.

Char (Char & Assoc., 1990) made a special effort to ascertain whether *'ili'ihilauākea* was present on the former proposed golf course site, particularly on parcels located across Lualualei Naval Road from the proposed industrial subdivision site that we recently surveyed. She was unable to locate this plant and we did not find either the fern or suitable habitat for this fern.

Avian Resources

The findings of the avian survey are consistent with the findings of a previous study conducted on the subject property (Berger 1990), and with at least three other avian surveys conducted in 2004, 2005 and 2007 on lands immediately adjacent to this site (David 2007), and with at least two other avian studies conducted in the general project vicinity in the recent past (David 2002, 2003). Given the highly disturbed nature of the site and the almost completely alien dominated vegetation present, it is not surprising that all avian species detected were commonly occurring lowland alien species.

The species list generated during the course of this survey is almost identical to that generated during course of the surveys conducted on the property to the immediate south of this site in 2004, 2005 and 2007 which is presented in David (2007).

Although not detected during the course of this survey, the 1990 survey of the site, or the 2004, 2005 and 2007 surveys of the adjacent property, it is likely that the Hawaiian endemic subspecies of the Short-eared Owl (*Asio flammeus sandwichensis*), or *pue'o* as it is known locally, forages within the project site upon occasion (Berger 1990, David 2007). The O'ahu population of this species is listed as endangered under State of Hawai'i endangered species statutes, it is not so listed under the federal endangered species act.

The habitat on site changes on such a regular basis due to anthropogenic alteration and fire that the site likely does not contain suitable nesting habitat for this species very often, if ever. From a *pueo's* perspective there is nothing unique about the habitat present on the project site. There are large areas of better foraging and nesting habitat within the Lualualei Branch of the Pearl Harbor Naval Ammunition Depot, located in close proximity to this site (David 2002, 2003). Clearing of the project site may temporarily disturb foraging *pueo*, though such activity is unlikely to result in an adverse impact to this species.

Mammalian Resources

The findings of the mammalian survey are consistent with the findings of a previous study conducted on the subject property (Berger 1990), and with at least three other mammalian surveys conducted in 2004, 2005 and 2007 on lands immediately adjacent to this site (David 2007), and with at least two other mammalian studies conducted in the general project vicinity in the recent past (David 2002, 2003).

Although no rodents were detected during the course of this survey, it is likely that the four established alien *muridae* found on O'ahu, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), European house mouse (*Mus musculus domesticus*) and possibly Polynesian rats (*Rattus exulans hawaiiensis*) use various resources found within the project area. All of these

introduced rodents are deleterious to native ecosystems and the native faunal species that are dependant on them.

Potential Impacts to Critical Habitat

Any human presence is likely to enhance the prospects for fires, and during the dry season, fires arising from activities on this property could be very detrimental to endangered species growing on the high ridgelines forming the surrounding small valley. The following discussion concerning the nearby west-facing slope of Pu‘uheleakalā (from Guinther, 2007, p. 7-8) summarizes the problem:

“The vegetation of the site is mostly grassland. The dry conditions and occasional fires tend to favor exotic grasses over native grasses, shrubs, and trees. Scrutiny of the satellite image... reveals a complex of fire roads cut into the steeper slopes to control the spread of fires that can occur with unfortunate regularity on leeward O‘ahu between about May and September of most years. Buffel grass dominates, and becomes self-preserving by increasing the intensity of fires that occur, itself capable of regrowing from basal stems when rains return (Hughes, Vitousek, and Tunison, 1991; Tix, undated, Latz, 1991). Native Hawaiian plants are not adapted to fire, and are gradually eliminated from areas subjected to repeated fires (Mueller-Dombois, 1981).”

Conclusions

From a native botanical, avian and mammalian perspective we found nothing precluding the clearing and development of the subject property. It is not expected that the modification of the habitat present on this site will result in any deleterious impacts to native botanical, avian or mammalian species.

Recommendations

The potential for starting a fire that would then spread upslope should be addressed as an issue for the construction contractor and for tenants of the industrial park. In general, this means developing fire breaks at the start of grading and having the ability on-site during construction to quickly address a fire if started.

We recommend that following build-out of the light industrial subdivision that a firebreak be maintained between the subdivision and the undeveloped grassy slopes in the back of the valley and/or that a green belt along the upland border of the development.

Glossary:

Alien – Introduced to Hawai‘i by humans.

Endemic – Native and unique to the Hawaiian Islands.

Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally.

mauka – Upslope, towards the mountains.

‘ōpe‘ape‘a – Hawaiian hoary bat.

pueo – Hawaiian endemic sub-species of the Short-eared Owl.

Sign – Biological term referring tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected

Threatened - Listed and protected under the ESA as a threatened species.

Xeric – Extremely dry conditions or habitat.

DLNR – Hawaii State Department of Land & Natural resources.

ESA – Federal Endangered Species Act of 1973, as amended.

USFWS – United States Fish & Wildlife Service.

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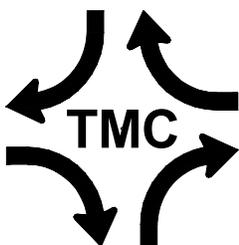
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APPENDIX E

Traffic Impact Analysis Report for the Proposed Nanakuli Industrial Park. Traffic Management Consultant, January 2010

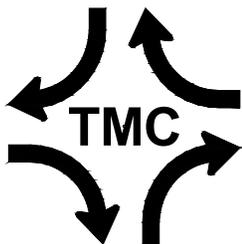
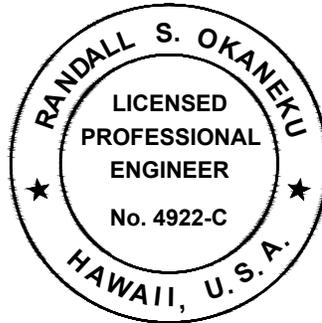
TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
NANAKULI INDUSTRIAL PARK
NANAKULI, HAWAII
TAX MAP KEY 8-7-09:02

PREPARED FOR
KIMURA INTERNATIONAL, INC.
JANUARY 29, 2010



PREPARED BY
THE TRAFFIC MANAGEMENT CONSULTANT

TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
NANAKULI INDUSTRIAL PARK
NANAKULI, HAWAII
TAX MAP KEY 8-7-09:02



THE TRAFFIC MANAGEMENT CONSULTANT
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TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
NANAKULI INDUSTRIAL PARK
TAX MAP KEY: 8-7-9:02

I. Introduction

A. Project Description

Tropic Land, LLC proposes to develop an industrial park in Nanakuli, Oahu. The 96-acre site is identified as Tax Map Key: 8-7-9:02. The proposed Nanakuli Industrial Park will consist of approximately 33 lots, totaling 75 net acres. Figure 1 depicts the vicinity map and the site plan.

Formal access to the project site is located on Hakimo Road, through a property (TMK 8-7-10: 06), owned Tropic Land, LLC, which is situated between Hakimo Road and Lualualei Naval Access Road; and an easement from the U.S. Navy to cross Lualualei Naval Access Road. Tropic Land, LLC has reached an understanding with the U. S. Navy to use Lualualei Naval Access Road for the access to the proposed Nanakuli Industrial Park. Site access will be provided at a stop-controlled T-intersection with Lualualei Naval Access Road.

The proposed project is expected to be fully built out and occupied by the Year 2020. The Year 2020 is used as the study's planning horizon for the purpose of the traffic impact analysis.

B. Purpose and Scope of the Study

The purpose of this study is to analyze the traffic impacts resulting from the development of the proposed Nanakuli Industrial Park. This report presents the findings and recommendations of the study. The scope of this study includes:

1. Description of the proposed project.
2. Evaluation of existing roadways and traffic conditions.
3. Development of trip generation characteristics of the proposed project.
4. Analysis of the 2020 traffic conditions without the proposed project.

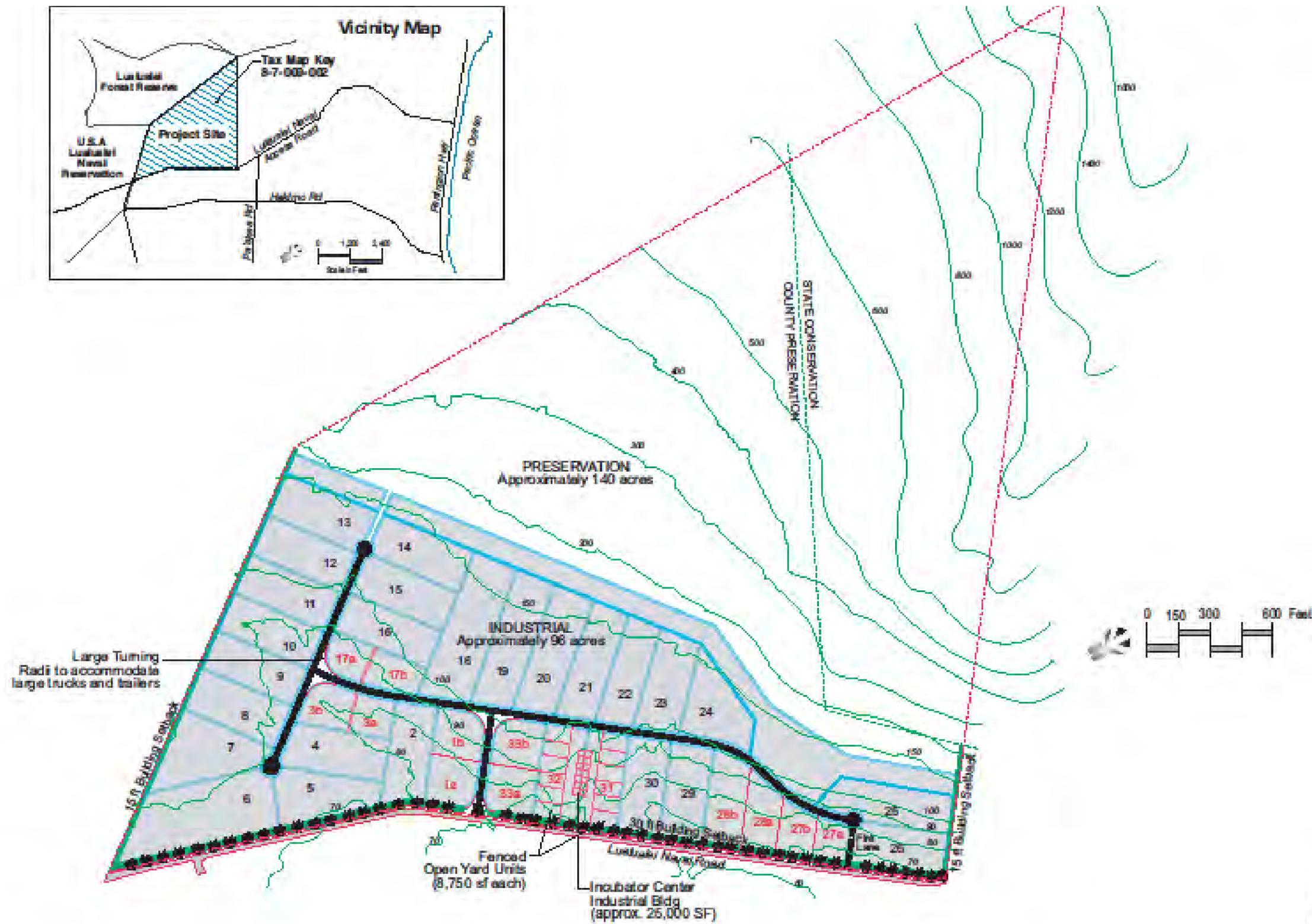


Figure 1. Site Plan and Vicinity Map



5. Identification and analysis of traffic impacts resulting from the development of the full build-out of the proposed project.
6. Recommendations of improvements, as necessary, that would mitigate the traffic impacts identified in this study.

C. Methodologies

1. Capacity Analysis Methodology

The highway capacity analysis, performed for this study, is based upon procedures presented in the Highway Capacity Manual (HCM), published by the Transportation Research Board, 2000. HCM defines Level of Service (LOS) as "a quality measure describing operational conditions within a traffic stream". Several factors may be included in determining LOS, such as: speed, travel time, freedom to maneuver, traffic interruptions, driver comfort, and convenience. LOS's "A", "B", and "C" are considered satisfactory Levels of Service. LOS "D" is generally considered a "desirable minimum" operating level of service. LOS "E" is an undesirable condition, and LOS "F" is an unacceptable condition. Intersection LOS is primarily based upon average delay, which is measured in seconds per vehicle (sec/veh). Table 1 summarizes the LOS criteria.

Table 1. Level of Service Criteria (HCM)		
LOS	Signalized Intersections	Unsignalized Intersections
	Control Delay (sec/veh)	Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

"Volume-to-capacity" (v/c) ratio is a measure indicating the relative traffic demand to the roadway's capacity. HCM defines capacity as "the maximum number of vehicles that can pass a given point during a specified period under prevailing roadway, traffic flow, and traffic control conditions." A v/c ratio of 0.50 indicates that the traffic demand is utilizing 50 percent of the roadway's capacity. A v/c ratio in excess of 1.00 indicates that the traffic demand exceeds the carrying capacity of the highway facility. Worksheets for the capacity analysis, performed throughout this report, are compiled in the Appendix.



2. Trip Generation Methodology

The trip generation methodology is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in Trip Generation, 7th Edition. ITE trip rates are developed by correlating the total vehicle trip generation data with various activity/land use characteristics, such as the vehicle trips per hour (vph) per acre.

II. Existing Conditions

A. Roadways

Farrington Highway is the primary arterial highway on the Leeward coast of Oahu, which carries over 48,000 vehicles per day, total for both directions. Farrington Highway is a four-lane highway, which is oriented generally in the north-south directions. Farrington Highway is signalized at its intersection with Lualualei Naval Access Road. An exclusive left turn lane is not provided on southbound Farrington Highway at this intersection. The posted speed on Farrington Highway is 35 miles per hour (mph).

Lualualei Naval Access Road is a two-lane, two-way roadway, which provides access to the U. S. Navy Radio Transmitter Facility in Lualualei. The posted speed on Lualualei Naval Access Road varies between 25 mph and 45 mph.

B. Existing Peak Hour Traffic Volumes and Operating Conditions

1. Field Investigation and Data Collection

Manual traffic count surveys were conducted at the intersection of Farrington Highway and Lualualei Naval Access Road on May 1-2, 2008, during the peak periods of traffic – from 5:30 AM to 8:00 AM and from 2:30 PM to 5:00 PM. Additional surveys were conducted on Lualualei Naval Access Road at an existing base yard on the project site on July 21-22, 2008. The peak period traffic data are presented in the Appendix.

2. Existing AM Peak Hour Traffic

The AM peak hour on Farrington Highway selected for this analysis is from 5:45 AM to 6:45 AM, based upon the observed AM peak hour of traffic on Lualualei Naval Access Road. Farrington Highway carried about 2,800 vehicles per hour (vph), total for both directions. Lualualei Naval Access Road carried a total of 430 vph at Farrington Highway, during the existing AM peak hour of traffic. At the project site, the traffic volume on Lualualei Naval Access Road decreased to about 120 vph.

The intersection of Farrington Highway and Lualualei Naval Access Road operated at an overall Level of Service "D" with a v/c ratio of 1.12, during the existing AM peak hour. Southbound Farrington Highway operated at LOS "E". The left-turn movement from Lualualei Naval Access Road on Farrington Highway operated at LOS "F". Figure 2 depicts the existing AM peak hour traffic volumes.

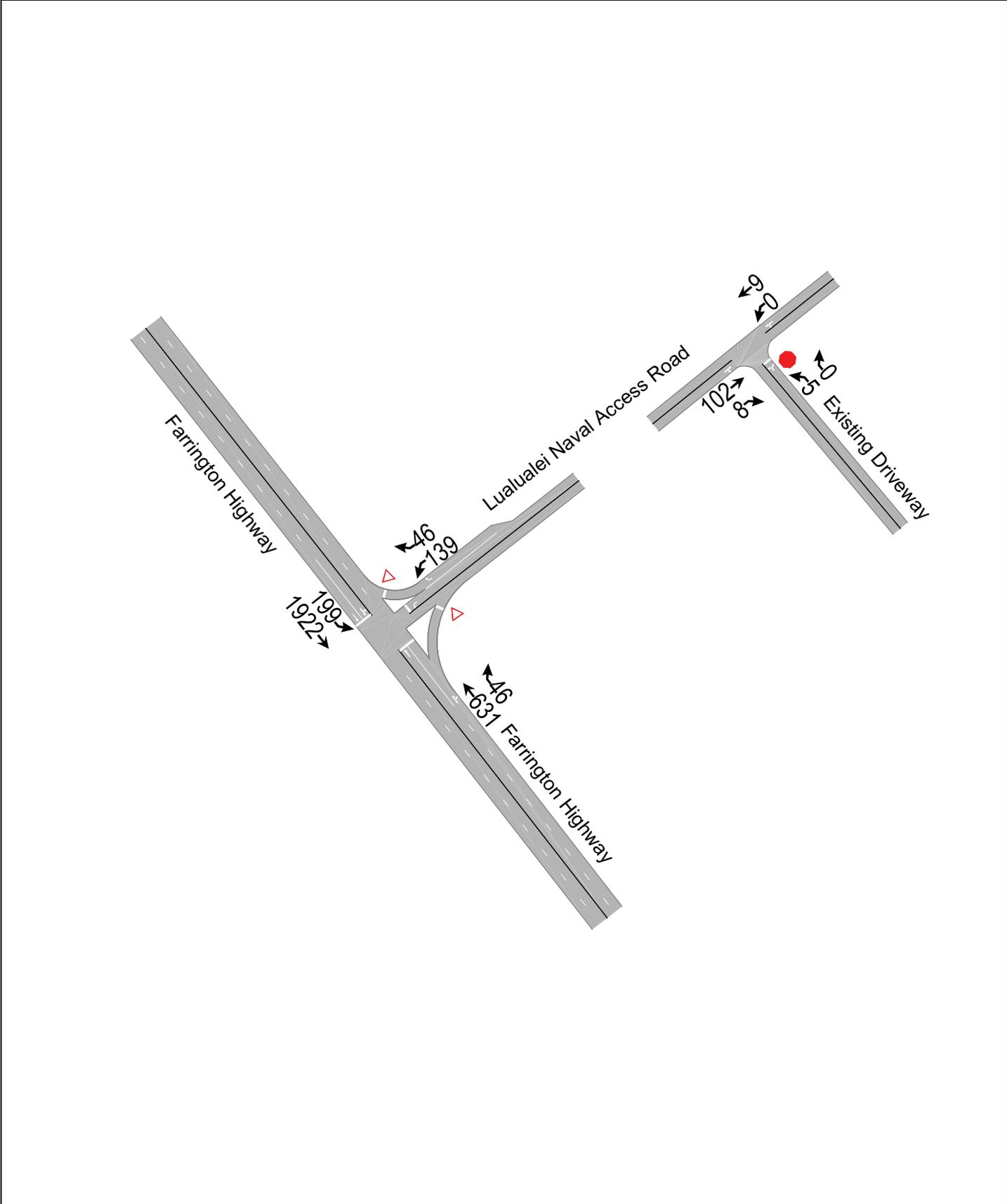


Figure 2. Existing AM Peak Hour Traffic (VPH)



3. Existing PM Peak Hour Traffic

The PM peak hour of traffic generally occurred between 3:15 PM and 4:15 PM. Farrington Highway carried about 3,500 vph, total for both directions. Lualualei Naval Access Road carried a total of over 500 vph, during the existing PM peak hour of traffic. At the project site, the traffic volume on Lualualei Naval Access Road decreased to about 100 vph.

During the existing PM peak hour of traffic, the shared through/left-turn lane on southbound Farrington Highway at Lualualei Naval Access Road operated as a de facto left-turn lane, according the HCM analysis, i.e., the delay on the left-turn movement resulted in the shared through/left-turn lane being used as an exclusive left-turn lane. The intersection of Farrington Highway and Lualualei Naval Access Road operated at an overall LOS "C" with a v/c ratio of 0.94. The left-turn movement from Lualualei Naval Access Road on Farrington Highway operated at LOS "D". The existing PM peak hour traffic volumes are depicted on Figure 3.

III. Future Traffic Conditions

A. Background Growth in Traffic

The Oahu Transportation Regional Plan 2030 (ORTP), was prepared for the Oahu Metropolitan Planning Organization (OMPO) in April 2006, and amended in May 2007. The Year 2030 socio-economic forecasts indicated about a one-half percent annual increase in population and employment on the Waianae coast. Based upon the ORTP socio-economic forecast, an annual growth of 0.55 percent was applied uniformly to the existing peak hour traffic to estimate the Year 2020 peak hour traffic demands without the proposed project.

B. Year 2020 AM Peak Hour Traffic Analysis Without Project

During the AM peak hour of traffic without the proposed project, traffic demands at the intersection of Farrington Highway and Lualualei Naval Access Road are expected to exceed the carrying capacity of the existing intersection, operating at an overall LOS "F" with a v/c ratio of 1.23. The southbound approach of Farrington Highway and the left-turn movement from Lualualei Naval Access Road are expected to operate at LOS "F". Figure 4 depicts the AM peak hour traffic without the proposed project.

C. Year 2020 PM Peak Hour Traffic Analysis Without Project

The PM peak hour of traffic demand without the proposed project is expected to exceed the existing carrying capacity of the intersection of Farrington Highway and Lualualei Naval Access Road, operating at LOS "D" with a v/c ratio of 1.01. Southbound Farrington Highway and the left-turn movement from Lualualei Naval Access Road are expected to operate at LOS "D". The PM peak hour traffic without the proposed project is depicted on Figure 5.

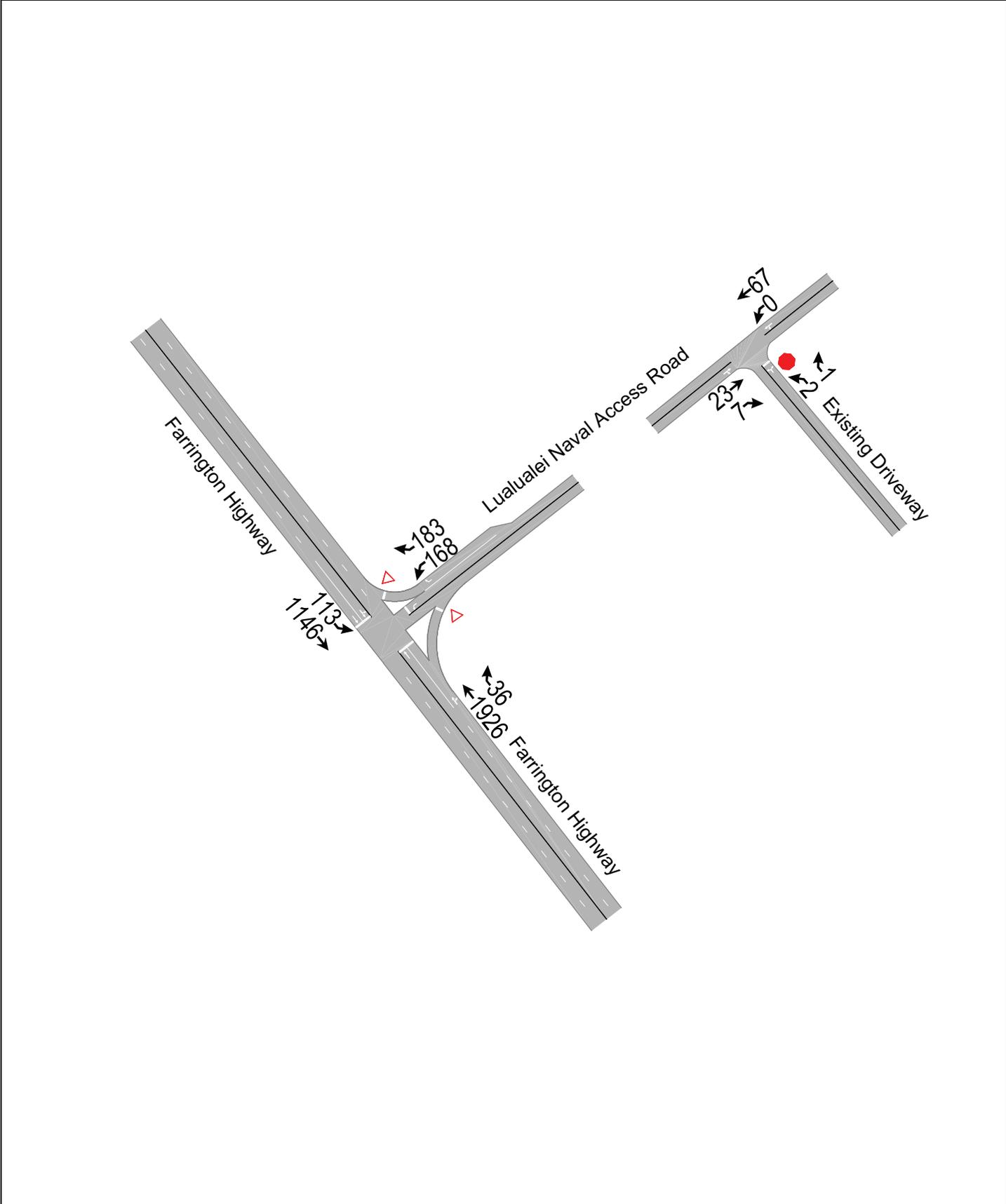


Figure 3. Existing PM Peak Hour Traffic (VPH)

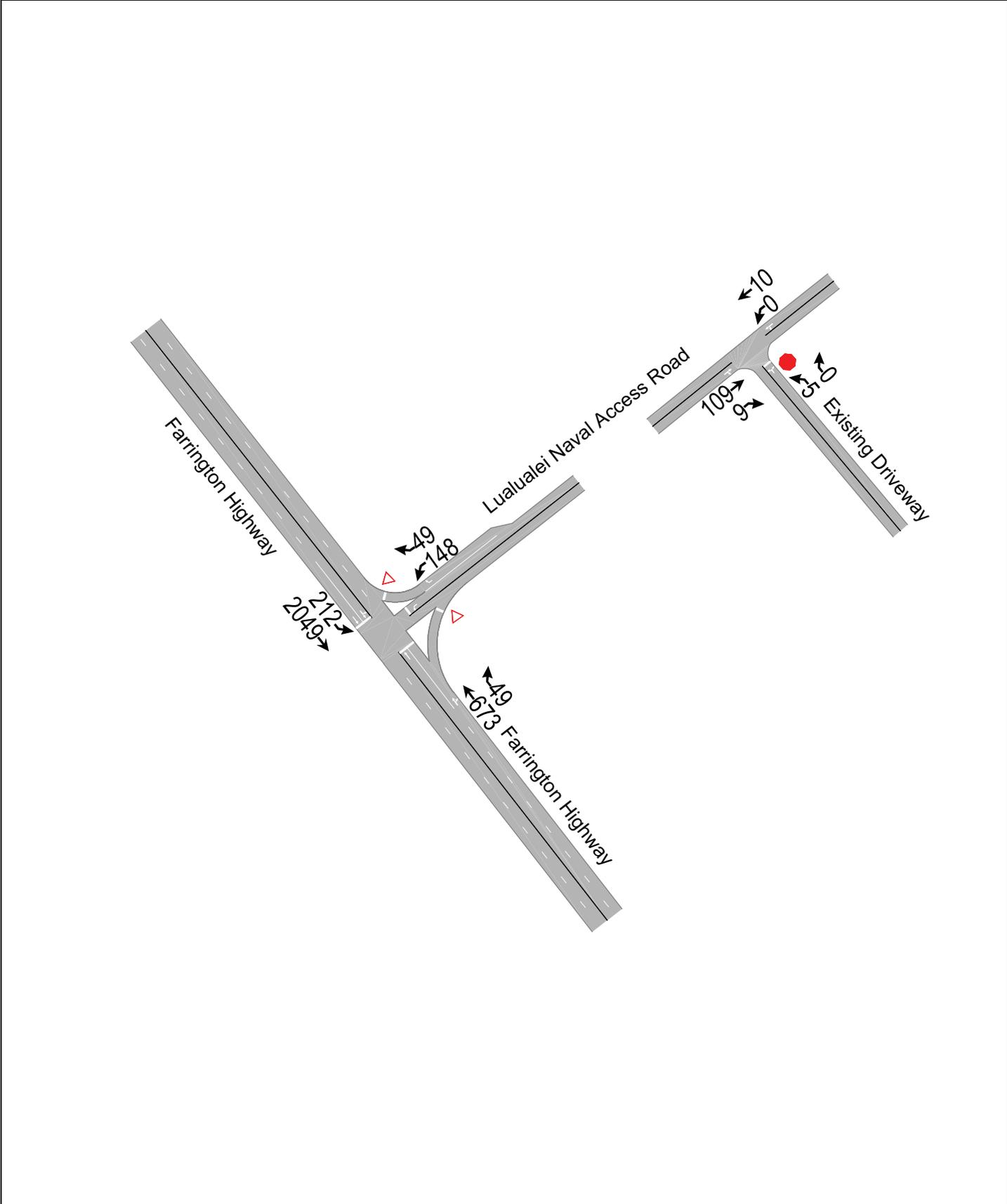


Figure 4. AM Peak Hour Traffic (VPH) Without Project

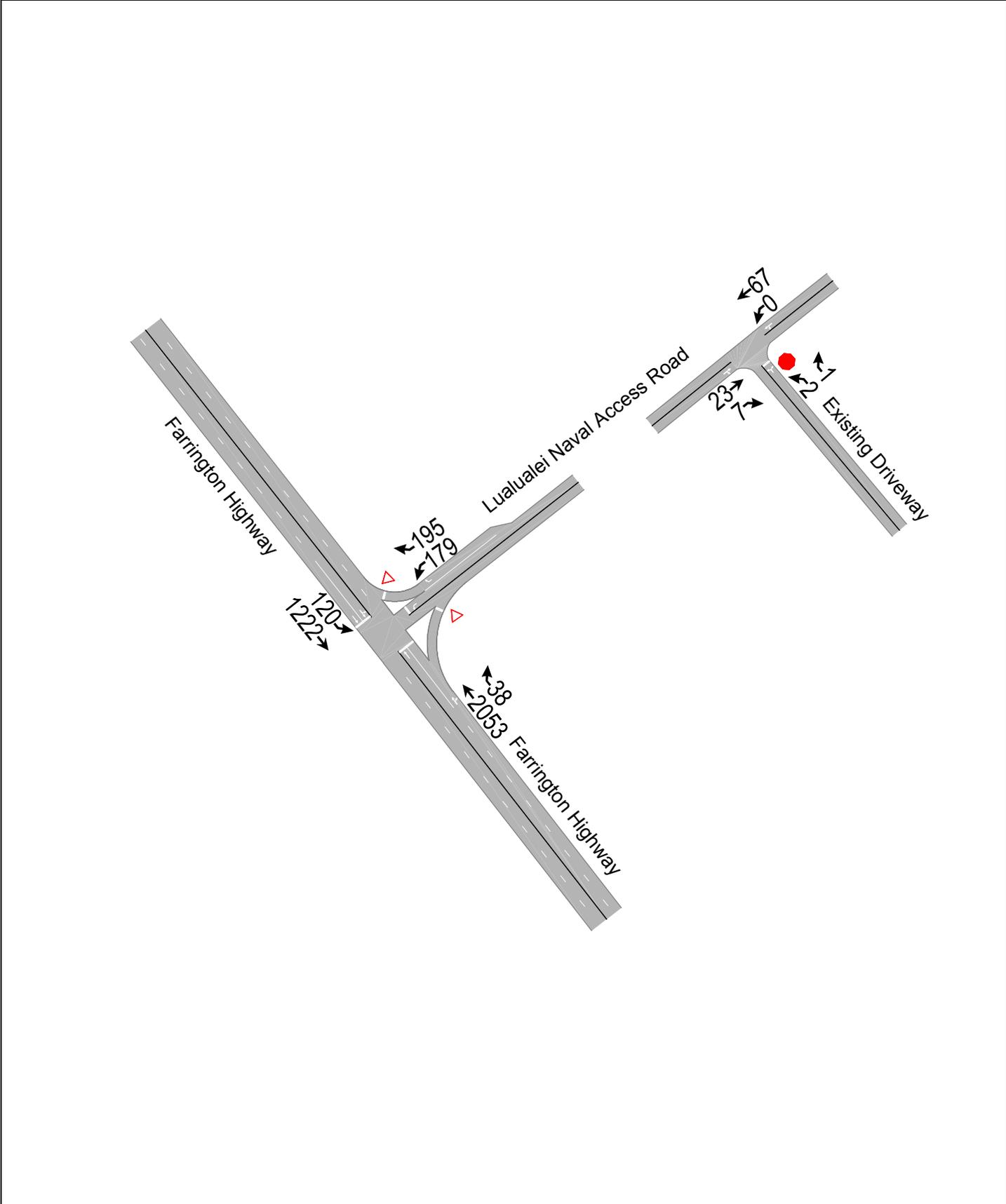


Figure 5. PM Peak Hour Traffic (VPH) Without Project



IV. Traffic Impact Analysis

A. Project Generated Traffic

1. Trip Generation Characteristics

The trip generation for the proposed 75-acre industrial park is based upon the ITE trip rates for an industrial park. During the AM peak hour of traffic, the proposed project is expected to generate a total of 522 vph – 433 vph entering the site and 98 vph exiting the site. The proposed project is expected to generate a total of 518 vph – 109 vph entering the site and 409 vph exiting the site, during the PM peak hour of traffic. Table 2 summarizes the trip generation characteristics.

Land Use (ITE Code)	Peak Hour	Direction	Vehicle Trips/Hour
Industrial Park (130)	AM	Enter	433
		Exit	89
		Total	522
	PM	Enter	109
		Exit	409
		Total	518

2. Trip Distribution

The trip distribution is based upon the projected growth in the Ewa and Waianae regions. By the Year 2020, the population of the Ewa region is expected to exceed the Waianae region by a ratio of 3 to 1. Similarly, the employment in the Ewa region is expected to be 6.7 times that of the Waianae coast. Table 3 summarizes the traffic assignment splits during the peak hours of traffic.

Peak Hour	Direction	Northbound	Southbound
AM	Enter	75%	25%
	Exit	15%	85%
PM	Enter	85%	15%
	Exit	25%	75%

Figures 6 and 7 depict the AM and PM peak hour project-generated traffic assignments for the proposed project, respectively.

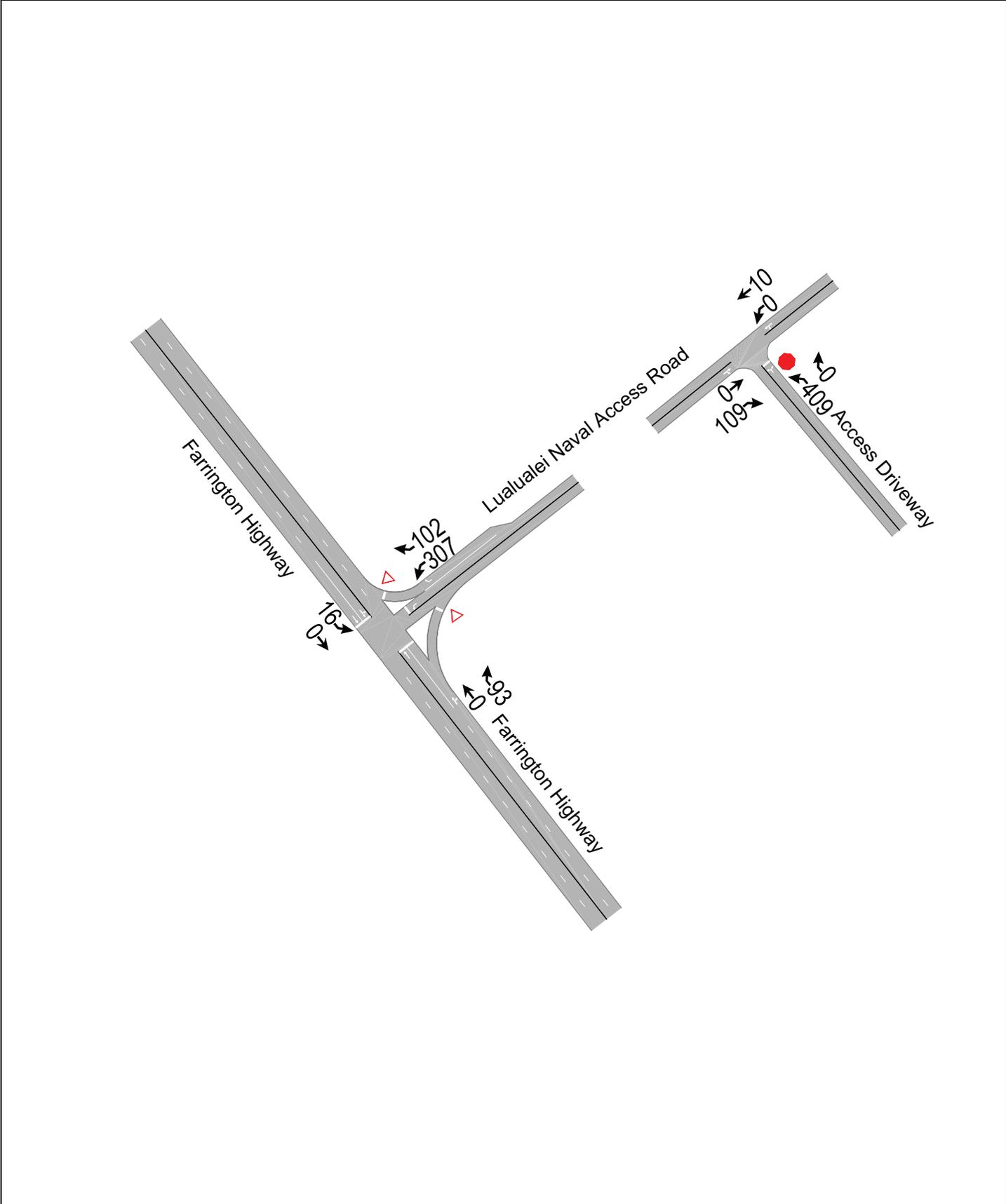


Figure 6. AM Peak Hour Traffic (VPH) Assignment

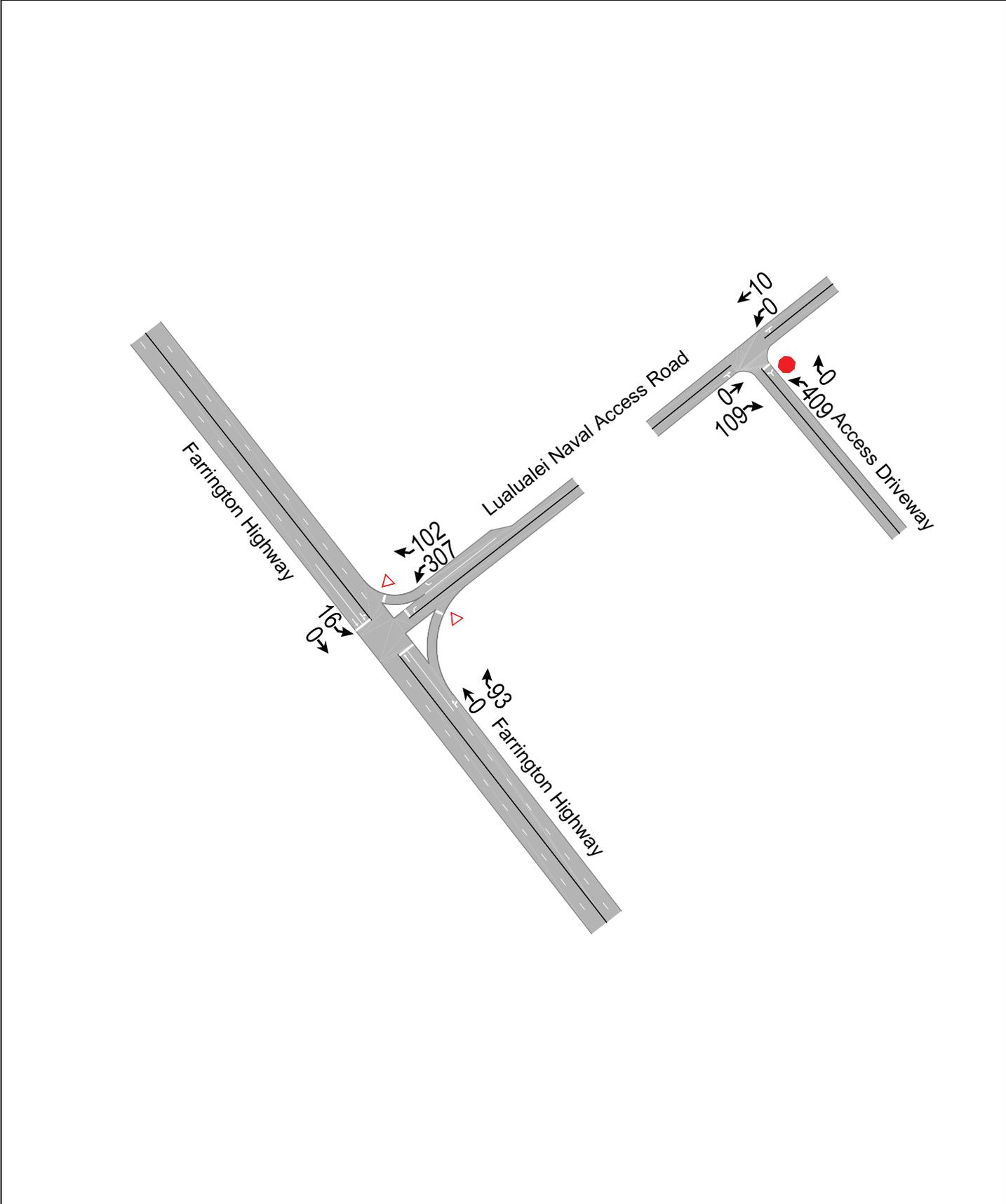


Figure 7. PM Peak Hour Traffic (VPH) Assignment



B. AM Peak Hour Traffic Impact Analysis With Project

Farrington Highway and Lualualei Naval Access Road is expected to operate at an overall LOS "F" and a v/c ratio of 1.86, during the AM peak hour of traffic with the proposed project. Southbound Farrington Highway and Lualualei Naval Access Road approaches are expected to operate at LOS "F". The Project Access Driveway is expected to operate at LOS "C" at Lualualei Naval Access Road. Figure 8 depicts the AM peak hour traffic with the proposed project.

C. PM Peak Hour Traffic Impact Analysis With Project

During the PM peak hour of traffic with the proposed project, the intersection of Farrington Highway and Lualualei Naval Access Road is expected to operate at LOS "F" with a v/c ratio of 1.39. Both Farrington Highway approaches and Lualualei Naval Access Road are expected to operate at LOS "F". The Project Access Driveway is expected to operate at LOS "B" at Lualualei Naval Access Road. The PM peak hour traffic with the proposed project is depicted on Figure 9.

V. Recommendations and Conclusions

A. Recommendations

The following traffic improvements, depicted on Figure 10, are recommended to mitigate the traffic impacts resulting from the proposed project:

1. Widen southbound Farrington Highway at Lualualei Naval Access Road to provide an exclusive left-turn lane (350 feet in length).
2. Widen Lualualei Naval Access Road at Farrington Highway to provide double left-turn lanes (350 feet in length) and an exclusive right-turn lane.

The proposed traffic mitigation would improve peak hour traffic operations at the intersection of Farrington Highway and Lualualei Naval Access Road from LOS "F" to LOS "C" and LOS "D", during the AM and PM peak hours of traffic, respectively.

B. Conclusions

The existing traffic congestion at the intersection of Farrington Highway and Lualualei Naval Access Road is a result of the traffic turning left from the shared through/left-turn lane on southbound Farrington Highway into Lualualei Naval Access Road. The left-turn movement reduces the through capacity of southbound Farrington Highway. During the existing PM peak hour of traffic, the shared left-turn/through lane on southbound Farrington Highway operated as a "default" exclusive left-turn lane, leaving only one through lane in the southbound direction. The traffic improvements, recommended herein, are expected to mitigate the traffic impacts resulting from the development of the proposed Nanakuli Industrial Park. Table 4 summarizes the traffic impact analysis of the project.

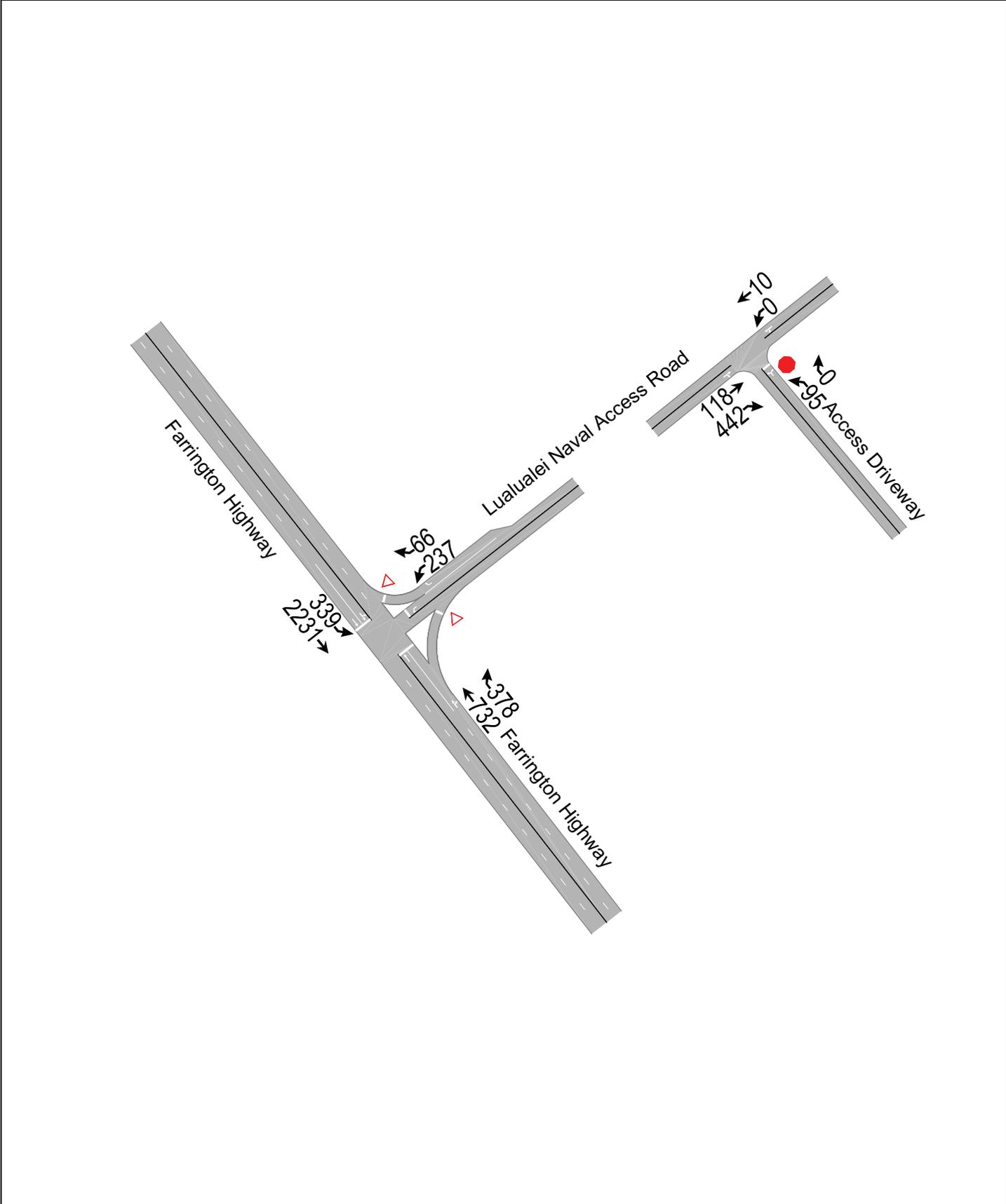


Figure 8. AM Peak Hour Traffic (VPH) With Project

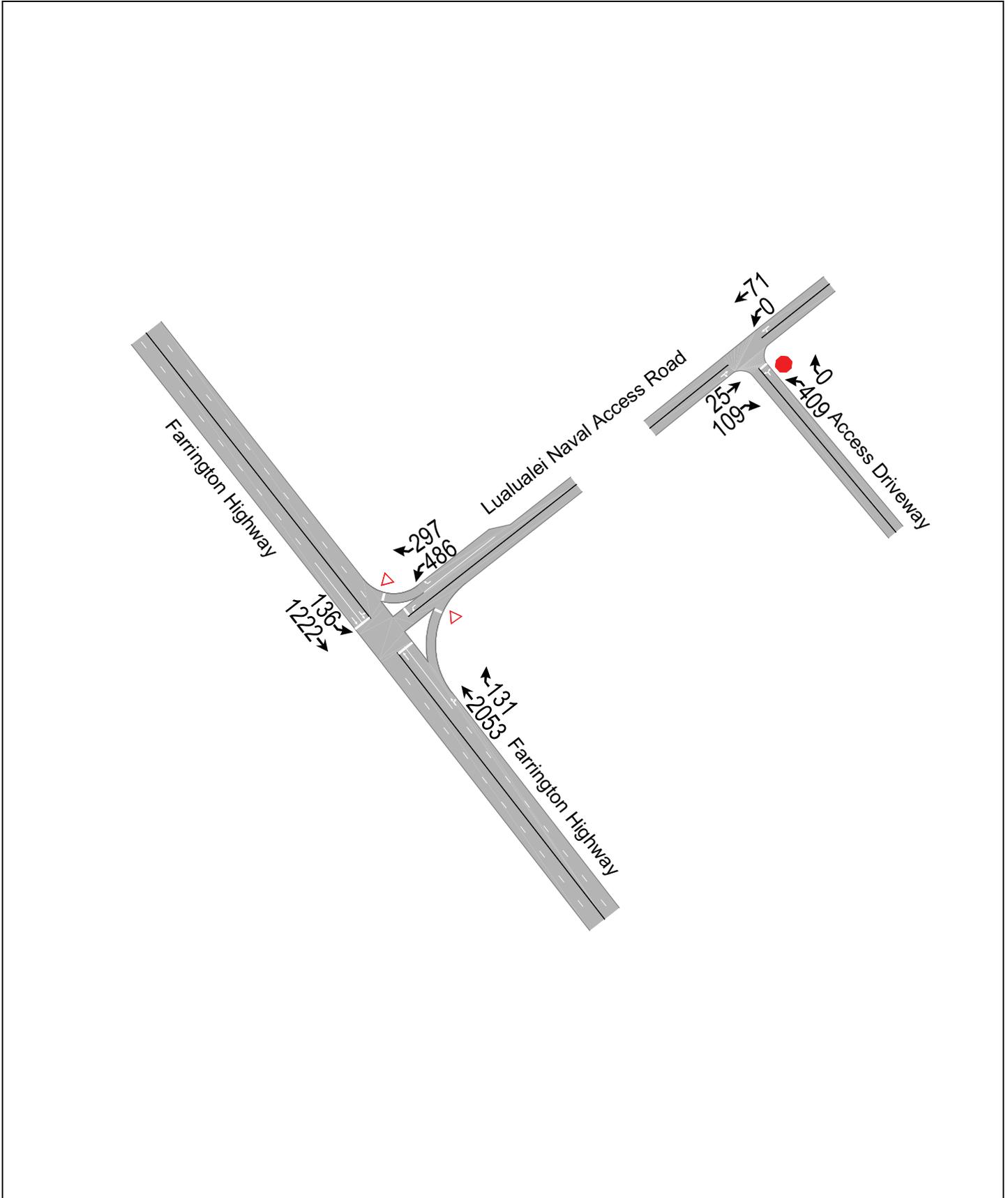


Figure 9. PM Peak Hour Traffic (VPH) With Project

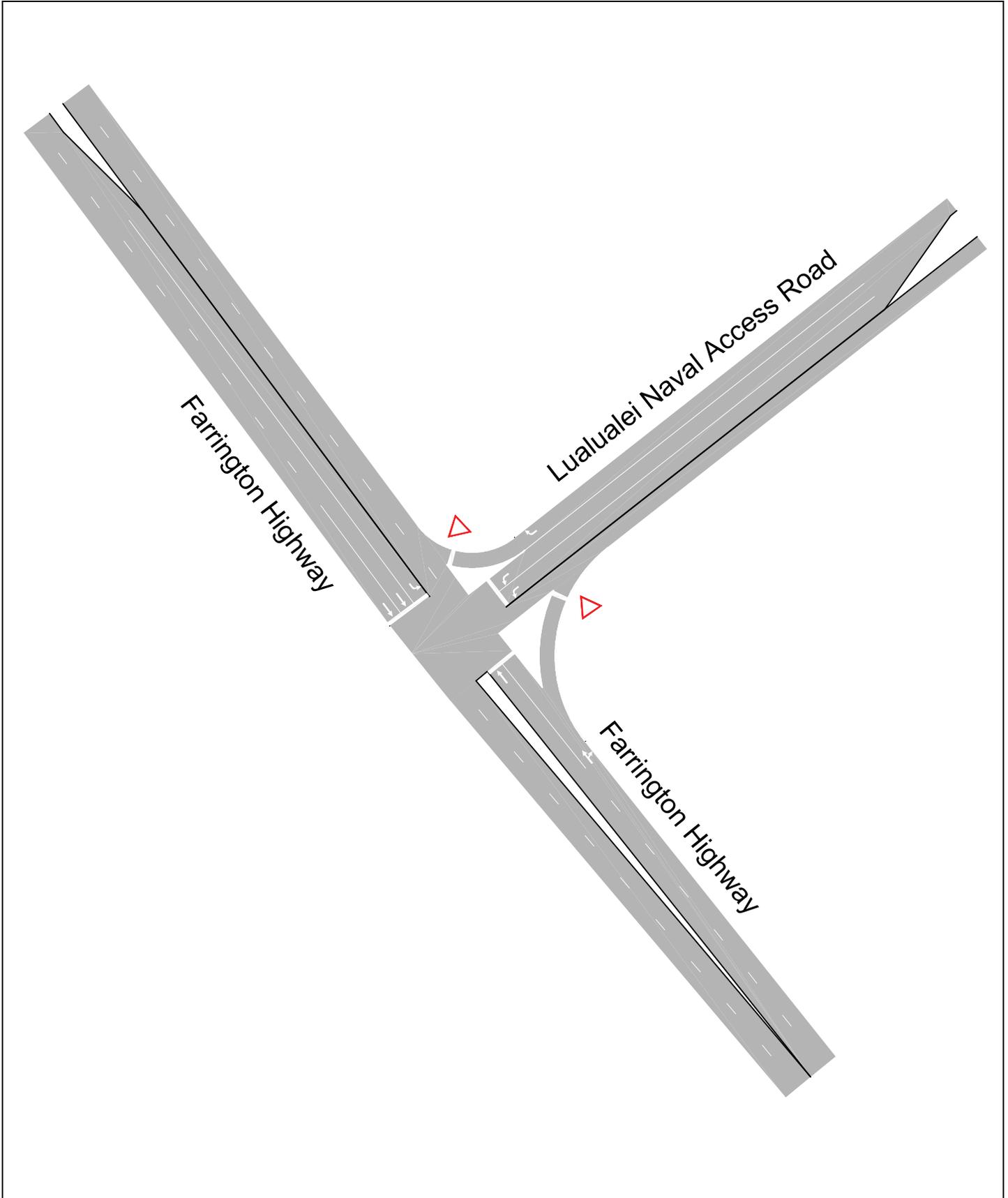


Figure 10. Intersection Improvements



Table 4. Capacity Analysis - Farrington Highway and Lualualei Naval Access Road									
Scenario		MOE	SBT	SBL	NBT	NBR	WBL	WBR	Int.
Existing AM Peak Hour Traffic	LOS	E		A		F	B	D	
	v/c	1.12		0.37		0.79	0.23	1.12	
	Delay	76.0		3.4		94.6	18.7	52.8	
Existing PM Peak Hour Traffic	LOS	C	C	C		D	C	C	
	v/c	0.67	0.95	0.92		0.73	0.59	0.95	
	Delay	29.7	27.3	23.9		50.4	24.5	26.7	
AM Peak Hour Traffic Without Project	LOS	F		A		F	B	F	
	v/c	1.23		0.40		0.82	0.24	1.23	
	Delay	125.6		3.6		98.3	18.3	84.0	
PM Peak Hour Traffic Without Project	LOS	D	D	C		D	C	C	
	v/c	0.81	1.01	0.95		0.76	0.66	1.01	
	Delay	48.2	41.1	28.1		53.5	31.3	34.7	
AM Peak Hour Traffic With Project	Without Improvements	LOS	F		A		F	C	F
		v/c	1.86		0.63		1.06	0.27	1.86
		Delay	408.1		6.3		136.8	21.9	237.3
	With Improvements	LOS	E	A	C		E	A	C
		v/c	0.88	0.71	0.84		0.61	0.10	0.88
		Delay	73.0	7.2	26.1		59.6	6.4	22.0
PM Peak Hour Traffic With Project	Without Improvements	LOS	F	F	F		F	D	F
		v/c	1.39	1.14	1.09		1.16	0.64	1.39
		Delay	245.7	100.4	82.4		136.6	43.1	97.2
	With Improvements	LOS	E	A	D		E	D	D
		v/c	0.82	0.52	1.00		0.95	0.70	1.00
		Delay	60.4	7.9	43.4		75.9	46.6	38.0

**TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
NANAKULI INDUSTRIAL PARK
NANAKULI, HAWAII**

**APPENDIX A
TRAFFIC COUNT DATA**

TRAFFIC COUNT DATA

FILE NAME: Farrington Lualualei

Sec 3

PROJECT: Nanakilu Industrial Subdivision
 LOCATION: Nanakuli, Hawaii
 E-W STREET Lualualei Naval Access Rd
 N-S STREET: Kamehameha Highway

PERIOD: AM Peak
 NORTH:
 TECHNICIAN: RSO
 DATE: 5/2/08

TIME	Lualualei Naval Access Rd						Kamehameha Highway						TOTAL	HRLY
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
5:30	5:45	0	0	0	17	0	6	0	53	7	47	514	0	644
5:45	6:00	0	0	0	27	0	9	0	88	12	51	516	0	703
6:00	6:15	0	0	0	49	0	17	0	144	11	62	465	0	748
6:15	6:30	0	0	0	32	0	11	0	146	6	38	486	0	719 2814
6:30	6:45	0	0	0	31	0	9	0	253	17	48	455	0	813 2983
6:45	7:00	0	0	0	25	0	14	0	218	27	26	477	0	787 3067
7:00	7:15	0	0	0	31	0	16	0	269	21	20	467	0	824 3143
7:15	7:30	0	0	0	44	0	17	0	264	3	25	400	0	753 3177
7:30	7:45	0	0	0	36	0	14	0	264	18	17	430	0	779 3143
7:45	8:00	0	0	0	42	0	18	0	229	24	28	454	0	795 3151

AM PEAK HOUR

5:45	6:45	0	0	0	139	0	46	0	631	46	199	1922	0	2983	2983
PHF					1.12		1.28		0.62	0.68	1.04	1.06		0.92	PHF

TRAFFIC COUNT DATA

FILE NAME: Farrington Lualualei

Sec 3

PROJECT: Nanakilu Industrial Subdivision
 LOCATION: Nanakuli, Hawaii
 E-W STREET Lualualei Naval Access Rd
 N-S STREET Kamehameha Highway

PERIOD: PM Peak
 NORTH:
 TECHNICIAN: RSO
 DATE: 5/1/08

TIME	Lualualei Naval Access Rd						Kamehameha Highway						TOTAL	
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
14:30	14:45	0	0	0	48	0	44	0	312	18	26	338	0	786
14:45	15:00	0	0	0	39	0	38	0	356	15	20	286	0	754
15:00	15:15	0	0	0	38	0	31	0	438	13	31	303	0	854
15:15	15:30	0	0	0	49	0	35	0	474	14	23	275	0	870 3264
15:30	15:45	0	0	0	51	0	55	0	455	8	33	310	0	912 3390
15:45	16:00	0	0	0	40	0	33	0	514	3	30	289	0	909 3545
16:00	16:15	0	0	0	28	0	60	0	483	11	27	272	0	881 3572
16:15	16:30	0	0	0	47	0	50	0	452	6	29	250	0	834 3536
16:30	16:45	0	0	0	31	0	59	0	430	5	28	256	0	809 3433
16:45	17:00	0	0	0	47	0	41	0	421	5	32	249	0	795 3319

PM PEAK HOUR

15:15	16:15	0	0	0	168	0	183	0	1926	36	113	1146	0	3572	3572
PHF					0.82		0.83		1.06	1.13	0.86	0.92		0.98	PHF

TRAFFIC COUNT DATA

FILE NAME: Farrington Lualualei

Sec 3

PROJECT: Nanakilu Industrial Subdivision
 LOCATION: Nanakuli, Hawaii
 E-W STREET Lualualei Naval Access Rd
 N-S STREET: Site Access

PERIOD: AM Peak
 NORTH:
 TECHNICIAN: RSO
 DATE: 7/22/08

TIME	Lualualei Naval Access Rd						Site Access						TOTAL	HRLY	
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
6:00 6:15	0	22	4	0	5	0	0	0	0	0	0	0	0	31	
6:15 6:30	0	21	2	0	1	0	3	0	0	0	0	0	0	27	
6:30 6:45	0	25	1	0	0	0	1	0	0	0	0	0	0	27	
6:45 7:00	0	34	1	0	3	0	1	0	0	0	0	0	0	39	124
7:00 7:15	0	9	1	0	3	0	2	0	0	0	0	0	0	15	108
7:15 7:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11	92
6:00 7:00	0	102	8	0	9	0	5	0	0	0	0	0	0	124	124
PHF		0.75	2.00		0.75		1.25							0.79	PHF

TRAFFIC COUNT DATA

FILE NAME: Farrington Lualualei

Sec 3

PROJECT: Nanakilu Industrial Subdivision
 LOCATION: Nanakuli, Hawaii
 E-W STREET Lualualei Naval Access Rd
 N-S STREET Site Access

PERIOD: PM Peak
 NORTH:
 TECHNICIAN: RSO
 DATE: 7/21/08

TIME	Lualualei Naval Access Rd						Site Access						TOTAL		
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
15:00 15:15	0	5	1	0	5	0	1	0	0	0	0	0	0	12	
15:15 15:30	0	8	2	0	7	0	0	0	1	0	0	0	0	18	
15:30 15:45	0	5	2	0	31	0	2	0	0	0	0	0	0	40	
15:45 16:00	0	7	3	0	14	0	0	0	0	0	0	0	0	24	94
16:00 16:15	0	3	0	0	15	0	0	0	0	0	0	0	0	18	100
16:15 16:30	0	3	1	0	10	0	0	0	0	0	0	0	0	14	96
PM PEAK HOUR															
15:15 16:15	0	23	7	0	67	0	2	0	1	0	0	0	0	100	100
PHF		1.15	0.88		0.54		0.25							0.63	PHF

**TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
NANAKULI INDUSTRIAL PARK
NANAKULI, HAWAII**

**APPENDIX B
CAPACITY ANALYSIS WORKSHEETS**



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑↑	↑↑		↑	↑
Volume (vph)	199	1922	631	46	139	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	150
Storage Lanes	0			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	0	3522	3507	0	1770	1583
Flt Permitted		0.644			0.950	
Satd. Flow (perm)	0	2279	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14			46
Link Speed (mph)		35	35		25	
Link Distance (ft)		592	801		431	
Travel Time (s)		11.5	15.6		11.8	
Peak Hour Factor	1.00	1.00	0.62	0.68	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2121	1086	0	139	46
Turn Type	pm+pt					Perm
Protected Phases	1	6	2		8	
Permitted Phases	6					8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	21.0
Total Split (s)	9.0	129.0	120.0	0.0	21.0	21.0
Total Split (%)	6.0%	86.0%	80.0%	0.0%	14.0%	14.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)		124.0	124.0		14.8	14.8
Actuated g/C Ratio		0.83	0.83		0.10	0.10
v/c Ratio		1.12	0.37		0.79	0.23
Control Delay		76.0	3.4		94.6	18.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		76.0	3.4		94.6	18.7
LOS		E	A		F	B
Approach Delay		76.0	3.4		75.8	
Approach LOS		E	A		E	
Queue Length 50th (ft)		~1258	113		134	0
Queue Length 95th (ft)		#1388	78		#237	41



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		512	721		351	
Turn Bay Length (ft)						150
Base Capacity (vph)		1899	2925		190	211
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.12	0.37		0.73	0.22

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 148.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 52.8 Intersection LOS: D
 Intersection Capacity Utilization 98.0% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Road





Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	5	0	102	8	0	9
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	1.00	0.88	0.92	0.54
Hourly flow rate (vph)	20	0	102	9	0	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	123	107			111	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123	107			111	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	872	948			1479	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	20	111	17
Volume Left	20	0	0
Volume Right	0	9	0
cSH	872	1700	1479
Volume to Capacity	0.02	0.07	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)		15	



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	113	1146	1926	36	168	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	150
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	1770	1863	3529	0	1770	1583
Flt Permitted	0.069				0.950	
Satd. Flow (perm)	129	1863	3529	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			105
Link Speed (mph)		35	35		25	
Link Distance (ft)		592	801		431	
Travel Time (s)		11.5	15.6		11.8	
Peak Hour Factor	0.90	0.90	1.00	0.88	0.81	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	1273	1967	0	207	203
Turn Type	pm+pt					Perm
Protected Phases	1	6	2		8	
Permitted Phases	6					8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	21.0	21.0		21.0	21.0
Total Split (s)	10.0	69.0	59.0	0.0	21.0	21.0
Total Split (%)	11.1%	76.7%	65.6%	0.0%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Min	Min		None	None
Act Effct Green (s)	62.8	62.8	52.7		14.0	14.0
Actuated g/C Ratio	0.72	0.72	0.61		0.16	0.16
v/c Ratio	0.67	0.95	0.92		0.73	0.59
Control Delay	29.7	27.3	23.9		50.4	24.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	29.7	27.3	23.9		50.4	24.5
LOS	C	C	C		D	C
Approach Delay		27.5	23.9		37.6	
Approach LOS		C	C		D	
Queue Length 50th (ft)	19	551	481		111	49
Queue Length 95th (ft)	#101	#977	#708		163	119



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations	W		T			T
Volume (veh/h)	2	1	23	7	0	67
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	1.00	0.88	0.92	0.54
Hourly flow rate (vph)	8	4	23	8	0	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	151	27			31	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151	27			31	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	841	1049			1582	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	12	31	124
Volume Left	8	0	0
Volume Right	4	8	0
cSH	900	1700	1582
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕↕	↕↔		↔↕	↔↕
Volume (vph)	212	2049	673	49	148	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	150
Storage Lanes	0			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	0	3522	3507	0	1770	1583
Flt Permitted		0.625			0.950	
Satd. Flow (perm)	0	2212	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14			49
Link Speed (mph)		35	35		25	
Link Distance (ft)		592	801		431	
Travel Time (s)		11.5	15.6		11.8	
Peak Hour Factor	1.00	1.00	0.62	0.68	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2261	1157	0	148	49
Turn Type	pm+pt					Perm
Protected Phases	1	6	2		8	
Permitted Phases	6					8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	21.0
Total Split (s)	9.0	129.0	120.0	0.0	21.0	21.0
Total Split (%)	6.0%	86.0%	80.0%	0.0%	14.0%	14.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)		124.0	124.0		15.2	15.2
Actuated g/C Ratio		0.83	0.83		0.10	0.10
v/c Ratio		1.23	0.40		0.82	0.24
Control Delay		125.6	3.6		98.3	18.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		125.6	3.6		98.3	18.3
LOS		F	A		F	B
Approach Delay		125.6	3.6		78.4	
Approach LOS		F	A		E	
Queue Length 50th (ft)		~1437	124		144	0
Queue Length 95th (ft)		#1564	85		#257	42

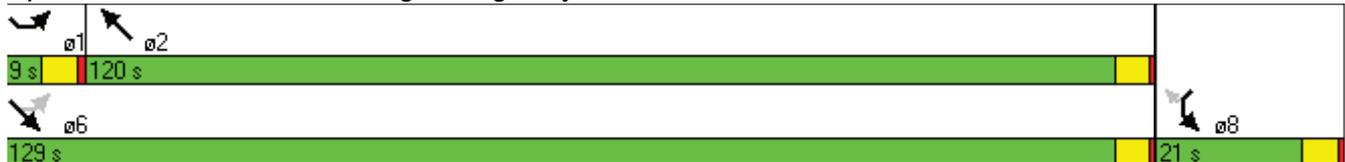


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		512	721		351	
Turn Bay Length (ft)						150
Base Capacity (vph)		1839	2918		190	214
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.23	0.40		0.78	0.23

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 149.2
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 84.0 Intersection LOS: F
 Intersection Capacity Utilization 103.7% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Road





Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	5	0	109	9	0	10
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	1.00	0.88	0.92	0.54
Hourly flow rate (vph)	20	0	109	10	0	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	133	114			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133	114			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	861	939			1469	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	20	119	19
Volume Left	20	0	0
Volume Right	0	10	0
cSH	861	1700	1469
Volume to Capacity	0.02	0.07	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)		15	



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	120	1222	2053	38	179	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	0	150
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	1770	1863	3529	0	1770	1583
Flt Permitted	0.067				0.950	
Satd. Flow (perm)	125	1863	3529	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			84
Link Speed (mph)		35	35		25	
Link Distance (ft)		594	801		431	
Travel Time (s)		11.6	15.6		11.8	
Peak Hour Factor	0.90	0.90	1.00	0.88	0.81	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	1358	2096	0	221	217
Turn Type	pm+pt					Perm
Protected Phases	1	6	2		8	
Permitted Phases	6					8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	21.0
Total Split (s)	9.0	69.0	60.0	0.0	21.0	21.0
Total Split (%)	10.0%	76.7%	66.7%	0.0%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)	64.0	64.0	55.0		14.5	14.5
Actuated g/C Ratio	0.72	0.72	0.62		0.16	0.16
v/c Ratio	0.81	1.01	0.95		0.76	0.66
Control Delay	48.2	41.1	28.1		53.5	31.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.2	41.1	28.1		53.5	31.3
LOS	D	D	C		D	C
Approach Delay		41.7	28.1		42.5	
Approach LOS		D	C		D	
Queue Length 50th (ft)	24	~831	546		119	69
Queue Length 95th (ft)	#77	#1081	#778		174	145



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations	W		T			L
Volume (veh/h)	2	1	23	7	0	67
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	1.00	0.88	0.92	0.54
Hourly flow rate (vph)	8	4	23	8	0	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	151	27			31	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151	27			31	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	841	1049			1582	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	12	31	124
Volume Left	8	0	0
Volume Right	4	8	0
cSH	900	1700	1582
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕↕	↕↔		↔↕	↔↕
Volume (vph)	339	2231	732	378	237	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600			0	0	150
Storage Lanes	0			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	0	3514	3369	0	1770	1583
Flt Permitted		0.499			0.950	
Satd. Flow (perm)	0	1766	3369	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			143			54
Link Speed (mph)		35	35		25	
Link Distance (ft)		587	801		420	
Travel Time (s)		11.4	15.6		11.5	
Peak Hour Factor	1.00	1.00	0.62	0.68	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2570	1737	0	237	66
Turn Type	Prot					Perm
Protected Phases	1	6	2		8	
Permitted Phases						8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	21.0
Total Split (s)	10.0	126.0	116.0	0.0	24.0	24.0
Total Split (%)	6.7%	84.0%	77.3%	0.0%	16.0%	16.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)		121.0	121.0		19.0	19.0
Actuated g/C Ratio		0.81	0.81		0.13	0.13
v/c Ratio		1.86	0.63		1.06	0.27
Control Delay		408.1	6.3		136.8	21.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		408.1	6.3		136.8	21.9
LOS		F	A		F	C
Approach Delay		408.1	6.3		111.8	
Approach LOS		F	A		F	
Queue Length 50th (ft)		~2005	271		~253	11
Queue Length 95th (ft)		#2124	150		#432	58



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		507	721		340	
Turn Bay Length (ft)						150
Base Capacity (vph)		1383	2745		224	248
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.86	0.63		1.06	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.86
 Intersection Signal Delay: 237.3 Intersection LOS: F
 Intersection Capacity Utilization 129.5% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Road





Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	95	0	118	442	0	10
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	1.00	0.88	0.92	0.54
Hourly flow rate (vph)	103	0	118	502	0	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	388	369			620	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	369			620	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	100			100	
cM capacity (veh/h)	616	676			960	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	103	620	19
Volume Left	103	0	0
Volume Right	0	502	0
cSH	616	1700	960
Volume to Capacity	0.17	0.36	0.00
Queue Length 95th (ft)	15	0	0
Control Delay (s)	12.0	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.0	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)		15	



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations	↖	↗	↕		↖	↗
Volume (vph)	136	1222	2053	131	486	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300			0	0	150
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	1770	1863	3504	0	1770	1583
Flt Permitted	0.044				0.950	
Satd. Flow (perm)	82	1863	3504	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			8			67
Link Speed (mph)		35	35		25	
Link Distance (ft)		594	801		431	
Travel Time (s)		11.6	15.6		11.8	
Peak Hour Factor	0.90	0.90	1.00	0.88	0.81	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	1358	2202	0	600	330
Turn Type	pm+pt					Perm
Protected Phases	1	6	2		8	
Permitted Phases	6					8
Detector Phase	1	6	2		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	21.0
Total Split (s)	10.0	101.0	91.0	0.0	49.0	49.0
Total Split (%)	6.7%	67.3%	60.7%	0.0%	32.7%	32.7%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)	96.0	96.0	86.0		44.0	44.0
Actuated g/C Ratio	0.64	0.64	0.57		0.29	0.29
v/c Ratio	1.39	1.14	1.09		1.16	0.64
Control Delay	245.7	100.4	82.4		136.6	43.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	245.7	100.4	82.4		136.6	43.1
LOS	F	F	F		F	D
Approach Delay		114.9	82.4		103.4	
Approach LOS		F	F		F	
Queue Length 50th (ft)	~145	~1545	~1277		~691	227
Queue Length 95th (ft)	#298	#1813	#1407		#784	340



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		514	721		351	
Turn Bay Length (ft)	300					150
Base Capacity (vph)	109	1192	2012		519	512
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	1.39	1.14	1.09		1.16	0.64

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.39
 Intersection Signal Delay: 97.2 Intersection LOS: F
 Intersection Capacity Utilization 107.9% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Road





Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	409	0	25	109	0	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	445	0	27	118	0	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	164	86			146	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164	86			146	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	46	100			100	
cM capacity (veh/h)	827	972			1436	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	445	146	77
Volume Left	445	0	0
Volume Right	0	118	0
cSH	827	1700	1436
Volume to Capacity	0.54	0.09	0.00
Queue Length 95th (ft)	82	0	0
Control Delay (s)	14.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.3	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		9.5	
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

3: Farrington Highway & Lualualei Naval Access Rd AM Peak Hour Traffic W/Project W/Improvements



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	320	2049	673	374	224	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			250	350	0
Storage Lanes	1			0	2	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	1770	3539	3362	0	3433	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3362	0	3433	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			110			62
Link Speed (mph)		35	35		25	
Link Distance (ft)		587	801		431	
Travel Time (s)		11.4	15.6		11.8	
Peak Hour Factor	1.00	1.00	0.62	0.68	1.00	1.00
Shared Lane Traffic (%)						
Lane Group Flow (vph)	320	2049	1635	0	224	62
Turn Type	Prot				pm+ov	
Protected Phases	1	6	2		8	1
Permitted Phases						8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	9.0
Total Split (s)	32.0	104.0	72.0	0.0	21.0	32.0
Total Split (%)	25.6%	83.2%	57.6%	0.0%	16.8%	25.6%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)	25.0	99.0	69.1		13.0	42.9
Actuated g/C Ratio	0.20	0.81	0.57		0.11	0.35
v/c Ratio	0.88	0.71	0.84		0.61	0.10
Control Delay	73.0	7.2	26.1		59.6	6.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	73.0	7.2	26.1		59.6	6.4
LOS	E	A	C		E	A
Approach Delay		16.1	26.1		48.1	
Approach LOS		B	C		D	
Queue Length 50th (ft)	242	307	529		88	0
Queue Length 95th (ft)	402	428	334		130	29

3: Farrington Highway & Lualualei Naval Access Rd AM Peak Hour Traffic W/Project W/Improvements

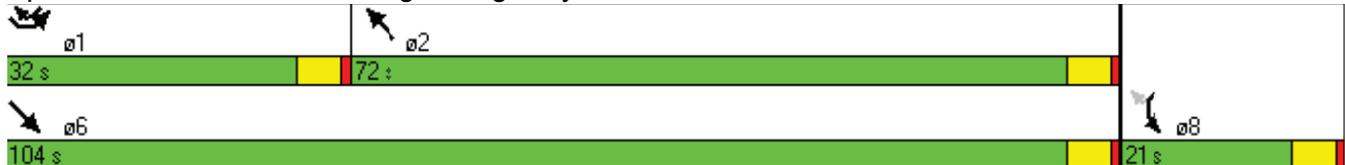


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		507	721		351	
Turn Bay Length (ft)	350				350	
Base Capacity (vph)	392	2872	1951		450	623
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.82	0.71	0.84		0.50	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 122
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 22.0 Intersection LOS: C
 Intersection Capacity Utilization 71.4% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Rd



3: Farrington Highway & Lualualei Naval Access Rd PM Peak Hour Traffic W/Project W/Improvements



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	136	1222	2053	131	486	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			0	350	0
Storage Lanes	1			0	2	1
Taper Length (ft)	25			25	25	25
Satd. Flow (prot)	1770	3539	3504	0	3433	1583
Flt Permitted	0.048				0.950	
Satd. Flow (perm)	89	3539	3504	0	3433	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			12
Link Speed (mph)		35	35		25	
Link Distance (ft)		587	801		431	
Travel Time (s)		11.4	15.6		11.8	
Peak Hour Factor	0.90	0.90	1.00	0.88	0.81	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	1358	2202	0	600	330
Turn Type	pm+pt				pm+ov	
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	9.0	9.0	21.0		21.0	9.0
Total Split (s)	14.0	97.0	83.0	0.0	28.0	14.0
Total Split (%)	11.2%	77.6%	66.4%	0.0%	22.4%	11.2%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Recall Mode	None	Max	Max		None	None
Act Effct Green (s)	92.0	92.0	78.2		23.0	36.8
Actuated g/C Ratio	0.74	0.74	0.63		0.18	0.29
v/c Ratio	0.82	0.52	1.00		0.95	0.70
Control Delay	60.4	7.9	43.4		75.9	46.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	60.4	7.9	43.4		75.9	46.6
LOS	E	A	D		E	D
Approach Delay		13.2	43.4		65.5	
Approach LOS		B	D		E	
Queue Length 50th (ft)	70	217	~897		250	228
Queue Length 95th (ft)	#185	261	#1114		#298	338

3: Farrington Highway & Lualualei Naval Access Rd PM Peak Hour Traffic W/Project W/Improvements

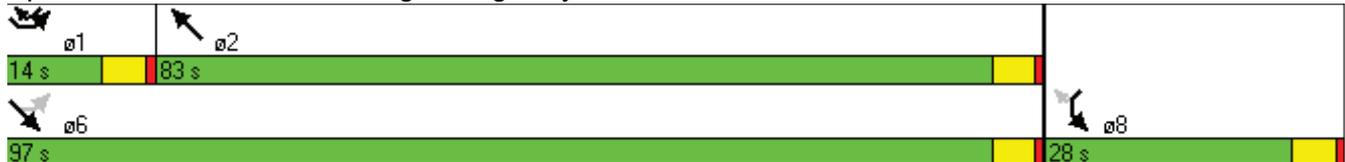


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Internal Link Dist (ft)		507	721		351	
Turn Bay Length (ft)	350				350	
Base Capacity (vph)	187	2605	2197		632	477
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.81	0.52	1.00		0.95	0.69

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 38.0 Intersection LOS: D
 Intersection Capacity Utilization 94.8% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Farrington Highway & Lualualei Naval Access Rd



APPENDIX F

An Archaeological Inventory Survey for the Proposed Lualualei Golf Course, Lualualei, Wai‘anae, O‘ahu. Hallet H. Hammatt, Ph.D., Jennifer J. Robins, and Mark Stride, January 1991

**An Archaeological Inventory Survey
for the Proposed Lualualei Golf Course
Lualualei, Wai'anae, O'ahu**

DRAFT

By

Hallett H. Hammatt, Ph.D.

Jennifer J. Robins, B.A.

Mark Stride

**Prepared for
Hida, Okamoto and Associates**

by

Cultural Surveys Hawaii

January 1991

Abstract

Cultural Surveys Hawaii was requested by Hida, Okamoto and Associates to undertake an archaeological inventory survey for the approximately 170-acre proposed Lualualei Golf Course Development Project (TMK 8-7-9:portion 2; 8-7-10 parcels 6 and 10; and 8-7-19, portion 1) located in the ahupua'a of Lualualei, Island of O'ahu.

The survey and limited testing were conducted during four field days in the month of November 1990. As a result of the fieldwork eight sites were located within the project area including two traditional Hawaiian sites and six historic sites related to ranching and military activities. The historic sites include a cattle wall, a furnace, wells, a house lot, and cement foundation structure. The two traditional Hawaiian sites include one habitation complex and one wall remnant.

Limited subsurface testing for cultural deposits was conducted at the habitation complex - site 50-80-08-4366 - within a suspected hearth feature; no midden or artifacts were recovered. According to the Lualualei Golf Course development plan, site 50-80-08-4366 lies outside of the impact area and thus should be spared any disturbance. However, in the event that the impact zone is extended into the site area, we would recommend that it be preserved since it represents the only unequivocal, traditional Hawaiian habitation site in the project area.

Of the remaining seven sites identified within the project area, none are considered significant for future research.

Acknowledgments

We wish to thank Mr. Harvey Hida of Hida, Okamoto and Associates for supplying the general information and maps for this project. Recognition and thanks is given to Messrs. Chris Bailey, Don Hugo, and Aron Suzuki who, along with the authors comprised the field crew. We would also like to thank Ms. Carol Kawachi of the State Historic Preservation Office for supplying information necessary for this report, Dr. Vicki Creed of Windword Processing for typing this report, and Mr. Dennis Tom for drafting the site maps. We especially thank Mr. Rodney Chiogioji and Mr. David Shideler for editing this report.

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I. Introduction

At the request of Hida, Okamoto and Associates, Cultural Surveys Hawaii conducted an archaeological inventory survey of the proposed Lualualei Golf Course (170 acres) in the ahupua'a of Lualualei, Island of O'ahu (TMK 8-7-9:portion 2; 8-7-10 parcels 6 and 10; and 8-7-19: portion 1)(Figures 1-5).

The objective of this survey was to locate, inventory and evaluate the significance of the cultural resources in the project area and provide recommendations for treatment of these resources.

Fieldwork was conducted over a period of four days during the month of November 1990, by a crew of four persons. Limited subsurface testing was conducted at site 50-80-08-4366 to determine if cultural deposits are present.

The project area is located along the northeastern perimeter of Lualualei Valley and along the base of Pu'u Heleakala Ridge which partially separates Lualualei Valley from Nanakuli Valley.

As a result of the survey, eight sites were identified within the project area (Figure 6). Two of these sites (50-80-08-4366 and -4367) are interpreted as traditional Hawaiian sites, while the remaining six are clearly attributable to historic activities related to ranching and military presence.

A. Scope and Methods

This project consisted of reconnaissance, description and mapping of archaeological sites within the project area.

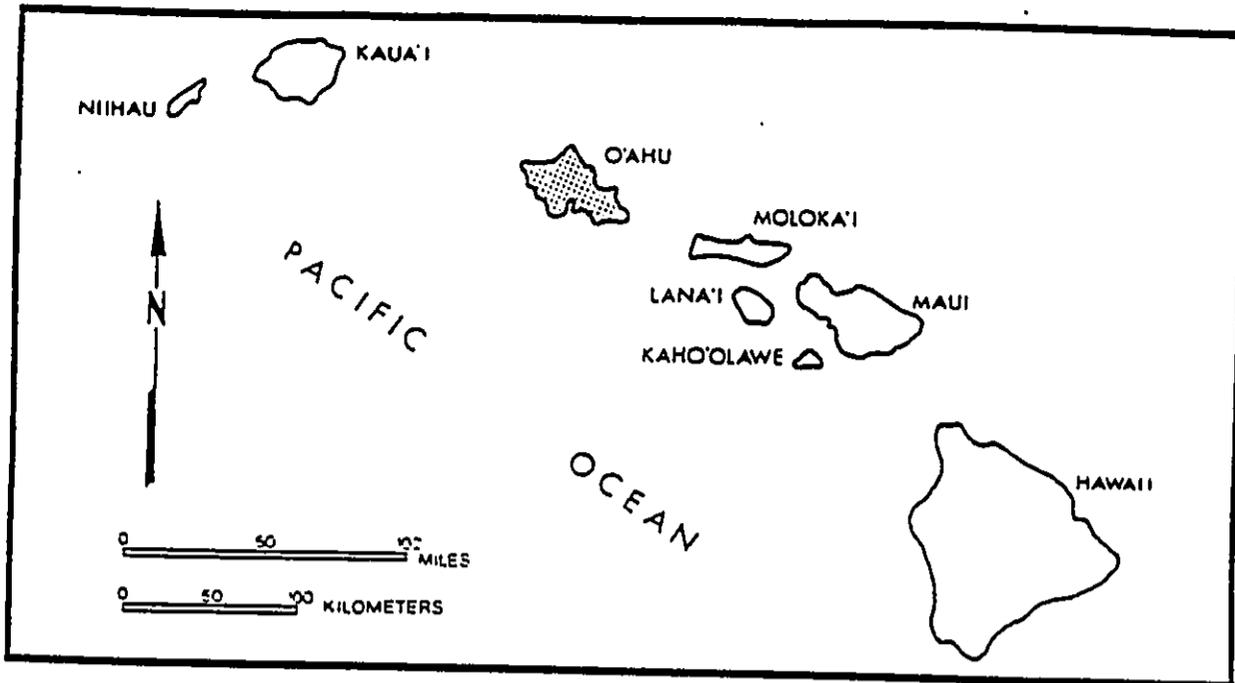


Fig.1. State of Hawaii

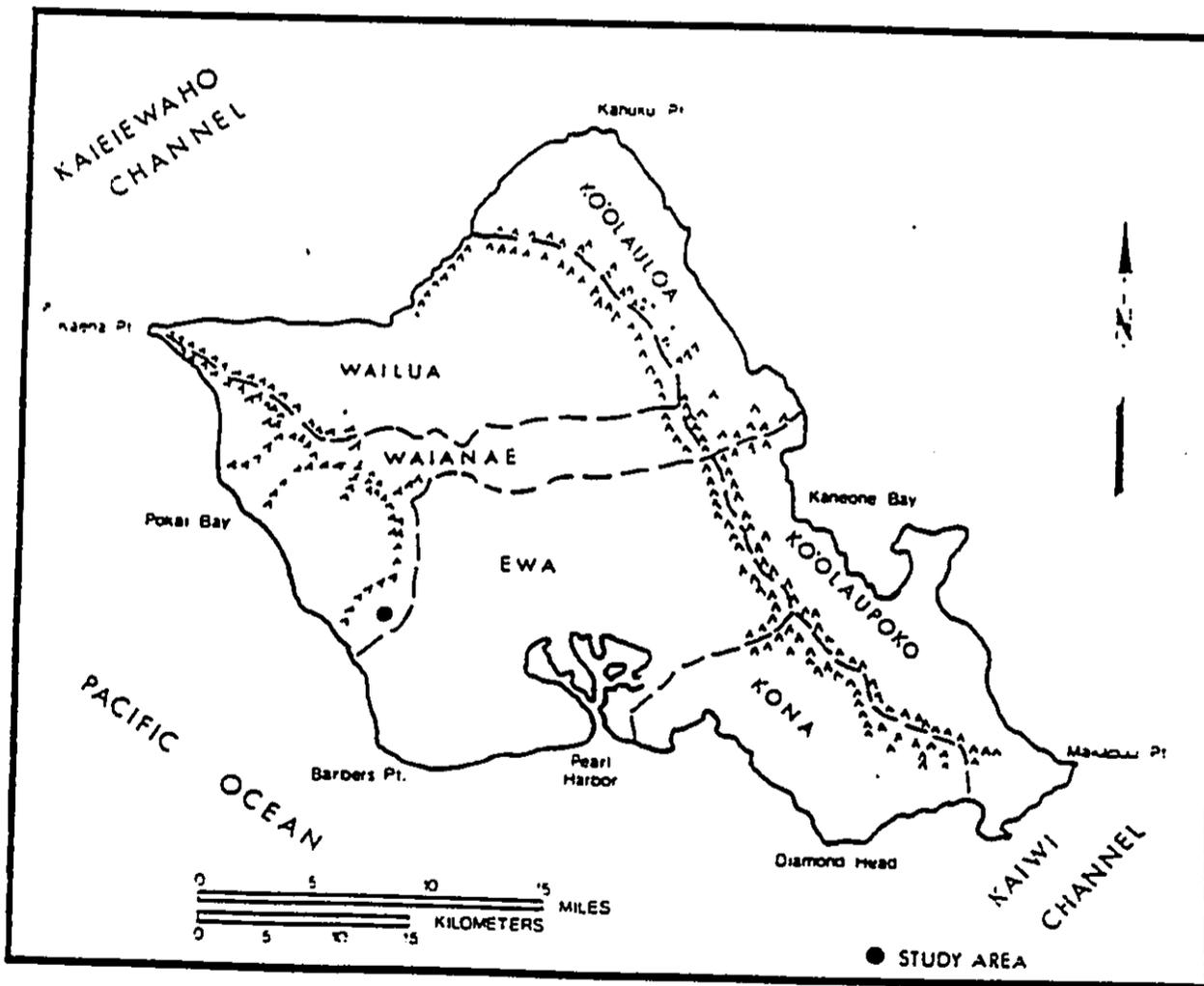


Fig.2. General Location Map, Oahu Island.

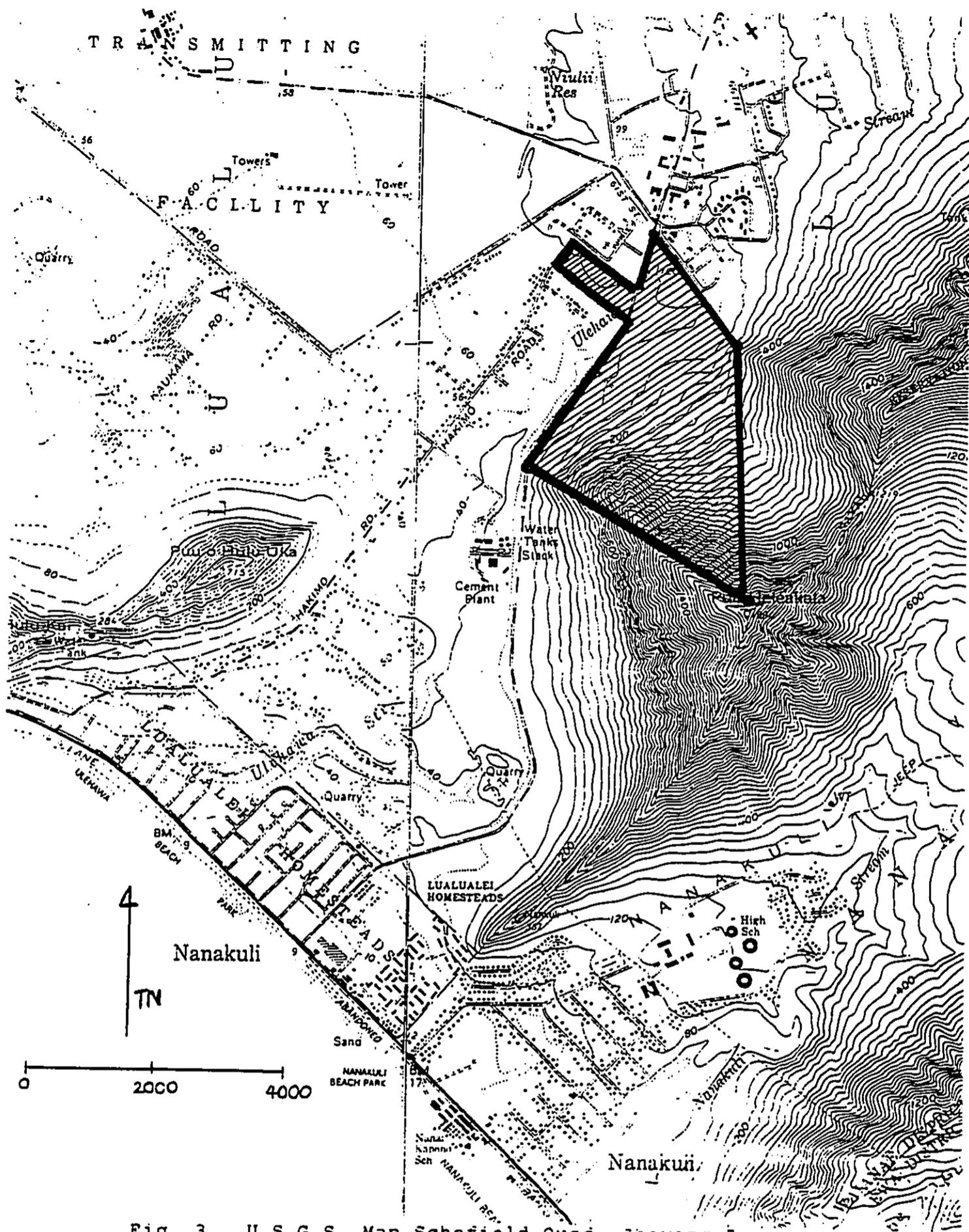


Fig. 3 U.S.G.S. Map Schofield Quad, Showing Project Area (Shaded)

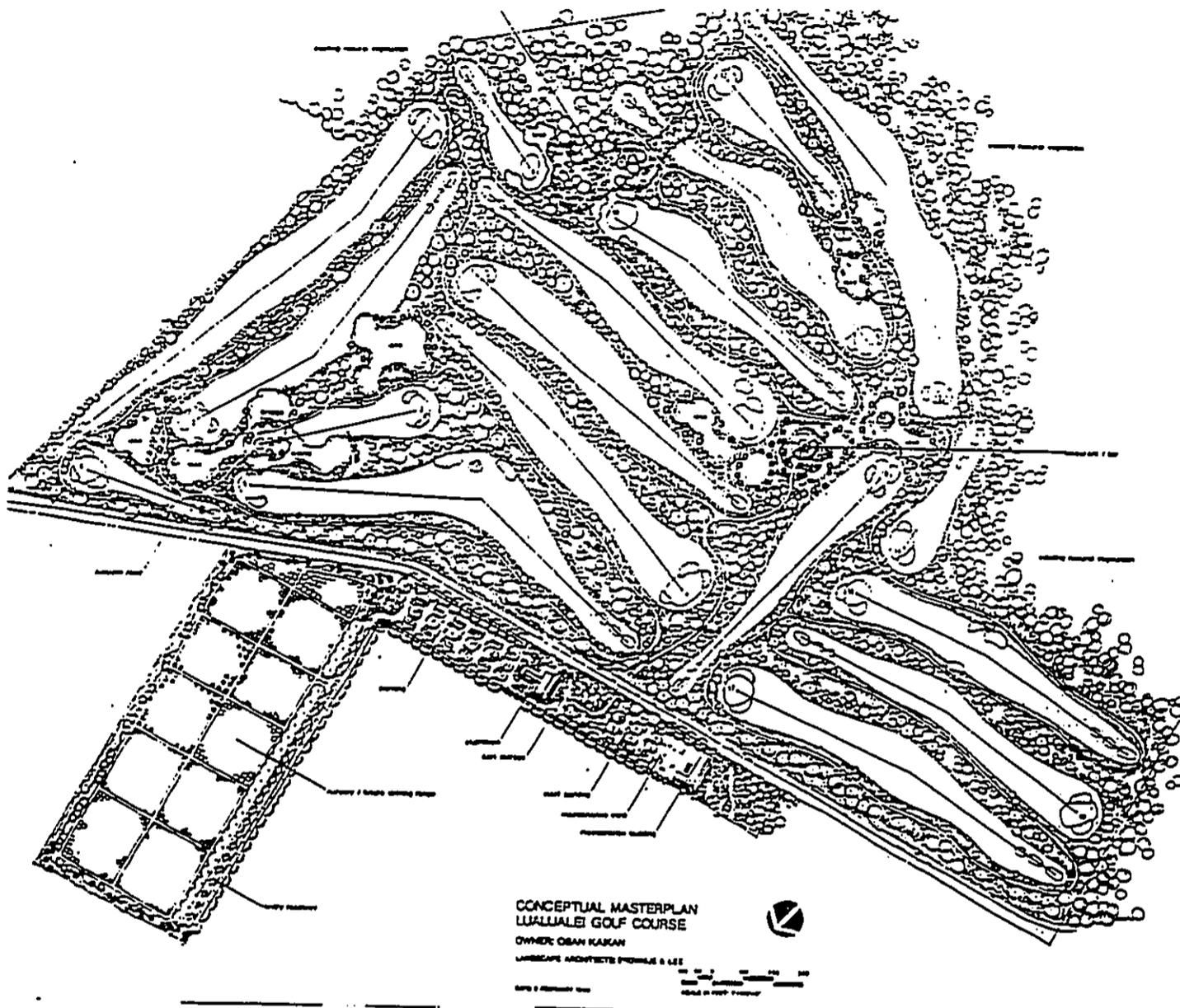


Fig. 4 Proposed Lualualei Golf Course

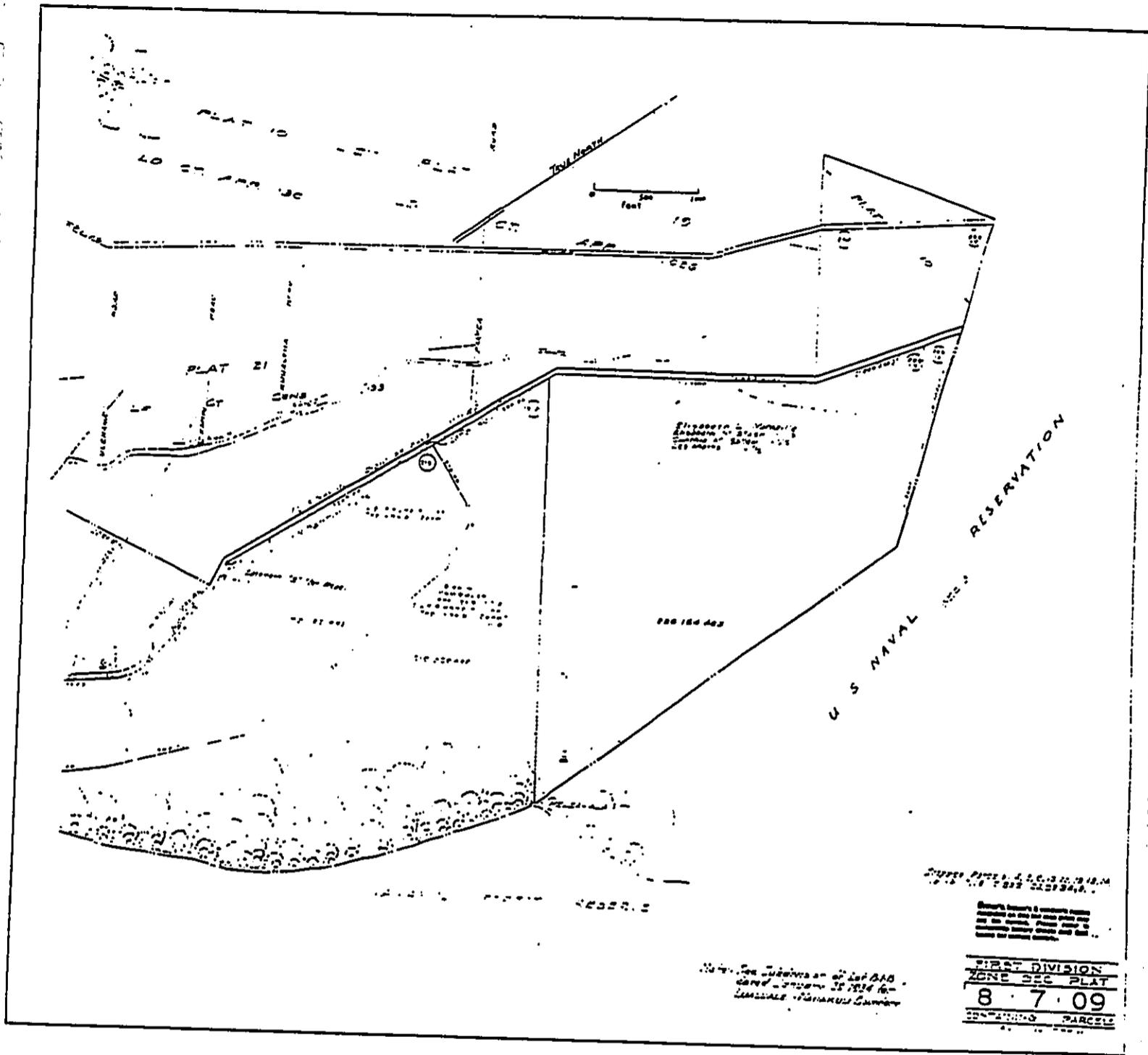


Figure 5 Tax Map of Project Area

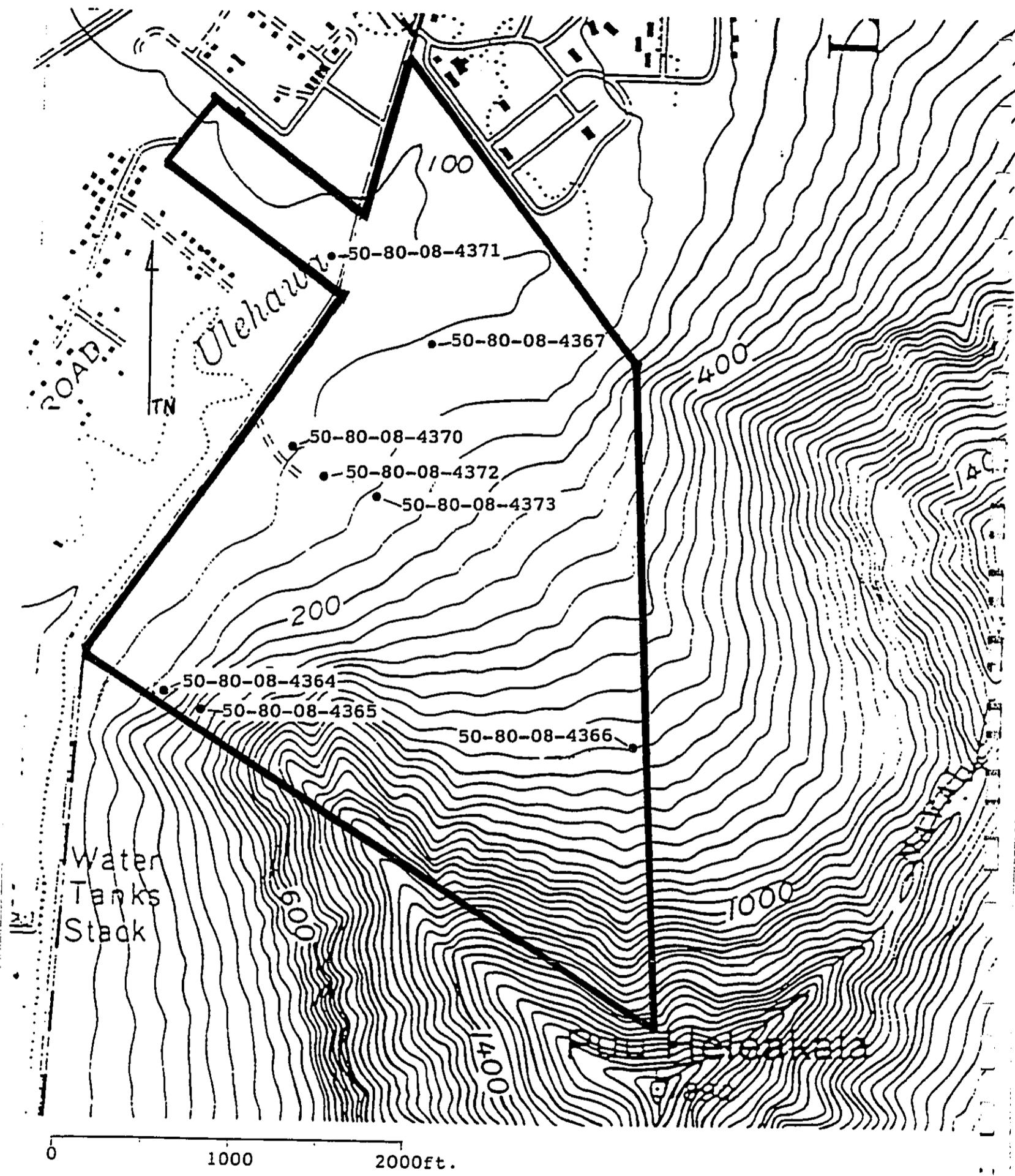


Figure 6 Project Area Showing Site Locations

Access to the property was gained from Lualualei U.S. Naval Road on the northwest boundary. Three gates along this road were used to enter the project area. A crew of three-four archaeologists, spaced at intervals of 50 ft.-100 ft. depending on the vegetation and visibility, systematically surveyed the property by pedestrian sweeps (usually west to east). The steep slope and cliffs along Pu'u Heleakala rendered the ground survey impossible above the 400 ft. to 600 ft. elevation.

All sites were recorded by formal category and given temporary site numbers. Fieldwork at each site included triangulating and mapping its location onto a project map; interpreting the site's nature, extent, and probable function; and searching for the presence of surface artifacts. Specific sites were mapped - using a compass and tape - and photographed. All sites were flagged with heavy yellow construction tape. Edges of sweeps were marked with pink or red flagging tape.

Following the fieldwork all sites were given State Site numbers. Two sites that were originally given temporary site numbers were later determined to be noncultural. Consequently, gaps exist in the temporary site number list.

B. Project Area Description

The project area comprises vacant, unused lands. It is undeveloped and contains several remnant and abandoned historic structures.

The project area extends in a northeasterly direction from

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

Access to the property was gained from Lualualei U.S. Naval Road on the northwest boundary. Three gates along this road were used to enter the project area. A crew of three-four archaeologists, spaced at intervals of 50 ft.-100 ft. depending on the vegetation and visibility, systematically surveyed the property by pedestrian sweeps (usually west to east). The steep slope and cliffs along Pu'u Heleakala rendered the ground survey impossible above the 400 ft. to 600 ft. elevation.

All sites were recorded by formal category and given temporary site numbers. Fieldwork at each site included triangulating and mapping its location onto a project map; interpreting the site's nature, extent, and probable function; and searching for the presence of surface artifacts. Specific sites were mapped - using a compass and tape - and photographed. All sites were flagged with heavy yellow construction tape. Edges of sweeps were marked with pink or red flagging tape.

Following the fieldwork all sites were given State Site numbers. Two sites that were originally given temporary site numbers were later determined to be noncultural. Consequently, gaps exist in the temporary site number list.

B. Project Area Description

The project area comprises vacant, unused lands. It is undeveloped and contains several remnant and abandoned historic structures.

The project area extends in a northeasterly direction from

Lualualei Naval Road to the foothills of Pu'u Heleakala. Below the 200-foot elevation level the terrain is fairly level with gradual slope. Above the 200-foot elevation level the terrain slopes steeply uphill toward Pu'u Heleakala Ridge which is at approximately the 1880-foot elevation level (no golf course construction will occur beyond the 400-ft. elevation).

The lower, flatter portion of the project area adjacent to the Lualualei Naval Road consists mostly of weedy grasses and koa haole shrubs. Approximately 15 acres located in the north portion of the project area were cultivated for vegetable crops until early 1988; much of the irrigation system is still evident. Kiawe trees and wild grasses dominate the remaining portion of the project area along the foothills of Pu'u Heleakala. Above the 250-foot elevation level, steep outcroppings dominate and the vegetation is low shrubs and grasses. A number of Wiliwili trees were present in the project area most especially along the foothills of Pu'u Heleakala.

The major soil types in the project area consist mostly of Lualualei extremely stony clay 3 to 35 percent slopes (LPE) with some Lualualei clay 2 to 6 percent slopes (LuB) covering the flatter portions of the project area adjacent to the Lualualei Naval Road (Foote et al. 1972).

II. Cultural Setting

A. Prehistory and Early History

Numerous Hawaiian legends, in addition to archaeological evidence, reveal the Wai'anae coast and mauka interior to be an important center of Hawaiian prehistory and early history.

The present study area is located in the ahupua'a of Lualualei which extends from the leeward ridge of the Wai'anae Range to the coast between Nanakuli Valley to the south and Wai'anae Valley to the north.

Traditional accounts of Lualualei focus on the mythological cycle of the demi-god Maui. Samuel Kamakau cites Ulehawa Stream at the coast of Lualualei as the birthplace of the Polynesian demi-god Maui and his brothers: it was here that Maui learned the secret of making fire for mankind and perfected his fishing skills. Other famous accounts of Maui at Ulehawa Stream refer to: the cave in which Hina (moon goddess, mother of Maui) made her tapa; the fishhook, Manai-a-ka-lani (with which Maui attempted to unite the Hawaiian Islands); the snare for catching the sun (which Maui used to advantage on Haleakala); and the place where Maui's adzes were made (Kamakau, 1961).

John Papa I'i describes three trails crossing over the mountains into Lualualei Valley and running along the coastline from 'Ewa. These trails are certainly of some antiquity with the southern-most trail through Pohakea Pass possibly once traversing a portion of the present study area along Ulehawa Stream.

During prehistory the arid coastal regions of Nanakuli and

Lualualei Valley likely supported a sparse population which was limited to isolated, perhaps temporary, habitations focusing on fishing; this scene was undoubtedly similar to George Vancouver's description of the Wai'anae coast observed at the time of contact. Here, Vancouver reported seeing "one barren, rocky waste, nearly destitute of verdure, cultivation or inhabitants" with only a "few stragglng fishing huts" scattered along the coastline (in McGrath et al., 1973:17). Amidst the sparsely inhabited expanse he observed at the leeward coast, Vancouver encountered a village along the beach at Wai'anae, where he was offered a number of hogs and a wide variety of vegetables (Handy and Handy, 1972:468). Wai'anae - the wettest valley on the leeward side of O'ahu - was the largest settlement on the coast. Roger C. Green suggests it was one of the first Hawaiian settlements in the Wai'anae District (Green, 1980:72).

A story told by Mary Kawena Pukui about how Nanakuli Valley got its name clearly reveals the early Hawaiians' struggle and the unique character formed by adapting to the more unfavorable environments of the leeward coast:

'...Because of the great scarcity of water and vegetable food, they [the Nanakuli people] were ashamed to greet passing strangers. They remained out of sight as much as possible. Sometimes they met people before they were able to hide, so they just looked at strangers with expressionless faces and acted as though they were stone deaf and did not hear the greeting. This was so that the strangers would not ask for water which they did not have in that locality...So the place they lived was called Nana, or look, and kuli, deaf--that is, Deaf mutes who just look' (in Sterling and Summers, 1978:61-62)

Although these and various other historic accounts describe the coastal regions of Nanakuli and Lualualei as relatively uninhabited because of their limited subsistence resources, archaeological evidence suggests that late prehistoric and early historic land usage occurred inland of the coastline.

Subsequent to western contact in the area (after ca. 1790), the landscape of Lualualei Valley and the surrounding slopes of the Wai'anae Mountains were adversely impacted by the removal of the sandalwood forest and by the introduction of domesticated animals and new vegetation species.

In the early 1800s when Wai'anae first became involved in the sandalwood trade, King Kamehameha the Great ordered the people of the leeward district to cut sandalwood to pay for the ship "Columbia" which he purchased at the price of "twice the full of the vessel" (in Hammatt et al., 1985:24). In addition to obliterating the sandalwood forest, the intensive sandalwood trade adversely impacted the traditional Hawaiian culture. Kamakau writes that because so many commoners were ordered to participate in the harvesting of sandalwood "famine was experienced from Hawaii to Kauai" forcing the people to "eat herbs and fern roots because there was no food to be had" (in McGrath et al. 1973:18). As a result of an accelerated oppression of the people following the death of Kamehameha in 1819 - when control of the rich sandalwood trade was placed in the hands of local chiefs - the people of Wai'anae pulled out the sandalwood saplings to avoid future harvesting (Ibid.).

Domesticated animals including goats, sheep, and cattle were brought to the Hawaiian Islands by Vancouver in the early 1790s and allowed to graze freely about the land for some time after. It is unclear when the domesticated animals were first brought to O'ahu; however, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson, 1972:10). During this same period, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the dwindling sandalwood forest and erosional effects of animal grazing. The following dates of specific vegetation introduced to Hawai'i are given by R. Smith and outlined by Frierson (1972:10-11):

- 1) "early," c. 1790
Prickly pear cactus, Opuntia tuna
Haole koa, leucaena glauca
Guava, Psidium quajava
- 2) 1835-1840
Burmuda [sic] grass Cynodon dactylon
Wire grass, Eleusine indica
- 3) Lantana, Lantana camara

The kiawe tree was also introduced during this period, either in 1828 or 1837 (Ibid.:11).

Following the western encroachment into the Wai'anae Coast, a swift decline in population occurred due to disease and a "tendency to move to the city where there was more excitement" (McGrath et al., 1973:25). In 1835, a missionary census listed 1,654 residents on the Wai'anae Coast. This was a small fraction

of the 4000-6000 inhabitants estimated to have lived in Wai'anae in 1778 by state statistician Robert Schmitt (Ibid.). The population of the Wai'anae Coast was decimated by a small pox epidemic in late 1853. In 1855, the Wai'anae tax collector recorded 183 taxpayers on the leeward coast, which is thought to represent a total population of about 800 people. This catastrophic depopulation facilitated the passing of large tracts of land into the hands of few landholders and led to the decline of the traditional Hawaiian economy that once supported the region.

B. Mid to Late 19th Century

During the Great Mahele in the mid 1800s, the ahupua'a(s) of Wai'anae, Lualualei, and Nanakuli became crown lands and were intended to be personal property of the king and his heirs providing sufficient revenue to support the king and his family (Haun and Kelly, 1984:35). In Lualualei six lands claims were awarded to at least eight families in Puhawa'i located at the northern end of the valley. According to information provided by the claimants in the Register of the Land Commissioners to Quiet Land Titles, these families were cultivating "a total of at least 163 lo'i or taro pondfields, in addition to dryland crops on the kula and wauke in the small valleys" (Ibid.:32).

Between 1850 and 1880, ranching was the leading industry of the Wai'anae Coast. During this time and prior to 1886 (year of King Kamehameha IV's death) large tracts of crown lands in the Wai'anae District were sold with fee simple titles or placed

under long-term leases to various entrepreneurs and families such as Samuel Andrews in Makua Valley; the Dowsetts in Nanakuli, Lualualei, Mikilua, and later in Wai'anae; and the Holt clan in Makaha.

In 1878, Hermann A. Widemann - a retired Supreme Court Justice - began Wai'anae Plantation, the first sugar plantation on O'ahu. Roger Green reports that "between 1878 and 1884 the economy and community of Wai'anae underwent a major change, in which the former Hawaiian landscape virtually disappeared" (Green, 1980:12). With the hiring of 20 local Hawaiians, 15 haole technicians and almost 60 Chinese laborers, Widemann essentially created a town at Wai'anae to support the cultivation and processing of sugarcane. This included the building of 24 new houses and a manager's residence along with a sugar mill and various extensive irrigation systems. In 1884, the Hawaiian Directory reported Wai'anae to be the largest settlement on the island outside of Honolulu. By 1890 the Wai'anae Sugar Plantation had over 600 acres in sugar cultivation, 12 miles of railroad and 350 laborers; the 1890 census reported 903 residents in the Wai'anae District.

On George Bower's trip around O'ahu in 1880, he described Lualualei Valley as "occupied as a grazing farm" by Dowsett and Galbraith who leased "sixteen thousand acres from the Crown" (in Haun and Kelly, 1984:32).

Following the overthrow of the Hawaiian monarchy in 1893, crown lands along with government lands became recognized as

public domain and subsequently became available for homesteading.

C. 20th Century

At the turn of this century the ahupua'a of Lualualei was divided into numerous homestead lots. The largest homestead lot (including the present study area) totaled 2,629 acres and was sold to H.M. von Holt in 1903 for ranching cattle (Haun and Kelly, 1984:37-38). The majority of the present study area continued to be used for cattle ranching and was probably once included in the extensive McCandless Cattle Ranch covering a large portion of Lualualei Valley. By 1929 over 8,184 acres of the McCandless Cattle Ranch land, "the area which now constitutes the Lualualei branch" (in Haun and Kelly, 1984:41) had been purchased by the U.S. Military.

Although most of the present study area continued to be utilized for cattle ranching up into modern times, the northeast portion of the lot was used by the military, as is evidenced by the presence of a few quonset huts and associated military debris.

D. Modern Land Use

During more recent times the project area has been vacant and unused with the exception of roughly 15 acres along the northern portion which was leased to tenant farmers - Mr. and Mrs. Ryoei Higa - for vegetable cultivation. After initial protest, an amicable agreement was reached between the owner and

tenants, and the Higas stopped farming and terminated the lease
in 1988.

III. Previous Archaeological Work

No archaeological research has been conducted within the project area prior to this present study.

The earliest attempt to record archaeological sites in the nearby regions of Lualualei and Nankuli was in the 1930s by J. Gilbert McAllister. Sites located closest to the present study area include Nioiula Heiau, Ilihune Heiau and a large rock referred to as "Maui" (McAllister, 1933:110).

Nioiula Heiau (State Site no. 50-80-08-1179) is located on Halona Ridge near Pohakea Pass. The site is described as a paved and walled heiau with the northern portion almost completely destroyed after many of its stones were removed to build a cattle pen for the McCandless Ranch. The site is said to have been of ancient antiquity, once belonging to the chief Kakuihewa. In addition, McAllister suggests it to be the "heiau on which was placed the body of the boxer killed by Kewalo" (Ibid.).

Ilihune Heiau (State Site no. ?) is located on the Nanakuli side of the western ridge of Pu'u Heleakala and was originally described by Thomas G. Thrum as "a small walled heiau of Pookana-ka class; used about 1860 by Frank Manini as a cattle pen, for which natives prophesied his poverty and death" (in McAllister, 1933:110). McAllister only approximated the location of this site as no surface structure or structures remained.

The large rock, referred to as "Maui," is located on the coast near Ulehawa Stream. Oral tradition denotes this rock as the place where the demi-god Maui "reposed and sunned himself"

after first arriving in the Hawaiian Islands from the south (McAllister, 1933:110).

A recent archaeological reconnaissance survey specifically conducted in Lualualei Valley by Alan Haun (1985) recorded the presence of a significant number of traditional Hawaiian sites. The project included surveying of approximately 3,130 acres of Lualualei Valley. A total of 376 indigenous (Hawaiian) "features" were recorded, including a wide range of site types from cliff overhang shelters, caves, and habitation platforms to field terraces and mounds, in addition to religious and lithic technology sites; possible burials were also noted. Nine radiocarbon dates obtained from the survey indicate an interior settlement pattern by the 1400s when, according to Haun, "mid-level elevation sites were occupied." Haun further suggests that the majority of the remaining "features" were occupied by the mid-1600s, probably permanently until the 1800s (Ibid.:13). It is important to note that these results and interpretations of the Lualualei fieldwork are preliminary and currently under review by the State Historic Preservation Office.

IV. Survey Results

Each of the eight sites located within the project area is described below.

State Site # 50-80-08-4364 CSH Site: 1
Site Type: Wall
Function: Cattle wall
Probable Age: Historic
Condition: Fair
Dimensions: 141 m. (462 ft.) long
Description: Site 50-80-08-4364 is located on the lower portion of the ridgeline oriented northwest/southeast along the west boundary of the project area. This site is a wall constructed of large and small boulders with some cobbles; it measures .6 m. - 1 m. (2 ft. - 3.5 ft.) high, 3-5 courses, and 30 cm. - 45 cm. (.9 ft. - 1.3 ft.) wide. The wall is constructed along a sloping ridgeline and utilizes bedrock cliffs in areas where the wall would not be necessary. The mauka end of the wall has a hook-shaped configuration and terminates where the terrain is too steep at approximately the 200-foot elevation level.

State Site # 50-80-08-4365 CSH Site: 2
Site Type: Wall
Function: Military shelter
Probable Age: Historic
Condition: Fair
Dimensions: 2.5 m. (8.2 ft.) long

Description: This site is located 42 m. (137.7 ft.) upslope of Site 50-80-08-4364 at approximately the 300-foot elevation level. The site comprises a short wall section constructed of piled small boulders; the wall averages 25 cm. (.8 ft.) high and 60 cm. (1.9 ft.) wide. It is situated along a knoll at the edge of a bedrock cliff providing a clear view of Lualualei Valley to the NE and NW. A small pile of bullet shells and military C-ration cans were visible at the site.

State Site # 50-80-08-4366

CSH Site: 3

Site Type: Structural Complex

Function: Habitation

Probable Age: Prehistoric

Condition: Fair

Dimensions: 12 m. (39.3 ft.) N/S by 8 m. (26 ft.) EW

Description: Site 50-80-08-4366 (Fig. 7) is located in the southeast portion of the project area at approximately the 550-foot elevation level on the west side of an intermittent stream bed. The site comprises at least three features including a terrace with an attached enclosure and adjacent modified outcrop.

The terrace is bi-level and is constructed of stacked boulders and cobbles. The uppermost level of the terrace exhibits the most formal construction; it is separated from the lower terrace by a raised boulder alignment 60 cm. (1.9 ft.) high. The upper terrace measures 8 m. (26.2 ft.) long E/W and retains a level area of small boulders and cobbles approximately 2 m. (6.5 ft.)

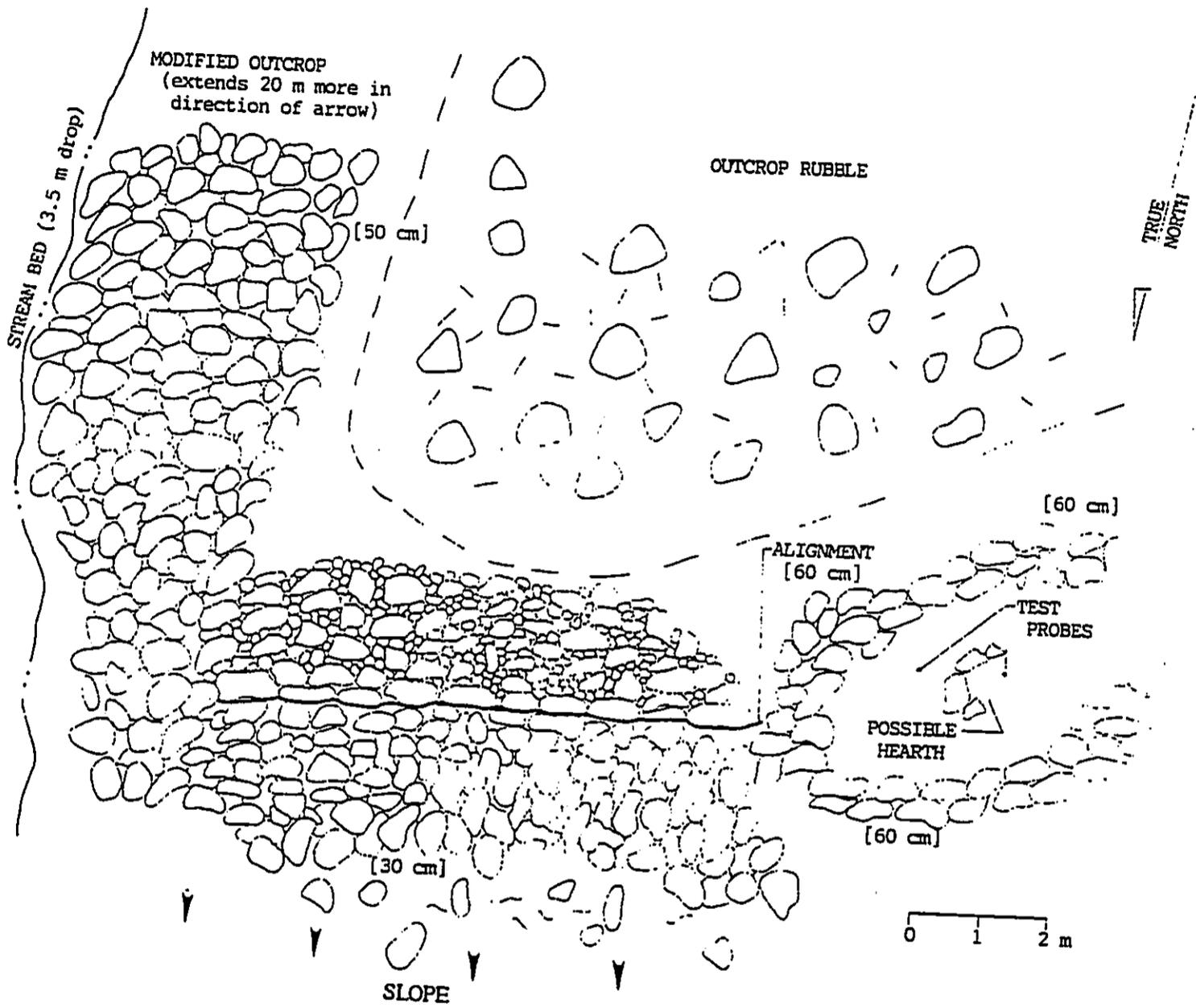


Fig. 7 Site 50-80-08-4366; Plan View

wide N/S. The lower terrace is less formal and somewhat collapsed.

A roughly oval-shaped enclosure abuts the terrace to the west; it is constructed of small and large boulders. It measures 6 m. (19.6 ft.) E/W by 4 m. (13.1 ft.) N/S (exterior) and 2 m. (6.5 ft.) E/W by 1.2 m. (3.9 ft.) N/S (interior). The walls of the enclosure average 60 cm. (1.9 ft.) high and 50 cm. (1.5 ft.) wide. A probable hearth feature - evidenced by a semi-circular configuration of four cobbles - is located at the center of the enclosure.

Directly east of the terrace is a naturally mounded wall of outcrop with minor modifications; this formation extends to the south roughly 30 m. (98.4 ft.) running adjacent to the stream bed and adjoins a sloped bed of outcrop rubble situated west and south of the general site area. Modifications along the naturally mounded wall as well as among the extensive outcrop rubble, include rough facings and circular depressions.

Two test probes were conducted within the suspected hearth feature of the enclosure. A very dark brown soil - which may represent burning episodes - was encountered; no artifacts or midden were observed.

State Site # 50-80-08-4367

CSH Site: 4

Site Type: Wall segment

Function: Possible shelter remnant

Probable Age: Prehistoric

Condition: Poor

Dimensions: 4.5 m. (14.7 ft.) long

Description: Site 50-80-08-4367 is located on fairly level terrain in the northern portion of the project area at approximately the 100-ft. elevation level. The site consists of a short wall segment 4.5 m. (14.8 ft.) long constructed of water-rounded boulders. It stands 60 cm. - 90 cm. (1.9 ft. - 3 ft.) high, 3-4 courses, and one boulder wide; it is situated on the west side of a small, shallow, dry stream bed. The area surrounding this site has been disturbed by heavy erosion or possible bulldozing. Adjacent to this site is a barbed wire fence extending NW/SE. No midden or artifacts were observed at this site.

State Site # 50-80-08-4370

CSH Site: 7

Site Type: Historic house lot

Function: House lot

Probable Age: Historic

Condition: Poor

Description: This site consists of historic features including a garden area, possible cesspool, and other miscellaneous modern debris. Directly to the east of this site is Ulehawa Stream; a dirt road lies immediately to the west. Evidence of a house, including wood, a refrigerator, bottles and jars, are present in this area. Fence posts are still standing near the dirt road. Lualualei Naval Road is located just to the north of this site.

Some minor modifications are evident along the southwest side of the stream bed where some small boulders have been piled in an alignment. There is no evidence of any prehistoric activity in this area. This site is located on level terrain in the west central portion of the project area at approximately the 100-foot elevation level.

State Site # 50-80-08-54371

CSH Site: 8

Site Type: Historic wells

Function: Well site

Probable Age: Historic

Condition: Poor

Dimensions: See Description

Description: This site is the only site located on the portion of the project area NW of Lualualei Naval Road. It consists of two probable well features. Both features consist of a circular depression with a low wall bounding the depression. The depressions average 1 m. (3.2 ft.) deep and 4 m. (13.1 ft.) in diameter. Wood and metal fragments are present within the depressions; these may have represented a well cover at one time.

Feature A is located at the north end of a dry stream bed. A low L-shaped wall was constructed on the NE bank. The low wall is constructed of piled small boulders and cobbles and measures 5 m. (15 ft.) N/S by 4 m. (13 ft.) E/W.

Feature B (Figure 8) is located directly to the NE of Feature A at the SW end of a dry stream bed. Some piling of cobbles

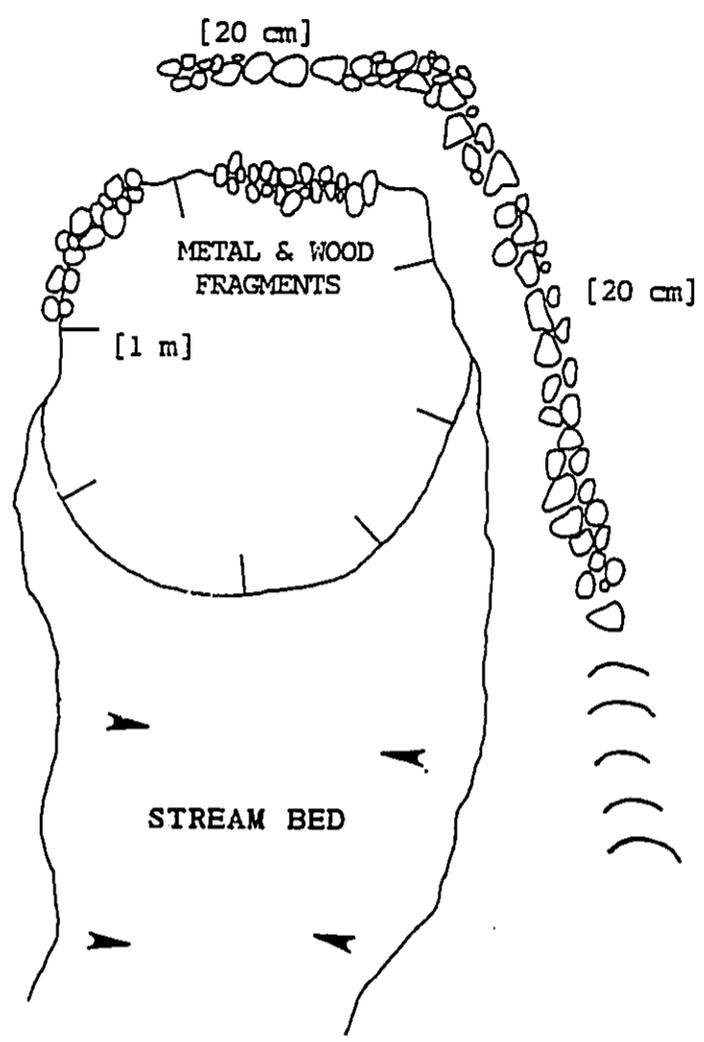


Fig. 8 Site 50-80-08-4371 Feature B; Plan View

are evident on the west and south portion of the depression. The associated L-shaped wall is constructed of small boulders and cobbles; it measures 3 m. (9.3 ft.) N/S by 6 m. (19.6 ft.) E/W. The wall stands only 20 cm. (less than 1 ft.) high and 1-2 courses.

These historic wells are located on level terrain surrounded by kiawe trees and low, thick grass.

State Site # 50-80-08-4372 CSH Site: 9

Site Type: Concrete retaining wall

Function: Building foundation or water tank foundation

Probable Age: Historic

Condition: Poor

Dimensions: 35 m. (115.8 ft.) long

Description: This historic structure is located in the west central portion of the project area at approximately the 100-foot elevation on fairly level terrain. The concrete structure has rebar and metal retaining plates protruding from it. The wall retains a level area measuring 35 m. by 40 m. (114.8 ft. by 131.2 ft.) with gravel, buried metal and wood evident. This structure probably served as a building foundation or as a foundation for water tanks.

State Site # 50-80-08-4373

CSH Site: 10

Site Type: Metal Tank

Function: Incinerator

Probable Age: Historic

Condition: Fair

Dimensions: 5.4 m. (17.7 ft.)

Description: This site is located in the west central portion of the project area. The historic incinerator is 5.4 m (17.7 ft.) high and 2.1 m. (6.8 ft.) in diameter and is cylinder-shaped. Two openings exist at the base and at the top of the structure (a metal staircase allows access to this top opening). The interior floor of the structure - visible through the lower opening - contains a circular metal plate covered primarily with burned bullet casings and miscellaneous metal debris. Bullet casings were also observed along the ground surface outside of the incinerator.

Summary and Recommendations

A total of 8 archaeological sites was identified in the Lualualei Golf Course project area.

Only two of these sites (50-80-08-4366 and -4367) are interpreted as being attributable to traditional Hawaiian activity, with one site (50-80-08-4366) probably representing prehistoric, recurrent habitation at the foothills of Pu'u Heleakala. This is primarily evidenced by the presence of a probable hearth feature within the site complex. Site 50-80-08-4367 - a remnant wall section running adjacent to an intermittent stream bed - suggests an agricultural usage possibly constructed to retain or divert water. Given the weathered condition of the structure this site may be prehistoric.

The six remaining sites identified within the project area are attributable to historic land usage. Five sites (50-80-08-4364, -4370, -4371, -4372, and -4373) are associated with cattle ranching and include cattle walls, a historic house lot and various other ranching infrastructure. One site (50-80-08-4365) represents a military shelter evidenced by the presence of bullets and C-ration cans. In addition to this site, three quonset huts are present in the project area. These structures, however, are considered to have been built within the last 50 years and have not been included in the present study.

Seven sites of the the site inventory are evaluated as no longer significant because of lack of cultural or scientific interest beyond their plotted distribution.

Site 50-80-08-4366 is likely to yield information important in prehistory or history. According to the Lualualei Golf Course development plan this site lies outside of the impact area and thus should be spared any disturbance. However, in the event that the impact zone is extended into the site area, we recommend that it be preserved given that it represents the only traditional Hawaiian habitation site present in the project area.

A summary of site significance and recommended action is presented in Table 1.

Table 1: Site Summary and Significance

<u>CSH#</u>	<u>State Site #</u>	<u>Site Type/Function</u>	<u>Sig.</u>	<u>Recommend.</u>
1	50-80-08-4364	Wall/Ranching	NLS	None
2	50-80-08-4365	Shelter/Military	NLS	None
3	50-80-08-4366	Struc. Complex/Hab.	D	Preserve
4	50-80-08-4367	Wall remnant/Agric.	NLS	None
7	50-80-08-4370	House lot/Ranching	NLS	None
8	50-80-08-4371	Wells/Ranching	NLS	None
9	50-80-08-4372	Foundation/Ranching	NLS	None
10	50-80-08-4373	Incinerator/Ranch.-Mil.	NLS	None

CODES FOR CRITERIA FOR SITE SIGNIFICANCE

- NS Not Significant
- NLS No Longer Significant
- A Site reflects major trends or events in the history of the state or nation.
- B Site is associated with the lives of persons significant in our past.
- C Site is an excellent example of a site type.
- D Site may be likely to yield information important in prehistory or history.
- E Site has cultural significance; probable religious structures (shrines, heiau) and/or burials present.

Summary of Site Distribution

The few traditional Hawaiian sites identified during the present study suggest that most of the project area was sparsely inhabited during prehistory and early history. This would be due primarily to the lack of fresh water resources in the vicinity. Archaeological site patterning in the Lualualei Valley has revealed that Hawaiian populations were typically present within the wetter upland valleys where wetland agriculture proved to be productive. Although surface run-off and intermittent drainages present in the project area would allow some potential for seasonal agriculture, the attraction for settling in the wetter upland valleys would surely have been greater.

The absence of sites within the project area along Ulehawa Stream, however, may not necessarily indicate the lack of Hawaiian usage of the area, as the lower regions of the project area have been extensively altered by ranching, military and modern farming activity.

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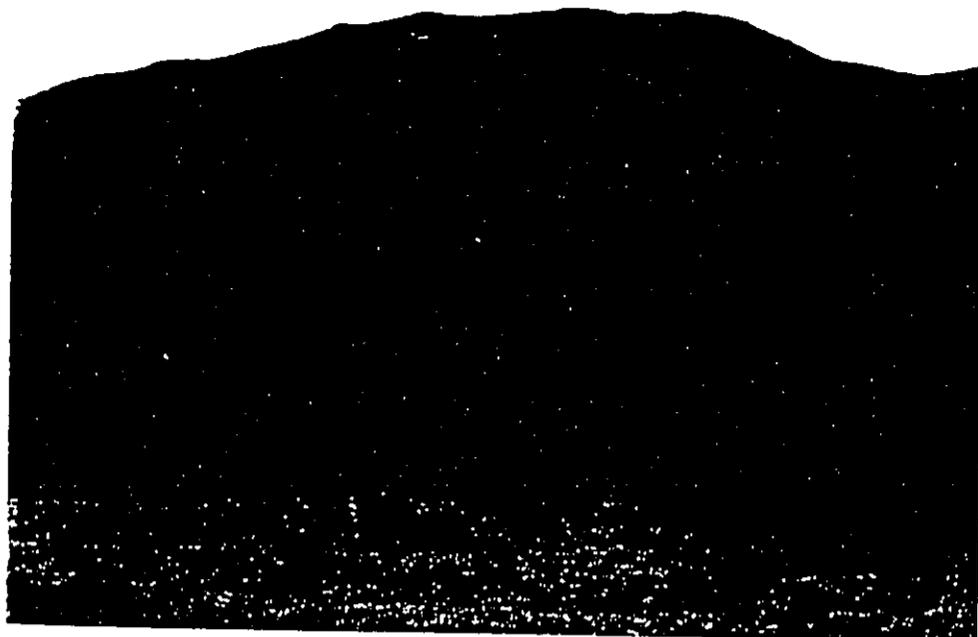
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VI. Photographic Appendix

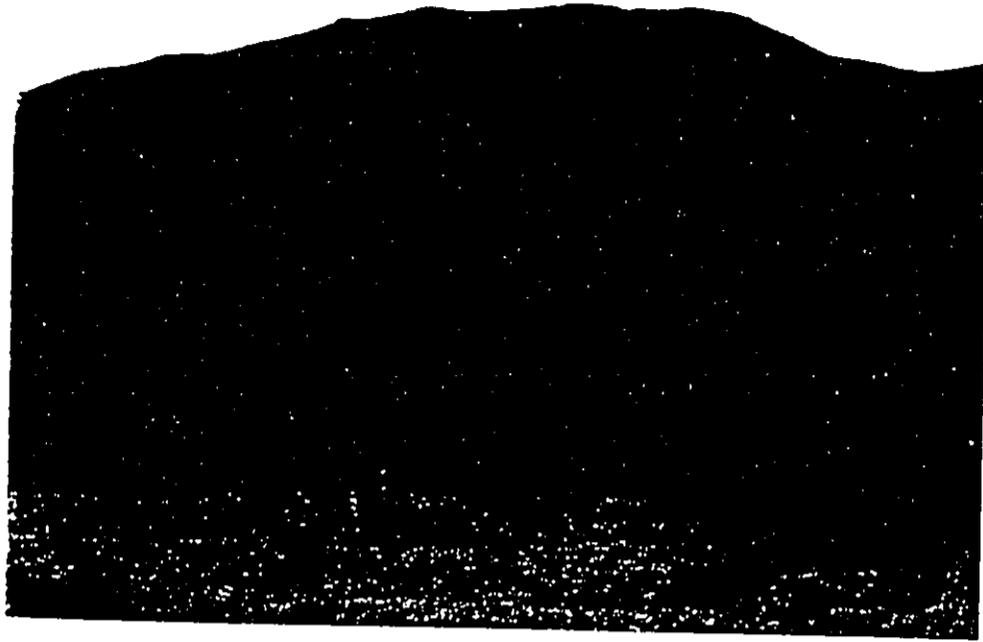


Project Area: View South With Pu'u Heleakala in Background



Project Area: View West

RECEIVED AS FOLLOWS



Project Area: View South With Pu'i Heleskala in Background



Project Area: View Northeast

RECEIVED AS FOLLOWS



Site 60-60-09-4344: Wall, View Northwest



Site 60-60-09-4344: Wall, View Southwest

RECEIVED AS FOLLOWS



Site 50-20-08-4365; Military Shelter



Site 50-20-08-4366; Terrace

RECEIVED AS FOLLOWS



Site 50-30-08-4270; Historic House Lot, Grill



Site 50-30-08-4270; Historic House Lot, Showing Debris and Cesspool

RECEIVED AS FOLLOWS



Site 50-50-08-4372; Concrete Retaining Wall



Site 50-50-08-4373; Metal Incinerator

APPENDIX G

Cultural Impact Assessment—Final Report. Janelle L. Kaohu,
Angelita S. Aipoalani, and Hanalei Y. Aipoalani, July 2009

Cultural Impact Assessment – Final Report

Project known as Nanakuli Community Baseyard
Located in Lualualei, Waianae, Oahu Island
TMK: (1) 8-7-009:002

Prepared by: Janelle L. Kaohu of JLK Management, LLC
Angelita S. Aipoalani of Mother Earth Foundation
Hanalei Y. Aipoalani of Mother Earth Foundation

July 10, 2009

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Section I: Summary of Assessment

JLK Management, LLC (herein “Preparer”), a project management firm based in Nanakuli, Hawaii, in collaboration with Mother Earth Foundation has been engaged by Tropic Land, LLC (herein “Client”) for the purpose of preparing a Cultural Impact Assessment for its project known as Nanakuli Community Baseyard; located in Lualualei, Waianae, Oahu Island—TMK: (1) 8-7-009:002.

The preparer designed its assessment in accordance to Chapter 343 of the Hawaii Revised Statutes, set forth by the Hawaii State Legislature and administered & enforced by the Hawaii State Department of Health’s Office of Environmental Quality Control.

Preparer has successfully engaged in interview sessions with four (4) credible Hawaiian culture practitioners; Mr. Lawrence Adams, Sr., Kahu Kamaki Kanahale, Mrs. Verna Landford-Bright, and Mr. Albert H. Silva. Neither found the proposed light industrial development project to be intrusive nor destructive toward the Hawaiian culture, practices and/or beliefs relative to the Ahupua’a of Lualualei.

Furthermore, review of culturally appropriate and relative reference and resource materials conclusively suggest that the project site is free of any culturally historic site, to include heiau (ancient burial or gravesite). Moreover, due to extensive improvements and developments of nearby, surrounding and neighboring properties, significant historic sites are not anticipated to be located within or near the property boundaries of the project site.

Section II: Interviewee

Preparer has successfully engaged in interview sessions with four (4) credible Hawaiian culture practitioners; Mr. Lawrence Adams, Sr., Mrs. Verna Landford-Bright, Kahu Kamaki Kanahale, and Mr. Albert H. Silva. Neither found the proposed light industrial development project to be

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intrusive nor destructive toward the Hawaiian culture, practices and/or beliefs relative to the Ahupua'a of Lualualei.

Identification and Selection Processes

Preparer identified a short list of prospective interviewees based on the following criteria: 1) first-hand knowledge of Hawaiian culture, 2) first-hand knowledge of Ahupua'a of Lualualei and 3) familiarity of the current state of Ahupua'a of Lualualei.

Persons meeting the requirements were selected to participate in this particular Cultural Impact Assessment.

Biographical Information

Mr. Lawrence Adams, Sr., born & raised and resides in Nanakuli, Hawaii is knowledgeable in the Hawaiian culture. Mr. Adams is familiar with the Lualualei Ahupua'a; particularly the immediate region surrounding and including Tropic Land, LLC's parcel.

Kahu Kamaki Kanahele, born on Ni'i'hau and raised in Nanakuli, is a respected cultural practitioner. Kahu Kahele has first-hand knowledge of Nioiula Heiau. His contribution to this assessment is solely related to Nioiula Heiau.

Mrs. Verna Landford-Bright, born & raised in Maili and Lualualei, Hawaii and a respected resident of Waianae, Hawaii. Mrs. Landford-Bright is knowledgeable in the Hawaiian culture and mo'olelo.

Mr. Albert H. Silva, born & raised and resides in Waianae, Hawaii. He is a highly regarded rancher and well respected individual of the community. He is knowledgeable

in the Hawaiian culture. More importantly, he has first-hand knowledge of the use of the Ahupua'a of Lualualei.

Section III: Interview Process

Interviews were limited to phone and in-person conversations. Discussions were documented by Interviewer and summarized for the purpose of preparing a succinct, yet comprehensive Cultural Impact Assessment.

Methodology

Interviewees were contacted by phone, initially. Interviewer described the project matter. Interviewer then proceeded with the interview (see Questions). Follow-on in-person interviews were conducted for clarification purposes.

Questions

The following questions were asked of each interviewee:

1. What is your recollection of the Ahupua'a of Lualualei?
2. What is your recollection of the specific property owned by Tropic Land LLC.?
3. Is there any cultural significance associated with the Ahupua'a of Lualualei? If any, please describe.
4. Would Tropic Land LLC's proposed project to develop a light industrial park impact the cultural essence of the Ahupua'a of Lualualei? The particular project site? If so, please explain.
5. As a native Hawaiian cultural practitioner, would you support Tropic Land LLC's project to develop a light industrial park?

Section IV: Historical and Cultural Source Materials

Preparer has the following Historical and Cultural Source Materials in its custody:

1. April 1991 Final EIS for Lualualei Golf Course; TMK: (1) 8-7-009:002

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2. November 1993 rev. (January 1991) Final Archaeological Inventory Survey of 170-acre parcel in the Ahupua'a of Lualualei
3. June 8, 1997 Final EIS and Special Management Area Permit Application for BHP Gas Express Station Number 46
4. July 2000 Waianae Sustainable Communities Plan—Cultural Resources Map
5. June 2005, National and State Register of Historic Places, <http://hawaii.gov/dlnr/hpd/register/oaind/oaqu08.pdf>
6. January 19, 2006 Blessing and Consecration of Lualualei Property—Mo'olelo of Maui
7. Hawaii State Historic Preservation division of Department of Land and Natural Resources, Geographic Information System.
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11. O'Leary, O.L. and M. McDermott, 2006 *Archaeological Inventory Survey of 200 Acres for the Proposed Nānākuli B Site Materials Recovery Facility and Landfill, Lualualei Ahupua'a, Wai'anae District, Island of O'ahu, Hawai'i (TMK [1]8-7-09:01)*. Prepared for URS Corporation by Cultural Surveys Hawai'i, Kailua, Hawai'i.
12. Thrum, Thos G., 1907. Hawaiian Almanac and Annual—The Reference Book of Information and Statistics—relating to the Territory of Hawaii, of value to Merchants, Tourists and Others.

Reference and resource materials conclusively support that it is highly unlikely that any historic or prehistoric artifacts exist on-site.

Section V: Cultural Resources, Practices and Beliefs

It is suggested that areas within the Lualualei Ahupua'a were used for the cultivation of the warrior art of Lua—native Hawaiian form of martial arts. Contrary, there is no evidence confirming that the project area was or is currently being used for traditional practices such as gathering or any cultural or religious purposes. No burials are believed to exist within the project area. There were no commoner land claims within the project area. Although some native Hawaiian activity may have occurred on the project area, the patterns of land use are relatively clear as the native Hawaiians did not utilize this land nearly as intensively as the coastal areas, well-watered areas and forest zones.

Recorded Hawaiian legends, mo'olelo, describes a said location within the Lualualei Ahupua'a as the birth place of Maui—son of Mauiakalana and Hina'akealoha. According to literature, Maui's birthing place is located on the south side of Waianae at Ulehawa and Kaolae (west-south-west of project site). O'Leary and McDermott's 2006 inventory survey report for "Nanakuli B Site Materials Recovery Facility and Landfill" (TMK: 8-7-009:001 and 8-7-009:007) contains a map showing known archaeological sites near their project area (O'Leary and McDermott's 2006:42). The map shows a Site 148 "Maui Rock" nearly a mile west-south-west of the project area, along Farrington Highway; thereby, confirming the existence of said rock.

MAUI ROCK—In the 1930s, McAllister recorded Site 148 in his work. McAllister describes a large rock referred to as "Maui" located about 1.1 miles from Nanakuli station toward Pu'u O Hulu (McAllister 1933:110). This rock represents the place where Maui first landed in the Hawaiian Islands from the south. The stone was surrounded by water and is where he reposed and sunned himself. The rock is reportedly on the "northeast of the road" (McAllister 1933:110); memorialized at Garden Groves, a private-condominium development off of Farrington Highway in Lualualei.

Hawaiian mythology also accounts for Maui venturing the Waianae Coast of the island of O'ahu. Kaneana, cave of Kane, commonly known as Makua cave, is said to have been frequented by

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demigod Maui. This cave is located at the base of a 200-foot outcropping of rock along Farrington Highway in Makua (near Kaena Point); approximately nine (9) miles west-north-west of project site. Kaneana cave goes back approximately 100 yards and ends. Legend has it that the cave was the home of Nanue, the shark man.

Also, worth noting is the fact that there are no registered historic sites within the project site boundaries. That said, however, according to the “National and State Register of Historic Places” there is one registered historic site within a 100-foot radius of the project site perimeters—Nioiula heiau (TMK: 8-8-01:01).

NIOIULA—Roy Kakulu Alameida, author of *Na Mo'olelo Hawai'i o ka Wa Kahiko*, references Nioiula heiau in his story about Kawelo. Alameida writes, “Kawelo then picked up the man. He took him to the ali'i nui of O'ahu to offer as a sacrifice to the gods at Nioiula heiau at Lualualei.”

In contrast to Alameida’s writings, Thos G. Thrum’s compilation of data, recorded in the *Hawaiian Almanac and Annual for 1907*, clearly states that Nioiula heiau (Halona, Lualualei), a paved and walled heiau of pookanaka class, about 50 feet square, in two sections; [was] recently destroyed.

According to Kahu Kamaki Kanahale, a long time resident of Nanakuli and respected cultural practitioner, “Nioiuola is located on Halona ridge in Lualualei next to the forest reserve. Part of the heiau has been completely destroyed with the stones being used by the McCandless, ohana (1930's-40's) of the Silva family. It was kapu when we were little because kupuna(s) told us that people were sacrificed there to the ancient gods. It belonged to the Oahu god—King Kaku'ihewa.”

Research and review of relative historical data at the Hawaii State Historic Preservation Division clearly indicates that there are no cultural or historical sites on the project site (TMK: (1) 8-7-

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009:002); therefore, reaffirming Thrum's recordings. More significantly, a cross-reference of the City & County of Honolulu and Hawaii State Department of Land and Natural Resources' Geographic Information Systems (GIS) concludes that Nioiula Heiau is situated on property fee owned by the United States of America and occupied by the United States Navy (TMK: 8-8-001:001).

It is therefore concluded that the project site does not directly nor indirectly adversely impact, destruct or obstruct access to culturally significant sites.

Analysis of Project Effects

Effects stemming from the development of the proposed project on Hawaiian culture would be minimal due to its geographical location and lack of surface water, unique topographic features, burial sites, and commoner land claims within the project area. If Hawaiian activity occurred on the project area, it would not have been nearly as intensively utilized as coastal areas, well-watered areas, and forest zones.

Section VI: Bibliography of References

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O’Leary, O.L. and M. McDermott, 2006 *Archaeological Inventory Survey of 200 Acres for the Proposed Nānākuli B Site Materials Recovery Facility and Landfill, Lualualei Ahupua’a, Wai’anae District, Island of O’ahu, Hawai’i (TMK [1]8-7-09:01)*. Prepared for URS Corporation by Cultural Surveys Hawai’i, Kailua, Hawai’i.

Silva, Albert H. (June 2008), resident of Makaha, born and raised along the Waianae Coast with substantial ties to Lualualei Ahupua’a, Phone Interview-JLK Management, LLC.

Thrum, Thos G., 1907. *Hawaiian Almanac and Annual—The Reference Book of Information and Statistics--relating to the Territory of Hawaii, of value to Merchants, Tourists and Others.*

Section VII: Addendums

Summaries of Interview sessions are provided herein.

Records of Interviews

Mr. Lawrence Jay Adams, Sr. recalled that the Lualualei Ahupua’a, like the Nanakuli Ahupua’a, was used for cattle grazing in the 1940’s and 1950’s. There were some agriculture lots, but nothing significant--the particular property was left barren for many years; there was no activity for as long as my kupuna were around in the late 1800s. The Lualualei Ahupua’a holds the mo’olelo of Maui. But the proposed project will in no way affect Maui’s legend. Mr. Adams supports the proposed development project.

Mrs. Verna Landford-Bright suggested that areas in the Lualualei Ahupua’a may have been used by native Hawaiian men for the cultivation of the warrior art known as “Lua”—art of Lua. It is not known for certain, if the immediate region surrounding and including Tropic Land, LLC’s parcel was used for cultural practices like the art of Lua. The significance of the mo’olelo of Maui and its relationship to Lualualei is important to note. It is unlikely that Tropic Land, LLC’s project will negatively impact the Hawaiian culture. Mrs. Landford-Bright takes no position on whether to support the project or not.

July 10, 2009

Mr. Albert H. Silva vividly recalls the Ahupua'a of Lualualei being used for agriculture and ranching purposes. The particular region, to include Tropic Land, LLC's parcel was used for cattle ranching. The Lualualei clay made it impossible for farming of produce. Aside from the mo'olelo of Maui, there are no points of cultural significance on or nearby the property being proposed for the development of a Light Industrial Park. Although there are claims suggesting that this particular area was used to practice the Art of Lua, Mr. Silva firmly stated that this was impossible due to the natural habitat and non-conducive climate. Mr. Silva supports the proposed development project.

APPENDIX H

Correspondence related to Chapter 6E-42, Historic Preservation
Review for TMK: (1) 8-7-009: 002

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

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

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF COMPLIANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENFORCEMENT
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KALODOR AWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

November 15, 2006

Dominic Miles
Lyon Associates, Inc.
841 Bishop Street, Suite 2006
Honolulu, Hawai'i 96813

LOG NO: 2006.3748
DOC NO: 0611AJ06
Archaeology

Dear Mr. Miles:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –
Notice of Intent Form C – Lualualei Grubbing Permit
Lualualei Ahupua'a, Wai'anae District, Island of O'ahu
TMK: (1) 8-7-009:002**

Thank you for the opportunity to review the aforementioned project, which we received on August 16, 2006. We apologize for the long delay in response. The proposed undertaking involves the clearing, grubbing, and mulching of the 60-acre area of potential effect.

A review of available documents indicates that the proposed undertaking will affect 60-acres of a larger 170-acre project area surveyed by Cultural Surveys Hawai'i (Hammatt *et al.* 1993. *An Archaeological Inventory Survey of a 170-acre Parcel in the Ahupua'a of Lualualei, Wai'anae District, Island of O'ahu. [TMK: 8-7-9: portion 2; 8-7-10; 8-7-19: portion 1] SHPD Rpt No. O-792*). The Hammatt *et al.* (1993) was accepted by this office in a letter (LOG NO: 10208, DOC NO: 9311EJ32) dated December 1, 1993.

There are two archaeological sites within the 60-acre APE of the proposed undertaking. These are: site -4371, remnants of a historic well, and site -4367, a historic wall segment. As stated in a letter (LOG NO: 9258, DOC NO: 9308ej17) dated September 7, 1993, we believe these sites have been adequately documented in the Hammatt *et al.* (1993) inventory survey. However, one archaeological site, SIHP NO. 50-80-08-4366 identified during the Hammatt *et al.* (1993) study was recommended for preservation. Site -4366 does not lie within the current APE, and thus, we believe it will not be impacted by the proposed undertaking.

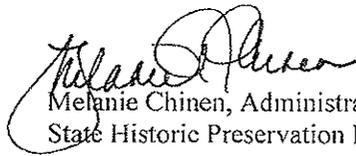
Therefore, we believe the current undertaking will have "no effect" on historically-significant resources. However, should the APE or the scope of work for the proposed undertaking change, or if other portions of the subject parcel are to be developed, proactive archaeological mitigation (*e.g.* preservation plan for site -4366) will be required.

In the event that historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, O'ahu Section, needs to be contacted immediately at (808) 692-8015.

Mr. Dominic Miles
Page 2

Please contact Mr. Adam Johnson if you have any questions or concerns about this letter.

Aloha,



Melanie Chinen, Administrator
State Historic Preservation Division

AJ:



DEPUTIES

GILBERT COLOMA-AGARAN

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HISTORIC PRESERVATION
DIVISION
LAND DIVISION
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII

October 24, 1997 DEPARTMENT OF LAND AND NATURAL RESOURCES

Jan Naoe Sullivan, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

LOG NO: 20361 ✓
DOC NO: 9710EJ21

Dear Ms. Sullivan:

**SUBJECT: Chapter 6E-42 Historic Preservation Review -- Request for a Special Use Permit (File No. 97/SUP-4) Mr. Robert Kava for Portion of Proposed Haleakala Golf Course
Lualualei, Wai'anae, O'ahu
TMK: 8-7-9:. por. 2**

In February of 1996 we commented on the rezoning of this parcel for the proposed Lualualei Golf Course (former name) from agricultural to preservation district. Our comments stated that:

An archaeological inventory survey of the proposed golf course parcel identified eight archaeological sites, two of which were related to traditional Hawaiian activity and six to historic land use. Seven of the eight sites are considered "no longer significant" due to their lack of cultural or scientific interest beyond the information retrieved during the survey. One site, 50-80-08-4366, is likely to yield information in prehistory and is recommended for preservation. This site is situated upslope of the golf course modification plans as submitted for the survey and as such will not be disturbed.

Also at that time we stated that the zone change application would have "no effect" on historic sites and asked that if development plans for the golf course were changed which may impact site -4366, that protective measures should be taken to assure the site's preservation.

The current application proposes development of 14.85 acres of the total project area. Site 50-80-08-4366 is not located in the current 14.85 acre parcel being considered under this permit and therefore we believe that the proposed development of the 14.85 acre parcel considered in this SUP, will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 587-0015.

Aloha

A handwritten signature in black ink, appearing to read "Don Hibbard".

Don Hibbard, Administrator
Historic Preservation Division

EJ:jk

OCT 24 1997

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

1996 JAN 29 AM 8:00
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

96-00507
MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

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GILBERT COLOMA-AGARAN

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DIVISION

LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

January 12, 1996

Patrick T. Onishi
Director of Land Utilization
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

LOG NO: 16202 ✓
DOC NO: 9601EJ03

Dear Mr. Onishi:

SUBJECT: Application for a Zone Change, from AG-1 Restricted
Agricultural District and AG-2 General Agricultural
District to P-2 General Preservation District
Lualualei, Wai'anae, O'ahu
TMK: 8-7-10: 6, 10; 8-7-19: por. 1, por. 2

Thank you for the opportunity to review the zone change application, from agricultural to general preservation, for the proposed 18-hole golf course. The rezoning application accurately summarizes historic preservation concerns for the area. An archaeological inventory survey conducted for the proposed golf course found eight historic sites. Seven of these sites were considered no longer significant. The remaining site, a possible prehistoric habitation area (Site 50-80-08-4366), is located outside of the development area of the golf course and therefore will not be affected by current development plans. Therefore we believe that this zone change action will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 587-0015.

Aloha,


Don Hibbard, Administrator
State Historic Preservation Division

EJ:jen



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

KEITH AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER II
DONA L. HANAKE

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December 1, 1993

Mr. Harvey K. Hida, P. E., President
Hida, Okamoto & Associates, Inc.
1440 Kapiolani Blvd.
Honolulu, Hawaii 96814

LOG NO: 10209
DOC NO: 9311EJ33

Subject: Lualualei Golf Course Wells I through 4
Lualualei, Wai'anae, O'ahu
TMK: 8-7-09:002 and 8-7-10:010

Dear Mr. Hida:

This is to inform you that Cultural Surveys Hawaii has submitted an acceptable archaeological inventory survey report to our office. We have notified the Commission on Water Resources Management that the report has been submitted and is acceptable and that the condition requested for this permit has been met.

If you have any questions please contact Elaine Jourdane at 587-0015.

Sincerely Yours,

DON HIBBARD, Administrator
State Historic Preservation Division

EJ:jt



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

KEITH AILU, CHAIRPERSON
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DONA L. HANAIKE

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STATE PARKS

WATER AND LAND DEVELOPMENT

December 1, 1993

MEMORANDUM

LOG NO: 10208
DOC NO: 9311EJ32

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division 

SUBJECT: Well Construction & Pump Installation Permit Applications
Lualualei Golf Course Wells 1 through 4
Well Nos. 2508-10 through 2508-13
Lualualei, Waiane, O'ahu
TMK 8-7-09:002 and 8-7-10:010

Pursuant to our memorandum to you on September 7, 1993 (LOG 9258 and DOC 9308EJ18), we would like to inform you that an acceptable archaeological inventory survey report has been submitted to the Historic Preservation Division of the Department of Land and Natural Resources and that the condition requested for this permit has been met.

EJ:jt

DEC 01 1993

APPENDIX I

Nānākuli/Mā'ili Neighborhood Board Resolutions

RESOLUTION

SUPPORTING THE AMENDMENT OF THE WAI'ANAE SUSTAINABLE COMMUNITIES PLAN TO INCORPORATE THE INPUT AND IDEAS OF THE NANAKULI-MAILI NEIGHBORHOOD BOARD #36, INCLUDING ITS SUPPORT FOR THE DEVELOPMENT OF A LIGHT-INDUSTRIAL PARK IN LUALUALEI VALLEY, NANAKULI, OAHU.

WHEREAS, on or about March 12, 2007, the Department of Planning and Permitting of the City and County of Honolulu ("DPP") began the official process to update and revise the existing Wai'anae Sustainable Communities Plan ("WSCP") which was adopted in December 2000;

WHEREAS, as a part of DPP's 5-year review process (see Section 24-9.10 of the Revised Ordinances of Honolulu), DPP is in the process of evaluating and re-assessing the appropriateness of the WSCP's regional vision, policies, design principles and guidelines and implementing actions;

WHEREAS, DPP contracted the services of Townscape, Inc. ("Townscape") to lead the "community participation processes" as DPP's planning consultant;

WHEREAS, Townscape began the community participation process in April 2007, and a planning advisory committee ("PAC") was established and its members were selected by June 2007;

WHEREAS, also as a part of the community participation process, Townscape attended several meetings of the Wai'anae Neighborhood Board meetings;

WHEREAS, the Neighborhood Commission established the Nanakuli-Maili Neighborhood Board # 36 ("Nanakuli NB") in February 2008, and its members were elected and seated in March 2008;

WHEREAS, since the Nanakuli NB was formed and its members seated after the commencement of the community participation process, and since Townscape has not had the opportunity to attend any of Nanakuli NB's meetings, the Nanakuli NB has not been able to make any meaningful input or comment to the community participation process to revise the WSCP;

WHEREAS, on or about July 15, 2008, the Nanakuli NB unanimously supported the development of a light-industrial park in Lualualei Valley, specifically that project known as the Nanakuli Community Baseyard, and which unanimous support is evidenced by the adoption of that certain Resolution dated July 15, 2008 ("7/15/08 Resolution") and that certain letter of Mr. Victor Kila dated July 21, 2008 ("Kila Letter") (copies of the 7/15/08 Resolution and Kila Letter are attached hereto as Exhibit "A");

WHEREAS, the 7/15/08 Resolution specifically recognizes the Nanakuli NB's desire to have the WSCP amended to support the development of the Nanakuli Community Baseyard Project in Lualualei Valley;

WHEREAS, although copies of the 7/15/08 Resolution and Kila Letter were delivered to Townscape, the September 5, 2008 version of Townscape's WSCP Public Review Draft did not reflect the Nanakuli NB's position to have a light-industrial park developed in Lualualei Valley

WHEREAS, the Nanakuli NB took further action to adopt at its general meeting held on September 16, 2008, a Resolution to specifically support an amendment to the WSCP to include the designation of the proposed Nanakuli Community Baseyard Project in Lualualei Valley ("9/16/08 Resolution");

WHEREAS, at the most recent PAC meeting which was held on September 18, 2008, Board Member Kimo Kelii "pressed" to have heard the need for input and participation from the Nanakuli NB in the community participation process and delivered to Townscape the 9/16/08 Resolution, together with a cover letter signed by all 9 members of the Nanakuli NB (a copy of the 9/16/08 Resolution and the accompanying cover letter are attached hereto as Exhibit "B");

WHEREAS, since the September 18 PAC Meeting, Townscape has accepted the further comments from Nanakuli NB members and has incorporated some, but not all, of the input into the current revised draft of Townscape's WSCP Public Review Draft which is dated October 1, 2008 ("10/1/08 Draft");

WHEREAS, since Townscape has announced its intention to develop a further revised WSCP Public Review Draft by November 2008 and to submit to DPP its proposed Final Revised WSCP by mid-December 2008, it is crucial that the Nanakuli NB continue to make known to Townscape its ideas, suggestions and proposals regarding any further amendment of the WSCP and to continue to oversee the implementation of the Nanakuli NB's ideas and suggestions into the Final Revised WSCP;

WHEREAS, Townscape has scheduled future PAC meetings and is scheduled to attend Nanakuli NB's general meeting which is scheduled for October 21, 2008; now, therefore,

BE IT RESOLVED that the Nanakuli-Mailii Neighborhood Board #36 hereby supports the amendment of the WSCP to incorporate the input and ideas of the Nanakuli NB (some of which have been already included in the 10/1/08 Draft), and including the new and additional input and comments to the 10/1/08 Draft which are set forth in Exhibit "C" which is attached hereto and incorporated herein;

BE IT FURTHER RESOLVED that the Nanakuli-Mailii Neighborhood Board # 36 hereby re-states its support for the development of the Nanakuli Community Baseyard Project, and states its support to amend the WSCP to provide for the development of a light-industrial park in Lualualei Valley, Nanakuli, Oahu, and which is identified on Map B of the 10/1/08 Draft;

BE IT FURTHER RESOLVED that the Nanakuli-Mailii Neighborhood Board # 36, except for the specific amendments previously requested by the Nanakuli-Mailii Neighborhood Board and the additional changes requested in Exhibit "C," hereby reserves judgment and makes no comment regarding other aspects of the 10/1/08 Draft; and

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the Mayor of the City and County of Honolulu, the Director of the Department of Planning and Permitting of the City and County of Honolulu, the Chairperson of the Honolulu Planning Commission and the Chairperson of the Honolulu City Council.

INTRODUCED AND SUPPORTED BY THE FOLLOWING MEMBERS OF THE NANAKULI-MAILII NEIGHBORHOOD # 36:

<u>Joseph U. Aye</u>	<u>Victory A. Kila</u>
<u>Antoinette J. Maiana-Tunuka</u>	<u>Patty K. Teruya</u>
<u>Clyde E. ...</u>	
<u>...</u>	
<u>J. P. Hokuli</u>	

The Nanakuli-Mailii Neighborhood Board # 36 adopted this Resolution at its meeting which was held on October 21, 2008.

Patty K. Teruya
Patty K. Teruya
Chairperson
10-21-08

EXHIBIT "A"

RESOLUTION

SUPPORTING THE DEVELOPMENT AND CONCEPT OF THE PROPOSED NANAKULI COMMUNITY BASEYARD PROJECT, A LIGHT-INDUSTRIAL PARK IN LUALUALEI VALLEY, NANAKULI, OAHU.

WHEREAS, a new 96-acre light industrial park is being proposed for development on a portion of TMK No. 8-7-9: 02 in Lualualei Valley, Nanakuli, Oahu (herein called "Industrial Park Project"); and

WHEREAS, the Industrial Park Project will be a center for many new employment in the construction trades, automotive repair, trucking, warehousing and other light-industrial businesses and that the type of employment created in this proposed project are quality jobs that pay well and are also the type of jobs that are being sought after by many Leeward Coast residents; and

WHEREAS, the Industrial Park Project is being planned to included an "incubator" facility for new or developing businesses in the Leeward Coast; and

WHEREAS, Tropic Land, LLC, the owner and developer of the Industrial Park Project, made a public presentation regarding the Industrial Park Project to the Planning and Zoning Committee of the Nanakuli-Mailii Neighborhood Board # 36 (herein "Neighborhood Board") on June 24, 2008; and

WHEREAS, in its recent presentation to the Planning and Zoning Committee, Tropic Land has made commitment with several unilateral agreements regarding the development of the Industrial Park Project which are attached hereto and incorporated herein as Exhibit "A;" and

WHEREAS, the Planning and Zoning Committee has received an informational booklet describing the project with more than 590 signatures/letters of support for the Industrial Park Project from many Leeward Coast residents and community groups; and

WHEREAS, in order for this project to become a reality for the residents of the Leeward Coast, various governmental approvals (herein collectively "Government Permitting Process") are required, which may include (i) an amendment of the Wai'anae Sustainable Communities Plan, (ii) the rezoning of the 96-acre site from P-2 (general preservation district) to I-1 (limited industrial district), (iii) a State Land Use Boundary amendment to reclassify the 96-acre site from Agricultural to Urban use, and (iv) an amendment of the Leeward Coast Enterprise Zone to include the 96-acre site; and

WHEREAS, the Planning and Zoning Committee, upon the unanimous vote of its members at the Committee's meeting held on June 24, 2008, adopted a motion to support the Industrial Park Project and recommend the action of the Nanakuli-Mailii Neighborhood Board #36 to support the Industrial Park Project at the Board's upcoming meeting on July 15, 2008; and

WHEREAS, the Nanakuli-Mailii Neighborhood Board No. 36 recognizes the need for a project in the Leeward Coast, which has traditionally "lagged" behind the rest of Oahu in terms of economic development and employment opportunities for its coastal residents; now, therefore,

BE IT RESOLVED that the Nanakuli-Mailii Neighborhood Board No. 36 supports the development of the Industrial Park Project; and

BE IT RESOLVED that the Nanakuli-Mailii Neighborhood Board No. 36 hereby supports and encourages the approvals of the various governmental agencies that will be reviewing the Industrial Park Project in the Government Permitting Process; and

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the Mayor of the City and County of Honolulu, the Director of the Department of Planning and Permitting of the City and County of Honolulu, the Chairperson of the Honolulu Planning Commission, the Chairperson of the Honolulu City Council, the Governor of the State of Hawaii, the Executive Director of the Office of Planning of the State of Hawaii, the Chairperson of the State Land Use Commission, and the Director of the Department of Business and Economic Development of the State of Hawaii.

INTRODUCED AND SUPPORTED BY:

NANAKULI-MAILII NB#36

James King Selin
Antoinette B. Niemann-Murphy
Karalei U. Aigoo-Jani
Chad H. W. H. M.
Merwina K. M. Casto-Kaio
Cynthia K. P. P. P.
John P. P. P. P.
John P. P. P. P., Chair, NB#36

The Nanakuli-Mailii Neighborhood Board # 36, hereby certifies that this Resolution was adopted by the Nanakuli-Mailii Neighborhood Board # 36 at its meeting held on July 15, 2008.

7-15-08

Tropic Land LLC agrees to the Unilateral Agreement and Promise to the Community along the Leeward Coast.

1. An MSW/composting/construction debris landfill *will not* be built on any Tropic's land LLC located in Nanakuli, Oahu.
2. A golf course *will not* be built on Tropic's land, LLC, Nanakuli, Oahu.
3. Any future housing development *will not* be built on Tropic's land.
4. Strip clubs, hostess bars, night clubs, or any alcohol establishments stores and pornography stores *will not* be allowed on Tropic's land, LLC, Nanakuli Oahu.
5. Tropic LLC, Nanakuli, Oahu *will* do an Environmental Impact Statement ("EIS") covering traffic, infrastructure and other pertinent issues. To be presented to the community and board members.
6. Tropic LLC, Nanakuli, Oahu *will* go green on energy consumption.
7. Tropic LLC, Nanakuli, Oahu *will* be sensitive to cultural practices and places and will work with Nanakuli or Leeward Coast residents cultural monitors.
8. Tropic LLC, Nanakuli, Oahu *will* contribute \$1,000,000 for the a community benefits program which will be used to benefit the Nanakuli and Maili communities.
9. Tropic LLC, Nanakuli, Oahu *will* apply for Enterprise Zone designation for the project.
10. Tropic LLC, Nanakuli, Oahu *will* find an appropriate permanent name for the project site, acceptable to the community and offer community involvement on names for the site. To add the word "Nanakuli", in naming the site.

The Planning and Zoning Committee has requested of Tropic Land the additional language to these promises which are indicated by the underlined text.



July 21, 2008

Kahu Victor Allen Kila
 Pacific Faith Fellowship Church
 Maili Commercial Center
 87-1784 Farrington Highway, Unit 8
 Wai'anae, Hawaii 96792

RE: Support of Tropic Land LLC proposed Light Industrial Project – Luahualei, O'ahu

Aloha Chair Teruya:

As you know I was on a religious mission in Jamaica and have recently returned home. Being away, I was unable to attend the Nanakuli-Maili NB#36 regular meeting on July 15, 2008. I understand that Tropic Land LLC did a presentation to the full board and the board introduced a Resolution and an exhibit agreement was supported unanimously of a vote 8 aye; 0 opposition.

As a member of the Planning & Zoning Committee which met on June 24, 2008, I was in attendance and voted with a motion to support this project and send to the full board meeting. This support recommendation did come from the P&Z Committee meeting.

This letter is to clarify my position and for the record as a member of the Nanakuli-Maili NB#36, and as the (9) ninth member of the board, I would like to state that my vote is to support this project and my vote be noted in the records through this process.

I'm very aware of this project and that Tropic Land LLC will continue to work with the board with updates but, this project will benefit our community with many opportunities.

Chair Teruya, I'm asking to be included in the support of Tropic Land LLC project and state my vote as "aye", as a member of the board I did not want my vote to be excluded.

Thank you and Aloha,

Ms. Victor Allen Kila, NB#36 member
 Committee Chair, Health & Public Safety

Cc: Neighborhood Commission Office
 P&Z Committee Chair, Eli





NANAKULI-MAILI NEIGHBORHOOD BOARD NO. 36

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 408 • HONOLULU, HAWAII, 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov>

Townscape Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813

Attn: Ms. Harmonee Williams

RE: Revised Wai'anae Sustainable Communities Plan

Ladies and Gentlemen:

We have received and reviewed the Revised Wai'anae Sustainable Communities Plan (2009) Preliminary Draft dated September 5, 2008.

However, based upon our review, it has come to our attention that the preliminary draft makes no mention of a proposed 96 acre light industrial park project in Luahualei Valley, that is supported by our Board and community.

Enclosed for your information is a copy of our formal support Resolution adopted and signed by all 8 Board members in attendance at our meeting held on July 15, 2008, supporting the proposed project and its inclusion in the Amendment to the Wai'anae Sustainable Communities Plan. Also enclosed is a copy of a letter dated July 21, 2008, signed by Mr. Victor Kila, the ninth Board member

who was unable to attend the meeting, also confirming his support of the resolution and the project.

It is also our understanding that you had previously been provided with a Community Support Report for the proposed light industrial project, that contains approx. 590 petition signatures and support letters evidencing the widespread community support for the proposed 96 acre light industrial park project.

We hereby request that the following language be added to the next Public Review Draft of the Revised Wai'anae Sustainable Communities Plan (2009), that is scheduled to be issued in early October, 2008. We propose that the following language be added to Section 2.4.11(new language in bold) :

“Other economic opportunities discussed include expansion of retail and commercial centers in the four major ahupua'a and the creation of a light industrial park in the **Lualualei/Ma'ili ahupua'a known as the Nanakuli Community Baseyard Project**. Similar to the other sectors, it is recommended that locally-owned businesses be given priority, and that they hire residents as much as possible.

The Nanakuli-Maili Neighborhood Board #36 at its formal meeting held on July 15, 2008, formally issued a support Resolution unanimously supported by all of its Board members, supporting the development of a proposed new 96 acre light industrial park known as

the Nanakuli Community Baseyard project, located in Lualualei Valley. The resolution issued by the Nanakuli-Mailii neighborhood board supports an amendment to the Wai'anae Sustainable Communities Plan, that would include the designation of the proposed project for the development of a light industrial park in Lualualei Valley. The proposed project has also received widespread community support along with endorsements from several business organizations located in the Leeward Coast."

Thank you for your consideration and kokua on this matter that is important to the economic future of our community.

Issued this 10th day of September, 2008:

NANAKULI-MAILII NEIGHBORHOOD BOARD #36

John K. King
Antoinette A. Mairamau-Munuka
Paalei U. Oupolani
Edith K. U. U.
Marina K. M. Calkas
Heath A. Kila
Christina K. K.
Joseph P. H.

Exhibit "C"

The 10/1/08 Draft includes the following language in the third paragraph on page 2-11:

"It is recognized that the four ahupua'a have different concerns and needs, and thus, the Wai'anae Sustainable Communities Plan must be flexible enough to take this into account. For example, the current land use and economic opportunities in Makaha Valley are very different from the circumstances in the Lualualei/Ma'ili and Nanakuli ahupua'a. As such, the land use policies and guidelines must allow for variance between the differing ahupua'a."

We believe that all ahupua'a along the Waianae Coast probably are in agreement with the concept in the above language; however, implementing the concept that we are all in agreement with must still be addressed.

The Nanakuli NB suggests that all further work on Townscape's Public Review Draft of the WSCP should progress with the understanding and agreement with the concept that greater weight be given to each ahupua'a's opinion when it comes to land use decisions made in their own ahupua'a. Although everyone should be able to voice their opinions, shouldn't there be greater weight given to the opinions of the residents in the ahupua'a involved?

This is especially true with respect to the drawing of the Wai'anae Concept Map in Section 2.3 and working out the details in Chapter 5, Implementation, both of which have not been prepared and circulated for review and comment. The Nanakuli NB strongly believes that the Nanakuli-Mailii communities should be given greater consideration and weight when deciding issues in the Lualualei/Mailii and Nanakuli ahupua'a. Likewise, we understand that that it is only fair and reasonable that the opinions of the Nanakuli-Mailii communities will have less weight when involving land use issues in the Wai'anae and Makaha ahupua'a.

The Nanakuli NB has already expressed its position to support the identification of the industrial park project in the Lualualei/Mailii ahupua'a as identified on Map B of the Wai'anae Concept Map in Section 2.3, and we hereby make no further comment and reserve our judgment with respect to the proposed land uses identified on the Wai'anae Concept Map for the other three ahupua'a.

APPENDIX J

Economic/Fiscal Impact Analysis of the Proposed Nanakuli
Community Baseyard. Hastings, Conboy, Braig & Associates, Ltd.,
February 2010

February 16, 2010

Ms. Nancy Nishikawa
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

RE: Economic/Fiscal Impact Analysis of the Proposed Nanakuli Community Baseyard

Dear Nancy:

We have completed the following **Economic/Fiscal Impact Analysis of the Proposed Nanakuli Community Baseyard** in response to a written comment from the State Land Use Commission (LUC). The pertinent LUC comment, as set forth in a letter addressed to Mr. Glenn T. Kimura dated January 5, 2010, is as follows:

“Additionally, we believe that the proposed development would generate revenues to the State and the City and County of Honolulu as well as require governmental operating expenditures to support it. However, there is no economic and fiscal analysis of the proposed development in the DEIS. Accordingly, we request that an analysis that addresses the projected revenues and expenses of the development be provided. The analysis should include a discussion on the various revenues, including personal income, general excise, and real property taxes, that would be generated. Similarly, the analysis on governmental expenditures should include, but not be limited to, the following areas: roadways (improvements and maintenance), public safety, health and sanitation; human services; recreation; debt service; and governmental employee benefits.”

INTRODUCTION AND EFFECTIVE DATE OF THE ANALYSIS

This economic/fiscal impact analysis of the Proposed Nanakuli Community Baseyard focuses on the potential impact of the proposed development on future public sector revenues and expenditures. More specifically, the intent of this analysis is to provide the following information: (1) reasonable forecasts of potential, additional revenues to the State of Hawaii and City and County of Honolulu governments generated by the proposed subject development and (2) reasonable forecasts of potential, additional governmental operating expenditures by the State of Hawaii and the City and County of Honolulu necessitated by, or resulting from, the proposed subject development.

Prior to this assignment, we prepared a Market Analysis and Employment Forecast for the Proposed Nanakuli Community Baseyard as part of a more comprehensive Draft Environmental Impact Statement (DEIS). The effective date of our market analysis and employment forecast for the proposed subject development was March 31, 2008.

The effective date of our analysis corresponding to this economic/fiscal impact analysis of the proposed subject development is February 1, 2010, and all dollar amounts presented herein are generally expressed in terms of 2010 monetary values. Also, please note that for purposes of this assignment, we have not updated or revised any portion of our initial March 2008 market analysis and employment forecast report.

FRAMEWORK OF THE ANALYSIS

The two following statements are excerpted from the Nanakuli Community Baseyard Draft Environmental Impact Statement (DEIS), set forth under Chapter 3, Section 3, (i.e., 3.3 Preliminary Cost and Timetable):

Based on the conceptual site plan, the preliminary cost for mass grading and infrastructure construction is estimated at \$29 million.

As the master developer for the project, Tropic Land, LLC plans to construct the infrastructure for the light industrial park over a period of ten years.

The second statement, alluding to the planned construction of proposed subject infrastructure over a ten-year period, is particularly relevant to the framework of this analysis. As indicated within the accompanying Tables 1 and 2, our forecasts of the potential economic/fiscal impacts of the proposed subject development to the respective governmental entities of the State of Hawaii and the City and County of Honolulu are presented with respect to two distinct time periods of assessment.

The first time period of assessment is represented by an initial, 10-year period corresponding to the projected timetable for completion of proposed infrastructure construction. From a forecasting perspective, this first assessment period (i.e., ten years) is characterized as a short-range to mid-range economic forecast.

The second time period of assessment is represented by the period of time extending beyond the initial ten-year timetable for completion of proposed infrastructure improvements. From a forecasting perspective, this second assessment period (extending beyond ten years) is characterized as a long-range economic forecast.

Therefore, within the framework of this analysis, our forecasts of the potential economic/fiscal impacts of the proposed subject development on future state and local government revenues and expenditures are presented with respect to two distinct time periods of assessment:

- (1) A Short-Range to Mid-Range Forecast corresponding to the anticipated ten-year period required to complete incremental infrastructure construction; and
- (2) A Long-Range Forecast corresponding to the subsequent period of time beyond the ten-year construction period required to complete infrastructure improvements.

ECONOMIC/FISCAL IMPACT FOR THE STATE OF HAWAII

The potential economic/fiscal impacts of the Proposed Nanakuli Community Baseyard on future government revenues and expenditures for the State of Hawaii are summarized in Table 1.

REVENUES:

Impact on Revenues, Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

For purposes of this analysis, the proposed subject development's potential impact on generating additional State government revenues over the course of its anticipated ten-year construction period is measured in terms of two basic categories, or sources, of revenue: general excise taxes (State share) and personal income taxes.

General Excise Taxes -- Over the course of the proposed project's anticipated ten-year construction phasing, the State's share of generated general excise tax revenue is forecast at four percent of the project's estimated total construction cost. In this case, the total construction cost estimate is \$29 million. Four percent of this total cost estimate equals \$1,160,000.

Personal Income Taxes -- As set forth in our Market Analysis and Employment Forecast report of March 2008, the total short-term, or short-range, employment forecast for the proposed subject development is estimated at 120 to 150 person-years (the term "person-year" refers to the equivalent of one year of full-time work for one worker). For purposes of this analysis, we utilize a single, point-estimate forecast of 135 person-years.

The gross workforce income generated by the proposed project's anticipated construction is forecast at \$8,100,000 based on the following factors: (a) a total employment forecast estimated at 135 person-years; and (b) a gross average annual wage per person-year estimated at \$60,000 [135 x \$60,000 = \$8,100,000]. The average annual wage estimate of \$60,000 is based on data pertaining to Construction Industry wages for Honolulu County, as compiled by the State Department of Labor and Industrial Relations.

Personal income tax revenue is forecast at five percent (5%) of gross workforce income. A five percent capture rate is generally consistent with the following historical data, as reported within the State of Hawaii Data Book:

<u>Calendar Year</u>	<u>Gross Family Income Level</u>	<u>State/Local Taxes Paid</u>	<u>Percent of Income</u>
2007	\$50,000	\$3,239	6.48%
	\$75,000	\$5,352	7.14%
2006	\$50,000	\$2,919	5.84%
	\$75,000	\$5,305	7.07%
2005	\$50,000	\$2,177	4.35%
	\$75,000	\$4,224	5.63%

Estimated Tax Burden for a Four-Person Family on Oahu in 2006,
As a Percentage of Gross Family Income:

Federal Income Tax	6.3%
State Income Tax	4.1
Social Security Tax	15.2
General Excise Tax	5.5
Real Property Tax	1.5
Employment Insurance Tax	5.2
Specific Excise Tax	0.3
Automobile Tax	<u>0.7</u>
Total Tax Burden	38.8%

Five percent of the gross workforce income estimate of \$8.1 million equals \$405,000.

Forecasted Impact on Revenues -- The forecasted impact on general excise tax revenue is estimated at \$1,160,000. The forecasted impact on personal income tax revenue is estimated at \$405,000. Therefore, the potential impact on State government revenues over the ten-year period corresponding to the project's construction of infrastructure improvements is forecast at \$1,565,000.

Impact on Revenues, Long-Range Forecast (Beyond 10 Years, Annual Basis)

The proposed subject development's potential impact on generating additional State government revenues on a long-range, stabilized operational basis is also measured in terms of two basic categories, or sources, of revenue: general excise taxes (State share) and personal income taxes.

The proposed development is not anticipated to achieve immediate, stabilized build-out and/or operational occupancy upon completion of construction. Given the scale of the proposed development and depending upon future market conditions, stabilized market absorption and build-out is likely to require multiple months, if not years, to accomplish. This analysis, however, is based on the assumption that the proposed subject development has attained a stabilized operational condition. As such, this portion of the analysis provides a general indication of the long-range revenue-generating potential associated with the proposed subject development, on an annual basis.

General Excise Taxes -- Economic/sales activity either conducted at the project site or generated by business entities based at the project site will generate general excise tax revenue to the State. Forecasting the future level of such activity and the amount attributable to a net increase in general excise tax revenue is not a straightforward procedure. First, the tenant mix and type of businesses that will ultimately locate and operate at the project site are presently unknown. Second, it must be assumed that some percentage of business activity at the project site will merely represent a geographic relocation of pre-existing sales, and this would not imply any net increase to the general excise tax base.

For illustrative and analytical purposes, we have estimated a stabilized level of forecasted additional business activity at \$37.5 million per year. This figure is derived by multiplying an estimated building area of 300,000 square feet by an average sales factor of \$125 per square foot of building area. A building floor area estimate of 300,000 square feet equates to approximately ten percent of

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the project's net developable land area of 70 acres. An average sales factor of \$125 per square foot of building area is considered reasonable for the subject's proposed light industrial development concept. Again, it is important to note the limitations inherent within this portion of the analysis as a result of present unknowns and possible future variables.

Based on the factors outlined above, the annual impact on general excise tax revenue is forecast at four percent of \$37.5 million, or \$1,500,000 per year.

Personal Income Taxes -- As set forth in our Market Analysis and Employment Forecast report of March 2008, the total long-term, or long-range, employment forecast for the proposed subject development on a stabilized operational basis is estimated at 840 to 1,260 full-time jobs. For purposes of this analysis, we have utilized a single, point-estimate forecast of 1,050 jobs associated with the long-range operational aspect of the proposed development.

The gross workforce income utilized as the basis for estimating the long-range impact on personal income tax revenue is forecast at \$6,400,000 based on the following factors: (a) annual net additional employment is estimated at 15 percent of 1,050 jobs, or approximately 160 new jobs created; and (b) the gross average annual wage per new job created is estimated at \$40,000 [160 x \$40,000 = \$6,400,000]. The average annual wage estimate of \$40,000 is based on data pertaining to Manufacturing, Service Providing, and Transportation and Utilities Industry wages for Honolulu County, as compiled by the State Department of Labor and Industrial Relations.

Personal income tax revenue is forecast at five percent (5%) of gross workforce income. Five percent of the estimated annual gross workforce income of \$6.4 million equals \$320,000 per year.

Forecasted Impact on Revenues -- The forecasted annual impact on general excise tax revenue is estimated at \$1,500,000 per year. The forecasted annual impact on personal income tax revenue is estimated at \$320,000. Therefore, the potential annual impact on additional State government revenues associated with this long-range forecast for the proposed subject development is estimated at \$1,820,000 per year.

EXPENDITURES:

The potential impact of the proposed subject development on State government expenditures is measured as a function of additional residential population growth. In essence, the proposed development is forecast to create additional job opportunities and personal income growth. In turn, the forecasted increases in employment and personal income would then be theoretically capable of supporting or resulting in some incremental increase in the number of people residing within the State of Hawaii.

As one example, it might be possible for new job openings to potentially attract an in-migration of labor to Hawaii or provide an opportunity for someone to return to Hawaii from out-of-State. As another example, new job opportunities could possibly provide an existing resident sufficient income to support additional household members, be it in the form of friends or family moving to Hawaii from out of state, increases to an existing family size, or a variety of alternative means.

One of the key aspects associated with this methodology of forecasting the impact on State government expenditures is estimating the anticipated additional population growth associated with the proposed development. Our employment forecast for the Proposed Nanakuli Community Baseyard, as of March 2008, estimated the potential impact of the subject development at 560 to 840 on-site jobs, plus an additional 280 to 420 off-site jobs resulting from a macro-economic, multiplier effect.

Only a given percentage of this estimated employment forecast has a reasonable expectation of representing incremental new employment, or a net increase in jobs, for the State. Some percentage of the jobs created at the project site is likely to be associated with pre-existing businesses relocating and/or expanding to the site from other areas of Oahu and/or the Neighbor Islands. Under these circumstances, this would not necessarily represent the creation of additional, new jobs to the State but, rather, a physical relocation of existing jobs.

Based on the high unemployment rate within the local construction industry, the residential population impact of the proposed subject development is forecast to be negligible, or nominally insignificant, during the ten-year infrastructure construction period. For illustrative and analytical purposes, the resident population impact of the proposed subject development in terms of a stabilized operational time frame beyond the ten-year infrastructure construction period is forecast at an estimated 160 new residents.

Impact on Expenditures, Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

We do not foresee and, therefore, do not forecast any significant increases in State government expenditures associated with the proposed subject development during the course of its anticipated, incremental construction of infrastructure improvements.

Impact on Expenditures, Long-Range Forecast (Beyond 10 Years, Annual Basis)

Resident Population Increase -- The forecasted potential impact of 160 new residents resulting from the proposed subject development is based on a factor equal to fifteen percent (15%) of the total employment forecast of 1,050 jobs attributable to the proposed development. A fifteen percent factor and the resulting projection of 160 new residents are identical to the annual, additional employment forecast utilized previously within our revenue forecasting model. In essence, we have assumed that each new, additional job created at the project site will result in the addition of one new resident to the State of Hawaii.

Annual Expenditures Per Capita -- As reported by the Hawaii State Department of Accounting and General Services, total government expenditures by the State of Hawaii for the fiscal year ending June 30, 2008 were \$8.22 billion; annual debt service is included as part of total government expenditures. The resident population estimate for the corresponding time period, as reported in the State of Hawaii Data Book, was approximately 1,283,000. Dividing total government expenditures by the resident population estimate results in an indicated annual per capita governmental expenditure of \$6,400 per resident [$\$8,220,000,000 \div 1,283,000$, as rounded].

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Forecasted Impact on Expenditures -- For illustrative purposes, the long-range employment forecast associated with the proposed subject development is projected to result in a net increase of 160 additional residents to the State of Hawaii. An analysis of general governmental expenditures by the State of Hawaii on an average per capita basis indicates an annual expenditure of \$6,400 per resident. Based on these factors, the potential annual impact on additional State government expenditures associated with this long-range forecast for the proposed subject development is estimated at \$1,024,000 per year [160 x \$6,400 per year].

ECONOMIC/FISCAL IMPACT FOR THE CITY AND COUNTY OF HONOLULU

The potential economic/fiscal impacts of the Proposed Nanakuli Community Baseyard on future government revenues and expenditures for the City and County of Honolulu are summarized in Table 2.

REVENUES:

Impact on Revenues, Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

For purposes of this analysis, the proposed subject development's potential impact on generating additional County government revenues over the course of its anticipated ten-year construction period is measured in terms of two basic categories, or sources, of revenue: general excise taxes (County share) and permit fees.

General Excise Taxes -- Over the course of the proposed project's anticipated ten-year construction phasing, the County's share of generated general excise tax revenue is forecast at one-half percent of the project's estimated total construction cost. This one-half percent share of the general excise tax corresponds to the designated Transit Tax currently in effect through December 31, 2022. As mentioned previously, the total construction cost estimate is \$29 million. One-half percent of this total cost estimate equals \$145,000.

Permit Fees -- County permit fees associated with the proposed subject development are projected to total approximately \$160,000 based on information provided by the developer's civil engineering consultant, Hida, Okamoto & Associates, Inc.

Forecasted Impact on Revenues -- The forecasted impact on the County's share of general excise tax revenue is estimated at \$145,000. The forecasted impact on increased permit fees revenue is estimated at \$160,000. Therefore, the potential impact on City and County government revenues over the ten-year period corresponding to the project's construction of infrastructure improvements is forecast at \$305,000.

Impact on Revenues, Long-Range Forecast (Beyond 10 Years, Annual Basis)

The proposed subject development's potential impact on generating additional County government revenues on a long-range, stabilized operational basis is measured in terms of a single, principal category/source of revenue: real property taxes.

The proposed development is not anticipated to achieve immediate, stabilized build-out and/or operational occupancy upon completion of construction. Given the scale of the proposed development and depending upon future market conditions, stabilized market absorption and build-out is likely to require multiple months, if not years, to accomplish. This analysis, however, is based on the assumption that the proposed subject development has attained a stabilized operational condition. As such, this portion of the analysis provides a general indication of the long-range revenue-generating potential associated with the proposed subject development, on an annual basis.

Real Property Taxes -- The presently unimproved site of the proposed subject development is a

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non-subdivided portion of First Division, Tax Map Key (TMK) 8-7-9, Parcel 2. The current annual real property tax corresponding to TMK 8-7-9, Parcel 2 is approximately \$20,000. The Proposed Nanakuli Community Baseyard, upon completion of its proposed infrastructure improvements, will add 70 acres of developable urban land, zoned for industrial use, to the County's real property tax base. As future build-out occurs over time, an additional layer of tax revenue will be generated by related increases in building assessment values.

Real property tax revenue is a function of real property assessment values multiplied by the applicable tax rate. The annual real property tax rate for unimproved, urban-zoned land classified as industrial use is \$12.40 per \$1,000 of assessment value.

For long-range forecasting purposes, the subject site's average fee simple land value assessment, following completion of planned infrastructure improvements, is estimated at \$1.0 million per acre, or approximately \$23.00 per square foot. This equates to a total, overall land value assessment of \$70 million for property taxation purposes. The long-range forecast of an overall additional building value assessment associated with the proposed subject development is based on a total floor area estimate of 300,000 square feet and an average assessment factor of \$100 per square foot of floor area.

Forecasted Impact on Revenues -- Based on the factors outlined above, the potential annual impact on additional City and County government revenues from real property taxes associated with this long-range forecast for the proposed subject development is estimated at \$1,240,000 per year $[(\$70,000,000 + \$30,000,000) \div \$1,000] \times \12.40 per year].

EXPENDITURES:

The potential impact of the proposed subject development on City and County government expenditures is also measured as a function of additional residential population growth. As stated previously, the proposed development is forecast to create additional job opportunities and personal income growth, and this forecasted increases in employment and personal income would then be theoretically capable of supporting or resulting in some incremental increase in the number of people residing within the City and County of Honolulu.

As consistent with our State impact analysis, the residential population impact of the proposed subject development for the City and County of Honolulu is forecast to be negligible, or nominally insignificant, during the ten-year infrastructure construction period based on the high unemployment rate within the local construction industry. Also, for illustrative and analytical purposes, the resident population impact of the proposed subject development in terms of a stabilized operational time frame beyond the ten-year construction period is similarly forecast at an estimated 160 new residents.

Impact on Expenditures, Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

We do not foresee and, therefore, do not forecast any significant increases in City and County government expenditures associated with the proposed subject development during the course of its anticipated, incremental construction of infrastructure improvements.

Impact on Expenditures, Long-Range Forecast (Beyond 10 Years, Annual Basis)

Resident Population Increase -- The forecasted potential impact of 160 new residents resulting from the proposed subject development is based on a factor equal to fifteen percent (15%) of the total employment forecast of 1,050 jobs attributable to the proposed development. A fifteen percent factor and the resulting projection of 160 new residents are identical to the annual, additional employment forecast utilized previously within our revenue forecasting model for the State of Hawaii. In essence, we have assumed that each new, additional job created at the project site will result in the addition of one new resident to the City and County of Honolulu.

Annual Expenditures Per Capita -- As reported by the Honolulu Department of Budget and Fiscal Services, total government expenditures by the City and County of Honolulu for the fiscal year ending June 30, 2009 were \$1.808 billion; annual debt service is included as part of total government expenditures. The resident population estimate for the City and County of Honolulu as of July 1, 2008, as reported in the State of Hawaii Data Book, was approximately 905,000. Dividing total government expenditures by the resident population estimate results in an indicated annual per capita governmental expenditure of \$2,000 per resident [$\$1,808,000,000 \div 905,000$, as rounded].

Forecasted Impact on Expenditures -- For illustrative purposes, the long-range employment forecast associated with the proposed subject development is projected to result in a net increase of 160 additional residents to the City and County of Honolulu. An analysis of general governmental expenditures by the City and County of Honolulu on an average per capita basis indicates an annual expenditure of \$2,000 per resident. Based on these factors, the potential annual impact on additional County government expenditures associated with this long-range forecast for the proposed subject development is estimated at \$320,000 per year [$160 \times \$2,000$ per year].

LIMITING CONDITIONS AND ASSUMPTIONS

The following conditions and assumptions embodied in this report constitute the framework of our analysis and conclusions.

- This analysis is based upon the condition of the national economy and the purchasing power of the dollar as of the date of the report.
- This report expresses the opinion of the signers as of the date of the report; in no way has it been contingent upon the reporting of specified values or findings.
- The appraisers have extensive experience in the economic analysis of proposed subdivision development properties and are considered competent to undertake and complete this assignment. A summary of the appraisers' qualifications is included in the Addenda of this report.
- It is assumed that the subject property is free and clear of any and all encumbrances other than those referred to herein, and no responsibility is assumed for matters of a legal nature. This report is not to be construed as rendering any opinion of title, which is assumed to be good and marketable. Responsible ownership and competent management of the subject property is also assumed, unless otherwise stated within the report.
- It is assumed that any existing or proposed uses of the subject property's land and improvements will occur within the legal boundaries or property lines of the subject property and that no encroachment or trespass exists, now or in the future, unless otherwise stated within the report.
- It is assumed that any and all required licenses, certificates of occupancy and/or other legislative or administrative authorizations relating to any existing or proposed uses of the subject property upon which our value conclusion is based will be obtained readily from the appropriate local, state, or federal government agencies, private institutions, or other organizational entities that exercise jurisdiction over these types of licensing and administrative matters.
- Any maps or plot plans reproduced and included in this report are intended only for the purpose of showing spatial relationships. These maps do not necessarily represent measured surveys or measured maps, and the appraiser is not responsible for the possible existence of any topographic or surveying errors within such maps. No engineering tests were furnished, and, therefore, no liability is assumed for the soil conditions, bearing capacity of the subsoil or building engineering matters relating to the subject property.
- Information provided by informed local sources such as governmental agencies, financial institutions, realtors, buyers, sellers and others, was interpreted in the manner in which it was supplied and, whenever possible or practical, was checked and verified by secondary means. However, no responsibility is assumed for any possible misinformation contained in these sources of information.
- The presence of hazardous wastes or toxic materials such as underground storage tanks, asbestos, urea-formaldehyde foam insulation or other potentially harmful substances may have an adverse affect on the value of a given property. The value conclusions reported herein are predicated on the assumption that there is no such hazardous material on or in the subject property that would result in this type of loss in value. No responsibility is assumed for any potentially adverse environmental conditions or for the lack of any expertise or engineering knowledge required to discover such conditions.
- The appraisers are not required to give testimony or appear in court because of having made this

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appraisal unless arrangements for the appearance and the fee for such appearance have been agreed upon by the person or corporation requiring such testimony.

- The appraisers' prior written consent and approval must be obtained in the event that this report should be conveyed by anyone to the public through advertising, public relations, news, sales, or other media.
- The appraisers will not disclose the contents of this report except as provided for in the Uniform Standards of Professional Appraisal Practice.

CERTIFICATION

The undersigned hereby certifies that, to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial and unbiased professional analyses, opinions, and conclusions.
- We have no present or prospective interest in the property that is the subject of this report, and have no personal interest with respect to the parties involved.
- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined conclusion or direction in conclusion that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this analysis.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which include the Uniform Standards of Professional Appraisal Practice (USPAP).
- Robert R. Braig, MAI, SRA and Ricky P. Minn have conducted a personal inspection of the property that is the subject of this report.
- No one provided significant analytical assistance to the persons signing this certification.
- As of the date of this report Robert R. Braig, MAI, SRA has completed the requirements of the continuing education program of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

February 16, 2010

Robert R. Braig, MAI, SRA
State Certified General Appraiser CGA-149
Certificate Expires: December 31, 2011

Table 1

POTENTIAL FISCAL IMPACT ON STATE GOVERNMENT FINANCES
Proposed Nanakuli Community Baseyard
Waianae District, Island of Oahu, State of Hawaii

IMPACT ON REVENUES**Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)**

General Excise Tax:	Construction Budget/Costs		\$29,000,000
	General Excise Tax Rate (State Share)	x	<u>0.040</u>
	Forecasted Additional Revenue		\$1,160,000
Personal Income Tax:	Gross Workforce Income		\$8,100,000
	State Income Tax Rate	x	<u>0.050</u>
	Forecasted Additional Revenue		\$405,000
Total Potential Impact, Over Period of 10 Years			\$1,565,000

Long-Range Forecast (Beyond 10 Years, Annual Basis)

General Excise Tax:	Annual Business Activity/Sales		\$37,500,000
	General Excise Tax Rate (State Share)	x	<u>0.040</u>
	Forecasted Additional Revenue		\$1,500,000
Personal Income Tax:	Gross Annual Workforce Income		\$6,400,000
	State Income Tax Rate	x	<u>0.050</u>
	Forecasted Additional Revenue		\$320,000
Total Potential Impact, Beyond 10 Years, Annual Basis			\$1,820,000

IMPACT ON EXPENDITURES**Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)**

Total Potential Impact, Over Period of 10 Years **None Identified**

Long-Range Forecast (Beyond 10 Years, Annual Basis)

All General Expenditures:	Resident Population Increase		160
	Per Capita Annual Expenditures	x	<u>\$6,400</u>
	Forecasted Additional Expenditures		\$1,024,000
Total Potential Impact, Beyond 10 Years, Annual Basis			\$1,024,000

Source: Hastings, Conboy, Braig & Associates, Ltd., February 2010.

/7371-A.State

Table 2

**POTENTIAL FISCAL IMPACT ON COUNTY GOVERNMENT FINANCES
Proposed Nanakuli Community Baseyard
Waianae District, Island of Oahu, State of Hawaii**

IMPACT ON REVENUES

Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

General Excise Tax:	Construction Budget/Costs		\$29,000,000
	General Excise Tax Rate (County Share)	x	<u>0.005</u>
	Forecasted Additional Revenue		\$145,000
County Permit Fees:	Forecasted Additional Revenue		\$160,000
Total Potential Impact, Over Period of 10 Years			\$305,000

Long-Range Forecast (Beyond 10 Years, Annual Basis)

Real Property Tax:	Annual Assessment Value (\$1,000s)		\$100,000
	Annual Tax Rate (Per \$1,000)	x	<u>\$12.40</u>
	Forecasted Additional Revenue		\$1,240,000
Total Potential Impact, Beyond 10 Years, Annual Basis			\$1,240,000

IMPACT ON EXPENDITURES

Short-Range to Mid-Range Forecast (1 to 10 Years, Inclusive)

Total Potential Impact, Over Period of 10 Years			None Identified
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Long-Range Forecast (Beyond 10 Years, Annual Basis)

All General Expenditures:	Resident Population Increase		160
	Per Capita Annual Expenditures	x	<u>\$2,000</u>
	Forecasted Additional Expenditures		\$320,000
Total Potential Impact, Beyond 10 Years, Annual Basis			\$320,000

Source: Hastings, Conboy, Braig & Associates, Ltd., February 2010.

/7371-A.County

APPENDIX K

Correspondence related to Lualualei Naval Access Road



DEPARTMENT OF THE NAVY

COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
PEARL HARBOR HI 96860-5101

11011
Ser N4/04200
July 6, 2009

Mr. Arik B. Yanagihara
Project Manager
Tropic Land LLC
1001 Bishop Street, Suite 2690
Honolulu, HI 96813

Dear Mr. Yanagihara:

SUBJECT: TROPIC LAND LLC REQUEST FOR FORMAL ACCESS EASEMENT FOR
USE OF LUALUALEI NAVAL ACCESS ROAD

The Navy is willing to issue a one-year license agreement, with possibility of extensions, to authorize Tropic Land LLC's use of the Lualualei Naval Access Road (LNAR). The issuance of a license agreement is consistent with the access rights over the LNAR that the Navy has granted to other adjacent landowners to include PVT Land Company, Pineridge Farms, and Pacific Shopping Mall.

In accordance with Navy policy, all costs associated with the processing of the license will be borne by Tropic Land LLC. This includes costs for the preparation of National Environmental Policy Act documentation, appraisal of the fair market value of the license, and preparation of the license agreement. Cost estimates are currently being prepared and will be provided to you as soon as they are available.

I am happy to meet with you to discuss. Please contact Ms. Lynn Tanaka at (808) 471-1170 extension 248 or e-mail lynn.tanaka@navy.mil.

Sincerely, \

A handwritten signature in black ink, appearing to read "B. J. Muilenburg".

B. J. MUILENBURG
Captain, CEC, U. S. Navy
Regional Engineer
By direction of the
Commander

TROPIC LAND LLC
1001 Bishop Street, Suite 2690
Honolulu, HI 96813
Phone: (808) 457-1172 FAX: (808) 533-1486

December 4, 2009

Navy Region Hawaii (Code N4)
Attn: Captain Bret J. Muilenburg
850 Ticonderoga Street, Suite 110
Pearl Harbor, HI 96860-5101

Re: Tropic Land LLC Request for Formal Access Easement for Use
of Lualualei Naval Access Road

Dear Captain Muilenburg:

In response to your letter of July 6, 2009 and in accordance with the prior meetings and discussions that have transpired to date on the subject matter of private use of Lualualei Naval Access Road ("Road"), the purpose of this letter of information is to confirm the desire and intent of the Tropic Land LLC and/or other adjacent land owners (to be determined), to enter into a long term easement agreement with the Navy for the long term use and access to the Road. From a conceptual point of view, some of the proposed terms and conditions that will need to be worked out and formally agreed to would include the following:

- The proposed private signatory to the agreement would be a formal user Association or LLC organized by Tropic Land LLC and current adjacent landowners, whose employees and invitees currently use the Road. These include, but are not limited to, PVT Land Company, Pineridge Farms and Pacific Mall LLC.
- The easement will grant the Association/LLC formal access and ability to use the Road and at the same time will require that Association/LLC maintain and manage the Road based upon mutually agreeable standards, terms and conditions which include the following:
 - o The Navy reserves the right to use the Road for any and all government purposes.
 - o The Association/LLC will set up an operation and maintenance account to track in-kind improvements/work performed in satisfaction of rent obligations. These in-kind improvements/work would be done to the satisfaction of the Navy.
 - o The Association/LLC shall indemnify, defend, and hold harmless the Navy, and its officers, agents, servants, employees, contractors and representatives, and hold them harmless, from and against any and all claims, damages, costs and liabilities whatsoever (including but not limited to any loss of or damage to any vehicles or injury to or death of any person or persons) which may arise or be alleged by anyone to arise in any manner in connection with the use of Road by the

Captain Bret J. Muilenburg
December 4, 2009
Page 2

Association/LLC, including but not limited to all costs, expenses and reasonable attorney's fees for all trial, appellate and post-judgment proceedings in connection with any claims, suits or actions related thereto.

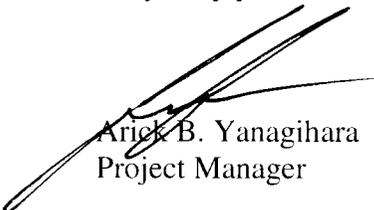
- The Association/LLC shall provide to the Navy comprehensive general liability insurance from a reputable insurance company or companies satisfactory to the Navy in an amount satisfactory to the Navy and to continue in full force and effect for the term of the easement. The insurance shall name the Department of the Navy and the United States of America as additional insured, and shall contain an endorsement reading:

"The insurer waives any right of subrogation against the United States of America or the Department of the Navy which might arise by reason of any payment made under this policy."

- The Navy and its personnel and invitees will be allowed unrestricted access and use of the road and will not be subject to any charge or assessment etc. for the maintenance and management of the Road.
 - The Navy will have the absolute right and authority to take control of the Road and restrict access thereto in the event of war, a national emergency or other predetermined events.
- The costs and/or fees to the Association/LLC will still need to be determined.
 - Other terms, conditions and covenants are to be agreed upon and determined.

It is to be clearly understood that this letter of information is an indication of Tropic Land LLC's desire and intent, based upon discussions and correspondences that have transpired to date. We look forward to further meetings and discussions to finalize a formal easement agreement as discussed herein on a mutually acceptable basis with all parties concerned.

Very truly yours,



Ariek B. Yanagihara
Project Manager

Acknowledged this 24th day of Dec, 2009

By: B.J. Muilenburg
B.J. Muilenburg,
Captain, CEC, U.S. Navy, Regional Engineer

APPENDIX L

Statements on Past Farming Activity

Tadashi Araki
84-1024 Farrington Hwy
Waianae, HI 96792

April 1, 2010

Arick B. Yanagihara
Tropic Land LLC
1001 Bishop Street, Suite 2690
Honolulu, HI 96813

Re: Summary of Historical Usage and Knowledge of Tropic Land
Property in Lualualei. Oahu TMK: 8-7-09:02

Dear Mr. Yanagihara:

I am Tadashi Araki. I am 76 years old. You have asked me to summarize my recollections about farming in Lualualei on the property (the "Property") next to the Lualualei Naval Base that Tropic Land proposes to develop.

I am very familiar with this Property. My late brother, Kazuto Araki, and I were directly involved with attempting to farm there for approximately 25 years. I don't remember the exact years, but we started around 1955, the year the military plane crashed into the mountain behind the Property.

Our attempts to farm the Property involved very hard work and were very costly. It was a time in my life that I'd like to forget.

We originally farmed on 54 acres of land that is now the Makaha Golf Resort. Our farm was successful and we sold produce to the military ships and local markets. The landowner, Chinn Ho, then decided to develop that property and we then moved to another property he owned across Makaha Beach. We farmed there until they also decided to develop the second property. We then moved to Lualualei.

We leased about 59 acres of land right next to the Naval Base on Lualualei Naval Road from the McCandless family. The guy we dealt with at the time was named Ross, who represented the McCandless family. Of the 59 acres, only 17 acres was flat and could be used for farming. The area we farmed ran along the Naval Road, next to the Naval Base fence and up the hillside.

The ground contained a lot of rocks, which we had to clear before any farming could be done. My friend, Willy Ferreira and the Bradley boys helped us clear the land. We piled the rocks into rock piles and built some loose stonewalls. Someone later told us that they heard that the rock piles that we created had cultural significance, which I don't understand because we cleared the land and stacked the rocks.

In the 17 acre area we farmed, there were two water wells that were capped. These wells were dug by the plantations for testing as a source of water to grow sugar cane. However the water was salty and not good for farm use. I do not think that sugar cane was ever grown on the Property.

Over the years, we tried to grow several different crops on the Property without much success. The crops we tried included corn, watermelon, round onions, bell peppers, cucumber, tomatoes and green onions.

The problem we had was that the soil was adobe clay and water did not drain into the ground. The crops did not grow properly, and a lot of crops failed. Because we were having a hard time, we went to the University of Hawaii Agriculture Department for help. Dr. Gilbert provided us with assistance. We brought in a lot of cattle and chicken manure and tilled them into the soil. The crops still failed. We also brought in coral slag from a quarry off of Hakimo and Paakea Road. We mixed this into the soil for aeration. However the Lualualei clay continued to harden and water still could not seep into the ground for the plants.

We sought financial aid from the State. We originally asked for a \$50,000 loan but were only able to get a farm loan for \$25,000. The loan officer from the State was Richard Marumoto. After a lot of hard work, we were eventually able to repay the loan. We later tried to get further financial assistance, but could not because the State thought that farming the Property was a poor risk.

Some other problems that we had with the Property were the strong winds that sometimes came down the mountains and the short, but heavy rains along with periods of very high heat that damaged the crops.

Dr. Gilbert from the University of Hawaii also recommended several other things to help us with the weather conditions. We used screens to cover part of the fields where we had sensitive vegetables, but the winds would destroy the screens. We tried using telephone poles to support the screens, but the poles didn't help.

We also had all kinds of pests to deal with – fruit flies, leaf worms, cut worms, stink bugs, African snails, field mice and cardinal birds. We used several different kinds of pesticides and chemicals. We sprayed the pesticides with large fans powered by generators, but didn't use protective masks and gear. We stored the chemicals in thousand gallon tanks. I believe that my brother and I were contaminated and affected by the exposure to these chemicals that we used on the farm. My brother had seven surgeries to remove tumors. I now have diabetes.

The area had hundreds of field mice. We would mix barley with poison and spread it throughout the farm. The next day there would be dead mice all over the place. We applied poison around the planted areas to kill the African snails. However the snails were smart and figured out how to follow along the poisoned areas until they found an opening that they could enter and eat the crops.

The cardinal birds would eat the crops and we had to hire a guy to shoot them on a daily basis. All these pests did a lot of damage to the leaves, stems and fruits of the crops, and it took a lot of time and money to fight them.

Because of the difficulty with farming, we also tried to raise a bee farm with over 150 box hives. However, because the fan blown chemicals spread into the bee area, the State Health Department did not approve the honey production and this operation was eventually discontinued.

We also had over 150 goats that were used to produce milk. Goat milk is good for children with Asthma. However, the weather also caused problems with the goats.

We also built a shooting range up against the mountain side behind the farm. We had targets at 100, 200 and 300 yards. The range did not create a problem, because the military personnel would come over and use the range.

Sometime in the early 1980's we attempted to extend the lease with the McCandless family because we already had put a lot of time, labor and money into the property and farm. By then Ross had died and a man named Kitamura handled the leases. He wanted to raise the rents a lot and also wanted to get 10% of the crop yield. We then left the property.

We moved back to Makaha. We now have a small farm land leased to us by Albert Silva's cousin. We raise Pikake flowers and sell them to the lei stands. This operation is profitable and we continue this farm today. We also grow fruits and vegetables for home use.

I know that a guy named Higa moved onto the Lualualei Property after us. He raised lettuce and was unsuccessful. After about a year or so, he left the Property.

This is my summary about my history and experience and attempts to farm the Property. It was very hard work and very costly.

Very Truly Yours,



Tadashi Araki

APPENDIX M

Environmental Impact Statement Preparation Notice (EISPN):
Comments Received and Responses

Comments on the EISPN/EA

Agency	Date	Comments	Relevant Section in the DEIS
FEDERAL AGENCIES			
U.S. Army Corps of Engineers, Civil Works Branch	Letter dtd 5-27-09	Concurrence with flood hazard determination in EISPN (p. 3-8)	Sec. 4.4
U.S. Army Corps of Engineers, Regulatory Branch	Letter dtd 6-26-09	Identify all streams and wetlands Describe all ground-disturbing activities on the project site	Sec. 4.3; 4.5 Sec. 4.1
STATE AGENCIES			
Department of Agriculture	Letter dtd 6-25-09	Recommend consulting with Harry Choy, Director of the West Oahu County Farm Bureau (Ph. 676-9100)	Phone conversation with Mr. Choy on October 16, 2009
Dept of Health	Letter dtd 6-16-09	<p><u>Wastewater Branch</u> Project is located in the Critical Wastewater Disposal Area—no new cesspools allowed. Property is located in both the Pass and No Pass Zones. Disposal of wastewater in the No Pass Zone is restricted. No objections to the private WWTP. Highly recommend that effluent disposal system be located in the Pass Zone area of property On-site WWTP should not be used to treat industrial wastewater Encouraged to use recycled wastewater Wastewater plans to meet HAR Chapter 11-62 <u>Clean Water Branch</u> 1. Any project impacts to State waters must comply with antidegradation policy, designated uses, and water quality criteria</p>	<p>Sec. 4.15.3 Sec. 4.15.2; 4.15.3 Sec. 4.15.2 Sec. 4.15.3 Sec. 4.3</p>

Agency	Date	Comments	Relevant Section in the DEIS
Dept of Health (continued)		<p>2. NPDES permit needed.</p> <p>3. Wastewater discharges not covered by NPDES general permit may require an individual permit</p> <p>4. Copy of NPDES permit application also must be submitted to DLNR and SHPD</p> <p>5. Discharges must comply with water quality standards</p>	<p>Sec. 1.6</p> <p>Sec. 1.6</p>
DLNR, Commission on Water Resource Management	Memo dtd 6-17-09	<p>Recommend coordination with County to incorporate project into Water Use and Development Plan</p> <p>Recommend coordination with Dept of Agriculture to incorporate reclassification into the Agricultural Water Use and Development Plan</p> <p>Recommend use of water efficient fixtures and practices</p> <p>Recommend use of BMPs for storm water management</p> <p>Recommend use of alternative water sources where practical</p> <p>Review by DOH needed to determine requirements to protect water quality</p> <p>* CWRM has records for three wells on TMK site, but there are discrepancies in pump testing levels between their records (200, 65, 100 gpm) and level (225 gpm) indicated in EISPN.</p> <p>* Drawdown in one well was below sea level and is expected to salt up, making it unsuitable for irrigation</p>	<p>Sec. 4.3</p> <p>Sec. 4.15.3; 6.3</p> <p>Sec. 4.2</p>
DLNR, Engineering Division	Memo dtd 6-15-09	<p>Confirmation that project site is in FIRM Zone D. There are no regulations for development in Zone D.</p>	Sec. 4.4
DLNR, Division of Aquatic Resources	Memo dtd 6-12-09	<p>There have been no DAR stream surveys on Ulehawa Stream</p> <p>Details on the drainage improvements—locations and routes, capacity of detention ponds, detention period for water, and water quality issues need to be addressed in the DEIS to determine impacts on aquatic resource values in the area</p>	Sec. 4.3

Agency	Date	Comments	Relevant Section in the DEIS
DLNR, Division of Forestry & Wildlife	Memo dtd 5-27-09	No objections	Sec. 4.5; 4.6
Dept. of Transportation	Memo dtd 6-17-09	<p>1. Traffic Impact Analysis Report (TIAR) needed to assess project-generated impacts to Farrington Hwy and intersections. TIAR should evaluate alternative access routes (Hakimo, Lualualei Naval Access). TIAR should address how vehicles would be prevented from using Lualualei Naval Access Rd if restricted by Navy</p> <p>2. TIAR to address full build-out conditions with mitigation recommendations.</p> <p>3. Construction plans required for work in State highway ROW.</p>	Sec. 4.9 Sec. 4.9
Office of Hawaiian Affairs	Letter dtd 6-19-2009	<p>Agree that golf course is not best and highest use of property, but concerns about using "limited agricultural lands for other purposes than agriculture and probable impacts to cultural and environmental resources"</p> <p>Comply with Sec 6E-46.6, HRS regarding inadvertent finds of significant cultural deposits or human skeletal remains</p> <p>Landscape with drought-tolerant native or indigenous species for erosion control, shade, and aesthetics</p>	Sec. 4.7; 4.8 Sec. 4.8 Sec. 6.3
Office of Planning	Letter dtd 7-1-09	<p>1. <u>Water</u>: discuss water requirements, potable and non-potable water sources, measures to reduce water demand and promote water reuse. Identify whether project is within a designated Water Management Area, impact of the project on sustainable yield of affected aquifers, impact of project on projected water use and system improvements in County's water use and development plan.</p> <p>2. <u>Ag Lands</u>: discuss how loss of ag lands is justified</p> <p>3. <u>Public Health</u>: quantify volume of solid waste likely to be generated and impact on County's existing and planned capacity for managing solid waste. Mitigation measures to</p>	Sec. 4.15.1; 4.15.3 Sec. 4.7 Sec. 4.15.4; 6.3

Agency	Date	Comments	Relevant Section in the DEIS
Office of Planning (continued)		<p>reduce solid waste generation. If project will have a potential to generate hazardous materials. Identify any contamination from past or present use of the site, including findings from Phase 1 or 2 ESAs.</p> <p>4. <u>Cultural Resources</u>: include archaeological inventory, status of any monitoring or preservation plans, describe cultural resources and practices on project site and ahupua'a in which the property is located, discuss impact of project on any cultural resources and practices.</p> <p>5. <u>Environmental, Recreation and Scenic Resources</u>: include updated flora and fauna inventory, including "rare" species and ecosystems, describe recreational uses on or near project site, describe scenic resources and impacts to them.</p> <p>6. <u>Coastal Zone Management</u>: discuss how storm water and wastewater generated by the project will be prevented from reducing the quality of nearshore waters. Describe hazard conditions and mitigation measures.</p> <p>7. <u>Energy Use</u>: quantify projected energy requirements by type of use and discuss measures to reduce energy demand, promote energy efficiency, promote use of alternative, renewable energy sources. Recommends use of LEED rating system and sustainable design. Identify generating or transmission capacity constraints. Discuss promotion of transportation energy savings.</p> <p>8. <u>Impact on State Facilities</u>: discuss impacts on State facilities, including highways, roads, harbors, and airports.</p> <p>9. <u>Access</u>: provide detailed information regarding easement agreements with Navy for use of Lualualei Naval Access Roads and any restrictions, responsibilities, or liabilities this will create for Tropic Land or future project tenants.</p> <p>10. <u>Conformance with County Plan Designations and Growth Boundaries</u>: discuss consistency with County land use plans, including alternative site considered, impacts on surrounding</p>	<p>Sec. 4.8</p> <p>Sec. 4.5; 4.6</p> <p>Sec. 4.3; 4.15.2</p> <p>Sec. 4.15.5; 6.3</p> <p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 5.7</p>

Agency	Date	Comments	Relevant Section in the DEIS
Office of Planning (continued)		lands, significant public benefit, existing unilateral agreement (which conditions have been met and which have not). 11. <u>Development Timetable</u> : provide a schedule of development for each phase of the total development and provide a map showing location and timing of each increment of development.	Sec. 3.3
CITY AND COUNTY AGENCIES			
Board of Water Supply	Letter dtd 7-2-09	The existing water system cannot provide adequate fire protection for the project. To provide adequate fire flow, a new 16-inch water main is needed from the intersection of Pa‘akea and Hakimo Roads. The new water line will eliminate the need for the 1.0 MG reservoir on site. All water mains should be located in the public right-of-way. A non-potable water system should be installed. Proposed development should be master-metered	Sec. 3.3; 4.15.1 Sec. 3.3; 4.15.3
Honolulu Dept of Design and Construction	Letter dtd 6-9-09	No comments at this time	
Honolulu Dept of Facility Maintenance	Letter dtd 6-22-09	No comments; improvements on private property will have negligible impact on DFM facilities and operations Understand that on-site roads, parking, drainage system, storm water detention basins and other roadway improvements will be privately owned and maintained and not dedicated to City	
Honolulu Dept of Planning and Permitting	Letter dtd 7-2-09	1. What is current status of plans for Lualualei Naval facility? 2. List all possible permits needed in Sec 1.7 3. Check location of 100-foot buffer. Should be described as “northwesterly” not “southwesterly” 4. Natural Hazards section should include rockfall and fire hazards. EIS should include rockfall, erosion, and slide studies.	Sec. 1.6 Sec. 4.4

Agency	Date	Comments	Relevant Section in the DEIS
Honolulu Dept of Planning and Permitting (continued)		<p>5. Mention that a private refuse collection service will be used.</p> <p>6. Chapter 4, “federal” should be dropped if federal plans not discussed.</p> <p>7. Because project is in a rural area, drop “Economic Activity, Objective G” and “Physical Development and Urban Design, Objective D” from discussion of General Plan policies. Mention that part of the site is classified as Prime Ag Lands under Economic Activity Objective C.</p> <p>8. Delete statement that the site is close to the freeway since Kalaheo interchange is 8 miles away.</p> <p>9. Show Waianae SCP land use policies more clearly in Fig. 13</p> <p>10. Under Significance Criteria, discuss:</p> <ul style="list-style-type: none"> • Permanent loss of Prime ag land • Urbanization will alter natural environment • Potential noise, air quality, and industrial hazard impacts that might adversely affect public health • Rock and fire hazards make this an environmentally sensitive area • Project may substantially increase electrical consumption in this area even if solar power is used. Separate energy impact from potential reduction in gasoline use due to reduced commuter travel. <p>11. Under Hydrological Conditions locate and discuss the no-pass line and the UIC line and any impacts on groundwater resources</p> <p>12. Under Surface Water show location of the stream and discuss how project will accommodate stream flow, protect stream from industrial run-off and protect the project from flooding. Discuss drainage improvements and project’s “Storm Water Quality Plan”</p>	<p>Sec. 4.15.4</p> <p>Sec. 5.7</p> <p>Fig. 23 and 24</p> <p>Sec. 4.7</p> <p>Sec. 4</p> <p>Sec. 4.11; 4.10</p> <p>Sec. 4.4</p> <p>Sec. 4.15.5; 6.3</p> <p>Sec. 4.15.3</p> <p>Sec. 4.3</p>

Agency	Date	Comments	Relevant Section in the DEIS
Honolulu Dept of Planning and Permitting (continued)		<p>13. Under Circulation and Traffic, discuss steps and approvals needed to provide access to the industrial park.</p> <p>14. Under Water, identify the location of the 1.0 mgd water storage facilities and transmission lines needed. Discuss (a) how much of the 8-inch transmission line is available to meet the anticipated water demand and (b) the anticipated non-potable water demand and system.</p> <p>15. Under Wastewater System, discuss anticipated wastewater flows and potential impacts of wastewater treatment.</p> <p>16. Under Waianae SCP, indicate the project's location outside the Rural Community Boundary and why the project (as urban development) should be located in an agricultural area.</p>	<p>Sec. 4.9</p> <p>Sec. 3.1; 4.15.2</p> <p>Sec. 4.15.2</p> <p>Sec. 5.7</p>
Honolulu Dept of Transportation Services	Letter dtd 6-16-09	TIAR should include impacts on area roads, such as Hakimo Rd. DTS requests copy of the TIAR for review and comment.	Sec. 4.9
Honolulu Fire Dept	Letter dtd 6-17-09	<ol style="list-style-type: none"> 1. Provide fire access road for every facility or building when any part of an exterior wall is located more than 150 ft from a fire access road 2. Provide water supply capable of supplying required fire flow for fire protection to all premises on which a facility or building will be constructed. Provide fire hydrants and mains if any part of the facility or building is more than 150 feet from a water supply on a fire access road. 3. Submit civil drawings to HFD for review and approval 	<p>Sec. 3.1; 4.15.1</p> <p>Sec. 4.15.1</p>
Honolulu Police Dept	Letter dtd 6-2-09	No significant impacts on the facilities or operations of HPD	Sec. 4.16.1
UTILITIES			
Hawaiian Electric Co.	Letter dtd 7-9-09	HECO has existing 11.5kV overhead facilities along Luualalei Naval Access Road. Request that development plans show all affected HECO facilities and address any conflicts. Continue	Sec. 4.15.5

Agency	Date	Comments	Relevant Section in the DEIS
Concerned Elders of Wai‘anae (continued)		<p>Document extensive cultural history and traditional practices of the region affected by the project</p> <p>Will the industrial park block access to the Nioiula Heiau? What access path to the heiau will be allowed?</p> <p>Where is the stone that Maui sunned himself on? What impact to this sacred pohaku?</p> <p>Where is the cave Maui used as a child? What effect will the project have on this cultural site?</p> <p>What will be done to protect Ulehawa Stream?</p> <p>What will be done to preserve the loi terraces documented in the area of the project site?</p> <p><u>Endangered Species</u></p> <p>What is the state of the endangered nehe? ...</p> <p>What impact will construction on the site have on the ecology downhill? This area was set aside as sacred, which may indicate that disturbing the soil here might have detrimental consequences on the land and ocean below it.</p> <p><u>Air Pollution</u></p> <p>Concerns about the increase to annual average for particulate, sulfur dioxide, daily maximum 1-hour values recorded for ozone and carbon monoxide, especially because air quality along Farrington Hwy and Lualualei Naval Road is already impacted by heavy vehicle emission of diesel particulates</p> <p>If project proceeds, air quality monitoring station must be established and quarterly air quality reports released to the public.</p> <p>Assess impacts to residents, especially children and elderly, from exposure to truck emission/exhaust</p> <p><u>Wastewater</u></p> <p>Cumulative impact of greater lot coverage threatens erosion of</p>	<p>Sec. 4.8</p> <p>Sec. 4.8</p> <p>Sec. 4.8</p> <p>Sec. 4.8</p> <p>Sec. 4.3</p> <p>Sec. 4.8</p> <p>Sec. 4.5</p> <p>Sec. 4.5</p> <p>Sec. 4.10</p> <p>Sec. 4.10</p> <p>Sec.4.3</p>

Agency	Date	Comments	Relevant Section in the DEIS
<p>Concerned Elders of Wai‘anae (continued)</p>		<p>natural stream banks...resulting in flood conditions</p> <p>Is the proposed on-site WWTP in keeping with urban city-like characterization?</p> <p>Storm water runoff will negatively impact surrounding properties. What is the storm water management plan? Will it provide percolation into landscaped areas? Will there be dry wells to ensure no increase in runoff from the previous land use?</p> <p>What is the general drainage pattern of the project site? Where is the nearest storm drain connection? What are your plans for the municipal storm drain facility?</p> <p>Will the project be allowed to increase surface runoff onto adjoining properties? Where will surface waters be directed?</p> <p>Is the sanitary system adequate to meet the needs of activities for the Urban District?</p> <p>Will pre-treatment be required for the plant’s wastewater before it enters the public wastewater system?</p> <p>Retention/detention basins should be established to contain runoff</p> <p>Collection/separation systems should be constructed to collect and separate contaminants from runoff.</p> <p><u>Ground and Soil</u></p> <p>Are there plans to remove soil?</p> <p>What are the plans for altering the topography?</p> <p>How many acres are planned for soil disturbance?</p> <p>Development on unstable soils could be hazardous.</p> <p>Conduct soil study. Soils on this property are not suitable for safely constructing warehouses.</p> <p><u>Quality of Life in Nanakuli</u></p> <p>Noxious, commercial activities on properties abutting</p>	<p>Sec. 3.1; 4.15.2</p> <p>Sec. 4.3</p> <p>Sec. 4.3</p> <p>Sec. 4.3</p> <p>Sec. 3.1; 4.15.2</p> <p>Sec. 4.15.2</p> <p>Sec. 4.3</p> <p>Sec. 4.3</p> <p>Sec. 4.1</p> <p>Sec. 4.1</p> <p>Sec. 4.1</p> <p>Sec. 4.1; 4.4</p> <p>Sec. 4.1</p>

Agency	Date	Comments	Relevant Section in the DEIS
Concerned Elders of Wai 'anae (continued)		<p>Lualualei Naval Road have compromised QOL for residents along Farrington Hwy and Hakimo Rd</p> <p>Adding “urban-like” use next to working farms and residential communities without reducing, eliminating, or preventing serious public health issues is immoral. Changing district boundary from agricultural to urban will further compromise public health for citizens of the Lualualei ahupua ‘a.</p> <p><u>Noise</u></p> <p>Project will increase noise due to large volumes of traffic and heavy vehicles that will use Hakimo Rd, the primary access to the project.</p> <p>What are the project’s hours of operation?</p> <p><u>Water Supply</u></p> <p>How will building be served if there are no existing laterals?</p> <p>Are existing water lines for agricultural lots of sufficient size to serve urban needs?</p> <p>If water of sub-standard quality is used for irrigation, food safety is a concern for downstream farm lands.</p> <p>Will there be an automated irrigation system? Will treated wastewater be used to irrigate?</p> <p>Is the water supply adequate to meet fire requirements?</p> <p>Will raw water for industrial use be drawn from on-site wells?</p> <p>Are there specific funded plans for expansion of the water supply to the project site?</p> <p>What type of wastewater treatment technology will be employed?</p> <p>What becomes of the sludge collected from the WWTP?</p> <p><u>Traffic Congestion</u></p> <p>The existing roadway is nonstandard. Access to the project site is via an existing “non-city-like” road. More discussion</p>	<p>Sec. 4.14</p> <p>Sec. 4.14; 5.3; 5.7</p> <p>Sec. 4.11</p> <p>Sec. 3.1; 4.15.1</p> <p>Sec. 3.1; 4.15.1</p> <p>Sec. 4.2</p> <p>Sec. 4.15.1</p> <p>Sec. 4.15.1</p> <p>Sec. 4.2</p> <p>Sec. 3.1; 4.15.1</p> <p>Sec. 4.15.2</p> <p>Sec. 4.15.2</p> <p>Sec. 4.9</p>

Agency	Date	Comments	Relevant Section in the DEIS
Concerned Elders of Wai 'anae (continued)		<p>with Hakimo residents is warranted regarding roadway improvements.</p> <p>Use of Hakimo Road access will inevitably increase Existing Hakimo Rd and intersection with Farrington Hwy is not adequate to serve the project which will result in increased traffic flow through the residential community at Princess Kahanu Estates.</p> <p>“We’re not building our way out of congestion with this TL proposal.”</p> <p>Is the project site served adequately by access roads? Are additional access roads planned?</p> <p>Is traffic congestion a problem on the access road to the project? On State highways? In supplier areas? In market areas?</p> <p>What are the road limits?</p> <p>Complete a traffic study for the anticipated increased traffic on H-1, Farrington Hwy, Hakimo Rd, and any other access ways.</p> <p><u>Sense of Community</u></p> <p>Project site does not offer easy access to existing industrial centers or transportation. If the project proposes to link to regional businesses, which ones?</p> <p>What is the demand to locating in a region far from centers of commerce and with traffic access challenges? Proposed land use is not appropriate to State and City transportation policies and development plans?</p> <p>Does our State General Plan and regional development plan support urban development and industrial commercial growth moving to rural Waianae? Is there a plan in effect or proposed?</p> <p>Prepare a study to capture observed historical economic trends to forecast the vocational behavior of the individual</p>	<p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 3.1; 4.9</p> <p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 2; 5.5; 5.7</p> <p>Sec. 2</p> <p>Sec. 5.1; 5.2; 5.7</p> <p>Sec. 2; 4.13</p>

Agency	Date	Comments	Relevant Section in the DEIS
<p>Concerned Elders of Wai‘anae (continued)</p>		<p>households and firms consistent with economic theory to determine that the industrial park will create jobs (compatible with?) economic activities in the Waianae region.</p> <p>What is the non-market value of open space that would be lost if the industrial park were built?</p> <p>What impact will the loss of ag land have on Hawaii’s effort to improve food security? Conduct a study on how many acres of ag land are necessary to provide for all of Hawaii’s food needs.</p> <p>‘Part of Tropic Land’s theory is the notion of accessibility between households and businesses, as represented by the regional transportation network. Does TL know what that network is?’</p> <p>What mode of transportation will be used to serve suppliers to the market areas?</p> <p>‘Do the suppliers and are markets operate in within the Waianae region?’</p> <p>Is there demand for industrial space?</p> <p>Does the project have a plan to reduce waste and increase resource efficiency? Does the project have a mindset to reach zero waste?</p> <p>Is there a plan to coordinate the activities of the firms to increase efficient use of raw materials, reduce waste outputs, conserve energy and water resources, and reduce transportation requirements?</p> <p>Does the park have as its goal the elimination of wastes?</p> <p>Does the change from Ag to Urban lower the environmental impact than traditional business ventures allowable on Ag lands?</p> <p><u>Better Land Use Alternatives Exist</u></p> <p>Document the history of farming in Nanakuli</p>	<p>None Sec. 4.7</p> <p>Sec. 2</p> <p>Sec. 4.9</p> <p>Sec. 2 Sec. 2</p> <p>Sec. 4.15.4</p> <p>Sec. 4.15.4</p> <p>Sec. 4.15.4 Sec. 4.7; 5.3</p> <p>Sec. 4.7</p>

Agency	Date	Comments	Relevant Section in the DEIS
Concerned Elders of Wai 'anae (continued)		We propose that the parcel be subdivided and leased to graduates of UH ag programs and Ma' o Farm apprenticeship program. Property could serve as the incubator for next generation farmers.	Sec. 4.7
Princess Kahanu Estates Association	Letter dtd 6-20-09	<p>Address traffic flow in and through Hakimo Rd</p> <p>Provide traffic management plan for Hakimo Rd (use by heavy trucks, maneuvering by trucks)</p> <p>Concerned about potential odors associated with WWTP</p> <p>Concerned about water run-off into Ulehawa Stream and ocean</p> <p>Concerned about further degradation to residential environment (being next door to landfill)</p> <p>Concern about impacts to "the unique natural landscape and cultural resources associated with the demigod Maui."</p>	<p>Sec. 4.9</p> <p>Sec. 4.9</p> <p>Sec. 4.15.2</p> <p>Sec. 4.3</p> <p>Sec. 1.1; 3.1</p> <p>Sec. 4.8</p>

Letters with Substantive Comments (EISPN)

Federal Agencies

- U.S. Army Corps of Engineers, Regulatory Branch

State Agencies

- Department of Agriculture
- Department of Health
- Department of Land and Natural Resources
 - Commission on Water Resources Management
 - Division of Aquatic Resources
- Department of Transportation
- Office of Hawaiian Affairs
- Office of Planning

City Agencies

- Board of Water Supply
- Department of Planning and Permitting
- Department of Transportation Services
- Honolulu Fire Department

Utility Companies

- Hawaiian Electric Company

Community Organizations

- Nanakuli-Mailii Neighborhood Board No. 36
- Concerned Elders of Waianae
- Princess Kahanu Estates Association



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

A09-782

REPLY TO
ATTENTION OF:

June 26, 2009

LAND USE COMMISSION
STATE OF HAWAII

DD
BS

Regulatory Branch

2009 JUL -6 A 9:17
File No. POH-2009-191

Mr. Dan Davidson, Executive Officer
Land Use Commission
235 S. Beretania Street, Room 406
Honolulu, HI 96813

Dear Mr. Davidson:

This letter is in response to your request, dated May 20, 2009, for our review and early consultation comments on the Environmental Impact Statement Preparation Notice (EISPN) for the **Nanakuli Community Base Yard** located at Lualualei, Wainae District, Oahu, Hawai'i (TMK: 1-8-7-009:002).

Section 10 of the Rivers and Harbors Act (RHA) of 1899 requires that a Department of the Army (DA) permit be obtained from U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging, and other activities occurring in, over, or under navigable waters of the U.S. (TNWs) (e.g., the Pacific Ocean). Section 404 of the Clean Water Act (CWA) of 1972 (33 U.S.C. 1344) requires that a DA permit be obtained for the discharge (placement) of dredge and/ or fill material into waters of the U.S. Waters of the U.S. include both navigable waters of the U.S., referred to also as the traditional navigable waters (TNW), wetlands adjacent to TNWs, non-navigable tributaries that have perennial flow or continuous seasonal flow, and wetlands directly abutting such tributaries. For other types of waters, including those that do not have relatively permanent flows, as well as any wetlands adjacent to such tributaries, jurisdiction is determined on a case-by-case basis using a fact-specific analysis to assess the flow characteristics and functions of the tributary and its adjacent wetlands to determine if in combination they significantly affect the chemical, physical, and biological integrity of downstream navigable waters, particular emphasis being given to hydrological and ecological factors.

According to the EISPN (3.2.4.2 Surface Water), Ulehawa Stream crosses the northwest section of the project site. We recommend your Environmental Impact Assessment identify all streams and wetlands on the project site and in the immediate vicinity of the proposed project, characterize the hydrology and ecology of those features, and provide a description of all ground-disturbing activities associated with the project construction occurring on the project site. Thank you for the opportunity to comment. If you have any questions, please contact Ms. Meris Bantilan-Smith, of my Regulatory staff at 808-438-7023 (FAX: 808-438-4060) or by electronic mail at Meris.Bantilan-Smith@usace.army.mil. Please include File No. POH-2009-191 in any future correspondence regarding this project. Please be advised you can provide comments on your experience with the Corps' Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

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



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. George P. Young, Chief
Regulatory Branch
U.S. Army Corps of Engineers, Honolulu District
Fort Shafter, HI 96858-5440

Dear Mr. Young:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated May 27, 2009 [Ref: POH-2009-00191]. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as indicated below.

Comment: We recommend your Environmental Impact Assessment identify all streams and wetlands on the project site and in the immediate vicinity of the proposed project, characterize the hydrology and ecology of those features, and provide a description of all ground-disturbing activities associated with the project construction occurring on the project site.

Response: Descriptions of environmental conditions were provided in Section 4.3, Surface Water Resources and Section 4.5, Vegetation Resources. Ground-disturbing activities were described in Section 4.1, Topography and Soils.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

LINDA LINGLE
Governor



State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512

SANDRA LEE KUNIMOTO
Chairperson, Board of Agriculture

DUANE K. OKAMOTO
Deputy to the Chairperson

June 25, 2009

Mr. Dan Davidson
Executive Officer
Land Use Commission
235 South Beretania Street, Room 406
Honolulu, Hawaii 96813

Dear Mr. Davidson:

Subject: Environmental Impact Statement Preparation Notice (EISPN)
Light Industrial Park
Nanakuli Community Baseyard
Tropic Land LLC
TMK: 8-7-09: por. 2
Area: 96 acres of 236.154 acre parcel (35-40 CPR lots)

The Department of Agriculture has reviewed the subject document and recommends that Mr. Harry Choy, Director of the West Oahu County Farm Bureau (phone: 676-9100) be consulted in preparing the Draft Environmental Impact Statement.

Sincerely,

A handwritten signature in black ink, appearing to read "Sandra Lee Kunimoto".

Sandra Lee Kunimoto
Chairperson, Board of Agriculture

C: OEQC
Kimura International, Inc.

Nanakuli-light-industrial-park2.e09



KIMURA INTERNATIONAL INC.

April 26, 2010

Ms. Sandra Lee Kunimoto, Chairperson
Board of Agriculture
1428 South King Street
Honolulu, HI 96814

Dear Ms. Kunimoto:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 25, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as indicated below.

Comment: The Department of Agriculture recommends that Mr. Harry Choy, Director of the West Oahu County Farm Bureau be consulted in preparing the Draft Environmental Impact Statement.

Response: Mr. Choy was contacted by telephone on October 16, 2009. Copies of the EISPN and DEIS were sent to Mr. Choy. In turn, Mr. Choy submitted written comments on the DEIS. Attached are copies of those comments and our response.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Attachments

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999

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-09-082

June 16, 2009

Mr. Glen Kimura
Kimura International Inc.
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

RECEIVED JUN 19 2009

Dear Mr. Kimura:

SUBJECT: Draft Environmental Assessment for Nanakuli Community Baseyard
Lualualei, Waianae, Oahu, Hawaii
TMK: (1) 8-7-009: 002 (por.)

Thank you for allowing us to review and comment on the subject application. The application was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch, Clean Water Branch and General comments.

Wastewater Branch

The document proposes to develop a light industrial park on approximately 96 acres. The industrial park will contain 35-40 units, averaging two acres each.

The project is located in the Critical Wastewater Disposal Area (CWDA) where no new cesspools will be allowed. The 96 acre property is located in both the Pass and No Pass Zones with the vast majority of the property in the Pass Zone. Our rules restrict the disposal of wastewater in the No Pass Zone to protect groundwater sources.

We have no objections to the proposal as the domestic wastewater needs of the project will be handled by a new privately operated and maintained on-site wastewater treatment plant. We highly recommend that the effluent disposal system for the proposed wastewater treatment system is located in the Pass Zone area of the property.

Please be advised that the proposed on-site wastewater treatment system should not be used to treat industrial wastewaters that may be generated from the businesses that will occupy 35-40 lots.

We encourage the developer to utilize recycled wastewater for irrigation and other non-potable water purposes in open space and landscaping areas.

Mr. Kimura
June 16, 2009
Page 2

All wastewater plans must meet Department's Rules, HAR Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. If you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Clean Water Branch

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting the applicable Notice of Intent (NOI) form:
 - a. Storm water associated with construction activities, including excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, and storage areas that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.
 - b. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations (40 CFR), Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). Each tenant shall have coverage if they conduct industrial activities

defined in the above sections of 40 CFR.

- c. Discharges of hydrotesting water.
- d. Discharges of construction activity dewatering.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

3. For types of wastewater discharges not covered by an NPDES general permit or discharges to Class AA or Class 1 State waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.
4. You must also submit a copy of the NOI or NPDES permit application to the State DLNR, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.
5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

General

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.

Mr. Kimura
June 16, 2009
Page 4

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Kelvin H. Sunada', with a long horizontal flourish extending to the right.

KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
WWB
CWB



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Kelvin H. Sunada, Manager
Environmental Planning Office
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Dear Mr. Sunada:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 16, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
<u>Wastewater Branch</u>	
Project is located in the Critical Wastewater Disposal Area—no new cesspools allowed. Property is located in both the Pass and No Pass Zones. Disposal of wastewater in the No Pass Zone is restricted.	Sec. 4.15.3
No objections to the private WWTP. Highly recommend that effluent disposal system be located in the Pass Zone area of property	Sec. 4.15.2; 4.15.3
On-site WWTP should not be used to treat industrial wastewater	Sec. 4.15.2
Encouraged to use recycled wastewater	Sec. 4.15.3
Wastewater plans to meet HAR Chapter 11-62	
<u>Clean Water Branch</u>	
1. Any project impacts to State waters must comply with antidegradation policy, designated uses, and water quality criteria	Sec. 4.3

Comments	Relevant Section in the DEIS
2. NPDES permit needed.	Sec. 1.6
3. Wastewater discharges not covered by NPDES general permit may require an individual permit	Sec. 1.6
4. Copy of NPDES permit application also must be submitted to DLNR and SHPD	Comment acknowledged.
5. Discharges must comply with water quality standards	Comment acknowledged.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.



Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

LINDA LINGLE
GOVERNOR OF HAWAII



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CHAIRPERSON
MEREDITH J. CHING
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
DONNA FAY K. KIYOSAKI, P.E.
LAWRENCE H. MIKE, M.D., J.D.

KEN C. KAWAHARA, P.E.
DEPUTY DIRECTOR

2009 JUN 19 A 9:51
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

RECEIVED JUN 23 2009

June 17, 2009

REF: Nanakuli Community Baseyard EISPN.dr

TO: Morris Atta, Administrator
Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management

SUBJECT: Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard

FILE NO.: NA
TMK NO.: (1) 8-7-9:2(portion)

A handwritten signature in black ink that reads 'Ken C. Kawahara'.

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrm>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/pp/index.htm>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.

- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/resources_permits.htm.

- 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.
- 9. A Well Construction Permit(s) is (are) required any well construction work begins.
- 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 12. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER:

Our records through the Commission's permitting process indicate that there are 3 existing wells listed on the TMK site, State Well No. 2408-09, 2408-10, 2508-12, and are not sure which of the 3 are the two specified in the document. We do not have records showing any of these wells pump tested to 225 gpm, but rather 200, 65, and 100 gpm respectively. Drawdown in 2408-09 was excessive as it actually lowered the water table to approximately 3 ft below sea level and over time this particular well would be expected to salt up to be unsuitable for irrigation purposes.

We look forward to reviewing the DEIS, which will provide information on potable and non-potable water needs for the project. We recommend that the DEIS identify and discuss all practical alternative water sources for meeting water demands.

If there are any questions, please contact Roy Hardy at 587-0225.



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Ken C. Kawahara
Deputy Director
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Kawahara:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by memorandum dated June 17, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
Recommend coordination with County to incorporate project into Water Use and Development Plan	Comment acknowledged.
Recommend coordination with Dept of Agriculture to incorporate reclassification into the Agricultural Water Use and Development Plan	Comment acknowledged
Recommend use of water efficient fixtures and practices	Comment acknowledged.
Recommend use of BMPs for storm water management	Sec. 4.3
Recommend use of alternative water sources where practical	Sec. 4.15.3; 6.3
Review by DOH needed to determine requirements to protect water quality	
* CWRM has records for three wells on TMK site, but there are discrepancies in pump testing levels between their records (200, 65, 100 gpm) and level (225 gpm) indicated in EISPN.	Sec. 4.2
* Drawdown in one well was below sea level and is expected to salt up, making it unsuitable for irrigation	

Commission on Water Resource Management
April 26, 2010
Page 2

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Glenn T. Kimura", with a long horizontal flourish extending to the right.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809
May 21, 2009

AQUATIC
RESOURCES: 2379

DIRECTOR	
COMM. FISH.	
AQ RES/ENV	
AQ REC	
PLANNER	
STAFF SVCS	
RCUH/UH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	
TECH ASST	<input checked="" type="checkbox"/>
Return to:	
No. Copies	
Copies to:	
Due Date:	

MEMORANDUM

RECEIVED JUN 23 2009

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division -



FROM:

for Morris M. Atta *M. Atta*

SUBJECT:

Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard

LOCATION: Waianae, Oahu

APPLICANT: Kimura International Inc on behalf of Tropic Land LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 19, 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: *[Signature]*
Date: 12 June 2009

64

STATE OF HAWAII
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

MEMORANDUM

TO: Dan A. Polhemus, Administrator *DP*
FROM: Glenn R. Higashi, Aquatic Biologist *GRH*
SUBJECT: Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard
Comments Morris M. Atta
Requested By: Land Division
Date of Request: 5/21/09 Date Received: 5/22/09

Summary of Project

Title: Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard
Project By: Kimura International Inc. on behalf of Tropic Land LLC
Location: Lualualei, Oahu – TMK: (1) 8-7-09: 02

Brief Description:

The applicant, Kimura International Inc. on behalf of Tropic Land LLC proposes to develop a light industrial park that would occupy approximately 96 acres on a portion of TMK 8-7-9: 02. The property is located in the upper Lualualei Valley approximately 2 miles *mauka* (inland) of Farrington Highway and immediately south of the U.S. Naval Installation at Lualualei. The industrial park will contain 35-40 units, averaging two acres each. The proposed number of units (or lots) is presented as a range to accommodate the possibility that lots in higher visibility areas; for example, along the main entry road and around intersections, may be further divided into smaller increments.

The property is planned with a single, secured entry off of Lualualei Naval Access road and a secondary access for fire and emergency purposes. The existing linear tree farm will remain as a 30-foot wide landscaped setback along the Lualualei Road frontage. The north and south property lines will have 15-foot building setbacks. An additional strip of land, approximately 100 feet wide and *mauka* of the industrial lots, will be used for drainage improvements, rockfall hazard mitigation, and a fire break.

The project site is located near Ulehawa Stream drainage basin which, overall, encompasses approximately 3,178 acres of land and several tributaries that discharge into Ulehawa Stream. The Ulehawa Stream drainage basin stretches from sea level to Ulehawa Beach Park to a maximum elevation of 3,098 feet at Palikea, at a distance of over 4.5 miles. Ulehawa Stream crosses the northwest section of the project site, and then crosses under Lualualei Naval Access Road through culverts. Where it passes through the project site, Ulehawa stream is an intermittent stream that is dry under normal conditions.

Comments:

No DAR stream surveys were conducted on Ulehawa Stream. (ref. DAR Aquatic Resources Database, Oct. 6, 2006).

The proposed construction of drainage improvements for the industrial park, which includes swales, detention ponds, and underground storage tanks, will be constructed to retain increases in storm drainage runoff that occurs as a result of the proposed development. However, details on the drainage improvements, their locations and routes, capacity of the detention ponds and the detention period for the water and water quality issues from the proposed development need to be addressed in the DEIS in order to better determine impacts on aquatic resource values in this area.



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Dan Polhemus, Administrator
Division of Aquatic Resources
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Polhemus:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by memorandum dated June 12, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
There have been no DAR stream surveys on Ulehawa Stream	Comment acknowledged.
Details on the drainage improvements—locations and routes, capacity of detention ponds, detention period for water, and water quality issues need to be addressed in the DEIS to determine impacts on aquatic resource values in the area	Sec. 4.3

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

LINDA LINGLE
GOVERNOR



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

BRENNON T. MORIOKA
DIRECTOR

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

IN REPLY REFER TO:

STP 8.3296

June 17, 2009

RECEIVED JUN 22 2009

TO: MR. DAN DAVIDSON, EXECUTIVE OFFICER
LAND USE COMMISSION
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND
TOURISM

FROM: BRENNON T. MORIOKA, PH.D., P.E. 
DIRECTOR OF TRANSPORTATION

SUBJECT: NANAKULI COMMUNITY BASE YARD
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPN)

Thank you for providing the subject project for the State Department of Transportation's (DOT) review and comments.

DOT understands that the proposed 96-acre light industrial park will consist of 35-40 lots of approximately 2 acres each. The industrial park will feature individual ownership of lots and common ownership of internal roads and infrastructure under condominium property regime. Current access is via Hakimo Road with an easement from the U.S. Navy to cross Lualualei Naval Access Road. The applicant is working on an easement from the Navy to allow the use of Lualualei Naval Access Road for more direct access from Farrington Highway.

Although the project's direct access roads are under the jurisdiction of the City and County of Honolulu, there may be impacts to the State highway, Farrington Highway, due to the project's location. Thus, DOT submits the following comments from the Highways Division:

1. A Traffic Impact Analysis Report (TIAR) should be prepared to assess the potential project-generated traffic impacts to Farrington Highway and its intersections with major roadways in the area. The TIAR should include the evaluation of traffic impacts based on the various alternatives being pursued to provide access to the project site, for example, the use of Hakimo Road and Lualualei Naval Access Road to connect to Farrington Highway. The TIAR should also address how vehicles will be prevented from using Lualualei Naval Access Road should the Navy restrict such use.

Mr. Dan Davidson
Page 2
June 17, 2009

STP 8.3296

2. The TIAR must also appropriately address full build-out conditions of the proposed light industrial park and include recommended improvements to mitigate project-generated impacts.
3. The applicant is required to submit construction plans for all work done within the State highway right-of-way. Required mitigation improvements must be provided at no cost to the State.

Four copies of the DEA should be provided to DOT to facilitate review by the Highways Division. If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.

c: Katherine Kealoha, Office of Environmental Quality Control
Glenn Kimura, Kimura International



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Brennon T. Morioka
Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Dear Mr. Morioka:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by memorandum dated June 17, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as indicated below.

1. A Traffic Impact Analysis Report (TIAR) should be prepared to assess the potential project-generated traffic impacts to Farrington Highway and its intersections with major roadways in the area. The TIAR should include the evaluation of traffic impacts based on the various alternatives being pursued to provide access to the project site, for example, the use of Hakimo Road and Lualualei Naval Access Road to connect to Farrington Highway. The TIAR should also address how vehicles will be prevented from using Lualualei Naval Access Roads should the Navy restrict such use.

Response: The TIAR was included as Appendix E of the DEIS.

2. The TIAR must also appropriately address full build-out conditions of the proposed industrial park and include recommended improvements to mitigate project-generated impacts.

Response: Project impacts and proposed mitigation measures discussed in Section 4.9.

3. The applicant is required to submit construction plans for all work done within the State highway right-of-way. Required mitigation improvements must be provided at no cost to the State.

Response: Tropic Land acknowledges this comment.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Glenn T. Kimura", with a long horizontal flourish extending to the right.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission



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

RECEIVED JUN 24 2009

HRD09/4374

June 19, 2009

Dan Davidson
Land Use Commission
235 S. Beretania Street, Room 406
Honolulu, Hawai'i 96813

**RE: Request for comments on the environmental impact statement notice (EISPN),
Nānākuli Community Baseyard, Lualualei, O'ahu, TMK: 8-7-009:002.**

Aloha e Dan Davidson,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated May 20, 2009. OHA has reviewed the project and offers the following comments.

OHA understands that this proposal is to build a light industrial park on approximately 96 acres in the Agricultural District with P-2 Preservation zoning. We also recognize that this property was re-zoned from AG-1 Restricted Agricultural District to the current, less restrictive zoning in support of an 18-hole golf course that was never developed. Most recently, however, the Nānākuli/Mā'ili Neighborhood board unanimously voted to support this proposal despite the zoning and adopted a resolution to amend the Wai'anae Sustainable Communities Plan.

While we agree that the best and highest use of this area is not in the form of a golf course, OHA does have concerns regarding the use of our limited agricultural lands for other purposes than agriculture and probable impacts to cultural and environmental resources that this proposal generates. We look forward to further consultation as the permitting and environmental review processes develop.

Currently, we do offer the following comments and suggestions to better shape this proposal:

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any

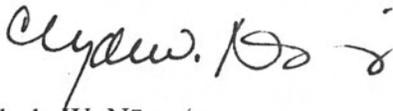
Dan Davidson
June 19, 2009
Page 2

significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted. We also ask that the surveys and data presented be current and related to this proposal.

Landscaping not only adds beauty and value to your property, but also helps control erosion by reducing the amount and speed of runoff. Ground covers are one of the best erosion controls and include any plant material that covers the ground surface so the soil cannot be seen from above and rain does not strike directly upon it. As such, OHA would like to suggest that the project area be landscaped with drought tolerant native or indigenous species that are common to the area. Any invasive species should also be removed. Doing so would not only serve as practical water-saving landscaping practices, but also serve to further the traditional Hawaiian concept of mālama 'āina and create a more Hawaiian sense of place. This would also help to reduce the amount of impervious surfaces in the project area, thereby reducing runoff as well. Tree and landscape planting to shade paved parking areas and provide shade and cooling to building elements and outdoor use areas should also be considered.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o
Administrator

C: Office of Environmental Quality Control
235 South Beretania St., Suite 702
Honolulu, Hawai'i 96813

Glen Kimura
Kimura International
1600 Kapi'olani Blvd., Suite 1610
Honolulu, Hawai'i 96814



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Clyde W. Namuo
Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Dear Mr. Namuo:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 19, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as indicated below.

1. While we agree that the best and highest use of this area is not in the form of a golf course, OHA does have concerns regarding the use of our limited agricultural lands for other purposes other than agriculture and probable impacts to cultural and environmental resources that this proposal generates.

Response: Suitability of the project site for agricultural use was discussed in Section 4.7. Cultural impacts were discussed in Section 4.8, based on the Archaeological Inventory Survey (Appendix F) and Cultural Impact Assessment (Appendix G). Alternative uses of the site, more generally, were discussed in Chapter 3.

2. OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic reservation Division shall be contacted.

Response: Adherence to applicable laws on significant cultural deposits and human remains are included in the DEIS, Section 4.8.

3. OHA would like to suggest that the project area be landscaped with drought tolerant native or indigenous species that are common to the area. Any invasive species should also be removed.

Response: Landscaping of common areas will be limited to non-invasive and/or native plants. CC&Rs will identify acceptable planting material.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Glenn T. Kimura", with a long horizontal flourish extending to the right.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission



DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
ABBEY SETH MAYER
DIRECTOR
OFFICE OF PLANNING

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-12635

July 1, 2009

RECEIVED JUL 03 2009

Mr. Orlando Davidson
Executive Officer
Land Use Commission
235 South Beretania Street, Room 406
Honolulu, Hawaii 96813

Dear Mr. Davidson:

Subject: Nanakuli Community Baseyard
Tropic Land LLC
Environmental Impact Statement Preparation Notice
Tax Map Key No. (1)-8-7-09:02 (por.)
Lualualei, O`ahu, Hawai`i

The Environmental Impact Statement Preparation Notice (EISPN) for the above referenced project proposes to reclassify approximately 96 acres of land from the State Agricultural District to the State Urban District to develop a light industrial park, landscaped buffer, and drainage improvements. The project site was the subject of a previous EIS (completed and filed in April 1991) for a proposed golf course development.

The Office of Planning (OP) will be coordinating the State's position on areas of cross-cutting State concern. OP requests that in the Draft Environmental Impact Statement (DEIS) the applicant consider the impacts of the proposed project on the following issues:

1. **Water Resources** – Water resource protection and water quality are critical State issues. Applicant should discuss the water requirements of the proposed project, the proposed potable and non-potable water sources to be used for the project, and what measures are proposed to reduce water demand and promote water reuse in the project. The applicant should identify whether the proposed project is within a designated Water Management Area, the impact of the project on the sustainable yield of affected aquifers, and the impact of the project on projected water use and system improvements contained in the County's water use and development plan.

2. **Agricultural Lands** – Preservation of important agricultural lands is a priority for the State and Counties. The EISPN indicates that portions of the proposed project are rated as Prime under the Agricultural Lands of Importance to the State of Hawai'i (ALISH) as well as "B" under the Land Study Bureau's (LSB) Detailed Land Classification rating system. The applicant should discuss how the loss of these lands can be justified or how other lands of equal importance can be protected.
3. **Public Health** – The applicant should quantify the volume of solid waste likely to be generated by the project, and describe the impact the project will have on the County's existing and planned capacity for managing solid waste as represented in the County's solid waste management plan. The DEIS should discuss any mitigation measures to be incorporated in the project to reduce solid waste generation. If the project will have a potential to generate hazardous materials or result in the possible contamination of the air, soil, or water, applicant should discuss how public health and safety will be protected. The DEIS should identify and discuss any potential health and environmental threats that may be present due to contamination from past or current use of the site, including findings from Phase I or Phase II environmental site assessments conducted at the site.
4. **Cultural, Archaeological, and Historic Resources** – The DEIS should include an inventory of archaeological and historic sites on the subject property. The EISPN Appendix contains a November 15, 2006, letter from the State Historic Preservation Division (SHPD) indicating that a proposal to clear, grub, and mulch a 60-acre area "will have 'no effect' on historically significant resources." SHPD goes on to ask that if the area of potential effect (APE) or the scope of work for the proposed undertaking change, or if other portions of the subject parcel are to be developed, proactive archaeological mitigation will be required. The applicant should identify the status of any monitoring and preservation plans being prepared for or approved by the SHPD. The DEIS should identify and describe any cultural resources and cultural practices, including visual landmarks, if applicable, on the subject property and within the ahupua'a in which the property is situated. The applicant should discuss the impact of the proposed project on identified cultural resources and practices, alternatives considered, and proposed mitigation measures.
5. **Environmental, Recreational, and Scenic Resources** – The DEIS should include an updated inventory of flora and fauna, including invertebrates, found on or in proximity to the project site and in any lava tubes and caves on the property. Flora and fauna of concern should not be limited to listed threatened or endangered species or those under consideration for listing, and should include

those species and ecosystems identified as “rare” by The Nature Conservancy of Hawai‘i. The DEIS should discuss measures to be taken to protect rare, threatened or endangered species or ecosystems of concern. The applicant should consider in the design of the field observations including both wet and dry season surveys to capture the fullest range of flora and fauna. The DEIS should include a description of recreational uses on or near the project site. A description of scenic resources and any impacts to them should also be included.

6. **Coastal Zone Management (CZM)** – The State oversees protection of natural, cultural, and economic resources within the coastal zone, which is defined as all lands of the State and the area extending seaward from the shoreline to the limit of the State’s police power and management authority, including the United States territorial sea (§205A-1, Hawaii Revised Statutes). The DEIS should discuss how the proposed project will balance the competing values of economic development and preservation of coastal resources, including the following CZM objective areas.

- a. **Coastal and Ocean Resources** – The State has an affirmative duty to protect Hawaii’s nearshore waters. The applicant should discuss important coastal and marine resources and ecosystems that may be impacted by the proposed project. The DEIS should discuss how stormwater and wastewater generated by the project will be prevented from reducing the quality of nearshore waters.

The DEIS should discuss the impact of the project on existing site and offsite hydrology and how the project will manage stormwater and runoff. OP recommends the use of best management practices (BMP) that promote onsite infiltration and minimize runoff from storm events. The DEIS should discuss and detail any BMP measures to be incorporated into the project. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.

- b. **Coastal and Other Hazards** – The DEIS should describe any hazard conditions that are relevant to the site, such as potential risk or harm from tsunami, hurricane, wind, storm wave, sea level rise, flood, erosion, volcanic activity, earthquake, landslide, subsidence, and point and nonpoint source pollution. The applicant should describe the measures that are proposed to mitigate any hazard impacts.

7. **Energy Use and Impacts** – The DEIS should quantify the projected energy requirements of the project by type of use, and discuss measures to be taken to

reduce energy demand, promote energy efficiency, and to promote use of alternative, renewable energy sources. OP recommends the project's projected energy use and performance be discussed in relation to the U.S. Green Building Council's LEED rating systems for new construction and neighborhood development, the Hawaii Built Green, and Zero-Net Energy Green Homes programs for energy efficiency. The DEIS should identify any generating or transmission capacity constraints that may arise as a result of the proposed project and other projects planned for the region. The DEIS should also discuss the degree to which the project promotes transportation energy savings for project residents and users.

8. **Impact on State Facilities** – The DEIS should include a discussion on the impacts on State-funded facilities, including schools, highways, roads, harbors, and airports. The DEIS should cite the mitigation measures proposed to be used in the development of the project.
9. **Access** – The DEIS should provide detailed information regarding easement agreements with the U.S. Navy for use of Lualualei Naval Access Road and any restrictions, responsibilities, or liabilities this will create for Tropic Land LLC or future project tenants.
10. **Conformance with County Plan Designations and Urban Growth or Rural Community Boundaries** – Act 26, Session Laws of Hawaii 2008, reaffirmed the Land Use Commission's duty to consider any proposed reclassification with respect to the Counties' adopted general, community, or development plans. The EISPN indicates that an amendment to the Wai'anae Sustainable Communities Plan will be required. Thus, the DEIS should discuss the proposed project's consistency with the County land use plans. If the proposed project is not consistent with the County plans, it would require a County plan amendment, or lies outside a County urban growth or rural community boundary, then the DEIS should provide an analysis and discussion of the following:
 - a. **Alternative Sites Considered** – The DEIS should describe and discuss alternative sites that were considered for the project, and discuss why the project could not be accommodated on lands within the urban growth or rural community boundary, if the County plan delineates such boundaries, or on land already designated by the County for similar uses.
 - b. **Impact on Surrounding Lands** – The DEIS should discuss what the impacts of changing the County plan designation or extending the urban

growth or rural community boundary would have on the surrounding lands.

- c. **Significant Public Benefit** – The DEIS should discuss what, if any, public benefits are provided by the proposed project above that already required under existing approval and permitting requirements.
 - d. **Unilateral Agreement (UA)** – the DEIS should discuss the existing UA issued by the City and County of Honolulu related to the development of the previously proposed golf course, including which, if any, conditions would be included in the Land Use Commission proceedings. Including which conditions have been met and which have not.
11. **Development Timetable** – The State Land Use Commission (LUC) requires that projects seeking reclassification be substantially completed within ten years or seek incremental approvals. The DEIS should reference LUC rules (Section 15-15-50, *Hawaii Administrative Rules*), and provide a schedule of development for each phase of the total project and a map showing the location and timing of each increment of development.

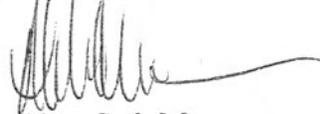
The Office recommends that the EA/EIS process be used as a means to identify and incorporate sustainable design and development practices, including green building practices, in the proposed project. The adoption of sustainable building and development practices has long-term environmental, social, and economic benefits to Hawaii's residents and communities. The Office of Environmental Quality Control's *Guidelines for Sustainable Building Design in Hawai'i* and the U.S. Green Building Council's (U.S. GBC) Leadership in Energy and Environmental Design (LEED) programs for new construction and its pilot program for neighborhood development (LEED-ND) offer guidelines and checklists for this purpose.

The LEED-ND rating system is especially useful in profiling how a project protects and enhances the overall health, natural environment, and quality of life of communities. The rating system provides a range of development features and strategies that promote efficient water, energy, and resource use, including waste reduction, as well as location and design elements to reduce transportation impacts. OP recommends that the DEIS include a preliminary overview of LEED features that could be incorporated into the project, based on the U.S. GBC LEED checklists available. This information would greatly aid agencies, decision makers, and the public in reviewing the project application.

Mr. Orlando Davidson
July 1, 2009
Page 6

The Office of Planning looks forward to receiving the DEIS with the potential impacts and proposed mitigation measures for the above issues addressed. If you have any questions, please call Scott Derrickson, AICP, in the Land Use Division at 587-2805.

Sincerely,

A handwritten signature in black ink, appearing to read "Abbey Seth Mayer", with a long horizontal flourish extending to the right.

Abbey Seth Mayer
Director

c: ✓ Glenn Kimura, Kimura International
Katherine Kealoha, OEQC



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Abbey Seth Mayer, Director
Office of Planning
P.O. Box 2359
Honolulu, HI 96804

Dear Mr. Mayer:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated July 1, 2009 [Ref No. P-12635]. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
1. <u>Water</u> : discuss water requirements, potable and non-potable water sources, measures to reduce water demand and promote water reuse. Identify whether project is within a designated Water Management Area, impact of the project on sustainable yield of affected aquifers, impact of project on projected water use and system improvements in County's water use and development plan.	Sec. 4.15.1; 4.15.3
2. <u>Ag Lands</u> : discuss how loss of ag lands is justified	Sec. 4.7
3. <u>Public Health</u> : quantify volume of solid waste likely to be generated and impact on County's existing and planned capacity for managing solid waste. Mitigation measures to reduce solid waste generation. If project will have a potential to generate hazardous materials. Identify any contamination from past or present use of the site, including findings from Phase 1 or 2 ESAs.	Sec. 4.15.4; 6.3
4. <u>Cultural Resources</u> : include archaeological inventory, status of any monitoring or preservation plans, describe cultural resources and practices on project site and ahupua'a in which the property is located, discuss impact of project on any cultural resources and practices.	Sec. 4.8

Comments	Relevant Section in the DEIS
5. <u>Environmental, Recreation and Scenic Resources</u> : include updated flora and fauna inventory, including “rare” species and ecosystems, describe recreational uses on or near project site, describe scenic resources and impacts to them.	Sec. 4.5; 4.6
6. <u>Coastal Zone Management</u> : discuss how storm water and wastewater generated by the project will be prevented from reducing the quality of nearshore waters. Describe hazard conditions and mitigation measures.	Sec. 4.3; 4.15.2
7. <u>Energy Use</u> : quantify projected energy requirements by type of use and discuss measures to reduce energy demand, promote energy efficiency, promote use of alternative, renewable energy sources. Recommends use of LEED rating system and sustainable design. Identify generating or transmission capacity constraints. Discuss promotion of transportation energy savings.	Sec. 4.15.5; 6.3
8. <u>Impact on State Facilities</u> : discuss impacts on State facilities, including highways, roads, harbors, and airports.	Sec. 4.9
9. <u>Access</u> : provide detailed information regarding easement agreements with Navy for use of Lualualei Naval Access Roads and any restrictions, responsibilities, or liabilities this will create for Tropic Land or future project tenants.	Sec. 4.9
10. <u>Conformance with County Plan Designations and Growth Boundaries</u> : discuss consistency with County land use plans, including alternative site considered, impacts on surrounding lands, significant public benefit, existing unilateral agreement (which conditions have been met and which have not).	Sec. 5.7
11. <u>Development Timetable</u> : provide a schedule of development for each phase of the total development and provide a map showing location and timing of each increment of development.	Sec. 3.3

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.



Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



July 2, 2009

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF
WILLIAM K. MAHOE

JEFFREY S. CUDIAMAT, Ex-Officio
BRENNON T. MORIOKA, Ex-Officio

WAYNE M. HASHIRO, P.E.
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

Mr. Dan Davidson, Executive Officer
Land Use Commission
235 South Beretania Street, Room 406
Honolulu, Hawaii 96813

RECEIVED JUL 07 2009

Dear Mr. Davidson:

Subject: Letter Dated May 20, 2009 on the Environmental Impact Statement
Preparation Notice (EISPN) for Nanakuli Community Base Yard,
Lualualei, Waianae, TMK: 8-7-009:002

Thank you for the opportunity to comment on the proposed project.

The existing water system cannot provide adequate fire protection to the proposed industrial development. Our Water System Standards require a fire hydrant to be located within 125 linear feet of industrial developments and provide a flow of 4,000 gallons per minute (gpm). The existing water system can only provide a flow of approximately 2,200 gpm to fire hydrant number L-945 at the intersection of Paakea Road and Hakimo Road. Therefore, the developer will be required to install approximately 7,000 linear feet of 16-inch water main from the 20-inch main at the intersection of Paakea and Hakimo Road to the site to upgrade the fire protection in accordance with our water system standards. The construction drawings should be submitted for our review and approval.

The installation of a new 16-inch water main, as described above, will provide adequate fire flow to the proposed industrial development. Therefore, the proposed 1.0 million gallon reservoir indicated in the EISPN is not required to provide adequate fire protection to the proposed development.

Please be advised that this information is based upon current data and, therefore, the BWS reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

Mr. Dan Davidson
July 2, 2009
Page 2

All water mains that will be dedicated to the BWS should be located within the public right-of-way.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The developer will be required to install the non-potable water system, indicated in the EISPN, to provide for the non-potable water requirements of the proposed development. The proposed development should be master metered.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,



KEITH S. SHIDA
Program Administrator
Customer Care Division

cc: Mr. Glenn Kimura, Kimura International, Inc.
Ms. Katherine Puana Kealoha, Office of Environmental Quality Control



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Keith S. Shida, Program Administrator
Customer Care Division, Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Shida:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated July 2, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments

Relevant Section in the DEIS

The existing water system cannot provide adequate fire protection for the project. To provide adequate fire flow, a new 16-inch water main is needed from the intersection of Pa'akea and Hakimo Roads. The new water line will eliminate the need for the 1.0 MG reservoir on site. All water mains should be located in the public right-of-way.

Sec. 3.3; 4.15.1

A non-potable water system should be installed.

Sec. 3.3; 4.15.3

Proposed development should be master-metered

Comment acknowledged.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluluodpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR



DAVID K. TANOUE
DIRECTOR

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

2009/ELOG-1222 (mw)

July 2, 2009

RECEIVED JUL 07 2009

Mr. Orlando Davidson, Executive Officer
Land Use Commission
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Dear Mr. Davidson:

Subject: EISPN for the Nanakuli Community Base Yard,
Lualualei, Waianae, Oahu, TMK 8-7-9: por. 2

We have the following comments on this EIS Preparation Notice for Tropic Land's proposed 96-acre industrial subdivision next to the Lualualei Navy facility:

1. The discussion of the Lualualei Naval facility should mention that several years ago the military published long-range plans which called for closing this facility, and it should also discuss the current status of its future. (p. 1-6)
2. Please list all possible permits needed in Section 1.7. (pp. 1-9 to 1-10)
3. Please recheck your directional terms. The proposed 100-foot buffer area is on the "uphill" or southeast side of the project, and the project site slopes downward in a generally northwesterly direction, not a southwesterly direction. (pp. 1-1, 2-2, 3-1, etc.)
4. The Natural Hazards section should include rockfall hazards, since the plan calls for a rockfall buffer area just uphill of the project site. It should also include fire hazards. The EIS should include rockfall, erosion, and slide studies. (p. 3-8)
5. The DEIS should mention that a private refuse collection service will be used. (p. 3-25)
6. At the start of Chapter 4, the word "federal" should be dropped if federal plans or policies are not going to be discussed. (p. 4-1)
7. Several General Plan goals should be left out, since the project does not support them. Because this is a rural area, not an urban-fringe area, drop Economic Activity Objective G, Policy 2 and Physical Development and Urban Design Objective D, Policy 1. Also, the discussion of Economic Activity Objective C and its policies 1 and 5 should mention that a significant part of the site is classified as Prime Agricultural Lands, according to the ALISH system. (pp. 4-4 to 4-6)

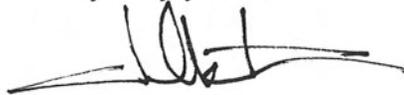
8. A statement about the project site being close to the freeway should be deleted or corrected, since the end of the H-1 Freeway at the Kalaeloa Interchange is nearly eight miles from the project site. (p. 4-8)
9. Figure 13 needs to be redone so that the Waianae SCP's land-use policies for the project site are clear. We suggest: (1) zooming in by dropping the Makaha to Waianae part of the map, (2) using a dark boundary around the proposed industrial park instead of a green color, and (3) reproducing the green colors on the map more faithfully. (p. 4-12)
10. Chapter 5 on the significance criteria needs to be revised. All relevant impacts should be disclosed here. The criteria which need to be revised and the impacts which need to be mentioned are as follows: (pp. 5-1 to 5-3)
 1. The project will cause two areas of Prime agricultural land to be permanently lost.
 2. The project will urbanize the site and thus alter the natural environment.
 5. The project has potential noise, air quality, and industrial hazard impacts, and so might adversely affect public health.
 11. The rockfall and fire hazards make this an environmentally sensitive area.
 13. The project may substantially increase electrical consumption in this area even if solar power is partly relied on. This is a separate energy impact from potential reductions in gasoline use due to reduced commuter travel.
11. Regarding Section 3.2.4, Hydrological Conditions, please locate and discuss the no-pass line and the UIC line and any impacts on groundwater resources.
12. Regarding Section 3.2.4.2, Surface Water, please show the location of the stream and discuss how the project will accommodate streamflow, protect the stream from industrial run-off, and protect the project from flooding. Also discuss needed drainage improvements, including impacts, mitigation measures, and the project's Storm Water Quality Plan.
13. Regarding Section 3.6.2, Circulation and Traffic, you may wish to move this section to the following Section 3.7, Public Infrastructure and Services. Current access and future access to the property should be discussed. The discussion on future access should include the steps and approvals needed to provide access to the proposed industrial park.
14. Regarding Section 3.7.1, Water, please identify the location of the 1.0 mgd water storage facility and the transmission lines needed. Please also discuss: (1) how much of the 8" transmission line is available to meet the anticipated water demand, and (2) the anticipated non-potable water demand and system.
15. Regarding Section 3.7.2, Wastewater System, the anticipated wastewater flows and the potential impacts of wastewater treatment should be discussed.
16. Regarding Section 4.3.2, Waianae Sustainable Communities Plan, please indicate the project's location outside of the Rural Community Boundary and its status as an urban development, which the Waianae SCP says "should not be

Mr. Orlando Davidson, Executive Officer
Land Use Commission
July 2, 2009
Page 3

allowed to intrude into the coastal area, the Agricultural area, or the Preservation area." The discussion should provide reasons why it does in fact need to do so.

Should you have any questions, please contact Mike Watkins of our staff at 768-8044.

Very truly yours,

A handwritten signature in black ink, appearing to read 'D. Tanoue', with a long horizontal flourish extending to the right.

David K. Tanoue, Director
Department of Planning and Permitting

DKT:js

cc: OEQC
Kimura International, Inc.

P:\DivFunction\EA-EIS\2009\Tropic Land EISPN.doc



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. David K. Tanoue, Director
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Mr. Tanoue:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated July 2, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments

Relevant Section in the DEIS

- | | |
|--|--|
| 1. What is current status of plans for Lualualei Naval facility? | Information unavailable. |
| 2. List all possible permits needed in Sec 1.7 | Sec. 1.6 |
| 3. Check location of 100-foot buffer. Should be described as “northwesterly” not “southwesterly” | Comment acknowledged. |
| 4. Natural Hazards section should include rockfall and fire hazards. EIS should include rockfall, erosion, and slide studies. | Sec. 4.4 |
| 5. Mention that a private refuse collection service will be used. | Sec. 4.15.4 |
| 6. Chapter 4, “federal” should be dropped if federal plans not discussed. | Correction made. |
| 7. Because project is in a rural area, drop “Economic Activity, Objective G” and “Physical Development and Urban Design, Objective D” from discussion of General Plan policies. Mention that part of the site is classified as Prime Ag Lands under Economic Activity Objective C. | Sec. 5.7 |
| 8. Delete statement that the site is close to the freeway since Kalaeloa interchange is 8 miles away. | Project site is closer to the freeway than locations further up the Waianae coast. |

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999

Comments	Relevant Section in the DEIS
9. Show Waianae SCP land use policies more clearly in Fig. 13	Fig. 23 and 24
10. Under Significance Criteria, discuss:	
• Permanent loss of Prime ag land	Sec. 4.7
• Urbanization will alter natural environment	Sec. 4
• Potential noise, air quality, and industrial hazard impacts that might adversely affect public health	Sec. 4.11; 4.10
• Rock and fire hazards make this an environmentally sensitive area	Sec. 4.4
• Project may substantially increase electrical consumption in this area even if solar power is used. Separate energy impact from potential reduction in gasoline use due to reduced commuter travel.	Sec. 4.15.5; 6.3
11. Under Hydrological Conditions locate and discuss the no-pass line and the UIC line and any impacts on groundwater resources	Sec. 4.15.3
12. Under Surface Water show location of the stream and discussion how project will accommodate stream flow, protect stream from industrial run-off and protect the project from flooding. Discuss drainage improvements and project's "Storm Water Quality Plan"	Sec. 4.3
13. Under Circulation and Traffic, discuss steps and approvals needed to provide access to the industrial park.	Sec. 4.9
14. Under Water, identify the location of the 1.0 mgd water storage facilities and transmission lines needed. Discuss (a) how much of the 8-inch transmission line is available to meet the anticipated water demand and (b) the anticipated non-potable water demand and system.	Sec. 3.1; 4.15.2
15. Under Wastewater System, discuss anticipated wastewater flows and potential impacts of wastewater treatment.	Sec. 4.15.2
16. Under Waianae SCP, indicate the project's location outside the Rural Community Boundary and why the project (as urban development) should be located in an agricultural area.	Sec. 5.7

Department of Planning and Permitting
April 26, 2010
Page 3

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Glenn T. Kimura", with a long horizontal flourish extending to the right.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



WAYNE YOSHIOKA
DIRECTOR

SHARON ANN THOM
DEPUTY DIRECTOR

June 16, 2009

TP5/09-315191R

RECEIVED JUN 17 2009

Mr. Dan Davidson, Executive Officer
Land Use Commission
235 S. Beretania Street, Room 406
Honolulu, Hawaii 96813

Dear Mr. Davidson:

Subject: Nānākuli Community Base Yard

This responds to Mr. Glenn Kimura's letter of May 20, 2009, requesting consultation and comments in preparing an Environmental Impact Statement for the subject project. Our department reserves comment on the project pending the preparation of the associated traffic impact study, which should include an assessment of impacts on area roads such as Hakimo Road. Upon completion of the traffic study, we request that a copy be forwarded to our department for review and comment.

Should you have any questions on the matter, please contact Mr. Brian Suzuki at 768-8349.

Very truly yours,

A handwritten signature in black ink, appearing to read "Wayne Y. Yoshioka", is written over the typed name.

WAYNE Y. YOSHIOKA
Director

cc: Office of Environmental Quality Control
✓ Kimura International, Inc.



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Wayne Y. Yoshioka, Director
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813

Dear Mr. Yoshioka:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 16, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comment: Our department reserves comment on the project pending the preparation of the associated traffic impact study, which should include an assessment of impacts on area roads such as Hakimo Road.

Response: Traffic issues were discussed in Chapter 3. Traffic impacts were discussed in Section 4.9. The full Traffic Impact Assessment Report was included in the DEIS as Appendix E.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR



KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

June 17, 2009

RECEIVED JUN 19 2009

Mr. Dan Davidson, Executive Officer
Land Use Commission
235 South Beretania Street, Room 406
Honolulu, Hawaii 96813

Dear Mr. Davidson:

Subject: Environmental Impact Statement Preparation Notice
Nanakuli Community Base Yard
Lualualei, Waianae, Oahu, Hawaii
Tax Map Key: 8-7-009: 002 Portion

In response to your letter dated May 20, 2009, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)
2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire

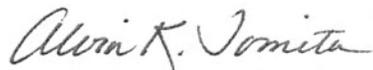
Mr. Dan Davidson, Executive Officer
Page 2
June 17, 2009

apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151.

Sincerely,



ALVIN K. TOMITA
Acting Fire Chief

AKT/SY:bh

cc: Office of Environmental Quality Control
Glenn Kimura, Kimura International, Inc. ✓



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Kenneth G. Silva, Fire Chief
Honolulu Fire Department
636 South Street
Honolulu, HI 96813

Dear Chief Silva:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by memorandum dated June 17, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
1. Provide fire access road for every facility or building when any part of an exterior wall is located more than 150 ft from a fire access road	Sec. 3.1; 4.15.1
2. Provide water supply capable of supplying required fire flow for fire protection to all premises on which a facility or building will be constructed. Provide fire hydrants and mains if any part of the facility or building is more than 150 feet from a water supply on a fire access road.	Sec. 4.15.1
3. Submit civil drawings to HFD for review and approval	Comment acknowledged.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

EIS



July 9, 2009

RECEIVED JUL 11 2009

Mr. Dan Davidson, Exec. Director
Hawaii State Land Use Commission
235 South Beretania St. - Rm. 406
Honolulu, HI 96813

Dear Mr. Davidson:

**Re: Nanakuli Community Base Yard
Lualuelei, Waianae, Oahu
TMK (1) 8-7-09:02 (por.)**

Thank you for the opportunity to review and comment on the EISPN prepared for the above-referenced project. The following comments were received from the Transmission & Distribution Division of our Engineering Department:

As noted in the EISPN, HECO has existing 11.5kV overhead facilities along Lualuelei Naval Access Road that run alongside the parcel being developed for the project. We appreciate your continuing efforts to keep us apprised of the planning process. As the construction plans are developed, please continue to keep us informed. We will be better able to evaluate any effects on our system facilities further along in the project's development. We request that development plans show all affected HECO facilities, and address any conflicts between the proposed plans and HECO's existing facilities. Please forward the pre-final development plans to HECO for review.

Should it become necessary to relocate HECO's facilities, please immediately submit a request in writing and we will work with you so that construction of the project may proceed as smoothly as possible. Please note that there may be costs associated with any relocation work, and that such costs may be borne by the requestor. Because any redesign or relocation of HECO's facilities may cause lengthy delays, upon determination that HECO facilities will need to be relocated, HECO should be notified immediately in order to minimize any delays in or impacts on the project schedule.

Our point of contact for this project is Kristin Inouye (543-7219). I suggest dealing directly with her to coordinate HECO's continuing input in this project. Thank you again for the opportunity to comment.

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

cc: Ms. Katherine P. Kealoha (OEQC)
Mr. Glen T. Kimura (Kimura Int'l)
K. Inouye/M. Lum/l. Lee



KIMURA INTERNATIONAL INC.

April 26, 2010

Mr. Kirk S. Tomita
Senior Environmental Scientist
Hawaiian Electric Co.
P.O. Box 2750
Honolulu, HI 96840-0001

Dear Mr. Tomita:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated July 9, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as indicated below.

Comments: HECO has existing 11.5kV overhead facilities along Lualualei Naval Access Road. Request that development plans show all affected HECO facilities and address any conflicts.

Response: A description of affected electrical utilities was provided in Sec. 4.15.5. Tropic Land will continue consultations with HECO.

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Attachments

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999



NANAKULI-MAILI NEIGHBORHOOD BOARD NO. 36

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 400 • HONOLULU, HAWAII, 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov>

June 23, 2009

RECEIVED JUN 26 2009

Kimura International
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Tropic Land LLC
1001 Bishop Street, Suite 2690
Honolulu, Hawaii 96813

Re: Tropic Land LLC – Nanakuli Community Base yard Tax map Key: (1) 8-7-9:2

On behalf of the Nanakuli-Mailii Neighborhood Board No. 36 we have supported the proposed development of the Industrial Park Project dated July 15, 2008 by a vote of eight members present. I have also submitted a letter of support by board member Victor Kila our Health and Safety Committee Chair who could not be present at our July 15, 2008 regular neighborhood board meeting.

In addition we understand that Tropic Land LLC is working forward through the permit process and will have a complete Environmental Impact Statement for this project and to address all and any concerns the community may have of this project. The board has received numerous presentations and updates from the Tropic Land LLC representatives and will look forward in supporting this project through its proper process.

I have attached the supporting Resolution adopted by members of the Nanakuli-Mailii Neighborhood Board No. 36 and also a copy of our "exhibit A" document. Please do not take this attachment lightly, as members of the board and community has worked very hard in working out a comfortable and positive solution with representatives of Tropic land LLC.

As a native Hawaiian community, we are very aware of the cultural significance and cultural resources in the Lualualei Ahupua'a, but feel very confident that our cultural monitors from Nanakuli will be able to address any impact that may be discuss on this project.

Should you require any additional information, please feel free to contact me at 768-3888. Mahalo for this opportunity to comment to this project that is located in our immediate boundary of our neighborhood board.

Sincerely,


Patty Kahanamoku Teruya
Chair, NB#36

Cc: State Land Use Commission



RESOLUTION

SUPPORTING THE DEVELOPMENT AND CONCEPT OF THE PROPOSED NANAKULI COMMUNITY BASEYARD PROJECT, A LIGHT-INDUSTRIAL PARK IN LUALUALEI VALLEY, NANAKULI, OAHU.

WHEREAS, a new 96-acre light industrial park is being proposed for development on a portion of TMK No. 8-7-9: 02 in Lualualei Valley, Nanakuli, Oahu (herein called "Industrial Park Project"); and

WHEREAS, the Industrial Park Project will be a center for many new employment in the construction trades, automotive repair, trucking, warehousing and other light-industrial businesses and that the type of employment created in this proposed project are quality jobs that pay well and are also the type of jobs that are being sought after by many Leeward Coast residents; and

WHEREAS, the Industrial Park Project is being planned to included an "incubator" facility for new or developing businesses in the Leeward Coast; and

WHEREAS, Tropic Land, LLC, the owner and developer of the Industrial Park Project, made a public presentation regarding the Industrial Park Project to the Planning and Zoning Committee of the Nanakuli-Mailii Neighborhood Board # 36 (herein "Neighborhood Board") on June 24, 2008; and

WHEREAS, in its recent presentation to the Planning and Zoning Committee, Tropic Land has made commitment with several unilateral agreements regarding the development of the Industrial Park Project which are attached hereto and incorporated herein as Exhibit "A;" and

WHEREAS, the Planning and Zoning Committee has received an informational booklet describing the project with more than 590 signatures/letters of support for the Industrial Park Project from many Leeward Coast residents and community groups; and

WHEREAS, in order for this project to become a reality for the residents of the Leeward Coast, various governmental approvals (herein collectively "Government Permitting Process") are required, which may include (i) an amendment of the Wai'anae Sustainable Communities Plan, (ii) the rezoning of the 96-acre site from P-2 (general preservation district) to I-1 (limited industrial district), (iii) a State Land Use Boundary amendment to reclassify the 96-acre site from Agricultural to Urban use, and (iv) an amendment of the Leeward Coast Enterprise Zone to include the 96-acre site; and

WHEREAS, the Planning and Zoning Committee, upon the unanimous vote of its members at the Committee's meeting held on June 24, 2008, adopted a motion to support the Industrial Park Project and recommend the action of the Nanakuli-Mailii Neighborhood Board #36 to support the Industrial Park Project at the Board's upcoming meeting on July 15, 2008; and

WHEREAS, the Nanakuli-Mailli Neighborhood Board No. 36 recognizes the need for a project in the Leeward Coast, which has traditionally "lagged" behind the rest of Oahu in terms of economic development and employment opportunities for its coastal residents; now, therefore,

BE IT RESOLVED that the Nanakuli-Mailli Neighborhood Board No. 36 supports the development of the Industrial Park Project; and

BE IT RESOLVED that the Nanakuli-Mailli Neighborhood Board No. 36 hereby supports and encourages the approvals of the various governmental agencies that will be reviewing the Industrial Park Project in the Government Permitting Process; and

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the Mayor of the City and County of Honolulu, the Director of the Department of Planning and Permitting of the City and County of Honolulu, the Chairperson of the Honolulu Planning Commission, the Chairperson of the Honolulu City Council, the Governor of the State of Hawaii, the Executive Director of the Office of Planning of the State of Hawaii, the Chairperson of the State Land Use Commission, and the Director of the Department of Business and Economic Development of the State of Hawaii.

INTRODUCED AND SUPPORTED BY:

NANAKULI-MAILI NB#36

James Kimo Keli
Antoinette P. Miamau-Mumuka
Paalei U. Aigoo-Jani
Cheryl H. M. M.
Meruana K.M. Castor-Kaio
Cynthia P. P.
John P. P.
John P. P., Chair, NB#36

The Nanakuli-Mailli Neighborhood Board # 36, hereby certifies that this Resolution was adopted by the Nanakuli-Mailli Neighborhood Board # 36 at its meeting held on July 15, 2008.

7-15-08

Exhibit "A"

Tropic Land LLC agrees to the Unilateral Agreement and Promise to the Community along the Leeward Coast.

1. An MSW/composting/construction debris landfill *will not* be built on any Tropic's land LLC located in Nanakuli, Oahu.
2. A golf course *will not* be built on Tropic's land, LLC, Nanakuli, Oahu.
3. Any future housing development *will not* be built on Tropic's land.
4. Strip clubs, hostess bars, night clubs, or any alcohol establishments stores and pornography stores *will not* be allowed on Tropic's land, LLC, Nanakuli Oahu.
5. Tropic LLC, Nanakuli, Oahu *will* do an Environmental Impact Statement ("EIS") covering traffic, infrastructure and other pertinent issues. To be presented to the community and board members.
6. Tropic LLC, Nanakuli, Oahu *will* go green on energy consumption.
7. Tropic LLC, Nanakuli, Oahu *will* be sensitive to cultural practices and places and will work with Nanakuli or Leeward Coast residents cultural monitors.
8. Tropic LLC, Nanakuli, Oahu *will* contribute \$1,000,000 for the a community benefits program which will be used to benefit the Nanakuli and Maili communities.
9. Tropic LLC, Nanakuli, Oahu *will* apply for Enterprise Zone designation for the project.
10. Tropic LLC, Nanakuli, Oahu *will* find an appropriate permanent name for the project site, acceptable to the community and offer community involvement on names for the site. To add the word "Nanakuli", in naming the site.

The Planning and Zoning Committee has requested of Tropic Land the additional language to these promises which are indicated by the underlined text.



July 21, 2008

Kahu Victor Allen Kila
Pacific Faith Fellowship Church
Maili Commercial Center
87-1784 Farrington Highway, Unit 8
Wai'anae, Hawaii 96792

RE: Support of Tropic Land LLC proposed Light Industrial Project – Lualualei, O'ahu

Aloha Chair Teruya:

As you know I was on a religious mission in Jamaica and have recently returned home. Being away, I was unable to attend the Nanakuli-Maili NB#36 regular meeting on July 15, 2008. I understand that Tropic Land LLC did a presentation to the full board and the board introduced a Resolution and an exhibit agreement was supported unanimously of a vote 8 aye; 0 opposition.

As a member of the Planning & Zoning Committee which met on June 24, 2008, I was in attendance and voted with a motion to support this project and send to the full board meeting. This support recommendation did come from the P&Z Committee meeting.

This letter is to clarify my position and for the record as a member of the Nanakuli-Maili NB#36, and as the (9) ninth member of the board, I would like to state that my vote is to support this project and my vote be noted in the records through this process.

I'm very aware of this project and that Tropic Land LLC will continue to work with the board with updates but, this project will benefit our community with many opportunities.

Chair Teruya, I'm asking to be included in the support of Tropic Land LLC project and state my vote as "aye", as a member of the board I did not want my vote to be excluded.

Thank you and Aloha,

Ms. Victor Allen Kila, NB#36 member
Committee Chair, Health & Public Safety

Cc: Neighborhood Commission Office
P&Z Committee Chair, Eli





KIMURA INTERNATIONAL INC.

April 26, 2010

Ms. Patty Teruya, Chair and Board Members
Nanakuli-Mailii Neighborhood Board, No. 36
530 South King Street, Room 400
Honolulu, HI 96813

Dear Ms. Teruya:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 23, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
Neighborhood Board has supported the proposed industrial park project through resolution supported by eight members present. Absent member submitted letter of support.	Sec. 8.1; Board resolutions included as Appendix I
Board will monitor and support project as it progresses through permit and EIS process.	Comment acknowledged.
Resolution and attached exhibit embodies cooperative effort between Board members and project developers.	Comment acknowledged
Community is aware of significant cultural resources in project area, but confident that local cultural monitors will be able to address any project impact.	Sec. 4.8 and Cultural Impact Assessment (Appendix G)

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814
Tel: 808 944-8848 • Fax: 808 941-8999

To: Mr. Glenn Kimura
Kimura International, Inc.
1600 Kapiolani Blvd., # 1610
Honolulu, HI 96814

RECEIVED JUN 23 2009

From: Alice Greenwood, Director *AG*
Concerned Elders of Waianae
87-576 Kula'aupuni Street C-101
Waianae, HI 96792

Date: June 22, 2009

Re: Response to the EA/PN for Tropic Land's Proposed Industrial Park in Nanakuli

Aloha Mr. Kimura,

The Concerned Elders of Waianae, together with KAHEA: The Hawaiian-Environmental Alliance and the American Friends Service Committee Hawaii Area Program, are writing in opposition to the industrial park proposed by Tropic Land for Lualualei. We have serious concerns about the detrimental affect this type of land use will have on the natural and cultural resources of Nanakuli.

Concern for the Cultural Resources of the Area

Bulldozing the hillsides of Lualualei for an industrial park will irreparably undermine the immense cultural significance of this region. The parcel Tropic Land seeks to urbanize, Lot 205A, is in the center of one of the most important viewplaces on the Waianae Coast.

The demigod Maui is a central figure in the cosmology of Native Hawaiians. He is the man that made the Hawaiian way of life possible, by snaring the sun in order to slow its path across the sky and lengthen the day for the benefit of all a Hawaiians. It is said that he was born along the hillsides of Lualualei.

Please document the extensive cultural history and traditional practices of the region affected by Tropic Land's proposal.

Would the proposed industrial park block access to the Nioiula Heiau? What will be the access path to the heiau if the project is allowed?

Where is the stone that Maui sunned himself on? What impact would the proposed project have on this sacred pohaku?

Where is the cave that Maui used as a child? What affect would the proposed project have on this cultural significant site?

What will Tropic Land's do to protect Ulehawa stream if the proposed project is allowed?

What will Tropic Land's do to preserve the many lo'i terraces documented in the area of the proposed project site?

Concern for the Environment of Nanakuli

Industrial parks pose an unacceptable high risk to the health and well-being of neighboring communities.

Endangered Species

What is the state of the endangered Nehe? How much land does the Nehe need to recover and be removed from the endangered species list? What impact will construction of this industrial park have on the survival and recovery of this endangered plant species?

What impact will construction on this site have on the ecology downhill? Sacred designations for land usually have practical implications. This area was set aside as sacred, which may indicate that disturbing the soil here might have detrimental consequences on the land and ocean below it.

Air Pollution

We have concerns about the increase to annual average for particulate, sulfur dioxide and increased annual averages of daily maximum 1-hour values recorded for ozone and carbon monoxide, especially since the air quality along Farrington Highway of Lualualei Naval Road is already highly impacted by heavy vehicle emission of diesel particulates.

If this project proceeds, then an air quality monitoring station must be established. Quarterly reports of air quality in the area must also be released to the public on a quarterly basis.

Please assess the exposure residents will suffer, especially among children and the elderly, from the environmental impact of truck emission/exhaust.

Waste Water

Increased lot coverage by large buildings and more extensive paving can increase the volume and rate of storm water discharge. Over the long-term, the cumulative impact of greater lot coverage threaten to erode the natural stream banks down stream requiring expensive aesthetically and ecologically undesirable structural hardening of the drainage channel or even to exceed the capacity of the drainage system resulting in flood conditions.

Sewer System: Lot 205A is not serviced by any existing sewer line and there are no sewer connection permit approved or planned for.

Is the proposed on-site waste treatment facility in keeping with urban city-like characterization?

On-site storm water runoff generated by the TL development will negatively impact the surrounding properties. What is TL storm water management plan? Will it provide percolation into landscaped areas? Will there be drywells to ensure that there will be no net increase in runoff from the previous land usage?

What is the general drainage pattern of the project site? Where is the nearest storm drain connection? What are your plans for the municipal storm drain facility?

Will the project be allowed to increase surface runoff onto adjoining properties or rights-of-ways? When the project increases the amount of paving the runoff concerns are real. Where will the surface waters be directed? Increased landscape areas will reduce surface runoff from current amounts of runoff. Similarly water from building roof tops... where will they be directed?

Is the sanitary system adequate to meet the needs of activities for Urban districts?

Will pre-treatment be required for the plant's waste water before it enters the public wastewater system?

Retention/Detention basins should be established to contain the runoff anticipated from providing impermeable surfaces in the industrial park.

Collection/separation systems should be established to separate and collect contaminants from impermeable surfaces in the industrial park so that they do not go down the drain with the storm water runoff.

Ground & Soil

Does TL have plans to remove the soil?

For slab-on-grade construction what plans do you have for altering the topography (excavating, filling, and grading)?

How many acres does Tropic Land plan for soil disturbance? If it's greater than one acre, Tropic Land will need NPDES permit.

Development on unstable soils could result in adverse hazardous conditions. Where locations have deposits of unstable soils, slow moving landslides can cause property damage.

Please conduct a soil study. The soil on this lot is not adequate for safely constructing warehouses, as Tropic Land proposes to do.

Concern for the Quality of Life in Nanakuli

The noxious commercial activities allowable on properties abutting Lualualei Naval Road have, over the short-term compromised the quality of life for residents along Farrington

Highway and on Hakimo Road.

There are no future plans by landowners and commercial operators to reduce, shut down or change the nature of their business that we know of. The addition of one for "urban-like" usage next to working agricultural farms and residential communities without addressing the reduction, elimination or prevention of serious public health issues is immoral.

Changing the district boundary from agricultural to urban will further compromise the public health for citizens in the Lualualei ahupuaa.

Noise

The project is not in a highly developed area. Existing ambient noise levels are relatively low. The noise sources will increase from traffic noise due to large volumes of traffic and heavy vehicles that will use Hakimo Road, the primary traffic access to the project.

What are your hours of operation?

Water Supply

The project is not served by the existing water lines and water meters. How will buildings be served if there are no existing laterals for water lines?

Are the existing water lines for agricultural lots of sufficient size and adequate to serve the urban needs of the new buildings to be constructed and the changed uses of the new users who occupy them?

Tropic Land will use sub-standard quality water to irrigate the project which will require better management practices and a plan for managing the use of R-water. Food Safety concerns are real because properties downstream farm lands. Food safety certifications may be jeopardized by potential contamination from r-water runoffs.

Does Tropic Land plan to have an automated irrigation system? If yes, then will Tropic Land (TL) use waste plan water to irrigate, TL must install a backflow preventer to eliminate cross contamination of the municipal water system if an automatic irrigation system installed to irrigate the landscape.

Is the water supply to the proposed site adequate to meet needs and fire insurance requirements? If not, what plan does the BWS have to expand capacity or extend service?

Will raw water for industrial use be drawn from wells on site?

Are there specific, funded plans for the expansion of the water supply to the project site?

What type of waste water treatment technology will be employed?

What becomes of the sludge collected in the waste treatment plant?

Traffic Congestion

The existing roadway is non-standard as it contains no drainage, no sidewalks, curbs, or gutters. Access to the TL project is via an existing NON-CITY-LIKE standard road. More discussion is warranted regarding the roadway and roadway improvements with Hakimo residents.

The number of employees, customers and suppliers associated with the park using the Hakimo Road access to the TL project will inevitably increase.

The existing Hakimo roadway and the intersection of Farrington Highway are not adequate to serve the traffic to the TL Park, which will result in increase traffic flow through the residential community at the Princess Kahanu Estates.

We're not building our way out of congestion with this TL proposal.

Is the TL site served adequately by access roads? Are there additional access roads planned?

Is traffic congestion a problem on the access road to the project? On state highways? In supplier areas? In market areas?

What are the road limits?

Please complete a traffic study for the anticipated increased traffic on H-1, Farrington Highway, Hakimo Road, and any other access ways.

Sense of Community

Industrial parks often offer desirable site characteristics to companies, such as proximity to existing industrial centers and easy access to transportation. TL does not offer easy access. Urban designation does not make the site ideal for warehouse and distribution businesses. If the TL project proposes to link to regional businesses, which ones?

TL will be new stock. What is the demand to locating in a region far from the centers of commerce and with traffic access challenges? We don't believe the land use proposed by TL is appropriate to the state and city transportation policies and development plans.

Does our state general plan to regional development plan support urban development and industrial commercial growth moving into rural Waianae? Is there a plan in effect? Is there a plan proposed?

Produce a study to capture the observed historical economic development trends to forecast the vocational behavior of the individual households and firms in a construct consistent with economic theory to determine that the industrial park will create jobs accessory to the economic activities in the Waianae region?

What is the non-market value of the open space that would be lost if the industrial park were built?

What impact will the loss of this agricultural land have on Hawaii's effort to improve food security? Please conduct a study on how many acres of agricultural land are necessary to provide for all of Hawaii's food needs?

Part of Tropic Land's theory is the notion of accessibility between households and businesses, as represented by the regional transportation network. Does TL know what that network is?

What mode of transportation will be used to serve suppliers to the market areas?

Do the suppliers and markets operate within the Waianae region?

Is there demand for industrial space?

Does the proposed economic development project have a plan to reduce waste and increase resource efficiency? Does the project have a mindset to reach zero waste?

Is there a plan to coordinate the activities of the firms to increase efficient use of raw materials, reduce waste outputs, conserve energy and water resources, and reduce transportation requirements?

Companies co-locate so that water, energy sharing and recycling of low-value by-products become physically and economically feasible by closely coordinating their production process and infrastructure to maximize efficiency.

Does the park have as its goal the elimination of wastes?

Does the change from Agricultural to Urban lower the environmental impact than traditional business ventures allowable on Agricultural lands?

Better Land Use Alternatives Exist

Please document the history of farming in Nanakuli. Nanakuli was once a famed farming community with lush farms that helped to feed the people of Oahu. With proper planning, Nanakuli can manage its economic development to provide jobs while re-embracing its farming history. We propose the Tropic Land parcel be subdivided and leased to graduates of the University of Hawaii's agriculture programs and MA'O Farm's apprenticeship program. New farmers need the hands-on experience to demonstrate their proficiency and qualify for additional support from the government and private sector support programs. The 205A parcel could serve as the incubator for the next generation of master farmers in Hawaii.



KIMURA INTERNATIONAL INC.

April 26, 2010

Ms. Alice Greenwood
Concerned Elders of Waianae
87-576 Kula‘aupuni Street, C-101
Waianae, HI 96792

Dear Ms. Greenwood:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 22, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments	Relevant Section in the DEIS
<u>Cultural Resources</u>	
Bulldozing hillsides will irreparably undermine one of the most important viewplaces (viewplanes?) on the Waianae Coast. Maui, central figure in Native Hawaiian cosmology, said to be born on the hillsides of Lualualei.	Sec. 4.8; 4.12
Document extensive cultural history and traditional practices of the region affected by the project	Sec. 4.8
Will the industrial park block access to the Nioiula Heiau? What access path to the heiau will be allowed?	Sec. 4.8
Where is the stone that Maui sunned himself on? What impact to this sacred pohaku?	Sec. 4.8
Where is the cave Maui used as a child? What effect will the project have on this cultural site?	Sec. 4.8
What will be done to protect Ulehawa Stream?	Sec. 4.3
What will be done to preserve the loi terraces documented in the area of the project site?	Sec. 4.8

Comments

Relevant Section in the DEIS

Endangered Species

What is the state of the endangered nehe? Sec. 4.5

What impact will construction on the site have on the ecology downhill? This area was set aside as sacred, which may indicate that disturbing the soil here might have detrimental consequences on the land and ocean below it. Sec. 4.5

Air Pollution

Concerns about the increase to annual average for particulate, sulfur dioxide, daily maximum 1-hour values recorded for ozone and carbon monoxide, especially because air quality along Farrington Hwy and Lualualei Naval Road is already impacted by heavy vehicle emission of diesel particulates Sec. 4.10

If project proceeds, air quality monitoring station must be established and quarterly air quality reports released to the public. Sec. 4.10

Assess impacts to residents, especially children and elderly, from exposure to truck emission/exhaust

Wastewater

Cumulative impact of greater lot coverage threatens erosion of natural stream banks...resulting in flood conditions Sec.4.3

Is the proposed on-site WWTP in keeping with urban city-like characterization? Sec. 3.1; 4.15.2

Storm water runoff will negatively impact surrounding properties. What is the storm water management plan? Will it provide percolation into landscaped areas? Will there be dry wells to ensure no increase in runoff from the previous land use? Sec. 4.3

What is the general drainage pattern of the project site? Where is the nearest storm drain connection? What are your plans for the municipal storm drain facility? Sec. 4.3

Will the project be allowed to increase surface runoff onto adjoining properties? Where will surface waters be directed? Sec. 4.3

Is the sanitary system adequate to meet the needs of activities for the Urban District? Sec. 3.1; 4.15.2

Will pre-treatment be required for the plant's wastewater before it enters the public wastewater system? Sec. 4.15.2

Retention/detention basins should be established to contain runoff Sec. 4.3

Collection/separation systems should be constructed to collect and separate contaminants from runoff. Sec. 4.3

Sec. 4.1

Comments

Relevant Section in the DEIS

Ground and Soil

Are there plans to remove soil? Sec. 4.1
What are the plans for altering the topography? Sec. 4.1
How many acres are planned for soil disturbance? Sec. 4.1; 4.4
Development on unstable soils could be hazardous.
Conduct soil study. Soils on this property are not suitable for safely constructing warehouses. Sec. 4.1

Quality of Life in Nanakuli

Noxious, commercial activities on properties abutting Lualualei Naval Road have compromised QOL for residents along Farrington Hwy and Hakimo Rd Sec. 4.14
Adding “urban-like” use next to working farms and residential communities without reducing, eliminating, or preventing serious public health issues is immoral. Changing district boundary from agricultural to urban will further compromise public health for citizens of the Lualualei ahupua‘a. Sec. 4.14; 5.3; 5.7

Noise

Project will increase noise due to large volumes of traffic and heavy vehicles that will use Hakimo Rd, the primary access to the project. Sec. 4.11
What are the project’s hours of operation?

Water Supply

How will building be served if there are no existing laterals? Sec. 3.1; 4.15.1
Are existing water lines for agricultural lots of sufficient size to serve urban needs? Sec. 3.1; 4.15.1
If water of sub-standard quality is used for irrigation, food safety is a concern for downstream farm lands. Sec. 4.2
Will there be an automated irrigation system? Will treated wastewater be used to irrigate? Sec. 4.15.1
Is the water supply adequate to meet fire requirements? Sec. 4.15.1
Will raw water for industrial use be drawn from on-site wells? Sec. 4.2
Are there specific funded plans for expansion of the water supply to the project site? Sec. 3.1; 4.15.1
What type of wastewater treatment technology will be employed? Sec. 4.15.2
What becomes of the sludge collected from the WWTP? Sec. 4.15.2

Comments	Relevant Section in the DEIS
<u>Traffic Congestion</u>	
The existing roadway is nonstandard. Access to the project site is via an existing “non-city-like” road. More discussion with Hakimo residents is warranted regarding roadway improvements.	Sec. 4.9
Use of Hakimo Road access will inevitably increase	Sec. 4.9
Existing Hakimo Rd and intersection with Farrington Hwy is not adequate to serve the project which will result in increased traffic flow through the residential community at Princess Kahanu Estates.	Sec. 4.9
“We’re not building our way out of congestion with this TL proposal.”	Sec. 4.9
Is the project site served adequately by access roads? Are additional access roads planned?	Sec. 3.1; 4.9
Is traffic congestion a problem on the access road to the project? On State highways? In supplier areas? In market areas?	Sec. 4.9
What are the road limits?	Sec. 4.9
Complete a traffic study for the anticipated increased traffic on H-1, Farrington Hwy, Hakimo Rd, and any other access ways.	Sec. 4.9
<u>Sense of Community</u>	
Project site does not offer easy access to existing industrial centers or transportation. If the project proposes to link to regional businesses, which ones?	Sec. 2; 5.5; 5.7
What is the demand to locating in a region far from centers of commerce and with traffic access challenges? Proposed land use is not appropriate to State and City transportation policies and development plans?	Sec. 2
Does our State General Plan and regional development plan support urban development and industrial commercial growth moving to rural Waianae? Is there a plan in effect or proposed?	Sec. 5.1; 5.2; 5.7
Prepare a study to capture observed historical economic trends to forecast the vocational behavior of the individual households and firms consistent with economic theory to determine that the industrial park will create jobs (compatible with?) economic activities in the Waianae region.	Sec. 2; 4.13
What is the non-market value of open space that would be lost if the industrial park were built?	
What impact will the loss of ag land have on Hawaii’s effort to improve food security? Conduct a study on how many acres of ag land are necessary to provide for all of Hawaii’s food needs.	Sec. 4.7

Comments	Relevant Section in the DEIS
“Part of Tropic Land’s theory is the notion of accessibility between households and businesses, as represented by the regional transportation network. Does TL know what that network is?”	Sec. 2
What mode of transportation will be used to serve suppliers to the market areas?	Sec. 4.9
“Do the suppliers and are markets operate in within the Waianae region?”	Sec. 2
Is there demand for industrial space?	Sec. 2
Does the project have a plan to reduce waste and increase resource efficiency? Does the project have a mindset to reach zero waste?	Sec. 4.15.4
Is there a plan to coordinate the activities of the firms to increase efficient use of raw materials, reduce waste outputs, conserve energy and water resources, and reduce transportation requirements?	Sec. 4.15.4
Does the park have as its goal the elimination of wastes?	Sec. 4.15.4
Does the change from Ag to Urban lower the environmental impact than traditional business ventures allowable on Ag lands?	Sec. 4.7; 5.3
<u>Better Land Use Alternatives Exist</u>	
Document the history of farming in Nanakuli	Sec. 4.7
We propose that the parcel be subdivided and leased to graduates of UH ag programs and Ma’o Farm apprenticeship program. Property could serve as the incubator for next generation farmers.	Sec. 4.7

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.



Glenn T. Kimura
President

Cc: Arick Yanagihara, Tropic Land LLC
Dan Davidson, Land Use Commission

Princess Kahanu Estates A S S O C I A T I O N

87-117 Princess Kahanu Avenue, Wai'anae, Hawai'i 96792 ♦ Telephone 668-2115

RECEIVED JUN 24 2009

June 20, 2009

Tropic Land LLC
1001 Bishop Street, Suite 2690
Honolulu, Hi 96813

Re: ***Tropic Land LLC – Nanakuli Community Base yard
Tax Map Key: (1) 8-7-9:2 (portion)***

Gentlemen:

The Board of Directors of the Princess Kahanu Estates Association, a 271-residential home community of the Department of Hawaiian Home Lands, met on June 18, 2009 and discussed Tropic Land LLC's Nanakuli Community Base yard's Environmental Assessment and Environmental Impact Statement Preparation Notice of March 2009.

Here are our pertinent concerns. As adjacent neighbors to Tropic Land LLC's proposed development of an industrial park, we are concerned about the impact this development will have on our community.

As such, we want Tropic Land LLC to address the traffic flow pattern in and through Hakimo Road, and the traffic management plan for Hakimo Road. We are very concerned, because heavy trucks drive through our residential community to avoid the tight right turn at Hakimo Road and Farrington Highway. Princess Kahanu Estate's community borders on Farrington Highway and Hakimo Road.

In addition, we are concerned about the odors associated with the proposed wastewater treatment system; and the water run-off into Ulehawa Stream and the ocean. We also have concerns about how this project will further degrade our environmental quality of life. Princess Kahanu Estates is located in an environmentally sensitive area. We live next door to the PVT landfill.

Also, as a Native Hawaiian community, we object to the impact this project will have on the cultural and historic significance of the unique natural landscape and cultural resources associated with the demigod Maui.

Princess Kahanu Estates Association

87-117 Princess Kahanu Avenue, Wai'anae, Hawai'i 96792 ♦ Telephone 668-2115

Tropic Land LLC
June 20, 2009

Finally, please keep Princess Kahanu Estates Association apprised of all pertinent information and materials relating to Tropic Land LLC's proposed industrial park. You may contact us at:

87-117 Princess Kahanu Avenue
Waianae, Hawaii 96792

Thank you for this opportunity to convey our concerns.

Very truly yours,

PRINCESS KAHANU ESTATES ASSOCIATION
BOARD OF DIRECTORS

By: *Olivia M. Aquino*
Olivia M. Aquino, President

Cc: State Land Use Commission
✓ Kimura International, Inc.
Micah Kane, Department of Hawaiian Home Lands



KIMURA INTERNATIONAL INC.

April 26, 2010

Ms. Olivia M. Aquino, President
Princess Kahanu Estates Association
87-117 Princess Kahanu Avenue
Waianae, HI 96792

Dear Ms. Aquino:

**Comments on the Environmental Impact Statement Preparation Notice
Nanakuli Community Baseyard, Oahu, Hawaii
Portion of TMK: (1) 8-7-009: 002**

Thank you for your comments on the Environmental Impact Statement Preparation Notice (EISPN) submitted by letter dated June 20, 2009. Your comments were addressed and/or incorporated into the November 2009 Draft Environmental Impact Statement (DEIS), as summarized below.

Comments

Address traffic flow in and through Hakimo Rd
Provide traffic management plan for Hakimo Rd (use by heavy trucks, maneuvering by trucks)

Concerned about potential odors associated with WWTP

Concerned about water run-off into Ulehawa Stream and ocean

Concerned about further degradation to residential environment (being next door to landfill)

Concern about impacts to "the unique natural landscape and cultural resources associated with the demigod Maui."

Relevant Section in the DEIS

Sec. 4.9 on Roadways and Traffic

Sec. 4.15.2 on Wastewater Facilities

Sec. 4.3 on Surface Water Resources

Sec. 3.1 on Project Description (light industrial park, not landfill)

Sec. 4.8 on Cultural Resources

We appreciate your participation in the environmental review process.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

Letters with No Substantive Comments (EISPN)

Federal Agencies

- U.S. Army Corps of Engineers, Civil Works Technical Branch

State Agencies

- Department of Land and Natural Resources
 - Division of Engineering
 - Division of Forestry and Wildlife

City Agencies

- Department of Design and Construction
- Department of Facility Maintenance
- Honolulu Police Department

Utility Companies

- Hawaiian Telcom



REPLY TO
ATTENTION OF: CEPOH-EC-T

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

May 27, 2009

RECEIVED MAY 29 2009

Civil Works Technical Branch

Mr. Glenn T. Kimura, President
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Thank you for your letter dated May 20, 2009 regarding the Environmental Impact Statement Preparation Notice (EISPN) for the Nanakuli Community Baseyard Project, Lualualei, Oahu (TMK 8-7-9: 2). I concur with the flood hazard determination provided on page 3-8 of the EISPN. The document has been forwarded to our Regulatory Branch to determine Department of the Army permit requirements (438-2303). They will respond to your office under separate cover.

Should you require additional information, please call Ms. Jessie Dobinchick of my staff at 438-8876.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven H. Yamamoto".

Steven H. Yamamoto, P.E.
Chief, Civil Works Technical Branch

Enclosures

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

RECEIVED JUN 23 2009

May 21, 2009

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division -

RECEIVED
LAND DIVISION
2009 JUN 15 P 2:05
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: *for* Morris M. Atta *Maatase*
SUBJECT: Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard
LOCATION: Waianae, Oahu
APPLICANT: Kimura International Inc on behalf of Tropic Land LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 19, 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: *[Signature]*
Date: 6/15/09

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD\MorrisAtta
REF.: EISPNNanakuliCommunityBaseyard
Oahu. 696

COMMENTS

- (X) **We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone D. The Flood Insurance Program does not have any regulations for developments within Zone D.**
- () 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.

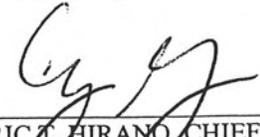
Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable 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: 
for ERIC T. HIRANO, CHIEF ENGINEER
Date: 6/15/09

LINDA LINGLE
GOVERNOR OF HAWAII



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



RECEIVED
LAND DIVISION

2009 MAY 28 P 3:42

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

May 21, 2009

MEMORANDUM

RECEIVED JUN 23 2009

- TO: **DLNR Agencies:**
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division -

FROM: *for* Morris M. Atta *MMA*

SUBJECT: Environmental Impact Statement Preparation Notice for Nanakuli Community Base Yard

LOCATION: Waianae, Oahu

APPLICANT: Kimura International Inc on behalf of Tropic Land LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 19, 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.
- Comments are attached.

Signed: *Paul J. Conry*
Date: MAY 27 2009

**PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE**

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



CRAIG I. NISHIMURA, P.E.
DIRECTOR

COLLINS D. LAM, P.E.
DEPUTY DIRECTOR

RECEIVED JUN 16 2009

June 9, 2009

Mr. Glenn Kimura
Kimura International
1600 Kapiolani Boulevard Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Nanakuli Community Base Yard
Luahualei, Waianae District, O'ahu
Environmental Impact Statement Preparation Notice
(EISPN)

Thank you for inviting us to review the above Final Environmental Impact Statement. The Department of Design and Construction does not have any comments to offer at this time.

Should you have any questions, please contact Craig Nishimura, Director, at 768-8480.

Very truly yours,


Craig I Nishimura, P.E.
Director

CN.pg (315154)

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768 -3381
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



JEFFREY S. CUDIAMAT, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 09-607

June 22, 2009

RECEIVED JUN 30 2009

Mr. Dan Davidson, Executive Director
Land Use Commission
235 S. Beretania Street, Room 406
Honolulu, Hawaii 96813

Subject: Environmental Impact Statement Preparation Notice (EISPN)
Nanakuli Community Baseyard, Lualualei, Oahu, Hawaii

Thank you for the opportunity to review and comment on the EISPN dated March 2009, for the proposed Nanakuli Community Baseyard project.

We have no comments to offer as the proposed improvements will be located within privately owned property and will have negligible impact on our facilities and operations. It is our understanding that the proposed on-site project roadways, parking areas, drainage system, storm water detention basins and other roadway improvements will be privately owned and maintained and will not be dedicated to the City.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 768-3697.

Sincerely,


Jeffrey S. Cudiamat, P.E.
Director and Chief Engineer

c: OEQC
✓ Kimura International

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulu.org

MUFI HANNEMANN
MAYOR



BOISSE P. CORREA
CHIEF

PAUL D. PUTZULU
KARL A. GODSEY
DEPUTY CHIEFS

OUR REFERENCE BS-DK

June 2, 2009

RECEIVED JUN 08 2009

Mr. Dan Davidson, Executive Officer
Land Use Commission
235 South Beretania Street, Room 406
Honolulu, Hawaii 96813

Dear Mr. Davidson:

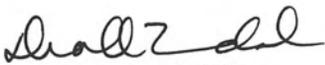
This is in response to a letter from Kimura International, Inc., requesting comments on an Environmental Impact Statement Preparation Notice for the "Nanakuli Community Baseyard" project in Lualualei.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Michael Moses of District 8 at 692-4253 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By 
DEBORA A. TANDAL
Assistant Chief of Police
Support Services Bureau

cc: OEQC
✓Kimura International, Inc.

Hawaiian Telcom ●

RECEIVED MAY 28 2009

May 26, 2009

Land Use Commission
235 S. Beretania Street, Room 406
Honolulu, HI 96813
Attention: Mr. Dan Davidson, Executive Officer

Dear Mr. Davidson:

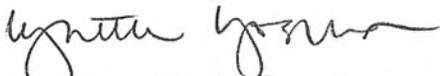
Subject: **Nanakuli Community Base Yard**
Environmental Impact Statement Preparation Notice

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

Hawaiian Telcom does not have any comments to offer at this time. Please continue to include us during the design stages of the project.

If you have any questions or require assistance in the future on this project, please call Les Loo at 546-7761.

Sincerely,



Lynette Yoshida
Senior Manager - OSP Engineering
Network Engineering & Planning

cc: G. Kimura - Kimura International
Director - Office of Environmental Quality Control
File [Wahiawa]

