BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

October 11, 2002

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Finding of No Significant Impact (FONSI)
Final Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 and 3-2-13:003

The Department of Hawaiian Home Lands has reviewed the comments received during the 30-day public comment period which began on August 8, 2002. The Hawaiian Homes Commission has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the October 23, 2002 Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the final Supplemental Environment Assessment. Should you have any questions, please call Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Enc.

101

2002-10-23-MA-FEA

FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

(*WAIEHU KOU PHASE 3* - Supplemental)

~ Native Hawaiian Housing ~

Proposing Agency:

Department of Hawaiian Home Lands
State of Hawaii

October 2002

FINAL
SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT

Waiehu Kou Phase 3
Native Hawaiian Housing

Waiehu, Maui, Hawaii

Tax Map Key: (2) 3-2-13:09 & (2) 3-2-12:03

Proposing Agency:

Department of Hawaiian Home Lands
State of Hawaii
1099 Alakea Street, Suite 2000
Honolulu, Hawaii 96813

Prepared by:

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

October 2002

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SECTION 1
INTRODUCTION AND SUMMARY

1.1 INTRODUCTION AND PURPOSE

This is a Supplemental Environmental Assessment (EA) for the proposed Department of Hawaiian Home Lands (DHHL) Waiehu Kou Phase 3 project in Waiehu, Maui (see Figure 1). This supplemental EA is necessary due to the addition of approximately 20.78 acres of land for the project area.

Originally, the Phase 3 project (TMK: (2) 3-2-13:09) consisted of 22.43 acres of which 12 acres were designated for 60 single-family house lots with the remaining area devoted to a storm water drainage retention basin. This drainage retention basin was designed to accommodate a 100-year, 24-hour storm and has enough capacity to serve Phases 1, 2 and 3 of the Waiehu Kou Project and an 89-acre offsite area.

Dowling Company, Inc. (DCI) owns approximately 20.78 acres of land bordering the project site to the North (TMK: (2) 3-2 12:03). DHHL has entered into an agreement with DCI to purchase this parcel of land, identified as Waiehu Kou 3B, to be included in the Waiehu Kou Phase 3 project. Approximately 51 single-family lots have been added to the project from the inclusion of this 21-acre parcel (see Figure 2).

In addition to Waiehu Kou Phase 3B, DHHL also proposes to install two sections of potable water distribution lines, totaling 1,800 lineal feet along the Kahekili Highway right-of-way (see Figure 3). These two sections will complete the connection of existing water lines previously installed by the County of Maui Department of Water (DOW) to the North Waihee source wells (refer to the Waihee Wells and Transmission System Final Environmental Assessment, March 1994). This water line installation is being constructed by DHHL as a requirement of DOW.

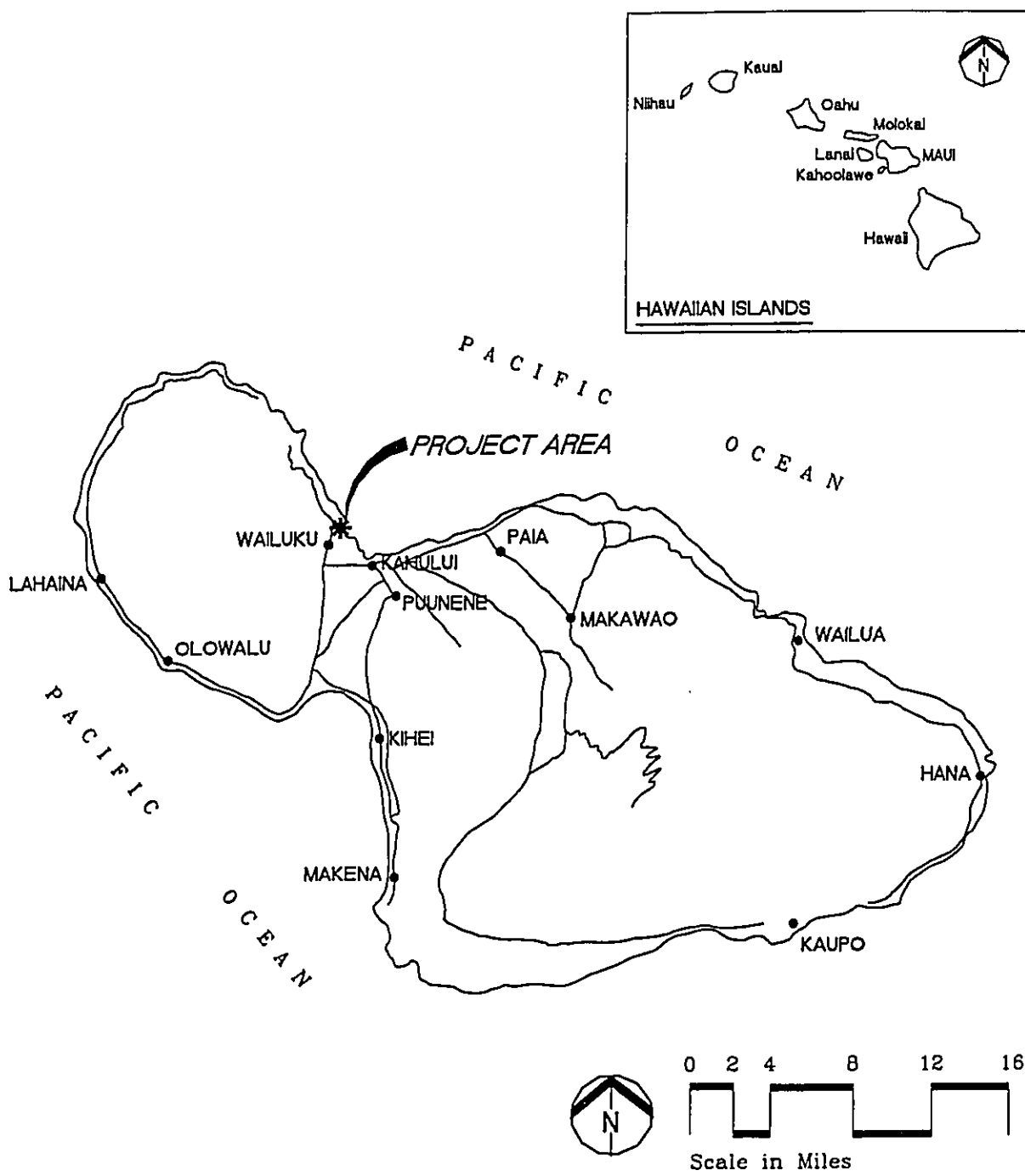

FIGURE 1

LOCATION MAP
Island of Maui

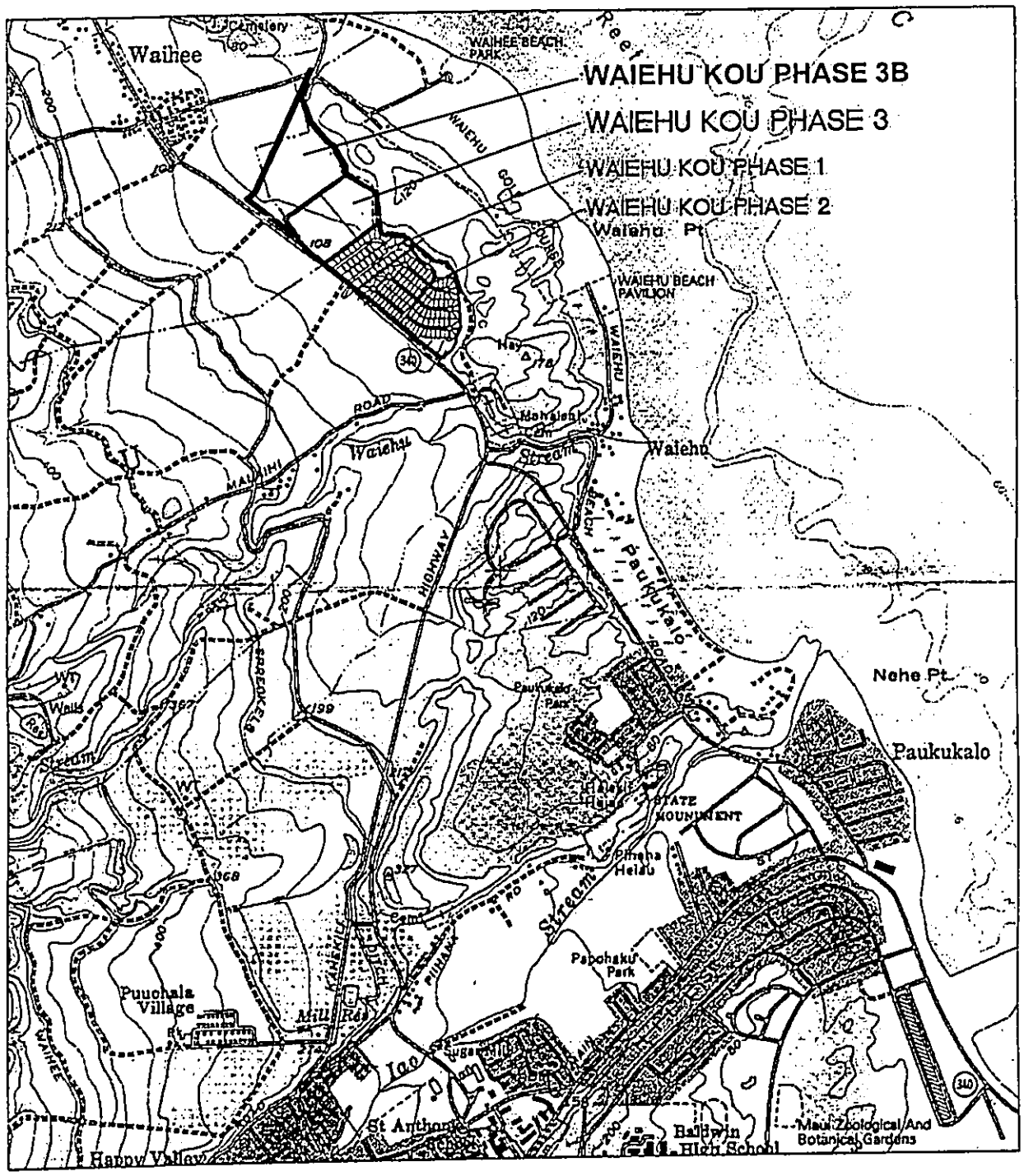

FIGURE 2
VICINITY MAP
Waiehu Kou Phase 3

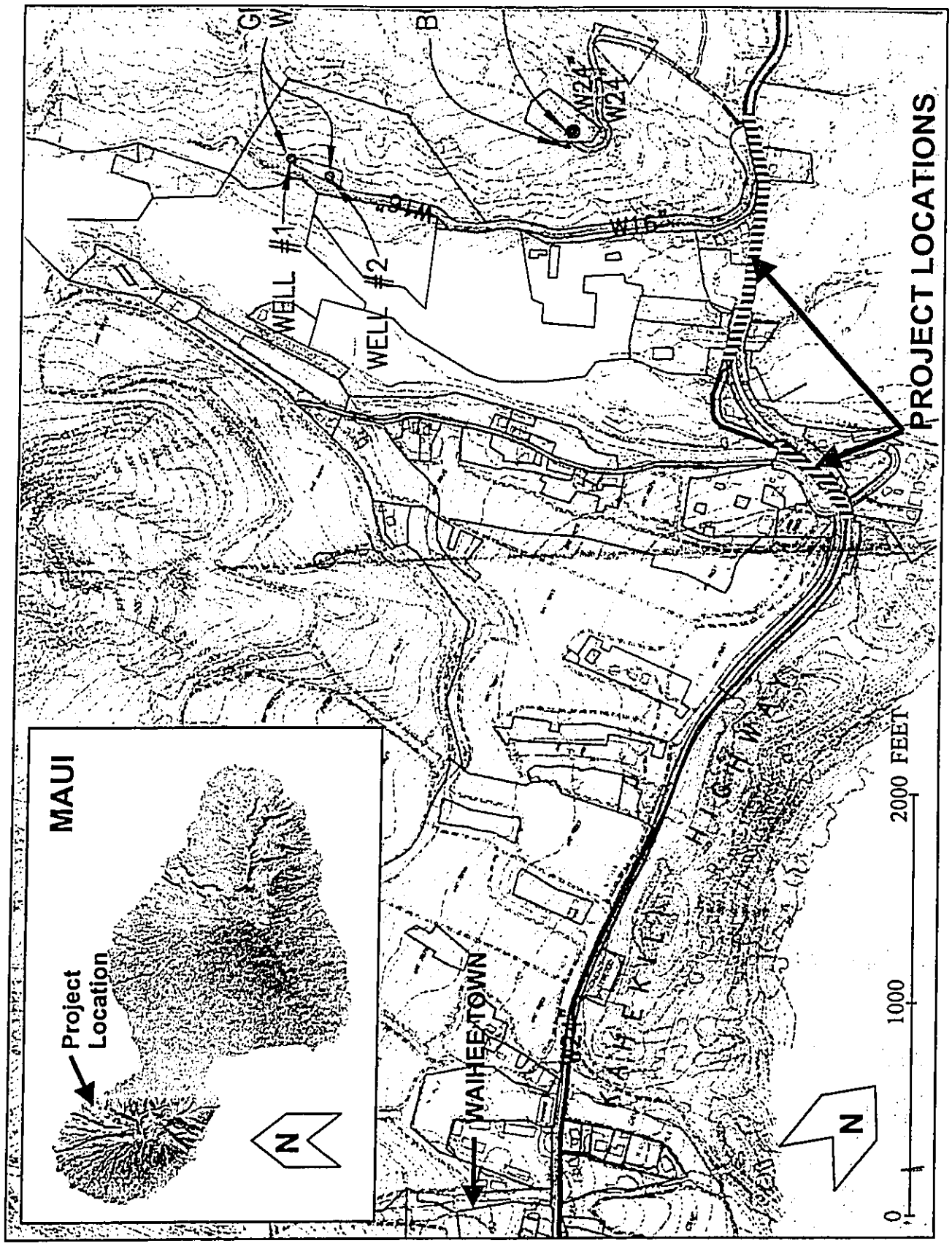

FIGURE 3

PROPOSED WATERLINE PROJECT SITE

The purpose of the Waiehu Kou Phase 3 project is to provide affordable homes and lots for native Hawaiian beneficiaries. While the final environmental assessment for the Waiehu Kou Phase 3 was submitted in April 2002 and was issued a Finding of No Significant Impact (FONSI), the addition of "new" land and the water line installation has changed and expanded the scope of the project, thus necessitating a supplemental study. There are now approximately 43.21 acres set aside for the project with about 111 proposed single-family lots. The direct impacts of the added property and from the proposed activities as well as cumulative impacts of the proposed projects will be addressed in this document.

1.2 PROJECT LOCATION

The Waiehu Kou Phase 3 project site is located on the northern side of the Island of Maui approximately 2.5 miles northeast of Wailuku and 3 miles northwest of Kahului (see Figure 1 & 2). Waiehu Municipal Golf Course is located adjacent to and makai (seaward) of the property. A natural drainage way marks the northern boundary while the Waiehu Kou Phase 1 is located south of the project site. Access to the site is off of Kahekili Highway.

The potable water distribution line installation is approximately 1.2 miles north of the Waiehu Kou site in the vicinity of the Waihee Stream (see Figure 3).

1.3 PROJECT DESCRIPTION

Together with the original parcel of land, the proposed Waiehu Kou Phase 3 project now consists of 43.21 acres with approximately 111 single-family lots. Lot sizes will average approximately 7,500 square feet and will not be smaller than the R-1 zoning standard of 6,000 square feet. Eligible native Hawaiians will lease these lots for one dollar ($1.00) a year with the lease lasting 99 years. Qualified beneficiaries will select lots or purchase the homes that will be constructed on the lots. The developer of the project may also offer self-help house construction.

Besides the added residential lots, an additional storm water retention basin will be built on the northern edge of the property to supplement the existing basin. A new wastewater pump station is also planned.

DHHL will also install approximately 1,800 linear feet of potable water distribution lines to complete the connection of the existing County distribution lines in the area as a component of this project. The two sections of water distribution lines will be installed along the Kahekili Highway to connect existing lines put in by the Maui Department of Water in 1997. A 12-inch waterline, roughly 500 feet in length will be installed along the highway north of the Waihee Stream. Immediately south of the stream, an 8-inch water line approximately 1,300 feet in length will complete the connection for the existing water distribution system in the Waiehu-Waihee area.

1.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

1.4.1 Environmental Impacts

Except for short-term dust and noise impacts from construction, development of the project will not have an adverse affect on the physical environment. Biological, botanical and archaeological surveys of the site were performed, all of which did not identify any important environmental and historic or cultural resources. A soil analysis done at the Phase 3 site showed that there were no significant levels of pollutants in the soil.

1.4.2 Social and Economic Impacts

The project is contiguous with existing Hawaiian homestead development and will be a natural extension of the existing community. There appears to be strong interest among the Hawaiian beneficiaries to locate within this project.

The change in the land use from agriculture to urban use will increase the real property tax values. However, DHHL lessees have a 7-year property tax exemption. During the construction phase of the project, direct and indirect jobs will be created.

1.4.3 Public Facilities and Services

The sewer, water, electric, telephone, and cable systems all have sufficient capacity to accommodate this project. On-site drainage facilities will be constructed so as not to increase storm water runoff leaving the site. In general, all infrastructure and utilities will be constructed according to County of Maui standards.

Health services will be provided by Maui Memorial Hospital, St. Francis Medical Center, and Kaiser Permanente Medical Clinic located in Kahului approximately 2.5 miles from the site.

The Wailuku Station located 2.5 miles from the site will provide police and fire protection. The Kahului Station will provide backup fire protection.

Based on discussions with the Department of Education (DOE), at full build out of approximately 111 homes, the Waiehu Kou Phase 3 project is estimated to generate 30-45 elementary students, 12-17 intermediate school students and 12-17 high school students. Currently, a master plan is being prepared for the Iao Intermediate School to increase its capacity. An additional classroom facility is currently under construction at Waihee Elementary School and depending on funding availability, eight additional classrooms are planned for Baldwin High School. DHHL will coordinate with DOE to discuss possible mitigating actions to address increase in student population from the three phases of the Waiehu Kou subdivision.

Kahekili Highway has adequate capacity to accommodate the added traffic from the proposed housing project.

As for the potable waterline installation portion of this project, the only anticipated impact will be temporary delays in traffic along the project site. However, this section of Kahekili Highway is sparsely populated and not utilized as a major thoroughfare. Work will be coordinated with the State Department of Transportation, County Public Works Division and the Police Department to prevent project delays and ensure public safety.

1.5 RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

1.5.1 Hawaiian Homes Commission Act of 1920

The Hawaiian Homes Commission Act (HHCA) of 1920, as amended, set aside certain lands within the Territory of Hawaii for the benefit of native Hawaiians. This project is being developed to implement the objectives of the HHCA.

1.5.2 Hawaii State Plan and Functional Plans

The project is consistent with the Hawaii State Plan and the Functional Plans by providing the necessary improvements for housing development with no significant adverse impact on the physical, social or economic environments.

1.5.3 State Land Use

The project is within the State "Agricultural" district, according to the State Land Use maps. However, DHHL is exempt from the State Land Use District Boundary requirements and will not require a change in the State Land Use designation to "Urban" for development of this project. (see Figure 4).

1.5.4 County General Plan

The project is consistent with the objectives of the County General Plan in that it provides "...for needed resident housing." Although some agricultural land is removed from future agricultural use because of the change to urban residential use, there is a surplus of agricultural land on Maui, and indeed, the proposed project site was once cultivated as sugar cane, a crop now out of production in this part of Maui, leaving large tracts of fallow land.

1.5.5 County of Maui Development Plan and Zoning

The project is designated "Agriculture" on the Wailuku-Kahului Development Plan and designated "Interim" according to County zoning. DHHL is exempt from County of Maui

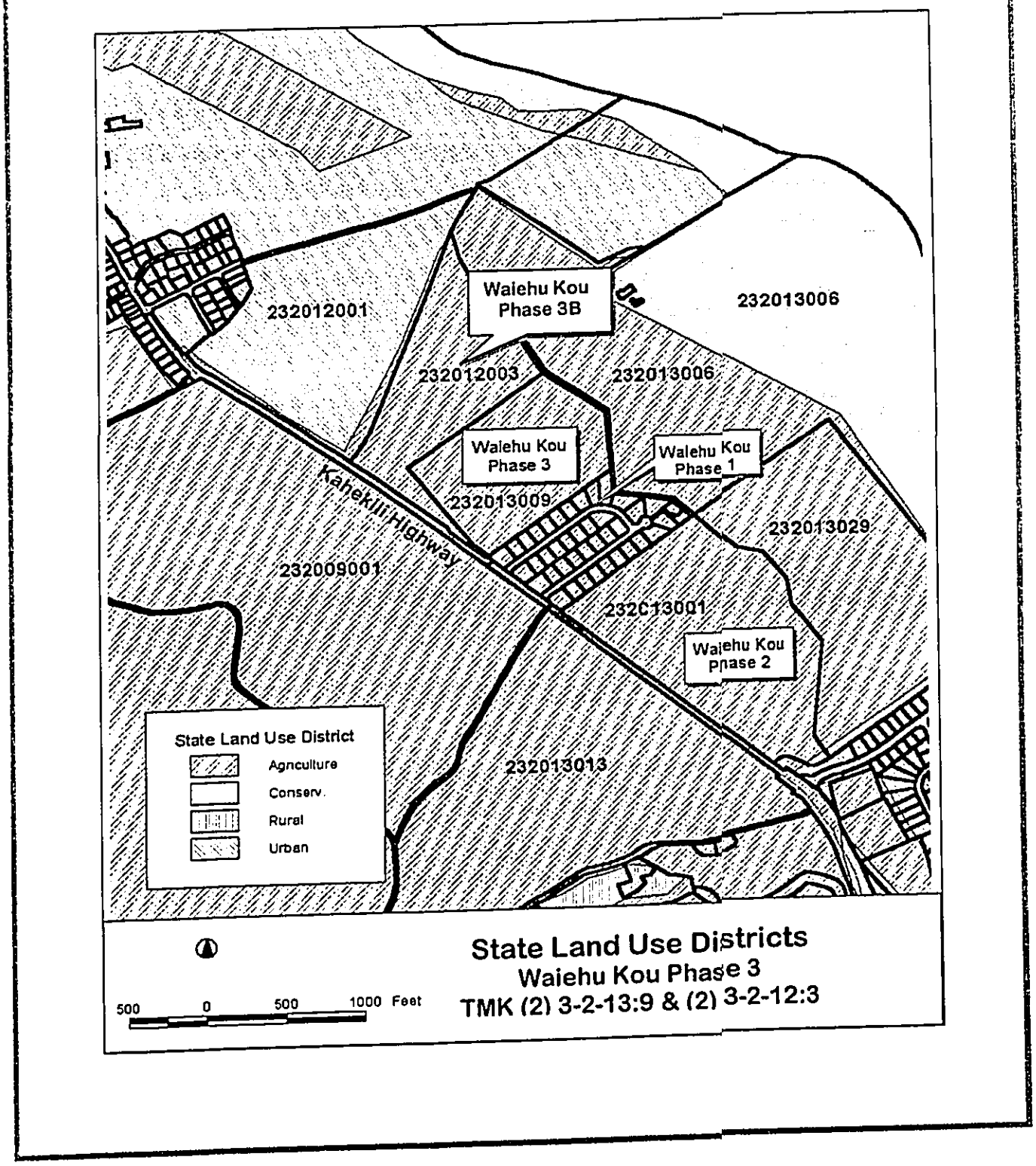
232012001
Waiehu Kou Phase 3B
232013006
232012003
232013006
Waiehu Kou Phase 3
Waiehu Kou Phase 1
232013009
Kahekili Highway
232013029
232009001
232013001
Waiehu Kou Phase 2
232013013
State Land Use District
Agriculture
Conserv.
Rural
Urban
500 0 500 1000 Feet
State Land Use Districts
Waiehu Kou Phase 3
TMK (2) 3-2-13:9 & (2) 3-2-12:3

FIGURE 4

Development Plan and Zoning rules and regulations. However, the development will be constructed according to Maui County standards.

1.6 NECESSARY PERMITS AND APPROVALS

The developer of the project will acquire the necessary permits and approvals for construction, including, but not limited to: Subdivision plan review, grading permit, building permit, National Pollution Discharge Elimination System Permit (NPDES) and erosion and dust control plan approvals.

1.7 ALTERNATIVES CONSIDERED

The no action alternative would mean that approximately 111 eligible beneficiaries and their families out of the current 2,800 native Hawaiians on the Maui DHHL waiting list will not be able to either purchase new homes or acquire residential lots in the Waiehu area.

Alternatives considered included alternate densities of development, however, DHHL beneficiaries prefer the lower density developments of single-family homes.

Other alternatives that will be considered for this project will deal mainly with the internal configuration of the lots and uses based on infrastructure requirements set upon by the State and the County. The primary DHHL objective is to provide affordable housing opportunities for native Hawaiian beneficiaries.

SECTION 2
PROJECT DESCRIPTION

2.1 OVERVIEW

The Department of Hawaiian Home Lands (DHHL) plans to develop approximately 111 single-family lots on a portion of a 43.21-acre site in Waiehu, Maui. A storm water retention basin occupies 10.43 acres on the eastern side of the parcel.

Originally, this project consisted of 22.43 acres with 12 acres dedicated to housing lots and the rest for the storm water retention basin. Newly acquired land adjacent to the property has enabled DHHL to increase the number of lots, therefore requiring the preparation of this supplemental EA.

These lots will be leased to eligible native Hawaiians for one dollar ($1.00) a year for ninety-nine (99) years. A developer will be contracted to build the homes or provide assistance to native Hawaiian beneficiaries wishing to construct their own homes. A schematic site plan showing the proposed uses is shown in Figure 5.

Additionally, DHHL will install approximately 1,800 lineal feet of potable water distribution lines to complete the connection of the existing Maui County water system as a component of this project. Where applicable, DOW will credit DHHL any fees that exceed the required water system development charges.

2.2 PROJECT DESCRIPTION

Single-family lots to be awarded will average 7,500 square feet with minimum lot sizes not smaller than the R-1 zoning standard of 6,000 square feet. Approximately 111 single-family lots are planned. Housing construction will either be provided by the contractor or by the lot owners. The beneficiaries will have a choice of selecting a house type provided by the

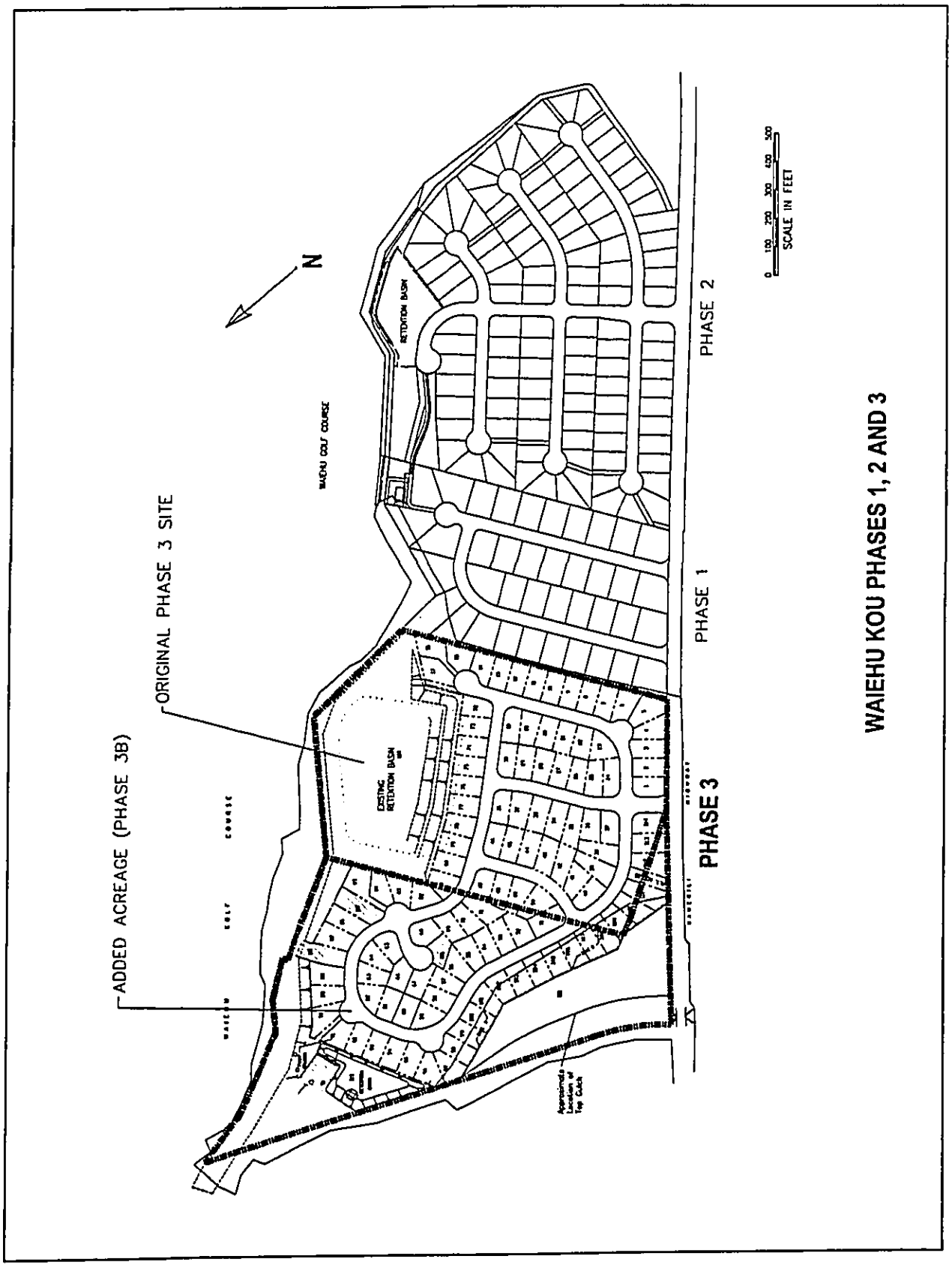

FIGURE 5
SCHEMATIC SITE PLAN

contractor or selecting a lot and building their own home through a self-help program or an owner-builder plan.

DHHL has had discussions with the various County agencies and utilities companies regarding connection to existing infrastructure and utilities. The County offices indicated that DHHL would be able to connect to the existing sewer and water systems. The sewer and water systems, currently have the capacity to accommodate this project.

An additional storm water retention basin at the northern edge of the property will supplement the existing basin located at the southeastern side of the project site. The additional basin is needed because the topography of the Phase 3B is such that it slopes toward the northern corner of the property. Drainage facilities will be constructed so that there will be no net increase in the volume of storm water leaving the site and entering the existing drainage system. An underground storm drain system will be constructed to direct flows to the respective retention basins. The spillway for the existing retention basin is designed to not exceed the pre-development flow rates for a 100 – year, 24 – hour storm. The proposed additional retention basin will be designed for a 50-year, 24-hour storm in accordance with County standards.

A new wastewater pump station is also planned for this project. Located at the northern edge of the property, the proposed pump station will pump sewage up to and along Kahekili Highway, then gravity flow to another pump station in Phase 1. Wastewater will eventually end up at the Wailuku-Kahului Wastewater Reclamation Facility in Kahului.

Maui Electric Company will provide electric service and TCI Cable will provide cable television service. Sandwich Isles Communication will provide telephone service to the property.

Access into the site is via Kahekili Highway, a state-owned roadway. Internal roadways will be constructed to Maui County standards and maintained by the County.

SECTION 3
EXISTING PHYSICAL ENVIRONMENT AND RELATED IMPACTS

3.1 GEOGRAPHY AND CLIMATE

The proposed project is situated on the Island of Maui on the northeastern base of the West Maui Mountains. According to the Atlas of Hawaii, the average rainfall in the Waiehu area is approximately 30 inches or less. No adverse impacts on the geography and climate are anticipated as a result of this project.

3.2 SURROUNDING LAND USES AND OWNERSHIP

Land uses adjacent to the property include Waiehu Kou Phase 1 project to the southeast and the Waiehu Municipal Golf Course located to the northeast. A natural drainage way borders the property to the northwest, while Kahekili Highway runs along the southwestern edge. The Department of Hawaiian Home Lands owns Waiehu Kou Phase 1 while the County of Maui owns Waiehu Municipal Golf Course. An agricultural subdivision is being planned for an existing macadamia nut orchard located opposite the proposed Waiehu Kou Phase 3 project, across Kahekili Highway.

The site of Waiehu Kou Phase 3 project is the third DHHL housing development in this area. The project is located adjacent to and north of the existing Waiehu Kou Phase 1 project. The Phase 3 project site, including the newly acquired land, consists of 43.21 acres and is partially planted in macadamia nut trees. There are three lots that have unresolved title in the Waiehu Kou Phase 3B section of the project. These lots will be left as open spaces pending resolution of ownership.

The project is contiguous with existing Hawaiian homesteads and agricultural uses and is not anticipated to have an adverse impact on the surrounding land uses and ownership.

Work done on the potable waterline portion of this project will remain in the highway's right-of-way and is not anticipated to affect other surrounding areas. Previous waterline installation work done by the County in this area did not encounter any historical or cultural features. However, if any cultural or historical features are encountered at any time during the implementation of the project, all work will cease and the State Historic Preservation Division will be notified.

3.3 SOILS AND TOPOGRAPHY

According to the U.S. Department of Agriculture, Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii (1972), the site is composed of three predominant soil series: (WvB) Wailuku silty clay, 3 to 7 percent slopes on the southwestern portion, (IcB) Iao Clay, 3 to 7 percent slope on the northern portion and (IaA) Iao silty clay, 0 to 3 percent slopes on the northeastern portion. On these soil series, runoff is slow and the erosion hazard is not more than slight.

Topography at the site, based on the U.S. Geological Survey 7.5 minute quadrangle map for Wailuku (see Figure 6), contains relatively gentle slopes at the project site itself. The eastern portion of the property has been modified to incorporate a storm water retention basin as well as an addition of a smaller basin on the northern fringe to ensure that there will be no net increase in the volume of storm water leaving the site and entering the existing drainage system.

During construction, the property will be graded and soil may be imported to provide sufficient slope to install underground utilities. However, no adverse impacts resulting from earthmoving are expected.

In April 2002, Terrasano, LLC conducted a soils analysis to determine if chemical residue from past agricultural activities were present in the soil profile. The soils analysis did not detect any traces of toxic chemicals that would be harmful to humans (see Appendix C).

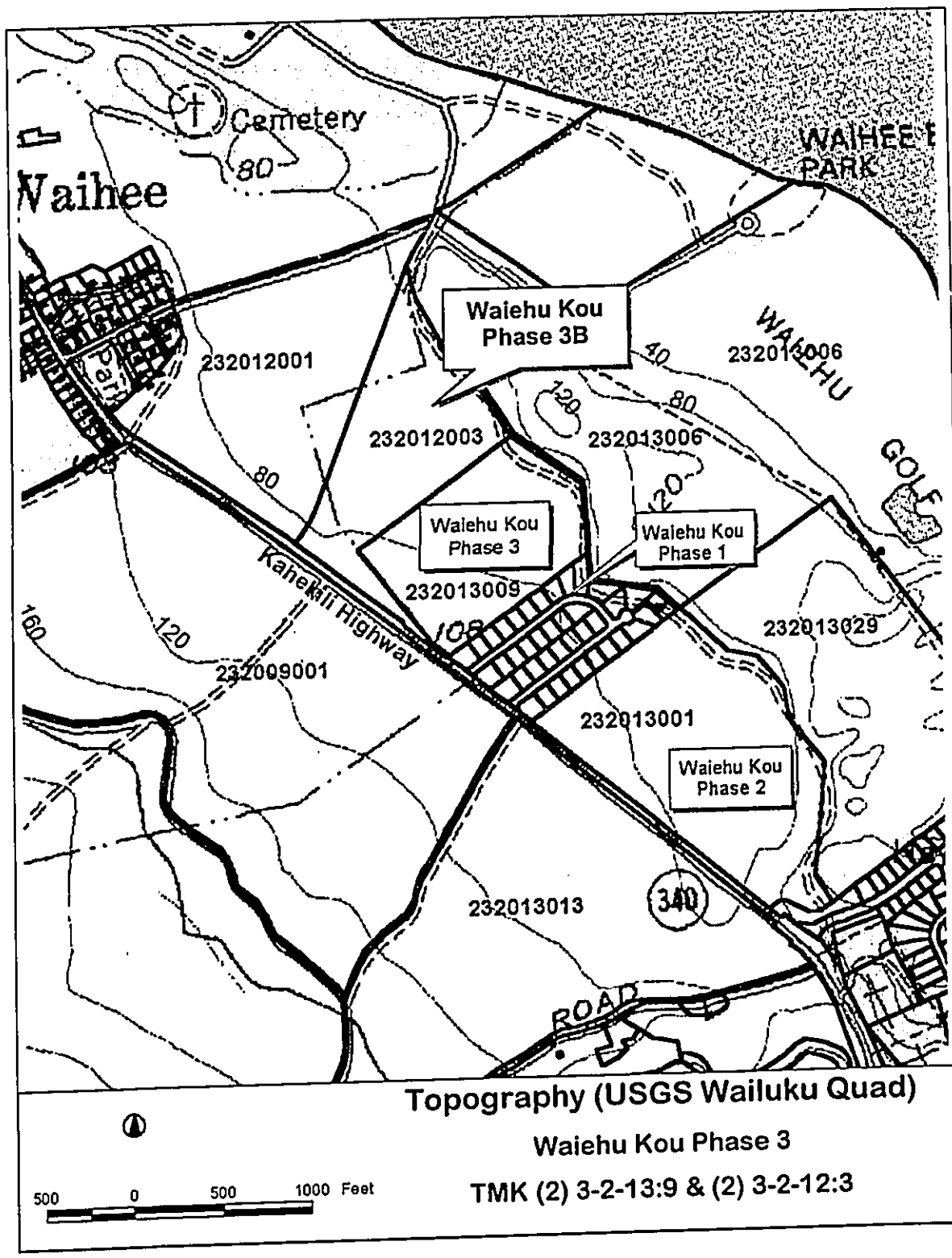
Cemetery
Waihee
80
WAIHEE
PARK
Waiehu Kou
Phase 3B
232012001
232013006
40
120
80
232012003
232013006
80
20
GOLF
Waiehu Kou
Phase 3
Waiehu Kou
Phase 1
Kahekili Highway
232013009
160
120
232009001
108
232013029
232013001
Waiehu Kou
Phase 2
232013013
340
ROAD
Topography (USGS Wailuku Quad)
Waiehu Kou Phase 3
TMK (2) 3-2-13:9 & (2) 3-2-12:3
500 0 500 1000 Feet

FIGURE 6

3.4 NOISE

Short-term noise impacts will occur during the construction phase of the project. However, these impacts will be mitigated through the establishment of start and curfew times in accordance with the State Department of Health regulations, Community Noise Control, Chapter 11-46.

Long-term noise impacts will be generated from the increase in traffic, typically during the morning and afternoon peak hour. However, the relatively small number of additional traffic and the efficiency of the roadway system will mitigate excessive noise impacts. The noise levels are not expected to exceed State DOH standards.

3.5 AIR QUALITY

Short-term impacts on air quality will occur during the construction phase of the project. Performing dust control practices in accordance with Department of Health regulations, Air Pollution Control, Chapter 60.1-33, Fugitive Dust, will mitigate these impacts. Dust screens and frequent watering of the soil will reduce the amount of fugitive dust emissions that are generated during construction.

Long-term impacts on air quality will occur from the increase in traffic. However, with the tighter motor vehicle emissions control standards and the prevailing northeast trade winds, pollutants in the air are not expected to exceed State DOH standards.

3.6 FLORA

Char & Associates conducted a survey of the Phase 3B site and along the proposed waterline installation project site in June 2002 (see Appendix A). No proposed, rare, threatened, endangered species, or species of concern were found at these sites. The Waiehu Kou 3B site contains an abandoned macadamia nut orchard and weedy scrub vegetation of introduced or

alien species. The proposed waterline route contains a narrow band of ruderal or weedy roadside vegetation. No adverse impacts on the botanical resources are expected.

The project will comply with Section 103D-408 of the Hawaii Revised Statutes, regarding the use of indigenous and Polynesian introduced plants in public landscaping.

3.7 FAUNA

Phil Bruner, Environmental Consultant, performed an avifaunal and feral mammal (bird and mammal) survey of the site in June 2002 (see Appendix B). During the survey, no native birds, or rare, threatened, or endangered fauna were found on the site.

Eleven (11) species of non-native birds were recorded at the site. Feral mammals consisted of mongoose and rats. Since no rare, threatened or endangered fauna were present on the site, adverse impacts on the faunal resources are not anticipated.

When flooded, the retention basins may contain native endangered water birds, but none were observed during the normal dry condition of the basin. These drainage basins may increase the available foraging areas for waterfowl and seabirds when flooded during the rainy season. This attraction of waterfowl and seabirds is viewed as a positive rather than a negative effect on the environment. To deter children and animals from entering the basin, a 6-foot high chain link fence has been placed around the existing retention basin. A fence will also be placed around the proposed retention basin in Phase 3B.

3.8 ARCHAEOLOGY

In January 2002, Archaeological Services Hawaii, LLC (ASH), and Pantaleo Consultants, LLC (JPC) conducted an archaeological inventory survey for the proposed Waiehu Kou Phase 3, including parcel 3B. The State Historic Preservation Division (SHPD) is currently reviewing the revised inventory survey report. This site has been extensively altered due to use in the past for cultivation of sugarcane and pineapple. No surface cultural remains were identified during the

survey. A total of 30 trenches were systematically excavated in the area. A single trench identified a possible cultural deposit, however this particular trench was outside the impact area. No other significant remains or deposits were encountered in any of the trenches that were inside the area to be affected by the development. The sand dunes adjacent to the eastern boundary of the project site are known to contain burials, however no development will occur in this area. Due to the sensitivity of the sand dune area and its close proximity to the project area, DHHL will coordinate with the SHPD on a monitoring plan to ensure that there will be minimal impacts to historic resources. Following the project completion, an archaeological monitoring report will be submitted to SHPD for review and approval.

3.9 AGRICULTURE

The 2000 State Data Book indicates that the County of Maui had 245,800 acres of land designated for agricultural use. Of that acreage, 56,000 acres are being actively farmed (1999). This suggests that there is an excess of 189,800 acres that is available for agricultural use. The specific loss of 43.21 acres of fallow lands and an abandoned macadamia nut orchard is not expected to significantly affect the reduction of productive agricultural lands.

The site was used in the past for cultivation of sugar cane and pineapple. The site is presently undeveloped and contains sparse weedy and scrub vegetation and an abandoned macadamia orchard. Thus, no adverse impacts on agriculture are expected.

3.10 VISUAL RESOURCES

Although the property is located near the coastline, there are no coastal views. Waiehu Golf Course, located makai of the site is at a higher elevation and blocks coastal views from the site. However, dramatic views of the West Maui Mountains are available from the site.

Because the site is at a low elevation, development of the site will not block existing visual resources from neighboring sites. Thus, no negative impacts on visual resources are anticipated.

SECTION 4

SOCIO-ECONOMIC ENVIRONMENT AND RELATED IMPACTS

4.1 POPULATION CHARACTERISTICS

According to the 1990 census, the County of Maui had a resident population of 100,504 people. Of that total, the Waihee/Waiehu area accounted for 4,004 people. In 2000, the Maui County census totaled 128,094. The Waihee/Waiehu area accounted for 7,310 people. This population increase over a ten-year period from 1990 to 2000 for the Waihee-Waiehu area was an additional 3,306 people, which is an approximate rate of growth of 82.5 percent over the ten-year period.

Based on the year 2000 statewide average household size of 3 persons, the projected population increase attributable to the proposed subdivision project of 111 single-family housing units would result in 333 additional residents for the Waihee-Waiehu area.

4.2 ECONOMIC CHARACTERISTICS

In year 2000, there were approximately 67,550 civilians in the labor force for Maui with 65,000 people employed and 2,550 people unemployed. The average annual per capita income for the County of Maui in 1999 was $24,211. The average per capita income for the State was $27,851.

In 1999, the Service Industry (including hotel employment) had the highest number of jobs totaling 23,050, which includes employment at hotels with 10,900 jobs. The Trade industry has the second highest job count of 15,850 jobs. State and local government ranked third with 7,650 jobs.

Although agriculture still plays an important role on Maui (the only island with a significant cultivation of sugarcane), the tourist industry plays a significant role in the island's economy. The County of Maui had the second highest number of visitors in year 2000 of

approximately 2,304,666 people. Oahu had the highest visitor count of nearly 5,000,000 people. Out of about 6,948,600 visitors for the State, Maui roughly received 33 percent of the share. Total visitor expenditure for the State in 2000 was $10.9 billion. Therefore, Maui would have theoretically earned $3.6 billion. As a comparison of the significance of the visitor versus the agricultural industry to Maui's economy, 2000 statistics suggest that while visitor expenditures were approximated at $3.6 billion, agricultural sales totaled only $133 million or roughly one thirtieth of the visitor-derived income.

Development of the project will stimulate the economy of Maui because direct and indirect jobs will be created during the construction phase of the project. Once the property is improved, real property tax values increase. However, DHHL beneficiaries have a 7-year property tax exemption. Overall, the project will have a positive impact on the economy.

4.3 TRADITIONAL AND CULTURAL PRACTICES

Cultural Surveys Hawaii (CSH) prepared a report (refer to the Waiehu Kou Phase 3 Final Environmental Assessment, March 2002) that explored traditional and cultural practices related to the proposed site. CSH employed literature searches and interviews. Their findings are summarized as follows: "Though the historical research implied many past cultural practices in the *ahupua'a* of Waiehu overall, no specific cultural practices or cultural sites were identified within the proposed project area by informants, the community or the consultation process. This was attributed to the long history of commercial agriculture by sugar plantations in the project area; spanning a time period of nearly 140 years... Of course there is always the underlying concern of the possible inadvertent discovery of burials once the construction phase begins. However, no one had specific knowledge of any known burials (or cultural sites) within the project area. "

Previous archaeological investigations in the area have revealed that the sand dune area makai of the property contains burial sites. However, development will occur away from the dune area. If historical or cultural features are encountered during construction, work will cease and the State Historic Preservation Division and the Maui-Lanai Island Burial Council will be

notified. Any human remains found on Hawaiian home lands will also be treated according to the Native American Graves Protection and Repatriation Act (NAGPRA).

SECTION 5

PUBLIC FACILITIES AND SERVICES AND RELATED IMPACTS

5.1 FLOODING AND DRAINAGE

According to the 1981 National Flood Insurance Rate Maps, a portion of the site is designated "Zone A" and "Zone B (X500)", which means this area is susceptible to flooding. A natural drainage way is located along the northwestern boundary of the property (see figure 7). The banks are susceptible to flooding during a 500-year storm, however all development on the property will be done outside the flood zone. The Flood Zone boundaries will be shown on the subdivision layout plan when it is submitted to the Maui Department of Planning for review and approval.

Drainage facilities have been previously constructed to serve the existing Waiehu Kou Phases 1 and 2 projects, the proposed Waiehu Kou Phase 3 project and an off-site area of 89 acres southwest of Phase 2. Due to the topography of the Phase 3B site, an additional storm water retention basin at the northern edge of the property is proposed to service this site. Thus, storm water will be collected by street-level inlets and catch basins, which will discharge into an underground storm drainage system that will convey storm water to both the existing and the proposed retention basin. The combined drainage system will have the capacity to store the increase in runoff for Waiehu Kou Phases 1, 2 and 3 as well as the 89-acre offsite area. The drainage system will be designed to meet County of Maui drainage standards.

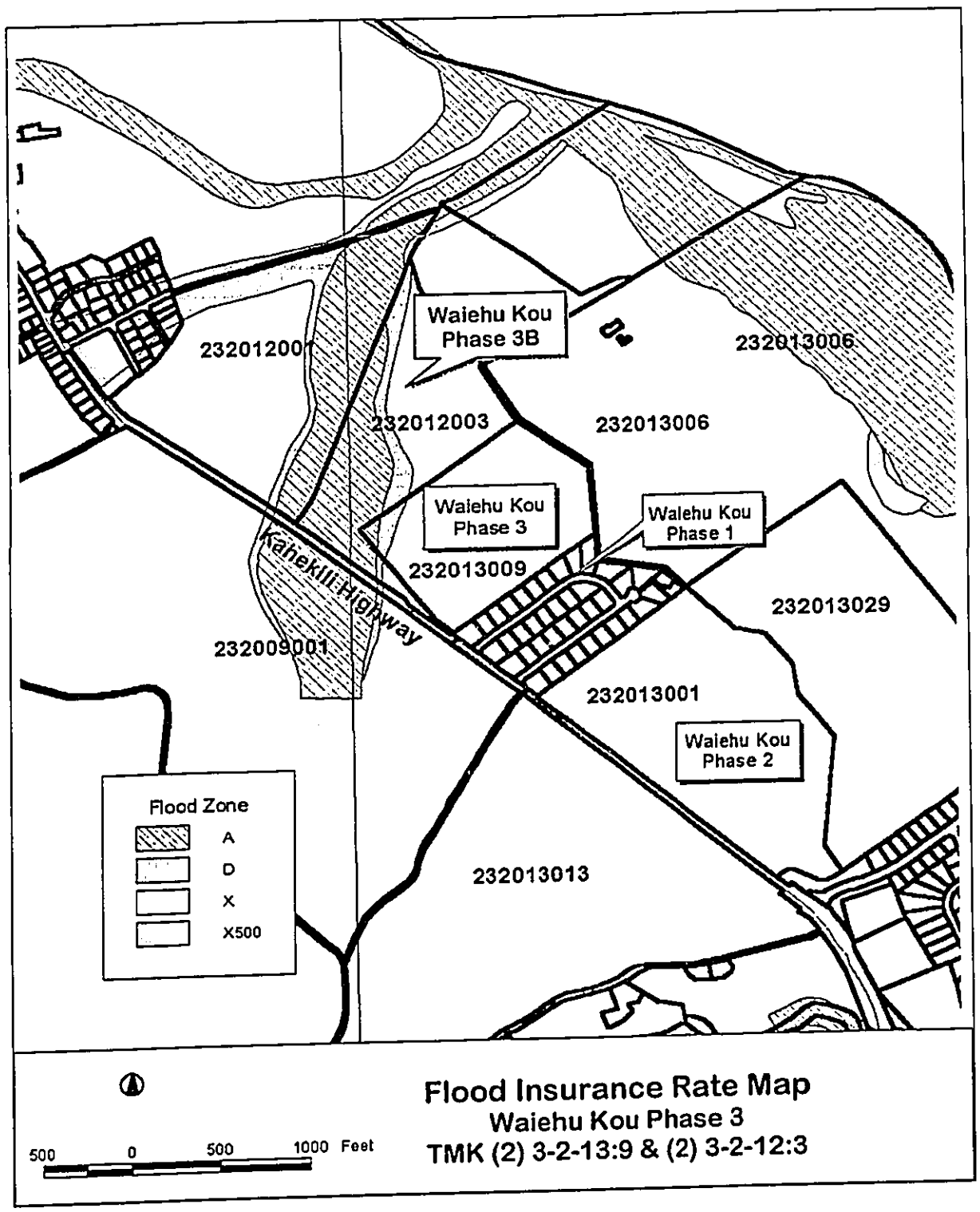
Waiehu Kou Phase 3B
23201200
232013006
232012003
232013006
Waiehu Kou Phase 3
Waiehu Kou Phase 1
232013009
Kahekili Highway
232013029
232009001
232013001
Waiehu Kou Phase 2
232013013
Flood Zone
A
D
X
X500
500 0 500 1000 Feet
Flood Insurance Rate Map
Waiehu Kou Phase 3
TMK (2) 3-2-13:9 & (2) 3-2-12:3

FIGURE 7

5.2 POTABLE WATER

The Central Maui System serves the project area. The major sources of water for this system are the Iao and Waihee aquifers. Rolling annual average groundwater withdrawals from the Iao Aquifer is 20 MGD. If rolling annual average withdrawals exceed 20 MGD, the State Commission on Water Resource Management may designate the aquifer as a water management area. This means that all groundwater to the purveyor would be subject to water use permits. The service area would be subject to a declaration of a water shortage or a water emergency. If withdrawals are constrained, uses may be subject to allocation to users by the purveyor. Once a water management area is declared, DHHL's water rights shall not be diminished, pursuant to the State Water Code, Chapter 174C, Hawaii revised Statutes and Section 221 of the Hawaiian Homes Commission Act, 1920, as amended. To supplement existing water resources, two wells in North Waihee were brought on-line in 1997 and another two adjacent wells were brought on-line during 2001. The Maui Department of Water Supply (DOW) is currently implementing a plan to bring new water sources on-line to mitigate current withdrawals.

The Maui DOW will provide potable water to the site. Twelve-inch and eight-inch waterlines have been installed along Kahekili Highway. DOW indicated that water is currently available to service the site and the water distribution system and storage capacity is adequate. The 12-inch line along Kahekili Highway is adequate to provide domestic and fire flow demands of the project. The DOW requested that if cul-de-sacs are used, easements that will connect the water lines at the end of the cul-de-sacs be provided to allow for continuous flow through the pipes. System improvements, including distribution line sizes will be determined in the subdivision review process.

At full build-out of all 111 homes, water demand for this project is calculated at ~~55,500~~ 66,600 gallons per day. Water usage is based on the Maui County Department of Water Supply System per-unit standard of 600 gallons per day (gpd). All three phases of the Waiehu Kou Subdivision contain a total of 259 lots (phase I – 39 lots, phase II – 109 lots, & phase III – 111 lots), resulting in an estimated cumulative water usage of 155,400 gpd.

5.3 SOLID WASTE AND WASTEWATER TREATMENT AND DISPOSAL

The developer of the proposed Waiehu Kou Phase 3 project will construct the underground sewer lines, which will enable sewage flow via gravity to a new sewage pump station to be built on the northern edge of the property. From this pump station, sewage will be pumped up to and run along Kahekili Highway where it will flow via gravity to the pump station located in the Phase 1 subdivision. The sewage is then pumped to another pump station on Waiehu Beach Road. From that location, sewage will be pumped to the Wailuku-Kahului Wastewater Reclamation Facility in Kahului. The topography and location of the Phase 3B site requires the construction of this additional sewage pumping station to service the site. It would not be feasible to raise the ground level to allow gravity flow from Phase 3 to the existing pump station in Phase 1 because of extensive earthmoving and importation of soil. Furthermore, the sewer lines would have to be placed along the makai side of the property near the sand dunes where burial sites are known to exist.

According to discussions with the County of Maui, Department of Public Works and Waste Management (DPWWM), the existing sewer system has adequate capacity to service this project. County of Maui Department of Public Works and Waste Management uses a wastewater generation estimate of 350-gallons/unit/day for single-family homes. For the full build out of Phase 3, approximately 38,850 gallons of wastewater will be produced daily. Cumulatively, the three phases would produce an estimated 90,650 gallons of wastewater per day. The capacity of the Wailuku-Kahului Wastewater Reclamation facility is 7.9 mgd. It is currently treating approximately 5.5 million gallons of wastewater per day. Thus, the facility can accommodate the Phase 3 project.

A solid waste management plan will be produced that will cover all construction phases of the project. All solid waste generated during construction that is not recyclable on-site, will be directed to a DOH-permitted solid waste disposal or recycling facility. Residents of the new subdivision will be encouraged to participate in applicable recycling efforts in the County. Furthermore, the project will comply with Section 103D-407 of the Hawaii Revised Statutes, regarding the use of recycled glass in construction projects.

5.4 TRANSPORTATION

The main transportation corridor servicing the site is Kahekili Highway, a State-owned, two-lane roadway fronting the project site. The section of the highway abutting the project site has a right-of-way width of 40 feet. Kahekili Highway continues northward to Waihee Village and to other areas on the northwestern coastline of the island. Kahekili Highway extends southward to Wailuku, approximately 2 miles south of the project site. It also intersects with Waiehu Beach Road about half mile south of the project site. Waiehu Beach Road extends southward to Kahului, which is about 3 miles away from the site.

In the Maui Long Range Transportation Plan, Kahekili Highway is recommended to be widened from two lanes to four lanes from Waiehu Beach Road to Waihee Valley Road in the 2006 to 2020 time period. In the vicinity of Waiehu Kou Phase 1, approximately 10 feet was added to Kahekili Highway right-of-way. Thus, it is anticipated that a 10-foot wide strip along Kahekili Highway will be provided for widening of the existing right-of-way. Existing trees along Kahekili Highway will be removed to provide safe access and adequate site distance. Frontage improvements and new landscaping is planned along the highway.

A Traffic Impact Analysis Report was prepared by Julian Ng, Incorporated (June 2002) to evaluate potential traffic impacts resulting from the development of the amended Waiehu Kou Phase 3 project (see Appendix D). The study concluded that the project is planned in an area of little traffic congestion and will have a minor impact to traffic conditions and to regional traffic demands. Based on a projected annual growth rate of 2 percent, traffic conditions in the vicinity of the proposed project would be acceptable to the year 2020 and traffic from the proposed project would be only a small portion of the total future traffic volume in the area. The primary impact would be construction of a new unsignalized intersection on Kahekili Highway for the main access to the proposed project.

The traffic study noted the following points:

"In the short term, the intersection will operate well, with some acceptable delays to all traffic. However, the expected increases in highway volumes could eventually result in very long delays for project vehicles wishing to enter the highway during the morning peak hour if drivers need to seek a gap in both northbound and southbound traffic. The addition of a median lane on the highway for left turns would permit a two-stage left turn movement from the project road, reducing the delays due to the stop sign to acceptable levels.

The project roadway should be located as far north as possible in order to maximize the distance between it and the existing intersection of Kahekili Highway and Kohomua Street (a roadway serving a proposed subdivision on the opposite side of the highway would add a fourth leg to the existing "T" – intersection at Kohomua Street). The roadside should be cleared to provide adequate intersection sight distances." (Appendix D - Traffic Study)

The only anticipated traffic impact of the potable waterline installation portion of this project is the temporary delay in traffic along the project site. However, this area of Waihee is sparsely populated and is not a major thoroughfare. Therefore, the traffic impacts will be minimal. A traffic control plan will be prepared for the construction phase of the waterline installation.

5.5 POWER AND COMMUNICATION

Electric power will be supplied by Maui Electric Company via overhead lines. The existing Waiehu Kou Phase 1 & 2 subdivisions are being serviced via overhead electrical lines.

Telephone service will be provided by Sandwich Isles Communications and will be placed underground, like the existing Waiehu Kou Phase 2 subdivision.

TCI Cable will provide cable service to the site. The cable lines will probably be placed in the same underground duct system as the telephone line. TCI Cable indicated that service would be made available to the site.

5.6 FIRE, POLICE AND EMERGENCY MEDICAL SERVICES

The Wailuku Fire Station provides fire protection service for this area with backup service from the Kahului Station. The Wailuku Station is equipped with a 5-person engine and Kahului Fire Station is equipped with a 5-person engine, a 5-person ladder truck and a 2,500-gallon tanker. American Medical Response out of Kahului provides ambulatory service.

Police service is provided by officers on three shifts to cover the Wailuku area.

Health services will be provided by Maui Memorial Hospital, St. Francis Medical Center, and Kaiser Permanente Medical Clinic located in Kahului approximately 2.5 miles from the site. No adverse impacts on the police, fire or emergency medical facilities are anticipated as a result of this project.

5.7 SCHOOLS

Schools servicing the area include Waihee Elementary School, Iao Intermediate School and Baldwin High School. All of these schools are operating over capacity. 2001 figures show that Waihee Elementary School has a capacity of 733 students with an enrollment of 877 students. Iao Intermediate School has a capacity of 806 students with 842 students enrolled. Baldwin High School has an enrollment of 1,693 students with a capacity for only 1,660 students.

Based on discussions with the Department of Education, at full build out of approximately 111 homes, the Waiehu Kou Phase 3 project is estimated to generate 30-45 elementary students, 12-17 intermediate students and 12-17 high school students. While a master plan is being prepared for the Iao Intermediate School to increase its capacity, actual implementation of the plan may take some time. An additional classroom facility is currently under construction at Waihee Elementary School. Depending on funding availability, eight additional classrooms are planned for Baldwin High School.

Although the project may generate school aged students as determined by DOE, the actual net increase of students may not be as indicated above. Some of the new residents of this project may already reside on the island of Maui and their children may already attend these schools. Thus, the impact on these schools may not be as high as presently determined. However, DHHL will discuss participation with DOE to mitigate impacts from additional students generated from the three phases of the Waiehu Kou subdivision.

SECTION 6
RELATIONSHIP TO STATE AND COUNTY PLANS, POLICIES AND CONTROLS

6.1 HAWAIIAN HOMES COMMISSION ACT OF 1920

In 1921, Congress passed the Hawaiian Homes Commission Act (HHCA) of 1920, 42 Stat. 108, as amended, which set aside certain lands within the Territory of Hawaii for the benefit of native Hawaiians. This project implements the HHCA by developing house and lot packages for the purpose of providing needed housing for the native Hawaiian people.

6.2 HAWAII STATE PLAN

The Hawaii State Plan was developed to serve as a guide for future development of the State of Hawaii in areas of population growth, economic benefit, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement. The Plan identifies, in general, the goals, objectives, policies and priorities for the development and growth of the State. Guidelines have been provided in the Plan to give direction to the overall development of the State.

The proposed project is consistent with the objectives and policies of the Hawaii State Plan. The following describes the relationship and compatibility of the proposed project with the overall plans for the State of Hawaii, as set forth in the Hawaii State Plan.

6.2.1 Population (HRS Section 226-5)

Development of this project will provide housing for the native Hawaiian community on Maui, which is in great demand. The number of applicants on the DHHL housing waiting list for the island of Maui as of October 2001 was approximately 2,800 people. This project will create the opportunity for the native Hawaiians to pursue their socio-economic aspirations by providing the opportunity to purchase or construct an affordable single family home.

6.2.2 Economy (HRS Section 226-6)

The proposed project will create short-term design and construction employment opportunities.

The economic objective to improve the standard of living will be fulfilled by the design and construction of quality affordable homes for the native Hawaiian beneficiaries. These new homes will improve their quality of life and enhance their mental well being.

6.2.3 Physical Environment (HRS Section 226-11, 12 and 13)

Although the project site is near the coastline, the Waiehu Golf Course has been developed between the project site and the shoreline. Therefore, the project will not affect shoreline or marine resources.

The project site is contiguous with existing residential development to the southeast and is a natural adjunct expansion for residential use.

Because the project is situated at a low elevation from surrounding developed lands, scenic views will be preserved. New residents of this community will be able to experience scenic view of the West Maui Mountains from their homes.

Sand dunes on the makai side of the site are known to contain burials. The sand dune areas are to remain in their natural state. If human remains are encountered at the project site during the construction phase of the project, the State Historic Preservation Division will be contacted and work will cease until appropriate mitigation measures can be established.

6.2.4 Facility Systems (HRS Sections 226-14, 15, 16,17 and 18)

The developer of the project will work together with the State and County agencies to provide adequate infrastructure to service the site. Underground sewer lines will be placed within the roadway rights-of-way and will be sized to accommodate the proposed Waiehu Kou Phase 3 homes.

Potable water will be provided to the site by the County's water system. The 12-inch line within Kahekili Highway was sized to accommodate future development by DHHL.

As in the Waiehu Kou Phases 1 and 2 projects, a 10-foot wide strip of land along Kahekili Highway will be set aside for future roadway widening planned by the State.

Sandwich Isles Communications will install underground telephone lines within the subdivision roadway rights-of-way. It is anticipated that TCI cable will also install cable lines within the same underground duct system.

6.2.5 Socio-Cultural Advancement (HRS Sections 226-19, 20, 22, 23, 24, 25)

The project satisfies the State's objectives for socio-cultural advancement because it provides housing opportunities for the native Hawaiians. Homes will be purchased at very affordable prices, since the land is not factored into the cost of the house. It is anticipated that some of the homes will be built by the beneficiaries, promoting a sense of pride, responsibility, and personal well being. Self-help built homes also provides a means to offer even more affordable homes for those that are economically disadvantaged.

The State government is taking an active role in the development of this new community that will provide needed housing opportunities for the native Hawaiian people.

6.3 STATE FUNCTIONAL PLANS

The State Functional Plans were formulated to specify in greater detail the policies, guidelines and priorities set forth in the Hawaii State Plan. The thirteen functional plans include Energy, Transportation, Historic Preservation, Recreation, Health, Agriculture, Tourism, Education, Higher Education, Housing, Human Services, Employment and Conservation Lands. The following is a description of the proposed project as it relates to the applicable State Functional Plans.

6.3.1 State Energy Functional Plan

The State's goal with regards to energy deals with reducing dependence on petroleum and other fossil fuels. The developer will be encouraged to provide the option to install solar water heaters to minimize the demand for electrical power. DHHL also encourages the design of houses to take advantage of the prevailing trade winds for cooling and to install low-flush toilets and energy efficient devices to promote an environmentally sensitive and energy efficient development.

6.3.2 State Transportation Functional Plan

The objectives of the Transportation Functional Plan is to provide an efficient, economical, safe, and convenient movement of people and goods in consonance with the planned growth objectives for the State of Hawaii. The roadways within the subdivision will be constructed to Maui County standards. Kahekili Highway, which fronts the project site, will have an additional 10 feet of roadway right-of-way for future roadway widening improvements to include additional pavement and a sidewalk.

According to the traffic report, the project is situated in an area of little traffic congestion. Thus, the transportation system in the vicinity of the project is expected to operate efficiently and safely.

6.3.3 State Historic Preservation Functional Plan

An Archaeological inventory survey was conducted in the Waiehu Phase 3 (including parcel 3B) in January 2002. There were no significant cultural or historical features found in the affected area of project site. Areas closer to the sand dunes on the makai side of the property known to contain burial sites will be left unaltered. The site has been highly disturbed by agricultural operations in the past. However, if cultural or historic resources are uncovered during construction, the State Historic Preservation Division will be consulted for the appropriate mitigation measures.

6.3.4 State Recreation Functional Plan

This project will make use of a 2-acre public park that was constructed previously as part of the Waiehu Kou Phase 2 project. Additionally, a northwest portion of the property inside a flood zone will be left as open space to serve as a passive park for the residents.

6.3.5 State Housing Functional Plan

This project satisfies the objective of the Housing Functional Plan to provide affordable housing. DHHL will be working with the private sector to build turnkey homes for purchase by the native Hawaiian beneficiaries or to provide self-help and owner-builder house lots.

6.3.6 State Employment Functional Plan

The project will create direct and indirect employment during the construction phase of the project.

6.4 STATE LAND USE

The State Land Use designation for the property is "Agricultural". However, DHHL is exempt from the State Land Use Law and will exercise this exemption to develop the property into residential use.

6.5 COUNTY GENERAL PLAN

The project is consistent with the objectives of the County General Plan in that it provides "...for needed resident housing." Although some agricultural land is removed from future agricultural use because of the change to urban residential use, there is a surplus of agricultural land on Maui, and indeed, the proposed project site was once cultivated as sugar cane, a crop now out of production in this part of Maui, leaving large tracts of fallow land.

6.6 WAILUKU/KAHULUI COMMUNITY PLAN

The Community Plan designation for the project site is "Agriculture" and DHHL is exempt from Community Plan redesignation. However it is anticipated that the project will be developed according to R-1 standards with a minimum lot size of 6,000 square feet.

6.7 COUNTY ZONING

County Zoning designation for the parcel is "Interim". DHHL is also not subject to County zoning rules and regulations.

SECTION 7
PERMITS REQUIRED

7.1 STATE PERMITS

The following State of Hawaii permits will be required:

Permit/Approval required	Agency
Erosion and Dust Control Plan	Department of Health
National Pollution Discharge Elimination System (NPDES)	Department of Health

Also, an approval from the State Historic Preservation Division is being sought following revision of the draft archaeological inventory survey report.

7.2 COUNTY PERMITS

The following County of Maui permits will be required:

Permit/Approval required	Agency
Grading Permit	County of Maui, Building Department
Building Permit	County of Maui, Building Department

In addition to the permits listed above, DHHL will request that a subdivision plan review be carried out by the County Planning Department.

During a coordination meeting with County agencies, they requested that the county arborist committee be consulted regarding landscaping and removal of the macadamia nut trees from the existing site and trees along Kahekili Highway. This consultation will be coordinated prior to completion of the design phase of the project.

7.3 FEDERAL PERMITS

Federal permits are not required for the proposed development.

SECTION 8
ALTERNATIVES TO THE PROPOSED ACTION

8.1 NO ACTION ALTERNATIVE

The no action alternative would mean that approximately 111 eligible beneficiaries and their families out of the current 2,800 native Hawaiians on the Maui DHHL waiting list will not be able to either purchase new homes or acquire residential lots in the Waiehu area.

8.2 ALTERNATIVES CONSIDERED

Alternatives considered dealt mainly with the land uses with layouts showing varying lot sizes and roadway alignments.

SECTION 9
DETERMINATION

The environmental assessment indicates that there are no long-term adverse impacts that would be caused by the proposed development of house lots. Short-term impacts will occur during the construction of the project. However, these impacts can easily be mitigated. Therefore, an Environmental Impact Statement is not deemed to be required.

The development will be constructed in accordance with State and County rules and regulations.

Findings and reasons supporting the determination including justifying evidence.

1. *No irrevocable commitment to loss or destruction of any natural or cultural resource would result.* Historic, cultural and archaeological investigations and research have not identified any of the above resources. An archaeological inventory study with test trenching was conducted in January 2002, and no archaeological sites of significance were discovered within the project area.

2. *The proposed project would not curtail the range of beneficial uses of the environment.* The proposed project changes the range of beneficial uses from abandoned macadamia nut orchards with limited agricultural prospects to one of use for the existing demand for housing for native Hawaiians.

3. *The proposed project would not conflict with the state's long-term environmental policies or goals and guidelines.* The state's environmental policies and guidelines as set forth in Chapter 344, Hawaii Revised Statutes, "State Environmental Policy", encompass two broad policies: provision of affordable housing, and enhancement of the quality of life. This project will provide affordable housing for native Hawaiians and enhance their quality of life.

4. *The proposed project will improve the economic and social welfare of the community and the state.* The proposed improvements add to the housing stock on Maui, which benefits the general welfare of the state by fulfilling the need for affordable housing.

5. *The proposed project would not substantially affect public health.* The proposed improvements will not have substantial effects on public health. Impacts will be beneficial because of the additions to the affordable housing stock, built according to County standards, will promote healthy living conditions.

6. *No substantial secondary impacts, such as population changes or effects on public facilities, are expected.* The project will not cause population changes because the number of house lots proposed – 111 – is much less than the number of people on the Maui DHHL waiting list of 2,800 beneficiaries. The proposed improvements do not change the population projections for the County of Maui because most of the likely residents of the project already reside on Maui.

7. *No substantial degradation of environmental quality is expected due to the proposed project.* Construction activities would have potential short-term impacts on ambient environmental quality, although these impacts are expected to be minor. In the long term, the completed project will improve the environmental quality by lessening the dust problem due to existing fallow, uncultivated conditions at the site.

8. *No cumulative effect on the environment or commitment to larger actions will be involved.* The project is not expected to have a considerable cumulative effect on the environment that will involve the need for larger actions. Once the land is developed and occupied as described, the demand for additional facilities and services is not anticipated.

9. *No rare, threatened or endangered species or their habitats are affected.* No impacts are anticipated on any candidate, proposed or listed endangered species or their habitats. There are no known threatened/endangered species or their habitats within the project limits.

10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* Construction activities may cause short-term impacts to air, noise and water quality, which will be mitigated to the extent practicable.

11. *The proposed project will not detrimentally affect environmentally sensitive areas such as flood plains, tsunami zones, beaches, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters.* The proposed project is

not in the coastal zone or the special management area. Storm water runoff occurs via retention basins that meet or exceed County standards. These basins will capture most storm water runoff events to prevent flooding and excessive erosion. Furthermore, the proposed development will not occur in the flood zone.

12. *The proposed project will improve scenic vistas and view planes identified in county or state plans or studies.* The proposed improvements would not significantly obstruct seaward views, which are already blocked by the County golf course atop the existing sand dunes. The construction of a housing subdivision is a change in the visual environment from the present fallow former sugar cane field now at the site. However, there are houses both before and after the proposed subdivision so that its construction is not a significant change from the surrounding visual environment. Certain view planes actually may be improved because of additions of landscaping within and around the project.

13. *There will be no requirement for substantial energy consumption.* Construction of the project will not require substantial energy consumption, and energy conservation measures are proposed.

SECTION 10

LIST OF INDIVIDUALS, ORGANIZATIONS AND AGENCIES CONSULTED

10.1 STATE

Department of Transportation
Department of Land and Natural Resources, Historic Preservation Division
Department of Education

10.2 COUNTY OF MAUI

Department of Public Works and Waste Management
Department of Planning
Department of Water Supply

10.3 OTHERS

Maui Electric Company
TCI Cable
Waiehu Kou Community Association

10.4 COMMUNITY MEETING

A community meeting was held by DHHL on June 18, 2002, on Maui at Waiehu to discuss the proposed project and to answer questions or concerns of the public. The attendees had several concerns, but did support construction of the project. Concerns included:

- Current traffic conditions near schools.
- Size of Hawaiian families and the implications of added schoolchildren to existing schools, already over capacity.
- Addition of a community center and a park area.
- Procedure for awarding of lots and the process for self-help.

APPENDIX A
BOTANICAL RESOURCES ASSESSMENT
WAIEHU KOU PHASE 3B – WAILUKU DISTRICT, MAUI
Char and Associates

BOTANICAL RESOURCES ASSESSMENT
WAIEHU KOU PHASE 3B
WAILUKU DISTRICT, MAUI

by

Winona P. Char

CHAR & ASSOCIATES
Botanical Consultants
Honolulu, Hawai'i

Prepared for: **TOWNSCAPE, INC.**

July 2002

BOTANICAL RESOURCES ASSESSMENT
WAIEHU KOU PHASE 3B
WAILUKU DISTRICT, MAUI

INTRODUCTION

The approximately 20-acre Waiehu Kou Phase 3B project site is located on TMK: 3-2-12: 03 at Waiehu, Maui. The site is bounded by the Waiehu Municipal Golf Course to the north, the proposed Waiehu Kou Phase 3 site to the east, Kahekili Highway to the south, and cultivated agricultural lands to the west.

A macadamia nut orchard covers almost all of the site; the property was also used for sugar cultivation in the past. Soils on the property are mapped as "WvB", Wailuku silty clay, 3 to 7% slopes on the southern half and "IaA", 'Iao silty clay, 0 to 3% slopes on the northern half (Foote et al. 1972). Both soil types are well-drained dark reddish brown to dark brown colored and are found on alluvial fans.

A new 12 inch waterline to serve the project site is also proposed. The new line will run parallel to an existing 24 inch pipeline within the Kahekili Highway right-of-way near Waihe'e Stream. Soil type in this area is mapped as "IbB", 'Iao cobbly silty clay, 3 to 7% slopes (Foote et al. 1972). This is a well-drained, dark brown colored soil found on valley fill and alluvial fans. Vegetation along the highway right-of-way consists of weedy roadside vegetation which is periodically bladed, and a few areas with landscape plantings in front of homes.

Field studies to assess the botanical resources on the Waiehu Kou Phase 3B project site as well as along the proposed 12 inch pipeline

were conducted on 14 June 2002 by a team of two botanists. The primary objectives of the field survey were to:

1) prepare a general description of the vegetation on the two sites;
2) search for threatened and endangered species as well as species of concern; and
3) identify areas of potential environmental problems or concerns and propose appropriate mitigation measures.

DESCRIPTION OF THE VEGETATION

The plant names used in this report follow Wagner et al. (1990), and Wagner and Herbst (1999). The few recent name changes are those recorded in the Hawaii Biological Survey series (Evenhuis and Eldredge, eds., 1999-2000).

Waiehu Kou Phase 3B Site: The vegetation throughout the majority of the site consists of rows of macadamia nut trees (Macadamia integrifolia), 20 to 30 ft. tall, with a weedy assortment of plants found in the open areas between the rows of trees. Robust clumps of Guinea grass (Panicum maximum), 8 to 10 ft. tall, are common. Other plants here in fairly large numbers are sourgrass (Digitaria insularis), spiny amaranth (Amaranthus spinosus), wild or currant tomato (Solanum lycopersicon), and pluchea shrubs (Pluchea carolinensis). Rows of "Tropic coral" trees (Erythrina variegata cultivar), 40 to 60 ft. tall, serve as windbreaks along parts of the macnut orchard. Where the macnut trees form a dense canopy, there is very little ground cover; a mat of fallen leaves and barren soil is common.

Along the western boundary abutting a small drainageway, the vegetation consists of dense clumps of elephant grass (Pennisetum purpureum) and Guinea grass, 10 to 12 ft. tall. This area does not support any wetlands or standing water. Also found in this

section are scattered shrubs of koa haole (Leucaena leucocephala) and pluchea, cocklebur (Xanthium strumarium), Neonotonia wightii, and castor bean (Ricinus communis).

Along the golf course boundary, the vegetation consists of koa haole shrubs with Guinea grass. Other woody components found here include Java plum (Syzygium cumini), Christmas berry (Schinus terebinthifolius), lantana (Lantana camara), and a few young trees of ironwood (Casuarina equisetifolia).

Waterline: The vegetation adjacent to the highway consists of a narrow band of ruderal or weedy roadside plants which is infrequently maintained. Sourgrass and Guinea grass are abundant in most places, while swollen fingergrass (Chloris barbata) and Natal redtop (Melinis repens) are occasional to locally common. Common, weedy, herbaceous components include Florida beggarweed (Desmodium tortuosum), false mallow (Malvastrum coromandelianum), coatbuttons (Tridax procumbens), Boerhavia coccinea, golden crown-beard (Verbesina encelioides), and spiny amaranth. Koa haole shrubs with a few scattered kiawe trees (Prosopis pallida) is found on the slopes bordering the narrow band of ruderal vegetation. Also associated with the koa haole are castor bean, pluchea, hairy abutilon (Abutilon grandifolium), Chinese violet (Asystasia gangetica), and Java plum.

Where a number of homes front the highway, hedges and plantings of night-blooming cereus (Hylocereus undatus), plumeria (Plumeria rubra hybrids), golden-fruited palm (Chrysalidocarpus lutescens), ti (Cordyline fruticosa), coconut (Cocos nucifera), etc., and Bermuda grass (Cynodon dactylon) lawns are found. An earlier botanical survey for the North Waihe'e Wells Transmission System (Char 1993) also described similar findings.

DISCUSSION

A macadamia nut orchard along with the usual assortment of weedy species commonly associated with agricultural lands covers the Waiehu Kou Phase 3B project site. Weedy roadside vegetation is found along the proposed waterline route. All of the plants observed during our field studies are introduced or alien species. Introduced species are all those plants which were brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is, Cook's arrival in the islands in 1778. An earlier botanical survey of the adjacent Waiehu Kou Phase 3 project site (Char 2001) recorded similar findings. One native species, the 'uhaloa (Waltheria indica), was found; the 'uhaloa is indigenous, that is, it is native to the islands and elsewhere.

None of the plants found during this study is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999; Wagner et al. 1999). All of the plants can be found in similar lowland, disturbed habitats throughout the main Hawaiian Islands.

Because of the past and present uses of the sites and the amount of disturbance, there is little of botanical interest. The proposed Waiehu Kou Phase 3B development and the new 12 inch waterline are not expected to have a significant negative impact on the botanical resources. There are no botanical reasons to impose any restrictions, conditions, or impediments to the proposed projects.

LITERATURE CITED

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APPENDIX B
AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY FOR THE PROPOSED WAIEHU KOU PHASE 3B, MAUI

Phil Bruner

AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY FOR THE PROPOSED WAIEHU KOU PHASE 3B, MAUI

Prepared for:

Townscape, Inc.

Prepared by:

Phil Bruner

Environmental Consultant
Faunal (Bird & Mammal) Surveys
BYU-H # 1775
55-220 Kulanui St
Laie, HI 96762

3 July 2002

INTRODUCTION

The purpose of this report is to provide the results of a one day (26 June 2002) faunal (bird and mammal) field survey of approximately 20 acres adjacent to TMK 3-2-13:09 (Waiehu Kou Phase 3), Maui (Fig.1). References to pertinent literature and unpublished reports on the fauna in this region of the island are noted in this report. A comparison of findings between the Waiehu Kou Phase 3 and this phase 3B site are also provided. The goals of the field survey were to:

1- Document the species of birds and mammals currently on or near the lands involved in the proposed project.

2- Focus special attention on any native and migratory species, particularly those that are currently listed as endangered.

3- Note the natural resources, if any, that may be important to native and migratory species.

GENERAL SITE DESCRIPTION/STUDY AREA

Figure One gives the location of the Phase 3B site. Tall dense grass with scattered trees and brush dominate the habitat. No wetland habitat was found on the property.

SURVEY METHODS

The survey was conducted over a period of one day (26 June 2002). Observations were made both early in the day and at dusk when birds are most active. All species of birds and mammals seen or heard were noted. Point counts were made at several locations on the property to ascertain the relative abundance of each species (Siegel et al. 2001). Data were also obtained from adjoining property surrounding the site. The mobility of birds makes it important to record observations from nearby lands. The weather during the field survey was overcast with light passing showers. Scientific and common names used in this report follow Pyle (1997) and Honacki et al. (1982).

RESULTS AND DISCUSSION

Native Birds:

No native birds were observed on the survey. The Short-eared Owl or Pueo (*Asio flammeus sandwichensis*) is the only potential species in this category given the location and habitat on this property. This species is listed by the State of Hawaii as endangered on Oahu but not on Maui. Pueo nest on the ground in areas with tall grass (Pratt et al. 1987, Hawaii Audubon Society 1993). An absence of wetland habitat precludes any waterbirds at this location.

Migratory Birds:

No migratory birds were tallied. This result was not unexpected for two reasons. First, the majority of migratory shorebirds are on their arctic breeding grounds at this time of year. Second, there is no suitable habitat for migratory shorebirds on this property. The vegetation is too tall and dense.

Introduced Birds:

Table One lists the eleven species of introduced (non-native) birds recorded on the survey. Nine of these species were the same ones found on the adjoining Phase 3 site (Bruner 2001). The two new species added to the list for the Phase 3B site were Japanese Bush-warbler (*Cettia diphone*) and Java Sparrow (*Padda oryzivora*). None of the introduced birds in Table One are listed as threatened or endangered.

Mammals:

Two Small Indian Mongoose (*Herpestes auropunctatus*) were seen on the survey. One Roof Rat (*Rattus rattus*) was found dead along the road fronting the property. The endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) is listed as uncommon on Maui (Tomich 1986, Kepler and Scott 1990). A Pettersson Ultrasound Detector D-100 was used to search for vocalizing bats. None were recorded on this survey. They forage in a wide variety of habitats including urban areas and generally roost solitarily in trees.

CONCLUSIONS

The faunal survey covered the entire site and nearby adjoining lands. The species of birds and mammals found on the survey were those known to occur in this area. No endangered species were encountered. The proposed project should have no significant impact on the relative abundance of birds and mammals in this region of Maui. The site does not contain significant concentrations of natural resources important to native or migratory birds.

3-2-12:03

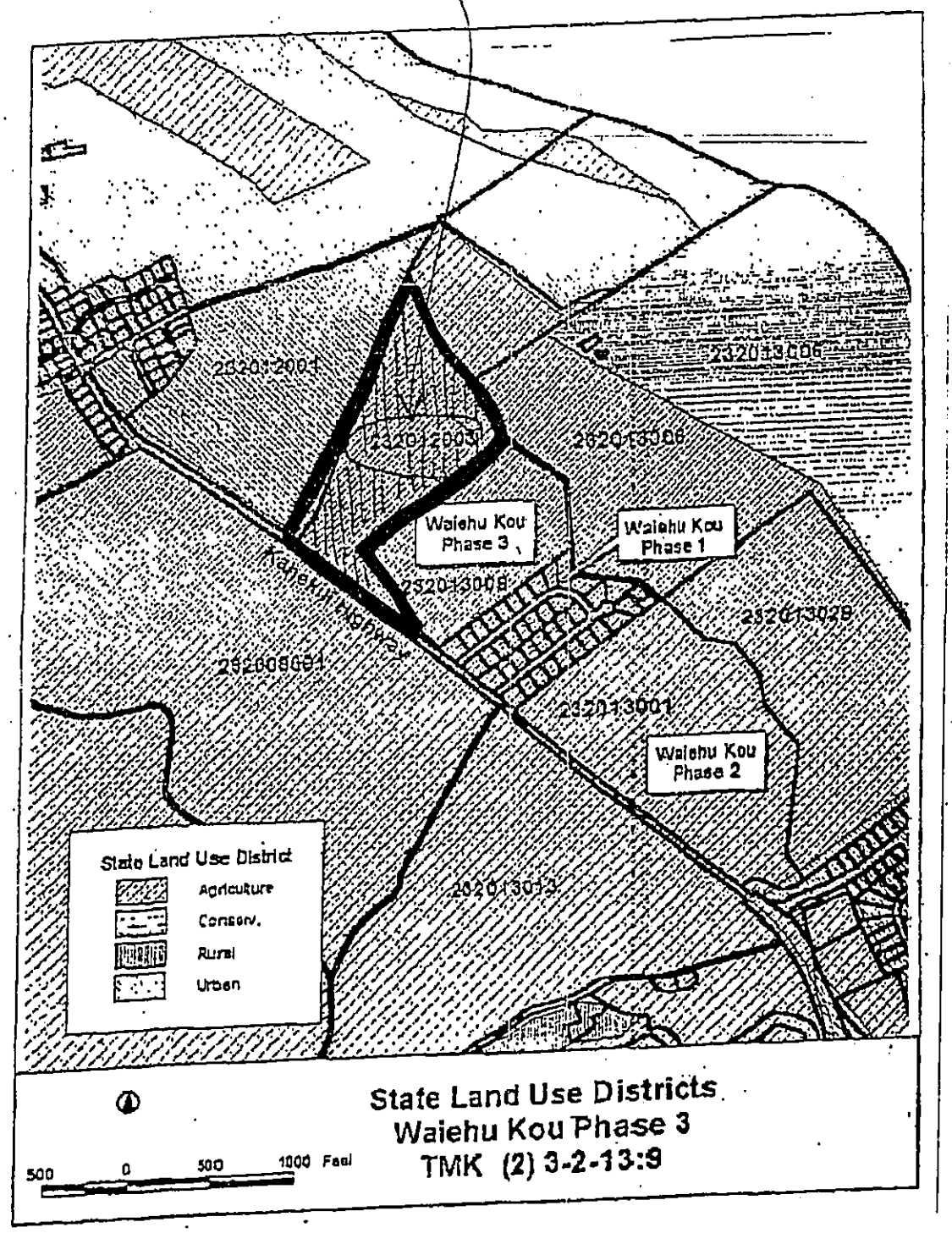

Fig. 1. Location of faunal (bird & mammal) survey.

TABLE ONE

Introduced birds recorded on the Waiehu Kou Phase 3B site on Maui.

COMMON NAME	**SCIENTIFIC NAME**	***RELATIVE ABUNDANCE**
Gray Francolin	*Francoalinus pondicerianus*	R= 7
Cattle Egret	*Bubulcus ibis*	R= 1
Spotted Dove	*Streptopelia chinensis*	C
Zebra Dove	*Geopelis striata*	U
**Japanese Bush-warbler	*Cettia diphone*	R= 2
Common Myna	*Acridotheres tristis*	C
Japanese White-eye	*Zosterops japonicus*	U
Northern Cardinal	*Cardinalis cardinalis*	C
Red-crested Cardinal	*Paroaria coronata*	U
House Finch	*Carpodacus mexicanus*	A
**Java Sparrow	*Padda oryzivora*	R=10

*Key to Relative Abundance

A= Abundant (10+ per point count) U=Uncommon (1-4 per point count)

C=Common (5-9 per point count) R=Recorded (total number tallied on property

**Species not found on survey of Waiehu Kou Phase 3 survey (Bruner 2001).

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APPENDIX C
LETTER REPORT FOR SAMPLING AND ANALYSIS OF SOILS AT FORMER SUGAR, PINEAPPLE AND MACADAMIA FIELDS - WAIEHU-KOU PHASE DEVELOPMENT 12-ACRE SITE, MAUI, HAWAII
PROJECT 011-006
Terrasano, LLC

Terrasano LLC
72 Dowsett Avenue
Honolulu, HI 96817
Office (808)595-7473
Fax (808)989-0561
www.terrasano.com

May 10, 2002

Ms. Joanne Hiramatsu
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

Subject: **Letter Report for Sampling and Analysis of Soils at Former Sugar, Pineapple, and Macadamia Fields**
Waiehu Kou Phase 3 Development, 12 Acre Site, Maui, Hawai'i
Terrasano Project 011-006

Dear Ms. Hiramatsu:

Terrasano LLC was contracted to collect and analyze two samples from a former agricultural area to determine whether residual pesticides are present in surface soils. The sampling was completed at the Waiehu Kou Phase 3 development site on Maui, Hawai'i. The purpose of the sampling was to identify potential impacts from pesticides applied at the site when it was used to cultivate sugarcane, pineapple, and macadamia nuts. The Hawaii Department of Hawaiian Home Lands (DHHL) is requesting the soil sampling because the land use will change from agricultural to residential. The land has not been in cultivation since 2000. The site was previously farmed by Wailuku Agribusiness Co., Inc.

There were no areas identified at the site where pesticides were stored or disposed. Wailuku Agribusiness Co. provided a list of chemicals that were used or may have been used during cultivation of sugarcane and macadamia nuts. This information, along with literature data on pesticides used on these crops and pesticide characteristics, are summarized in Table 1. Of these chemicals, the following were selected for sampling and analysis based on their relatively high toxicity and persistence in the environment:

Ametryn
Atrazine
Bromacil
Diuron
Hexazinone
Oxyfluorfen
Paraquat
Pentachlorophenol
Simazine

The objective of this project was to collect a limited number of surface soil samples from representative areas within the 12-acre site.

Collection of Samples

Field activities were completed on April 5, 2002. The site consisted of a widely disturbed area near the road, where earth has been graded and stockpiled, a stormwater retention pond, and a former macadamia nut grove that is relatively undisturbed. Vegetation throughout the ungraded area of the site was lush, and there were no areas of bare ground or stressed or denuded vegetation.

Two sample locations within the undisturbed portion of the site were selected on the basis of the potential for pesticides to accumulate. Sample locations are shown in Attachment 1.

All samples were surface samples, representing the top six inches of soil. A shovel was used to remove about six inches of soil from the ground surface, and a disposable hand trowel was used to collect the soil sample and place it into glass jars. Nitrile sampling gloves and a new disposable hand trowel was used for each sample collection to avoid cross contamination between samples.

Sample Tracking

Each sample was assigned a unique sample number. A label affixed to the sample container indicated the sample number, name of sampler, and date, time, and place the sample was collected, and analysis to be performed. A sample tracking form was used to document the sample collection process and other pertinent information regarding sampling location, times, and conditions. The tracking form was completed as samples were obtained. The tracking forms include spaces to indicate the site, sample ID numbers, date and time of sample collection, name of the sampler, and comments such as weather conditions and any problems containerizing the sample.

Samples were handled, stored, and shipped in accordance with EPA and Terrasano quality control procedures. Samples were preserved by chilling to a temperature of 4°Fahrenheit. All samples were shipped from the site to the laboratory in a sealed sample storage cooler. Chain of custody began at the time of sample collection by placing the packaged and labeled samples into the cooler. Field documentation was completed at this time, and samples were in the possession of a designated field sample custodian until placed into the custody of the shipping company.

The sample cooler was sealed with tamper-proof custody seals affixed across the lid at the front and back of the cooler. It was shipped via express mail to the analytical laboratory. The chain of custody form was sealed in a plastic bag taped to the inside of the sample cooler lid. The field chain of custody terminated when the laboratory received the samples. The Terrasano project manager retained a copy of the chain of custody form for project files.

Table I. Summary of Pesticides Used at Waiehu Kou Phase 3

Compound	Residential Region 9 Soil Preliminary Remediation Goal mg/kg	Field Dissipation Half-life Avg (Range) Days	Degradation Half-life in soil Days	Comments
Ametryn	550 non cancer (nc)	73(11-194)	37	Commonly used in Hawai'i. Slightly toxic to humans, moderately irritating to eyes, skin, respiratory tract. Carcinogenicity not determined.
Atrazine	2.2 cancer (ca)	173(13-402)	146	Commonly used in Hawai'i. Slightly to moderately toxic to humans through oral, dermal, and inhalation exposure. Classified as possible human carcinogen. Typically not found in soil below 1 foot, even after years of continuous use.
Bromacil, lithium salt	No standard	207(61-349)	275	Herbicide. Not classified as carcinogen. Toxicity related to aquatic species, developmental, and reproductive effects. Persistent in the environment.
2-(chlorophenoxy) propionic acid, sodium salt	No standard	No information	No information	Pineapple growth regulator. Possible carcinogen. Acutely toxic in aquatic environment.
2,4-D	690 nc	(4-15)	7	Moderately toxic but may produce serious eye and skin irritation from direct exposure. Older formulations contained dioxin compounds. Potential carcinogen.
Dalapon	1800 nc	30	No information	A herbicide with low toxicity rating. Not listed as a carcinogen.
Diazinon	55 nc	(2.8 – 54)	39	Organophosphorus insecticide. Moderate acute toxicity, some reproductive, developmental toxicity, potential groundwater contaminant
Diuron	120 nc	477	372	In Hawai'i used as spot treatment only. Slightly toxic to mammals but can cause eye and throat irritation. Not a carcinogen.
Ethephon	310 nc	15(10-21)	<7	Plant growth regulator with moderate toxicity. Negative effects associated with aquatic toxicity. Not listed as a carcinogen.
Fenamiphos	15 nc	13(2-21)	19	Nematode pesticide. Acutely toxic, not a likely carcinogen. Acute toxicity in aquatic environment.
Fosetyl Aluminum	100,000 max saturation	<1 hour	0.01	Fungicide used on fruit crops. Acutely toxic, not evaluated for carcinogenicity. Acute aquatic toxicity. Quickly dissipates and breaks down in environment.
Glyphosate	6100 nc	37 (2-174)	0.9	This chemical is relatively non-toxic and breaks down quickly in sunlight.
Hexazinone	2000 nc	79(30-180)	88	Herbicide with acute toxicity and aquatic toxicity impacts. Not classified as carcinogen.
Hydramethylnon	No standard	18 (7-28)	No information	Ant control chemical. Possible carcinogen, reproductive and development toxicity, some acute toxicity.
Metribuzin	1500 nc	47(23-128)	172	Slightly to moderately toxic to humans. No carcinogenic properties observed. Highly soluble in water and doesn't adsorb to soils.
Oryzalin	3100 nc	20	No information	Herbicide used on macadamia crops. Possible carcinogen, potential groundwater contaminant.
Oxyfluorfen	180 nc	30 (30-40)	291-296	Herbicide used on macadamia crops. Possible carcinogen. Aquatic toxicity.
Paraquat	270 nc	1067(99-4747)	No information	Highly toxic to animals and humans. Classified as possible human carcinogen. Breaks down readily in sunlight, ultraviolet light, and with soil microorganisms.
Pentachlorophenol	3.1 ca	48	No information	Commonly used weed killer in Hawai'i. Very toxic compound with skin absorption most common pathway. Associated with dioxin compounds. Possible human carcinogen.
Simazine	4.1 ca	89 (26-186)	91	This is a possible human carcinogen with moderate persistence in the environment.

Laboratory Analysis

The samples were analyzed using EPA test methods or, in the absence of EPA-approved methods, research methods that have been reviewed by EPA, as shown in Table 2. The samples were analyzed by Agriculture & Priority Pollutant Laboratory, Inc. Data validation of the laboratory report indicated that detection limits for each result were appropriate. Data quality parameters met established ranges and no data quality errors or problems were reported by the laboratory. The laboratory report is included in this letter report as Attachment 2.

Those items listed as surrogates in the laboratory report are part of a quality assurance procedure where a known quantity of a surrogate chemical is placed into a sample. The sample is then run through the analytical equipment. If the level recovered (as noted on the laboratory report) is within the acceptable range for that analytical method, the data quality parameter is met. Measurement of the surrogate in the sample does not indicate that a pesticide is present.

Table 2. Test Methods for Pesticides of Concern

Pesticide	USEPA Analytical Method
Ametryn, Simazine, Atrazine, Hexazinone (Velpar)	619-M
Diuron and Bromacil	8321
Oxyfluorfen	Modified DDT method
Pentachlorophenol	8151
Paraquat	CHEV RM 8-10

Results of Laboratory Analysis

None of the target pesticides were detected in the two surface soil samples. As a result, a comparison to risk-based levels and an assessment of potential risk posed by these pesticides was not necessary.

Conclusion

None of the pesticides of concern were detected in either of the two surface soil samples collected from the undisturbed area of the site, within the former macadamia nut grove. There were no visual signs of de-foliated areas or areas with stressed or denuded vegetation that might indicate excess pesticide residue. Based on the visual inspection of the site and the surface soil sample results, no further evaluation of residual pesticides is recommended at the site.

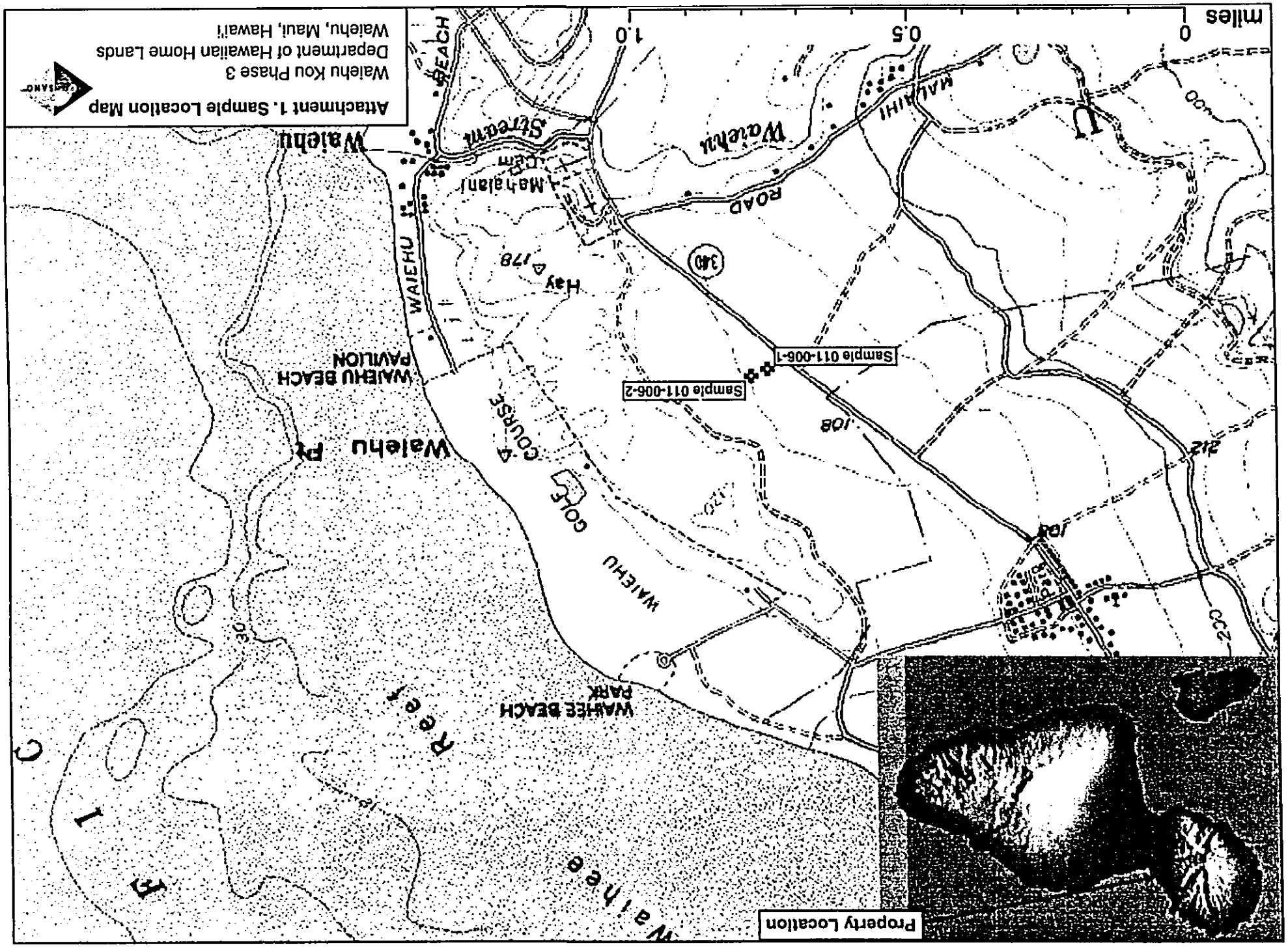
Terrasano appreciates this opportunity to continue supporting the planning activities of the Department of Hawaiian Home Lands and Townscape. If you have any questions about this proposal, please contact me at 808-595-7473 or by email at marty_walters@terrasano.com.

Sincerely,

Martha M. Walters

Martha M. Walters
Project Manager

Attachment 1. Sample location figure
Attachment 2. Laboratory report



ATTACHMENT 2
LABORATORY REPORT

AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES, INC.
4203 West Swift ▼ Fresno, California 93722 ▼ Phone 559.275-2175 ▼ Fax 559.275-4422

May 7, 2002

Terrasano LLC
72 Dowsett Avenue
Honolulu, HI 96817

Attn: Marty Walters

Subject: Report of Data: Case 38047

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety

Dear Mr. Walters :

Two soil samples were received April 9, 2002, in good condition. Written results are being provided on this May 7, 2002, for the requested analyses.

For the EPA 619 analysis, the samples were extracted according to EPA method 3550B.

For the EPA 8081A-Oxyfluorfen analysis, the samples were extracted according to EPA method 3550B. The samples were batched with a conventional 8081A compound list. The laboratory control spike duplicate (LCSD) indicated slightly high 4,4-DDD recovery (127%) where the upper control limit is 124%. All other compounds for the LCS/LCSD were within recovery acceptance criteria. Sample 011006-1 indicated low surrogate recoveries (DECA @ 20.4% and TCMX @ 36.8%). The lower control limit is 50% for both surrogates. The sample was re-injected at a dilution that supports a PQL of 10ug/kg. There were no target-compound responses detected in the samples between the MDL and the PQL.

For the EPA 8151A analysis, the samples were extracted and analyzed according to the method.

For the EPA 8321 analysis, the samples were extracted according to EPA method 3550B.

For the Paraquat analysis, the samples were subcontracted to North Coast Laboratories, Ltd. The results are attached to this report.

No other unusual problems or complications were encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

Sincerely,

Paula Young, Laboratory Director
APPL, Inc.

PY/sd
Enclosure
cc: File

Number of pages in this report 24

Triazines in Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-1
Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31677
QCG: S619S-020411A-47002

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8141A	Ametryn	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Atrazine	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Simazine	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Velpar	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Surrogate: Tributylphosphate	120	51-137	%	4/11/02	5/2/02
EPA 8141A	Surrogate: Triphenylphosphate	97.3	45-146	%	4/11/02	5/2/02

Run #: 94,37
Instrument: NPD03
Sequence: 020422,501
Dilution Factor: 2
Initials: SA

Printed: 5/2/02 11:46:27 AM

EPA 8081A OCL Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-1
Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31677
QCG: S8081S-020411A-47510

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8081A	4,4'-DDE	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	4,4'-DDT	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	4,4'-TDE/DDD	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	a-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	a-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Aldrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	b-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	d-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Dieldrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan I	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan II	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan sulfate	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin aldehyde	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin ketone	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	g-BHC (Lindane)	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	g-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Heptachlor	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Heptachlor epoxide	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Methoxychlor	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Oxyfluorfen	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Toxaphene	Not detected	1000	ug/kg	4/11/02	4/12/02
EPA 8081A	Surrogate: DECA	20.4 #	50-129	%	4/11/02	4/12/02
EPA 8081A	Surrogate: TCMX	36.8 #	50-112	%	4/11/02	4/12/02

= Recovery (or RPD) is outside QC limits.

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Initials: DB

Printed: 5/8/02 3:33:10 PM

EPA 8151A Herbicides Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS

Project: 011-006

Sample ID: 011006-1

Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047

APPL ID: AP31677

QCG: $8151S-020411A-47174

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8151	Pentachlorophenol	Not detected	40	ug/kg	4/11/02	4/12/02
EPA 8151	Surrogate: 2,4-DCAA	83.1	60-159	%	4/11/02	4/12/02

Run #: 119
Instrument: ECD01
Sequence: 020409
Dilution Factor: 1
Initials: DU

Printed: 4/29/02 4:09:01 PM

EPA 8321

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-1
Sample Collection Date: 04/05/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31677
QCG: $8321S-041102A-47512

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8321	Aldicarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Aminocarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Barban	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Benomyl/Carbendazim	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Bromacil	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Carbaryl	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Carbofuran	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Chloroxuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Chlorpropham	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Diuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Fenuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Fluometuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Linuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Methiocarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Methomyl	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Mexacarbate	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Monuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Neburon	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Oxamyl	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Propachlor	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Propham	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Propoxur	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Siduron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Tebuthiuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Surrogate: Tributyl_phosphate	64.7	40-140	%	04/11/02	04/22/02
EPA 8321	Surrogate: Triphenyl_phosphate	65.9	40-140	%	04/11/02	04/22/02

Run #: >LW0420-82
Instrument: LCQ
Sequence: LW042002
Dilution Factor: 1
Initials: MP

Printed: 05/06/02 4:14:41 PM

Triazines in Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-2
Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31678
QCG: S619S-020411A-47002

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8141A	Ametryn	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Atrazine	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Simazine	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Velpar	Not detected	50	ug/kg	4/11/02	5/2/02
EPA 8141A	Surrogate: Tributylphosphate	92.4	51-137	%	4/11/02	5/2/02
EPA 8141A	Surrogate: Triphenylphosphate	87.2	45-146	%	4/11/02	5/2/02

Run #: 84,38
Instrument: NPD03
Sequence: 020422,501
Dilution Factor: 1
Initials: SA

Printed: 5/2/02 11:46:28 AM

EPA 8081A OCL Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-2
Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31678
QCG: S8081S-020411A-47510

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8081A	4,4'-DDE	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	4,4'-DDT	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	4,4'-TDE/DDD	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	a-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	a-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Aldrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	b-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	d-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Dieldrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan I	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan II	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endosulfan sulfate	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin aldehyde	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Endrin ketone	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	g-BHC (Lindane)	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	g-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Heptachlor	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Heptachlor epoxide	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Methoxychlor	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Oxyfluorfen	Not detected	50	ug/kg	4/11/02	4/12/02
EPA 8081A	Toxaphene	Not detected	1000	ug/kg	4/11/02	4/12/02
EPA 8081A	Surrogate: DECA	59.7	50-129	%	4/11/02	4/12/02
EPA 8081A	Surrogate: TCMX	85.5	50-112	%	4/11/02	4/12/02

Run #: 85, 167
Instrument: ECD03
Sequence: 020409,502
Dilution Factor: 1
Initials: DB

Printed: 5/7/02 4:13:11 PM

EPA 8151A Herbicides Soil

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-2
Sample Collection Date: 4/5/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31678
QCG: $8151S-020411A-47174

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8151	Pentachlorophenol	Not detected	40	ug/kg	4/11/02	4/12/02
EPA 8151	Surrogate: 2,4-DCAA	88.0	60-159	%	4/11/02	4/12/02

Run #: 120
Instrument: ECD01
Sequence: 020409
Dilution Factor: 1
Initials: DU

Printed: 4/29/02 4:09:02 PM

EPA 8321

TERRASANO LLC
72 DOWSETT AVENUE
HONOLULU, HI 96817

Attn: MARTY WALTERS
Project: 011-006
Sample ID: 011006-2
Sample Collection Date: 04/05/02

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 38047
APPL ID: AP31678
QCG: S8321S-041102A-47512

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8321	Aldicarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Aminocarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Barban	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Benomyl/Carbendazim	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Bromacil	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Carbaryl	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Carbofuran	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Chloroxuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Chlorpropham	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Diuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Fenuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Fluometuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Linuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Methiocarb	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Methomyl	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Mexacarbate	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Monuron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Neburon	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Oxamyl	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Propachlor	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Propham	Not detected	70	ug/kg	04/11/02	04/22/02
EPA 8321	Propoxur	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Siduron	Not detected	20	ug/kg	04/11/02	04/22/02
EPA 8321	Tebuthiuron	71.4	40-140	%	04/11/02	04/22/02
EPA 8321	Surrogate: Tributyl_phosphate	68.7	40-140	%	04/11/02	04/22/02
EPA 8321	Surrogate: Triphenyl_phosphate					

Run #: >LW0420-83
Instrument: LCQ
Sequence: LW042002
Dilution Factor: 1
Initials: MP

Printed: 05/06/02 4:14:41 PM

Method Blank
Triazines in Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **020411S - 47002**
Batch ID: $619S-020411A

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	Ametryn	Not detected	50	ug/kg	4/11/02	5/2/02
BLANK	Atrazine	Not detected	50	ug/kg	4/11/02	5/2/02
BLANK	Simazine	Not detected	50	ug/kg	4/11/02	5/2/02
BLANK	Velpar	Not detected	50	ug/kg	4/11/02	5/2/02
BLANK	Surrogate: Tributylphosphate	104	51-137	%	4/11/02	5/2/02
BLANK	Surrogate: Triphenylphosphate	99.8	45-146	%	4/11/02	5/2/02

Run #: 85,36
Instrument: NPD03
Sequence: 020422,501
Initials: SA

Printed: 5/2/02 11:46:23 AM

Laboratory Control Spike Recoveries
Triazines in Soil

APPL ID: 020411S-31677 LCS - 47002
Batch ID: S619S-020411A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ug/kg	SPK Result ug/kg	DUP Result ug/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Ametryn	83.3	79.6	74.9	95.6	89.9	35-135	6.1	30
Atrazine	83.3	92.2	93.2	111	112	30-232	1.1	30
Simazine	83.3	91.8	97.7	110	117	44-180	6.2	30
Surrogate: Tributylphosphate	167	164	166	98.2	99.4	51-137		
Surrogate: Triphenylphosphate	167	161	164	96.4	98.2	45-146		

Comments:

Primary	SPK	DUP
Extraction Date :	4/11/02	4/11/02
Analysis Date :	4/24/02	4/24/02
Instrument :	NPD03	NPD03
Run :	86,88	87,89
Analyst :	SA	

Printed: 5/2/02 11:46:18 AM

Method Blank
EPA 8081A OCL Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **020411S - 47510**
Batch ID: S8081S-020411A

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	4,4'-DDE	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	4,4'-DDT	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	4,4'-TDE/DDD	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	a-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	a-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Aldrin	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	b-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	d-BHC	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Dieldrin	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endosulfan I	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endosulfan II	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endosulfan sulfate	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endrin	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endrin aldehyde	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Endrin ketone	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	g-BHC (Lindane)	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	g-Chlordane	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Heptachlor	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Heptachlor epoxide	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Methoxychlor	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Oxyfluorfen	Not detected	50	ug/kg	4/11/02	4/12/02
BLANK	Toxaphene	Not detected	1000	ug/kg	4/11/02	4/12/02
BLANK	Surrogate: DECA	68.0	50-129	%	4/11/02	4/12/02
BLANK	Surrogate: TCMX	94.5	50-112	%	4/11/02	4/12/02

Run #: 81, 46
Instrument: ECD03,02
Sequence: 409,507
Initials: DB

Printed: 5/8/02 3:33:08 PM

Laboratory Control Spike Recoveries

EPA 8081A OCL Soil

APPL ID: 020411S-31677 LCS - 47510
Batch ID: S8081S-020411A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ug/kg	SPK Result ug/kg	DUP Result ug/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
4,4'-DDE	167	165	177	98.8	106	58-122	7.0	30
4,4'-DDT	167	70.0	80.6	41.9	48.3	29-128	14.1	30
4,4'-TDE/DDD	167	200	212	120	127 #	51-124	5.8	30
a-BHC	167	183	195	110	117	58-126	6.3	30
a-Chlordane	167	164	177	98.2	106	64-124	7.6	30
Aldrin	167	182	195	109	117	65-134	6.9	30
b-BHC	167	173	182	104	109	54-137	5.1	30
d-BHC	167	173	183	104	110	55-124	5.6	30
Dieldrin	167	175	187	105	112	45-126	6.6	30
Endosulfan I	167	170	182	102	109	61-125	6.8	30
Endosulfan II	167	161	175	96.4	105	59-119	8.3	30
Endosulfan sulfate	167	160	170	95.8	102	57-120	6.1	30
Endrin	167	160	168	95.8	101	43-124	4.9	30
Endrin aldehyde	167	189	177	113	106	57-134	6.6	30
Endrin ketone	167	137	148	82.0	88.6	55-125	7.7	30
g-BHC (Lindane)	167	162	171	97.0	102	57-123	5.4	30
g-Chlordane	167	158	167	94.6	100	63-120	5.5	30
Heptachlor	167	173	182	104	109	60-118	5.1	30
Heptachlor epoxide	167	175	186	105	111	60-124	6.1	30
Methoxychlor	167	94.6	107	56.6	64.1	36-128	12.3	30
Surrogate: DECA	167	122	124	73.1	74.3	50-129		
Surrogate: TCMX	167	164	165	98.2	98.8	50-112		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Extraction Date :	4/11/02	4/11/02
Analysis Date :	4/12/02	4/12/02
Instrument :	ecd03	ECD03
Run :	82	83
Analyst :	DB	

Printed: 5/6/02 4:24:49 PM

Method Blank
EPA 8151A Herbicides Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: 020411S - 47174
Batch ID: S8151S-020411A

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	Pentachlorophenol	Not detected	40	ug/kg	4/11/02	4/12/02
BLANK	Surrogate: 2,4-DCAA	77.6	60-159	%	4/11/02	4/12/02

Run #: 115
Instrument: ECD01
Sequence: 020409
Initials: DU

Printed: 4/29/02 4:08:58 PM

Laboratory Control Spike Recovery
EPA 8151A Herbicides Soil

APPL ID: **020411S-31677 LCS - 47174**
Batch ID: **S8151S-020411A**

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/kg	SPK Result ug/kg	SPK % Recovery	Recovery Limits
Pentachlorophenol	540	688	127	54-146
Surrogate: 2,4-DCAA	420	504	120	60-159

Comments:

Primary	SPK
Extraction Date :	4/11/02
Analysis Date :	4/12/02
Instrument :	ECD04
Run :	409116
Analyst :	DU

Printed: 5/7/02 4:38:47 PM

Matrix Spike Recoveries
EPA 8151A Herbicides Soil

APPL ID: 020411S-31677 MS - 47174
Batch ID: S8151S-020411A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ug/kg	Matrix Result ug/kg	SPK Result ug/kg	DUP Result ug/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Pentachlorophenol	540	ND	480	475	88.9	88.0	54-146	1.0	30
Surrogate: 2,4-DCAA	420	NA	537	543	128	129	60-159		

Comments:

Primary	SPK	DUP
Extraction Date :	4/11/02	4/11/02
Analysis Date :	4/12/02	4/12/02
Instrument :	ECD01	ECD01
Run :	409117	409118
Analyst :	DU	

Printed: 5/7/02 4:38:44 PM

Laboratory Control Spike Recovery
EPA 8321

APPL ID: 020411S-31678 LCS - 47512
Batch ID: S8321S-041102A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/kg	SPK Result ug/kg	SPK % Recovery	Recovery Limits
Aldicarb	33.3	28.0	84.1	7-132
Bromacil	66.7	63.8	95.7	31-134
Carbaryl	33.3	31.2	93.7	34-129
Carbofuran	33.3	31.1	93.4	39-119
Diuron	66.7	65.3	97.9	25-133
Fenuron	66.7	57.3	85.9	59-96
Fluometuron	66.7	60.7	91.0	28-147
Linuron	66.7	58.2	87.3	24-138
Methiocarb	33.3	32.9	98.8	2-134
Methomyl	33.3	30.0	90.1	33-113
Monuron	66.7	60.9	91.3	38-114
Neburon	66.7	53.2	79.8	21-143
Tebuthiuron	66.7	59.7	89.5	27-121
Surrogate: Tributyl_phosphate	66.7	58.2	87.3	40-140
Surrogate: Triphenyl_phosphate	66.7	57.9	86.8	40-140

Comments:

Primary	SPK
Extraction Date :	4/11/02
Analysis Date :	4/22/02
Instrument :	LCQ
Sequence :	LW042002
Run :	>LW0420-75
Analyst :	MP

Printed: 5/6/02 4:44:12 PM

Method Blank
EPA 8321

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **020411S - 47512**
Batch ID: S8321S-041102A

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	Aldicarb	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Aminocarb	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Barban	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Benomyl/Carbendazim	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Bromacil	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Carbaryl	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Carbofuran	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Chloroxuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Chlorpropham	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Diuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Fenuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Fluometuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Linuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Methiocarb	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Methomyl	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Mexacarbate	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Monuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Neburon	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Oxamyl	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Propachlor	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Propham	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Propoxur	Not detected	70	ug/kg	04/11/02	04/22/02
BLANK	Siduron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Tebuthiuron	Not detected	20	ug/kg	04/11/02	04/22/02
BLANK	Surrogate: Tributyl_phosphate	87.4	40-140	%	04/11/02	04/22/02
BLANK	Surrogate: Triphenyl_phosphate	85.8	40-140	%	04/11/02	04/22/02

Run #: >LW0420-81
Instrument: LCQ
Sequence: LW042002
Initials: MP

Printed: 05/06/02 4:14:39 PM

MAY 0 2 2002

NORTH COAST LABORATORIES LTD.

April 29, 2002

APPL, Inc.
4203 West Swift
Fresno, CA 93722

Attn: Glen Brown

RE: ARF:38047

Order No.: 0204484
Invoice No.: 24234
PO No.: 00-38047
ELAP No. 1247-Expires July 2002

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	AP31677
02A	AP31678

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

MAY 0 2 2002

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Matrix Spike Recoveries
EPA 8321

APPL ID: 020411S-31678 MS - 47512
Batch ID: S8321S-041102A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ug/kg	Matrix Result ug/kg	SPK Result ug/kg	DUP Result ug/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Aldicarb	33.3	ND	27.4	32.0	82.3	96.1	7-132	15.5	25
Bromacil	66.7	ND	49.8	65.3	74.7	97.9	31-134	26.9 #	25
Carbaryl	33.3	ND	29.6	31.1	88.9	93.4	34-129	4.9	25
Carbofuran	33.3	ND	26.4	30.2	79.3	90.7	39-119	13.4	25
Diuron	66.7	ND	53.4	63.7	80.1	95.5	25-133	17.6	25
Fenuron	66.7	ND	51.8	56.6	77.7	84.9	59-96	8.9	25
Fluometuron	66.7	ND	58.6	52.0	87.9	78.0	28-147	11.9	25
Linuron	66.7	ND	48.1	57.7	72.1	86.5	24-138	18.1	25
Methiocarb	33.3	ND	30.7	35.1	92.2	105	32-134	13.4	25
Methomyl	33.3	ND	25.6	28.4	76.9	85.3	33-113	10.4	25
Monuron	66.7	ND	50.2	54.3	75.3	81.4	38-114	7.8	25
Neburon	66.7	ND	45.8	58.4	68.7	87.6	21-143	24.2	25
Tebuthiuron	66.7	ND	53.7	56.8	80.5	85.2	27-121	5.6	25
Surrogate: Tributyl_phosphate	66.7	NA	47.7	49.6	71.5	74.4	40-140		
Surrogate: Triphenyl_phosphate	66.7	NA	47.6	48.5	71.4	72.7	40-140		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Extraction Date :	04/11/02	04/11/02
Analysis Date :	04/22/02	04/22/02
Instrument :	LCQ	LCQ
Run :	>LW0420-77	>LW0420-79
Analyst :	MP	

Printed: 05/06/02 4:14:33 PM

ANALYTICAL REPORT

Date: 29-Apr-02
WorkOrder: 0204484

Client Sample ID: AP31677
Lab ID: 0204484-01A

Received: 4/19/02 Collected: 4/5/02 0:00

Test Name: Paraquat

Reference: Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	4/19/02	4/25/02

Client Sample ID: AP31678
Lab ID: 0204484-02A

Received: 4/19/02 Collected: 4/5/02 0:00

Test Name: Paraquat

Reference: Chevron RM8-10

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Paraquat	ND	1.0	µg/g	1.0	4/19/02	4/25/02

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521 • 707-822-4649 • FAX 707-822-6831

North Coast Laboratories, Ltd.

Date: 29-Apr-02

CLIENT: APPL, Inc.
Work Order: 0204484
Project: ARF:38047

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID LCS-6258	Batch ID: 6258	Test Code: PARAQS	Units: µg/g	Analysis Date 4/25/02	Prep Date 4/19/02
Client ID:		Run ID: OLSPEC_020425A		SeqNo: 243954	

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	4.540	1.0	5.00	0	90.8%	64	99	0			

Sample ID LCSD-6258	Batch ID: 6258	Test Code: PARAQS	Units: µg/g	Analysis Date 4/25/02	Prep Date 4/19/02
Client ID:		Run ID: OLSPEC_020425A		SeqNo: 243955	

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	4.427	1.0	5.00	0	88.5%	64	99	4.54	2.52%	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 29-Apr-02

CLIENT: APPL, Inc.
Work Order: 0204484
Project: ARF:38047

QC SUMMARY REPORT
Method Blank

Sample ID MB-6258	Batch ID: 6258	Test Code: PARAQS	Units: µg/g	Analysis Date 4/25/02	Prep Date 4/19/02
Client ID:		Run ID: OLSPEC_020425A		SeqNo: 243953	

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Paraquat	ND	1.0									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

APPENDIX D
TRAFFIC ASSESSMENT REPORT
WAIEHU KOU, PHASE 3
Julian Ng, Incorporated

TRAFFIC ASSESSMENT REPORT

WAIEHU KOU, PHASE 3

WAIEHU, MAUI, HAWAII

prepared for:

Department of Hawaiian Home Lands

prepared by:

Julian Ng, Incorporated
P. O. Box 816
Kaneohe, Hawaii 96744

June, 2002

Table of Contents

Traffic Assessment Report
Waiehu Kou, Phase 3
Waiehu, Maui, Hawaii

June, 2002

The Department of Hawaiian Home Lands (DHHL) will be developing Phase 3 of the Waiehu Kou project north of Wailuku, Maui. The proposed project is the final phase of a community located between the Waiehu Heights Phase IV subdivision (Hoauna Street) and the village of Waihee. Exhibit 1 shows the location of the project, which would be situated between Kahekili Highway and the Waiehu Golf Course. The project will be designed by a developer to be selected by DHHL. Vehicular access to the project site would be from a single roadway intersecting with Kahekili Highway, a two-lane highway between Wailuku to the south and Waihee to the north; the highway is paved for approximately another 10 miles north of Waihee, in the vicinity of Kahakuloa.

A traffic assessment was conducted to evaluate the potential traffic impacts of the proposed project. Traffic impacts at the new intersection formed by the project roadway with Kahekili Highway were considered and measures to maintain acceptable conditions at the intersection are considered. In addition, the project's contribution to traffic growth at the intersection of Kahekili Highway and Waiehu Beach Road north of Wailuku was identified.

This report includes analyses of peak hour conditions on the highway and at unsignalized intersections. Operating conditions are described by Levels of Service (LOS), which are determined using analyses methods described in the *Highway Capacity Manual*[1]. On highway segments, traffic densities are related to levels of service; since only a short segment of two-lane highway is being evaluated, the criteria for multilane highways were used. At unsignalized intersections, the volumes of the uncontrolled movements affect the capacity available for the other movements that must yield or stop. The analyses of unsignalized intersections used the procedure from the *Highway Capacity Manual* to identify average delays and levels of service for each controlled movement. These Levels of Service (LOS) are defined using the letters A through F:

LOS	General Description	Highway density	Intersection delay
A	Little or no delay	≤ 11 cars/mile/lane	≤ 10 seconds
B	Short traffic delays	≤ 18 cars/mile/lane	> 10 and ≤ 15 seconds
C	Average traffic delays	≤ 26 cars/mile/lane	> 15 and ≤ 25 seconds
D	Long traffic delays	≤ 35 cars/mile/lane	> 25 and ≤ 35 seconds
E	Very long traffic delays	≤ 45 cars/mile/lane	> 35 and ≤ 50 seconds
F	Very long traffic delays	> 45 cars/mile/lane	> 50 seconds

1 Transportation Research Board, National Research Council, *Highway Capacity Manual*, Washington, D.C., 2000.

Existing Traffic Conditions

The project site is located approximately 2 miles north of Wailuku, adjacent to Kahekili Highway, an undivided State highway which is the only link between the communities of Waihee and Kahakuloa to the north and the Waiehu area just outside of Wailuku. Waiehu Beach Road, which intersects with Kahekili Highway approximately 0.7-mile south of the project site, connects to the lower Wailuku and Kahului areas of central Maui.

The *Traffic Summary, Island of Maui 1999* report published by the State Department of Transportation shows an average daily traffic (ADT) in 1999 of 4,359 vehicles per day (vpd) on Kahekili Highway between Waiehu Beach Road and Waihee Valley Road, a highway segment that is 2.21 miles long. Based on reported factors for peak hour traffic and directional distribution, the traffic volume during the AM Peak Hour (morning commute) peak hour is 350 vehicles per hour in each direction while PM Peak Hour (afternoon commute) peak hour traffic volumes are 250 vehicles per hour northbound and 205 vehicles per hour southbound.

Traffic counts are taken biannually by the State Highways Division near the project site. The daily volume had increased steadily from 1985 to 1997; the daily volumes subsequently recorded in 1999 and 2001 are lower than those recorded in 1997. The daily volumes from these counts are summarized in Table 1, along with the peak hour volumes recorded in 1999 and 2001.

Table 1
STATE TRAFFIC COUNT DATA
Kahekili Highway, 0.7 mile north of Waiehu Beach Road (Station C-3-A)

	southbound	northbound	total
November, 1985	1,354	1,336	2,680
July, 1987	1,526	1,534	3,060
May, 1989	1,557	1,524	3,081
May, 1991	1,771	1,802	3,573
June 1993	1,895	1,909	3,804
September 1995	2,271	2,223	4,494
April 1997	3,024	2,564	5,588
May 1999	2,831	2,705	5,536
AM Peak Hour (7:00-8:00 AM)	462	463	925
Early PM (1:45-2:45 PM)	321	263	584
PM Peak Hour (4:15-5:15 PM)	228	225	453
May 2001	2,674	2,541	5,215
AM Peak Hour (6:45-7:45 AM)	428	486	914
Early PM (1:15-2:15 PM)	393	256	649
PM Peak Hour (4:30-5:30 PM)	194	229	423

Source: State of Hawaii, Department of Transportation, Highways Division

As indicated in Table 1, the highest afternoon volumes in the area occur in the early afternoon, before the normal commuter period.

The State Highways Division has also taken approach and departure counts at the intersection of Kahekili Highway and Waiehu Beach Road. The daily volumes and the 2001 peak hour volumes from these counts are shown in Table 2. The morning peak hour occurred from 6:45 to 7:45 AM; the afternoon peak hour was 4:15-5:15 PM on the Waiehu Beach Road leg and 4:30-5:30 PM on Kahekili Highway.

Table 2
STATE TRAFFIC COUNT DATA
Station 3-E: Kahekili Highway and Waiehu Beach Road

	Kahekili Highway (north of intersection)		Kahekili Highway (south of intersection)		Waiehu Beach Road (east of intersection)	
	south-bound	north-bound	south-bound	north-bound	west-bound	east-bound
October, 1985	1,530	1,537	1,110	1,264	1,487	1,578
July, 1987	1,610	1,820	1,236	1,409	1,785	2,000
May, 1989	2,019	1,500	1,392	1,770	1,826	2,136
April, 1991	2,263	2,114	1,801	2,016	2,225	2,372
June 1993	2,649	2,651	1,633	1,776	2,332	2,280
September 1995	3,017	2,936	1,977	2,140	2,212	2,466
April 1997	3,510	3,865	1,829	2,132	2,565	2,850
May 1999	3,345	3,247	1,863	1,951	2,643	2,747
AM Peak Hour	543	455	272	230	305	358
1:45 – 2:45 PM	378	327	195	182	227	266
PM Peak Hour	237	281	110	212	227	260
May 2001	4,251	4,060	2,107	2,196	3,173	3,310
AM Peak Hour	661	504	293	249	340	392
1:45-2:45 PM	412	325	183	190	214	273
PM Peak Hour	285	391	189	210	345	251

Source: State of Hawaii, Department of Transportation, Highways Division

Future Traffic Conditions

The State Highways Division's estimates of average daily traffic (ADT) on Kahekili Highway (Waihee Valley Road to Waiehu Beach Road) for the odd-numbered years between 1987 and 1999 were evaluated to develop a growth rate based on a trendline. A regression of the daily traffic estimates show a close correlation with an annual growth (compounded) of 6.34%, as illustrated in Table 3. The most recent biannual traffic counts (1997, 1999, and 2001), however, indicate that the increase in traffic volumes on Kahekili Highway has leveled off. The average increase in daily traffic volume between 1997 and 1999 (the last two years available) was 1.6%.

Table 3
REGRESSION OF STATE TRAFFIC ESTIMATES

Kahekili Highway, between Waiehu Beach Road and Waihee Valley Road	Reported ADT *	Regression estimate	variance
1987	2,214	2,164	-2.3%
1989	2,401	2,447	1.9%
1991	2,757	2,767	0.0%
1993	2,988	3,129	4.7%
1995	3,641	3,538	-2.8%
1997	4,225	4,001	-5.3%
1999	4,359	4,524	3.8%
2005 (extrapolation)	--	6,540	--
2020 (extrapolation)	--	16,438	--

* Source: State Highways Division

The recent trend in traffic growth could be used to project the short-term increase in traffic volumes; for further into the future, however, a growth rate based on planning parameters would be preferred. The *Maui Long Range Land Transportation Plan* forecasted that the peak hour traffic volumes on Kahekili Highway and Waiehu Beach Road would increase as shown in Table 4. The average annual growth rates in peak hour traffic volumes, if annual compounding is considered, are approximately 2 percent on Kahekili Highway and 1.5 percent on Waiehu Beach Road.

Table 4
PROJECTED INCREASES IN HIGHWAY TRAFFIC

	AM Peak Hour			PM Peak Hour		
	1990 volume	2020 forecast	Increase 2020/1990	1990 volume	2020 forecast	Increase 2020/1990
Kahekili Highway, south of Waiehu Beach Road						
southbound	628	1,180	+88%	280	502	+79%
northbound	276	499	+81%	663	1,251	+89%
total (2-way)	904	1,679	+86%	943	1,753	+86%
Waiehu Beach Road, north of Iao Bridge						
eastbound	442	689	+56%	189	286	+51%
westbound	197	301	+53%	435	714	+64%
total (2-way)	639	990	+55%	624	1,000	+60%

Based on the foregoing, future traffic assignments for years 2005 and 2020 were developed by factoring the 2001 volumes for an average growth of 2% per year for four and 19 years, respectively. For 2020, traffic volumes on Kahekili Highway near the proposed project would be approximately 46% greater than existing. The additional peak hour traffic

volumes would be about 420 vehicles per hour in the AM Peak Hour, 300 vehicles per hour in the early afternoon, and 190 vehicles per hour in the PM Peak Hour.

The *Maui Long Range Land Transportation Plan* recommended highway improvements. The widening to four lanes, on Kahekili Highway between Waihee Valley Road and Waiehu Beach Road, and on Waiehu Beach Road between Kahekili Highway and Kahului Beach Road, are identified as improvements in the period 2006 to 2020.

Project Traffic

The proposed development consists of a residential subdivision to create 111 lots for single family dwellings. The traffic volumes generated by the single family dwellings were estimated using factors for detached dwelling units published by the Institute of Transportation Engineers[2], as shown in Table 5.

Table 5
PROJECT TRAFFIC GENERATION

	Trip generation factor, %In				AM Pk. Hr.		PM Pk. Hr.	
	AM Pk. Hr.		PM Pk. Hr.		enter	exit	enter	exit
111 detached DUs	0.75	25%	1.01	64%	21	62	72	40

The increase in traffic attributable to the project is a portion of the increase in traffic computed using the growth factors. The project traffic, therefore, is considered to have been included in the future forecast in the following analyses. The project impacts have been evaluated at the new intersection with Kahekili Highway and at the locations where the long-range plan provided forecasts of future traffic.

Traffic Distribution: The project traffic was distributed onto the roadway system using the distribution of traffic observed at the Phase 1 roadways during field counts taken for the Phase 2 traffic study. The traffic to the south was further distributed to Waiehu Beach Road or to Kahekili Highway south of Waiehu Beach Road using the field counts at that intersection. The distribution factors used for project traffic are shown in Table 6.

Table 6
PROJECT TRAFFIC DISTRIBUTION

	AM Peak Hour		PM Peak Hour	
	entering	exiting	entering	exiting
Kahekili Highway, north (Waihee)	11%	15%	12%	21%
Kahekili Highway, south (Wailuku)	58%	55%	61%	53%
Waiehu Beach Road, south (Kahului)	31%	30%	27%	26%

2 Institute of Transportation Engineers, *Trip Generation - 6th Edition*, Washington, D.C., 1997.

Overall Project Impact: The highest volume of traffic generated by the proposed project in one direction is 72 vehicles per hour entering during the PM Peak Hour. As indicated in the section on Traffic Distribution, a portion of this traffic will arrive from the north. The project's maximum impact on traffic, therefore, would be 63 vehicles per hour along Kahekili Highway. This volume compares with the suggested criteria[3] of "100 or more added (new) peak direction trips to or from the site during the ... peak hour" for conducting a traffic impact study.

Project Traffic Compared to Total Traffic: The traffic estimates for the proposed project were also compared to the growth and the forecasted future traffic at two locations that were considered in the long-range plan. As shown in Table 7, project traffic is only a small portion of the expected growth and would be less than 4% of the forecasted volumes.

Table 7
PROJECT TRAFFIC COMPARED WITH HIGHWAY TRAFFIC

	1990 volume	2020 forecast	Project volume	Project Traffic, % of growth	Project Traffic, % of forecast
Kahekili Highway, south of Waiehu Beach Road					
AM Peak Hour					
southbound	628	1,180	34	6.2%	2.9%
northbound	276	499	12	5.4%	2.4%
total (2-way)	904	1,679	46	5.9%	2.7%
PM Peak Hour					
southbound	280	502	19	8.6%	3.8%
northbound	663	1,251	44	7.5%	3.5%
total (2-way)	943	1,753	63	7.8%	3.6%
Waiehu Beach Road, north of Iao Bridge					
AM Peak Hour					
southbound	442	689	19	7.7%	2.8%
northbound	197	301	7	6.7%	2.3%
total (2-way)	639	990	26	7.4%	2.6%
PM Peak Hour					
southbound	189	286	10	10.3%	3.5%
northbound	435	714	19	6.8%	2.7%
total (2-way)	624	1,000	29	7.7%	2.9%

Traffic assignments and capacity analyses: The project traffic estimates were combined with the future baseline traffic projections. The future with project traffic assignments are shown in Exhibit 2 (the volumes for the "PM Peak Hour" in the exhibit and in the following text discussions are based on the higher volumes that occur before the commuter peak period). The results of the intersection analyses are shown in Table 8.

3 Institute of Transportation Engineers, *Traffic Access and Impact Studies for Site Development – A Recommended Practice*, Washington, D.C., 1991.

Table 8
FUTURE INTERSECTION CONDITIONS AT PROJECT ROAD

	AM Peak Hour		PM Peak Hour	
	Delay *	LOS	Delay *	LOS
Simple connection to highway				
Year 2005				
southbound left turn	8.8	A	8.0	A
westbound shared lane (project road)	25.8	D	15.7	C
Year 2020				
southbound left turn	9.5	A	8.3	A
westbound shared lane (project road)	52.8	F	21.1	C
Mitigated with median lane on highway				
Year 2005 (with median lane on highway)				
southbound left turn	8.8	A	8.0	A
westbound shared lane (project road)	16.9	C	13.1	B
Year 2020 (with median lane on highway)				
southbound left turn	9.5	A	8.3	A
westbound shared lane (project road)	22.2	C	15.3	C

* average delay per vehicle, in seconds

The analyses indicate acceptable delays (LOS D or better for urban condition) at the intersection for peak hour traffic volumes in year 2005. Increased traffic volumes on the highway by the year 2020, however, would cause increased delays for traffic on the project roadway wishing to enter the highway during the AM Peak Hour. If a median lane is provided on the highway for left turns (similar to the improvements made at Na Wai'eha Place (the Waiehu Kou Phase 2 access road), the delays for traffic on the Phase 3 project road would decrease to acceptable levels. Only minimal delays on the highway would be caused by southbound vehicles waiting to turn left into the project roadway(s) against the oncoming northbound traffic in either the AM or the PM peak hours.

The two-lane Kahekili Highway fronting the site will continue to be adequate as indicated by the highway levels of service shown in Table 9.

Table 9
FUTURE HIGHWAY CONDITIONS

Density * (LOS)		AM Peak Hour		PM Peak Hour	
Direction of Travel:		southbound	northbound	southbound	northbound
Year 2005:	north of project road	16.3 (B)	18.4 (C)	15.1 (B)	8.8 (A)
	south of project road	18.1 (B)	18.7 (C)	15.7 (B)	10.7 (A)
Year 2020:	north of project road	21.9 (C)	24.7 (C)	20.3 (C)	12.1 (B)
	south of project road	23.7 (C)	25.1 (C)	21.1 (C)	14.1 (B)

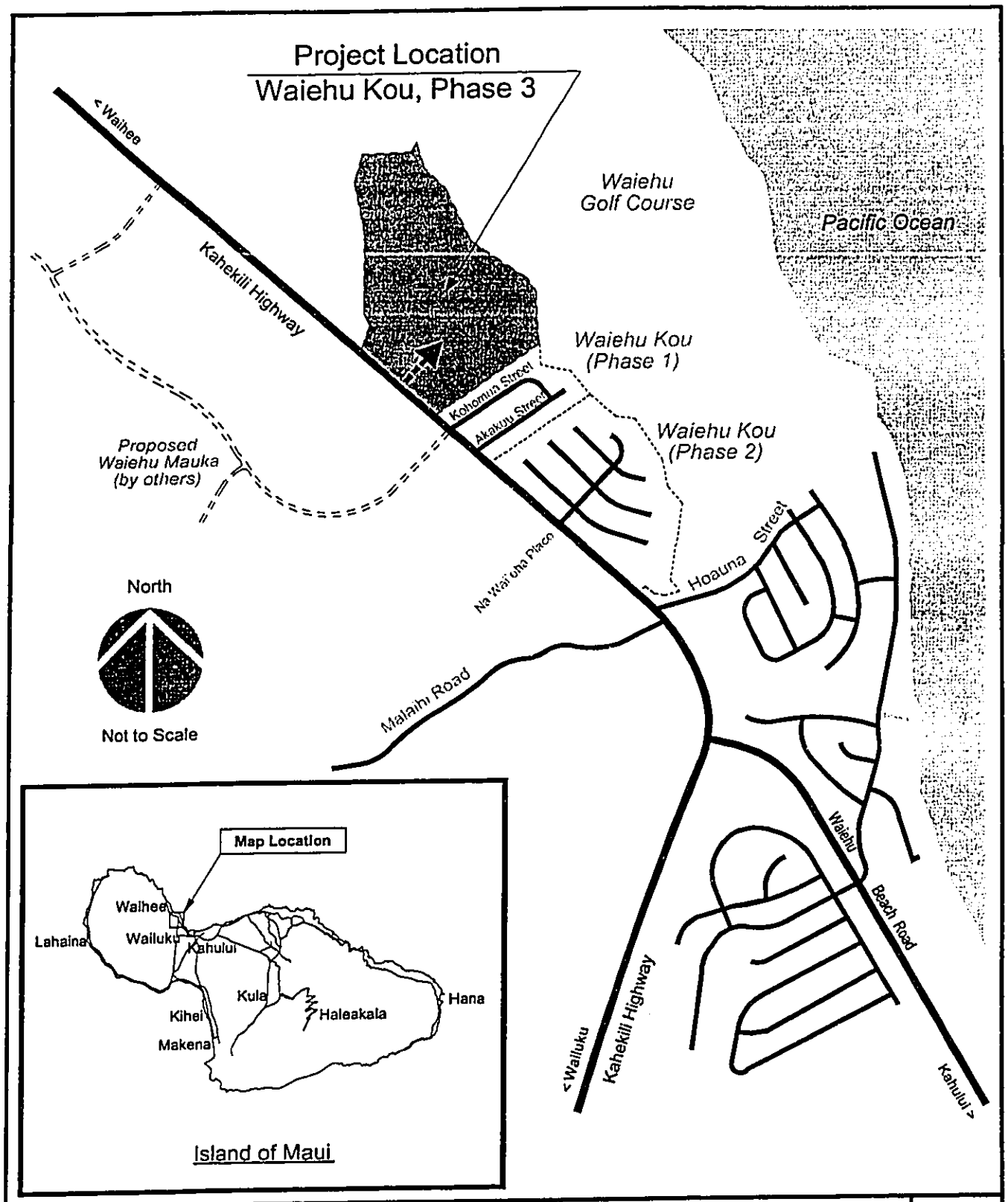
* average traffic density at 30 miles per hour, in passenger cars/mile/lane

Conclusions and Recommendations

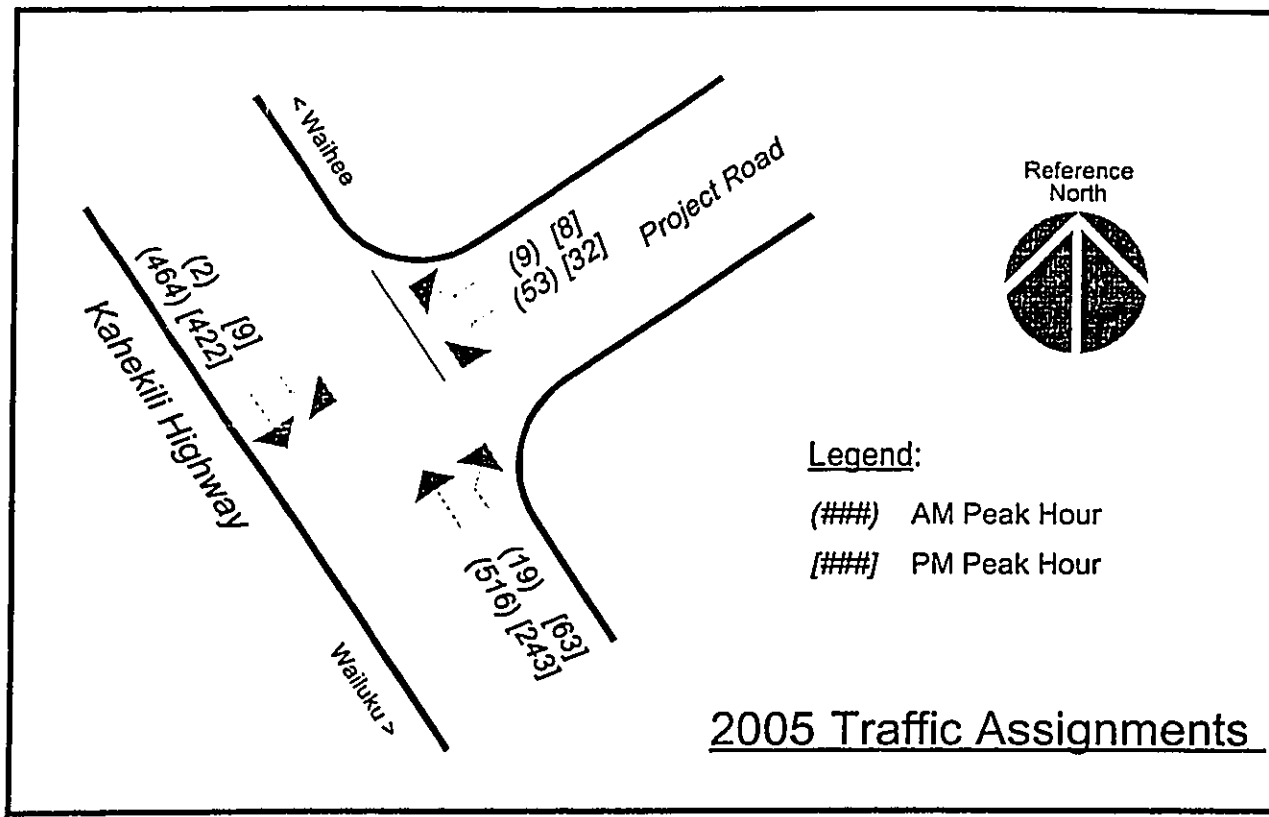
The proposed project is located in an area which presently has little traffic congestion. With an average 2% per annum growth in traffic volumes (as indicated by traffic forecasts shown in the long-range land transportation plan for the island), traffic conditions in the vicinity of the proposed project would generally continue to be acceptable to year 2020. Project traffic will only be a small portion of the total future traffic volume in the area. The primary impact of the project would be the introduction of a new unsignalized intersection on Kahekili Highway.

A single access road will be adequate for the traffic generated by the proposed project. A stop sign for traffic from the project would control the intersection. In the short term, the intersection will operate well, with some acceptable delays to traffic. However, the expected increases in highway volumes could eventually result in very long delays for project vehicles wishing to enter the highway during the morning peak hour if drivers need to seek a gap in both northbound and southbound traffic. The addition of a median lane on the highway for left turns would permit a two-stage left turn movement from the project road, reducing the delays due to the stop sign to acceptable levels.

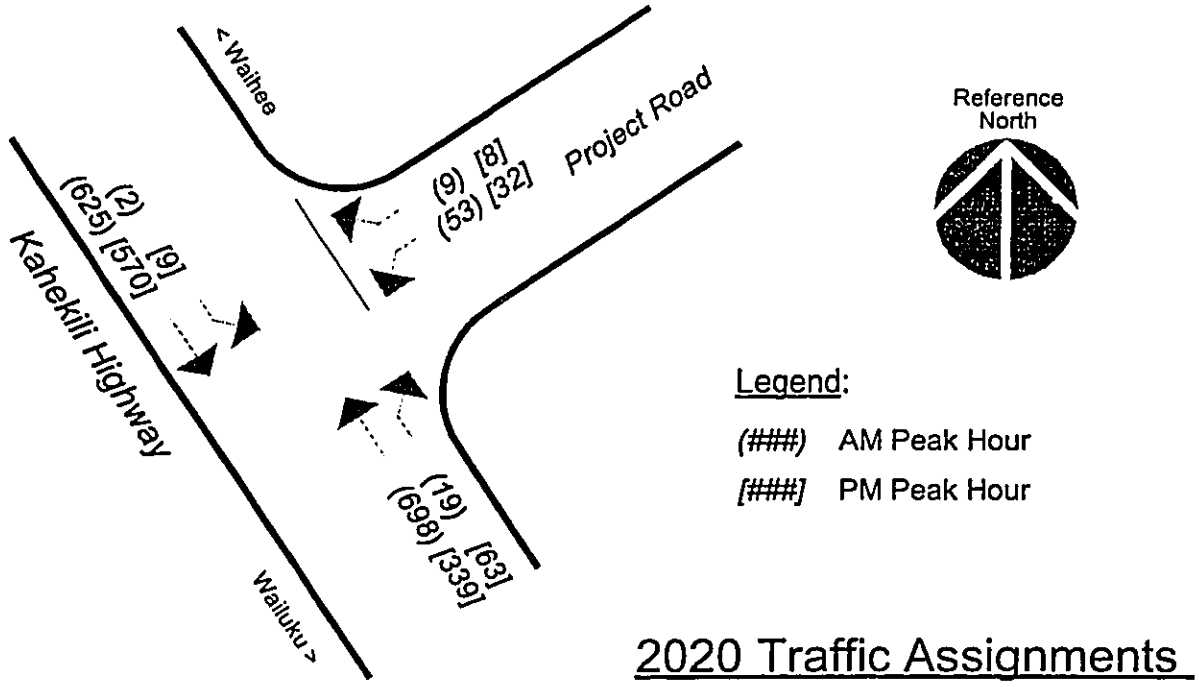
The project roadway should be located as far north as possible in order to maximize the distance between it and the existing intersection of Kahekili Highway and Kohomua Street (a roadway serving a proposed subdivision on the opposite side of the highway would add a fourth leg to the existing "T"-intersection at Kohomua Street). The roadside should be cleared to provide adequate intersection sight distances.



Traffic Assessment Report Waiehu Kou, Phase 3 prepared for: Department of Hawaiian Home Lands prepared by: Julian Ng, Incorporated June, 2002	PROJECT LOCATION Waiehu, Maui	Exhibit 1 Not to Scale



2005 Traffic Assignments



2020 Traffic Assignments

Traffic Assessment Report Waiehu Kou, Phase 3 prepared for: Department of Hawaiian Home Lands prepared by: Julian Ng, Incorporated June, 2002	FUTURE TRAFFIC AM & PM PEAK HOURS	Exhibit 2 Not to Scale

APPENDIX E
COPIES OF CORRESPONDENCE

TOWNSCAPE, INC.
Environmental and Community Planning
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813
Phone: (808) 536-6999 * Fax: (808) 524-4998
e-mail address: townscap@lava.net

MEMORANDUM NO. 2
Waiehu Kou Phase 3 – Supplemental Environmental Assessment

Date: June 19, 2002
To: Stewart Matsunaga
From: Kevin Polloi
Re: June 18 Meeting with Maui State Historic Preservation Division (SHPD)
Present: Stewart Matsunaga, DHHL; Melissa Kirkendall Maui SHPD; Joanne Hiramatsu; TSI and Kevin Polloi; TSI

Summary

- SHPD explained its problems with the archaeological inventory survey report prepared by Archaeological Services Hawaii, LLC (ASH) and Jeffrey Pantaleo Consultants, LLC (JPC) for Dowling Company, Inc. There is no need for additional trenching work, however the report must be revised.

Issues

Background information not adequate – The report refers the reader to the past report prepared by Xamanek Researches. At a minimum, the Xamanek report needs to be summarized in the report prepared for the Waiehu Kou Phase 3 site.

Trench 5 in Phase 3b – While the trench is outside the area of impact from the development, the report's conclusion that the feature found is a probable burial pit is questionable. The lack of remnants of human remains inside the pit as well as the intactness of the soil layers (meaning that the site has not been previously disturbed) makes such an assumption debatable. Resolution of this matter is needed.

Radiocarbon dating – The radiocarbon dating results of the charcoal fragment sent to Beta Analytic Inc. was still pending when the report was published. These results must be incorporated into the report as it assists in the clarification of the unresolved Trench 5 findings.

SHPD found the document to be "hasty" and should be written in a more standardized fashion. There was no inclusion of a table of contents.

Waterline Installation Project

Maui SHPD's preference is for the inventory survey to be in the form of monitoring during construction whereby an archaeologist would monitor the excavation work at all times. TSI indicated that an archaeological inventory survey was performed for the previously installed

24-inch waterline. SHPD was unaware of such a study. TSI will check with the County Water Department to find out if archaeological resources were uncovered during the construction of the 24-inch waterline.

Next Steps

- TSI to contact SHPD Honolulu office for a copy of the monitoring report/ inventory survey for the county waterline installation project.

TOWNSCAPE, INC.
Environmental and Community Planning
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813
Phone: (808) 536-6999 * Fax: (808) 524-4998
e-mail address: townscap@lava.net

MEMORANDUM NO. 3
Waiehu Kou Phase 3 – Supplemental Environmental Assessment

Date:	June 19, 2002
To:	Stewart Matsunaga
From:	Kevin Polloi
Re:	June 18 Meeting with County of Maui Departments of Planning, Water & Wastewater
Present:	Stewart Matsunaga, DHHL; Colleen Tsuyama, Planning; Tracy Takamine, Wastewater Reclamation Division (WRD); Mike Miyamoto, WRD; Scott Rollins, WRD; Myles Fujinaka, DOW, Joanne Hiramatsu; TSI and Kevin Polloi; TSI

Department of Water (DOW)

- Regarding the water line project, the northern section will connect to a 12" line, while the southern section will connect to an 8" line.
- Excavation work for the waterline project has to be done at least 4 feet away from existing waterline.
- The area north of Waihee Valley Road is farther from the sand dunes so there is less chance of encountering burials. Prior work in the same area did not unearth burials.
- DOW submitted a monitoring report/ inventory survey for the project. This should be available at the Honolulu SHPD office.
- DOW mentioned the probability of a 50% refund for the installation project rather than giving credits. Credit option is harder due to tedious bookkeeping requirements.

Wastewater Reclamation Division (WRD)

- WRD has had problems in the past with too much grease in the system. There has been an educational campaign to Phase 2 residents regarding dumping grease and other household wastes into the sewer system; however, the effectiveness of the campaign still needs to be determined.
- WRD is not in favor of another sewer pump station.
- DHHL explained that the topography and the locations of burials are preventing Phase 3 from connecting to the existing pump station in Phase 1.
- Phase 1 lots are delinquent in connecting to the sewage system. Currently the houses are using septic systems. DHHL clarified that the Phase 1 residents were given a grant to build their septic systems. This was done so that the residents do not have to pay for sewage facilities improvement twice once the pump station comes on line. Now that the pump station is in operation, it is the residents' responsibility to tie-in to the system. Therefore, WRD should contact the residents directly.

- The capacity of the Wailuku-Kahului Wastewater Reclammation facility is 7.9 mgd. It is currently treating approximately 5.5 million gallons of wastewater per day. Thus, the facility can accommodate the Phase 3 project.

Department of Planning

- DHHL needs to have a more comprehensive approach for better planning.
- Clarification was given to the terms detention and retention for the drainage system. **Detention** – Keeps all stormwater (closed system); **Retention** – Regulated flow

Next Steps

- TSI to contact SHPD Honolulu office for a copy of the monitoring report/ inventory survey for the county waterline installation project.
- DHHL, DOW, ATA and Unemori to meet regarding design plans for waterline installation.

TOWNSCAPE, INC.
Environmental and Community Planning
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813
Phone: (808) 536-6999 * Fax: (808) 524-4998
e-mail address: townscap@lava.net

MEMORANDUM NO. 4
Waiehu Kou Phase 3 – Supplemental Environmental Assessment

Date: June 19, 2002
To: Stewart Matsunaga
From: Kevin Polloi
Re: June 18 Community Meeting @ Paukukalo Community Center
Present: Stewart Matsunaga, DHHL
Mei Lee Wong, Dowling Company, Inc.
Hannah Book, Waiehu Kou – Phase 1
Kalani Tassill, Paukukalo
Lehua Clubb, Waiehu Kou
Blossom Feiteira, Hui Kako`o
Kehau Filimoe`atu, Hawaiian Community Assets
Clyde Kahalehau, Paukukalo
Joanne Hiramatsu, TSI
Kevin Polloi, TSI

The purpose of this meeting was to inform the community of the inclusion of additional lands to the Phase 3 project and the need for a supplemental environmental assessment.

Items Presented

- With the addition of land to the Phase 3, the project now consists of 111 single-family lots with 75 turnkey and 36 empty lots.
- Developer for the project is Dowling Company.
- Three of the house plans constructed for the Phase 2 project will be used for Phase 3. Prices will range between $99,000 to $169,000.
- An archaeological inventory survey was performed on the site.
- Botanist was in the field and we are awaiting the report.
- Biologist will be in the field next week
- Soil analysis was also performed. No harmful toxins were present in the soil

Comments or Concerns

- Current traffic conditions near schools should be addressed.
- Hawaiian families, on average usually have more children. What are the implications of added school children to existing schools that are already over capacity? New residents for Phase 3 may already live in Maui, so it doesn't necessarily mean an increase in the number of residents and school children. Only two residents of the Phase 2 project relocated to the island of Maui. All other residents resided on Maui.

- TSI should talk to the education personnel (principals) regarding impacts. (TSI has contacted DOE regarding impacts to schools.)
- Community center should be included as part of the Phase 3 project. Paukukalo Community Center is located nearby. Inclusion of a community center will mean that several lots will be eliminated for residential use. There are still over 2,700 applicants on the Maui waiting list.
- A park area should be included in the project. There are already parks in Phase 2, Paukukalo and Waihee. Also, the northwest portion of Phase 3 will be left open for a passive park.
- Procedure for awarding of lots not clear. (DHHL, Dowling and HCA will meet at a later time to resolve this issue).
- Self-help process was unclear. Dowling is currently working on possible self-help arrangements.

Next Steps

- DHHL, Dowling and Hui Kako`o to meet regarding awarding of lots and self-help options.

TOWNSCAPE, INC.
Environmental and Community Planning
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813
Phone: (808) 536-6999 * Fax: (808) 524-4998
e-mail address: townscap@lava.net

July 9, 2002

Mr. Sanford Beppu
CIP Planner
Department of Education
Facilities Support Services Branch/ OBS
809 8th Avenue
Honolulu, HI 96816

Dear Mr. Beppu:

Subject: Waiehu Kou Phase 3 Supplemental Environmental Assessment

We are writing to you in regards to our phone conversation on the Supplemental Environmental Assessment (EA) for the Waiehu Kou Phase 3 Project. This is Department of Hawaiian Home Lands (DHHL) project located in Waiehu, Maui.

Townscape, Inc. has been contracted by DHHL to prepare the Supplemental EA for the project. Impacts from the proposed development, including impacts to educational facilities need to be assessed in the EA.

The original Phase 3 project proposed to develop approximately 60 single-family lots for native Hawaiian beneficiaries. The Final Environmental Assessment for the original project was submitted and issued a Finding of No Significant Impact (FONSI) in April 2002.

However, the acquisition of additional land adjacent to the Phase 3 site by DHHL has enabled the project to expand in scope. The amended Phase 3 project now consists of approximately 111 single-family lots; an addition of 51 lots.

Our inquiries had to do with the potential number of students produced by this project, current enrollment and the capacity of the affected schools in the area, specifically Waihee Elementary, Iao Intermediate and Baldwin High School. Finally, we wanted to know if there were any facilities improvement projects being planned for these schools.

The following were the responses to our inquiries:

- 111 single-family lots would produce approximately 30 - 45 elementary students, 12 – 17 intermediate students and 12 – 17 high school students.
- Current capacities for the schools are: Waihee Elementary, 733 students; Iao Intermediate, 806 students; and Baldwin, 1660 students.

Mr. Sanford Beppu
July 9, 2002

- 2001 enrollment for the schools was: Waihee Elementary, 877 students; Iao Intermediate, 842 students; and Baldwin, 1693 students.
- For Waihee Elementary, a new library has been built and will open this year. A new classroom is also under construction.
- For Iao Intermediate, a master plan is in progress.
- At Baldwin High School, 8 classrooms are planned depending on availability of funds.

If you have any questions, please contact the undersigned.

Thank you for your assistance.

Sincerely,

Kevin Polloi
Staff Planner

APPENDIX F
COPIES OF COMMENT LETTERS AND RESPONSES

JAMES "KIMO" APANA
Mayor

FLOYD S. MIYAZONO
Director

GLENN T. CORREA
Deputy Director

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

DEPARTMENT OF PARKS & RECREATION

1580-C Kaahumanu Avenue, Wailuku, Hawaii 96793

August 1, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Homes Lands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Matsunaga:

SUBJECT: WAIEHU KOU PHASE 3

Thank you for the opportunity to review the Draft Supplemental Environmental Assessment for the subject project. We have no comments to submit at this time.

If there are any questions, please contact me or Mr. Patrick Matsui, Chief of Parks Planning and Development, at (808) 270-7387.

Sincerely,

FLOYD S. MIYAZONO
Director

c: Patrick Matsui, Chief of Planning and Development
OEQC
Joanne Hiramatsu, Townscape Inc.

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

The Honorable Floyd S. Miyazono
Department of Parks and Recreation
County of Maui
1580-C Kaahumanu Avenue
Wailuku, Hawaii 96793

Dear Mr. Miyazono:

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003

Thank you for your comments on the Draft Supplemental Environmental Assessment dated July 2002 for the subject project. We appreciate your agency's review of the document and participation in the environmental review process.

Should you have any questions, contact me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

August 7, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Matsunaga:

RE: Supplemental Draft Environmental Assessment (EA) for the Propose Waiehu Kou Phase 3 Project at TMK 3-2-013:009 and 3-2-012:003, Waihee, Maui, Hawaii

We have reviewed the Supplemental Draft EA and have the following comment:

1. The Supplemental Draft EA states that the proposed subdivision will be located outside of the Flood Hazard Zone. However, it appears by reviewing the Flood Hazard Map with the Subdivision layout that portions of the proposed lots and drainage retention basin are within the Flood Zones. The boundaries of the Flood Zones should be identified on the Subdivision layout plan to ensure that the development is located outside of the Flood Zone areas.

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

Very truly yours,

JOHN E. MIN
Planning Director

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

Quality Seamless Service - Now and for the Future

JEM:CMS:tlm
c: Clayton I. Yoshida, AICP, Deputy Planning Director
Colleen M. Suyama, Staff Planner
Joanne Hiramatsu, Townscape, Inc.
OEQC
Project File
General File
(K:\WP_DOCS\PLANNING\EA\2002\WaiehuKou3Supple.wpd)

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

The Honorable John E. Min
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Min:

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003

Thank you for your comment on the Draft Supplemental Environmental Assessment dated July 2002 for Waiehu Kou Phase 3.

The engineers designing this project, Austin Tsutsumi & Associates, coordinated with Mr. Francis Cerizo of the Maui Planning Department to overlay the Flood Zone boundaries on the subject property. The Flood Zone boundaries will be shown on the Subdivision layout plan when it is submitted for review and approval.

Should you have any questions, please contact me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission

BENJAMIN J. CAYETANO
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

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

OFFICE OF BUSINESS SERVICES

August 15, 2002

MEMO TO: Mr. Steward Matsunaga, Project Manager
Land Development Division
Department of Hawaiian Home Lands

F R O M: Rayne M. Minami, Director
Facilities and Support Services Branch

SUBJECT: Waiehu Kou Phase 3
Supplemental Environmental Assessment
TMK: 3-2-13:09 & 3-2-12:03

The Department of Education (DOE) has reviewed the Supplemental Environmental Assessment (EA) for the Waiehu Kou Phase 3 residential project. The project has been expanded by an additional 20.78 acres and the number of single-family residential lots has increased from 60 to 111. Total size of the project will now be 43.21 acres.

The EA states that Waiehu Kou Phase 3 will have a population of roughly 333 people when completed, including somewhere between 54 and 79 school children. In the EA you acknowledged that the children of Phase 3 will be attending schools that are already operating over capacity. The report also mentions that during the community meetings, residents of the area expressed concern about the impact of the project's increased population on already overcrowded schools. Your only response is that many of the new residents of Phase 3 may already be Maui residents so the project's impact on the schools might be less than expected.

The DOE's concern is that the students will be attending schools with strained staff and facilities. Further, although they may already be Maui residents, the shift in population to Waiehu Kou concentrates the enrollment on Waihe`e Elementary, Iao Middle, and Baldwin High.

The DOE requests that the Department of Hawaiian Home Lands (DHHL) participate in mitigating the impact of building a total of 248 homes in the three phases of Waiehu Kou by constructing one or more portable classrooms at one of the schools that serve Waiehu Kou. DHHL's donation would make a significant contribution towards the quality of education available for the youngest members of its new homestead community.

Should you have any questions, please call Ms. Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Thank you.

RMM:HM:hy

cc: Patricia Hamamoto, Superintendent
Alfred K. Suga, OBS
Genevieve Salmonson, OEQC
Joanne Hiramatsu, Townscape, Inc.

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

To: The Honorable Patricia Hamamoto
Superintendent
Department of Education

Attn: Raynor M. Minami, Director
Facilities and Support Services Branch

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003

Thank you for your comments on the Draft Supplemental Environmental Assessment dated July 2002 for Waiehu Kou Phase 3. The Department of Hawaiian Home Lands will coordinate with the Department of Education to discuss possible mitigating actions to address increase in the student population generated from the Waiehu Kou development.

Should you have any questions, please call me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

BENJAMIN J. CAYETANO
GOVERNOR

BRIAN K. MINAAI
DIRECTOR

DEPUTY DIRECTORS
JEAN L. OSHITA
JADINE Y. URASAKI

Aug 19 10 51 AM '02

IN REPLY REFER TO:

HWY-M2.243-02

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAUI DISTRICT
650 PALAPALA DRIVE
KAHULUI, HAWAII 96732

August 16, 2002

MEMORANDUM

TO: **Stewart Matsunaga**
Department of Hawaiian Home Lands

FROM: **Paul M. Chung**
State Highways

SUBJECT: ***Waiehu Kou – Phase 3***
ME 01-67

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Assessment for the subject project. Based upon our review we have no comments to offer at this time, however, the recommendations of the Traffic Impact Analysis Report should be followed.

If there are any questions or concerns, please call me at 873-3535.

/pmc

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

To: The Honorable Brian K. Minaai
Director
Department of Transportation

Attn: Paul Chung, Highways Division
Maui District

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-12:003
Ref: HWY-M2.243-02

Thank you for your comments on the Draft Supplemental Environmental Assessment dated July 2002 for Waiehu Kou Phase 3. The Department of Hawaiian Home Lands will follow the recommendations of the Traffic Impact Analysis Report.

Should you have any questions, please call me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

PHONE (808) 594-1888

FAX (808) 594-1865

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

HRD 02-452B

Date: August 20, 2002

To: Mr. Stewart Matsunaga
State of Hawaii
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Native Hawaiian Housing
Wailuku, Maui, Hawaii

TMK: (2) 3-2-13: 00 & (2) 3-2-12:03

Dear Mr. Matsunaga:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Assessment for Waiehu Kou Phase 3.

At this time, the Office of Hawaiian Affairs has no comments on the above cited draft supplemental environmental assessment.

If you have further questions, please contact Aulani Apoliona in OHA's Hawaiian Rights Division at 594-1962.

Sincerely,

Jalna Keala

Jalna Keala
Acting Hawaiian Rights Director

cc: ADM
BOT
County of Maui, Dept of Planning

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

Mr. Clyde Namuo
Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Namuo:

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-13:009 & 3-2-012:003
HRD 02-452B

Thank you for comments on the Draft Supplemental Environmental Assessment (EA) dated July 2002 for Waiehu Kou Phase 3. We appreciate your agency's review of the document and participation in the environmental review process.

Should you have any questions, contact me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7199

August 26, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Homelands
PO Box 1879
Honolulu, Hawaii 96805

SUBJECT: Waiheu Kou Phase 3
TMK 3-2-13:009 & 3-2-12:003

Dear Mr. Matsunaga,

Thank you for the opportunity to provide comments on this Draft Supplemental Environmental Assessment (EA). Please find attached our comment letter of February 4, 2002 to the Draft EA. We provide the following additional comments:

System improvements, including distribution line sizes will be determined in the subdivision review process.

Based on system per-unit standards, water use for the proposed 111 lots when built out would be about 66,600 gallons per day (gpd, and could be as high as 98,300 gpd based on system per-acre standards.

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

Sincerely,

David Craddick
Director
emb

cc: Office of Environmental Quality Control
Townscape, Inc.
engineering division

C:\WPdocs\EAs EISs\Waiehu Kou Ph 3 DEA Supp.wpd

By Water All Things Find Life

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109
Telephone (808) 270-7816 • Fax (808) 270-7199

February 4, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Homelands
PO Box 1879
Honolulu, Hawaii 96805

SUBJECT: Waiheu Kou Phase 3
TMK 3-2-13:009

Dear Mr. Matsunaga,

Thank you for the opportunity to provide comments on this Draft Environmental Assessment (DEA).

The DEA should include the sources and expected potable and non-potable water usage. This project area is served by the Central Maui System. The major source of water for this system is the Iao and Waihee aquifers. Rolling annual average groundwater withdrawals from the Iao Aquifer as of January 1, 2002 were 17.540 MGD and from Waihee 3.977 MGD.. The regulatory sustainable yield of the Iao aquifer is 20 MGD. If rolling annual average withdrawals exceed 20 MGD, the State Commission on Water Resource Management will designate the aquifer. The Department is implementing a plan to bring new sources on-line and to mitigate withdrawals. Two wells in North Waihee were brought on-line in July 1997 and another two adjacent wells were brought on-line during 2001.

The applicant will be required to provide water service and fire protection to standards. Since the applicant has participated in storage to serve this project, only the source and transmission portions of the water system development fee (WSDF) will be assessed.The applicant will need to connect the North Waihee source to the Waihee 12-inch transmission line. System improvements will be further determined in subdivision review.

As much of the water demand as possible should be delivered from non-potable sources (reclaimed or brackish). Where appropriate, the applicants should consider these measures:
Use Climate-adapted Plants: The project site is located in "Maui County Planting Plan" - Plant Zones 4 and 5. Please refer to the "Maui County Planting Plan", and to the attached document. We encourage the applicants to use climate-adapted and salt-tolerant native plants in landscaping of common areas. Native plants adapted to the area, conserve water and further protect the watershed from degradation due to invasive alien species.
Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20.675 requires the use of low flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs.
Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip". The applicant should establish a regular maintenance program.
Prevent Over-Watering By Automated Systems: For all landscaping, provide rain-sensors on all automated

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

The Honorable David R. Craddick
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Hawaii 96793-7109

Dear Mr. Craddick:

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003

Thank you for your comments on the Draft Supplemental Environmental Assessment (EA) dated July 2002 for Waiehu Kou Phase 3. We appreciate your review of the document. The Final Supplemental EA will be revised to reflect the information you provided on water usage and system improvements.

Should you have any questions, contact me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

SEP 3 10 58 AM '02

In reply, please refer to:
File:

02-194/epo

August 27, 2002

Mr. Steward Matsunaga
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Matsunaga:

Subject: Draft Environmental Assessment (DEA) Supplemental
Waiehu Kou Phase 3, Waiehu, Maui
Tax Map Keys: 3-2-013:009 & 3-2-012: 003

Thank you for the opportunity to review and comment on the subject proposal. The Supplemental DEA was routed to the various branches of the Environmental Health Administration. We have the following comments.

Clean Water Branch (CWB)

1. The applicant should contact the Army Corps of Engineers to identify whether a federal permit (including a Department of Army permit) is required for this project. A Section 401 Water Quality Certification is required for "Any applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...", pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act");

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following discharges to waters of the State:

    a. Discharge of storm water runoff associated with industrial activities, as define in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi);

    b. Discharge of storm water runoff associated with construction activities that involve the disturbance of five (5) acres or greater, including clearing, grading, and excavation;

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

d. Discharge of once through cooling water less than one million gallons per day;

e. Discharge of hydro-testing water;

f. Discharge of construction dewatering effluent;

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

h. Discharge of treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department of Health, Clean Water Branch (CWB) at least thirty (30) days prior to commencement of any discharges to State waters;

3. If construction activities involve the disturbance of one acre or greater, including clearing, grading, and excavation, and will take place or extend after March 10, 2003, an NPDES general permit coverage is required for discharges of storm water runoff into State waters; and

4. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters.

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

Clean Air Branch

Control of Fugitive Dust

There is a significant potential for fugitive dust emissions during all phases of construction activities. In addition, construction activities would occur in close proximity to existing residential establishments and a major thoroughfare, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust.

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

a. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

b. Providing an adequate water source at the site prior to start up of construction activities;

c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;

d. Controlling of dust from shoulders and access roads;

e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and

f. Controlling of dust from debris being hauled away from project site.

If you have any questions regarding these issues on fugitive dust, please contact the Clean Air Branch at (808) 586-4200.

Noise, Radiation and Indoor Air Quality (NRIAQ) Branch

All project activities shall comply with the Administrative Rules of the Department of Health, Chapter 11-46, on "Community Noise Control".

If you have any questions, please contact the NRIAQ at (808) 586-4701.

Solid and Hazardous Waste Branch (SHWB)

The Office of Solid Waste Management recommends the development of a solid waste management plan that encompasses all project phases including demolition, construction, and occupation of the buildings.

Specific examples of elements that the plan should address include:

- Recycling of green-waste during clear and grub activities;
- Recycling construction and demolition wastes, as appropriate;
- Use of locally produced compost in landscaping;
- Use of recycled content building materials; and

- The provision of recycling facilities in the design of the project.

The developer shall ensure that all solid waste generated during construction is directed to a Department of Health permitted solid waste disposal or recycling facility.

If you have any questions, please contact the Solid and Hazardous Waste Branch at (808) 586-4240.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

c: CWB
CAB
NRIAQ
SHWB
Maui DHO

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

To: The Honorable Bruce S. Anderson, Ph.D., M.P.H.
Director
Department of Health

Attn: Gary Gill, Deputy Director
Environmental Health Administration

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003
DOH File No. 02-194/epo

Thank you for comments from the Department of Health (DOH) on the Draft Supplemental Environmental Assessment (EA) dated July 2002 for Waiehu Kou Phase 3. Responses to the issues raised by various branches within the Environmental Health Division in its letter dated August 27, 2002, are provided below:

1. Clean Water Branch

The project will not discharge runoff directly into navigable waters or waters of the State of Hawaii. The existing and proposed drainage and detention basin systems are designed for a 100-year, 24-hour duration storm. Wastewater will be directed to the Wailuku-Kahului Wastewater Reclamation Facility in Kahului. The selected developer shall be informed of any Federal or State permits required for any discharge from the subject project. A Department of Army permit is not required, however as stated in the Draft Supplemental EA, a National Pollutant Discharge Elimination System (NPDES) permit will be sought for this project.

2. Clean Air Branch

Fugitive dust control measures in accordance with Hawaii Administrative Rules, Chapter 11-60.1, will be performed to mitigate air quality impacts during all construction stages of the project.

3. Noise, Radiation and Indoor Air Quality Branch

The project will comply with the Community Noise Control requirements under DOH's Administrative Rules, Chapter 11-46.

4. Solid & Hazardous Waste Branch

A solid waste management plan will be produced that will cover all construction phases of the project. Residents of the new subdivision will be encouraged to participate in applicable recycling efforts in the County.

Should you have any questions, please call me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

September 3, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Homelands
P. O. Box 1879
Honolulu, Hawaii 96805

LOG NO: 30624
DOC NO: 0208CD53

Dear Mr. Matsunaga,

SUBJECT: National Historic Preservation Act Section 106 Review Pertaining to the Draft Supplemental Environmental Assessment Pursuant to the EIS Law (Hawaii Revised Statutes Chapter 343) and the EIS Rules (Administrative Rules, Title 11, Chapter 200) for the Proposed Waiehu Kou Phase 3 – Native Hawaiian Housing
Wai'ehu Ahupua'a, Wailuku District, Island of Maui
TMK: (2) 3-2-013:009, 3-2-112:003

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Assessment (Draft Supplemental EA) Pursuant to the EIS Law (Hawaii Revised Statutes Chapter 343) and the EIS Rules (Administrative Rules, Title 11, Chapter 200) for the Proposed Waiehu Kou Phase 3 – Native Hawaiian Housing, which was received by our staff July 29, 2002.

Based on the submitted document, we understand the supplemental EA is necessary due to the addition of approximately 20.78 acres of land for the project area. Initially, the Phase 3 project consisted of 22.43 acres of which 12 acres were designated for 60 single-family house lots with the remaining land to be a retention basin. In addition to Waiehu Kou Phase 3, DHHL also proposes to install two sections of potable water distribution lines, totaling 1800 lineal feet, along the Kahekili Highway Right-of-Way.

Archaeological Services Hawaii (ASH) and Pantaleo Consultants recently completed an archaeological inventory survey of the proposed project area, consisting of the excavation of 30 backhoe trenches. During the survey, a single historic site (SIHP 50-50-04-4731) consisting of a remnant habitation site was identified. We have reviewed the archaeological report documenting the findings of the survey and recommended a number of revisions to be made to the report prior to finding it acceptable (SHPD DOC NO.: 0204MK09/LOG NO.: 29793). Once the survey report is accepted, we do concur that archaeological monitoring occur for remnants of SIHP 4731 is warranted. In addition, during previous archaeological work conducted of the Wai'ehu Kou Phase 2 Residential Development (Fredericksen and Fredericksen 1999), a portion of SIHP 4731 was identified which contained human burials suggesting the possibility that additional human burials may be present within the Phase 3 portion of the project area. Therefore, we do not concur with the statement that "... [n]o significant remains or deposits were encountered in any of the trenches to be affected by the development... (Draft Supplemental EA p.18).

Given the above information, we recommend that complicance with the following conditions would result in no adverse effect to historic properties.

1) The requested revisions to the archaeological inventory survey report will be submitted to both the O'ahu and Maui offices of the State Historic Preservation Division for review and acceptance prior to the commencement of any ground altering activities.

2) A monitoring plan will be submitted to both the O'ahu and Maui offices of the State Historic Preservation Division for review and acceptance prior to the commencement of any ground altering activities.

3) A report documenting the findings of the archaeological monitoring activities will be submitted to both the O'ahu and Maui offices of the State Historic Preservation Division for review and acceptance upon 180 days following the completion of the proposed undertaking.

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

Aloha,

Gilbert Coloma-Agaran
State Historic Preservation Officer

CD:jen

c: Ms. Joanne Hiramatsu Townscape Inc. 900 Fort Street Mall, suite 1160 Honolulu, HI 96813
OEQC

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

To: The Honorable Gilbert S. Coloma-Agaran
Chairperson
Board of Land and Natural Resources

Attn: Cathleen Dagher
State Historic Preservation Division

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment, Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-13:009 & 3-2-12:003
Log: 30624, Doc No: 0208CD53

Thank you for comments from the Department of Land and Natural Resources on the Draft Supplemental Environmental Assessment (EA) dated July 2002 for Waiehu Kou Phase 3. Responses to the issues raised in your letter of September 3, 2002, are provided below:

1. Prior to commencement of any ground altering activity, the revised archaeological inventory survey report will be submitted to both the Oahu and Maui offices of the State Historic Preservation Division for review and acceptance.

2. Prior to commencement of any ground altering activity, a monitoring plan will be submitted to both the Oahu and Maui offices of the State Historic Preservation Division for review and acceptance.

3. A report documenting the findings of the archaeological monitoring activities will be submitted to both the Oahu and Maui offices of the State Historic Preservation

Division for review and acceptance upon 180 days following the completion of the proposed project.

The Final Supplemental Environmental Assessment will be revised to reflect the information you have provided.

Should you have any questions, please call me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

September 6, 2002

Mr. Stewart Matsunaga
Department of Hawaiian Home Lands, State of Hawai'i
P.O. Box 1987
Honolulu, Hawai'i 96805

Ms. Joanne Hiramatsu
Townscape Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawai'i 96813

Dear Mr. Matsunaga and Ms. Hiramatsu:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Waiehu Kou Phase 3 Project, Tax Map Key (2nd): 3-2-12, parcels 3 and 9, in the judicial district of Wailuku, and offers the following additional comments for your consideration and response:

1. *CUMULATIVE IMPACT ANALYSIS:* This project supplements a previous final environmental assessment for the Waiehu Kou project. Please include discussion of water demand for the entire Waiehu Kou project (all phases), as well as estimates of wastewater generation for the Phase 3 project and the entire Waiehu Kou project.
2. *ADDITIONAL SEWER CONSTRUCTION AND BURIAL IMPACTS*: On page 26, mention is made that the County of Maui concurs that the topography of the Phase 3B site requires construction which may impact burials in sandy soils. Please consult with the State Historic Preservation Division and the Office of Hawaiian Affairs.
3. *USE OF RECYCLED GLASS IN CONSTRUCTION PROJECTS.* To promote the use of recycled materials in-state, section 103D-407, Hawai'i Revised Statutes recommends that State/county agencies purchase materials with minimum recycled glass content. We ask that you consider this in the design of your station.
4. *NATIVE, INDIGENOUS AND POLYNESIAN INTRODUCED PLANTS FOR USE IN PUBLIC LANDSCAPING*: We ask that you consider the use of xerophagic native, indigenous and polynesian introduced plants in your landscaping.

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

Sincerely,

GENEVIEVE SALMONSON
Director

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

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

Attn: Leslie Segundo
Environmental Health Specialist

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-13:009 & 3-2-12:003

Thank you for your comments on the Draft Supplemental Environmental Assessment (EA) dated July 2002, for Waiehu Kou Phase 3. Our response to your letter dated September 6, 2002, is provided below:

1. Cumulative Impact Analysis

Water usage is based on the Maui County Department of Water Supply System per-unit standard of 600 gallons per day (gpd). For Waiehu Phase 3, water use for the 111 lots when occupied is calculated at 66,600 gpd.

All three phases of the Waiehu Kou Subdivision contain a total of 259 lots (Phase 1 - 39 lots, Phase 2 - 109 lots, & Phase 3 - 111 lots), resulting in an estimated total water usage of 155,400 gpd.

County of Maui Department of Public Works and Waste Management uses a wastewater generation estimate of 350-gallons/unit/day for single-family homes. For the full build out of Waiehu Kou

Phase 3, approximately 38,850 gallons of wastewater will be produced daily.

The three phases would produce an estimated 90,650 gallons of wastewater per day. The capacity of the Wailuku-Kahului Wastewater Reclamation facility is 7.9 million gallons per day (mgd) while current treatment is estimated at 5.5 mgd. Thus, the facility can accommodate the Phase 3 project.

2. Additional Sewage Construction and Burial Impacts

As stated in the Supplemental EA, the sand dunes, which are known to contain burials, located *makai* of the property, will be left undisturbed. The State Historic Preservation Division is being consulted regarding the construction of this project.

3. Use of Recycled Glass in Construction Projects

The project will comply with Section 103D-407 of the Hawaii Revised Statutes, regarding the use of recycled glass.

4. Native, Indigenous and Polynesian Introduced Plants for Use in Public Landscaping

The project will comply with Section 103D-408 of the Hawaii Revised Statutes, regarding the use of indigenous and Polynesian introduced plants in public landscaping.

Should you have any questions, please call me at 586-3801 or Stewart Matsunaga, Project Manager, Land Development Division at 587-6454.

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI F. NAYA, Ph.D.
DIRECTOR
SHARON S. NARIMATSU
DEPUTY DIRECTOR
DAVID W. BLANE
DIRECTOR, OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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-9813

September 10, 2002

SEP 12 7 52 AM '02
OFFICE OF HAWAIIAN HOME LANDS

To: Raynard C. Soon, Chairman
Department of Hawaiian Home Lands

Attn: Stewart Matsunaga

From: David W. Blane
Director, Office of Planning

Subject: Waiehu Kou Phase 3, Wailuku, Maui
TMK: 3-4-13: 09 (22.43 acres, Phase 3)
TMK: 3-2-12: 03 (20.78 acres Phase 3B)

The Office of Planning has reviewed the Draft Supplemental Environmental Assessment for the proposed Department of Hawaiian Home Lands (DHHL) Waiehu Kou Phase 3 project in Waiehu, Maui. The Supplemental Draft has been prepared to include information on the impacts of incorporating approximately 20.78 acres into the existing 22.43-acre Waiehu Kou Phase 3 project. DHHL has entered into an agreement with the owner, Dowling Company, Inc. (DCI), to purchase the 20.78-acre parcel identified by TMK: 3-2-12: 03. The new acreage will allow development of 51 additional single family lots, bringing the total number of lots to 111 for the 43.21-acre site (20.78 and 22.43) comprising Phase 3 of the Waiehu Kou project.

The Draft Supplemental Environmental Assessment addresses concerns raised in our letter dated February 19, 2002 regarding the project's impact on drainage corridors, schools, and recreational space.

Existing drainage facilities constructed on 10.43 acres situated on the southeastern side of the site identified for Phase 3 have been designed to not exceed predevelopment flow rates for a 100-year, 24-hour storm. The basin drains the proposed Waiehu Kou Phase 3 project, Phases 1 and 2, as well as an off-site area of 89 acres southwest of Phase 2. Approximately 40 percent of the 20.78 acre parcel to be added to Phase 3 is located within flood zones "A" and "B" meaning the area is susceptible to flooding during a 500-year storm. Although all of the lots proposed for this addition to Phase 3 will be constructed outside of the flood zone area, slope conditions of the site require that an additional storm water retention basin be constructed to capture flows for the northern edge of the parcel. An additional retention basin to service the area will be designed for

a 50-year, 24-hour storm in accordance with County standards. The existing and proposed drainage basins will have the capacity to contain increased runoff from the entire Waiehu Project, as well as the 89-acre area southwest of Phase 2. An underground drainage system will convey runoff to the existing and proposed retention basins. As with the existing drainage basin, a fence will be placed around the proposed retention basin.

Additional recreational space will be an area inside the flood zone that will be left as open space to serve as a passive park for Waiehu residents.

The Department of Education (DOE) has estimated the project will generate 30 to 45 elementary students, 12 to 17 intermediate students and 12 to17 high school students. It appears that DHHL is not in total agreement with the DOE assessment. According to DHHL most of the families estimated to apply for homes in Waiehu Kou project already live on the island and their children are presently registered and attending Maui Schools. However, all of the schools identified as serving the area (Waihee Elementary, Iao Intermediate and Baldwin High School) are all operating over capacity.

The Waiehu Project may attract families just starting out or with young children and this will further impact the Waihee Elementary School which is operating at nearly 17 percent over capacity. Waihee Elementary has capacity for 733 students and an enrollment of 877 students. The additional 144 students represent a need for another four to five classrooms at the elementary level.

There is no assurance that the families of the students attending these schools will be included with the families of applicants who will qualify for one of the 111 house lots. The total number of applicants on the waiting list as of October 2001 was 2,800. The project will provide housing opportunities for only four percent on the waiting list, and not all who qualify for a lot will be from the Wailuku area. It is probable that families with school-age children not yet enrolled in the schools servicing Waiehu will come from outside the Wailuku area. As we have seen recently, not all Hawaiian school-age children are able to attend Kamehameha Schools. Well-serviced public schools will benefit the Waiehu Community. We recommend that discussions continue with DOE regarding how DHHL may satisfy its fair share to accommodate students generated by the development.

Thank you for the opportunity to comment. Please call Judith Henry at 587-2803 if you have any questions.

c: Anthony Ching, Land Use Commission

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

To: The Honorable Seiji F. Naya, Ph.D.
Director
Department of Business,
Economic Development and Tourism

Attn: David W. Blane, Director
Office of Planning

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-012:003
Ref. No. P-9813

Thank you for your comments on the Draft Supplemental Environmental Assessment (EA) dated July 2002 for Waiehu Kou Phase 3.

The Department of Hawaiian Home Lands will coordinate with the Department of Education to discuss possible mitigating actions to address increase in the student population generated from the Waiehu Kou development.

If you have any questions, please call me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

JAMES "KIMO" APANA
Mayor

DAVID C. GOODE
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

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

RALPH NAGAMINE, L.S., P.E.
Land Use and Codes Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

September 13, 2002

Mr. Stewart Matsunaga
DEPARTMENT OF HAWAIIAN HOMELANDS
P. O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Matsunaga:

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (EA)
WAIEHU KOU PHASE 3
TMK: (2)3-2-013:009, 3-2-012:003

We have reviewed the subject environmental assessment and have the following comments:

1. Submit a plan for construction waste recycling and disposal and a plan for cleared and grubbed material.

2. Although wastewater system capacity is currently available as of August 14, 2002, the developer should be informed that wastewater capacity cannot be ensured until the issuance of the building permit.

3. The developer is required to pay assessment fees for treatment plant expansion costs and to fund any necessary off-site improvements to collection system and wastewater pump stations.

4. Wastewater contribution calculations are required before a building permit is issued. Plans should show the installation of single service laterals and an advance riser at each lot. Indicate on the plans the ownership of each easement. The County will not accept sewer easement or lines that traverse private property.

5. A signed Hold-Harmless Agreement should be executed and will be required before Wastewater Reclamation Division will give recommendations for final subdivision approval.

6. The County will not accept the proposed pump station. The pump station and forcemain shall remain privately owned and maintained.

7. The drainage assessment provided in this document is not adequate to address this 111-lot subdivision. There is a major natural waterway through this subdivision that requires major drainage "channel improvements" within the subdivision and an upgrade of the existing drainage road crossing on Kahekili Highway (State Highway). The existing drainage road crossing that services the existing Waiehu Golf Course will also have to be improved. This EA does not provide analysis of these issues.

8. The applicant proposes to provide ONLY one (1) vehicular access off Kahekili Highway to service 111 lots. One (1) vehicular access is not adequate to serve 111 lots. At least two (2) access points are desirable to ensure public safety concerns involving fire, police and emergency ambulance services.

9. The foregoing drainage and access concerns should be addressed prior to issuance of preliminary subdivision approval.

10. The design and construction of the roadways and the drainage system shall comply with the standards of the County and the drainage rules in order to be accepted for County maintenance.

If you have any questions regarding this letter, please call Milton Arakawa at (808) 270-7835.

Sincerely,

for DAVID GOODE
Director

RMN:msc
xc: Office of Environmental Quality Control
S:\LUCA\Czm\Waiehu Kou Ph3-DSEA.wpd

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 26, 2002

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

Dear Mr. Goode:

Subject: Draft Supplemental Environmental Assessment
Waiehu Kou Phase 3
Wailuku, Maui, TMK: 3-2-013:009 & 3-2-12:003

Thank you for your comments on the Draft Supplemental Environmental Assessment dated July 2002 for Waiehu Kou Phase 3. Responses to the issues raised in your letter dated September 13, 2002, are provided below:

1. A plan for construction waste recycling and disposal, and a plan for cleared and grubbed material will be submitted to your office.

2. We understand that wastewater system capacity cannot be ensured until the issuance of building permits for the project.

3. The developer will pay the required assessment fees for treatment plant expansion costs and to fund any necessary off-site improvements to the collection system and wastewater pump stations should those improvements be required as a result of this project.

4. Wastewater contribution will be calculated prior to issuance of a building permit. Construction plans will reflect your comments regarding laterals, risers and easements.

5. A signed Hold-Harmless Agreement will be executed prior to receiving recommendations from Wastewater Reclamation Division for final subdivision approval.

6. The Department of Hawaiian Home Lands will initially look into contracting with a qualified company to maintain the new pump station and forcemain that will be developed in the Waiehu Kou Phase 3 project. We wish to further discuss the County of Maui's role in the maintenance and operation of the new pump station in Phase 3.

7. The drainage system will be designed to maintain existing flows into the existing drainage system through the construction of drainage retention basins that will hold any net increase in storm water runoff from the project. The drainage system will be designed to hold the 1-hour, 50-year storm water.

8. The State Department of Transportation (SDOT) was consulted regarding additional intersections along Kahekili Highway and they are recommending only one vehicular access off of Kahekili Highway. Kahekili Highway is under the jurisdiction of the SDOT.

9. Drainage and access concerns will be addressed prior to preliminary subdivision approval. The developer for this project and its design engineer will be informed about the County of Maui's concerns.

10. The construction of the roadways and the drainage system will comply with the standards of the County.

Should you have any questions, contact me at 586-3801, or Stewart Matsunaga, Project Manager, Land Development Division, at 587-6454.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission