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CITY AND COUNTY OF HONOLULU

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CDD-A 05-0057

March 7, 2005

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

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for Nuhelewai Stream Improvements, TMK: 1-6-017: 004, Honolulu, Oahu, Hawaii

The department has reviewed the comments received during the 30-day public comment period which began on January 8, 2004. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the final EA. Please call Dennis Toyama at 523-4756 if you have any questions.

Very truly yours,

WAYNE M. HASHIRO, P.E.
Acting Director

DT:FK:pto

Encl.

2005-03-23 FONSI
NUHELEWAI STREAM IMPROVEMENTS

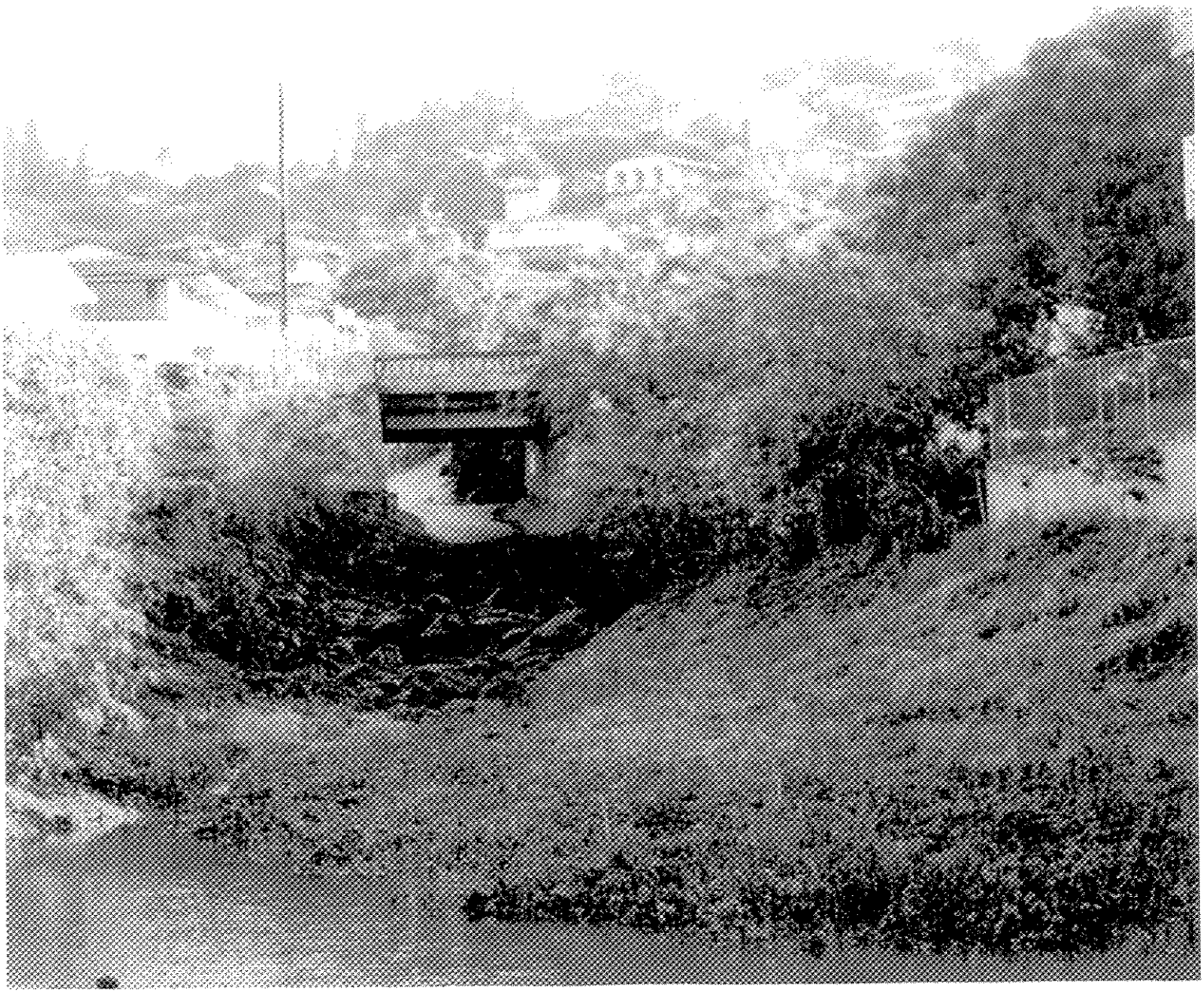
FINAL
ENVIRONMENTAL ASSESSMENT

NUHELEWAI STREAM IMPROVEMENTS

March 2005

City and County of Honolulu
Department of Design and Construction

Prepared by:
Eugene P. Dashiell, AICP
Environmental Planning Services



FINAL ENVIRONMENTAL ASSESSMENT

NUHELEWAI[1] STREAM IMPROVEMENTS CITY & COUNTY OF HONOLULU

March 2005

Prepared for:

City and County of Honolulu
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[1]Nuhelewai is the name used on government documents pertaining to this stream and the proposed project. However, it is likely that the correct name for this stream is *Niuhelewai* (Appendix C, Letter 3/8/04, State Office of Environmental Quality Control). For uniformity in the records of this proposed project, the name Nuhelewai is used throughout this Final Environmental Assessment.

SUMMARY SHEET

Project: Nuhelewai Stream Improvements, Honolulu, Oahu, Hawaii. This project is for stream channel modifications to prevent erosion of streambanks of the Nuhelewai Stream drainage project between Naio and Aupuni Streets.

Short-term Effects: Short term effects will occur during construction. Effects include noise, odors, disruption of flora on and near streambanks, suspended sediments, degraded water quality in Nuhelewai Stream, and destruction of benthic life in the stream channel.

Long-term Effects: There are no significant long-term adverse impacts to geology, hydrology, flora and fauna, historic resources, hazardous materials, air quality, noise quality and socio-economic resources. The project area is highly urbanized and has been previously modified by filling, grading, paving and facilities development. Exposed areas will be seeded with grass or otherwise covered as appropriate to minimize soil erosion and to restore surface areas. The completed project will halt the present erosion of streambanks which endangers adjacent properties and dwellings.

The Environmental Assessment concludes that the proposed action does not constitute a major federal action which significantly affects the quality of the human environment. Therefore, neither a Federal nor a State of Hawaii environmental impact statement is required. This assessment includes a finding of no significant impact (FONSI).

Location	Kapalama, O'ahu, Hawai'i, City and County of Honolulu
Tax Map Key	1-6-017:004
Project Site	Less one-half acre.
State Land Use District & Zoning	Urban Land Use District; R-5 (Residential).
Ownership	City and County of Honolulu
Approving Agency	Department of Design and Construction, City and County of Honolulu, 650 South King Street, Honolulu, Hawai'i 96813.
Proposing Agency	Department of Design and Construction, City and County of Honolulu, 650 South King Street, Honolulu, Hawai'i 96813.
Consultant	Austin Tsutsumi & Associates, 501 Sumner Street; Honolulu, Hawai'i 96817-5031; 808-533-3646 (Tel.); 808-526-1267 (Fax); E-mail, atahnl@atahawaii.com.
Associated Consultant	Eugene P. Dashiell, AICP, Environmental Planning, 1314 South King St., Suite 952; Honolulu, Hawai'i 96814; Telephone: (808) 593-8330; E-mail, dashiell@lava.net.
Required Permits and Approvals	U.S. Army Corps of Engineers Permit to Dredge/excavate or fill; DOH – Water Quality Certification; DLNR-Commission on Water Resources Management - Stream Channel Alteration Permit; Building & Grading Permits.

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CHAPTER 1 - PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343 of the Hawaii Revised Statutes. The EA considers the impacts of the Proposed Action on the environment and the community. The document states the purpose and need for the Proposed Action in Section 1.2. The Proposed Action and alternatives of the Proposed Action are described in Chapters 2 and 3. The affected environment in which the Proposed Action is situated is described in Chapter 4, while the environmental consequences of the alternatives of the Proposed Action are discussed in Chapter 5. Chapter 6 offers a summary of the environmental impacts related to the Proposed Action. Chapter 7 states the expected determination. Chapter 8 lists the agencies and persons consulted. Chapter 9 includes a list of references, a glossary of acronyms, and the EA preparers.

The Proposed Action, by the City and County of Honolulu, is construction of channel improvements to an approximate 250-foot segment of Nuhelewai Stream (Figure 1) between Naio and Aupuni Streets. The purpose of the Proposed Action is to protect the public health and safety by preventing erosion of the streambanks which endangers residences on both sides of the stream channel.

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is to protect public health and safety by preventing erosion of the channel banks adjacent to residences on both sides of the stream. The section of Nuhelewai Stream between Naio and Aupuni Street is the only remaining segment of unimproved channel in the urban reaches of the stream. The project was initiated because of problems with streambank erosion which endangered adjacent residential properties.

Project design standards[2] for this Flood Control Channel are based on a peak discharge from a storm with a one percent chance of occurrence in any given year (100-year recurrence interval). The peak discharge for such a storm in the Nuhelewai watershed (250 acres) is 1,500 cfs (cubic feet per second). The proposed project will meet current project design standards and is intended to remedy erosion of the streambanks in this reach of the stream. While the proposed project will meet the City's current design standards for channel capacity, both the upstream and downstream segments of the Nuhelewai channel do not meet current design standards. There are no future plans to modify the Nuhelewai channel either upstream or downstream of the proposed project, nor are there plans to modify any of the adjacent bridges.

[2]City and County of Honolulu, Department of Planning and Permitting, *Rules Relating to Storm Drainage Standards,* January 2000.

CHAPTER 2 - DESCRIPTION OF THE PROPOSED ACTION

2.1 Project Location

The project site is on the island of Oahu in the Hawaiian Islands, central Pacific Ocean. The project is located at Kapalama, Honolulu, Island of Oahu, State of Hawaii. TMK (Tax Map Key) 1-6-17:4; and latitude N21 degrees, 20.03 minutes; longitude W157 degrees, 51.66 minutes. (Figures 1 and 2)[3], between Naio and Aupuni Streets. The existing stream channel includes concrete-lined box culverts upstream (including the Naio Street bridge) and downstream (including the Aupuni Street bridge) of the proposed project.

2.2 Project Features

The existing unlined stream channel would be lined (for an approximate distance of 250 feet) with reinforced concrete with a slight v-shaped bottom which includes a small "pilot"[4] channel. (Figures 3 and 4 and Proposed Project Profiles). The stream channel between the two bridges (Naio and Aupuni Streets) is the only unlined segment of this stream in the developed residential area. There is an existing low dam about 60 - feet upstream of the Aupuni Street bridge. The dam serves as a debris control structure and boulder basin to prevent debris or boulders from entering the stream channel to be transported downstream. The existing dam would remain in place. The stream channel downstream of the dam is lined with concrete and includes a small pilot channel. Approximately 1,130 cubic yards of material would be excavated during construction and approximately 455 cubic yards of material would be placed as backfill or for foundations.

2.3 Project Schedule and Cost

A schedule for the Proposed Action has not been determined. It is dependent on funding and agency approvals. The cost of the Proposed Action is estimated to be between $800,000 and $900,000.

2.4 Required Permits and Approvals

Following is a list of formal permits and approvals required.

A. U. S. Army Corps of Engineers. An "individual" permit to excavate for construction of the box culvert is required. The Corps will make a determination as to the specific applicable authority which pertains to the proposed project.

B. State of Hawaii Department of Health (DOH) A Water Quality Certification including approval of monitoring and best management practices may be required.

C. State of Hawaii Commission on Water Resource Management. A Stream Channel Alteration Permit is required for stream channel modifications.

D. State of Hawaii Department of Business, Economic Development and Tourism, Coastal Zone Management Program. Because a federal permit is required, a Declaration of Consistency with the Hawaii Coastal Zone Management Program will be required to be obtained from the Department.

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[3]Figure 1 shows both the open channel of Nuhelewai Stream from its origin in the watershed to the beginning of its underground channel and terminus at Kapalama Canal.

[4]A pilot channel is a channel within a channel. The pilot channel functions to direct a small flow of water towards the center of the channel.

Coordination has been carried out or is underway[5] between the City and County of Honolulu and:

U.S. Army Corps of Engineers, Honolulu Engineer District

U.S. Fish and Wildlife Service[6]

National Marine Fisheries Service[7]

State of Hawaii, Department of Health

State of Hawaii, Commission on Water Resource Management

State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division[8]

State of Hawaii Department of Business, Economic Development and Tourism, Coastal Zone Management Program[9]

City and County of Honolulu, Department of Planning and Permitting

Neighborhood Boards, Community Groups and Individuals

[5]Coordination underway is via the Chapter 343 EA review process.

[6]To be carried out during the permit application process with the U.S. Army Corps of Engineers.

[7]To be carried out during the permit application process with the U.S. Army Corps of Engineers.

[8]To be carried out during the permit application process with the U.S. Army Corps of Engineers.

[9]To be carried out during the permit application process with the U.S. Army Corps of Engineers.

CHAPTER 3 - ALTERNATIVES CONSIDERED

The alternatives considered in this EA are discussed below.

3.1 **NO ACTION -** The No-Action alternative is the existing condition consisting of eroding streambanks between Naio and Aupuni Streets. This alternative continues the exposure of community members to the public health and safety hazards of eroding streambanks and the potential loss of private property, and the potential discharge of sediment and debris into State receiving waters.

3.2 **ALTERNATIVE 1 – Relocate Residents.** In Alternative 1, residential properties affected by streambank erosion hazards would be purchased by the City and the residents would relocate to unaffected areas. This alternative is not feasible because of high costs.

3.3 **ALTERNATIVE 2 – Stabilization from Erosion.** In Alternative 2, residential properties would be reconstructed to be more resistant to erosion. This alternative is not feasible because of high costs.

3.4 **ALTERNATIVE 3 - (Recommended Alternative) Construct the Proposed Stream Channel Improvement.** In Alternative 3, the proposed stream channel improvement of concrete lining and reinforced concrete retaining walls would result in erosion prevention.

Alternative 3 is the recommended alternative for this proposed project because it is the most cost-effective solution to the present streambank erosion problems.

During public review of the draft Environmental Assessment (January 2004), several comments were received requesting that the project incorporate vegetated channels, greenery and plantings. Unfortunately, the high velocity stream flows exceed 10 feet per second which precludes the use of vegetation and requires the use of concrete to prevent erosion and undercutting of adjacent residential properties. Furthermore, streambanks at this location are presently eroding and the near-vertical streambank walls need to be stabilized and retained with reinforced concrete walls. Also, even if planters could be installed, the high cost of maintenance would preclude their use. Similarly, the use of construction materials other[10] than reinforced concrete were considered and were rejected because the other materials lacked the structural strength of concrete to withstand the forces of high-velocity stream flow and high vertical streambank retention required to mitigate the ongoing streambank erosion under the present conditions.

[10]Other materials considered included gabions (wire baskets filled with rocks), grouted rock, rip-rap (loose rock), and concrete reinforced masonry (hollow tile).

CHAPTER 4 - AFFECTED ENVIRONMENT

This Chapter presents a description of the environment which may be impacted by the Proposed Action. The descriptions are representative of the existing (baseline) environment and are based on historical knowledge, technical studies, previous environmental studies, and site visits.

4.1 Climate

The climate of Hawaii is moderate and can be characterized into two seasons: I) summer, from May 1 to October 31; and ii) winter, from November 1 to April 30. The summer months are normally warm and dry with persistent trade winds (northeasterly winds), while the winter months are wetter and cooler interspersed with Trade winds and Kona winds (southerly winds).

The average annual temperature at Honolulu International Airport (similar in characteristic to the project site) varies between 72°F (coolest month) and 81°F (warmest month). The average annual precipitation is 23 inches. The Trade winds, or northeasterly winds, typically have a range from 4 to 12 miles per hour, and rarely exceeds 24 miles per hour, though peak gusts have been recorded to 51 miles per hour.[11]

Annual rainfall within the watershed can range from 30 inches at the Nuhelewai Stream mouth to 150 inches at the highest elevations near the crest of the Koolau mountains.

4.2 Geology and Groundwater Sources

Geology of the watershed overall reflects the volcanic nature of the Island of Oahu. The watershed in general is comprised of fairly steep slopes and a somewhat dissected terrain and with highly erodible soils. Typically, in Hawaii, these upland, erodible areas incur the highest rainfall and the most severe soil erosion. There are no ground water sources or potable water wells related to the watershed of Nuhelewai Stream, which is not a perennial stream, and which conveys flow only during rainfall events.

4.3 Topography

The project area is a sloping stream bed with steep banks. The stream channel consists of boulders, rocks and sediment. There is a small dam at the lowest reach of the proposed project. The dam was constructed in the mid-1970's as part of the City's Nuhelewai Flood Control Project. The dam serves as a sediment retention structure and debris/boulder catchment basin. It is accessed by a vehicle ramp from Aupuni Street so that heavy equipment can enter the area to clean the basin. The dam will be retained in the proposed project.

4.4 Flora

Most of the project site is an aquatic habitat. Flora at the site consists of a variety of non-native species. (See Appendix B, "Biological Resources Survey").

4.5 Fauna

Most of the project site is aquatic. During field inspections, water birds were not observed within the project site stream channel. (See Appendix B, "Biological Resources Survey").

4.6 Endangered Species

The project area has been extensively disturbed in the past, the flora and fauna of the area consists of non-native species. (See Appendix B, "Biological Resources Survey").

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[11]Climate data source, State of Hawaii *Data Book 1995.*

4.7 Historical and Archaeological Resources; Traditional and Cultural Practices; Public Access

The Nuhelewai[12] Stream project area has been significantly disturbed from pre-historic times because of development and urbanization. There are no known archaeological or historic sites within the project site boundary or near-by which could be affected by the proposed project. There are no known traditional or cultural practices at this time for the proposed project. However, historically, and pre-historically, prior to construction of the present flood control project, native Hawaiians, and other groups may have used this area for access to the mountain regions. Under current conditions, public access is prohibited and has been since construction of the Nuhelewai Flood Control project in the mid-1970's. The State Historic Preservation Division (SHPD) has stated that "no historic properties will be affected" (see Appendix C, SHPD Letter, Log #: 2004.0502). An archeological report is included in Appendix A.

There are references to the historic battle between Kahahawai and Kahahana from which "...the stream became damned by the corpses of men."[13] The location of the battle and corpses apparently was in the lower reaches of the stream in the vicinity of the old Palama Fire Station on King Street, approximately one mile south-southeast (makai or seaward) of the proposed project.

4.8.1 Watershed

The Nuhelewai Stream watershed (Figure 1) is comprised of approximately 250 acres at the lower boundary of the project site. The entire watershed area is in an Urban Land Use district and is zone R-5 Residential by the City and County of Honolulu. However, due to steepness of some of the slopes in the watershed, some areas have not been developed.

4.8.2 Plans, Land Use and Ownership

The project site is located in the State of Hawaii, Land Use District Classification of Urban, and the City and County of Honolulu has designated the entire area as R-5 Residential zoning. The project is within the confines of the Nuhelewai Stream Flood Control Project, which is owned by, and was constructed by the City and County of Honolulu. This drainage system is shown on the existing Primary Urban Center Development Plan Public Facilities Map.

4.8.3 Wetlands

There are no wetlands shown on the national wetlands inventory maps for this location.

4.8.4 Population

Population in the neighborhood of the project site (Kamehameha Heights) has declined slightly since the 1990 census based on the 2000 U.S. Census. In 1990, the population was 5,991 and in 2000 the population had decreased to 5,821. During the same 10 year period, the population of the State of Hawaii increased by 9.3 percent, from 1,108,279 to 1,211,537. The implications of this change is that this neighborhood is a stable, not a developing or physically growing community with additional housing units, and that the population is aging with younger people moving out of the area into their own dwellings elsewhere.

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[12] *Niuhelewai* appears to be the correct name (Appendix C, Letter from OEQC, 3/8/04).

[13] Sterling, Elspeth P. & Catherine C. Summers, *Sites of Oahu*, Bernice P. Bishop Museum, 1978, p. 320 referencing Abraham Fornander in his *Collection of Hawaiian antiquities and folklore*, Vol. 5, p. 498. They state (according to Fornander): "In this battle...at Niuhelewai [name of locality of the Palama cane field between the Fire and Pumping stations]...".

4.9 Flood Hazard, Tsunami and Flood Classifications

The Nuhelewai Stream channel and surrounding areas are shown as Zone X in the City and County of Honolulu's geographic information system. The source of the Zone X designation is the Federal Emergency Management Office, Flood Insurance Rate Maps. The Zone X classification is assigned to areas determined to be outside the 500-year flood plain.

4.10 Hazardous and Toxic Wastes

There are no known Hazardous or Toxic Wastes disposal sites in the area. State of Hawaii Department of Health records[14] do not list any toxic or contaminated releases in the Nuhelewai Stream area. The State of Hawaii Department of Health also does not list any reports of problems with leaking USTs (underground storage tanks) at the project location or vicinity.[15]

4.11 Air Quality

In general, outdoor air quality at the project site meets federal and state standards because of consistent tradewinds and the absence of significant industrial sources of air contamination.

4.12 Noise

Noise in this location is typical of an older neighborhood with low density traffic patterns located some distance from the highway or main arterial roadways.

4.13.1 Water Quality

Nuhelewai Stream is designated as a Class 2 inland stream and water quality standards have been established by the State Department of Health (Chapter 11-54). One water sample was taken and analyzed. The water had a high levels of turbidity (15.8 NTU), suspended sediment (TSS 7.2 mg/l), and nutrients (Total N 732 micrograms/liter; Total P 77 micrograms/liter). These results are discussed in Appendix B.

The State Department of Health (DOH) is in the process of establishing TMDLs (Total Maximum Daily Loads) one objective of which would be to prevent any project-related increases in pollutant loads (See Appendix C, DOH letter, 2/24/04).

4.14 Coastal Zone Management.

The entire Island of Oahu is within the Coastal Zone Management area. The project site is not within the special management area of the City and County of Honolulu.

4.15 Traffic

Traffic is not generated by Nuhelewai Stream itself. Traffic reflects the quiet residential character of the surrounding neighborhood.

4.16 Solid Waste

There are no solid waste facilities in the project area or watershed.

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[14]State of Hawaii, Department of Health, HEER (Hazard Evaluation and Emergency Response Office), database 1990 to present.

[15]State of Hawaii, Department of Health, Hazardous and Solid Waste web site for leaking underground storage tanks.

4.17 Sanitary Sewer

There are sanitary sewer lines serving the developed areas surrounding Nuhelewai Stream. There is a sewer easement adjacent to the project on the south corner. However, no disruption of sewer services is anticipated.

4.18 Stream Water

Nuhelewai Stream is a tributary of, and flows to, Kapalama Stream which drains to Kapalama Canal. Nuhelewai Stream is either intermittent or interrupted perennial with flows apparently only during rainfall events. It is not gaged. It is not listed as a perennial stream in the *Hawaii Stream Assessment* (December 1990). Portions of Nuhelewai Stream are underground where flows are transported via constructed closed storm drain channels. An inspection of the stream (see Appendix B for the full report) conducted for this EA in June 2002 noted "...just a trickle..." of stream flow and the presence of pools which may be "...permanent features".[16]

[16]AECOS, Inc., Biological resources survey for a streambank repair project on Nuhelewai Stream, Honolulu, June 21, 2002. Reproduced in Appendix B of this EA.

CHAPTER 5 - ENVIRONMENTAL CONSEQUENCES

5.1 Climate

None of the alternatives are anticipated to have any significant impacts on climate, regional or local.

5.2 Geology and Groundwater Sources

None of the alternatives are anticipated to have any significant impacts on geology or groundwater sources, regional or local.

5.3 Topography

None of the alternatives are anticipated to have any significant impacts on topography, regional or local. Stream contours will change with the addition of the open concrete-lined drainage channel.

5.4 Flora

None of the alternatives are anticipated to have any significant impacts on flora, regional or local.

5.5 Fauna

None of the alternatives are anticipated to have any significant impacts on fauna, regional or local.

5.6 Endangered Species

None of the alternatives are anticipated to have any significant impacts on endangered species, regional or local.

5.7 Historical and Archaeological Resources

None of the alternatives are anticipated to have any significant impacts on historical or archaeological resources, regional or local. There are no historic sites at the project location (see Appendix B). If cultural deposits or burials are found during excavation, the State Historic Preservation Division will be immediately notified and appropriate arrangements made per State Law.

5.8.1 Watershed

None of the alternatives are anticipated to have any significant impacts on the watershed.

5.8.2 Plans, Land Use and Ownership

None of the alternatives are anticipated to have any significant impacts on land use or ownership, regional or local, except in-so-far as to maintain the existing condition by reducing the streambank erosion hazard to protect the existing built-up developed areas adjacent to the stream channel. During public review, the City Department of Planning Permitting suggested that the proposed project incorporate a neighborhood mini-park. Such a component is not a suitable addition to the proposed project because the entire channel width is necessary for the project and there is no available area. Use of the existing drainage channel is not a safe place for the public to access. There have also been complaints from residents about loud parties held late at night and residents have concerns about vandalism in the area.

5.8.3 Wetlands

None of the alternatives are anticipated to have any significant impacts on wetlands.

5.8.4 Population

The alternative of "No action" would adversely affect population. All other alternatives benefit the population by providing for health and safety with regard to lessened erosion hazards.

5.9 Flood Hazard, Tsunami and Flood Classifications

None of the alternatives are anticipated to have any significant impacts on flood hazards, tsunami or flood classifications, regional or local. However, "No action" would result in a continued condition of erosion of the adjacent streambanks.

5.10 Hazardous and Toxic Wastes

None of the alternatives are anticipated to have any significant impacts on hazardous or toxic wastes, regional or local.

5.11 Air Quality

None of the alternatives are anticipated to have any significant impacts on air quality, regional or local.

Short term ambient air quality, may be slightly degraded due to implementation of the proposed plan. Such conditions would be due to emissions from the construction equipment and vehicles which may slightly and temporarily impact air quality in the area. The short-term construction impacts on air quality will be mitigated by compliance with the State of Hawaii, Department of Health rules and regulation on construction activities. Such activities include limitations on hours of operation due to normal working hours (see next paragraph) and requirements that all equipment be maintained and operated according to manufactured specifications and in compliance with State and Federal laws. Dust control measures will include use of spot-watering, netting or screens as needed. Compliance with air quality rules are the responsibility of the contractor.

5.12 Noise

Construction activities will cause short-term noise impacts in the area. However, these impacts are not expected to be significant. A noise permit could be required by the Department of Health if the proposed equipment to be used during construction would be operated outside of normal working hours (7:00 AM to 5:30 PM, weekdays) or at night. Noise impacts are mitigated by limitations on hours of operation and requirements that all equipment be maintained according to manufacture specification, including proper muffling of internal combustion engines. Compliance with noise rules are the responsibility of the contractor.

5.13 Water Quality

The methods of construction will prevent the release of material during excavation and construction. Water quality downstream will not be adversely affected. Because the proposed project is not a generator of contaminants, has a short reach and is a small proportion of the total drainage area, it is not anticipated to significantly affect the pollutant loading for the affected drainage basin. Water quality monitoring under the guidance of the DOH Clean Water Branch (CWB) will be conducted prior to, during, and after the proposed project and Best Management Practices will be applied under guidance of the DOH-CWB. Such BMPs may include the use of filters consisting of cloth or other material to prevent the release of suspended solids, the isolation of the work area from the stream through use of sheet pile coffer dams or other measures to be agreed upon by the construction contractor and the Department of Health when permits and BMPs are finalized. Compliance with water quality rules are the responsibility of the contractor.

5.14 Coastal Zone Management

These alternatives are not expected to affect Coastal Zone Management Area programs, activities, plans or policies. A Coastal Zone Consistency Declaration will be filed with the State of Hawaii as part of the application for the U.S. Army Corps of Engineers permit to excavate for the foundation.

5.15 Traffic

Alternatives 1, 2, 3 and 4 require use of trucks on public roadways to transport construction materials or household goods. There would be adverse but temporary impacts on traffic during those periods of transport which would primarily be during normal working hours. Normal working hours are considered to be between 6:30 AM and 5 PM week-days and excluding state, federal and local holidays.

5.16 Solid Waste

There would be no effect on solid waste facilities. There is not expected to be significant excess material remaining from excavation work. Excess excavated material will be disposed of at an approved landfill site. Material (for example, graded rock) will be imported as necessary to meet design requirements.

5.17 Sanitary Sewer

There would be no impacts on the sanitary sewer system from any of the alternatives.

5.18 Stream Water

The methods of construction will prevent the release of material during excavation and construction. Water quality downstream will not be adversely affected. Stream flow is intermittent and a function of rain fall.

CHAPTER 6 - MITIGATION

Mitigation for implementation of alternatives

Prior to construction, if necessary, and depending on the method or location of dewatering to be applied (if necessary), resources will be protected by requiring the contractor to develop and implement an erosion control plan, a water quality monitoring plan, a best management practices plan, a storm water runoff best management practices plan or other measures compatible with the State of Hawaii, Department of Health, "Best Management Practices". This plan will include dust control measures.

Cultural resource protection will require that the contractor notify the contracting office, construction manager, and the State of Hawaii, Historic Preservation Office in the event that burials or archaeological artifacts are encountered.

Construction-related traffic will operate during normal working hours and will follow existing regulations regarding road clean-up (if necessary) resulting from this traffic and utilize traffic control devices to provide safe ingress and egress to the project site.

CHAPTER 7 - EXPECTED DETERMINATION

7.1 **Finding of No Significant Impact (FONSI)**. The proposed improvements will not have a significant effect on the environment and therefore preparation of an environmental impact statement is not required. This document constitutes a Notice of Negative Declaration/Finding of No Significant Impact for the proposed project. This determination was based on review and analysis of the "Significance Criteria" in Section 11-200-12 of the Hawai'i Administrative Rules, as documented below.

7.2 **Findings and reasons supporting the determination including justifying evidence.**

7.2.1 *No irrevocable commitment to loss or destruction of any natural or cultural resource would result.* There are no sites within the project boundaries, nor would any sites outside the project boundaries be affected.

7.2.2 *The proposed project would not curtail the range of beneficial uses of the environment.* The proposed project will not change the lack of beneficial uses at present in the affected environment.

7.2.3 *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 343, Hawai'i Revised Statutes, "State Environmental Policy", encompass two broad policies: conservation of natural resources, and enhancement of the quality of life. The proposed project will not reduce the natural resources of this intermittent reach of Nuhelewai Stream, and the health and safety of adjacent residents will be enhanced by providing for increased streambank erosion protection.

7.2.4 *The proposed project will improve the economic and social welfare of the community and the state.* The proposed improvements add to the benefits available to residents by reducing the streambank erosion hazards of Nuhelewai Stream channel and thereby protecting adjacent residences.

7.2.5 *The proposed project would not substantially affect public health.* The proposed improvements will benefit public health by lessening the present streambank erosion problem.

7.2.6 *No substantial secondary impacts, such as population changes or effects on public facilities, are expected.* The project will not alter the present use of the area and will not cause population changes nor will there be any effects on existing public facilities. The area has actually had a slight population decrease in the last 10 years implying that the project is not inducing population growth.

7.2.7 *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 of the surrounding community due to reduction of the stream channel erosion problem which puts property at risk..

7.2.8 *No cumulative effect on the environment or commitment to larger actions will be involved.* The proposed improvements affect only the existing project and are part of the required maintenance of the facility.

7.2.9 *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.

7.2.10 *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.

7.2.11 *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 will harden the stream channel in order to reduce streambank erosion in this reach of Nuhelewai stream. This area is not geologically erosion prone, but the streambank erosion problems to be reduced have resulted from urbanization of this area with concomitant loss of natural stream area.

7.2.12 *The proposed project will improve scenic vistas and view planes identified in county or state plans or studies.* The proposed improvements have no impact on scenic vistas because the basic stream channel is below the typical residential or street line of sight towards the ocean and the horizon.

7.2.13 *There will be no requirement for substantial energy consumption.* Construction of the project will not require substantial energy consumption.

CHAPTER 8 - AGENCIES AND PERSONS CONSULTED OR TO BE CONSULTED & PERMITS REQUIRED

The following agencies or groups have been or will be consulted with regard to the draft environmental assessment for the proposed project. The following permits or approvals are or may be required. Supporting coordination documents are included in Appendix C.

Agency or Person to be Consulted	Permit or Approval Required
Department of the Army, Corps of Engineers, Honolulu Engineer District	Permit required to dredge/excavate from stream.
Department of Interior, Fish and Wildlife Service	Coordination required per the federal Endangered Species Act
Department of Commerce, National Marine Fisheries Service	Coordination required per the federal Coastal Zone Management Act
U.S. Environmental Protection Agency	Coordination required per the federal Clean Water Act
State of Hawaii Department of Health	Water Quality Certification; NPDES permits for construction dewatering and construction site storm water management may be required.
State of Hawaii Commission on Water Resource Management	A Stream Channel Alteration Permit will be required.
State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division	Coordination required with the State Historic Preservation Officer per the Federal Historic Preservation Act.
State of Hawaii, Coastal Zone Management Program	CZM Consistency Declaration.
City and County of Honolulu, Departments of Design and Construction & Planning and Permitting	Approval of the EA required. Grading Permit.
Neighborhood Boards	Coordination done through circulation of the EA for public comment and presentation at the Neighborhood Board.
Community Groups	Coordination done through circulation of the EA for public comment.
Individuals	Coordination done through circulation of the EA for public comment.

CHAPTER 9 - REFERENCES

City and County of Honolulu, *Revised Ordinances of Honolulu, Chapter 25 - Shoreline Management.*

City and County of Honolulu, Department of Information Services, *Geographic Information System Database.*

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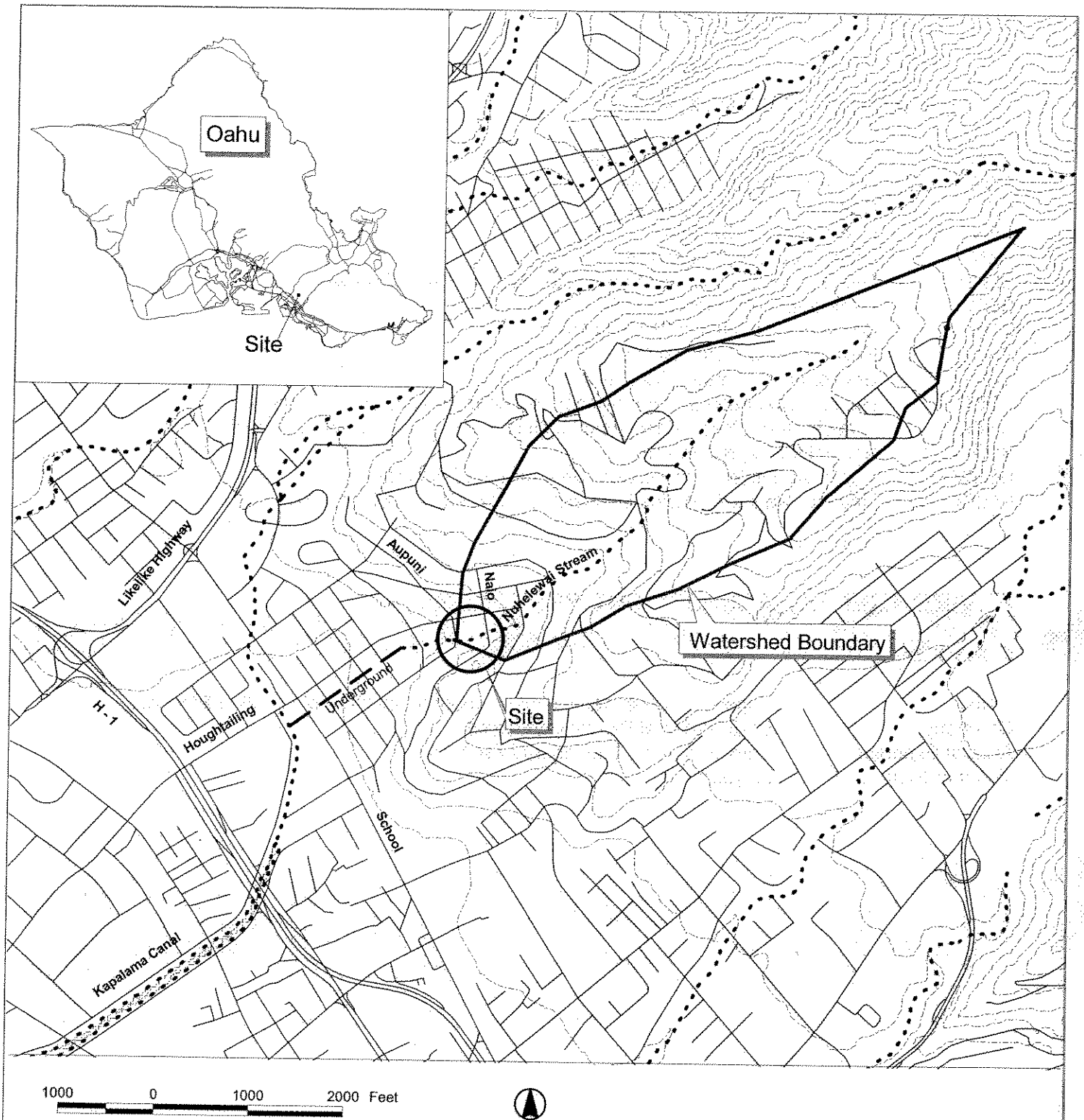
GLOSSARY OF ACRONYMS

CEQ	Council on Environmental Quality
COE, USACE	U.S. Army Corps of Engineers
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CZM	Coastal Zone Management
DLNR	Department of Land and Natural Resources, State of Hawaii
DOD	Department of Defense, U. S.
DOH	Department of Health, State of Hawaii
EA	Environmental Assessment
EIS	Environmental Impact Statement
HEER	Hazard Evaluation and Emergency Response, DOH, State of Hawaii
SHPO	State Historic Preservation Officer, DLNR, Historic Preservation Division
SMA	Special Management Area
USFWS	U.S. Fish and Wildlife Service, Department of the Interior
NMFS	National Marine Fisheries Service, U.S. Department of Commerce

ENVIRONMENTAL ASSESSMENT PREPARERS

CONSULTANT

Name:	Eugene P. Dashiell, Member, American Institute of Certified Planners
Company:	Environmental Planning Services
Area of Expertise:	Environmental Planning and Analysis
Years of Experience:	25 years



Location Map

Figure 1

Nuhelewai Stream Channel Improvement

Adapted from GIS data:

City and County of Honolulu

Prepared by: E. Dashiell, AICP, Environmental Planning Services

Vicinity Map "Honolulu" USGS Quad

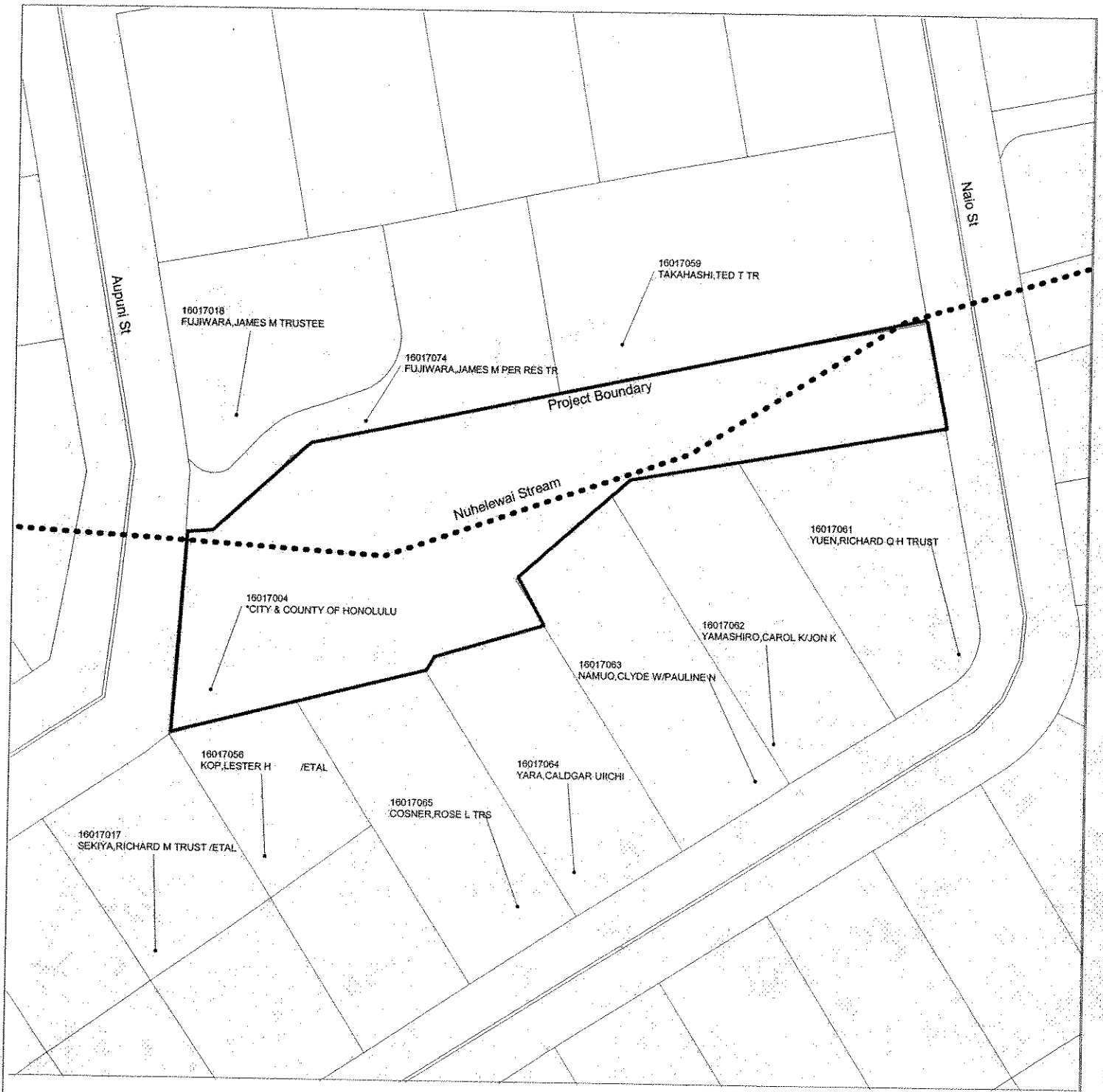
Adapted from GIS data:

City and County of Honolulu

Prepared by: E. Dashiell, AICP, Environmental Planning Services

Figure 2

Nuhelewai Stream Channel Improvement



50 0 50 100 Feet

Site Map
TMK & Ownership

Zoning: R-5 Residential

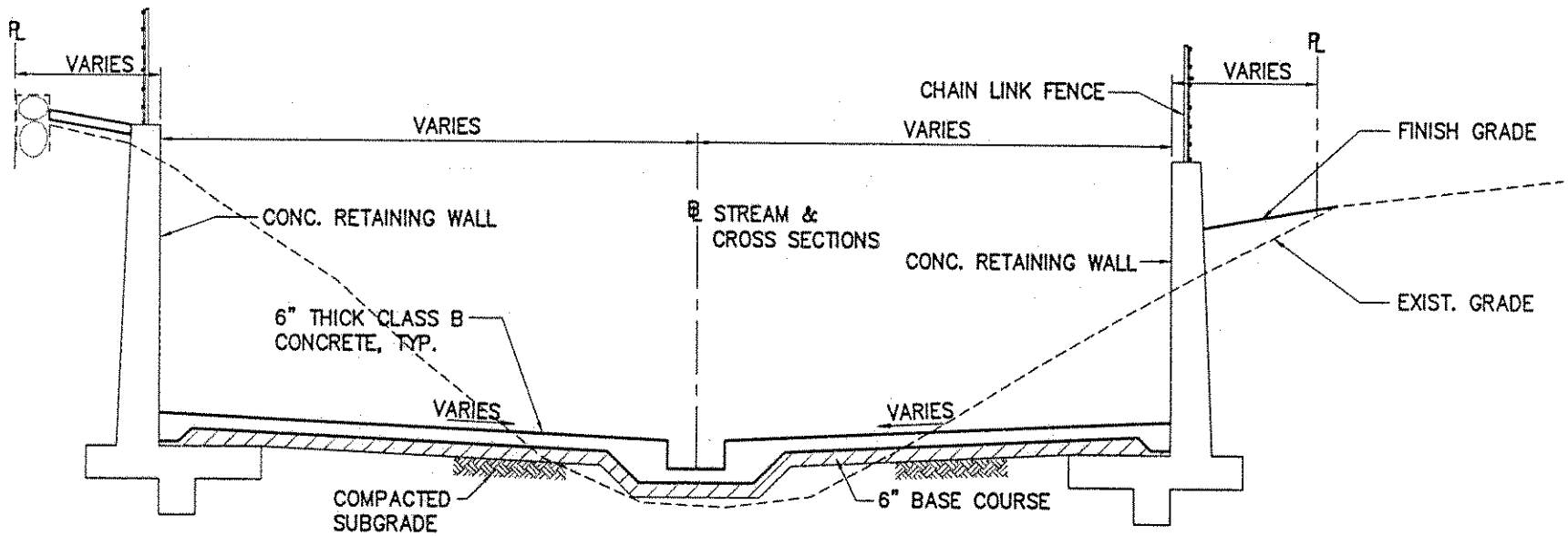
Adapted from GIS data:

City and County of Honolulu

Prepared by: E. Dashiell, AICP, Environmental Planning Services

Figure 3

Nuhelewai Stream Channel Improvement



TYPICAL CHANNEL SECTION

FIGURE 4A – Typical Channel Section

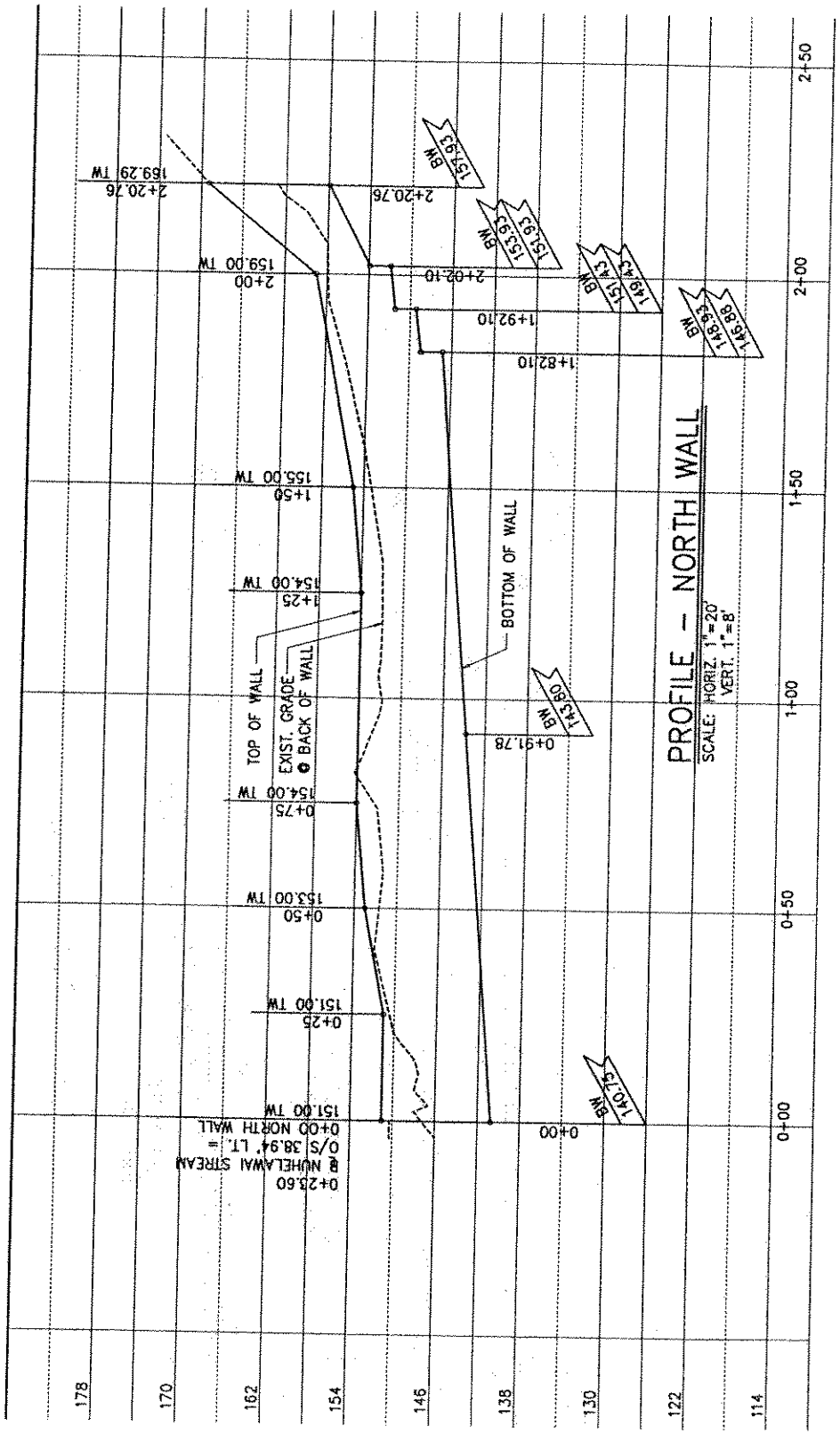


FIGURE 4B – Profile – North Wall

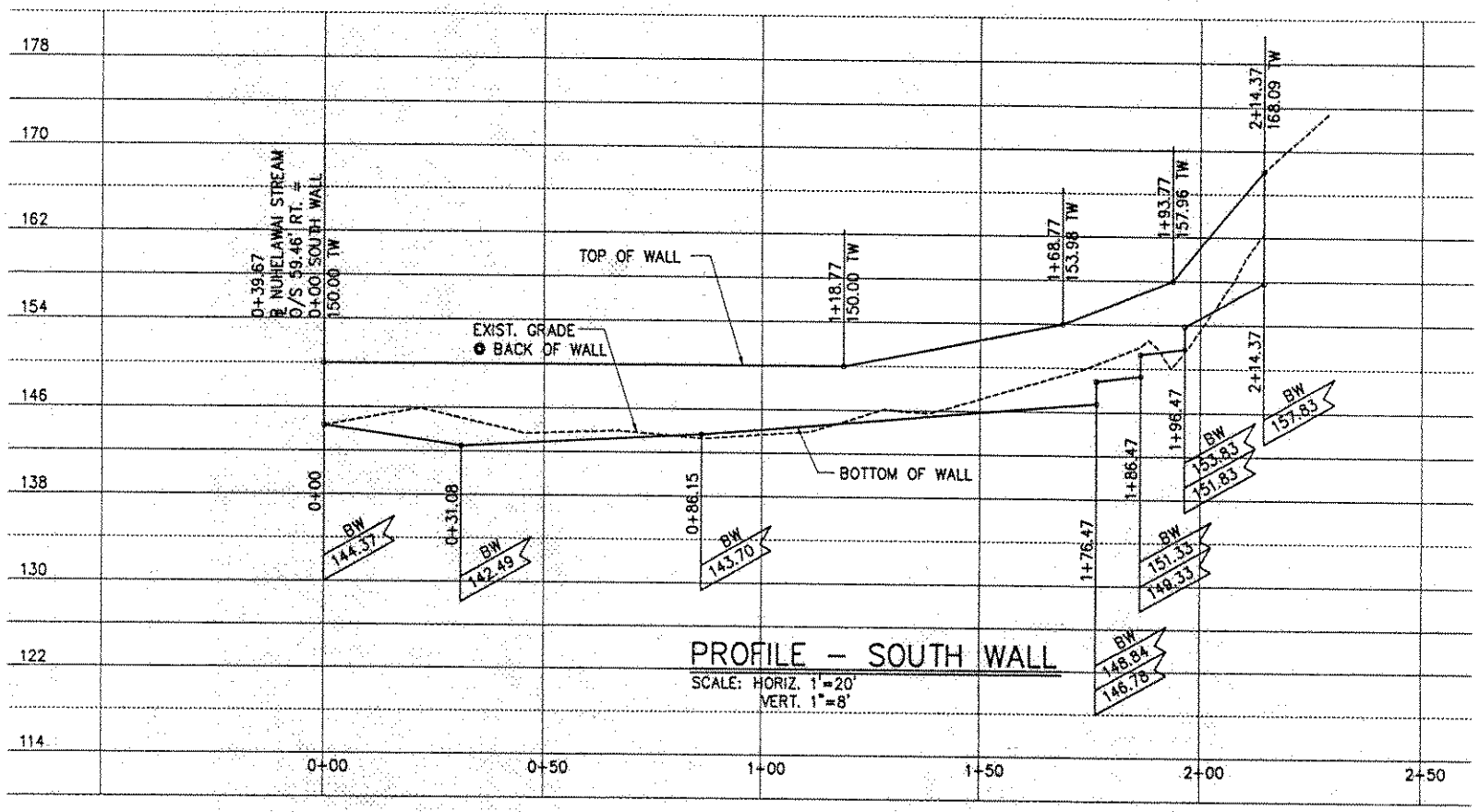
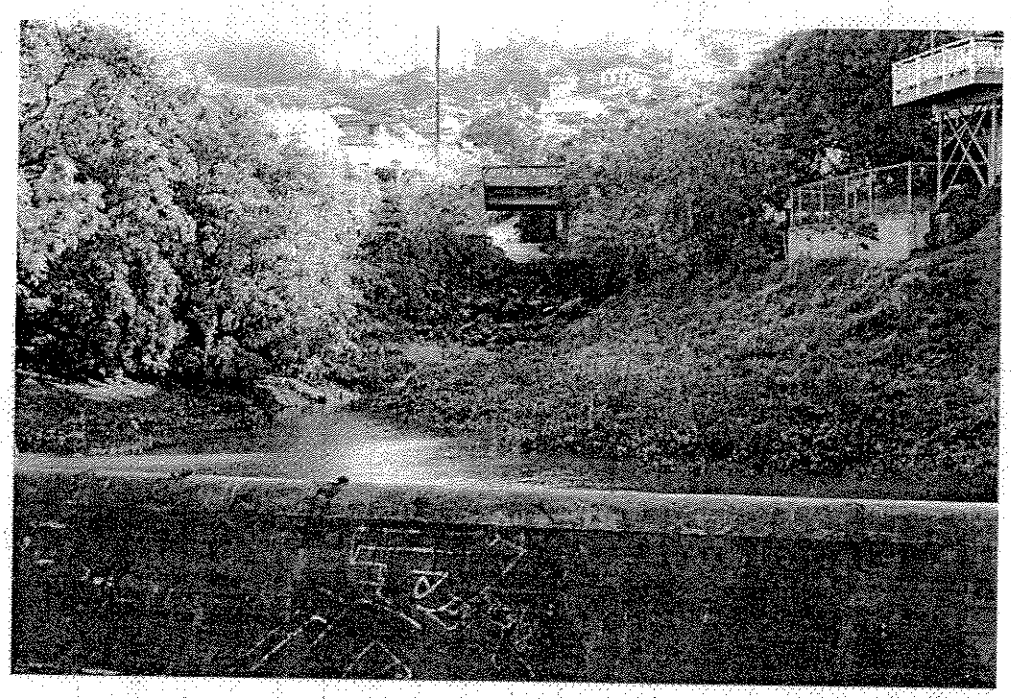


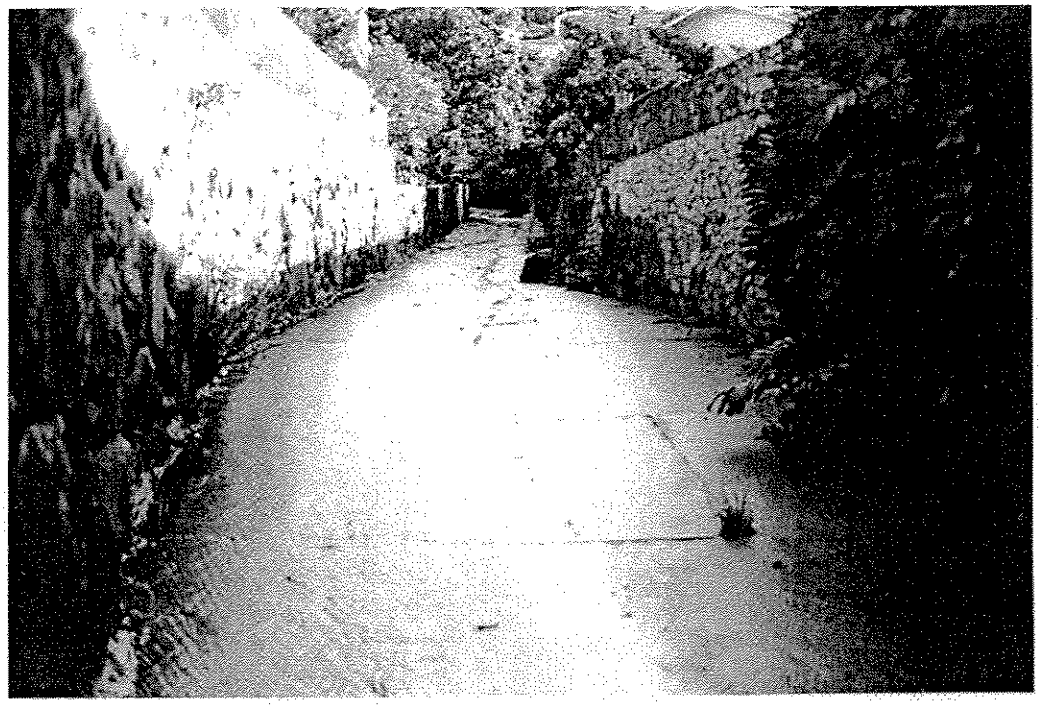
FIGURE 4C – Profile – South Wall

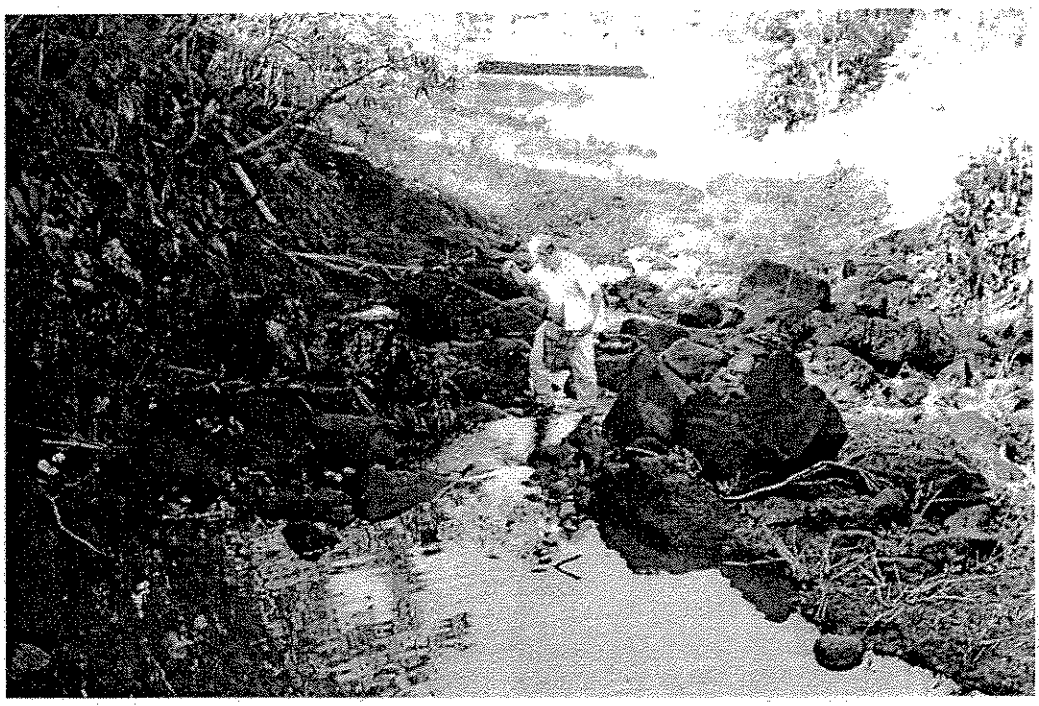


Top: Looking downstream from within existing box culvert beneath Naio St. bridge. Note dam in background.

Bottom: Looking upstream at Naio St. bridge from Aupuni St. bridge. Note dam in foreground. There is some water in the retention basin due do rainfall ongoing the day of inspection.

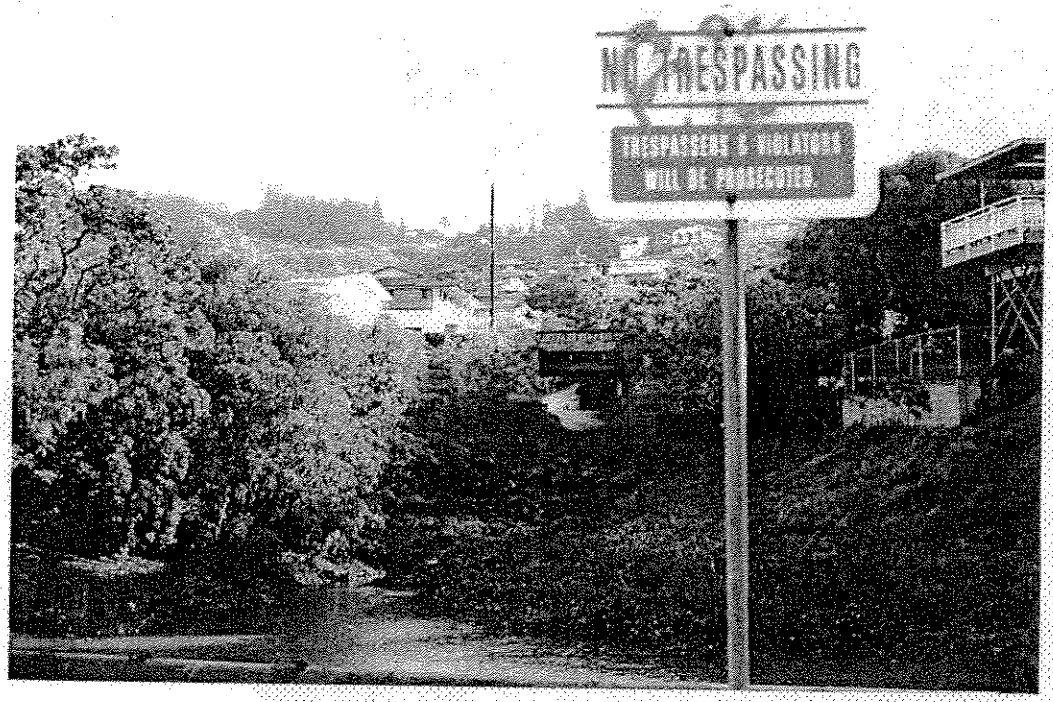
Photographs





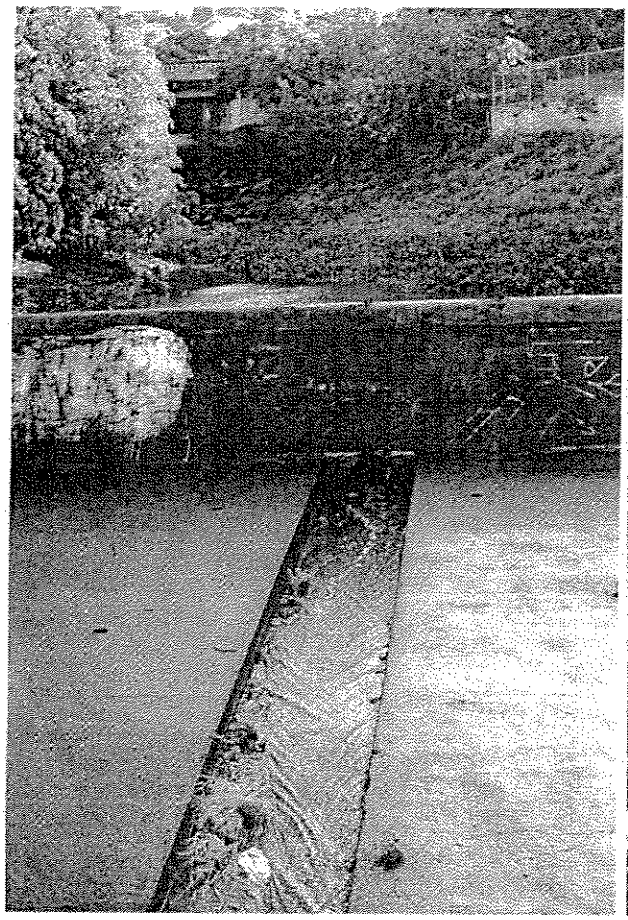
Top: Looking upstream from beneath Naio St. bridge at the existing upstream box culvert.

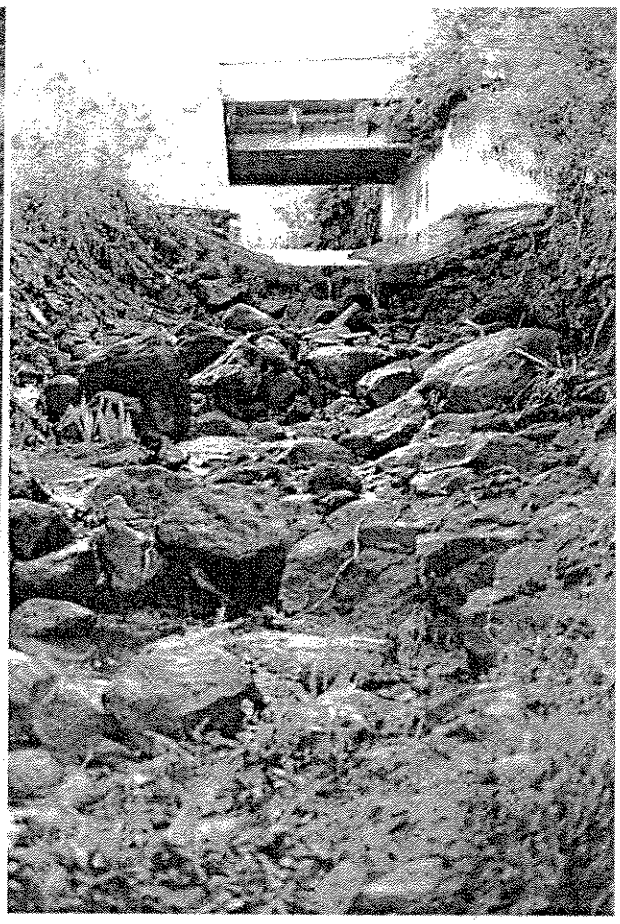
Bottom: Looking downstream below Naio St. bridge. Note boulders.



Top: Looking upstream from within stream at lower edge of box culvert beneath Naio St. bridge. Note undermining and erosion beneath culvert bed, and lack of cut-off wall which contributes to erosion.

Bottom: Looking upstream from Aupuni St. bridge. Note vegetation and overgrowth on left bank and "No Trespassing" sign.





Left: Looking upstream from Aupuni St. bridge at dam and the metering gate and pilot channel which allow a controlled release of water from behind the dam. The metering gate prevents flow-through of boulders and larger-sized debris or sediment. Proposed pilot channel is similar in configuration to existing pilot channel. Dimensions of pilot channel are about 2-feet wide and 1-foot deep.

Right: Looking upstream from mid-stream. Note erosion on right and left banks just below Naio St. bridge. Eroding banks are undermining private residential lots.

APPENDIX A

ARCHAEOLOGICAL ASSESSMENT

Aki Sinoto Consulting – Cultural Resource Management
2333 Kapiolani Blvd. No. 2704, Honolulu, Hawai`i 96826 Tel: (808)941-9538 Fax: (808)942-1096

January 9, 2002

Mr. Eugene P. Dashiell
Eugene P. Dashiell Environmental Planning
1314 South King Street, Suite 951
Honolulu, Hawai`i 96814

Dear Mr. Dashiell:

Subject: Results of an Archaeological Assessment of a Segment of Nuhelewai Stream, Kapalama, Kona, O`ahu (TMK 1-6-17:04)

An archaeological surface assessment was conducted on January 2, 2002, along a segment of Nuhelewai Stream, located in upper Kamehameha Heights, in Kapalama *ahupua`a*, Kona District, O`ahu Island (Fig. 1 attached). The project area encompasses the unimproved section of the stream, located between Naio and Aupuni Streets, east of Kealia Drive. The stream sections both above and below the project area are channelized and concrete bridges span the crossings at both streets.

The streambed in this section appears largely natural, on a *mauka-makai* slope, with large boulders and rocks concentrated within the central portions surrounded on both sides by earthen, grassy areas. Sections along both banks are discontiguously protected by modern retaining walls of various heights and constructions. At the time of inspection, small pools of standing water were evident with minimal flow. Several of the large boulders exhibited signs of drilling and blasting, indicating that some modification of the streambed may have taken place in the past.

An examination of the streambed and banks showed that no archaeologically significant remains or evidence of past human activities were present within the stream easement owned by the City & County of Honolulu. Areas of eroded embankments, particularly along the northeastern periphery of the easement, were inspected for any evidence of subsurface deposition or remains with negative results. No evidence of current use of the area was encountered, although the ease of access probably provides an area for recreational netting of small freshwater fish, such as guppies, and the gathering of aquarium plants, such as *Anacharis sp.* which appeared to be plentiful.

Since no culturally sensitive remains or elements are located within the stream easement, no further work is recommended prior to the commencement of any stream improvements. However, the bridges, most likely, were constructed more than fifty years ago and can be considered historic sites and accorded appropriate protection under Chapter 6E of the Hawaii Revised Statutes or Section 106 depending on the source of project funding. The Historic Architecture Section of the State Historic Preservation Division of the Department of Land and Natural Resources should be contacted regarding these bridges when and if modifications become imminent.

Should you have any comments or questions, please contact me at the above listed numbers.

Sincerely,

Aki Sinoto
Consulting Archaeologist

APPENDIX B

AQUATIC RESOURCES ASSESSMENT

Biological resources survey for a stream bank repair project on Nuhelewai Stream, Honolulu[1]

June 21, 2002 *AECOS* No. 1000

Eric Guinther
AECOS, Inc. 45-939 Kamehameha Highway, No. 104
Kaneohe, Hawai'i 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: aecos@aecos.com

Introduction

Although most of Nuhelewai Stream within the urban neighborhoods of Kamehameha Heights and Palama (Figure 1) is confined to a concrete or crm lined channel, the stream segment between Aupuni Street and Naio Street is not so modified. This segment incorporates a debris basin with a low concrete cross-channel barrier at its lower end, and the parcel of land (TMK: 1-6-017:004) including the stream is much wider than the highly modified stream channels up and down stream. Although part of the segment is a bedrock basalt bed, the stream exits from beneath the Naio Street bridge at the upper end directed by the concrete structure towards the left bank. Consequently, during infrequent freshet flows, this bank has been subjected to severe erosion, creating a vertical faced cut that is slowly extending back into the property at TMK: 1-6-017:061 (Naio Street) threatening the stability of a garage structure on that parcel.

On December 19, 2001, a brief survey of the stream in the project area and upstream to the Kamehameha Schools campus was undertaken by Eric Guinther of *AECOS*, Inc. The project site was revisited on June 17, 2002 to confirm several identifications and view the site under "summer" or dry season conditions. The purpose of these surveys was to ascertain if the stream harbored any biological resources that might be adversely impacted by either channelization of the stream through the project area or construction of a wall to prevent further erosion of the left bank.

[1] Report prepared for Eugene P. Dashiell, AICP, Environmental Planning Services, for an environmental assessment entitled "Nuhelewai Stream Improvements" This report will become part of the public record.

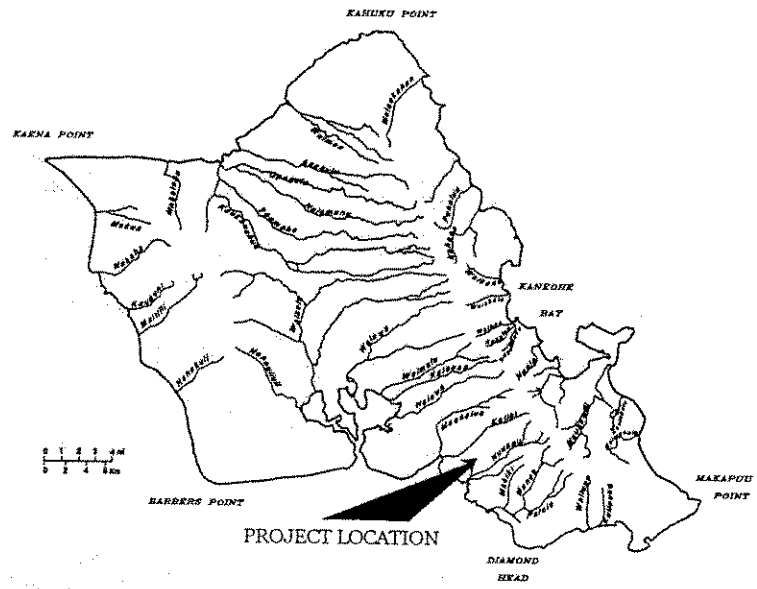


Figure 1. Project location in relation to major streams on O`ahu.

Stream Description

The small stream known as Nuhelewai Stream occupies the gulch that lies between Alewa Heights and Kamehameha Schools in west central Honolulu. This stream is mostly channelized within the Kamehameha Heights neighborhood, and is contained within an underground culvert through much of its lower course through Palama before discharging into Kapalama Stream near Damien High School. The stream appears to arise above the campus of Kamehameha Schools, in the vicinity of the Alewa Heights water reservoir around 325 m (1060 ft) elevation at the very upper end of Alewa Drive. However, the stream is clearly intermittent through the campus of Kamehameha Schools. The stream bank restoration project, for which this survey was undertaken, will involve that portion of the stream between Naio and Aupuni streets. Here, the stream is either intermittent or interrupted perennial. Water was flowing in mid-June, although just a trickle. Pools in the

stream bed harbor snails and fishes, which suggest these pools are permanent features. However, the long wet season in 2001-2002 may have permitted colonization by migration upstream from perennial Kapalama Stream (State Perennial Stream ID No. 3-3-10).

Upstream from the Naio Street bridge (Figure 2a) to above houses on Makanani Street, the stream is confined to a concrete and crm lined channel. Just above Aupuni Street occurs a debris basin behind a low, concrete barrier (Figure 2b). Below Aupuni, the stream again enters a completely lined channel, and eventually flows into an underground storm sewer.

Riparian Vegetation — Vegetation found in the area (stream bed and banks; project parcel TMK: 1-6-017:004) is listed in Table 1 identified from the two field visits. The vast majority of species are either alien weedy species or ornamentals (or escaped ornamentals) growing along the boundary with adjacent yards. There is little of botanical interest, although it is noteworthy that large numbers of seedlings of trees such as *kukui* and Java plum are sprouting in the stream bed, representing material brought in by stream flow from further upslope. The area around the debris basin (comprising half or more of the survey area) is periodically sprayed to suppress weeds. This maintenance favors fast growing weeds such as the spiny amaranth and various grasses, keeping shrubs and trees from getting a foothold in the riparian zone.

A total of 73 species of plants were identified, not including several that were either yard plants or escaped ornamentals not recognized by the biologist. Of the 73 species, 11 (15 %) were ornamentals encroaching from adjacent yards or escaped from cultivation but not considered naturalized on O`ahu, and 2 species (3 %) were native plants: *kukui* and a sedge (*Pycreus polystachyos*). *Kukui* is considered a plant introduced to Hawai`i by the ancient Polynesians and was found at this site only as seedlings carried in from well upstream. *P. polystachyos* is a common sedge in wet areas, native to Hawai`i and elsewhere in the Pacific.

Water Quality — A single water sample was obtained from Nuhelewai Stream near the center of the parcel and analyzed for turbidity, total suspended solids (TSS), and nutrients (ammonia, nitrate + nitrite, total nitrogen, and total phosphorus). Results are reported in Table 2.

Although not a complete suite of analyses for basic water quality parameters as listed in the State of Hawaii water quality regulations for streams (DOH, 1999), the measurements are those parameters generally requiring laboratory analyses. Other measurements (pH, temperature, and dissolved oxygen) are measured in the field and tend to change throughout the day, especially in small, low flowing streams

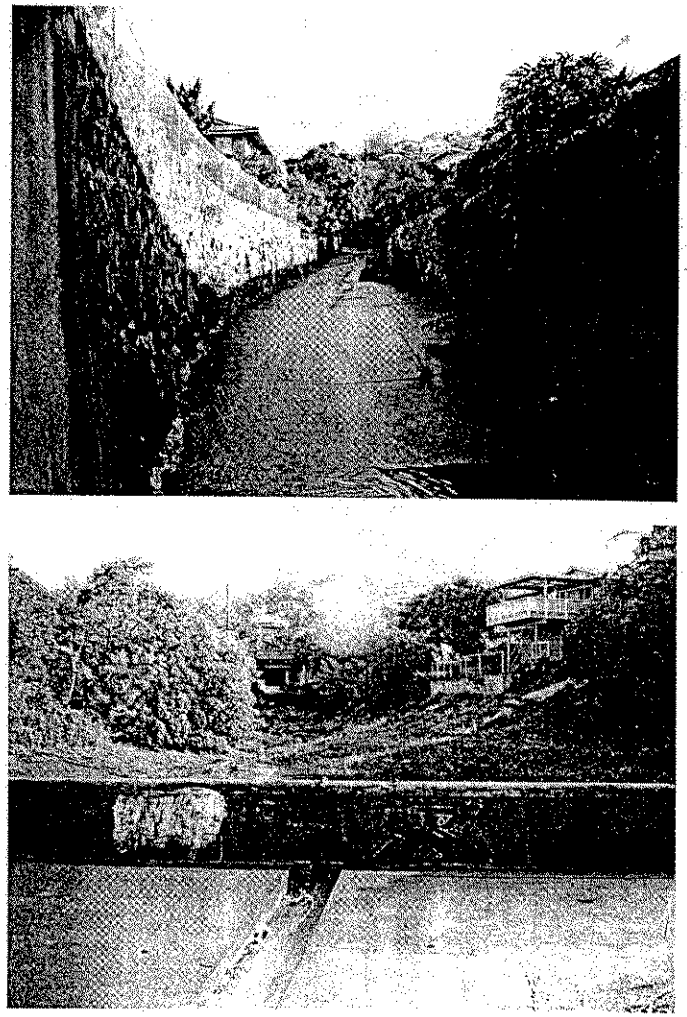


Figure 2a. (Upper). View of Nuhelewai Stream looking upstream from beneath the Naio Street bridge. Figure 2b (Lower). Looking upstream from just below the debris barrier towards the Naio Street bridge. The grassy slopes are part of the debris basin; the rocky stream bed above is the site of severe bank erosion.

Table 1. Checklist of plants found along Nuhelewai Stream between Naio Street and Aupuni Street (TMK: 1-6-017:004), Kamehameha Heights, Honolulu, O`ahu.

Species	Common name	Status	ABUNDANCE LOW	MID	UP
FERNS					
POLYPODIACEAE					
Phymatosorus grossus (Langsd. & Fisch.) Brownlie	*laua`e*	nat.		R	
FLOWERING PLANTS					
DICOTYLEDONES					
ACANTHACEAE					
Asystasia gangetica (L.) T. Anderson	Chinese violet	nat.		O	
AMARANTHACEAE					
Amaranthus spinosus L.	spiny amaranth	nat.		AA	
ANACARDIACEAE					
Mangifera indica L.	mango	nat.		C	
APOCYNACEAE					
Allamanda cathartica L.	allamanda	orn.		R	
Catharanthus roseus (L.) G. Don	Madagascar periwinkle	nat.		R	
Plumeria acuminata Ait.	plumeria	orn.		U	
ARALIACEAE					
Schefflera actinophylla (Endl.) Harms	octopus tree (seedling)	nat.		R	
ASTERACEAE (COMPOSITAE)					
Bidens pilosa L.	beggar's tick	nat.		C	
Eclipta alba (L.) Hassk.	false daisy	nat.		U	
Emilia fosbergii Nicolson	Flora's paintbrush	nat.		O	
Flaveria trinervia (Spreng.) C. Mohr		nat.		R	
Pluchea carolinensis (Jacq.) G. Don	sourbush	nat.		R	
Sonchus oleraceus L.	sow-thistle	nat.		R	
Tridax procumbans L.	coat buttons	nat.		R	
CACTACEAE					
Opuntia sp.	*panini*	nat.		R	
CONVOLVULACEAE					
Ipomoea obscura (L.) Kerr-Gawl		nat.		C	
Ipomoea triloba L.		nat.		U	
CRASSULACEAE					
Kalanchoe pinnata L.	air plant	nat.		R	
CUCURBITACEAE					
Coccinia grandis (L.) Voigt	scarlet-fruited gourd	nat.		C	
Momordica charantia L.	balsam apple	nat.		O	

Table 1. (continued)

EUPHORBIACEAE			
Aleurites moluccana (L.) Willd.	*kukui* (seedlings)	pol.	U
Chamaesyce hirta (L.) Millsp.	garden spurge	nat.	C
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	nat.	O
Chamaesyce prostrata (L.) Müll. Arg.	little-leaved spurge	nat.	R
Phyllanthus debilis Klein ex Willd.		nat.	A
Ricinus communis L.	castor bean	nat.	R
FABACEAE			
Canavalia cathartica Thours	*Maunaloa*	nat.	U
Crotalaria incana L.	fuzzy rattlepod	nat.	C
Leucaena leucocephala (Lam.) deWit	*koa-haole*	nat.	C
Microptilium lathyroides (L.) Urb.	cow pea	nat.	A
Senna surattensis (Burm.) H. Irwin & Barneby	*kolomana*	nat.	O
LAURACEAE			
Persea americana Mill.	alligator pear	nat.	R
LYTHRACEAE			
Ammannia sp.	toothcup	nat.	R
MALPIGHIACEAE			
Malpighia punicifolia L.	acerola cherry	orn.	R
MALVACEAE			
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	nat.	R
Malvastrum coromandelianum (L.) Garck	false mallow	nat.	C
Sida rhombifolia L.	Cuba jute	nat.	U
MORACEAE			
Ficus microcarpa L. fil.	Chinese banyan	nat.	O
MORINGACEAE			
Moringa oleifera Lam.	horseradish tree	orn.	R
MYRTACEAE			
Psidium guajava L.	guava	nat.	R
Syzigium cumini (L.) Skeels	Java plum (seedlings)	nat.	C
OLEACEAE			
Jasminum multiflorum (Burm f.) Andr.	star jasmine	orn.	R
OXALIDACEAE			
Oxalis corymbosa DC	pink wood sorrel	nat.	R
RUTACEAE			
Citrus grandis (L.) Osbeck	pummelo	orn.	R
SAPINDACEAE			
Cardiospermum cf. *grandiflorum* Sw.	balloon vine	nat.	R
SOLANACEAE			
Lycopersicon esculentum Mill.	cherry tomato	nat.	U

Table 3. Checklist of aquatic fauna observed in Nuhelewai Stream.

Species	Common name	Status	QC Code	Abundance
ALGAE				
CYANOPHYTA, HORMOGONALES	(bluegreen "algae")			
OSCILLATORIACEAE				
Schizothrix sp.	(tentative id)		20	C
CHLOROPHYTA, ZYGNEMATALES	(green algae)			
CLADOPHORACEAE				
Rhizoclonium hieroglyphicum			20	AA
Cladophora sp.			20	U
VASCULAR PLANTS				
SPERMATOPSIDA, DICOTYLEDONES				
HYDROCHARITACEAE				
Egeria densa Planch.	elodea	nat	10	C
INVERTEBRATES				
MOLLUSCA, GASTROPODA	(mollusks)			
THIARIDAE				
Melanoides tuberculata	melanid snail	nat	10	O
PHYSIDAE				
Physa cf. *virgata*	pond snail	nat	20	AA
VERTEBRATES				
VERTEBRATA, PISCES	(fishes)			
POECILIIDAE				
Poecilia mexicana (Steindachner)	shortfin mollie	nat.	10	A
Poecilia reticulata Peters	guppy, rainbow fish	nat	10	O
VERTEBRATA, AMPHIBIA	(frogs & toads)			
BUFONIDAE				
Bufo marinus	marine toad, tadpole	nat	10	AA
Bufo marinus	marine toad, adult	nat	10	R
RANIDAE				
Rana catesbeiana Shaw	bullfrog, adult	nat	10	R

KEY TO SYMBOLS USED:

Status:
- **end.** - endemic - A native species found only in the Hawaiian Islands.
- **ind.** - indigenous. A native species also found elsewhere in the Pacific.
- nat. - naturalized. An introduced or exotic species.
- orn. - ornamental; planted at site or nearby; not naturalized in Hawai'i.

QC Code:
- 10 - Observed in the field by aquatic biologist.
- 20 – Collected, identified in the laboratory; specimen(s) not saved.
- 21 – Collected, identified in the laboratory; voucher specimen(s) saved.

Abundance categories:
- R – Rare - only one or two individuals seen.
- U - Uncommon - several to a dozen individuals observed.
- C - Common - Seen everywhere, although generally not in large numbers.
- A - Abundant - found in large numbers and widely distributed.
- AA – very abundant; numbers exceed typical population densities

Conclusions

In general, while this part of Nuhelewai Stream is the last remnant of stream bed in the dense urban land-use sector, the aquatic flora and fauna is uninteresting. None of the animal species observed in December 2001 or June 2002 is a native aquatic species. The stream appears to be perennial in the form of permanent pools of water within the segment surveyed. Clearly intermittent segments occur upstream and downstream where the stream bed is completely concrete-lined. One or more deeper pools may provide more or less permanent habitat for aquatic species, which may include native fishes or crustaceans not observed during our brief survey. However, it is unlikely, any part of this tributary of Kapalama Stream serves as breeding habitat for native aquatic animals.

No aquatic species listed as endangered, threatened, proposed or candidate species by the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*; see CFR; 1999; Federal Register, 1999a, 1999b, 2001) or the State of Hawaii under HRS §13-124 (3a) were detected in the project area.

We would argue that as the only remaining natural segment of stream in the urban district of Kamehameha Heights, the stream deserves better treatment than to be completely concrete-lined through this parcel. Such a solution is contrary to modern approaches to stream flooding and erosion problems. Nonetheless, the bank erosion below Naio Street will require some combination of concrete or massive boulders to harden the left bank before damage occurs to adjacent properties. The Kamehameha Heights neighborhood can be characterized as one almost completely lacking open park space. A solution combining bank stabilization where required with people-friendly maintained open space would provide the neighborhood with an asset it presently lacks: transforming the debris basin from an eyesore to a minipark. Planting the debris basin with lawns and trees, and leaving some natural stream channel, would be the most environmentally acceptable solution. However, unless such a plan is championed by local residents, it can not be expected that the City & County (nor the taxpayers) should want to do any more than find an engineering solution to the erosion problem and continue the maintenance as necessary to reduce the downstream flood hazard.

Literature Cited

Code of Federal Regulations (CFR). 1999. Title 50 - Wildlife and Fisheries, Part 17 - Endangered and Threatened Wildlife and Plants, Subpart B - Lists. 50 CFR §17.11 and §17.12. U.S. Government Printing Office. 37 pp. (Also URL: `http://endangered.fws.gov`).

Table 1. (continued)

URTICACEAE			
Pilea microphylla (L.) Liebm.	artillery plant	nat.	U
VERBENACEAE			
Vitex trifolia var. *subtrisecta* (Ktze.) Mold	blue vitex	orn.	R
MONOCOTYLEDONES			
ARACEAE			
Monstera delicosa Liebm.		orn.	R
Philodendron scandens oxycardium	sweetheart vine	orn.	U
Syngonium cf. *auritum* (L.) Schott	nephthytis	nat.	O
Xanthosoma roseum Schott	common `ape	nat.	R
CANNACEAE			
Canna indica L.	Indian shot	nat.	R
COMMELINACEAE			
Commelina diffusa L.	*honohono*	nat.	U
CYPERACEAE			
Cyperus alternifolius L.	umbrella sedge	nat.	C
Cyperus difformis L.		nat.	A
Cyperus gracilis R. Br.	McCoy grass	nat.	R
Eleocharis sp.	spikerush	nat.	R
Kyllinga nemoralis (JR.& G Forster) Dandy ex Hutchinson & Dalziel		nat.	U
Pycreus polystachyos (Rottb.) P. Beauv.		**ind.**	C
LILIACEAE			
Asparagus sprengeri Regel	asparagus "fern"	orn.	R
Sansevieria trifasciata Prain.	bowstring hemp	orn.	U
POACEAE (GRAMINEAE)			
Chloris radiata (L.) Sw.	radiate fingergrass	nat.	C
Coix lachryma-jobi L.	Job's tears	nat.	O
Digitaria insularis (L.) Mez ex Ekman	sourgrass	nat.	O
Echinochloa colona (L.) Link	jungle rice	nat.	U
Echinochloa crus-galli (L.) P. Beauv.	barnyard grass	nat.	C
Eleusine indica (L.) Gartn.	beach wiregrass	nat.	C
Leptochloa uninerva (L. Presl.) Hitch. & Chase	sprangletop	nat.	A
Panicum maximum Jacq.	Guinea grass	nat.	C
Setaria verticillata (L.) P. Beauv.	bristly foxtail	nat.	U
Themeda villosa (Poir.) A. Camus	Lyon's grass	nat.	O

Table 1 Legend:
Status = distributional status
end. = endemic; native to Hawaii and found naturally nowhere else.
ind. = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
nat. = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

Table 1 Legend (continued):
orn. = exotic, ornamental; plant not naturalized at this location (not well-established outside of cultivation).
pol. = Polynesian introduction before 1778.
Abundance = occurrence ratings for plants
R – Rare - only one or two plants seen.
U - Uncommon - several to five plants observed.
O - Occasional - found between five and ten times; not abundant anywhere.
C - Common - considered an important part of the vegetation and observed numerous times.
A - Abundant - found in large numbers; may be locally dominant.
AA - Abundant - abundant and dominant; defining vegetation type.

In such streams, primary interest is usually on the nutrients which are being carried downstream with the flow. These substances encourage algal growth in the stream channel and can contribute to eutrophication (excessive enrichment) of receiving waters; in this case Kapalama Basin of Honolulu Harbor.

Table 2. Some basic water quality characteristics of Nuhelewai Stream, Island of O`ahu (December 2001).

	Time sampled	Location	Turbidity (ntu)	TSS (mg/l)	Nitrate + nitrite (µg N/l)	Ammonia (µg N/l)	Total N (µg N/l)	Total P (µg P/l)
12-19-01 **Sta. 1**	1015	middle of parcel	15.8	7.2	283	< 1	732	77

Nutrient results indicate moderately high concentrations of nitrogen and phosphorus compounds. The value of 77µg P/l as total phosphorus, for example, is at least twice as much phosphorus as seen in unpolluted streams. The relatively high turbidity and TSS values recorded in December indicate considerable particulate matter being carried by the stream at the time, and if much of this were organic matter, the moderately high TN and TP values could be expected.

Aquatic Biota — The diversity of the aquatic biota is low and consists entirely of non-native species., Nonetheless, the types and abundances of these organisms is greater than would be expected for an intermittent stream. If this segment of Nuhelewai is intermittent, then the occurrence of dry conditions may be less often than annually. Alternatively, the several large pools, especially the one just below Naio Street, may be permanently wet, serving as a refuge for the aquatic species throughout the dry season.

Federal Interagency Stream Corridor Restoration Working Group. 2000. Website for: *Stream Corridor Restoration: Principals, Processes and Practices* by the Federal Interagency Stream Corridor Restoration Working Group. URL: http://www.usda.gov/stream_restoration/.

Federal Register. 1999. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Recycled Petitions, and Annual Description of Progress on Listing Actions. *Federal Register*, 64 (205 (Monday, October 25, 1999)): 57534-57547.

_____. 2001. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Notice of Findings on Recycled Petitions. *Federal Register*, 66 No. 5 (Monday, January 8, 2001): 1295 - 1300.

State of Hawaii, Department of Health (DOH). 1999. Hawaii Administrative Rules, Title 11, Department of Health, Chapter 54, Water Quality Standards. State of Hawaii, Department of Health.

_____. 1989. Hawaii Administrative Rules (HAR), Title 13, Subtitle 4 Fisheries, Part VI Protected Freshwater Fisheries Resources, Chapter 100 O`opu and Hinana.

State of Hawaii, Department of Land and Natural Resources (DLNR). 1996. Hawaii Administrative Rules. Title 13, Department of Land and Natural Resources, Subtitle 5, Forestry and Wildlife, Part 2 Wildlife, Chapter 124. 11 p.

APPENDIX C

COORDINATION WITH AGENCIES AND THE PUBLIC

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

HAWAI'I HISTORIC PRESERVATION
DIVISION REVIEW

Log #: 2004.0502
Doc #:0402EJ28
Date Received: February 6, 2004

Applicant/Agency: Eugene P. Dashiell, AICP
Environmental Planning Services
Address: 1314 South King Street, Suite 952
Honolulu, Hawaii 96814

SUBJECT: Chapter 6E-8 Historic Preservation Review- Draft Environmental Assessment for the Nuhelewai Stream Improvements
Ahupua`a: Kapalama
District, Island: Kona, O`ahu
TMK: (1) 1-6-017:004

1. ____ This project has not gone through the historic preservation review process. Please submit documentation _____

2. ____ This project has already gone through the historic preservation preview process.
____ a. mitigation has been completed
____ b. other

3. ✓ We have not been consulted on this undertaking, however we believe there are no historic properties present, because:
____ a) intensive cultivation has altered the land
____ b) residential development/urbanization has altered the land
____ c) previous grubbing/grading has altered the land
✓ d) an acceptable archaeological assessment or inventory survey found no historic properties (Aki Sinoto Consulting, January 9, 2002, included in DEA)
✓ e) other: No historic sites found during survey area. No work will be done on Naio and Aupuni Bridges, which are more than 50 years old.

✓ Thus, we believe that "no historic properties will be affected" by this undertaking.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

DEPARTMENT OF DESIGN AND CONSTRUCTION
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0149

July 25, 2004

Ms. P. Holly McEldowney, Administrator
Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

Dear Ms. McEldowney:

Subject: Draft Environmental Assessment for Nuhelewai Stream Improvements, TMK: 1-6-17: 4

We note your comment ". . . that 'no historic properties will be affected' by this undertaking."

If you have any questions, please call Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

for TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EPO-04-024

February 24, 2004

Mr. Timothy E. Steinberger, P.E.
Director
Department of Design and Construction
City and County of Honolulu
615 South King Street
Honolulu, Hawaii 96843

Dear Mr. Steinberger:

SUBJECT: Draft EA for Nuhelewai Stream Improvements
TMK 1-6-17:4

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

Environmental Planning Office

Water body type and water quality designations

Section 4.13.1 of the Draft Environmental Assessment (DEA) suggests, "The State of Hawaii does not designate water quality in Nuhelewai Stream because the stream has only intermittent flow"(p. 4-3). We would like to clarify that the State of Hawaii does indeed designate water quality in streams with intermittent flow, and that intermittent flow may occur in two stream types – interrupted perennial streams and intermittent streams, as defined in Hawaii Administrative Rules Chapter 11-54-01 (http://www.state.hi.us/doh/rules/11-54.pdf).

Regardless of flow regime and stream type, Nuhelewai is, by virtue of surrounding land use, designated as a Class 2 inland stream for purposes of applying the standards set forth in Chapter 11-54 and for the selection or definition of appropriate water quality parameters and uses to be protected in the stream waters.

According to the biological resources survey appended to the DEA (Appendix B, p. 2), Nuhelewai at the proposed project site "is either intermittent or interrupted perennial." We suggest that the Final Environmental Assessment (FEA) present and discuss any additional information that might assist this determination.

Pending water quality management actions

The proposed project is located in the drainage basin of Kapalama Stream and Honolulu Harbor and Shore Areas. The basin's stream and estuary waters (including the Nuhelewai tributary) are currently listed under section 303(d) of the Clean Water Act as water bodies in which water quality is impaired by excessive nutrients, turbidity, and trash. The embayment and coastal waters are similarly listed for excessive nutrients, pathogens, metals, turbidity, and suspended solids (http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf).

The impaired status of these waters requires that the Department of Health establish Total Maximum Daily Loads (TMDLs) suggesting how much the existing pollutant loads should be reduced in order to attain water quality standards in the coastal waters. Although these TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. We expect that this would be accomplished through the proper application of suitable best management practices in all phases of the project and adherence to the City and County of Honolulu Rules Relating to Storm Drainage Standards and any applicable permit conditions.

When TMDLs are established for these waters, the State will establish pollutant load allocations for the surrounding lands and point source discharges and develop an implementation plan to improve receiving water quality. One of the components of this implementation plan will be to reduce the polluted discharge and runoff entering the estuary receiving waters. Thus we suggest that the applicant plan additional pollutant load reduction practices for future management of the surrounding lands and storm drain system. To facilitate TMDL development and assessment of the potential impact of the proposed project upon pollutant loading in the stream receiving waters, we suggest that the draft Environmental Assessment for this project quantify the pre-and post project pollutant loading for the affected drainage basin.

Proposed Action and Alternatives Considered

According to the DEA, both the upstream and downstream segments of the Nuhelewai channel do not meet current design standards (p. 1-1), and "the stream exits from beneath the Naio Street bridge at the upper end directed by the concrete structure towards the left bank" (Appendix B, p. 1). In order to assess potential cumulative impact of the proposed project, we suggest that the FEA identify any future plans to modify the upstream and downstream segments. In order to more fully evaluate project alternatives, we suggest that the FEA include a discussion of modifying/realigning the Naio Street bridge culvert so that exiting flow velocity is reduced and flow is directed to the center of the stream channel rather than towards the left bank.

The DEA suggests that the most environmentally acceptable solution to the current erosion problem would include planting the debris basin with lawns and trees, and leaving some natural stream channel (Appendix B, p. 10). In order to more fully evaluate project alternatives, we suggest that the FEA include a discussion of using "alternative," "soft," and "green" engineering solutions for bank hardening and stabilization that would provide a more environmentally friendly and aesthetically pleasing channel environment and avoid destruction of the natural bedrock streambed in this area.

If you have any questions about these comments or the Total Maximum Daily Load program, please contact David Penn at 586-4337.

Sincerely,

June F. Harrigan-Lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: EPO
Eugene P. Dashiell

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0148

July 25, 2004

Ms. June F. Harrigan-Lum, Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Ms. Harringan-Lum:

Subject: Draft Environmental Assessment (EA) for Nuhelewai Stream Improvements, TMK: 1-6-17: 4

We have reviewed your comments on the subject document and have the following response:

1. Water body type and water quality designations. The final EA will include your clarification as to stream type and also that Nuhelewai Stream is designated as a Class 2 inland stream with the appropriate water quality parameters per standards set forth in Chapter 11-54. Stream flow data is not available to assist in verification of the actual stream type (intermittent versus interrupted perennial).

2. Pending water quality management actions. The final EA will note the status of the pending TMDLs. Because the proposed project is not a generator of contaminants, has a short reach and is a small proportion of the total drainage area, it is not anticipated to significantly affect the pollutant loading for the affected drainage basin. Pre- and post-monitoring will be done per guidance of the Clean Water Branch (Department of Health) under provisions of the required permits as stated in the subject document.

3. Proposed action and alternatives considered. There are no future plans to modify other reaches of the Nuhelewai channel or the bridge at Naio Street. The existing eroded stream bank is in severe condition and must be remedied. The stream velocities under high flow conditions range exceed 10 feet per second. Vegetated channels cannot withstand such velocities nor can vegetated channels provide structural support to the

eroding steam banks, the remedy of which is the intent of the proposed project. Concreting the channel will prevent erosion and provide for the most efficient maintenance of this area.

If you have any questions, please call Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

1955A Aupuni Street
Honolulu, HI 96817
February 27, 2004

City and County of Honolulu
Project Manager: Dennis Toyama
Department of Design and Construction
650 South King Street, 15th Floor
Honolulu, HI 96813

Dear Mr. Toyama:

This letter is just an input of an idea.

A copy of the Nuhelewai Stream Improvements Draft Environment Assessment, sent by Senator Suzanne Chun Oakland, was received at the James M. Fujiwara Residence. Our father passed away on February 20, 2000.

Going over the above mentioned material, it would be nice to see the City and County of Honolulu have about 5'-10' planting space between the new City's concrete/fence wall and the property owners' wall which run along side this stream from Naio to Aupuni Street. If each of these property owners can have the option to help with beautification in these spaces, and in areas not, the City will continue to spray in areas with weeds. Besides beautification, greenery will surely soften and cool down this new huge concrete stream area. Also, if and when graffiti occurs like there are now, greenery hides from view some of the graffiti and the City's driveway side area where California grass weeds etc. turn brown, dusty, and barren looking whenever the City applies weedkiller.

Our dad always tried to help maintain his side above the stream area like one would a sidewalk area fronting/sides of ones property, and always kept an eye out and reported any mischievous behaviors in the area.

We really appreciate the planned Nuhelewai Stream improvements by the City and County of Honolulu. Thank you for your time in reading an idea.

Very truly yours,

Ida H. Hori
(daughter of James M. Fujiwara)

Enclosure: 2 Pictures

cc: State Senator Suzanne Chun Oakland
City Council Member Rodney Tam
Mr. Kyle Teraoka, Project Mgr., Austin Tsutsumi & Associates
Mr. Eugene P. Dashiell, AICP, Environmental Planning Services
Mr. Ted Takahashi, Neighbor and a Property Owner

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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0151

July 27, 2004

Ms. Ida H. Hori
1955A Aupuni Street
Honolulu, Hawaii 96817

Dear Ms. Hori:

Subject: Draft Environmental Assessment for Nuhelewai Stream Improvements, TMK: 1-6-17: 4

We have reviewed your comments on the subject document and have the following response:

1. It is not possible to incorporate vegetative planters into this project because of the high cost of maintenance over the long-term. However, the completed project will include added fencing in an effort to reduce unauthorized access to the project.

2. Scheduling of the project will be expedited to the extent possible, but time is needed to obtain the requisite federal and state permits which may push the project construction start date into a later budget year.

If you have any questions, please call Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5054 FAX: (808) 692-5857

JEREMY HARRIS
MAYOR

LARRY J. LEOPARDI, P.E.
DIRECTOR AND CHIEF ENGINEER

ALVIN AU
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM04-197

March 1, 2004

MEMORANDUM

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: LARRY LEOPARDI, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT (EA)**
NUHELEWAI STREAM IMPROVEMENTS

We have reviewed the subject draft EA and have no comments.

Should you have any questions, please contact Hugh Liu of my staff at 5337.

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0146

July 23, 2004

MEMORANDUM

TO: MR. LARRY J. LEOPARDI, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

FROM: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR
NUHELEWAI STREAM IMPROVEMENTS, TMK: 1-6-17: 4

We note receipt of your memorandum with no comments on the subject EA.

If you have any questions, please call Dennis Toyama of our Civil Division at Extension 4756.

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

March 8, 2004

Mr. Dennis Toyama
Department of Design and Construction
City and County of Honolulu
650 South King Street, 15th Floor
Honolulu, Hawai`i 96813

Mr. Eugene P. Dashiell, AICP
Environmental Planning Services
1314 South King Street, Suite 952
Honolulu, Hawai`i 96813

Dear Messrs. Toyama and Dashiell:

The Office of Environmental Quality Control has review the draft environmental assessment for the Niuhelewai Stream Improvements, Tax Map Key 1-7-017-004, situated at Kapalama in the judicial district of Honolulu, and we offer the following comments for your consideration and response.

1. **INCORRECT STREAM NAME NEEDS TO BE CORRECTED**: The stream you refer to in this document is not the "Nuhelewai" [sic] stream, but the "*Niuhelewai*" Stream. The name means "coconut going {in} water" and was the site of a battle in which Kahekili of Maui defeated Kahahana of O`ahu, where the stream was choked with corpses (see, Mary Kawena Puku`i, Samuel H. Elbert, and Esther T. Mo`okini, Place Names of Hawai`i, revised and enlarged edition, University Press of Hawai`i, Honolulu, 1981, pp. 116, 166). Please inform your early consultation parties (such as Dr. Aki Sinoto, etc.) of this error as it may have affected literature searches they may have conducted on the incorrect place name (that does not exist). If the incorrect name is in the City's GIS database, it needs to be corrected.
2. **ADDITIONAL HISTORIC AND CULTURAL INFORMATION**: Please include in the section on Cultural Impacts, mention of the following literature cited above: W.D. Alexander, *A Brief History of the Hawaiian People*, New York, 1891, p. 123; and Abraham Fornander, "Hawaiian Antiquities and Folklore," *Bernice P. Bishop Museum Memoirs*, Honolulu, Volume 4, p. 575. In a battle at Kolekole, the Maui forces killed the last of the O`ahu people who had escaped the massacre at Niuhelewai. If the stream was choked with corpses, is there a possibility that bones may remain today? In light of this new information, please reassess impacts (if any) to cultural resources and practices.
3. **CHANNELIZATION COURSE OF THE ENTIRE NIUHELEWAU STREAM**: Please indicate on the map, those portions of the natural streambed (from source to confluence with the Kapalama canal) that are channelized (i.e., lined with concrete) and those that are non-channelized. Please consider alternatives to concrete stream channelization, such as the use of grass-lined channels; please contact the Environmental Planning Office for more information.

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

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0147

July 23, 2004

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

Dear Ms. Salmonson:

Subject: Draft Environmental Assessment (EA) for Nuhelewai Stream Improvements, TMK: 1-6-17: 4

We have reviewed your comments on the subject document and have the following response:

1. Incorrect Stream Name Needs to be Corrected. We will include a correction in the final EA to note this stream name and the suggested reference.

2. Additional Historic and Cultural Information. We will include the suggested references in the final EA. The archaeological inspection of the site found no burials or remains of cultural deposits and no historic sites are listed in the State Register of Historic Places at this location. The Office of Historic Preservation has informed us of their belief that no historic properties will be affected by the proposed project. The high velocities of stream flows during storms scour the bedrock in this reach of the stream, and it is unlikely that if a battle was fought at this location and bodies were in the stream that any such remains could have endured successive storm water flood flows over the intervening period of more than 150 years and the development of urban properties which have altered the stream banks significantly. If cultural deposits or burials are found during excavation, the State Office of Historic Preservation will be immediately notified and appropriate arrangements made per State law.

3. Channelization Course of the Entire Nuhelewai Stream. All of the stream within the urban State land use district is channelized, modified, and constrained by the development of urban properties on both banks. In some areas, the channel is

underground. The map in the final EA shows the channelized and unchannelized reaches. Use of grass-lined channels is not practical in this project because the stream flow velocities exceed the velocities which grass-lining can resist erosion and this is discussed in the final EA.

If you have any questions, please call Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

KATHY SOKUGAWA
ACTING DEPUTY DIRECTOR

2004/ELOG-256 (TH)

March 9, 2004

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: DENNIS TOYAMA

FROM: ERIC G. CRISPIN, AIA, DIRECTOR Randolph Hata for
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR
THE NUHELEWAI STREAM IMPROVEMENTS PROJECT
HONOLULU, TAX MAP KEY: (1) 1-6-017: 004

We have reviewed the DEA and offer the following comments:

1. A drainage system symbol (beyond six years) is currently shown on the Department of Planning and Permitting's (DPP) existing Primary Urban Center (PUC) Development Plan Public Facilities Map (DPPFM) (ID # 92) "Nuhelewai Stream Flood Control" project. Therefore, the proposed project will not require an amendment to the PUC DPPFM.

2. The DPP is currently in the final stages of preparing a new PUC Public Infrastructure Map (PIM) that will replace the existing PUC DPPFM. The new PUC PIM will need approval from the City Council. As such, the DPP will recommend to the City Council that the proposed project be transferred to the new PUC PIM as an active project.

3. The proposed project is also consistent with the Section 4.6.2 (Stormwater Systems) of the proposed PUC DP since it will employ Best Management Practices to mitigate adverse environmental impacts.

   The proposed PUC DP promotes the integration of drainage improvements into the open space network by emphasizing the use of retention basins, creation of passive recreational areas, and recreational access for pedestrians and bicyclists without jeopardizing public safety (Section 4.6.3).

   To address that objective, we note that the attached Biological Resource Survey suggests that the project could accommodate a combination of "bank stabilization where required with people-friendly maintained open-space" that would provide the neighborhood with a minipark. As such, the applicant should consider the feasibility of the report's suggestion. Such a solution would be more in line with the policies and guidelines in the proposed PUC DP.

4. The proposed project is located in TMK: 1-6-017: 004 and owned by the City and County of Honolulu. The proposed project is within the State's Urban District, and is currently zoned R-5 Residential District.

5. The proposed project is not within the Special Management Area and is not subject to the requirements under Chapter 25 Revised Ordinances of Honolulu.

6. The Final EA (FEA) should state the quantity of grading (volume) anticipated since a grading permit may be required for this project.

7. Chapter 3 of the FEA should disclose if other types of construction materials (i.e., gabions, grouted rip-rap and CRM, etc.), were considered for the proposed project, and how these materials could maintain a more natural appearance versus the recommended alternative.

8. We recommend that Section 5.3 of the FEA be revised by deleting the term "concrete box culvert." According to the consultant, we understand that a "concrete box culvert" can refer to either an "open" or "covered" drainage channel. However, we prefer the term "open concrete-lined drainage channel" to make it clear that the proposed project will not be covered.

9. Section 5.13 (Water Quality) of the FEA should be revised to explain what construction methods (i.e., Best Management Practices, etc.) would be employed to mitigate potential impacts to water quality.

10. Section 7.2.10 of the FEA should clarify how potential impacts to air, noise and water quality would be mitigated "to the extent practicable."

11. Please include the DPP to the list of agencies consulted in Chapter 8 of the FEA. Since a grading permit may be required for this project, please add "grading permit" to the "Permit or Approval Required" column.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

EGC:js

cc: Eugene P. Dashiell, AICP, Environmental Planning Services
p:/DivFunctions/ea-eis/2004/elog-256

DEPARTMENT OF DESIGN AND CONSTRUCTION
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0150

July 27, 2004

MEMORANDUM

TO: MR. ERIC G. CRISPIN, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR NUHELEWAI STREAM IMPROVEMENTS, TMK: 1-6-17: 4

We have reviewed your comments on the subject document and have the following response:

1. We concur that the proposed project is currently shown in the existing DPPFM (ID #92) and will not require an amendment to the PUC DPPFM.

2. We concur that the Department of Planning and Permitting (DPP) will recommend to the City Council that the proposed project be transferred to the new PUC PIM (currently in preparation) as an active project.

3. We concur that the proposed project is consistent with Section 4.6.2 (Stormwater Systems) of the proposed PUC DP since it will employ BMPs to mitigate adverse environmental impacts.

   We do not concur that this location is appropriate for a neighborhood mini-park. Complaints from residents have been received about loud parties held late at night, and residents are concerned about vandalism in the area. The proposed project will further restrict access because the existing drainage channel is not a safe place for the public to access.

4. We concur that the proposed project is owned by the City and County of Honolulu, is within the State's Urban District, and is zoned R-5.

5. We concur that the proposed project is not within the SMA.

6. The Final EA (FEA) states the quantity of grading (cut and fill) anticipated.

7. The FEA discusses the alternatives considered for this project. Reinforced concrete was chosen because of the structural strength required to retain the near vertical stream banks in the areas of erosion as well as the high velocity erosive steam flow forces.

8. The FEA uses the nomenclature of "open concrete-lined drainage channel" to make it clear that the project will not be covered.

9. The FEA discusses typical BMP's during construction. Water quality post-construction may be slightly improved because soil erosion from this stream segment will no longer occur.

10. The FEA clarifies how potential impacts to air, noise, and water quality would be mitigated to the extent practicable during construction.

11. The FEA includes DPP in the list of agencies consulted and "grading permit" is added to the "Permit or Approval Required" column.

If you have any questions, please call Dennis Toyama of our Civil Division at Extension 4756.

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

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

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HRD04/1297

March 10, 2004

Timothy E. Steinberger, P.E.
Director
Department of Design and Construction
City and County of Honolulu
615 South King St.
Honolulu, HI 96843

RE: Nuhelewai Stream Improvements Draft EA Request for Review and Comments

Dear Mr. Steinberger:

OHA is in receipt of your request for comments on the above referenced project. We offer the following comment.

OHA notes that channelizing streams is no longer considered the best method of flood control as pointed out in the biological resources report attached to your draft EA. OHA supports the consultant's suggestion that a solution combing bank stabilization with people-friendly open space would be a better alternative than the one proposed. We suggest the city, as part of its visioning program, find ways to fund this people and environment friendly solution.

Thank you for this opportunity to comment. Please contact Pua Aiu or Heidi Guth at 594-1931 or by e-mail at heidig if you have further questions.

Sincerely,

Clyde W. Namu'o
Administrator

cc: Eugene P. Dashiell, AICP
Environmental Planning Services
1314 South King St. Ste 952
Honolulu, HI 96814

DEPARTMENT OF DESIGN AND CONSTRUCTION
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0179

September 8, 2004

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

Dear Mr. Namu'o:

Subject: Draft EA for Nuhelewai Stream Improvements
TMK: 1-6-17: 4

This is in response to your letter, dated March 10, 2004 (HRFD04/1297), regarding your review comments on the subject project.

Nuhelewai Stream through the Urban Land Use District has been narrowed, channelized, lined with concrete or rocks, and in some reaches is actually underground in a concrete box culvert. The existing eroded stream bank is in a severe condition and must be remedied. The stream velocities under high flow conditions range exceed 10 feet per second. Vegetated channels cannot withstand such velocities nor can vegetated channels provide structural support to the eroding steam banks; the remedy of which is the intent of the proposed project. Concreting the channel in this area as proposed will prevent erosion and provide for the most efficient maintenance of this area. To do otherwise would require extensive taking of private residences to "restore" this stream to an "unchannelized" condition. The proposed plan is the most technically and economically feasible alternative.

If you have any questions, please call Mr. Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

The Senate
The Twenty-Second Legislature
of the
State of Hawaii
STATE CAPITOL
HONOLULU, HAWAII 96813

April 8, 2004

Mr. Dennis Toyama, Project Manager
City and County of Honolulu
Department of Design and Construction
650 South King Street, 15th Floor
Honolulu, Hawaii 96813

Dennis

Dear Mr. Toyama:

I received a copy of a letter sent to you by Ida H. Hori in which she outlined a beautification idea relating to the Nuhelewai Stream. I support her request and believe that it would be in the best interest of the City and County and the residents if Ms. Hori's request is implemented.

If I can be of further assistance to you, please feel free to contact me or my staff at 586-6130.

Me ke aloha pumehana,

Suzanne N. J. Chun Oakland
State Senator
13th District

cc: City Council Member Rodney Tam
Mr. Kyle Teraoka, Project Mgr., Austin Tsutsumi & Associates
Mr. Eugene P. Dashiell, AICP, Environmental Planning Services
Mr. Ted Takahashi, Neighbor and a Property Owner
Ms. Ida H. Hori

SNJCO:cb

DEPARTMENT OF DESIGN AND CONSTRUCTION
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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDD-A 04-0152

July 27, 2004

Honorable Suzanne N. J. Chun Oakland
Senator, 13th District
The Senate
State of Hawaii
State Capitol
Honolulu, Hawaii 96813

Dear Senator Chun Oakland:

Subject: Draft Environmental Assessment for Nuhelewai Stream Improvements, TMK: 1-6-17: 4

We have reviewed your comments on the subject document in support of the letter sent to you by Ida H. Hori and have the following response, which we have also made to Ms. Hori:

It is not possible to incorporate vegetative planters into this project because of the high cost of maintenance over the long-term. However, the completed project will include added fencing in an effort to reduce unauthorized access to the project.

If you have any questions, please call Dennis Toyama of our Civil Division at 523-4756.

Very truly yours,

TIMOTHY E. STEINBERGER, P.E.
Director

DT:FK:pto

cc: Eugene Dashiell, AICP, Environmental Planning Services
Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.

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

REPLY TO ATTENTION OF

January 31, 2002

Regulatory Branch

Mr. Eugene P. Dashiell, AICP
Environmental Planning Services
1314 South King Street, Suite 951
Honolulu, Hawaii 96814

Dear Mr. Dashiell:

This responds to your letter dated January 23, 2002 requesting a jurisdictional determination for the proposed construction on Nuhelewai Stream. Based on the information you provided and a brief site visit by a member of my staff, it appears that a Department of the Army (DA) individual permit will be required for the project. I have enclosed a permit application and other pertinent documents for your use.

If you have any questions concerning this determination please contact Mr. William Lennan of my staff at 438-6986 or FAX 438-4060 and mention File Number 200200174.

Sincerely,

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

Enclosures

Eugene P. Dashiell AICP
ENVIRONMENTAL PLANNING SERVICES
1314 South King Street, Suite 951
Honolulu, Hawai'i 96814

Telephone/FAX: 808.593.8330
Cell: 371.0745
www.lava.net/environmental-planning
E-mail: dashiell@lava.net

Member, American Institute of Certified Planners

January 23, 2002

MR GEORGE YOUNG
CHIEF, REGULATORY BRANCH
US ARMY CORPS OF ENGINEERS
BLDG 230
FORT SHAFTER HAWAII 96858

Dear Mr. Young:

Subject: Nuhelewai Stream: Proposed Construction

We request your determination as to the jurisdiction of your agency, and the type of permit you may require for subject project. I am under subcontract to the firm, Austin Tsutsumi and Associates who has been contracted by the City to prepare an engineering report for this proposed project.

The City and County of Honolulu is proposing to construct channel improvements on Nuhelewai Stream between Naio and Aupuni Streets. The site is in the Kamehameha Heights area of Kalihi, one block south of Houghtailing Street. This one block reach of the stream is basically unimproved, although there is a concrete detention structure at the lower end of the site. The stream channel is fully lined and modified as a box channel both upstream and downstream of the proposed improvements. These improvements are proposed to stabilize the stream banks on both sides of the channel and to reduce the frequent (approximately four times per year) maintenance requirements of sediment removal at this location. We have inspected the site with an aquatic biologist and found no listed, threatened or endangered species. Also, our archaeologist found no cultural sites. This stream is not a perennial stream. I have attached a map of the proposed project are for your information.

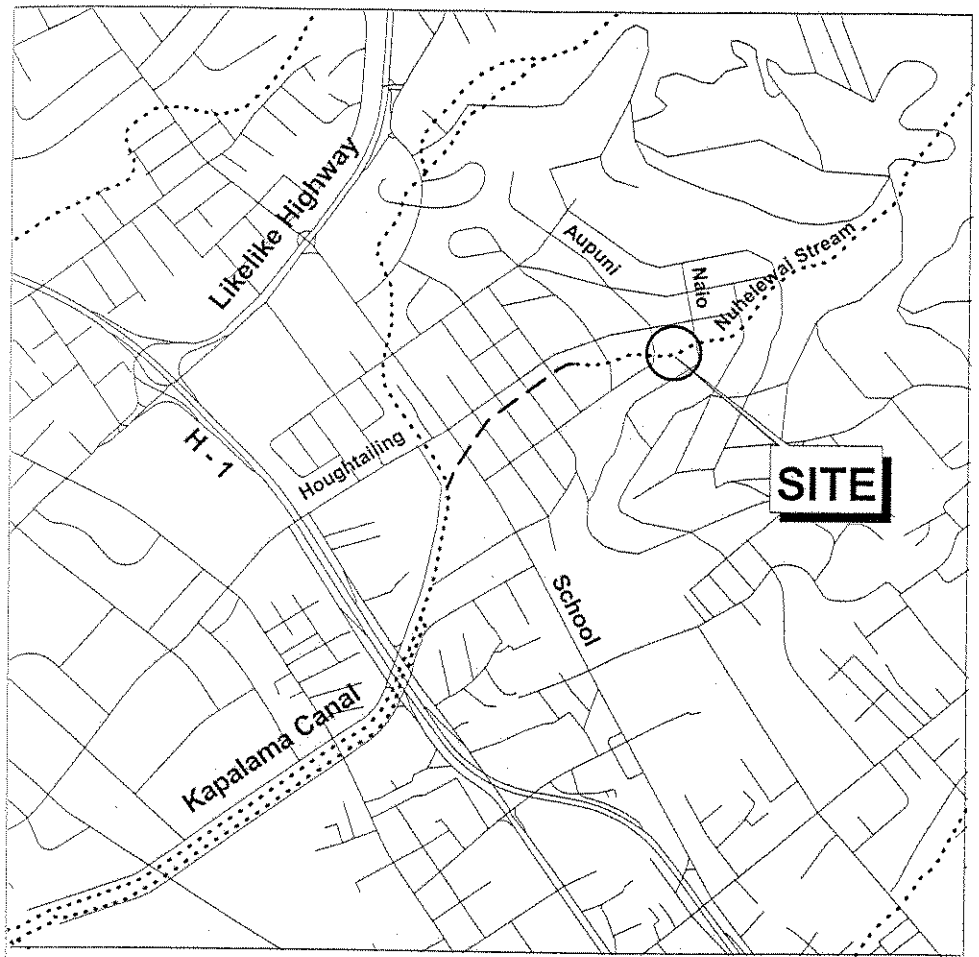
Please call me (593-8330 or 371-0745) if you have questions, or if you would like to inspect the site. We look forward to hearing from you.

Sincerely yours,

Eugene P. Dashiell

Enclosure

Copy: Austin Tsutsumi and Associates



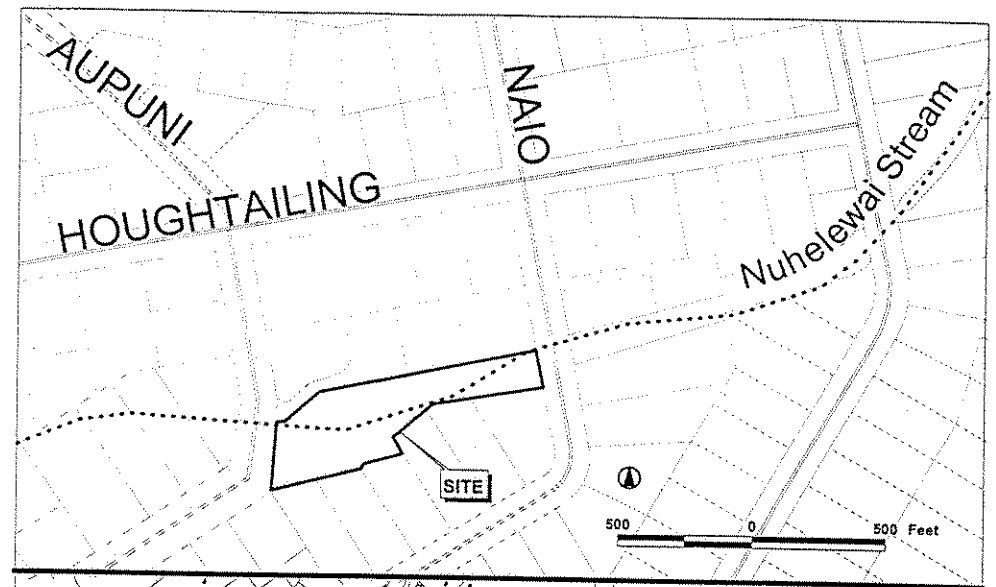
Location Map

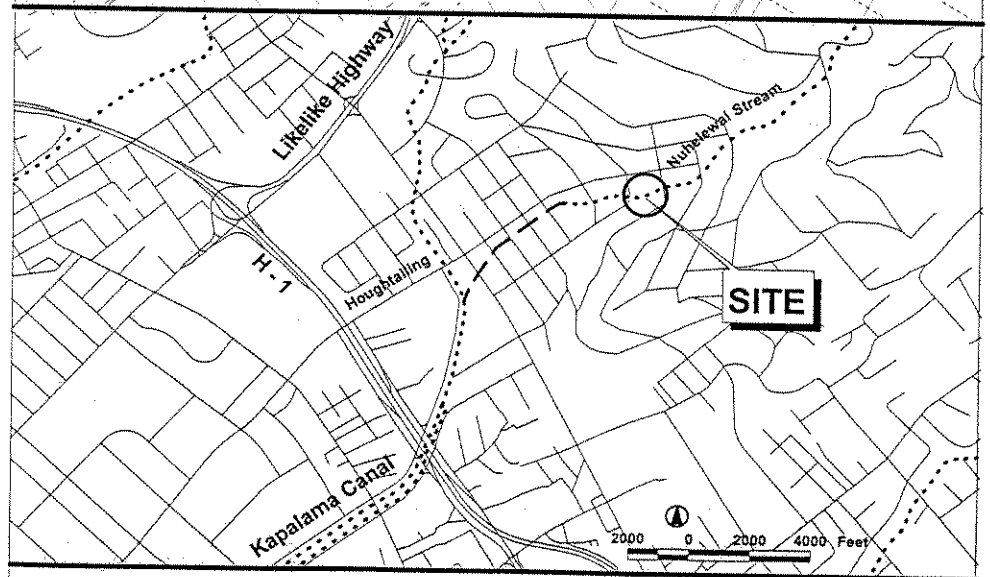
Adapted from GIS data:

City and County of Honolulu

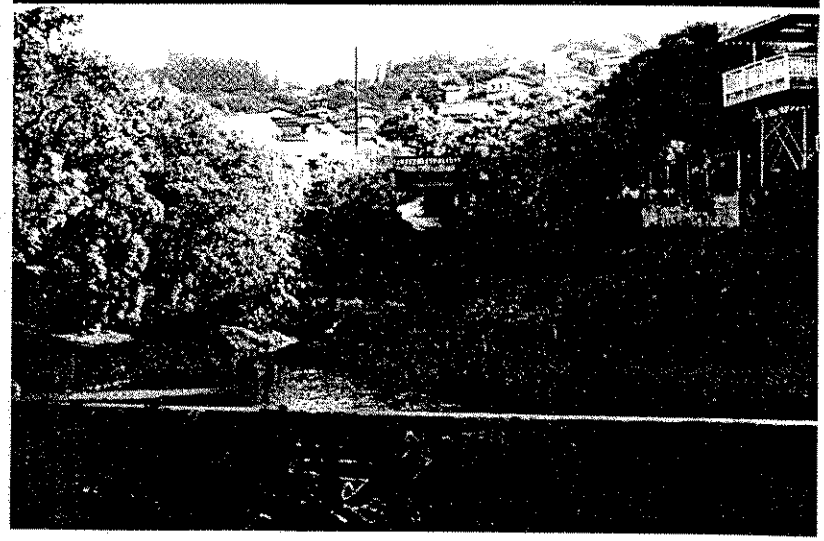
Prepared by: E. Dashiell, AICP, Environmental Planning Services

Nuhelewai Stream
Channel Improvement





Above: View of channel, looking downstream.
Below: View of channel and detention structure, looking downstream, from inside culvert bridged at Naio Street.



Above: View looking downstream of detention structure, and bridge at Aupuni Street (behind detention structure).
Below: View looking upstream from bridge at Aupuni Street. Detention structure in foreground, Naio Street bridge in background