Draft Environmental Assessment

Prepared in Accordance with Chapter 343, Hawai‘i Revised Statutes

Mā‘ili‘ili Stream Removal and Restoration Plan

Mā‘ili, Island of O‘ahu, Hawai‘i

April 13, 2010

Department of Facility Maintenance
City and County of Honolulu
1001 Uluohia Street
Kapolei, Hawai‘i 96707

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Accepting Authority:
Department of Facility Maintenance
City and County of Honolulu
1001 Uluohia Street
Kapolei, Hawaiʻi 96707

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Acronyms and Abbreviations

ACOE	U. S. Army Corps of Engineers, Honolulu District
ATF	After-the-Fact
BMPs	Best Management Practices
CAD	Computer aided design
cfs	Cubic feet per second
City/ Respondent	City and County of Honolulu
CWA	Clean Water Act (33 USC 1311)
CWRM	Commission on Water Resource Management, State of Hawai‘i
C.Y. or c.y.	Cubic Yard(s)
DQO	Data Quality Objectives
DA	Department of the Army
DDC	Department of Design and Construction, City and County of Honolulu
DFM	Department of Facility Maintenance, City and County of Honolulu
DPP	Department of Planning and Permitting, City and County of Honolulu
DOH	Department of Health, State of Hawai‘i
DOH-CWB	Department of Health, Clean Water Branch, State of Hawai‘i
DLNR	Department of Land and Natural Resources, State of Hawai‘i
DOFAW	Division of Forestry and Wildlife, DLNR, State of Hawai‘i
EPA	U. S. Environmental Protection Agency
ESA	Endangered Species Act
FWS	Fish and Wildlife Service, U. S. Department of the Interior
FVO	Findings of Violation and Order for Compliance
HAR	Hawai‘i Administrative Rules
HRS	Hawai‘i Revised Statutes
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System (CWA Section 402)
NTU	Nephelometric Turbidity Units
OCCL	Office of Conservation and Coastal Lands, State of Hawai‘i
R&R Plan	Removal and Restoration Plan
RMTC	R.M. Towill Corporation
ROH	Revised Ordinances of Honolulu
SCAP	Stream Channel Alteration Permit
Sta.	Station
State	State of Hawai‘i
TSS	Total Suspended Solids
USGS	United States Geological Survey
WQMP	Water Quality Monitoring Plan

Section 1
Project Summary

Project:	Māʻiliʻili Stream Restoration
Landowner/Applicant	City and County of Honolulu Department of Facility Maintenance
Accepting Agency	Department of Facility Maintenance, City and County of Honolulu
Proposed Action:	Removal of unauthorized fill material from the channel will consist primarily of uncompacted material along the banks and imported fill material including: concrete rubble, used asphalt, metal debris, soil and sediment. The volume of fill material to be removed is estimated at ±1,533 C.Y.
Location	Māʻiliʻili Stream , Waiʻanae, Oʻahu
Tax Map Key	Adjacent to: (1) 8-6-002: 003
Land Area	1.08 acres
Present Use	Stream channel used for drainage control
State Land Use District	Agricultural
Zoning	Military (F-1)
Waiʻanae Sustainable Community Plan	Agricultural
Special Management Area	Not within the Special Management Area
Permits Required	NPDES Construction Stormwater Discharge; Department of the Army Permit; Plan Review Approval; Removal and Restoration Plan (R&R Plan)
Anticipated Determination	Finding of No Significant Impact (FONSI)

Section 2
Project Background and Purpose

2.1 Project Background

On July 28, 2009, the U.S. Environmental Protection Agency (EPA), issued their Findings of Violation and Order for Compliance to the City and County of Honolulu ("Respondent") in accordance with the provisions of Section 301 of the Clean Water Act ("CWA") (33 USC 1311) (EPA Docket No. CWA-404-309(a)-09-020). See **Appendix A – Findings of Violation and Order for Compliance**.

Upon inspection by the EPA, the State of Hawai'i, Department of Health (DOH), and the U. S. Army Corps of Engineers, Honolulu District (ACOE), it was determined that the Respondent placed or caused to be placed "concrete rubble, metal debris, used asphalt, and dirt (collectively, fill material) along the channel walls of Mā'ili'ili Stream" (see **Figure 1 - Project Location**). The total area of the fill material was estimated to be 1.08 acres (FVO, paragraph 13).

Based on their "Findings of Violation and Order" (FVO), the EPA ordered:

Paragraph 22 (of the FVO):

> *"Within **thirty (30) days** of receipt of this Order, Respondent shall submit to EPA the following information:*
>
> *a. A detailed description of each earthmoving activity, including but not limited to any grading, leveling, back-filling, clearing, and bank modification, that was undertaken, caused or authorized to be undertaken, or undertaken with knowledge or consent, in part of in whole, by Respondent or Respondent's agent or representative, at the Property or any other portion Mā'ili'ili Stream owned by Respondent between January 1, 2005 and present."*

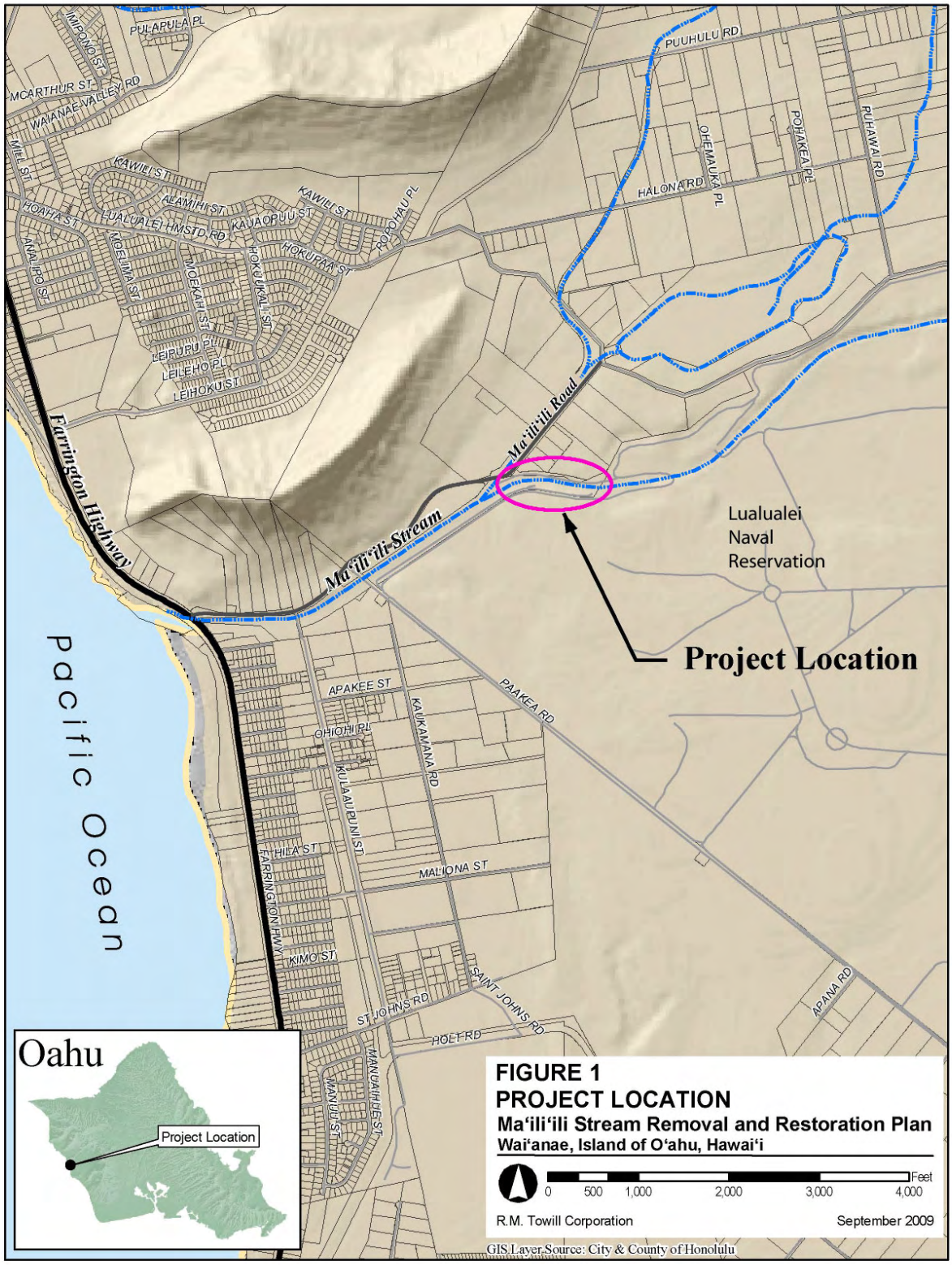
Paragraph 23 (of the FVO):

> *"Within **sixty (60) days** of receipt of this Order, Respondent shall submit to EPA for approval a Removal and Restoration Plan ("R&R Plan" or "Plan") for removing the unauthorized discharges from the Property and restoring the Mā'ili'ili Stream to its pre-filled dimensions and configuration. The R&R Plan shall be prepared by a qualified professional(s) with the requisite expertise in hydrology and engineering."*

Paragraph 24 (of the FVO):

> *"The R&R Plan shall, at the minimum, include the following components:*
>
> *a. Removal of all unauthorized dredge and fill material from the Property.*
>
> *b. Disposal of all removed material at appropriate upland locations, in compliance with all applicable federal, state and local requirements.*

Figure 1. Project Location



Restoration Plan Scheduling – The City and County of Honolulu will submit a schedule within 45 days of receipt of the EPA's letter approving the project for completing the environmental documentation, obtaining environmental permits, and implementing the Restoration and Removal Plan. The R&R Plan schedule was submitted to the EPA and approved on January 29, 2010, and is provided as **Appendix B**.

Reporting Requirements – The City and County of Honolulu shall submit a Final Report to the EPA including photographs, describing all removal and restoration activities and the work performed. The Report shall be submitted within 30 days of completion of the work.

EPA Site Inspection – The City and County of Honolulu shall notify the EPA not less than 7 days prior to the start of the work. The EPA may conduct a site visit at any time during the project and will attempt to notify the City or its designated contractor in advance of any inspection, but reserves the right to inspect the site without notice.

2.3 Purpose

The purpose of this Draft Environmental Assessment (DEA) is to inform interested parties of the proposed project and to seek public comment on subject areas that should be addressed prior to the acceptance of the Final Environmental Assessment (FEA). This DEA describes existing conditions at the site and proposes mitigation measures to address the potential for adverse environmental impacts as a result of the proposed action.

This EA complies with Chapter 343, Section 343-5-1, HRS, which states that an environmental assessment shall be required for actions which, "propose the use of state or county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects which the agency has not approved, adopted, or funded, or funds to be used for the acquisition of unimproved real property; provided that the agency shall consider environmental factors and available alternatives in its feasibility or planning studies".

The subject project requires the use of land and funds of the City and County of Honolulu. This EA further complies with the stipulated conditions of the EPA approval of January 29, 2010.

Section 3
Existing Conditions, Proposed Action, and Alternatives Considered

3.1 Area of Disturbance and Fill Material Characteristics

3.1.1 Area of Disturbance

The area of disturbance includes all of the areas that were filled and graded as delineated in **Figure 2 – Topographic Survey**. Unauthorized fill material was placed at Sta. 49+10, on the north and south banks to erect a metal pole and sediment boom. Crushed asphalt concrete ("AC") material was placed on the north bank maintenance road within the stream banks (see **Figure 3 – Existing Site Photographs**). A ramp was graded on the north bank near the upstream fence line at Sta. 59+50. The total disturbed area is approximately 1.4 acres.

3.1.2 Material to be Removed

Material to be removed from the channel will consist primarily of uncompacted material along the banks and imported fill material including: concrete rubble, metal debris, tires, used asphalt, soil and sediment.

A. Volume of Imported Fill Material

The volume of imported unauthorized fill material to be removed from within the channel was determined using CAD software by creating three-dimensional models of the existing and filled channel conditions. The two models were compared to calculate the difference between the assumed pre-filled condition and the filled conditions. The calculated volume of fill material is approximately 930 cubic yards (C.Y.). The variation between the calculated quantity of fill material and estimates from the City results from placement and compaction of the fill material. Assuming that the fill material will expand by 25% upon excavation, the volume of fill material to be removed is estimated at 1,163 C.Y.

B. Uncompacted Material and Sediment (silt and soil)

The volume of uncompacted material on the channel banks to be removed was also determined using CAD. The volume of uncompacted material to be removed is approximately 370 C.Y. Sediment that is attached to the fill material removed from the channel is assumed to be negligible.

Therefore, the total volume of material that will be removed from the disturbed area is ±1,533 C.Y. (1,163 C.Y. plus 370 C.Y.).

Figure 2. Topographic Survey

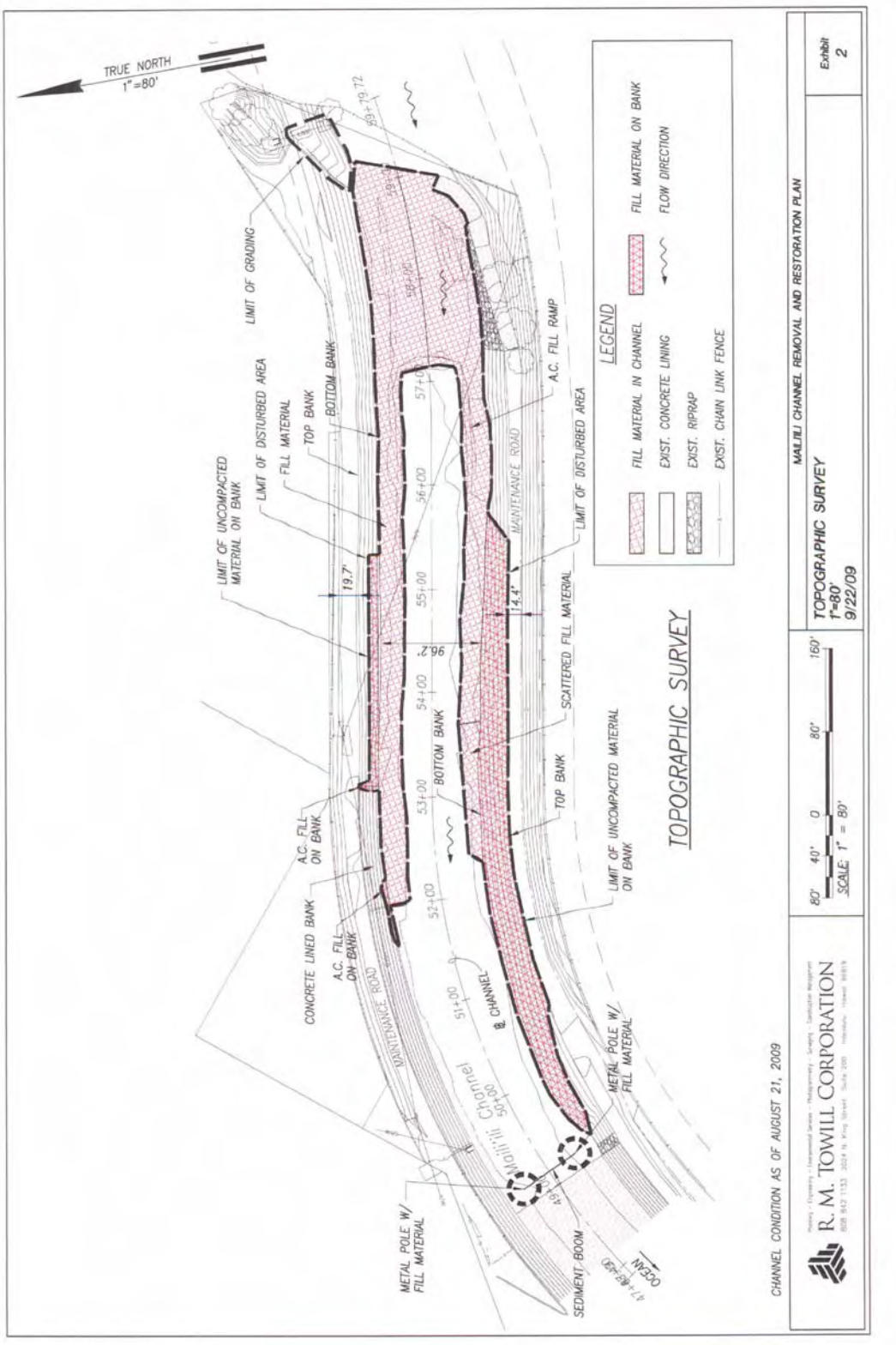


Figure 3. Existing Site Photographs

View upstream

View downstream

3.2 Establishment of Pre-Filled Channel Cross Section

A comparison of the as-built plans and the topographic survey revealed the following differences:

Description	**As-Built Plans**	**Topographic Survey**[(1)]
Channel Earth Bank	1.5:1	2:1
Bottom Width	100’	90’
Bottom Cross Slope	2%	Varies from 1% to 5%
Top of Concrete	1.43’[(2)]	1.49’
Depth of Sediment	N/A	Varies 2” to 18”

[(1)]Elevation based on mean sea level
[(2)]Elevation at edge of concrete-lined portion of the channel

A comparison of the existing baseline channel elevations with the finish grade profile in the as-built plans indicates that the existing channel is an average of 6-inches lower than the as-built plans as a result of erosion over the past 40 years. The topographic survey (Figure 2), together with visual observations, confirmed that the fill placement is limited to the bank area.

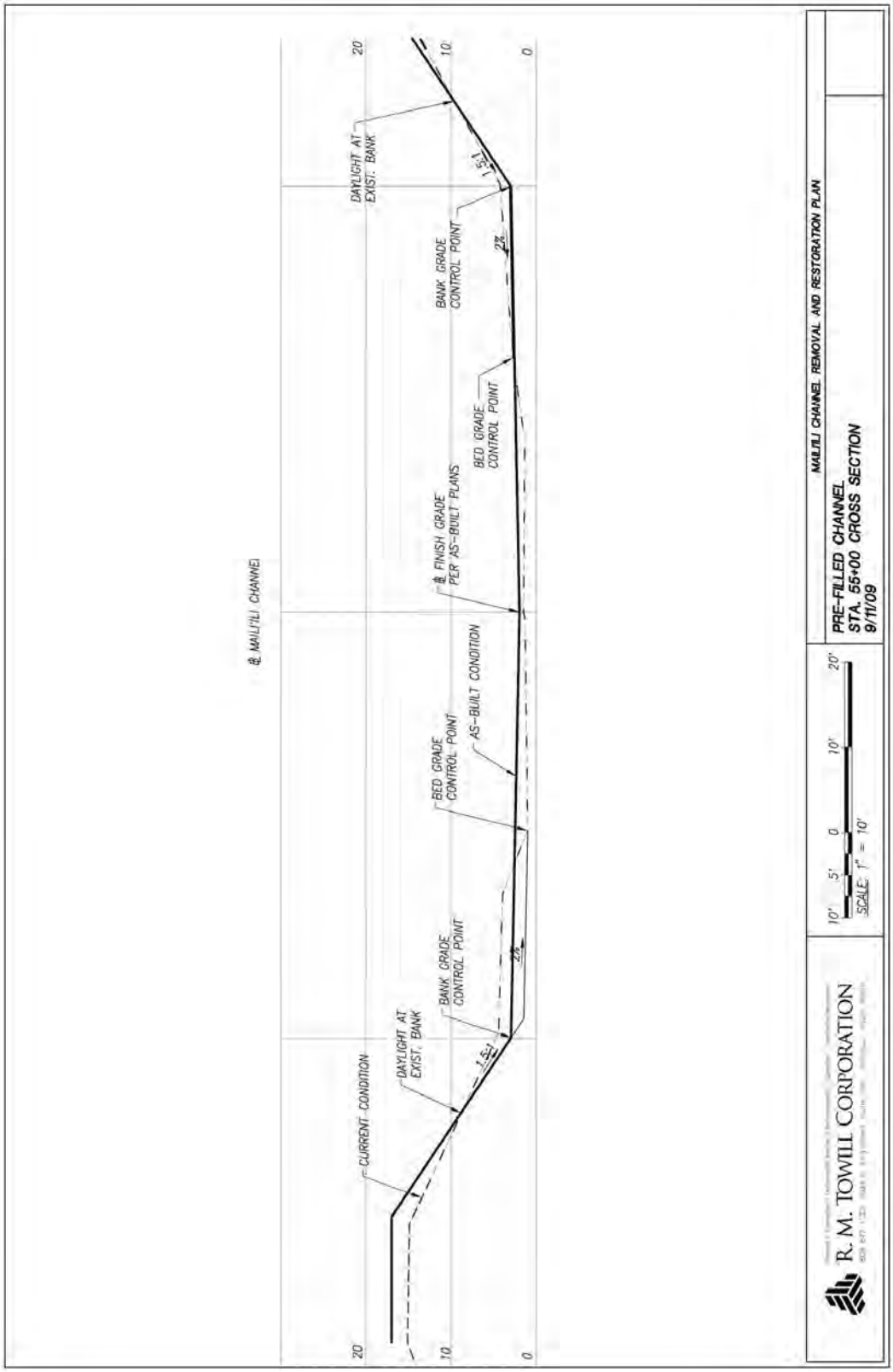
Since the existing channel cross section varies from the as-built plans, a pre-filled channel cross section was developed by modifying the existing channel cross section and adopting channel elements from the as-built plans. The pre-filled channel cross section includes a channel bottom that is sloped toward the center of the channel and banks sloped per the as-built plans. For areas within the channel beneath the fill material, the channel bottom will be leveled and sloped toward the channel center to match the existing channel elevation at the edge of the fill material. For bank areas beneath the uncompacted material, the bank slope will be graded to a maximum slope of 1.5:1.

Establishment of the pre-filled channel cross section will provide the baseline with which the existing cross section can be compared to estimate the depth of fill material placed on the banks and in the channel. The typical pre-filled channel cross section is shown in **Figure 4 – Pre-Filled Channel, Sta. 55+00 Cross Section**.

3.3 Establishment of Grade Controls for the Pre-Filled Channel Cross Section

For restoration work along the north and south banks within the channel, from Sta. 49+10 to Sta. 57+00, the finish grade of the restored channel bottom will be based on the existing channel elevation at the edge of the fill material. The finish grade of the bank will be based on the as-built grade at the toe of the bank. From this point, the bank will be sloped at 1.5:1 until it intersects the channel bottom and “daylights” with the existing bank face (see **Figure 4**).

Figure 4. Pre-Filled Channel, Sta. 55+00 Cross Section



Restoration work across the entire channel from Sta. 57+00 to Sta. 59+43 will be based on the finish grade profile along the channel baseline and pre-filled channel cross section shown in **Figure 4**. The downstream profile elevation will match the existing channel elevation at the edge of the fill material. The profile will be sloped at a minimum of 0.085% to match the as-built plans. Steeper profile grades may be used based on the velocity in the channel and protection of the restored channel surfaces from erosion and scour.

3.4 Alternatives

3.4.1 No Action

The No Action Alternative would involve taking no action to remove the unauthorized fill within the Māʻiliʻili Stream channel. The No Action Alternative would avoid impacts to the stream and avoid capital investment, and the expenditure of human resources. Because the No Action Alternative does not comply with the approved R&R Plan and the requirement for compliance with the EPA, this alternative was rejected from further consideration.

3.4.2 Alternative Location

The proposed removal of the unauthorized fill is localized to the Māʻiliʻili Stream channel and therefore alternative sites were not considered.

3.4.3 Alternative Methodology

Two debris removal methodologies were considered: manual removal and mechanical removal.

A. Manual Removal

Manual removal requires the physical removal of the debris from the stream employing manual labor.

B. Mechanical Removal

Mechanical removal will employ equipment to lift the concrete slabs out of the stream and loading the material into awaiting trucks.

C. Removal Evaluation

Because of the size and weight of the concrete slabs to be removed, it is proposed that lifting equipment will be required for the debris removal. Manual labor will be used for the removal of smaller pieces of loose concrete. The work will be done from the sides of the stream, working down stream to up-stream.

3.5 Preferred Plan

3.5.1 Proposed Action

The fill material within the channel and uncompacted material along the banks will be removed in two phases which will divide the channel into longitudinal halves to provide an opening in the channel that is at least 55% of the total channel width for uninterrupted stream flow during project activities: Phase 1 will include the removal of fill material

along the north bank; and Phase 2 will include the removal of fill material along the south bank.

3.5.2 Preparation of Construction Documents

Construction documents will be prepared prior to the removal of the unauthorized fill and debris. The construction documents will include detailed construction plans, specifications, and drainage and hydraulic calculations, which will be submitted to the City and other appropriate agencies for review and approval. After the construction documents are approved, the City will solicit bids from contractors for this work.

3.5.3 Installation of Channel and Wildlife Protection Measures

Prior to the start of any work:

A. The project site will be inspected by the selected restoration Contractors and City representative(s) to identify locations with loose soils that may be subject to erosion. As required, stabilize loose soils by placing vegetative (e.g., hydromulch and/or grassing) or structural controls (e.g., install geotextile filter fabric). Sites subject to inspection shall include:

   1. Construction staging site(s);
   2. Construction materials storage site(s);
   3. Designated location(s) used for vehicle fueling, if any; and
   4. Contractor's planned on-site haul route.

B. A sandbag barrier will be installed within the channel around the perimeter of the work zone and across the channel at Sta. 49+00. These barriers will prevent runoff in the work zone from entering the channel and will remain in place until the restored channel sections are sufficiently stabilized.

   The size of the active removal areas within the channel will be limited to sub-phases 15 feet long to ensure completion of the removal work on a daily basis.

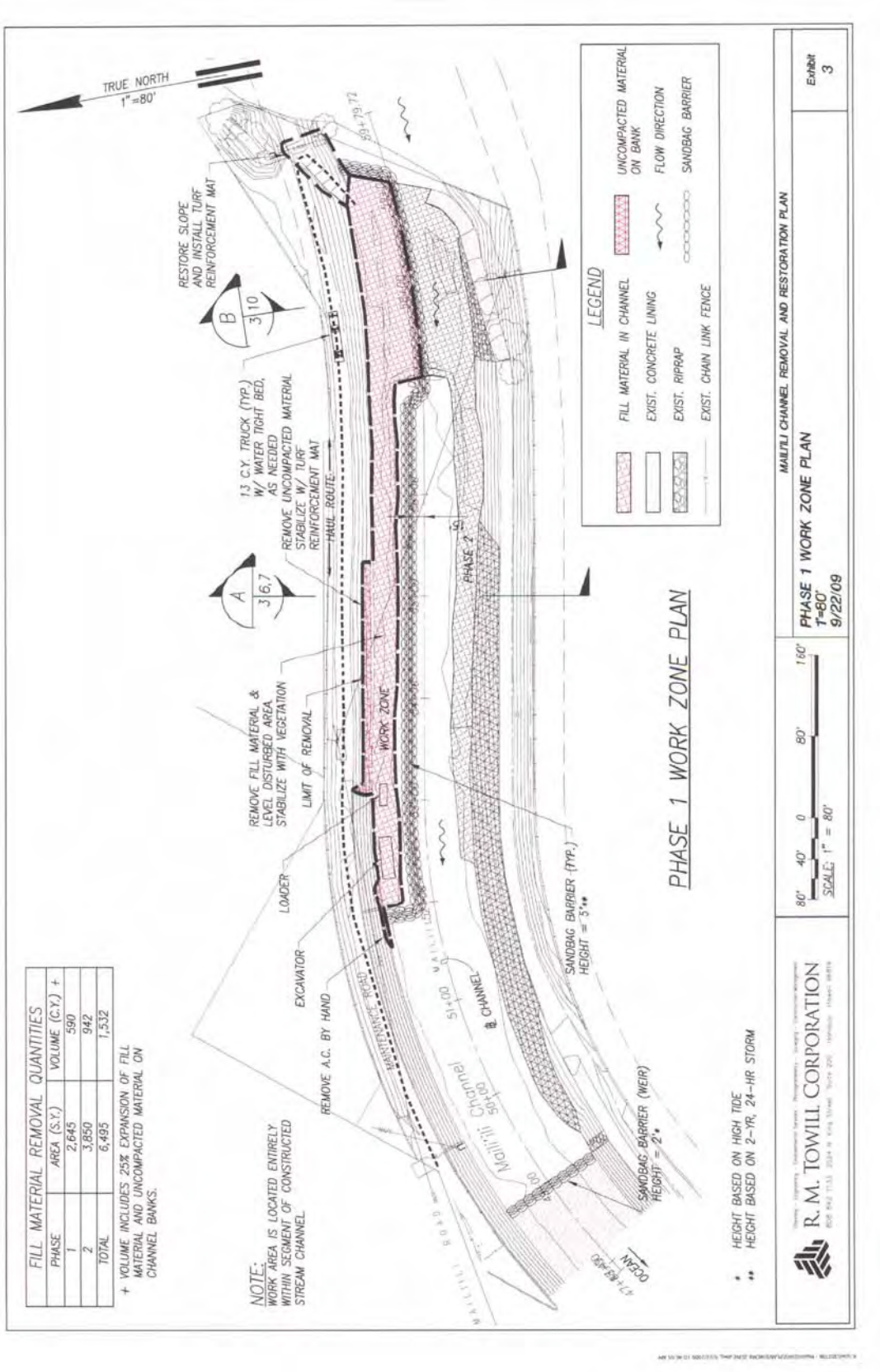
C. Prior to the mobilization of equipment at the project site, the area will be determined to be clear of any nesting or fledging Stilts or other listed threatened or endangered species by a wildlife biologist engaged by the project Contractor. The biologist findings will be confirm by the DLNR.

3.5.4 Project Phasing

A. Phase 1

   The limit of work is from approximately Sta. 52+00 to Sta. 59+43 along the north bank (see **Figure 5 – Phase 1 Work Zone Plan**). The approximate quantity of material to be removed in this phase is approximately 591 C.Y., which includes

Figure 5. Phase 1 Work Zone Plan



463 C.Y. of fill material (assume 25% expansion), and 128 C.Y. of uncompacted material.

B. Phase 2

The limit of work is from Sta. 49+10 to Sta. 59+43 along the south bank (see **Figure 6 – Phase 2 Work Zone Plan**). The approximate quantity of material to be removed is 942 C.Y., which includes 700 C.Y. of fill material (assume 25% expansion), and 242 C.Y. of uncompacted material.

C. Equipment and Personnel

Construction equipment will be used to remove the unauthorized material from the channel. The existing grade along both channel banks is wide, flat, and stable enough to accommodate an excavator and/or track loader, and tractor trailer or dump truck.

Construction personnel shall also be used to remove smaller pieces of the unauthorized material in order to reduce the release of silt and sediments.

D. Sequence

Since the construction equipment will access the channel bottom at the upstream end of the disturbed area, removal of the unauthorized material will begin at the downstream end and progress in the upstream direction. This will reduce repeated disturbance of surfaces that have been previously cleared.

E. Material Removal

For each work phase, the uncompacted material located on the channel banks shall be completely removed first. Uncompacted material along the south bank shall be removed by equipment stationed on the maintenance road at the top of the bank. If the equipment is unable to remove all of the material from the top, a sandbag access road shall be installed within the channel to access the lower bank. Material removal shall create a slope no steeper than the as-built channel bank slope of 1.5:1 (see **Figure 4 – Pre-Filled Channel, Sta. 55+00 Cross Section**).

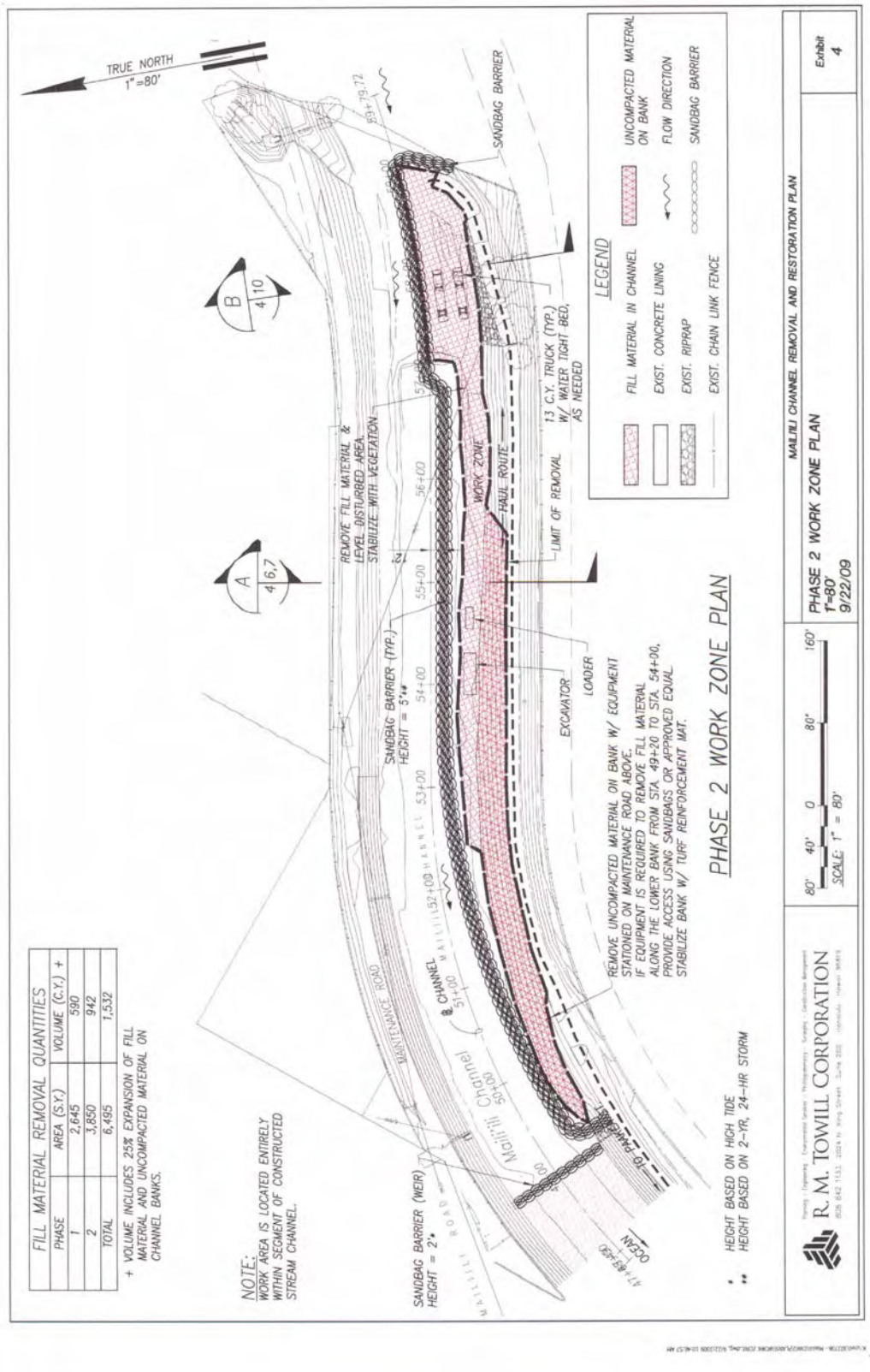
The fill material within the channel shall be primarily removed by machine with guidance from construction personnel located on the ground fronting the removal area. Machine removal work shall be continuously monitored to ensure complete and proper removal of the unauthorized material. Any small fill material observed remaining in the channel upon completion of the machine removal shall be removed by hand to avoid over excavation by machine. Remaining material that is too large to be removed by hand shall be removed with the machine's assistance without over excavation in the channel to the extent feasible.

The undulating surface resulting from the fill material removal shall be leveled and sloped toward the channel center. Stabilization of graded areas shall be provided by vegetation.

Material removed by an excavator will be transported by a loader to a truck, located on the top bank of the access road. Since there is no City owned land available outside the channel to dry the excavated material, water tight trailer beds will be used to transport any wet disposal material.

The isolated piles of fill material on the north and south banks near Sta. 49+10 and AC material within the channel `banks will be removed by hand to avoid

Figure 6. Phase 2 Work Zone



additional disturbance within the channel. Machinery may be used to assist with material removal along the access roads that may erode into the channel. The AC material along the access roads will remain in place.

3.5.5 Haul Route

Ingress and egress to the phased work zones will be via the maintenance road located along the top of the north and south channel banks. Trucks will transport the disposal material along the Ma'ili'ili Road or Pa'akea Road to the PVT Landfill.

3.5.6 Material Disposal

The unauthorized material will be disposed offsite at a State approved privately owned landfill, PVT Land Company (PVT), located at 87-2020 Farrington Highway, Wai'anae, Hawai'i 96792-3749. PVT is located on Lualualei Naval Road about ¼ mile from Farrington Highway, and approximately 5 road miles away from the project site. Discussions with PVT representatives indicate that the landfill has the capacity to accommodate the quantity of saturated and dry materials to be disposed of. The contractor will be required to file an application including the estimated percent of water contained in the waste materials for disposal.

Trucks with 13 C.Y. capacity are proposed for use to transport the disposal material. Each truck will be filled to capacity. However, due to the weight and size of the disposal material, the net disposal capacity for each truck will be approximately half of its design capacity. Therefore, disposal of approximately 1,533 C.Y. of material would take approximately 235 loads. Assuming 10 loads per day are taken to the landfill, approximately 24 working days would be needed to complete the disposal, weather and other extenuating circumstances permitting.

3.5.7 Channel Stabilization

After the fill material and silt material has been removed, the channel will be restored by stabilizing the channel bank. The channel banks will be stabilized by installing a turf reinforcement mat or vegetation. The turf reinforcement mat shall be permanent and designed to accommodate the hydraulic properties of the 100-year storm. If dry land vegetation is installed, temporary irrigation shall be provided for a minimum of 30 days until the vegetation is fully established.

The channel bed shall not be stabilized except for the areas in the work zones that are graded, e.g. access ramps. These areas shall be stabilized using vegetation suitable to the frequently inundated conditions in the channel. Three wetland associated species appropriate for this purpose were identified with the assistance of AECOS Consultants, Inc., and include:

- 'Ahu'awa (*Cyperus javanicus*) – A native indigenous species
- Akulekule (*Sesuvium portulacastrum*) – A native indigenous species
- Water finger-grass (*Paspalum vaginatum*) – An introduced species

The identification of the above wetland associated species were based on: (1) the plants are capable of tolerating the brackish water environment; (2) require low to no maintenance; and (3) will serve the function of ground and submerged ground

stabilization. Graded areas shall be smoothed while performing the removal work to accommodate the planned use of vegetation.

3.5.8 Channel Protection and Stabilization Measures

A sandbag barrier will be installed around the work zone to provide temporary channel protection during the removal process. Permanent stabilization measures include turf reinforcement mat for the channel banks and vegetation for the channel bed described above. The design of the sandbag barrier, turf reinforcement mat, and placed vegetation will be based on hydrology, channel hydraulics, and tidal data.

A. Hydrology

The drainage basin which contributes runoff to this segment of the channel has an area of 9.3 square miles.

1. The width of the work zone and height of the barriers shall be designed to accommodate runoff from a 2-year, 24-hour storm. Preliminary calculations for the rate of runoff generated in the drainage basin resulted in 609 cubic feet per second (cfs) as determined using a regression equation developed by the U.S. Geologic Service (USGS) in fact sheet 004-00, “The National Flood-Frequency Program-Methods for Estimating Flood Magnitude and Frequency in Rural Areas in Hawai‘i, Island of O‘ahu, 2000”.
2. Runoff from the 100-year storm shall be used to determine the type of turf reinforcement mat that will be used for channel bank restoration. Two methods were used for preliminary calculations of the 100-year runoff rate: the City and County of Honolulu’s (City) Plate 6 and the TR-55 Plate 6 resulted in a flow of 10,000 cfs. The Soil Conservation Service’s TR-55 method yielded a runoff rate of 8,030 cfs, which is consistent with the design water surface elevation shown in the as-built plans. Therefore, the TR-55 runoff rate will be used.

B. Hydraulics

The water surface elevation within the unobstructed portion of the channel (outside of the work zone) was determined by a preliminary hydraulic analysis of the 2-year, 24-hour storm. The flow depth was calculated to be 4 feet.

The water surface elevation within the restored channel cross section was determined by a preliminary hydraulic analysis of the 100-year storm. The flow depth was calculated to be 13.5 feet. The hydraulic properties for this flow shall be used for design of the turf reinforcement mat and vegetative stabilization. The water surface elevation within the channel shall be verified by analyzing the hydraulics of the restored channel geometrics with the selected stabilization.

C. Tidal Flow

Tidal flow prediction data for 2010 from the NOAA was used to determine the maximum high tide between the anticipated removal dates in the months between September and March, which is 2.5 feet. At this depth, a portion of the channel bottom would be inundated, reaching upstream Sta. 59+00. Work practices to address tidally influenced inundation have been considered and will include the use of sandbag barriers. This is further discussed below.

D. Sandbag Barriers

Sandbag barriers will be installed around the perimeter of the work zones. The barriers will temporarily divert runoff and tidally influenced water in the channel away from the work zones (see **Figures 7 and 8**). The height and width of the work zone barriers shall be based on the channel hydrology, hydraulics and tidal influence. Sandbags will be stacked with side slopes of 1:1 (height to width). An impermeable plastic sheeting which is both tear and puncture resistant will be wrapped around the sandbags. The sandbag barrier will be installed from the upstream end of the work zone to the downstream end. The sheeting will be placed on the outside of the sandbags with the upstream sheet overlapping the downstream sheet by 18 inches. The work zone barriers for each phase shall be removed upon completion of all removal and restoration work.

An additional sandbag barrier will be installed across the entire length of the channel at Sta. 49+00, at the end of the existing concrete lined channel bottom. The height of this barrier will be lower than the one installed around the work zone. It will be installed at a height of 2 feet, which is above the high tide depth of 1 foot and will function as a weir allowing the 2-year storm event flowing over the barrier. The sandbag weir shall remain in place until turbidity levels return to pre-construction levels or less. If a severe storm is imminent and a flood warning is issued, the weir shall be removed prior to evacuation of the work zone.

E. Turf Reinforcement Mat

A permanent turf reinforcement mat will be installed along the disturbed channel bank sections. The turf reinforcement mat shall have specifications similar to North American Green's SC250 and shall be installed per the manufacturer's instructions.

F. Implementation of Construction Stormwater Best Management Practices (BMPs) Plan

In addition to channel protection measures to be installed around the work zones, BMPs are recommended to be employed to protect the channel and access road during the removal and restoration work. The BMPs are intended to be applied before, during, and following the completion of the project. The BMPs Plan is included in **Appendix D**.

G. Environmental Monitoring

A qualified water quality specialist engaged by the project Contractor will conduct monitoring of water quality conditions during the restoration work on a weekly basis and once construction activity ceases. Monitoring protocols for water quality will be developed in consultation with the EPA, ACOE, and DOH-CWB. The Water Quality Monitoring Plan (WQMP) is included in **Appendix E**.

3.6 Future Channel Maintenance

The City will provide regular inspection and maintenance of this restored portion of the channel to prevent future overgrowth.

Figure 7. Phase 1 Sand Bag Protection

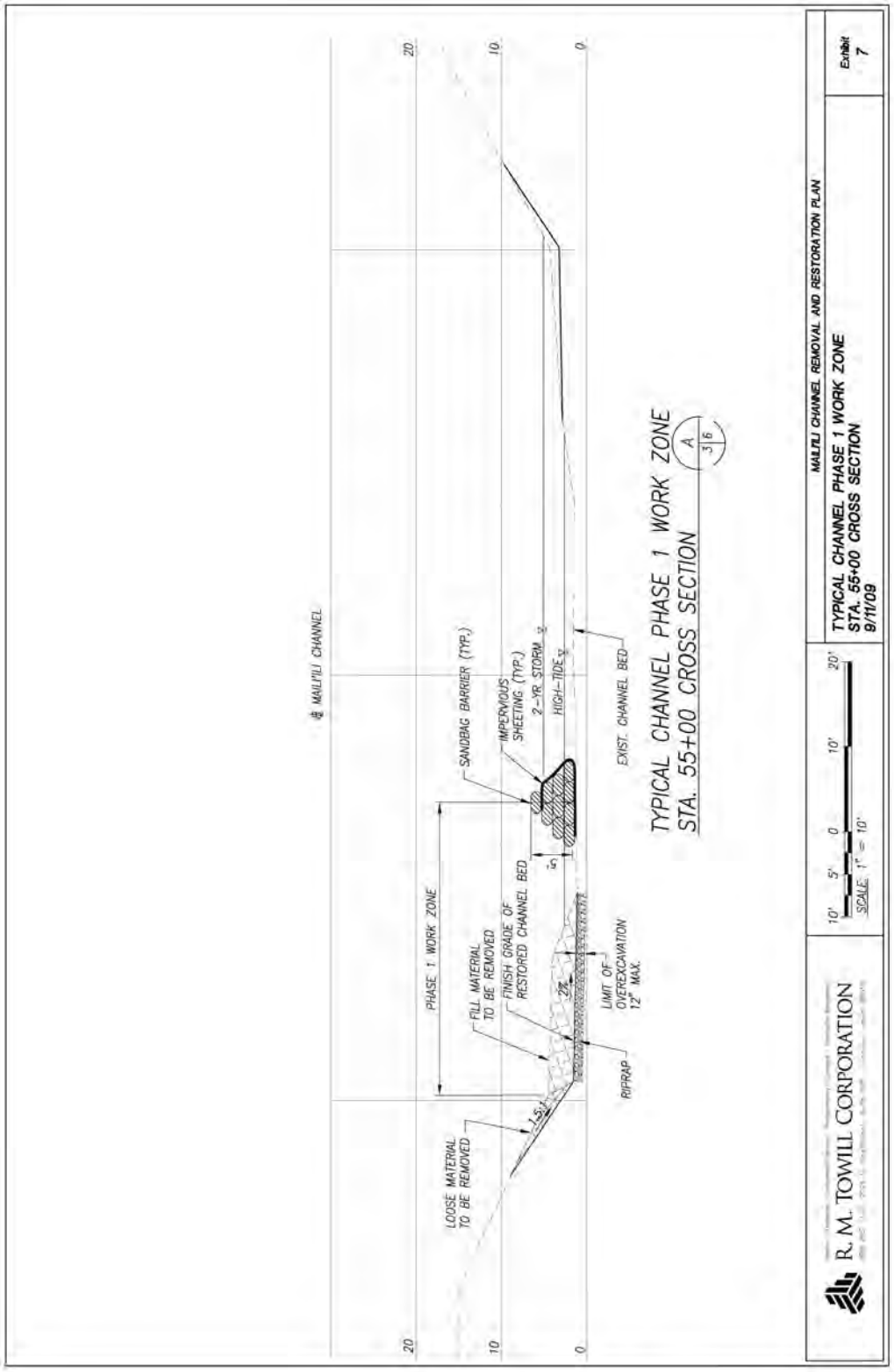
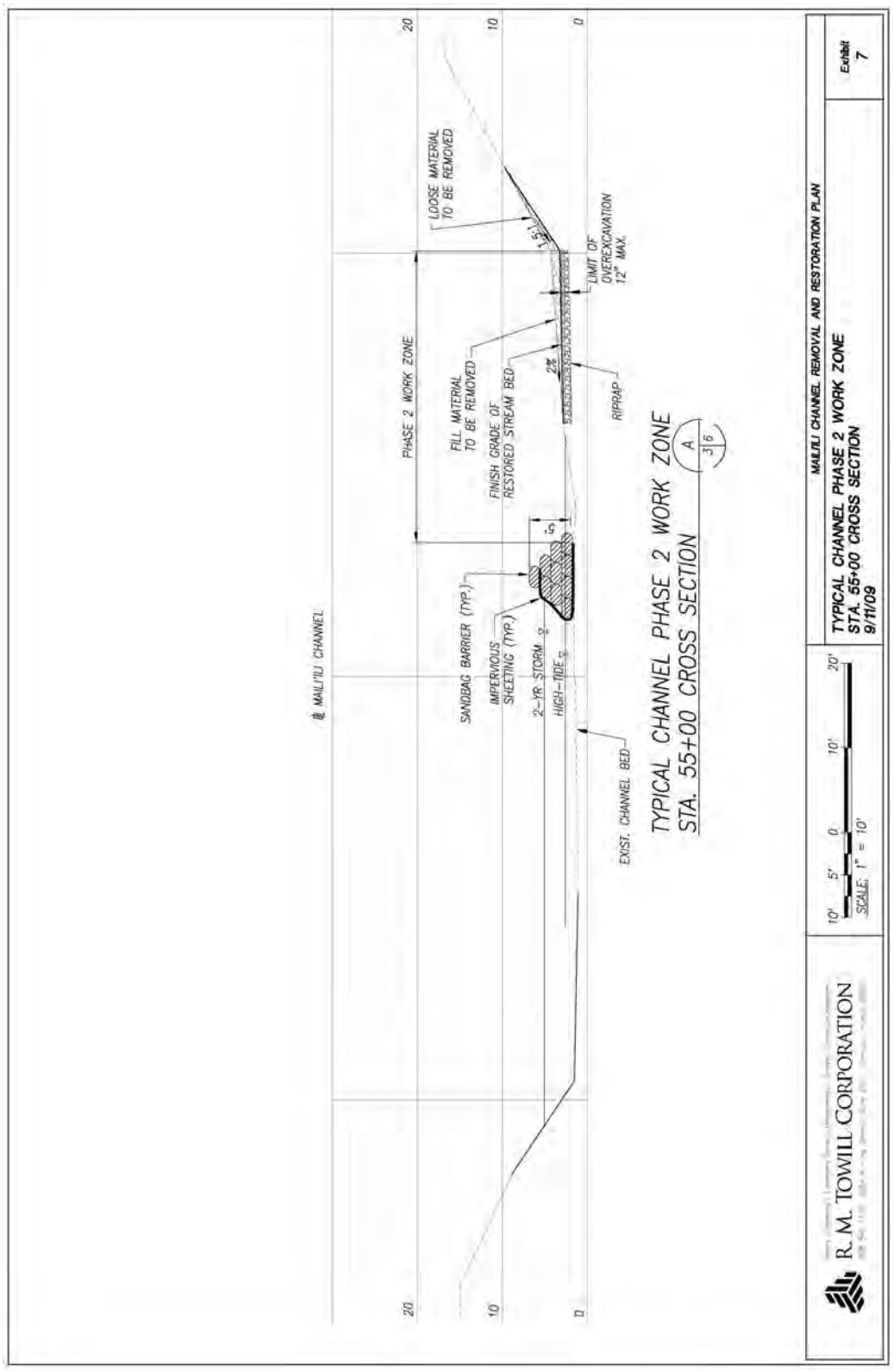


Figure 8. Phase 2 Sandbag Protection



3.7 Implementation Schedule

The following implementation schedule is based on approval of the R&R Plan by the EPA on January 29, 2010.

Tasks	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1. Environmental Permits [1]												
2. Construction Documents												
3. Bidding & Award (Est. 2 months)[2]												
4. Mobilization/Install BMPs												
5. Fill Removal[3]												
6. Site Restoration												
7. Final Report (To EPA and DOH)												

Table Notes:
[1] Schedule assumes that the permits are not contested.
[2] Based on an uncontested award of contract.
[3] Construction activities are proposed to take place outside of the nesting and fledgling season of the Hawaiian Stilt, between March and September.

Section 4
Existing Conditions, Potential Impacts and Proposed Mitigation

4.1 Project Location

The project location is shown in **Figure 1 – Project Location** and is approximately 0.75 miles inland from Farrington Highway (State Route 93) along Māʻiliʻili Road on a parcel identified as Tax Map Key (1) 8-6-002: 003. The subject property is owned by the City & County of Honolulu.

Land uses in the vicinity are characterized by low-density farming and related farm dwellings. The Lualualei Naval Reserve shown on **Figure 1**, owned by the military, borders the project site on two sides – east and south. State and County land use in the vicinity of the project site is shown in **Figure 9 – State Land Use Districts** and **Figure 10 – Zoning**. The overall disturbed area comprises approximately 1.4 acres. **Figure 3 – Photos of Existing Conditions** shows the condition of the project site and surrounding area.

4.2 Māʻiliʻili Channel Improvements

A review of the as-built plans for the Māʻiliʻili Channel M-1 dated August 1964 revealed the following channel characteristics:

- The segment of the channel where the filling occurred is approximately 1,043 feet in length (Sta. 49+10 to Sta. 59+43). This segment is mostly unlined, except for a 390 foot segment of the north bank, which is concrete lined from Sta. 49+10 to Sta. 53+00.
- The channel bottom is V-shaped with 2% cross slopes from the invert at the baseline of the channel to the toe of each bank.
- The longitudinal slope of the channel is 0.085%.
- The channel bottom is 100 feet wide and 15 feet deep with 1.5:1 (horizontal to vertical) banks on both sides.
- There are 15-foot wide access roads along the top of both banks with a concrete ramp to the channel bottom from the south bank.
- The channel baseline is located in the center of the 100-foot wide bottom.
- The channel was constructed in a cut condition in silty clay material.

4.3 Topographic Survey

A topographic survey of the channel was conducted by RMTC during the week of August 10, 2009 (see **Figure 2 – Topographic Survey**) to characterize present condition of the channel and locate the limits of the fill material. The topographic survey included the full channel width from north top bank to the south top bank, from approximate baseline channel Sta. 48+00 to Sta. 59+50.

Figure 9. State Land Use Map

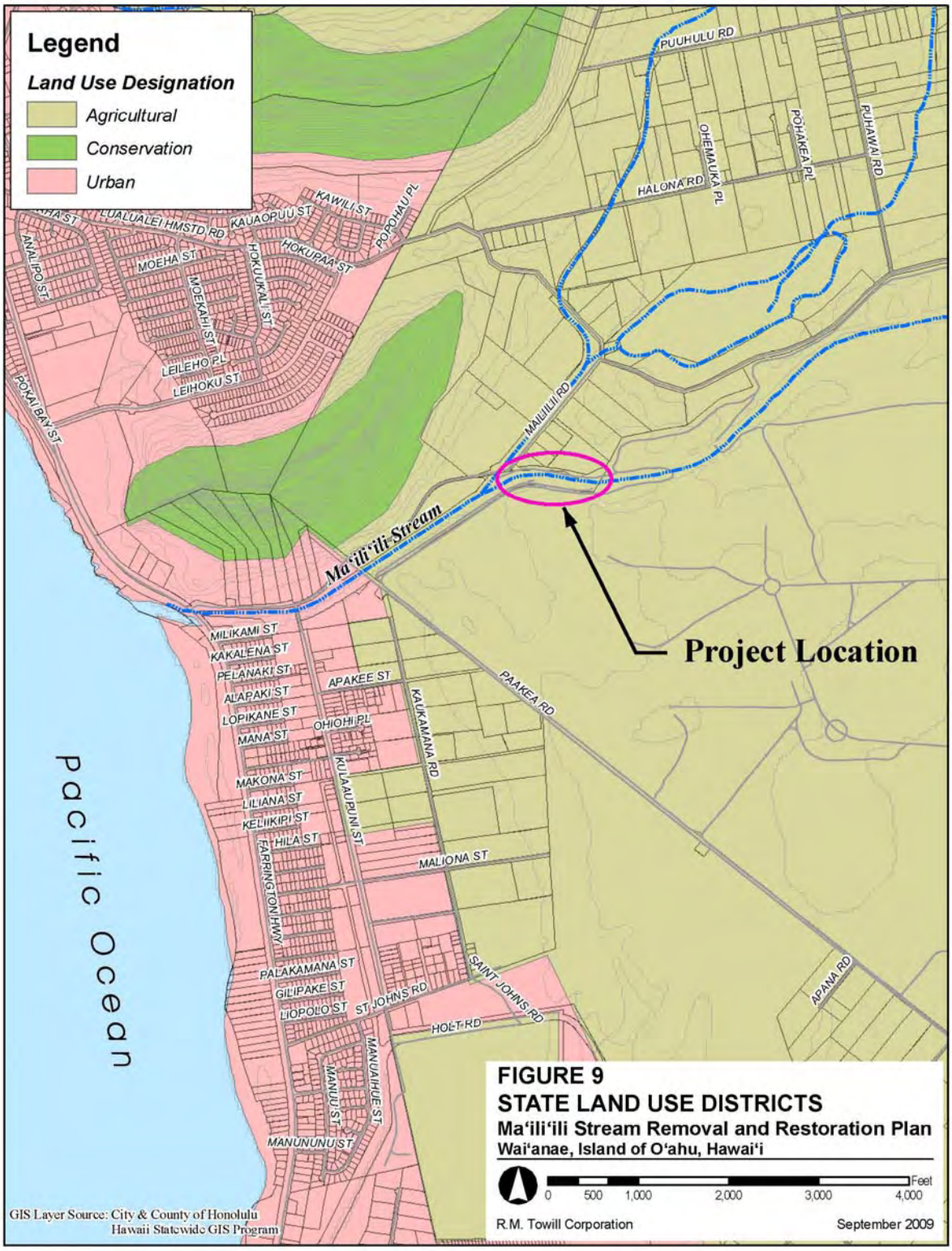
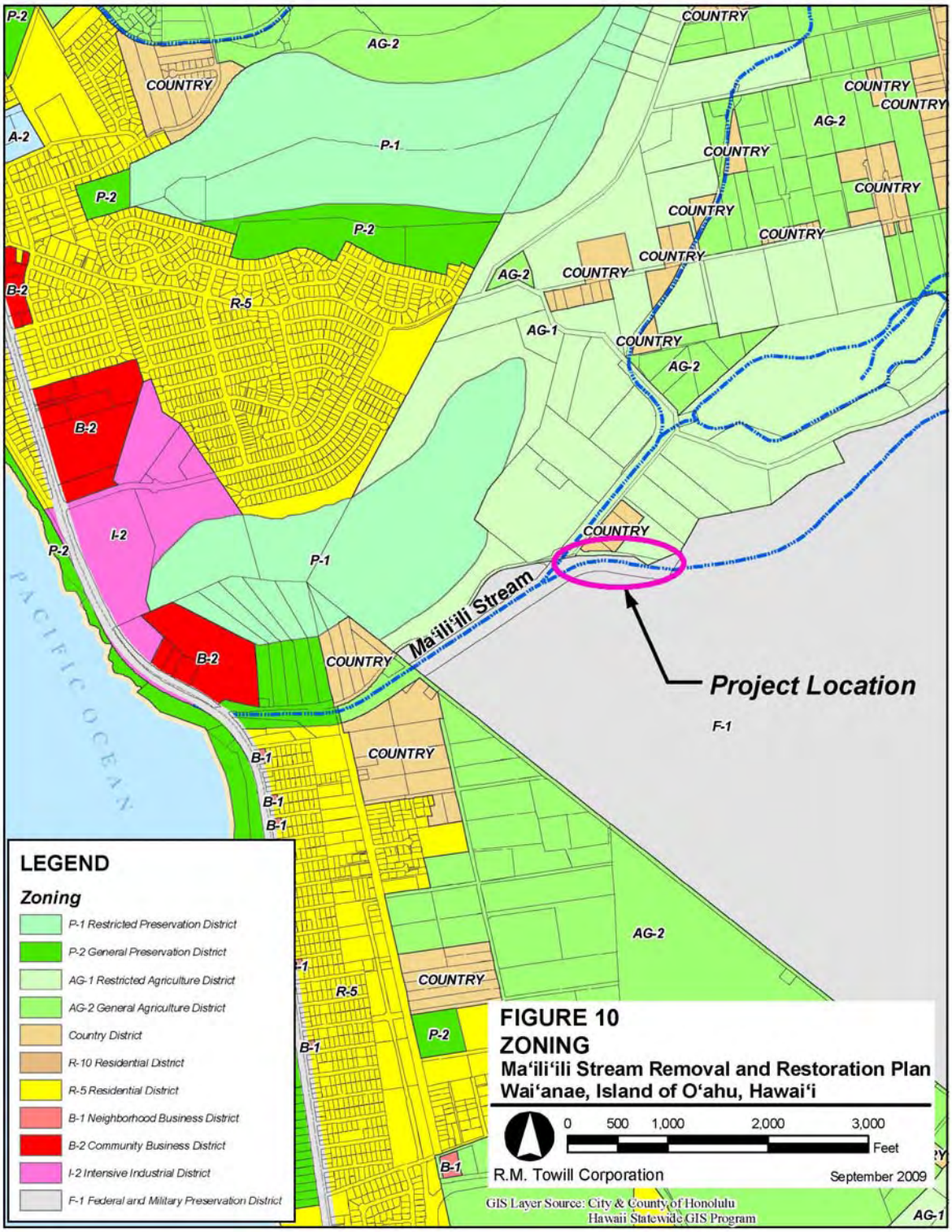


Figure 10. Zoning



Spot elevations were taken along the channel baseline. At these points, the depth of sediment build-up was estimated by inserting a 4-foot rod into channel bottom until a firm subgrade was reached. The results indicated that the depth of the sediment layer ranged from 2 inches to 18 inches.
The following observations were made:

- The center portion of the channel is submerged with tidal water from Sta. 49+00 to Sta. 57+50.
- The earthen section of the channel bottom upstream of the end of the concrete lined surface (Sta. 49+00) was eroded below the top of the concrete section, creating a sump condition.
- Along the concrete-lined north bank, the top of the riprap toe is visible. The channel bottom has eroded below the edge of the riprap creating a nearly vertical drop.
- The channel banks that were undisturbed exhibit various levels of erosion, with flatter slopes and an undulating bank face. The entire concrete footing of a fence post along the upstream fence line is exposed, indicating that the bank has eroded since it was constructed. Vegetative cover on these slopes is about 50% or less.
- Uncompacted material has been placed on both channel banks. Material on the south bank contains tires and other urban debris.
- A temporary ramp has been graded into the slope near the upstream end of the channel.
- Crushed asphalt concrete (AC) has been placed along the north bank maintenance road from the access gate to Sta. 53+60. Some of the AC spilled onto the concrete bank from approximately Sta. 51+65 to Sta. 52+30 and at Sta. 53+10.
- At Sta. 49+10, fill material was placed on both banks to support the installation of a metal pole and sediment boom.

4.4 Wildlife Characterization

4.4.1 Field Investigations

The following field investigations have been conducted at Māʻiliʻili Channel to characterize wildlife conditions at the project site and to identify species listed for protection by the state or federal government.

A. Division of Forestry and Wildlife (“DOFAW”) Field Investigation, June 15, 2009 (**See Appendix C - Agency Correspondence and Reports**).

A field investigation conducted by DOFAW biologists observed 13 Hawaiian stilts (Black-necked stilt, *Himantopus mexicanus knudseni)*, including 11 adults and two chicks, within the channelized stream bed, and one black crowned night heron (Aukuʻu, *Nycticorax nycticorax hoactli)* in the concrete rubble area. The Hawaiian stilt is a listed, protected species by both the state and federal government.

B. U. S. Fish and Wildlife Service (“FWS”)/DOFAW Field Investigation, June 16, 2009 (**See Appendix C**)

A field investigation conducted by FWS and DOFAW biologists observed six Hawaiian stilts, including three adults and one chick, within the project area. No evidence of a "take" was observed during the field investigations. The project area is not a federally designated "critical habitat."

C. Phil Bruner Field Investigation, August 31, 2009 (**See Appendix F – Avifauna Reconnaissance Report**)

A field investigation was conducted for the R&R Plan by Phil Bruner, Ph.D., biologist and avifauna specialist, to identify the presence or absence of native waterbirds and migratory shorebirds. The total number of native birds observed is shown in the following table.

Common Name	**Scientific Name**	**No. Recorded**
Black-necked (Hawaiian) Stilt †	*Himantopus mexicanus knudseni*	7
Koloa †	*Anas wyvilliana*	4
Black-crowned Night- Heron	*Nycticorax nycticorax hoactli*	5
Pacific Golden-Plover	*Pluvialis fulva*	21
Wandering Tattler	*Heteroscelus incanus*	2
Ruddy Turnstone	*Arenaria interpres*	1
† federally listed endangered species.		

Phil Bruner, Ph.D., observed "the seven (*Hawaiian*) Stilt were all foraging in the cement bottom section of the channel. Three of the seven were juveniles based on their white cheek patches and brownish backs. If these young stilt were hatched at this site they were indeed fortunate given the accessibility of the channel to cats, mongoose and even dogs. The gated section of the fence surrounding the channel would not exclude dogs since I was easily able to access the channel between the widely spaced gates."

"Both Koloa and Stilt are opportunistic foragers which utilize a wide variety of wetland habitats. One of the major limitations on their population is predator-free nesting sites. The (*Hawaiian*) Stilt breeding season extends from March through September with the majority of activity in April through July (Robinson et al. 1999). They are semi-colonial nesters preferring mudflats near water. The average clutch is four eggs. Adults are very aggressive and noisy when apparent danger to eggs or chicks occurs (Hawaii Audubon Society 2005)."

4.4.2 Site Characterization

Dr. Bruner observed that the project site is characterized by a high level of human alteration, both with respect to the pre-existing stream channelization, and to the routine and on going maintenance to maintain the channel function for drainage and flood control.

Vegetation growth during intervals in maintenance can become dense with introduced trees and grasses. Currently, the channel is mostly clear of vegetation. Grasses and low ground cover plants are present along some segments of the channel bottom together with sediment deposits. Tidal waters moving up the channel flood the sediment and

grass areas with shallow water and create conditions that attract a variety of native birds, including the listed Hawaiian Stilt and Kōloa, to feed and rest.

The absence of vegetation in the channel creates open space for birds to use and reduces ambush opportunities for predators. Fencing around the site provides a limited measure of predator control. However the fencing can be easily breached by dogs, cats, and mongoose which are the animals that pose the greatest threat to nesting and foraging birds and chicks.

The presence of the Hawaiian Stilt fledglings (as observed by DOFAW in June 2009) indicates that the channel is used by the birds as a breeding area. This finding is unexpected given the birds' sensitivity to human activity and suggests an adaptive response to the human-altered environment.

As further noted by Dr. Bruner, "Nesting [for Kōloa] is primarily concentrated in December to May." This site (Māʻiliʻili Channel) is unlikely to serve as a nesting site for Koloa due to insufficient vegetation cover and water as well as easy access for predators."

4.4.3 Wildlife Mitigation Recommendations

- Removal of debris is recommended by DOFAW in order to increase the area of apparently productive avifauna habitat.
- Debris removal and channel restoration work activities will be limited to the months between September to March (DoFAW, June 17, 2009) to avoid disturbing the Hawaiian Stilt breeding and fledging season.
- The EPA, FWS, and DOFAW should be contacted prior to and during the construction period to ensure that no nesting birds or chicks are present.

4.5 Botanical and Biological Resources

A visit to the project area was made on September 8, 2009 by AECOS Consultants (see **Appendix G** – Biological Reconnaissance Survey of Māʻiliʻili Channel for an Unauthorized Fill Restoration Project, Māʻili, Oʻahu. The survey area encompassed the lower, estuarine reach of Māʻiliʻili Channel from Paʻakea Road (bridge) up to the U.S. Navy, Lualualei Reservation fence. The survey area was traversed on foot over several hours by biologists Eric B. Guinther and Chad Linebough, who made observations on the plants and aquatic biota present. Preliminary conclusions of their observations were "although a highly modified aquatic environment, lower Māʻiliʻili Channel, includes a brackish wetland and associated pond(s) that are attractive to a number of aquatic organisms, including the endangered, Hawaiian stilt (*Himantopus mexicanus knudseni*)."

Basic water quality parameters were measured using field instruments to characterize the aquatic environment. Sampling was conducted at three locations: under the Paʻakea Street bridge, at the very upper end of the pond in the project area, and at the lower end of the pond, where the channel bed transitions from mixed sediments to concrete.

Basic Water Quality Data from the Project Vicinity
(Collected September 8, 2009)

Location	Time (am)	Temp (C))	Salinity (ppt mg/l)	pH	DO (dissolved O^2)
Pond Upper End	11:40	29.2	4	8.76	8.33 (111)
Pond Lower End	10:45	26.3	4	7.87	7.34 (93)
Confluence*	11:00	28.8	2	8.42	16.73 (219)
Pa'akea Street Bridge	11:10	27.2	20	8.08	10.32 (145)

* North and main branch; in concrete lined channel

A. Flora

On September 8, 2009, field biologists from AECOS, conducted a reconnaissance study of the biological resources within the channel. In summary, "the flora is overwhelmingly dominated by non-native species, exceptions being the abundant widgeon grass and seaside heliotrope (*Heliotropium curassavicum*), which are regarded as an indigenous species (native to Hawai'i and other Pacific locations). A majority of the species listed are found growing on and along the top of the high, manmade sidewalls of the channel where these are not concrete-lined. Parts of these "banks" are maintained by cutting (kiawe and koa haole) and spraying. The floor of the channel in the project area, aside from the two species described from the pond itself, supports pickleweed (*Batis maritima*), sourbush (*Pluchia indica* and *P. carolinensis*), saltbush (*Atriplex semibaccata* and *A. suberecta*), and seaside heliotrope as common to abundant."

B. Stream/Estuarine Biota

Two distinct aquatic environments are represented in the project area: 1) a concrete-lined tidal estuary; and 2) a slightly brackish, pond like feature with mixed sediment bottom and minimal tidal influence at the project site. These areas share much of the same biota with some exceptions indicating the stronger influence of the sea on the estuarine reach and of the land on the ponds-like reach.

According to AECOS, "Mozambique tilapia (*Orechromis mossambicus*), black-chin tilapia (*Sarotherodon melanotheron*) and mollies (*Poecilia salvatoris/mexicana hybrid*) are abundant throughout the shallow waters of the project area. Glass shrimp (*Palaemonetes sp.*) is also abundant, clinging to the prop roots of mangrove trees (*Rhizophora mangle*) and sheltering in widgeon grass (*Ruppia maritima*). Mullet (*Mugil cephalus*), Samoan crabs (*Scylla serrata*), and crenate swimming crabs (*Thalamita crenata*) are sighted occasionally in deeper parts of the estuary. The chlorophyte, *Schizomeris leibleinii* is the only macro-algae identified growing attached to the substrate, though several marine species (including *Acanthophora spicifera, Liagora sp., Padina sp.*, and *Ulva fasciata*) are present drifting unattached in the water column of the estuary."

Section 5
Relationship to Federal, State and County Land Use Plans and Policies

5.1 Federal – Laws and Regulations

5.1.1 Clean Water Act and Rivers and Harbors Act of 1899

The Clean Water Act (CWA) of 1977 (33 USC §§ 1251 *et. seq.*) regulates pollutant discharges that could affect aquatic life forms or human health and safety. The major sections of the CWA applicable to the proposed action are:

> **Section 401** of the CWA requires a Water Quality Certification (WQC) be obtained from the State for actions that require certain Federal permits to conduct an activity, construction or operation that may result in discharge to waters of the United States. The State of Hawai‘i, Department of Health, Clean Water Branch (DOH-CWB) issues the WQC for Hawai‘i waters.
>
> **Section 402** of the CWA requires a National Pollution Discharge Elimination System (NPDES) permit for point source discharges including storm water discharges associated with construction activities. An NPDES permit would be required if construction activities disturb a land area of 1.0 ac. or more and discharge storm water from the construction site to waters of the U. S. The DOH-CWB issues the NPDES for Hawai‘i waters.
>
> **Section 404** of the CWA, and Executive Order (EO) 11990, Protection of Wetlands, regulate development activities in or near streams or wetlands. Section 404 regulates development in streams and wetlands and may require a permit from the ACOE for dredging and filling in wetlands.

The Rivers and Harbors Act of 1899 (33 USC §§ 401 et seq.) regulates activities in navigable waters of the U. S. The Mā‘ili‘ili stream channel is considered a navigable water of the U. S. and subject to regulatory reviews by the ACOE.

The following agencies were consulted to establish jurisdictional authority and permitting requirement:

- Department of the Army, Corps of Engineers
- State of Hawai‘i, Department of Health, Clean Water Branch

Discussion

The potential for adverse impacts to water quality from construction activities associated with this project will be addressed through the following proposed measures and practices below.

Runoff from construction areas will be regulated through adherence to the conditions of the National Pollutant Discharge Elimination System (NPDES) permit. Best Management Practices (BMP) will be employed to prevent soil loss and sediment discharges from areas of work. Project activities and the operation of the drainage facility following completion of the removal and restoration work will comply with DOH regulations as set forth in Hawai‘i Administrative Rules (HAR), Title 11, Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Control.

Discharge pollution prevention measures will be employed in all phases of the project. Control measures will be in place and functional before construction activities begin, and will be maintained throughout the construction period. A Site-Specific BMPs Plan to minimize and prevent runoff and discharges of pollutants into State waters, including removal procedures for the construction site BMPs, will be prepared by the construction contractor as part of the project construction plan. The construction plan will be submitted to the DOH-CWB for review.

The BMPs will include guidelines and mitigation measures to minimize and prevent runoff, discharge pollution, and other detrimental effects related to construction activities. In addition, contingency plans are included as part of the BMPs to address the potential for heavy rainfall conditions.

Mitigation measures, in addition to the discharge pollution controls described above, shall include, but not be limited to the following:

- Clearing and excavation shall be held to a minimum necessary to meet project design and construction plan requirements.
- Construction shall be phased to minimize the exposure time of cleared or excavated areas. Existing ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to the start of construction.
- Stabilization shall be accomplished by temporarily or permanently protecting the disturbed surface from rainfall impacts and runoff.
- Storm water flowing toward active project areas shall be diverted as much as practicable using the appropriate controls, including berms and silt fences, as determined by the contractor according to site conditions.
- The project contractor will select locations for stockpiling construction material. Stockpile sites will be identified in the site-specific BMPs and construction plans. A sediment retention berm or silt fence will be installed around the down-slope side of stockpile sites to retain sediment discharges during heavy rainfall.
- Fueling of construction equipment will only be performed off-site or within an area designated by the contractor. Any site designated for refueling shall be located away from the stream, enclosed by a containment berm, constructed to contain spills and seepage, and prevent storm water runoff from carrying pollutants into state coastal waters.
- In the event of a severe storm event that may result in flooding of the work site within the streambed, all construction equipment and materials, including discharge pollution prevention will be removed from the project site to a secure staging area above the potential flood level.

The contractor, based on professional experience and expertise, may modify the proposed BMP mitigation measures as necessary to account for unanticipated or site specific conditions.

As provided pursuant to the EPA approval letter for the R&R Plan dated January 29, 2010, the ACOE has been notified by the Department of Facility Maintenance regarding the need for Section 404 authorization.[1] The Department of Facility Maintenance intends to comply with the follow-up requirements of the ACOE to address its regulatory concerns.

[1] See Letter from Department of Facility Maintenance to ACOE dated March 15, 2010.

5.1.2 Section 106, National Historic Preservation Act

The National Historic Preservation Act (NHPA) became law in 1966, and was last amended in 2000. The NHPA requires government agencies to evaluate the impact of government funded construction projects through a process known as the Section 106 Review. The goal of the process is to identify historic properties potentially affected by the proposed project, assess its impacts and seek ways to minimize or mitigate adverse effects. The NHPA is administered by the U. S. Department of the Interior, National Park Service, and the Advisory Council on Historic Preservation (ACHP). At the State level, the NHPA is implemented by the State Historic Preservation Officer (SHPO).

The NHPA Section 106 review process encompasses a "good faith effort" in ascertaining the existence and location of historic properties near and within the project site, establishing an Area of Potential Effect (APE) of the project, identifying whether a potential for "adverse effects" on historic properties by the project exists, and developing a reasonable and acceptable resolution in the monitoring and treatment of any historic sites that is agreed upon by the consulted government agencies, community associations, and native Hawaiian organizations. The APE of the project is defined by the banks of the stream as shown in Figure 2.

According to the ACHP, "Historic properties are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register (ACHP, 2008)." Public involvement is a key ingredient in successful Section 106 consultation, and the views of the public should be solicited and considered throughout the process.

Discussion

The implementation of the R&R Plan is not anticipated to adversely affect a historic property or properties. Consultation was limited to the State Historic Preservation Division (SHPD) based on the location of the project site and its history of use as a drainage control facility. However, should historic or cultural features be identified during the debris removal process, the SHPD will be immediately notified and work will cease until a determination has been made as to the significance of the findings.

5.1.3 Section 7, Endangered Species Act

The purpose of Section 7 of the Endangered Species Act (ESA) of 1973 is to protect and conserve ecosystems upon which endangered and threatened species are dependant, and to provide for the conservation of endangered and threatened species. Section 7 of the ESA is administered by the U. S. Department of the Interior through the Fish and Wildlife Service, and the U. S. Department of Commerce through the National Marine Fisheries Service, National Oceanic and Atmospheric Administration.

Discussion

In order to ascertain if land that falls within the objectives of Section 7, ESA, is impacted, the following agencies were consulted:

- U. S. Department of the Interior, Fish and Wildlife Service
- State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife
- Department of the Army, Corps of Engineers

Based on the analysis conducted for this project, the proposed R&R Plan does not impact any uses identified in Section 7, and therefore no additional mitigation is proposed beyond those outlined in this document.

5.2 State of Hawai‘i – Laws and Regulations

5.2.1 State Land Use

Chapter 205, HRS, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are classified. These are the Urban, Rural, Agricultural, and Conservation Districts. The project site is with an area designated Agricultural (see **Figure 9 – State Land Use Districts**).

Discussion

The proposed removal of debris from the stream does not require a change to the existing State Land Use designation as the Agricultural designation is compatible with the proposed project.

5.2.2 Coastal Zone Management Act

The Hawai‘i Coastal Zone Management (CZM) Act (HRS, Chapter 205A), regulates all land and water use activities in the State of Hawai‘i and serves as a policy umbrella to state and county agencies to provide legal and operational compliance of all actions undertaken by agencies within their scopes of authority. Under Chapter 205A, the actions of agencies must comply with the objectives and policies of the CZM Law.

The federal Coastal Zone Management Act (CZMA), enacted in 1972, provides states with financial incentives for the development and implementation of coastal zone management practices, and limited review power over federal actions affecting the state’s coastal zone. The CZMA requires federally assisted actions, including federally-funded state and local government projects, to be consistent with Hawai‘i’s CZM Program objectives and policies. The national CZM program is administered by the Office of Ocean and Coastal Resources Management (OCRM), an office within the National Oceanic and Atmospheric Administration, under the U. S. Department of Commerce.

The Hawai‘i and federal CZMA is administered by the Hawai‘i State Office of Planning.

Discussion

Federal CZMA – The trigger for further compliance with the federal CZMA will be based on the review of the project by the ACOE for applicability to Section 404 of the Clean Water Act. However, coastal resources are not anticipated or expected to be will be impacted. No further mitigation beyond the measures as provided in this Environmental Assessment is required.

Hawai‘i CZM Act – The proposed restoration work is under the jurisdiction of the Hawai‘i CZM Act. A review of the applicability of the project is summarized in the following evaluation:

1. Recreational resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

A) Improve coordination and funding of coastal recreational planning and management; and B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Evaluation

The proposed facility is not located on the coastline or shoreline and does not involve the use of coastal resources. The site is not in a location suitable for the development of new shoreline recreational opportunities or to dedicable shoreline areas with recreational value. Although not shoreline dependent, the location of the site mauka and above the shoreline will allow for the proper operation and functioning of the facility.

2. Historic resources

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

Policies:

(A) Identify and analyze significant archaeological resources;

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

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Evaluation

The implementation of the R&R Plan is not anticipated to adversely affect a historic property or properties. Consultation was limited to the State Historic Preservation Division (SHPD) based on the location of the project site and its history of use as a drainage control facility. However, should historic or cultural features be identified during the debris removal process, the SHPD will be immediately notified and work will cease until a determination has been made as to the significance of the findings.

3. Scenic and open space resources

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

Policies:

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

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

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

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

Evaluation

The project site is within a relatively isolated location and is not visible from the Farrington Highway in the Waiʻanae or Kahe Point directions. The site also functions as a designated drainage channel and is not considered an open space resources. Scenic and open space resources will not be adversely affected with respect to scenic and open space resources.

4. Coastal ecosystems

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

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

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

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

(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Evaluation

The proposed project is not expected to have any adverse effects on coastal or marine coastal ecosystems. The project involves the implementation of the R&R Plan to restore the site, as much as practicable, to its existing condition. In this regard the project will promote the coastal ecosystem through the restoration of pre-existing conditions within an existing drainage channel.

During construction, all construction activities will be covered under an NPDES permit to address proper treatment of storm water discharges. Measures to reduce and prevent sediment discharges in storm water runoff will be in place and functional before project activities begin and will be maintained throughout the construction period. Runoff and discharge pollution prevention measures will be incorporated into a construction stormwater BMPs plan by the project contractor.

5. Economic uses

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

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

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

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

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

Evaluation

The project site is within an existing facility this is not coastal dependent although the drainage channel does allow for the movement of tidally influenced seawater and brackish water. As noted in this document the potential for adverse effects are addressed through mitigative measures and practices that are designed to minimize or reduce the potential for adverse effects due to construction. The facility is owned by the City & County of Honolulu and the use of the site for a drainage facility is not expected to affect the location or expansion of future coastal dependent developments.

6. Coastal hazards

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

Policies:

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

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

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

(D) Prevent coastal flooding from inland projects.

Evaluation

The potential for hazards from storm wave, tsunami, hurricane, wind, flood erosion, subsidence, and point and nonpoint source pollution will be addressed by the proposed project through adherence to the required regulatory permit authorizations and controls as cited in Section 6, Permits and Approvals That May Be Required.

The project will also be in compliance with the requirements of the Federal Flood Insurance Program, the City & County of Honolulu Drainage, Grading and Development standards for Flood Hazard Districts, and the LUO, Section 21-9.10, Flood Hazard Districts.

Coastal flooding is not anticipated based on the location of the project inland and upgradient of the Farrington Highway.

7. Managing development

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

Policies:

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

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

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

Evaluation

The project site is within the State Agricultural Land Use District. Land uses within this designation are subject to regulation by the State and City & County of Honolulu. The county's zoning designation is F-1, Federal and Military Preservation District. According to Chapter 21, Land Use Ordinance, of the Revised Ordinances of Honolulu (ROH):

Sec. 21-3.40 Preservation districts--Purpose and intent.

“The purpose of the preservation districts is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value”; and

“The purpose of creating the F 1 military and federal preservation district is to identify areas in military or federal government use and to permit the full range of military or federal government activities.”

The proposed project will involve the implementation of the R&R Plan to restore the site, as much as practicable, to its existing use and function as an existing drainage facility. Inasmuch as the proposed action is not inconsistent with the

underlying zoning designation of the site no adverse effects to managing development are anticipated.

8. Public participation;

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

Policies:

(A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

(C) Organize workshops, policy dialogues, and site-specific mitigation to respond to coastal issues and conflicts.

Evaluation

Public involvement in the project will consist of public notification of the project as provided in the Office of Environmental Quality Control (OEQC) Bulletin. See Section 7, Agencies and Organizations Consulted, for a list of the agencies, organizations and individuals consulted for this project. All written public comments to the Draft EA for this project will be provided with a written response. Where appropriate, mitigation measures will be developed to address issues and concerns raised during public review of the project.

9. Beach protection;

Objective: Protect beaches for public use and recreation.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Evaluation

The proposed project is not located along the shoreline or beach and therefore no impacts to the shoreline or public use beaches are anticipated or expected. No structures are proposed seaward of the shoreline. Control of erosion will be based on conformance to standards of the state and City & County of Honolulu regulating the control of erosion.

10. Marine resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

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

Evaluation

The proposed project does not involve or utilize marine resources. However, as required by law all necessary permit applications and environmental permit approvals will be secured prior to the initiation of construction activities to ensure against the potential for adverse effects.

5.2.3 Chapter 11-55, HAR, DOH

The proposed project will be governed under the provisions of Chapter 11-55, HAR, and will be subject to NPDES permitting requirements in accordance with Section 402, CWA. Water quality monitoring and the implementation of BMPs will minimize the potential for pollutants entering the stream waters.

Discussion

Chapter 11-55, Water Pollution Control, is implemented in the state of Hawai‘i through the NPDES permit program which will require the use of BMPs to reduce, minimize, or eliminate discharges of construction associated stormwater from state waters. Inasmuch as the provision of water quality monitoring and the use of BMPs will be utilized for the proposed action, no adverse impacts to state water quality are anticipated.

5.2.4 Chapter 6E, HRS

Chapter 6E, HRS, provides for the evaluation and preservation of historic properties within the state of Hawai‘i. The proposed restoration work will be within an existing improved drainage facility and it is expected that previous earthwork and the flow of drainage flows through the channel (through unimproved portions of the facility) would have destroyed or caused the removal of historic or cultural features.

Discussion

The proposed project is not anticipated to disturb any historic or cultural properties because the proposed restoration work is within the banks of the existing stream channel. However, should historic or cultural features be identified during the debris removal process, the SHPD will be immediately notified and work will cease until a determination has been made as to the significance of the findings.

5.2 City and County of Honolulu – Laws and Regulations

5.3.1 General Plan

The General Plan of the City & County of Honolulu is a comprehensive statement of objectives and policies which sets forth the long-range aspirations of O‘ahu's residents and the strategies or actions to achieve them. It is the focal point of a comprehensive planning process that addresses physical, social, economic and environmental concerns affecting the City & County of Honolulu. Since adoption of the General Plan in 1977, the last amendment to the Plan was completed in 2002. Although the Plan has sustained a number of changes since its adoption the basic themes and directions for growth remain valid.[2]

The proposed project is consistent with the General Plan objectives and policies that relate to the following:

III. Natural Environment

Objective A – To protect and preserve the natural environment.

Policy 2 – Seek the restoration of environmentally damaged areas and natural resources.

Policy 6 – Design surface drainage and flood-control systems in a manner which will help preserve their natural settings.

Policy 7 – Protect the natural environment from damaging levels of air, water, and noise pollution.

Policy 8 – Protect plants, birds, and other animals that are unique to the State of Hawaii and the Island of Oahu.

Evaluation

The proposed project will address the provisions of the EPA Order and will restore the portions of the Mā‘ili‘ili Stream channel subjected to the placement of unauthorized fill. The proposed construction activities will also maintain the existing surface and flood-control function of the facility while allowing for the preservation of the natural surrounding site.

The protection of the natural environment from damaging levels of air, water, and noise pollution will be addressed through the applicable provisions of federal, state, and City and County of Honolulu laws and regulations governing the use and operation of combustion powered machinery and equipment including the use of exhaust mufflers to control the generation of noise. Control of construction stormwater related discharges will be addressed through the filing of a NPDES permit application, and project coordination with the ACOE to address any regulatory requirements of Section 404, CWA, that may apply.

The protection of threatened and endangered species will be addressed through the use of an on-site biologist that will assist with the monitoring of threatened and endangered species that may be present. As required, the monitoring activities of the biologist will be coordinated with the Fish and Wildlife Service and/or DLNR, Division of Forestry and Wildlife.

[2] General Plan, City & County of Honolulu. Website reference: http://honoluludpp.org/planning/GeneralPlan/GPIntro.pdf

V. Transportation and Utilities

Objective C – To maintain a high level of service for all utilities.

Policy 1 – Maintain existing utility systems in order to avoid major breakdowns.

Policy 2 – Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.

Evaluation

The principal purpose of the project is to address the requirements of the EPA in its Order for the restoration and removal of unauthorized fill material. However, a benefit of the plan will be the improvement and maintenance of the drainage channel.

5.3.2 Sustainable Communities Plan (SCP) – Wai‘anae

Section 3.5 of the Wai‘anae SCP relating to “Preservation of Streams and Stream Floodplains” states “The streams of the major valleys of the Wai‘anae Coast have always been considered a sacred part of the natural landscape. The streams traditionally provided precious fresh water for drinking and agriculture, as well as for other daily uses including bathing and washing. The major valleys – Nānākuli, Lualualei, Wai‘anae, Mākaha, and Makua – have well-articulated systems of intermittent streams: Nānākuli Stream, Ulehawa Stream and Mā‘ili’ili Stream in Lualualei Valley, Kaupuni Stream and Kawiwi Stream in Wai‘anae Valley, Mākaha Stream and Makua Stream. In recent years, the makai sections of the streams in Lualualei and Wai‘anae Valleys have been replaced with concrete drainage channels.”

The location of the unauthorized fill is designated as agriculture in the July 2000 Sustainable Communities Plan for Wai’anae.

Discussion

The proposed removal of debris from the stream does not require changing the existing State Land Use designations as the current Agricultural designation is compatible with the proposed work.

5.3.2 Zoning

Chapter 21, ROH, relating to the Land Use Ordinance, established the zoning for the stream area as Federal and Military (F-1). The zoning for the project site and vicinity is shown in **Figure 10 – Zoning**.

Discussion

The proposed removal of debris from the stream does not require changing the existing State Land Use designations as the current Agricultural designation is compatible with the proposed work.

5.3.3 Special Management Area

The proposed action is not within the Special Management area as regulated by Chapter 25, ROH.

5.3.4 Plan Review and Approval

A. Environmental Protection Agency. The EPA is responsible for the review and approval of the removal and restoration plan as prepared by the City and County of Honolulu. The plan was approved on January 29, 2010 (see Section 2.2, Plan Approval and Appendix B), as noted by the EPA, "We recommend that the City move forward with obtaining necessary permits and preparing for commencement of the restoration work."

B. Department of Design and Construction (DDC), City and County of Honolulu. The DDC is responsible for the review and implementation of the removal and restoration plan prepared by the Department of Facility Maintenance. In late February 2010, the Plan was initiated starting with the preparation of environmental and construction documents. This EA addresses the regulatory requirements pursuant to Chapter 343, HRS, and requirements for other federal, state and City & County of Honolulu laws and regulations.

Section 6
Permits and Approvals That May Be Required

6.1 City and County of Honolulu

- Plan Review and Approval

6.2 State of Hawai‘i

- NPDES NOI-C, Discharges of Storm Water Associated With Construction Activities
- Best Management Practices Plan (coordination with DOH-Clean Water Branch)
- Water Quality Monitoring Plan (coordination with DOH-Clean Water Branch)

6.3 Federal

- Department of the Army Permit (Section 404, Clean Water Act, and/or Section 10, Rivers and Act)
- Environmental Protection Agency – Review and Approval of the “Removal and Restoration Plan” (completed on January 29, 2010)

Section 7
Agencies and Organizations Consulted

The following agencies, organizations, and individuals were/will be contacted regarding the preparation of the Draft EA for this project:

7.1 City and County of Honolulu

- Department of Planning and Permitting
- Department of Design and Construction
- Department of Facility Maintenance
- Police Department
- Fire Department
- Honolulu City Councilman Todd Apo

7.2 State of Hawai‘i

- Department of Health
  - Environmental Management Division
  - Clean Water Branch
- Department of Land and Natural Resources
  - Land Division
  - State Historic Preservation Division
  - Commission on Water Resource Management
  - Division of Forestry and Wildlife
- Department of Business, Economic Development and Tourism

7.3 Federal

- U. S. Army Corps of Engineers
- U. S. Fish and Wildlife Service
- Environmental Protection Agency

7.4 Organizations and Individuals

- Wai‘anae Neighborhood Board No. 24

Section 8
Summary of Impacts and Significance Determination

8.1 Short Term Impacts

Short term impacts associated with the proposed project are expected to be minimal. The City and County of Honolulu and its designated contractor will need to access the project site via access roads that parallel the stream channel. No impacts are anticipated to vehicular traffic on Pa‘akea Road or Mā‘ili‘Ili Road. Noise will be temporarily generated from construction and related mobilization of equipment will persist for the duration of the removal operations. Construction equipment is expected to include, but not be limited to, backhoe(s), front-end loader(s) or excavator(s), dump trucks and powered hand tools. All equipment will be muffled in accordance with standard engine operating practices. The work will be limited to weekday daylight hours and engine exhausts will be governed in accordance with applicable state and county regulations. Upon construction completion, noise levels will return to ambient levels.

Dust and associated nuisance problems are expected to be slight to insignificant due to the limited scope and scale of the project. Fugitive dust will be controlled by regular wetting of the soil by the contractor.

Protection of water quality will be through the use of mitigative measures including silt fencing/curtains, berms, and other applicable erosion control devices to prevent construction-related soils and silt from leaving active areas of work. Specifications for the use of these measures will be through the required environmental permit applications will be filed and secured prior to the start of work.

8.2 Long Term Impacts

No long term impacts are anticipated as a result of the proposed stream restoration work. The proposed project will mainly involve the removal of debris placed in the stream to restore it to its pre-filled conditions. Upon completion, all construction equipment used on-site will be demobilized and all debris and waste materials will be disposed of at an approved refuse facility. Proposed mitigation measures will include measures to prevent silt and other construction debris from entering the stream.

8.3 Significance Criteria

Based on the significance criteria set forth in Title 11, Chapter 200, HAR, Environmental Impact Statement Rules, the proposed project is not anticipated to result in significant environmental impacts. The recommended preliminary determination for the proposed project is a Finding of No Significant Impact (FONSI). The findings and reasons supporting this determination are summarized as follows:

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

The proposed project will not result in the adverse loss of natural or cultural resources. The project site has been known to support the nesting of the Hawaiian Stilt. The restoration work will be conducted outside of the Stilt's nesting season, generally between March and September. Because the proposed work will be within the stream channel, it is not anticipated that historic or archaeological sites will be impacted. However, in the unlikely event of a discovery of significant historic or archaeological resources, the State Historic Preservation Division will be immediately notified for appropriate action and treatment.

2. Curtails the range of beneficial uses of the environment.

The subject project site is part of a stream channel that has been modified for flood control. The proposed improvements will not impact long-term stream flow and consequently will not curtail the beneficial uses of the environment.

3. Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 343, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

The proposed project is consistent with the environmental policies, goals and guidelines expressed in Chapter 343, HRS. Potential sources of adverse impacts have been identified and appropriate mitigative measures have been developed as a part of the EA process to either mitigate or minimize potential impacts to negligible levels.

4. Substantially affects the economic and social welfare of the community or state.

The proposed project will not affect the economic and social welfare of the community or state. The installation of erosion control measures will be regulated in accordance with County, State and Federal regulations. The removal and restoration work will provide employment for the firm selected to perform the removal and restoration work.

5. Substantially affects public health

Factors affecting public health, including air quality, water quality, and noise levels, are expected to be only minimally affected, or unaffected, by the proposed project during construction. Once construction is completed, the proposed improvements will not pose a direct threat to public health and safety. Potential impacts will be mitigated in accordance with Federal, State and City and County of Honolulu regulations.

6. Involves substantial secondary impact, such as population changes or effects on public facilities

The proposed activity is expected to have little to no substantial secondary, cumulative, or indirect impacts such as population changes or effects on public facilities based on the limited scope and scale of the project.

7. Involves a substantial degradation of environmental quality

Impacts to air and water quality, noise levels associated with the planned restoration work are anticipated to be minimal. Mitigation measures will be employed, as practicable, to further minimize potentially detrimental effects to the environment. The proposed project does not involve substantial degradation of environmental quality.

8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions

The proposed improvements are not expected to cause adverse cumulative impacts to the environment, nor does the proposed project involve a commitment for larger actions. The area of use involving the drainage channel is limited and is not planned to be further expanded.

9. Substantially affects a rare, threatened or endangered species

The project site is believed to be a nesting site for the Hawaiian Stilt and other endangered and threatened species may be present. The restoration work will be accomplished during the non-nesting season in coordination with U. S. Fish and Wildlife Service and the DLNR, Division of Forestry and Wildlife. This season has been identified as generally between March and September. A wildlife biologist will be contracted to monitor for threatened and endangered avifauna to ensure against the potential for adverse effects as a result of construction activities. See also Section 4.4, Wildlife Characterization.

10. Detrimentally affects air or water quality or ambient noise levels

On a short-term basis, ambient air and noise conditions may be affected by construction activities related to the proposed stream restoration work, but these are short-term potential impacts and can be controlled by mitigation measures as described in this EA. Once the project is completed, air and noise in the project vicinity will return to preconstruction conditions. Erosion control measures and other BMPs will be employed to prevent untreated storm water runoff from construction activities entering State waters.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters

The work proposed is within the Māʻiliʻili Stream channel and will be subject to flood hazards. Upon notification of an impending severe storm event, all equipment within the stream will be removed. The proposed action will not have any impact on the existing capacity of the stream to convey flood waters. See also Section 3.5.7, Channel Stabilization.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies

The proposed project will not obstruct views of any significant scenic features and view planes due to the work being within the stream channel. Once the work is completed and

equipment removed, the view into the stream channel from the banks will be similar to the existing pre-construction conditions.

13. Requires substantial energy consumption

Construction and daily activities associated with the proposed site improvements will not require substantial amounts of energy. However, the proposed improvements are anticipated to require the use of a reasonable quantity of fossil fuel for the operation of construction equipment and machinery.

Section 9
Findings

In accordance with the provisions set forth in Chapter 343, HRS, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, HAR, it is anticipated that the proposed project will have no significant adverse impacts to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. All anticipated impacts are expected to be temporary in duration and negligible or limited, and will not adversely impact the environmental quality of the area. It is expected that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) will be issued for this project.

Section 10
References

AECOS, Inc, Biological Reconnaissance Survey, July 2009

Chapter 25, Revised Ordinance of Honolulu, Special Management Area

Chapter 205A, Hawai‘i Revised Statutes, Coastal Zone Management

Chapter 343, Hawai‘i Revised Statutes

Chapter 11-55, Hawai‘i Administrative Rules, Water Pollution Control

Chapter 11-200, Hawai‘i Administrative Rules

City and County of Honolulu, 100-Year Runoff Rate, Plate 6 and the TR-55

City and County of Honolulu, General Plan, 1992 as amended October 2006.

Department of Facility Maintenance, City and County of Honolulu, “Removal and Restoration Plan,” September 2009

Environmental Protection Agency, Findings of Violation and Order for Compliance, July 28, 2009

Environmental Protection Agency, Approval and conditions to "Removal and Restoration Plan Mā’ili’ili Channel, Wai'anae District, Island of O'ahu Hawai'i". Docket No. CWA 404-309(a)-09-020. January 29, 2010

Phillip Brunner, Avifauna Reconnaissance Report, July 2009

Section 301, 401, 402 and 404, Clean Water Act (CWA) (33 USC 1311)

Sustainable Communities Plan for Wai’anae, City and County of Honolulu, July 2000

U.S. Geologic Service (USGS) in fact sheet 004-00, The National Flood-Frequency Program-Methods for Estimating Flood Magnitude and Frequency in Rural Areas in Hawai‘i, Island of O‘ahu, 2000

Section 11
Appendix

A. Findings of Violation and Order for Compliance, July 28, 2009

B. EPA approval and conditions to "Removal and Restoration Plan Māʻili'ili Channel, Wai'anae District, Island of O'ahu Hawai'i". Docket No. CWA 404-309(a)-09-020. January 29, 2010

C. Agency Correspondence and Reports

D. Best Management Practices (BMPs) Plan

E. Water Quality Monitoring Plan

F. Avifauna Reconnaissance Report (Phil Brunner, Ph.D.)

G. Biological Reconnaissance Survey (AECOS Consultants, Inc.)

APPENDIX A
Findings of Violation and Order for Compliance
July 28, 2009

Fax

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Name:	Kirk Caldwell, Carrie K.S. Okinaga, Jeoffrey Cudiamat
Organization:	City and County of Honolulu
Fax:	(808) 768-4242, (808) 768-5105, (808) 768-3381
Phone:	
From:	Amy C. Miller
Date:	7/29/09
Subject:	
Pages:	12

Comments: Attached is a copy of an Administrative Order to City and County of Honolulu, which was signed yesterday. An official copy was sent today certified mail. Should you have any questions, please contact me at (415) 947-4198

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JUL 2 8 2009

Certified Mail: 7001 0320 0002 4541 0748
Return Receipt Requested

Kirk Caldwell, Director
Managing Director's Office
City and County of Honolulu
530 S. King Street, Rm. 306
Honolulu, HI 96813

Re: Findings of Violation and Order for Compliance under sections 308 and 309(a) of the Clean Water Act, EPA Docket No. CWA-404-309(a)-09-020

Dear Mr. Caldwell,

The U.S. Environmental Protection Agency, Region 9 ("EPA") has information that, between at least February 2008 and May 2009, City and County of Honolulu's Department of Facility Maintenance, Division of Road Maintenance employees discharged dredged and/or fill material into the M-1 section of the Maili'ili Stream, without authorization under section 404 of the Clean Water Act.

EPA issues the enclosed Findings of Violation and Order for Compliance ("Order") pursuant to sections 308 and 309(a) of the Clean Water Act. The Findings describe the nature of the violations and the Order requires you to implement a removal and restoration plan ("R/R Plan") to remove and legally dispose of the unauthorized material and restore the affected area of the Maili'ili Stream.

The R/R Plan must be submitted to EPA for approval and must, at the minimum, include the following components:

- Removal of all unauthorized dredged and fill material from the Maili'ili Stream;
- Disposal of all removed material at appropriate upland locations, in compliance with all local, state and federal requirements;
- Installation of erosion and sedimentation control measures to minimize erosion from the river bank and all other disturbed areas during and after the required removal efforts; and
- A schedule for implementing the R/R Plan.

I invite you to work with EPA to resolve this matter. If you have questions, please contact Wendy Wiltse of our Wetlands Regulatory Office at (808) 541-2752, or Hugh Barroll of our Office of Regional Counsel at (415) 972-3895.

Sincerely Yours,

Alexis Strauss 28 July 2009

Alexis Strauss
Director, Water Division

Enclosure

cc: Carrie K.S. Okinaga, City and County of Honolulu
Jeoffrey S. Cudiamat, City and County of Honolulu
George Young, U.S. Army Corps of Engineers, Honolulu District
Mike Tsuji, Hawaii Department of Health

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

IN THE MATTER OF:	Docket No. CWA-309(a)-09-020
City and County of Honolulu,	**FINDINGS OF VIOLATION AND ORDER FOR COMPLIANCE**
Respondent.	Proceeding under Sections 308 and 309(a) of the Clean Water Act, 33 U.S.C. §§ 1318 and 1319(a)

AUTHORITY

The following Findings are made and Order issued pursuant to the authorities vested in the Administrator of the U.S. Environmental Protection Agency ("EPA") by sections 308 and 309(a) of the Clean Water Act ("CWA"), 33 U.S.C. §§ 308 and 1319(a). The Administrator has delegated these authorities to the Regional Administrator of EPA Region IX, who has in turn delegated them to the Director of the Water Division of EPA Region IX.

FINDINGS OF VIOLATION

1. Under CWA section 301(a), 33 U.S.C. §§ 1311(a), it is unlawful for a person to discharge any pollutant from a point source into a navigable water without a permit issued under the CWA.
2. "Discharge of a pollutant" means "any addition of any pollutant to navigable waters from any point source." CWA section 502(12), 33 U.S.C. § 1362(12).
3. "Navigable waters" means "the waters of the United States." CWA section 502(7), 33 U.S.C. § 1362(7). The U.S. Army Corps of Engineers ("Corps") and EPA regulations

further define "waters of the United States" to include, among others, all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce and their tributaries. 33 C.F.R. § 328.3(a) (1) and (5)(Corps regulations); 40 C.F.R. § 230.3(s)(1) and (5)(EPA regulations).

4. "Pollutant" means, among other things, "dredged spoil, solid waste, biological materials, rock and sand," CWA section 502(6), 33 U.S.C. § 1362(6), and includes "dredged material" and "fill material" regulated under CWA section 404, 33 U.S.C § 1344 and further defined under 33 C.F.R. § 323.2(e) (Corps regulations) and 40 C.F.R. § 230.2 (EPA regulations).

5. "Point source" means "any discernible, confined and discrete conveyance ... from which pollutants are or may be discharged." CWA section 502(14), 33 U.S.C. § 1362(14).

6. "Person" includes individuals and various types of entities. CWA section 502(5), 33 U.S.C. § 1362(5).

7. Under CWA section 404, 33 U.S.C. § 1344, and its implementing regulations at 33 C.F.R. Part 323, the discharge of dredged or fill material into a water of the United States requires a permit ("section 404 permit") issued by the Corps.

8. City and County of Honolulu ("Respondent") owns a section of the Maili'ili Stream which consists of a 380-yard long trapezoidal channel from the fence line of the Laulaulei Naval Reservation downstream to the fork where the segment of the Maili'ili Stream identified as M-1, joins the segment identified as M-2 in Honolulu County, Hawaii.

9. The Maili'ili Stream is a perennial stream approximately 6 miles long which discharges directly into the Pacific Ocean. The Property is located 0.75 miles from the Pacific Ocean and Maili'ili Stream is tidally influenced at the Property.

10. On June 15, 17, and 18, 2009, inspectors from the Hawaii Department of Health ("DOH") inspected the Maili'ili Stream at the Property and met with Respondent's Department of Facility Maintenance Division of Road Maintenance employees. During the inspection, the inspectors observed that concrete and other material had been placed within the Maili'ili Stream. DOH's inspector obtained daily work reports from Respondent's employees which confirmed that Respondent had placed the concrete and other material in Maili'ili Stream between February 2, 2008 and May 9, 2009.

11. On June 18, 2009, the Corps' Honolulu District issued a Notice of Unauthorized Activity citing that Respondent dumped concrete slabs and other debris in the Maili'ili Drainage Channel (Maili'ili Stream) and that it was not authorized by the Corps under the Rivers and Harbors Act of 1899, 33 U.S.C. § 401, or CWA. The Corps letter requested further information concerning the matter, which Respondent has provided to the Corps.

12. On July 1, 2009, inspectors from EPA and DOH inspected the Property. The inspection confirmed that concrete rubble, metal debris, used asphalt and dirt had been placed in the Maili'ili Stream along the channel walls of the Stream,

13. Based on evidence gathered during the above-referenced inspections and a review of documents, including field and aerial photographs and Respondent's daily work reports, as of the date of EPA's July 1, 2009 inspection, Respondent had filled an area that was approximately 1.08 acres in the M-1 section of Maili'ili Stream. Along both the north and south banks, the fill was approximately 8 yards wide for a distance of approximately 175 yards. Fill extended across the entire 33 yard channel width for the uppermost 70 yard of the M-1 section, just below the fence.

14. Respondent is a person under CWA section 502(5), 33 U.S.C. § 1362(5).

15. The Maili'ili Stream is a water of the United States under CWA section 502(7), 33 U.S.C.

§ 1362(7), and its implementing regulations at 33 C.F.R. § 328.3(a) and 40 C.F.R. § 230.3(s).

16. The concrete rubble, metal debris, used asphalt, and dirt placed or caused to be placed in the Maili'ili Stream is a "dredged material" and/or a "fill material" under CWA section 404, 33 U.S.C. § 1344, and its implementing regulations at 33 C.F.R. § 323.2(e) and 40 C.F.R. § 230.2, and a "pollutant" under CWA section 502(6), 33 U.S.C. § 1362(6).

17. The placement of dredged and/or fill material in the Maili'ili Stream constitutes the "discharge of a pollutant" under CWA section 502(12), 33 U.S.C. § 1362(12).

18. The earthmoving equipment used by Respondent to place dredged and/or fill material in the Maili'ili Stream is a point source under CWA section 502(14), 33 U.S.C. § 1362(14).

19. The above-described discharges were not authorized by a section 404 permit.

20. By discharging dredged and/or fill material into waters of the United States without a section 404 permit, Respondent has violated CWA section 301(a), 33 U.S.C. § 1311(a).

ORDER

Based on the foregoing FINDINGS OF VIOLATION and pursuant to the authorities of CWA sections 308 and 309(a), 33 U.S.C. §§ 1318 and 1319 (a), it is hereby ORDERED:

21. Respondent shall not discharge any dredged or fill material into any waters of the United States except in compliance with a section 404 permit.

22. Within **thirty (30) days** of receipt of this Order, Respondent shall submit to EPA the following information:

    a. A detailed description of each earthmoving activity, including but not limited to any grading, leveling, back-filling, clearing, and bank modification, that was undertaken,

caused or authorized to be undertaken, or undertaken with knowledge or consent, in part or in whole, by Respondent or Respondent's agent or representative, at the Property or any other portion Maili'ili Stream owned by Respondent between January 1, 2005 and present. For each earthmoving activity, the description shall, at a minimum, include the following:

i. the start and end dates of the activity;

ii. the number and type of equipment used;

iii. the type of material discharged;

iv. the volume of the material discharged;

v. the location of the activity;

vi. the person who authorized or consented to the activity;

vii. the person who designed the activity;

viii. the person who oversaw the activity; and

ix. the person who performed the activity.

x. the purpose of the activity.

b. Copies of all documents that concern or relate to any of the earthmoving activities described in subparagraph a, above, including but not limited to: all photographs, videotapes, plans, drawings, surveys, design documents, technical calculations, maps, invoices, payment records, material costs, purchase records, federal, state or local permits or permit applications, and records of correspondence with any federal, state, and local agencies.

23. Within sixty (60) days of receipt of this Order, Respondent shall submit to EPA for approval a Removal and Restoration Plan ("R&R Plan" or "Plan") for removing the unauthorized discharges from the Property and restoring the Maili'ili Stream to its pre-

filled dimensions and configuration. The R&R Plan shall be prepared by a qualified professional(s) with the requisite expertise in hydrology and engineering.

24. The R&R Plan shall, at the minimum, include the following components:

a. Removal of all unauthorized dredged and fill material from the Property;

b. Disposal of all removed material at appropriate upland locations, in compliance with all applicable federal, state and local requirements;

c. Installation of erosion and sedimentation control measures to minimize erosion from the stream bank and all other disturbed areas during and after the required removal efforts;

d. A schedule for implementing the R&R Plan, which shall take into account the need to obtain and comply with any and all authorizations required by applicable federal, state and local laws to carry out the R&R Plan.

e. A statement of the professional qualifications of those responsible for preparation of the R&R plan.

25. Upon approval by EPA, the R&R Plan shall be deemed incorporated by reference as part of this Order and shall be implemented by Respondent.

26. Immediately upon receipt of EPA approval of the R&R Plan, Respondent shall contact the Corps to determine the need for section 404 authorization for any discharges of dredged or fill material associated with implementation of the Plan. The Corps contact is:

Mr. George Young, Regulatory Branch Chief
U.S. Army Corps of Engineers, Honolulu District
Building 230, Fort Shafter, HI 96858-5440

27. Within 30 days of the completion of the R&R work set forth in paragraph 24a-c, Respondents shall submit to EPA a final report describing all removal and restoration activities as performed.

28. All submittals made pursuant to this Order shall be mailed to the following two addresses:

Amy C. Miller
U.S. Environmental Protection Agency
Region IX
CWA Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, CA 94105
(415) 947-4198

Wendy Wiltse, Ph.D.
U.S. Environmental Protection Agency-PICO
300 Ala Moana Blvd. Box 50003, Room 5-152
Honolulu, HI 96850
(808) 541-2752

29. All submittals required under this Order shall include the following certification signed by Respondent or Respondent's duly authorized representative:

> I certify under penalty of law that this document and all attachments were prepared by me or under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or are directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

30. This Order is not a permit under the CWA or any other laws or regulations. This Order does not waive or modify Respondent's obligation and responsibility to ascertain and comply with all applicable federal, state or local laws, regulations, ordinances, permits, licenses or orders.

31. EPA has promulgated regulations to protect the confidentiality of the business information it receives at 40 C.F.R. Part 2, Subpart B. A claim of business confidentiality may be asserted in the manner specified by 40 C.F.R. § 2.203(b) for all or part of the information requested. EPA will disclose business information covered by such a claim only as authorized under 40 C.F.R. Part 2, Subpart B. If no claim accompanies the business information at the time EPA receives it, EPA may make it available to the public without further notice. Respondent may not withhold from EPA any information on the grounds that it is confidential business information.

32. This requirement of information is not subject to review by the Office of Management and Budget under the Paperwork Reduction Act because it is not a "collection of information" within the meaning of 44 U.S.C. § 3502(3). It is directed to fewer than ten persons and is an exempt investigation under 44 U.S.C. § 3518(c)(1) and 5 C.F.R. § 1320.4(a)(2).

33. This Order shall be binding upon Respondent, and Respondent's agents, servants, employees, heirs, successors and assigns.

34. Issuance of this Order shall not be deemed an election by EPA to forego any remedies available to it under the law, including without limitation any administrative, civil, or criminal action to seek penalties, fines, or other appropriate relief under the Act. EPA reserves all rights and remedies, legal and equitable, available to enforce any violation cited in this Order and to enforce this Order.

35. CWA Section 309(a), (b), (d) and (g), 33 U.S.C. § 1319(a), (b), (d) and (g), provides administrative and/or civil judicial relief for failure to comply with the CWA. In addition, CWA section 309(c), 33 U.S.C. § 1319(c), provides criminal sanctions for negligent or knowing violations of the CWA, and for knowingly making false statements.

36. This Order shall become effective upon the date of receipt by Respondent.

Date: 28 July 2009

Alexis Strauss, Director
Water Division
U.S. Environmental Protection Agency
Region IX

APPENDIX B
EPA approval and conditions to "Removal and Restoration Plan Ma'ili ' ili Channel, Wai'anae District, Island of O'ahu Hawai'i". Docket No. CWA 404-309(a)-09-020. January 29, 2010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

January 29, 2010

Jeoffrey S. Cudiamat, P.E.
Director and Chief Engineer
Dept. of Facilities Maintenance
City and County of Honolulu
1000 Ulu'ohia Street, Ste 215
Kapolei, Hawaii, 96707

Re: EPA approval and conditions to "Removal and Restoration Plan Ma'ili'ili Channel, Wai'anae District Island of O'ahu Hawai'i". Docket No. CWA 404-309(a)-09-020.

Dear Mr. Cudiamat:

EPA received the Removal and Restoration Plan (Plan) for Ma'ili'ili Channel, Oahu, dated September 22, 2009 and prepared by the City's Department of Facility Maintenance. This Plan was prepared in response to EPA's Findings of Violation and Order for Compliance (EPA Order) issued on July 23, 2009 (Docket No. CWA 404-309(a)-09-020).

This letter communicates EPA's approval of the Plan, provided that City and County meets the following conditions:

Channel Cross Section:
The goal of the restoration shall be removal of all unauthorized fill placed in the Ma'ili'ili Channel by City and County. The channel cross section varies from the as-built plans because the channel has eroded and down cut over time. The finish grade after restoration will not be consistent with the as-built plans in this respect since all unauthorized fill must be removed. If City and County wants to restore the channel cross section to the dimensions of the as-built plans, that would be a separate project that would require approval from the Army Corps of Engineers following completion of the restoration work required by the EPA Order.

Army Corps of Engineers:
As stated in #26 of the EPA Order, immediately upon receipt of EPA approval of the Plan, City and County shall contact the Corps to determine the need for section 404 authorization for any discharges of dredged or fill material associated with implementation of the Plan. We note that p. 14 of the Plan incorrectly states that an ACOE "After-the–Fact" permit may be required for the restoration. This is not accurate and inconsistent with the correspondence from COE dated June 16, 2009 and with the meeting minutes for ACOE on August 5, 2009 as recorded in Appendix C of the Plan.

BMP Plan:
The restoration shall take place during the winter season in order to avoid impacts to nesting endangered water birds. This means that construction will occur during the rainy season when there is potential for high stream flows. City and County shall submit a copy of a final site-specific BMP plan to EPA, including plans to stabilize the site in anticipation of rainfall and stream flow.

Schedule for Restoration:
Within 45 days of receipt of this approval letter, City and County shall submit a schedule to EPA for completing environmental reviews, obtaining permits, and implementing the Removal and Restoration Plan.

Reporting Requirements:
Within 30 days of the completion of the R&R work, the City shall submit to EPA a final report, including photographs, describing all removal and restoration activities and work performed.

EPA's Right to Inspect the Site:
The City must notify Wendy Wiltse (phone: 808-541-2752) at EPA at least 7 days prior to the start of the removal and restoration work. EPA intends to inspect the site while the restoration work is underway and/or after completion of the restoration. We will attempt to notify you or your contractor in advance of any anticipated inspections, but we reserve the right to inspect the site without notice if we believe that circumstances warrant such an inspection.

We recommend that the City move forward with obtaining necessary permits and preparing for commencement of the restoration work. We are available to discuss these comments and any questions you may have. Please contact Dr. Wendy Wiltse in EPA's Honolulu office at (808) 541-2752 or Mr. Hugh Barroll of our Office of Regional Counsel at (415) 972-3895 to make arrangements for a discussion via conference call.

Sincerely,

Wendy Wiltse, Ph.D.
Environmental Scientist

Cc: George Young, ACOE
Michael Tsuji, DOH
Jeff Newman, FWS

C1 MEETING AND PHONE CONFERENCE MINUTES

Date	Agency
08/05/2009	U. S. Army Corps of Engineers
08/06/2009	State Department of Health
08/10/2009	State Office of Conservation and Coastal Lands
08/12/2009	U. S. Fish and Wildlife Service
08/19/2009	State Commission on Water Resources Management
08/19/2009	State Division of Forestry and Wildlife
08/25/2009	U. S. Army Corps of Engineers
08/21/2009	State Division of Forestry and Wildlife
08/21/2009	State Division of Forestry and Wildlife
08/27/2009	State Department of Health
08/31/2009	State Division of Forestry and Wildlife
09/14/2009	U. S. Environmental Protection Agency, Pacific Islands Contact Office

See attached meeting notes.

Māʻiliʻili Stream Channel Restoration Project
Agency Coordination Notes

Corps of Engineers Conference Call

August 5, 2009

Teleconferees: Farley Watanabe, COE; Brian Takeda, RMTC

Summary: A phone discussion was held with the Department of the Army, Corps of Engineers, Regulatory Branch on August 5, 2009 regarding the unpermitted discharge of concrete and debris in the Māʻili'ili Stream. The following is a summary of the major points discussed.

1. The COE advises us that the EPA instructions should be closely followed emphasizing the corrective steps to remediate the discharge.

2. The City presently has a contract with AECOM [?] to provide a training class for its support and maintenance workers to be educated on proper protocols to follow to meet the requirements of the Clean Water Act including NPDES regulations. This type of corrective action should be included as a mitigation measure to demonstrate the use of a "program element" that would help to institutionalize awareness against future unregulated discharges.

3. The City should emphasize that the nature of the discharge is only partially within the stream, e.g., that it occurred along the stream banks and not wholly within the stream.

4. The nature of the restoration should be to restore the purpose and function of the stream channel which is primarily a stormwater conveyance. This would require that the contours and elevation match the original design. The function and purpose of the channel is not necessarily to serve as a "wetland."

5. The drainage channel contains impounded water which appears to be tidally influenced, e.g. Farley believes there are mangrove present which is indicative of salt water intrusion coming from the high tide.

6. Farley does not believe a Department of the Army Permit to conduct the restorative work is needed because: (1) the corrective action is being triggered by an unpermitted discharge; and (2) the EPA is directing the City to perform the corrective action which he feels does not trigger the need for the permit.

7. The City is advised to work closely with the EPA's delegated contact person to prepare its Workplan. The Corps can be consulted for further guidance as the elements of the Workplan (including permits) are prepared.

Māʻiliʻili Stream Channel Restoration Project
Agency Coordination Notes

Department of Health, Clean Water Branch

August 6, 2009

Present:
Joanna Seto, Alec Wong, DOH CWB
Tim Trang, Dennis Toyama, DDC
Keoki Miyamoto, DFM
Brian Takeda, Gordon Ring, RMTC

Summary:
A meeting was held with the CWB to discuss regulatory requirements and concerns related to Sections 404, 401, and 402 of the Clean Water Act (CWA). The following is a summary of the major points discussed.

1. A description of the existing site conditions was provided:

    - The location of the unpermitted discharge of concrete and debris is located upgradient of the mouth of the stream. (approximately 0.8 miles upstream).
    - The site location appears to be tidally influenced by seawater entering up the channel during periods of high tide, e.g., mangroves appear to be present from photographs of the site.
    - The City is working at present to address the conditions of the EPA notice and include the submittal of reports at 30 days and 60 days following the date of the letter.
    - The location of the discharge appears to be outside of the concrete channelized sections of the stream. The concrete and debris appear to be located both along the unlined channel banks as well as within portions of the stream with water.

2. The CWB indicated the decision regarding the requirement for a Section 401 Water Quality Certification will be made by the Corps of Engineers. The DOH does not have authorization to require this permit. However, during the restorative portion of the work the DOH asks for the submittal of a Best Management Practices (BMPs) Plan to address their administration of HAR, Chapter 11-54, Water Quality Standards.

    The CWB suggested that visual monitoring and/or water quality testing be considered.

3. RMTC noted that a preliminary discussion was held with the Corps of Engineers to initiate consultation and to prevent any missteps in the process. According to the Corps the project does not initially appear to trigger the Section 401 WQC based on the EPA's request for a corrective step to be taken that would involve an "after the fact" action. However, further consultation with the Corps will be taken by the City and its consultants to clarify this requirement.

4. Section 402 (NPDES), CWA, issues were next discussed.

   - The need for a NPDES Construction Stormwater permit will be straightforward and will be based on the permit criteria requiring a permit if the area of disturbance will be greater than 1-acre. The City and RMTC confirmed this permit would be prepared as required.
   - The need for a NPDES Construction Dewatering permit will be determined based on how the debris is treated following removal from the stream. In particular the concern is to prevent any discharges of water from removed materials contacting "waters of the state." RMTC indicated that at this preliminary stage that further detail on handling of this type of material would be developed. However, the general approach will be to prevent discharges of this type of material from state waters.

5. The CWB asked if any community consultation is being undertaken for this project. The City responded that the Wai'anae Neighborhood Board and individuals have contacted them to ask questions and for information. The City is not yet able to answer all questions because the actions underway are preliminary and in development. However, the focus is on responding to the EPA notice and to develop the work plan for removal of the debris from the stream.

6. The meeting concluded with the City and the consultants indicating that communications will be maintained with the CWB and as required, the project team will consult with the CWB to meet its regulatory requirements.

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PHONE NOTES - 08/10/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	DLNR-OCCL regulatory requirements		
Call Date & Time:	Monday 08/10/09 11:45 am		
Participants:	DLNR-OCCL, K. Tiger Mills, Staff Planner 587-0377 RMTC: Jim Niermann		
To:	file		
By:	Jim Niermann		

Called DLNR Office of Conservation and Coastal Lands regarding regulatory requirements to address the unpermitted discharge of construction debris into the Mailiili Stream. Tiger Mills, OCCL Staff Planner clarified that OCCL has no regulatory oversight and no comment if the project area is located outside of the State Land Use Conservation District.

Confirmed that the project is located entirely within the State Land Use Agricultural District.

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PHONE NOTES - 08/12/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	USFWS regulatory requirements		
Call Date & Time:	Monday 08/12/09 10:00 am		
Participants:	Patrice Ashfield, USFWS 792-9406 RMTC: Jim Niermann		
To:	File,		
By:	Jim Niermann		

Called USFWS regarding regulatory requirements to address the unpermitted discharge of construction debris into the Māʻiliʻili Stream.

Comments from Patrice Ashfield:

1. USFWS biologists (Joy Hiramasa) and law enforcement conducted a site visit to Māʻiliʻili Stream on June 16, 2009. Jason Misaki from DOFAW (973-9786) also attended the site visit. Their observations are summarized in a letter dated July 02, 2009 addressed to Jeoffrey S. Cudiamat, P.E., Director and Chief Engineer. A copy of the letter will be obtained from USFWS for the project files.

2. USFWS observed three (3) Hawaiian Stilt, including 1 chick on the site. 3 chicks were observed in the area on a subsequent visit. Hawaiian Stilts are a federally protected endangered species.

3. Construction activities within the stream to remove the debris "would result in a take" if the activities occur while the protected species is present, e.g. during breeding and fledging season.

4. There is no federal Critical Habitat in the project area.

5. If a ACOE permit is required, then the presence of the protected species will need to be addressed in compliance with Section 7 of the Endangered Species Act (ESA).

6. The City needs to establish whether ACOE (contact: Farley Watanabe) or EPA (contact: Dr. Wendy Wiltse) will be the lead federal agency. The lead agency will be responsible for determining if the action will have "no effect", or if it is necessary to initiate informal or formal consultation with USFWS in compliance with Section 7 of the ESA.

7. Information that the lead agency and USFWS will need to make a determination:
   - Status of the Stilt population and condition of the habitat in the project area. Have a biologist go and characterize the site.
   - What is the breeding and fledging season?
   - What is the anticipated condition of the Stilt population and habitat at the time the work is proposed to be undertaken?
   - Would rubble removal change or adversely impact stilt habitat that has been created by the unpermitted discharge?

8. For the initial report to the EPA, state that potential impacts to the endangered species need to be addressed in compliance with ESA Section 7, that a biologist will conduct a site survey and report on the conditions of the

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PHONE NOTES - 08/12/09

Hawaiian Stilt and habitat, and that the lead agency will make the determination on the effects of the proposed action on the protected species.

9. Work activities should be scheduled to avoid the breeding / fledging season.

10. If no birds are on the site when the work is conducted, (e.g. during the non-breeding season) then there is "no-effect."

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PHONE NOTES - 08/19/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	CWRM regulatory requirements		
Call Date & Time:	Monday 08/19/09 11:00 am		
Participants:	CWRM: Robert Chong 587-0266 Stream Protection and Management RMTC: Jim Niermann		
To:	file		
By:	Jim Niermann		

11:00: Called Kathy 587-0234. Left message.
1:45: Robert Chong called back:

I provided a brief background on the unpermitted discharge of construction debris, the EPA Notice of Violation, and the City's intention to restore the stream channel to its previous condition as an engineered drainage and flood control channel. Robert provided the following comments:

- Māʻiliʻili Stream is designated by CWRM as an "intermittent stream".
- CWRM does not consider that segment of the stream to have any significant aquatic resources.
- If the segment of the stream in which remediation/restoration work will take place is man made, then no permit, including a SCAP permit, or other approval from CWRM is required. This is the case even if the man-made stream channel follows the course of what was originally a natural stream.

We will send a letter to CWRM requesting confirmation of this determination. The letter should be addressed to:

Ken Kawahara, Deputy Director
Attn: Rober Chong
Include the TMK No.: 8-6-002: 003

Send a copy of the letter to Robert by email: Robert.k.chong@hawaii.gov

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PHONE NOTES - 08/19/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	DOFAW regulatory requirements		
Call Date & Time:	Monday 08/19/09 11:40 am		
Participants:	DOFAW: Jason Misaki 973-9786 RMTC: Jim Niermann		
To:	file		
By:	Jim Niermann		

Called Jason Misaki re: DOFAW regulatory requirements and interests. He provided the following comments.

- Jason prepared a report on his June 16, 2009 site visit to Māʻiliʻili Stream and sent it to Thomas Lenchanko, District Road Superintendant for Waianae District, DFM, CCH.
- DOFAW enforces compliance with wildlife rules regarding the protection of native birds.
- They were specifically looking for evidence of a "take", impact to nests, birds, or eggs. They noted in their report that there was no evidence of a take, but that it could occur if the dumping activity were to continue.
- DOFAW was surprised to see so many Hawaiian Stilts. The Stilts appear to be adapting to human presence and activity.

Jason will confirm with the City that its okay to send RMTC a copy of the report. I provided him with Tim Trang's phone number: 768-8838.

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PHONE NOTES - 08/21/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	DOFAW regulatory requirements		
Call Date & Time:	Monday 08/21/09 2:45 pm		
Participants:	DOFAW: Jason Omick 587-0166 RMTC: Jim Niermann		
To:	file		
By:	Jim Niermann		

Jason Omick called.

DOFAW oversees two permits:

(1) Incidental take permit.
(2) Scientific collection permit

Jason Omick will review the project information contained in Jason Misaki's report, confer with his fellow staff, and reply with their determination regarding permit requirements. He is not certain that permits will or will not be required. He will also clarify the specific begin and end dates of the Hawaiian Stilt nesting and fledging season (April 1 to August 31?)

In follow-up to the phone call, I sent a PDF copy of the DOFAW field report to Jason Omick at: Jason.d.omick@hawaii.gov

Māʻiliʻili Stream Channel Restoration
Department of the Army, Corps of Engineers Teleconference
9:45 AM, Tuesday, August 25, 2009

Conference Call
Farley Watanabe, COE Regulatory Branch
Brian Takeda, R. M. Towill Corporation

Summary Points

The COE advises the City that a meeting with the Corps for the review of the proposed plan for mitigation of the undocumented "dumping" at Māʻiliʻili Stream is not required, or appropriate at this time based on the following:

(1) The COE notes that the EPA has assumed lead jurisdiction over alleged Clean Water Act violations that would normally be administered by the COE. In the case of Māʻiliʻili Stream the EPA directly notified the City with specific instructions as to comply with the requirements of the Clean Water Act. The EPA is the lead federal agency to review and approve any proposed plan for corrective, remedial or mitigation measures.

(2) After the CWA issues have been resolved to the satisfaction of the EPA, the COE will at that time inspect the project site for any issues related to Section 10, Rivers and Harbors Act of 1899, and the condition of the site relative to tidally-influenced waters.

(3) The COE understands the EPA may direct the City to file an After-the-Fact (ATF) Department of the Army Permit Application following the implementation of mitigative measures at the site.

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PHONE NOTES - 08/21/09

Project Title:	Māʻiliʻili Stream Channel Restoration Project	**Project No.**	3-02706
Subject:	DOFAW regulatory requirements		
Call Date & Time:	Monday 08/21/09 1:45 am		
Participants:	DOFAW: Jason Misaki 973-9786 and Jason Omick 587-0166 RMTC: Jim Niermann		
To:	file		
By:	Jim Niermann		

Called Jason Misaki re: clarification of possible permit requirements.

The only permit DOFAW would potentially require for this project is an "Incident of Take Permit", pursuant to HAR 13-124-3 and 195D.

Jason Misaki agreed that limiting work to the period from September to March when the protected species are not nesting or fledging is a reasonable mitigation measure to avoid a "take" and could eliminate the need to obtain an Incident of Take Permit.

Jason recommended contacting Jason Omick 587-0166 at the DOFAW administration office. Mr. Omick processes permits for DOFAW.

Called Jason Omick. Left message re: permit requirements.

Māʻiliʻili Stream Channel Restoration Project
Agency Coordination Notes

Department of Health, Clean Water Branch

August 27, 2009

Present:
Joanna Seto, Mike Tsuji, Matthew Kurano, DOH CWB
Dennis Toyama, DDC
Keoki Miyamoto, DFM
Brian Takeda, Gordon Ring, RMTC

Summary:
A meeting was held with the CWB to review the proposed construction drawing plans for the subject project in relation to DOH's oversight of the Clean Water Act (CWA) and Hawaiʻi Administrative Rules, Section 11-54, Water Quality Standards. The following comments were made:

1. The plans should be prepared to address the expected size of sediments present at the site.
2. DOH wants the plans to address the potential for future issues such as impacts due to use and maintenance along and including the access road.
3. Use of sandbags shown in the eastern end of the project site could be relocated since the ramp used for access is an existing feature. This would help with movement of vehicles into and out of the channel.
4. DOH recommends a sampling plan before, during, and after construction. Constituents sampled should include *suspended solids* and *NTU*. Photographs should also be taken for documentation purposes.
5. DOH further suggests that the *Data Quality Objectives (DQO)* process be used for the monitoring plan. This would ask and answer questions about the purpose and objectives for water quality monitoring.
6. All excavated concrete rubble and debris should not be reused for fill at the project site.
7. In closing, DOH suggested that a comprehensive approach be taken incorporating the comments of other agencies that have different jurisdictional concerns, e.g., U. S. Fish & Wildlife Service and Department of Land and Natural Resources, Division of Forestry and Wildlife.

Māʻiliʻili Stream Channel Removal and Restoration Project
Agency Coordination Notes

U. S. Environmental Protection Agency, Pacific Island Contact Office

September 14, 2009

Present
Wendy Wiltse, Ph.D., U. S. EPA – PICO
Tyler Sugihara, Dennis Toyama, DDC
Keoki Miyamoto, DFM
Chester Koga, Brian Takeda, Gordon Ring, RMTC

Summary
A meeting was held with the EPA-PICO to review the proposed approach for addressing the EPA Order. The following is a summary of the discussion:

1. The purpose of the meeting was (1) to present the overall approach to the removal and restoration plan; (2) to discuss other items that should be considered in the preparation of the plan; and (3) gain general agreement that the proposed approach is acceptable to the EPA or to make changes as required.

2. The proposed removal plan and information relating to the 1964 as-built plans and a more recent survey were discussed. The following points were noted:

    - The existing site elevation of the channel is lower than the 1964 as-built plans by approximately 0.5 to 1.0 feet.
    - The City does not consider it feasible to return the site to its existing as-built elevation due to stormwater erosion. The source of the stormwater that resulted in the erosion are uplands comprising a tributary area of approximately 6,000 acres that are not under the control of the City. Based on this condition the objective will be to restore the site to a pre-filled condition.
    - Endangered species including Hawaiian Stilt and Kōloa were identified during a biologist's recent site-visit. The U. S. Fish and Wildlife Service (USFWS) has recommended no work during the breeding season of the Hawaiian Stilt. According to biologist Dr. Phil Bruner, Ph.D., this would allow for work during the months of October through January when the stilt would not be nesting or raising fledglings. The group indicated that further coordination is in progress to ensure a proper construction schedule to address other species as required.

    Dr. Wiltse indicated the planned approach to restore the site to a pre-filled condition was considered acceptable. It was also indicated that every effort should be taken to schedule the project to ensure against the potential for impacts to Hawaiian Stilts and any other threatened or endangered species present.

3. The City's consultant indicated that Best Management Practices (BMPs) will be prepared to guide the work before, during, and after the removal and restoration process.

4. The work period should be defined as times when the Hawaiian Stilt are not nesting or fledgling their young. This will require careful scheduling and coordination with the respective agencies USFWS and the Division of Forestry and Wildlife (DOFAW), Department of Land and Natural Resources (DLNR), to ensure the work can be undertaken in a manner that will not pose a problem during the "winter" months. The DOH was also consulted as to when work will need to be done and recognized that the winter months would also be problematic due to possibly higher levels of rainfall.

5 A Department of the Army Corps of Engineers (ACOE), Section 404 permit was not considered necessary because the work is restorative in nature and according to the City will not involve the placement of fill.

6. Post removal work. The City will be responsible for post removal monitoring to ensure against adverse effects from storm water runoff. A monitoring period will be determined and included in the R&R Plan.

7. A Section 401 Water Quality Certification administered by the DOH is also not expected to be required because the trigger for it, the Section 404 permit, will not be required.

8. A final report will be required by the EPA in accordance with Condition No. 27, of the EPA Order not later than 30-days after the conclusion of the removal and restoration work. This work task item will be included in the R&R Plan, Implementation Schedule. The Implementation Schedule will also include the expected time for obtaining all environmental entitlements that are required.

9. The EPA anticipates it will take approximately 6-weeks to review the R&R Plan. Once the plan is approved the EPA will issue notification to the City that the plan can be implemented.

C2 CORRESPONDENCE

Date	Agency
08/31/2009	State Division of Forestry and Wildlife
09/01/2009	State Division of Forestry and Wildlife
09/01/2009	U. S. Fish and Wildlife Service
09/01/2009	State Office of Conservation and Coastal Lands
09/01/2009	State Commission on Water Resources Management
09/15/2009	Response from State Office of Conservation and Coastal Lands

See attached letters.

James Niermann

From: James Niermann
Sent: Monday, August 31, 2009 3:02 PM
To: 'jason.d.omick@hawaii.gov'
Cc: 'Jason.C.Misaki@hawaii.gov'
Subject: Mailiili Stream - DOFAW Field Report

Attachments: 2009.06.17_DOFAW REPORT_Mailiili Stream.pdf

Hello Jason,

Thank you for your phone call. Attached is the field report prepared by Jason Misaki to evaluate impacts from unpermitted discharges of construction material in Mailiili Stream. We're currently consulting with the EPA, ACOE, USFWS, and DOH-CWB to prepare a stream restoration plan for the removal of the concrete debris. The work area is located within a segment of the stream channel that has been constructed for draingage and flood control purposes. We expect that an ACOE permit will be required for the work, which will in turn trigger ESA Section 7 consultation with USFWS due to the presence of the Hawaiian stilts.

We plan to adopt the recommendations in the DOFAW field report, as well as other mitigation measures that may be recommended through consultation with your office and USFWS. The primary mitigation measure will be to restrict work activities to the months between September and March to avoid the Hawaiian stilt nesting and fledging season. Work activities are expected to take 2 months to complete, however we are using 4 months as the time frame to account for unforseen circumstances (storm events, etc.). Our current work is focused on identifying permit and regulatory approval requirements and developing the restoration plan and mitigation measures.

I appreciate your input. If you need any additional information, please contact me at 748-7463.

Best regards

2009.06.17_D
W REPORT_Mai

James Niermann, AICP
mailto:JimN@rmtowill.com

R. M. Towill Corporation
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Honolulu, Hawaii 96819-3456
voice: 808 842 1133 fax: 808 842 1937 web: www.rmtowill.com

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R. M. TOWILL CORPORATION
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Environmental Services
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Project and Construction Management

September 1, 2009

Mr. Paul J. Conry, Administrator
Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 325
Honolulu, Hawai`i 96813

Mā'ili'ili Stream Channel Restoration
Mā'ili, Waianae Coast, Island of Oahu
TMK No. (1) 8-6-002: 003

Dear Mr. Conry:

On behalf of the City and County of Honolulu (CCH), Department of Design and Construction (DDC) and Department of Facility Maintenance (DFM), this letter is written to request a determination from your office regarding regulatory requirements for planned restoration work to remove concrete debris in Mā'ili'ili Stream.

Mā'ili'ili Stream is an intermittent, tidally influenced stream. The work area is located approximately one-half mile upstream from the shoreline within a segment of the stream channel that has been constructed for drainage and flood control purposes. Concrete debris is located on both sides of the stream channel for a distance of approximately 700 feet. The total area of debris is approximately 1 acre.

Field inspections of the site conducted by State Division of Forestry and Wildlife (DOFAW) biologists on June 15 and 16, 2009, identified the presence of Hawaiian stilts (*Himentopus mexicanus knudsenii*), a state and federal listed protected species. Hawaiian stilt adults and chicks were present at the site. No evidence of take was observed during these field inspections. The project area does not contain Critical Habitat.

We are currently working with the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACOE) to determine federal permit requirements. We are also preparing a restoration plan based on preliminary comments from the EPA, the ACOE, the State Department of Health, the U. S. Fish and Wildlife Service (USFWS), and your office. Proposed restoration work includes installation of stream diversion barriers to divert flows around the work area; the use of an excavator, loader, and trailer trucks within the work area to remove the

debris; and, restoration of the stream channel to its previous, as-built condition. Removed debris will be disposed at the PVT landfill in Nanakuli.

Based on a conversation with Mr. Jason Miskai from your office, and information in the DOFAW field report dated June 17, 2009, we understand that potential impacts to the protected species must be addressed in compliance with Hawaii Administrative Rules (HAR) Section 13-24-3 and Hawaii Revised Statutes (HRS) Chapter 195D.

An avifauna specialist and aquatic biologist are currently conducting field surveys to characterize the site and to evaluate the status of Hawaiian stilts and the condition of habitat in the project area. This information will be used by CCH, in consultation with the EPA and USFWS, to make a determination on the effect of the proposed action on protected species in the project area, and to develop mitigation measures to prevent an "incidence of take".

A mitigation plan for protection of the Hawaiian stilts will include the following measures, as recommended in the June 17, 2009 DOFAW field report:

- Work activities will be restricted to the months of September through March to avoid the Hawaiian stilt nesting and fledging season.
- A site inspection will be conducted by a qualified biologist prior to the commencement of work activities to ensure that no nests or chicks are present.

We would appreciate your assistance to confirm that there are no other recorded, listed species in the project area. We would also appreciate your comments on the proposed mitigation measures and their effectiveness to avoid an "incidence of take" of a listed species.

If you have any questions or require additional information, please contact me at 748-7463.

Very truly yours,

Jim Niermann, AICP
Senior Planner

JAN:
Attachments:

cc: Jeoffrey Cudiamat, DFM
Keoki Miyamoto, DFM
Craig I. Nishimura, DDC
Dennis Toyama, DDC
Tim Trang, DDC
Dan Lawrence, Deputy Corporation Counsel, CCH

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Project and Construction Management

September 1, 2009

Ms. Gina M. Schultz, Acting Field Supervisor
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard
Room 3-122
Honolulu, HI 96850

Māʻiliʻili Stream Channel Restoration
Māʻili, Waianae Coast, Island of Oahu
TMK No. (1) 8-6-002: 003

Attention: Ms Patrice Ashfield

Dear Ms. Schultz:

On behalf of the City and County of Honolulu (CCH), Department of Design and Construction (DDC) and Department of Facility Maintenance (DFM), this letter is written to request a determination from your office regarding regulatory requirements for planned restoration work to remove concrete debris in Māʻiliʻili Stream.

Māʻiliʻili Stream is an intermittent, tidally influenced stream. The work area is located approximately one-half mile upstream from the shoreline within a segment of the stream channel that has been constructed for drainage and flood control purposes. Concrete debris is located on both sides of the stream channel for a distance of approximately 700 feet. The total area of debris is approximately 1 acre.

A field inspection of the site conducted by USFWS biologists on June 16, 2009 identified the presence of several Hawaiian stilts (*Himentopus mexicanus knudsenii*), a federally protected endangered species. Field inspections by DOFAW personnel also observed several Hawaiian stilt adults and chicks in the project area. No evidence of take was observed during the field inspections. The project area does not contain Critical Habitat.

We are currently working with the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACOE) to determine federal permit requirements. We are also preparing a restoration plan based on preliminary comments from the EPA, the ACOE, the State Department of Health, the State Division of Forestry and Wildlife (DOFAW), and your office.

Proposed restoration work includes installation of stream diversion barriers to divert flows around the work area; the use of an excavator, loader, and trailer trucks within the work area to

remove the debris; and, restoration of the stream channel to its previous, as-built condition. Removed debris will be disposed at the PVT landfill in Nanakuli.

Based on a conversation with Ms. Patrice Ashfield from your office, and your letter to DFM dated July 02, 2009, we understand that potential impacts to the listed species must be addressed in compliance with Section 7 of the Endangered Species Act of 1973, as amended (ESA). In concert with the anticipated ACOE Clean Water Act permit requirements, CCH will request ESA Section 7 consultation with USFWS to ensure that project activities do not adversely impact the listed species or result in a "take".

An avifauna specialist and aquatic biologist are currently conducting field surveys to characterize the site and to evaluate the status of Hawaiian stilts and the condition of habitat in the project area. This information will be used by CCH, in consultation with the EPA and USFWS, to make a determination on the effect of the proposed action on protected species in the project area, and to develop a mitigation plan for the protection of the Hawaiian stilts.

The mitigation plan will include, at a minimum, the following measures, as recommended in the DOFAW field report dated June 17, 2009:

- Work activities will be restricted to the months of September through March to avoid the Hawaiian stilt nesting and fledging season.
- A site inspection will be conducted by a qualified biologist prior to the commencement of work activities to ensure that no nests or chicks are present.

We would appreciate your assistance to confirm that there are no other recorded, listed species in the project area. We would also appreciate your comments on the proposed mitigation measures and their effectiveness to avoid a "take" of a listed species.

If you have any questions or require additional information, please contact me at 748-7463.

Very truly yours,

Jim Niermann, AICP
Senior Planner

JAN:
Attachments:

cc: Jeoffrey Cudiamat, DFM
Keoki Miyamoto, DFM
Craig I. Nishimura, DDC
Dennis Toyama, DDC
Tim Trang, DDC
Dan Lawrence, Deputy Corporation Counsel, CCH

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September 1, 2009

Mr. Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, HI 96809

Māʻiliʻili Stream Channel Restoration
Māʻili, Waianae Coast, Island of Oahu
TMK No. (1) 8-6-002: 003

Dear Mr. Lemmo:

On behalf of the City and County of Honolulu (CCH), Department of Design and Construction (DDC) and Department of Facility Maintenance (DFM), this letter is written to request a determination from your office regarding regulatory requirements for planned restoration work to remove concrete debris in Māʻiliʻili Stream.

Māʻiliʻili Stream is an intermittent stream. The work area is located approximately one-half mile upstream from the shoreline within a segment of the stream channel that has been constructed for drainage and flood control purposes. Concrete debris is located on both sides of the stream channel for a distance of approximately 700 feet. The total area of debris is approximately 1 acre. The entire project area is located within the State Land Use (SLU) Agricultural District.

A restoration plan is being prepared based on preliminary comments from the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U. S. Fish and Wildlife Service, the State Department of Health, and the State Division of Forestry and Wildlife. The plan proposes to remove the concrete debris and restore the stream channel to its previous, as-built condition. Removed debris will be disposed at the PVT landfill in Nanakuli. The landfill is located within the SLU Urban District.

Based on a phone conversation with Ms. Tiger Mills of your office on August 10, 2009, we understand that regulatory authorization from the State Office of Conservation and Coastal Lands (OCCL) is not required for work undertaken outside of the State Land Use Conservation District.

We would appreciate a written determination from your office to confirm our understanding, or to identify regulatory requirements or approvals from OCCL that may be necessary for the proposed restoration work.

If you have any questions or require additional information, please contact the undersigned at 748-7463.

Very truly yours,

Jim Niermann, AICP
Senior Planner

JAN:
Attachments:

cc: Jeoffrey Cudiamat, DFM
Keoki Miyamoto, DFM
Craig I. Nishimura, DDC
Dennis Toyama, DDC
Tim Trang, DDC
Dan Lawrence, Deputy Corporation Counsel, CCH

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Project and Construction Management

September 1, 2009

Mr. Ken C. Kawahara, Deputy Director
Commission on Water Resources Management
P.O. Box 621
Honolulu, Hawaii 96809

Māʻiliʻili Stream Channel Restoration
Māʻili, Waianae Coast, Island of Oahu
TMK No. (1) 8-6-002: 003

Attention: Mr. Robert Chong

Dear Mr. Kawahara:

On behalf of the City and County of Honolulu (CCH), Department of Design and Construction (DDC) and Department of Facility Maintenance (DFM), this letter is written to request a determination from your office regarding regulatory requirements for planned restoration work to remove concrete debris in Māʻiliʻili Stream.

Māʻiliʻili Stream is designated by the Commission on Water Resources Management (CWRM) as an intermittent stream. The work area is located approximately one-half mile upstream from the shoreline within a segment of the stream channel that has been constructed for drainage and flood control purposes. Concrete debris is located on both sides of the stream channel for a distance of approximately 700 feet. The total area of debris is approximately 1 acre.

A restoration plan is being prepared based on preliminary comments from the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U. S. Fish and Wildlife Service, the State Department of Health, and the State Division of Forestry and Wildlife. Proposed restoration work includes installation of stream diversion barriers to divert flows around the work area; the use of an excavator, loader, and trailer trucks within the work area to remove the debris; and, restoration of the stream channel to its previous, as-built condition. Removed debris will be disposed at the PVT landfill in Nanakuli.

Based on a phone conversation with Mr. Robert Chong of your office on August 19, 2009, we understand that regulatory authorization from CWRM, including a Stream Channel Alteration Permit, is not required for work undertaken within constructed stream channels. Therefore, a permit is not required from your office for the proposed restoration work.

We would appreciate a written determination from your office to confirm our understanding, or to identify regulatory requirements or approvals from CWRM that may necessary for the proposed restoration work.

If you have any questions or require additional information, please contact me at 748-7463.

Very truly yours,

Jim Niermann, AICP
Senior Planner

JAN:
Attachments:

cc: Jeoffrey Cudiamat, DFM
Keoki Miyamoto, DFM
Craig I. Nishimura, DDC
Dennis Toyama, DDC
Tim Trang, DDC
Dan Lawrence, Deputy Corporation Counsel, CCH

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C3 AGENCY CORRESPONDENCE AND REPORTS

Date	Agency
06/16/2009	ACOE letter to DFM
06/17/2009	DOFAW Field Investigation Report
07/02/2009	FWS letter to DFM
07/09/2009	DFM letter to ACOE
07/2/2009	EPA letter to ACOE

See attached documents.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440
June 16, 2009

REPLY TO
ATTENTION OF:

Regulatory Branch
Engineering and Construction

DA File No. POH-2009-00209

Notice of Unauthorized Activity

CERTIFIED MAIL—RETURN RECEIPT REQUESTED

Jeoffrey S. Cudiamat, P.E.
Director and Chief Engineer
Department of Facilities Maintenance
City and County of Honolulu
1000 Ulu'ohia Street, Suite 215
Kapolei, Hawai'i 96707

Dear Mr. Cudiamat:

This office is aware of the news reports of the City and County of Honolulu dumping concrete slabs and other debris in the Mā'ili'ili Drainage Channel, O'ahu Island. We have no record of any Department of the Army (DA) notification, authorization, or permit issued in connection with this activity.

The Mā'ili'ili Drainage Channel is a navigable water of the United States and is regulated under the Rivers and Harbors Act of 1899 (33 USC 401 et seq.) and the Clean Water Act (33 USC 1251 et seq.). As you know from your past dealings with my regulatory office, it is a violation of Federal law to obstruct or alter any navigable water or to place fill such as concrete slabs and debris into waters of the United States without a DA permit.

Title 33 of the United States Code provides for civil and criminal penalties for such violations. Pursuant to Section 406, a violator shall be deemed guilty of a misdemeanor and upon conviction is subject to a fine of up to $2,500, or imprisonment for up to one year, or both. Section 1319 provides for civil penalties of up to $25,000 per day for each violation and criminal penalties of up to $50,000 per violation per day and up to 3 years imprisonment for knowing violations.

A City spokesman has acknowledged that the alleged violations have ceased and that your department initiated the removal of the alleged unauthorized fill over the weekend of June 13, 2009. We will be considering your removal and restoration efforts in our preliminary evaluation.

As part of our investigation of the pertinent facts surrounding this matter, we request any information you are able to provide. At a minimum, we request that you provide

information regarding the specific location of the alleged unauthorized fill; the amount of fill discharged; the date(s) of the first and any subsequent discharges; the specific actions taken to date to remedy the alleged violation, including the amount of fill removed and any best management practices employed; and any future actions contemplated to restore the site or mitigate for any natural resource damages. Any information you provide will become a part of our record and as such may be used against you and any other responsible parties in any proceedings.

The U.S. Environmental Protection Agency (EPA) also enforces Section 404 of the Clean Water Act. The EPA will receive a copy of this letter and may provide views and/or recommendations concerning this matter to us. A copy of this letter and the attached news articles will also be sent to the following federal and state resource agencies for their views and/or recommendations on what initial corrective measures are required to resolve this violation:

Dr. Wendy Wiltse, U.S. Environmental Protection Agency, P.O. Box 50003, Honolulu, HI 96850
U.S. Fish and Wildlife Service, Office of Ecological Services, P.O. Box 50088, Honolulu, HI 96850
Office of Planning, Coastal Zone Management. Program, P.O. Box 2359, Honolulu, HI 96804
Division of Aquatic Resources, State of Hawaii DLNR, P. O. Box 621, Honolulu, HI 96809
Land Division, State Dept. of Land and Natural Resources, P. O. Box 621, Honolulu, HI 96809
Office of Conservation and Coastal Lands, State DLNR, P. O. Box 621, Honolulu, HI 96809
Commision on Water Resource Management, State DLNR, P. O. Box 621, Honolulu, HI 96809
State Department of Health, Clean Water Branch, P.O. Box 3378, Honolulu, HI 96801
Dept. of Design & Construction, C&C of Honolulu 650 South King St.,11th Flr, Honolulu, HI 96813
Dept. of Planning & Permitting, C&C of Honolulu, 650 South King St., Honolulu, HI 96813

We ask that you reply to this letter within seven (7) days, directing your response to the attention of Mr. Farley Watanabe at the above address. If you have any questions concerning your reply, please contact Mr. Farley Watanabe at (808) 438-7701, (fax 808-438-4060) or by e-mail at Farley.K.Watanabe@usace.army.mil.

Sincerely,

Jon J. Chytka

Jon J. Chytka
Lieutenant Colonel, U.S. Army
District Engineer

Attachments

Watchdog Says Concrete Dumping An Outrage

Reported by: Andrew Pereira

Email: apereira@khon.com
Last Update: 6/11 6:31 pm

STORY SUMMARY>>>

Environmental activist Carroll Cox says it's the most "egregious act" he has ever witnessed - tons of concrete dumped inside Maililli Channel covering what used to be wildlife habitat.

Even more disturbing says Cox, is the unlikely source allegedly behind the dumping – the City and County of Honolulu.

"It's just unimaginable that the City and County of Honolulu would commit such an act while it touts itself as being environmentally friendly," Cox told Khon2. "So that's what's puzzling."

Pieces of concrete litter Maililli Channel in Leeward Oahu. Activist Carroll Cox says the City and County of Honolulu is to blame for the dumping. (Carroll Cox)

Related Links

- Carroll Cox Website

The area inside the channel is frequented by the Hawaiian Stilt, or Ae'o, an endangered species with a population of just 1,500. The birds use the brackish water inside the waterway to feed and raise their young.

"You've taken that habitat and placed cement on top of it," said a clearly disturbed Cox.

According to the environmental watchdog, several city workers recently blew the whistle on the activity because they felt uncomfortable with what was happening. The workers told Cox the dumping may have involved as many as 300 truckloads of concrete over the past two years.

"We have not seen any environmental impact statement (or) any environmental assessment," Cox said about the activity, adding he wasn't aware of any opportunity for the public to comment on the placement of concrete inside the waterway.

The city was unable to respond to respond to Cox's allegations Thursday because all offices were closed for Kamehameha Day, a state holiday.

Looking out toward the mauka end of Maililli Channel stretches a length of concrete slabs 150 yards long and about ten feet wide, apparently the remnants of sidewalk construction projects. Cox says workers he spoke to were told to keep quiet.

"Apparently they were told by supervisors, 'Just don't worry about it; you just do your job.'"

Mixed within the pieces of concrete it's easy to spot yellow construction tape, metal piping, rebar and metal lid covers. Cox says the concrete and other debris also poses a risk to

City Removing Tons of Concrete From Mailili Channel

KHON News Website
Last Update: 6/13 6:19 pm

Clean-up of a wildlife habitat on the Waianae Coast continued on Saturday

City workers are using heavy equipment to clear tons of concrete inside the Mailiili Channel.

According to the city's spokesman, crews with the department of facility maintenance dumped the cement inside the channel illegally.

Environmentalist Carroll Cox said city workers told him the concrete came from sidewalk projects and had been dumping the cement in the channel for the past two years.

Cox says 110 tons of concrete was taken to the landfill it was originally supposed to have gone to.

The State Health Department and the Army Corps of Engineers are investigating.

Division of Forestry and Wildlife
Oahu Branch
2135 Makiki Heights Drive • Honolulu • HI • 96822
(808) 973-9786 • Fax: (808) 973-9781 • Cell (808) 295-5896
Email: Jason.C.Misaki@hawaii.gov

Mailiili Stream Dumping Investigation
Prepared by: Jason Misaki, Oahu District Wildlife Biologist, Division of Forestry and Wildlife

June 17, 2009

Background

On June 11th, KHON 2 News reported illegal dumping activity at the Mailiili Channel in Maili, based on a report by Envirowatch (Pereria, 2009). Reports indicated that dumping had taken place over the last two years by the City and County, and consisted of concrete, plastic and pieces of metal. The Department of Land and Natural Resources and the State Department of Health had not permitted the city, or been notified of the dumping. In the news clip, several Hawaiian Stilts *(Himantopus mexicanus knudseni)* were observed to be agitated, and aggressive to intruders, common behavior for nesting pairs. Several days later on June, 14 2009 KITV 4 news (KITV, 2009) reported that the City was removing the dumped material from the site. These actions were deemed as potential violations of Hawaii Administrative Rules §13-124-3and 195D, which prohibit the take or destruction of endangered and threatened wildlife young or egg, or to remove, damage, or disturb nests of indigenous, endangered or threatened wildlife. The Hawaiian Stilts are listed species and protected under this law.

The area was surveyed by Division of Forestry and Wildlife (DOFAW), Biologists on June 15th 2009, at 0945hours and consisted of approximately 800 meters of the channelized portion of the Mailiili Stream. The first 500 meters (fig. 1) was an exposed concrete channel, with tidal seawater and sediment buildup in the middle portion of the channel, with little vegetation present. A second survey was done on the following day June, 16 2009, at 0900, with personnel from DOFAW, US Fish and Wildlife Service and City and County Maintenance Division. Observers followed the same path along the channel.

Figure 1: Stilts in Channelized stream, Maili, Oahu

The latter 300 feet consisted of the actual dumping site along both sites of the stream. The habitat in this portion seemed to be consistent with other wetland habitats with a mixture of water, sediment and vegetation (fig. 2).

Figure 2 dump site and habitat

Methods

Two observers drove and walked along the bank and in the channel (appendix 1). Stilt locations, behavior, habitat use were noted along with the total number of birds present. Observers also walked into the stream bed to look for nests. The survey was started at the west portion of the channel at the Paakea St. bridge and continued east to the end of the channelized stream.

Results

6-15-09

13 Hawaiian Stilts (11 adults and 2 chicks) were observed utilizing the channelized stream bed in 1-3" of water. Chicks were estimated to be between 3-5 weeks old (Fig.3), and were observed walking throughout the channel. The sediment buildup in the middle portion of the channel was inundated with seawater which was flooding the area in via the rising tide, which was peaking at 1119 hours (Pacific Leasure, 2009). 1 Black Crowned Night Heron or Aukuu was also observed in the dump site area. No nests were observed in any of the areas walked or viewed from the stream bank and road. The adult stilts were extremely agitated and displayed actions consistent with the defense of chicks and nesting sites.

6-16-09

2 Hawaiian Stilts and 1 Wandering Tattler (*Tringa incana)* were observed utilizing the channelized stream in the west portion of the channel in 1-3" of water. 4 stilts (3 adults and 1 chick) were observed in the mudflat/vegetated east portion of the channel. This was the area where the dumping occurred.

Figure 3 Adult and two chicks (3-4 weeks old)

Discussion

City personnel reported dumping started in May 2008, and was used to stabilize the banks of the channel which was constructed to prevent possible flooding in the area. The last dumping had occurred in May of 2009. Some of the dumped material was removed 1-2 days before the survey took place (Fig. 4). The stilt pair and chicks were first observed in the channelized portion of the stream, which provides no cover from predators, to which the chicks are extremely vulnerable. It is possible the removal of the material, had displaced the chicks, who were then observed in the east (more vegetated) portion of the channel on the second survey day. Prior to the City's channel stabilization, the area was heavily infested with alien trees and grasses. The removal of these trees and grasses, helped to improve the area and create more habitat for the Hawaiian Stilt. The removal of the trees and grass eliminated ambush points for predators, and created more open space for the birds to utilize.

The age of the chicks are consistent to what had been reported at Pouhala Marsh, Honouliuli Unit of the Pearl Harbor National Wildlife Refuge, and the Chevron Refinery Ponds, which are located on the south western area of Oahu, and are relatively similar to the conditions present at the Mailiili Channel. Nesting most likely occurred in the months between May-June. Although the dumping has caused significant loss of habitat in the channel, the severity is debatable because there is little known about the previous nesting activity in the area and the frequency of the dumping. Tidal waters moving up the channel flood the sediment buildup, which attract adult birds to feed and loaf. Large flocks could be supported if the conditions are right; however it is unlikely that the area could support more than one or two nesting territories, because of the size and lack of predator control. The constant fluctuation in water levels is ideal to control fish in the channel which compete with the stilts for food.

Figure 4 Removed materials

Conclusion

No evidence of take was observed, there for there is no enforcement action being pursued by the DLNR, under Hawaii Administrative Rules §13-124-3and 195D. Even with the dumping of materials on site, a stilt pair managed to hatch two chicks. This is contradictory to what we would expect to see in an area where dumping has occurred; where there is a high level of human alteration (channelized stream); and where predators are not controlled. The number of birds observed in the area and the nesting activity is encouraging in an area that is not managed for stilts.

Recommendations

1. Removal of the materials is recommended to provide an increase in habitat to an already productive area. However, if the presence of the concrete is essential to flood control and prevention, the material should not be removed.
2. Removal or maintenance should be stopped until chicks have fledged. DOFAW and USFWS biologist will continue to monitor the pair and any other nesting activity. Once it has been confirmed that the birds have fledged, and no new nests or chicks are present, the activities may continue.

3. Maintenance work should be done in the months between September and March, to prevent any disturbance of chicks or nests. If the dumping of concrete is necessary to benefit the flood control ability of the canal, the work should also be done in this time frame.
4. If work must be done in the nesting months, the City should consult with DOFAW and USFWS on proper procedures and actions to prevent take and destruction of nests.
5. City and County personnel should consult with DOFAW on proper permits to prevent other violations from occurring.

References

Pereira, Andrew. "Watchdog Says Concrete Dumping An Outrage". KHON2 on the Web. June 11, 2009. <http://www.khon2.com/mostpopular/story/Watchdog-Says-Concrete-Dumping-An-Outrage/fG5-s6lsFE6O1JPhDTB0eg.cspx>

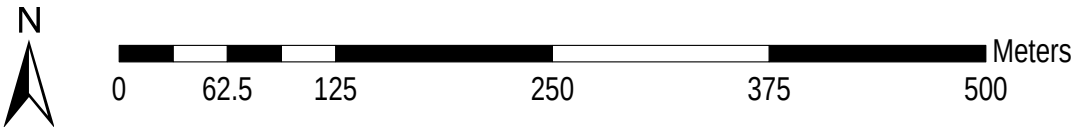
Pacific Leasure. "Hawaii Tides: Daily Tide Charts and Monthly Tide Tables for the Islands of Hawaii". June 16, 2009. <http://www.hawaiitides.com/Waianae/TideData2.asp>

KITV.Com. "City Begins Cleaning Stream" KITV on the Web. June 14, 2009. <http://www.kitv.com/news/19749470/detail.html>

Robinson, J. A., J. M. Reed, J. P. Skorupa, and L. W. Oring. 1999. Black-necked Stilt (*Himantopus mexicanus*). The Birds of North America, number 449. (A. Poole and F. Gill, eds.) The Birds of North America, Inc., Philadelphia, PA.

Appendix 1:

Mailiili Stream, Maili, Hawaii



Map created by Jason Misaki, DLNR-DOFAW. June 17, 2009

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

JUL 02 2009

In Reply Refer To:
2009-TA-0292

Mr. Jeoffrey S. Cudiamat, P.E., Director and Chief Engineer
Department of Facilities Maintenance
City and County of Honolulu
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Subject: Technical Assistance Regarding Rubble Removal from Mailiili Channel, Oahu

Dear Mr. Cudiamat:

On June 15, 2009, we received a request from the City and County of Honolulu (City and County) to provide technical assistance regarding the removal of previously dumped concrete rubble in Mailiili Channel located on leeward Oahu. In order to provide appropriate recommendations, Joy Hiromasa and Leslie Cole-Brooks (of my staff) and Keith Swindle (U.S. Fish and Wildlife Service (Service), Law Enforcement) met Thomas Lenchanko (City and County) for a site visit on June 16, 2009. During that visit, three federally endangered Hawaiian stilts (*Himentopus mexicanus knudseni*) were observed in the streambed, two adults and one chick. We indicated during the site visit that the removal of the rubble while the stilts are present may result in "take" of a listed species. We recommended curtailing any activity in the streambed until the chick has fledged in order to prevent harm or harassment of the Hawaiian stilts pursuant to the Endangered Species Act of 1973, as amended (ESA). We appreciate that you halted your project to temporarily avoid take of the Hawaiian stilts.

For your reference, take as defined by the ESA, means "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering.

Our biologist offered to provide the City and County with additional technical assistance by returning to the site in approximately three weeks (July 7, 2009) to determine the status of the stilts in the area. If the stilts are still using the area, continuation of the project may affect the stilts. If a project may affect an endangered or threatened species or designated critical habitat, the project must be reviewed pursuant to either section 10 (private action) or section 7 (Federal

action) of the ESA. Based on the U.S. Army Corps of Engineers letter (File No. POH-2009-00209), you may need a permit for the removal of the rubble and if that is the case, the project would have a Federal nexus. Upon completion of the upcoming July 7, 2009, site visit we recommend that you coordinate with the U.S. Army Corps of Engineers as they will make the determination if the rubble removal may affect the stilts thereby potentially triggering a section 7 consultation.

For future reference, to avoid project delays and potential take of listed species or adverse modification of critical habitat, we recommend that you request a species and critical habitat list from our office for each of your proposed projects. Once a species list has been obtained, you should address potential impacts to listed species and determine if consultation under section 7 or section 10 of the ESA is necessary. If consultation is needed, it must be completed prior to project implementation. A species list should be requested during the early planning stages of your project to ensure that there is adequate time to address impacts and complete consultation. Following these recommendations will help assure that you are in conformance with the ESA.

If you have any questions, please contact Patrice Ashfield, Section 7 Consultation and Technical Assistance Program Leader at (808) 792-9400.

Sincerely,

Gina M. Shultz
Acting Field Supervisor

cc: Farley Watanabe, U.S. Army Corps of Engineers, Honolulu District
Paul Conry, Hawaii Division of Forestry and Wildlife
Dr. Wendy Wiltse, U.S. Environmental Protection Agency
Gene Hester, U.S. Fish and Wildlife Service, Office of Law Enforcement

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu`ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR

JEOFFREY S. CUDIAMAT, P. E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:

July 9, 2009

Lieutenant Colonel Jon J. Chytka
District Engineer
Department of the Army
U.S. Army Corps of Engineers, Honolulu District
Fort Shafter, Hawaii 96858-5440

Attention: Mr. Farley Watanabe

Dear Lieutenant Colonel Chytka:

This is in response to your letter dated June 16, 2009, and received by our office on July 2, 2009. You have inquired about City personnel allegedly dumping concrete slabs and other debris into the Maili`ili Drainage Channel ("the Channel"). The Department of Facility Maintenance ("DFM" or "Department") is continuing its investigation into the allegations and is presenting herein information known to DFM at the time of the submission deadline set forth in your letter. As discussed in further detail below, the alleged activity is not dumping but rather the stabilization of the earthen channel bank of the Channel.

Background

The Channel was constructed as part of the Waianae Nui Flood Control project by the USDA Natural Resources Conservation Service (formerly known as the Soil Conservation Service) and maintained by the City as the local sponsor of the project. Construction plans of the project depict a rubble masonry bench at the toe of the channel bank (See Attachment 1). The bench is located just upstream from the concrete channelized portion of the Channel, also known as the Maili`ili M-1 Channel located within TMK 8-6-002:003 (See Attachment 2).

Incident

Starting on February 2, 2008 and continuing until May 9, 2009, approximately 1600 cubic yards of concrete slabs were delivered to the area at the Channel terminus. Details are set forth in Attachment 3. The slabs were then purposefully moved in a manner intended to stabilize the bench area so that it could be used by appropriate equipment to access the earthen bank area for the purpose of removing vegetation overgrowth and debris from the channel. Such removal is necessary to alleviate flooding concerns and to deter encroachment of the flood control improvements by an abutting property owner. The removal of brush and debris had an unintended effect of creating a habitat for the Hawaiian Stilt, an endangered species, that had not previously been known to inhabit or nest in this area.

Immediate Remedial Action

Upon discovery of the alleged unauthorized fill, a meeting was held at the site on June 12, 2009 and City maintenance personnel were directed to immediately cease deliveries of the concrete material to the site and to commence removal of the already placed concrete material. The City discussed the procedure for removing the concrete material with State Department of Health Clean Water Branch personnel that afternoon and were informed that concrete that was not in the proximity of the water could be removed while the concrete in the water would require a permit prior to its removal. Removal of concrete slabs from upland areas was performed on June 13, 2009 during a fairly low tide to minimize potential impacts to water quality. Approximately 109 tons of concrete rubble was removed and disposed of at the PVT landfill. Further cleanup work was suspended when a 3 to 5 week old Hawaiian Stilt fledgling was discovered in the area. US Fish and Wildlife Service recommended that work be suspended until the fledgling attains an age of about 8 weeks old at which time the fledgling and its parents were expected to leave the site.

Remedial Plan

The City intends to remove all of the concrete slabs from the Channel area and is preparing a permit application for the removal work. Once the Hawaiian Stilt fledgling has departed the site, the City will prepare an assessment on the extent of the concrete slabs that have actually been placed in the channel area to better quantify the amount and location of the slabs. The assessment will be used to prepare the permit application and site specific best management practices that will be employed to minimize water quality impacts during the removal process. In order to alleviate similar future situations, the City has contracted with AECOM, a consulting engineering firm, and has already met with such consultant to prepare a training course with input from the State Department of Health and the US Army Corps of Engineers to educate City maintenance personnel in regard to unauthorized fill operations and other environmental requirements related to similar City maintenance activities. Although we have cleared the overgrowth and do not expect such activity will be required in the future (as we shall be performing regular maintenance of the channel from now on), we will apply for appropriate permits if such need ever arises.

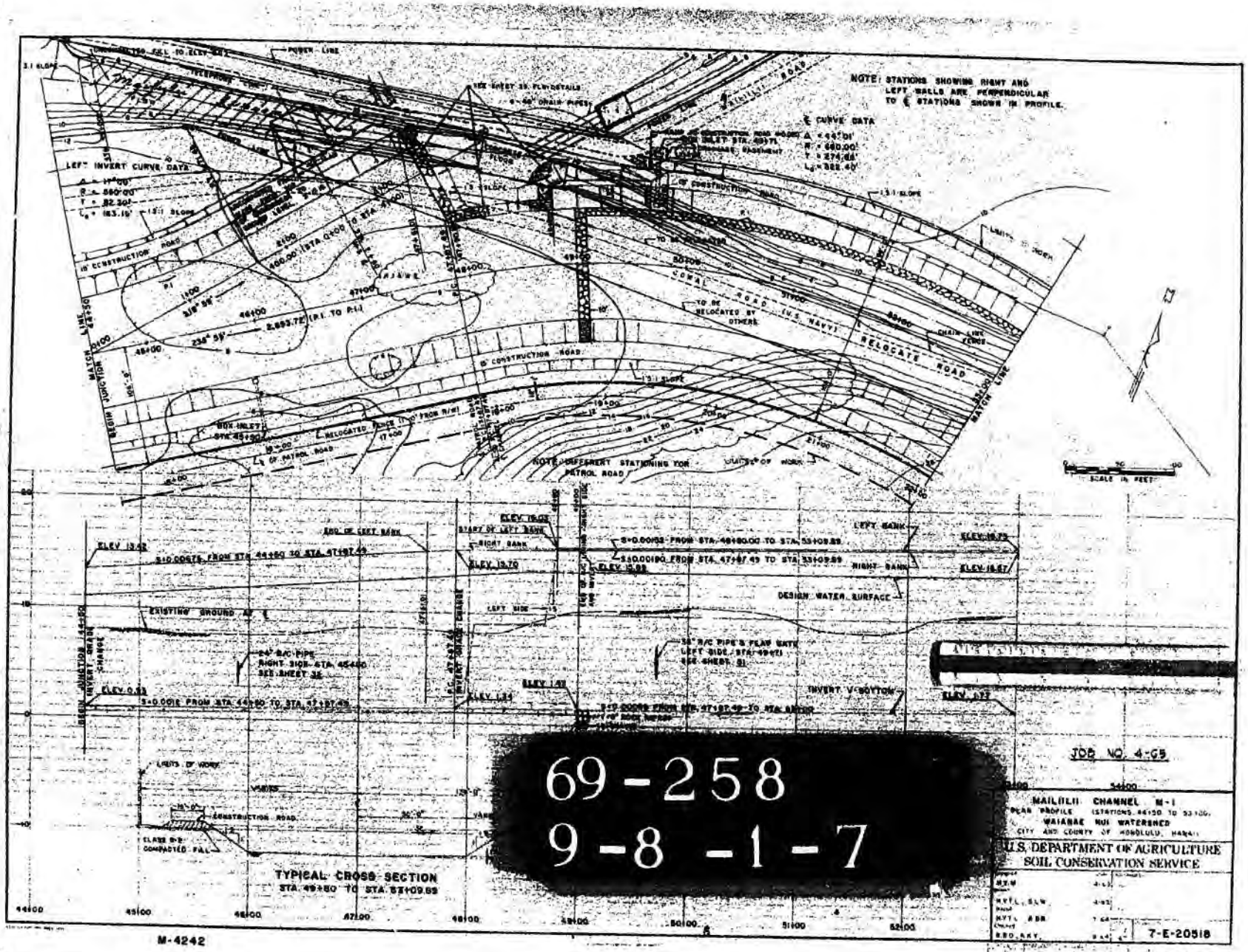
If you should have any questions, please call Tyler Sugihara, Chief of the Division of Road Maintenance at 768-3600.

Sincerely,

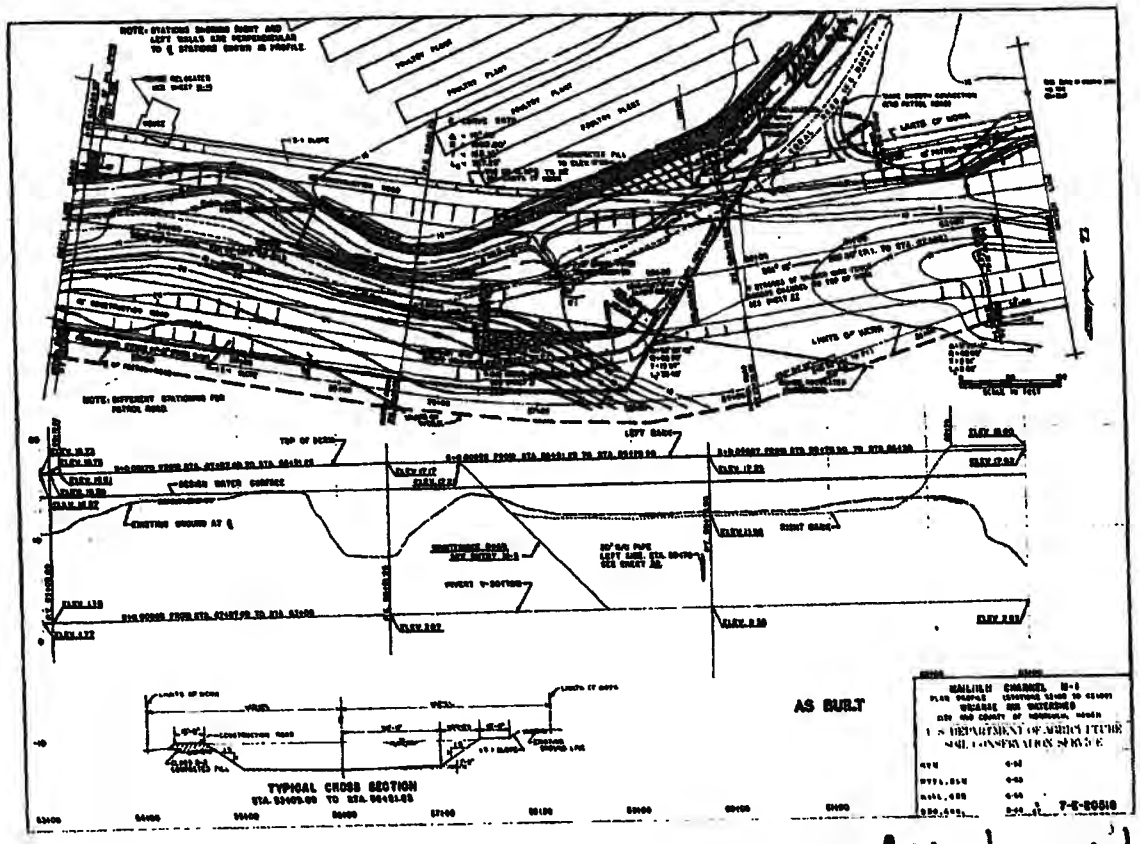
Jeoffrey Cudiamat

Jeoffrey S. Cudiamat, P.E.
Director and Chief Engineer

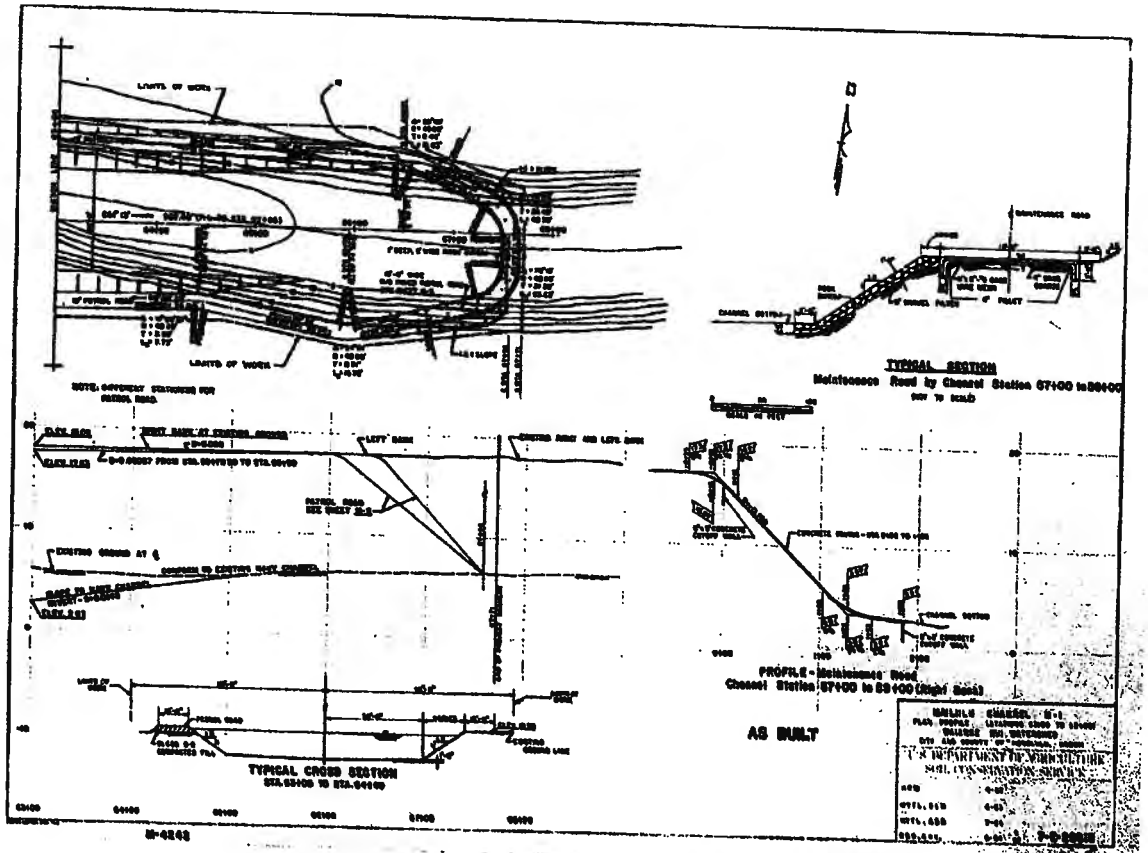
JSC/TS
Attachment



Attachment 1

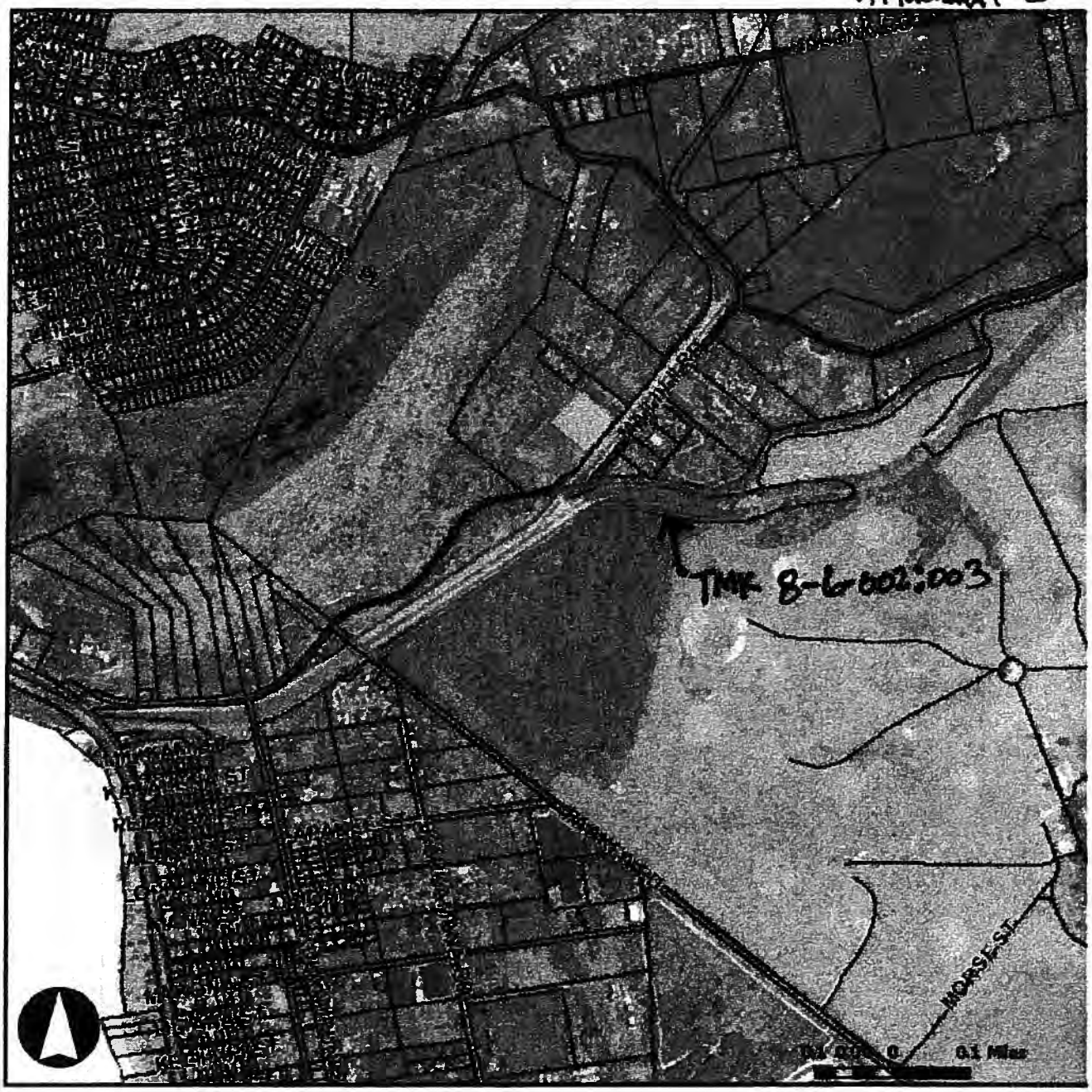


Attachment 1



Attachment 1

Attachment 2




Lualualei Homestead Rd
Paakea Rd
Attachment 2

Attachment 3

Date	Dump Truck capacity used to deliver concrete (cy)
February 2, 2008	91
February 23, 2008	65
February 24, 2008	143
March 1, 2008	45
March 2, 2008	61
March 29, 2008	40.5
March 30, 2008	45
April 26, 2008	26
May 31, 2008	75.5
June 1, 2008	243
June 7, 2008	70
June 8, 2008	56.5
July 12, 2008	229.5
July 20, 2008	97
July 26, 2008	297
July 27, 2008	156
September 20, 2008	156
September 21, 2008	192
March 26, 2009	390
April 4, 2009	138
April 11, 2009	162
May 9, 2009	118
Total	2897 cy

Approximate amount of concrete in truck is approximately 50 to 60% of truck capacity

2897 cy x 0.55 = 1593.5 cy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JUL 02 2009

Mr. George Young
Regulatory Branch Chief
US. Army Corps of Engineers
Honolulu District
Building 230
Fort Shafter, HI 96858-5440

Subject: Request for Lead Enforcement Agency on a Potential Enforcement Action against City and County of Honolulu at Mailiilii Steam, Waianae, Honolulu County, Hawaii

Dear Mr. Young:

I am writing to formally request that EPA assume lead agency responsibilities for the subject investigation, and the transfer to Wendy Wiltse any files the Corps may have on the matter. Several weeks ago I discussed this matter with you informally.

It appears that discharges of dredged or fill material have occurred within waters of the U.S., without benefit of a Clean Water Act Sect. 404 permit, at M-1 section of Mailiili Stream. A recent inspection by both EPA and Hawaii Department of Health show that a significant reach of the Mailiili Stream had concrete waste and other materials placed directly into the stream channel.

Thank you for your attention to this matter. If you have any questions or concerns, please do not hesitate to call me at (415) 947-4198.

Sincerely,

JULY 2, 2009

Amy C. Miller
Team Leader, CWA Compliance Office

APPENDIX D
Best Management Practices (BMP) Plan
R.M. Towill Corporation, September 2009

Construction Stormwater
Best Management Practices (BMPs) Plan

Māʻiliʻili Channel
Removal and Restoration Plan (R&R Plan)
Waiʻanae, Island of Oʻahu, Hawaiʻi

September 15, 2009

1. Introduction

The purpose of this document is to provide guidance to the Contractor to ensure compliance with the U. S. Environmental Protection Agency (EPA) Order and Hawaiʻi Administrative Rules (HAR), Chapter 11-54, Water Quality Standards, of the State of Hawaiʻi. The purpose is to provide for appropriate treatment of project associated construction stormwater and non-stormwater discharges to state waters.

This document contains and is organized according to the following sections:

Section 2 – Construction Activity
Section 3 – Quality of Discharge
Section 4 – Potential Pollutants of Concerns
Section 5 – Controls for Land Disturbances
Section 6 – Erosion and Sediment Control Requirements
Section 7 – Proposed Schedule
Section 8 – Post Construction Control Measures

2. Construction Activity

A. Project Location

The project location is within the Māʻiliʻili Channel located in the District of Waiʻanae, Island of Oʻahu, in Tax Map Key: (1) 8-6-002: Portion of 003, owned by the State of Hawaiʻi. The approximately 1.0 acre site is located approximately 0.8 miles inland from Farrington Highway (State Route 83) along Māʻiliʻili Road. Surrounding land uses are generally low density activities that include farming and open space. The largest landowner, the military, borders the project site on two sides – northeast, east and southeast.

The Māʻiliʻili Channel was constructed as part of the Waiʻanae Nui Flood Control project by the U. S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS, formerly known as the Soil Conservation Service) and maintained by the City as the local sponsor of the project. Construction plans of the project area depict a rubble masonry bench at the toe of a channel bank. The bench is located just upstream from the concrete channelized portion of the Channel, also known as the Māʻiliʻili M-1 Channel.

B. Construction Activity

The project involves the removal of unauthorized fill and related debris including concrete slabs, metal debris, used asphalt and dirt. Restoration will include grading of the site to restore the original purpose and function of the drainage channel to serve as a stormwater conveyance.

C. Construction Equipment

Construction equipment to be used on-site is to be determined and is planned to consist of excavator, track loader, trucks, and water truck for the control of dust (as needed).

3. Quality of Discharge

The materials excavated from the site will be comprised of unauthorized fill and related debris including concrete slabs, metal debris, used asphalt and dirt, and small amounts of existing on-site soils that may require excavation from the site.

A. Unauthorized Fill Materials

The unauthorized fill materials present are primarily construction demolition debris comprised of broken concrete slabs, used utility metal cabinets, broken sign posts, pieces of reinforcing bar, asphalt concrete ("AC"), and dirt that was collected during the demolition activity. The majority of these materials were collected and then deposited at the site by the City.

B. Silt and Sediments

Silt and sediments exposed by the planned removal of unauthorized fill have the potential for mixing with stormwater during project activities. Runoff from the project site would be confined within the existing channel and be directed downstream.

The composition of soils at the site are Pulehu Series soils (Soils Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lānaʻi, State of Hawaiʻi, Soil Conservation Service, August 1972 [Sheet No. 26]. Characterization of this predominant soils type is as following:

Pulehu clay loam, 0 to 3 percent slopes (PsA). According to the Soils Survey this soil is found on alluvial fans and stream terraces and in basins. In a representative profile the surface layer is dark brown clay loam about 21 inches think. This is underlain by dark brown, dark grayish brown, and brown, massive and single grain, stratified loam, loamy sand, fine sandy loam, and silt loam about 39 inches thick. Below this is coarse, gravelly or sandy alluvium. The soil is neutral in the surface layer and neutral to mildly alkaline below the surface layer. Permeability is moderate, runoff is slow, and the erosion hazard is no more than

slight. The available water capacity is about 1.4 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 5 feet or more. Low areas are subject to flooding. (Soil Conservation Service, August 1972).

Management of this soils type will be addressed through the measures indicated in the following sections.

4. Potential Pollutants of Concern

Construction activities with the potential for discharge of storm and non-stormwater pollutants are associated with: (1) the use of construction vehicles and equipment; and (2) the removal of the unauthorized fill and smaller amounts of vegetative material surrounding the areas of unauthorized fill. The following measures will be implemented to address these potential pollutants of concern.

A. Construction Vehicles and Equipment

The use of construction vehicles and equipment may generate some pollutants associated with the use of internal combustion engines. Tracking of mud and soils may also occur on-site with the potential for tracking of mud and soils to migrate off-site to adjoining roads.

1. The Contractor will be directed to maintain and wash off equipment off-site.

2. Construction waste material shall be disposed of using on-site lidded garbage containers (roll-off type) which shall be transported to a County approved landfill when the container is full.

3. Fueling and oiling of equipment shall be by Contractor's fuel/oil service trucks for equipment servicing. Fueling and oiling shall only be performed in a designated location. Spill prevention kits shall be provided on all fuel/oil service trucks. In the event of small spills, the area will be contained and the soil containing the contaminant will be immediately removed off-site and disposed of properly at a County approved disposal facility.

4. Vehicular maintenance shall not be performed on-site.

5. Fertilizers shall not be stored on site. Should fertilizing be required, a one-day supply of fertilizer will be brought in from the supplier. Excess fertilizer shall be removed from the site at the end of each day.

B. Removal of Unauthorized Fill and Disposed-Of Construction Debris

1. The unauthorized fill materials may be saturated from water in the channel. Removal of this material shall be performed by use of an excavator or similar construction vehicle capable of placing the materials in a sealed, water-tight truck bed. The purpose is to prevent the leakage of water saturated debris and

mud as the material is hauled off-site to the PVT Landfill, a County-approved facility for the disposal of construction and demolition debris.

2. Stockpiled materials awaiting off-site hauling shall be kept in a designated location. The seepage of waste water from stockpile sites shall be controlled by gutter socks, berms, or other structural controls as required. Stockpile sites shall be covered following the end of each work day to minimize the occurrence of erosion during inclement weather and the generation of dust as the materials dry.

3. Vehicles used for the hauling of excavated waste materials shall be inspected daily by the Contractor's designated field personnel prior to use. Any vehicle found with leaking beds shall be repaired or replaced prior to use. Spills that result from the transit of vehicles from the construction site to the PVT Landfill shall be cleaned immediately, as practicable.

5. Controls for Land Disturbances

A. General BMP Controls

The following special conditions promulgated in HAR, Chapter 11-55, Water Pollution Control, Appendix C, NPDES General Permit Authorizing Discharges of Storm Water Associated With Construction Activity, October 2007, applies to all land disturbance work before, during, and after construction or pollution producing activities:

"11. Special Conditions for Land Disturbances

The following special conditions apply to all land disturbance work conducted under this general permit:

(a) Construction Management Techniques

(1) Clearing and grubbing shall be held to the minimum necessary for grading and equipment operation.
(2) Construction shall be sequenced to minimize the exposure time of the cleared surface area.
(3) Construction shall be staged or phased for large projects. Areas of one phase shall be stabilized before another phase is initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.
(4) Erosion and sediment control measures shall be in place and functional before earth moving operations begin. These measures shall be properly constructed and maintained throughout the construction period.
(5) All control measures shall be checked and repaired as necessary, for example, weekly in dry periods and within twenty-four hours after any rainfall of 0.5 inches or greater within a twenty-four-hour period. During

prolonged rainfall, daily checking is necessary. The permittee shall maintain records of checks and repairs.

(6) The permittee shall maintain records of the duration and estimated volume of storm water discharge(s).

(b) Vegetation Controls

(1) Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than twenty calendar days prior to land disturbance.

(2) Temporary soil stabilization with appropriate vegetation shall be applied on areas that will remain unfinished for more than thirty calendar days.

(3) Permanent soil stabilization with perennial vegetation or pavement shall be applied as soon as practical after final grading. Irrigation and maintenance of the perennial vegetation shall be provided for thirty calendar days or until the vegetation takes root, whichever is shorter.

(c) Structural Controls

(1) Storm water flowing toward the construction area shall be diverted by using appropriate control measures, as practical.

(2) Erosion control measures shall be designed according to the size of disturbed or drainage areas to detain runoff and trap sediment.

(3) Water must be discharged in a manner that the discharge shall not cause or contribute to a violation of the basic water quality criteria as specified in section 11-54-4."

B. Site Specific BMP Controls

The following BMPs will be employed to protect the channel during the removal and restoration work.

1. Before Construction

   Prior to construction the project site will be inspected to identify locations with loose soils that may be subject to erosion. As required, stabilize loose soils by placing vegetative (e.g., hydromulch and/or grassing) or structural controls (e.g., install geotextile filter fabric). Sites subject to inspection shall include:

   a. Construction staging site(s)
   b. Temporary construction materials storage site(s)
   c. Designated location(s) used for vehicle fueling
   d. Contractor's planned on-site haul route

2. During Construction

   a. Install stabilized construction entrances at the connections to Māʻiliʻili Road and Paʻakea Road. The stabilized entry shall be not less than 20' x

50’ in dimension and overlain to a uniform depth with 2-inch rock (non-coral). The depth of the entry shall be not less than 8 inches.

b. Install silt fence on the channel side of the top bank maintenance road.
c. Water-tight truck beds will be used to prevent leakage of wet material over the disposal route to the landfill. Materials that are not saturated with water will be removed using regular truck beds.
d. Maintenance and/or washing of construction equipment will not be allowed within the channel. However, fueling of equipment may be done on the top bank access road.
e. All sediment control devices will remain in place until all disturbed areas are stabilized.
f. In-channel work shall be performed during periods of low rainfall.
g. Phase 1 work zone shall be completely stabilized prior to start of Phase 2.
h. The contractor shall listen to weather reports daily while working in the channel. During emergency conditions involving a storm event, stormwater overflow may enter the Māʻiliʻili Channel project site. If a flood warning is issued, all channel work shall cease immediately. All equipment shall be removed and the work area cleared of any construction debris to the extent practicable. Work shall not resume until water levels in the channel have subsided at least 1 foot below the top of the sandbag barriers.
i. The contractor shall conduct his operations so that excavation, embankment, and imported materials shall be dampened to prevent dust problems.
j. Contractor to periodically inspect silt fence, sandbag barriers, and stabilized construction entrance, especially during heavy rainfall. Contractor shall also ensure drainage through filter material is maintained.
k. Contractor shall ensure that all tires of construction vehicles are sufficiently cleaned off so that dirt or debris is not tracked off the construction site. Washing off tires with water will not be acceptable unless the runoff is contained and does not enter the channel or the roadway.
l. Materials Pollution Prevention Plan
    a. Applicable materials or substances used at the site shall be added to a materials inventory log kept by the Contractor. The Contractor shall maintain the materials inventory log at the worksite for the duration of construction activity.
    b. Material management practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Effort shall be made to store only enough product as is required to do the job.
    c. All materials stored onsite shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
    d. Products shall be kept in their original containers with the original manufacturer's label.

e. Substances shall not be mixed with one another unless recommended by the manufacturer.
f. Whenever possible, a product shall be used up completely before disposing of the container.
g. Manufacturer's recommendations for proper use and disposal shall be followed.
h. The contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

6. Erosion and Sediment Control Requirements

HAR, Chapter 11-54, Water Quality Standards, describes the basic water quality criteria applicable to all inland and coastal Hawaiian waters.

HAR, Chapter 11-55, Water Pollution Control, describes the State's regulatory requirements for the prevention and control of water pollution.

Rules Relating to Soil Erosion Standards and Guidelines, April 1999, Department of Planning and Permitting, City and County of Honolulu, sets forth the standards for controlling soil erosion and sedimentation arising from land disturbing operations.

7. Proposed Schedule

Construction Phasing and Schedule
The proposed project will involve 2 phases: Phase 1 will involve removal and restorative activities on the north bank; and Phase 2 will involve removal and restorative activities on the south bank.

The anticipated schedule of work will be developed following further consultation with the EPA and agencies designated by them. The time of work is anticipated to last approximately 1-2 months.

A detailed construction schedule is planned to be prepared by the contractor as part of the requirements for the NPDES NOI Form C, Construction Stormwater Permit. The detailed scheduling information will include, but is not limited to:

- The type of erosion controls to be installed
- The nature of the site-work to be performed, e.g., location of debris removal and grading
- Other work that will be performed to accomplish the respective project phase
- The start and termination dates for the use of erosion controls

8. Post Construction Pollutant Control Measures

At the completion of the project, the Contractor shall inspect the channel and area surrounding the project site:

A. Any remaining debris associated with the clean-up of the site shall be removed.

B. All construction related vehicles, equipment, and personnel will be demobilized. Prior to demobilization the Contractor's designated personnel will inspect the site for the removal of all debris associated with the construction activity, and the removal of all erosion and BMPs control measures, except where required to maintain the establishment of vegetative cover. Following the establishment of vegetative cover, if any, all accessory control measures will be removed, e.g., silt fencing, irrigation lines, or plant staking materials.

APPENDIX E
Water Quality Monitoring Plan
R.M. Towill Corporation, September 2009

Water Quality Monitoring Plan

Removal and Restoration of Māʻiliʻili Stream Channel
District of Waiʻanae, Oʻahu, Hawaiʻi
Tax Map Key: (1) 8-6-002: Portion of 003

September 15, 2009

1. Introduction

The purpose of this water quality monitoring plan (WQMP) is to substantiate the performance of the proposed Best Management Practices that will be applied to the project site during the removal of unauthorized fill and restoration of the Māʻiliʻili Stream Channel.

This WQMP is prepared pursuant to the EPA Findings of Violations and Order for Compliance Under Sections 308 and 309(a) of the Clean Water Act, EPA Docket No. CWA-404-309(a)-09-020, dated July 28, 2009. The water quality constituents identified in this plan are designed to ensure compliance with Hawaiʻi Administrative Rules (HAR), Chapter 11-54, Water Quality Standards.

2. Project Description Involving Monitoring of Potential Discharges to State Waters

The proposed construction activities will be within the Māʻiliʻili Stream Channel located in the District of Waiʻanae, Island of Oʻahu, at Tax Map Key (1) 8-6-002, comprising an approximately 1-acre portion of parcel 003. Construction activities will involve the use of an existing access roadway to enter the stream channel for the purpose of removing unauthorized fill including concrete slabs, metal debris, used asphalt, and dirt. The unauthorized fill material will be collected for diposal to the PVT Landfill, a City & County of Honolulu approved facility.

The project will be undertaken in two phases:

> Phase 1 will involve removal and restorative work within the north bank of the Māʻiliʻili Stream Channel. This side of the channel will be isolated using a series of sand bags and related materials to provide containment of the working area from direct contact with waters within the stream. When work to remove the unauthorized fill is completed from this section of the channel the area will be cleaned and cleared and the containment structure will be removed.
>
> Phase 2 will be similar to Phase 1 and will involve removal and restorative work within the south bank.

The primary discharges of concern are silt and sediments associated with the removal of unauthorized fill from the stream channel. Dewatering is not anticipated to be required

based on the removal of water saturated excavated materials to trucks with water-tight sealed beds for transit to the PVT Landfill.

3. Parameters Measured

Standard Parameters

The primary pollutants are silt and sediments (suspended solids) that would be released from excavation activities along the bed and banks of the stream channel. This poses the potential for the release of silt and sediments into the stream channel and could affect downstream waters following storm events. Based on the presence of these materials and current practice by the State Department of Health, Clean Water Branch, in the administration of the NPDES permit program, selected water quality parameters enumerated in HAR, Chapter 11-55, Water Pollution Control, Appendix G, will serve as the basis for this Plan. The constituents proposed for monitoring include:

Total suspended solids (TSS)
Nephelometric Turbidity Units (NTU)
Oil & Grease
pH

The construction Contractor's assigned individual will monitor ambient conditions including weather and relevant observations on the progress of construction activity each day in a field notebook. Photographic logs of the progress of work will be taken each day and will include the condition of any installed BMP measures such as silt screens and the sand bag containment barrier used for each phase of construction.

The water quality parameters identified above will be measured from grab samples collected by the analytical laboratory's field technician.

Toxic Parameters

Toxic parameters are not anticipated to be present at the site (see **Appendix F, Construction Stormwater Best Management Practices (BMPs) Plan**).

4. Sampling Locations

The primary treatment against the potential for mixing of loose materials with stream and storm water runoff will be through preventative measures that include isolating such materials before they have the chance to contact waters of the State.

Sampling locations will be: (1) within the enclosure constructed for each phase of work (if there is water present); and (2) at a location outside of the enclosure at a point approximately 25 to not more than 50 feet downstream and within the Māʻiliʻili Stream Channel. Two samples shall be taken to establish a monitoring cycle. The first sample shall be taken from within the enclosure and the second same shall be taken from downstream.

Measurements and records will be kept separately for each sampling location. Discharges which do not enter State waters will need not be measured or monitored if there are no discharges to State waters or if there are no State waters present at the project site at the time of the work activity.

5. Sampling Frequency

One sample will be collected from each of the two sampling points (one monitoring cycle) daily for three consecutive discharge days or longer as needed until the analytical results establish that the implemented BMPs are functioning as intended. Thereafter, analytical sampling frequency will be once per week for the duration of work. The day and time of the sampling shall be determined by the analytical laboratory's field technician. Visual inspections by the construction contractor's assigned individual will always be made (at a minimum) daily to maintain the integrity of the site BMPs. As required the performance of the system will be modified to achieve the requirements of the State water quality standards in HAR, Chapter 11-54.

6. Sampling and Analytical Procedures/ Quality Assurance

Samples will be collected by filling a 1 or 2-liter plastic bottle and a 1-liter glass bottle at the sampling locations described above. Smaller containers may be used if shallow water prevents filling the container without disturbing the bottom. Samples will be returned immediately to the laboratory to be analyzed for the following analytes:

Table of Analytical Methods and Instruments

Analysis List	**Method**	**Reference**	**Instrument**†
pH	EPA 150.1	EPA	Orion SA 250 pH Meter
Turbidity	EPA 180.1 Method 2130B	Standard Methods 18th Edition (1992)	Turner Nephelometer
Suspended Solids	EPA 160.2 Method 2540D	Standard Methods 18th Edition (1992)	Mettler H31 Balance
Oil & Grease	EPA 413.2	EPA	Laboratory Analysis

EPA. 1979. Methods for Chemical Analysis of Waters and Wastes, U.S. Environmental Protection Agency, EPA 600/4-79-020.
Standard Methods. 1992. Standard Methods for the Examination of Water and Wastewater, 18th Edition. 1992. (Greenberg, Cleceri, and Eaton, eds.). APHA, AWWA, & WEF. 1100p.
† Typical only, other manufacturer of equipment may be used.

The laboratory performing analyses of samples under this WQMP will participate in DOH/EPA sponsored quality assurance (QA) programs available for all analyses conducted as part of the water quality monitoring. This should include either or both the

EPA Water Supply performance evaluation and/or EPA Water Pollution performance evaluation programs.

The Data Quality Objectives (DQO) of the DOH CWB shall also be addressed in the sampling, laboratory analysis, and data reports. Relevant quality assurance/quality control (QA/QC) results will be provided to EPA upon request.

7. Reports

Results of sample testing will be available from the laboratory upon completion of the analyses, usually within 24 to 48 hours for turbidity and pH measurements because of the short hold-times for these samples. However, a written report for submittal to EPA will be prepared the following week of sampling. The reports will include, in addition to analytical results, the time and date of sampling, the individual who took the sample(s), the date each analysis was conducted, any additional treatment strategies to be implemented based on monitoring results, as well as identification of the laboratory and the analyst that conducted each analysis. The laboratory will retain in its records the analytical procedure(s) used and any relevant QA/QC and instrument calibration information pertaining to the specific run.

All analytical results and measurements and other pertinent observations made at the time of the sampling will be entered into a notebook obtained for this purpose, and provided in a monthly report. Reports of monitoring results obtained during the previous calendar month shall be submitted to EPA, postmarked no later than the twenty-eighth day of the month following the completed reporting period.

APPENDIX F
Avifauna Reconnaissance Report
Phillip Brunner, September 2009

American Golden-Plover (Kolea) image courtesy Daniel S. Kiby
© Bat Conservation International, Inc.

Faunal Surveys

Bird & Mammal

1 September 2009

To: R.M. Towill Corporation
2024 North King Street
Suite 200
Honolulu, HI 96819

Attention: Chester Koga AICP

From: Phil Bruner, Faunal Surveys

SUBJECT: Mailiilii Channel, Maili, West Oahu

The purpose of this letter report is to provide the observations of a one day (31 August 2009) site visit to Mailiilii Channel. The specific area examined was mauka of Puakea Road Bridge to the fence line at the mauka boundary of the channel. All native waterbirds and migratory shorebirds were tallied and notes regarding their activity at this site was noted. Endangered species were the major focus of the investigation.

The majority of the waterbirds and shorebirds recorded were foraging or loafing along a narrow section of water in the cement lined portion of the channel. Mauka of this area the channel contained emergent vegetation and standing water. Table One provides a list of the waterbirds and migratory shorebirds observed plus the total number of each species. The three migratory species recorded are not endangered. They are common winter visitors to Hawaii. Two of the three native waterbird species observed are federally listed endangered species: Black-necked Stilt (*Himantopus mexicanus knudseni*) and Koloa or Hawaiian Duck (*Anas wyvilliana*). The Black-crowned Night-Heron or Auku'u (*Nycticorax nycticorax hoactli*) is an indigenous species and the only native waterbird not listed as endangered.

Two pair of Koloa were observed loafing along the edge of the water in the mauka (non-cement bottom) portion of the channel. Both pair flew mauka as I approached within 50m of their position. They usually are seen in pairs. Nesting is

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primarily concentrated in December to May. This site (Mailiilii Channel) is unlikely to serve as a nesting site for Koloa due to insufficient vegetation cover and water as well as easy access for predators.

The seven Black-necked Stilt were all foraging in the cement bottom section of the channel. Three of the seven were juveniles based on their white cheek patches and brownish backs. If these young stilt were hatched at this site they were indeed fortunate given the accessibility of the channel to cats, mongoose and even dogs. The gated section of the fence surrounding the channel would not exclude dogs since I was easily able to access the channel between the widely spaced gates.

Both Koloa and Stilt are opportunistic foragers which utilize a wide variety of wetland habitats. One of the major limitations on their population are predator free nesting sites. The Black-necked Stilt breeding season extends from March through September with the majority of activity in April through July (Robinson et al. 1999). They are semi- colonial nester preferring mudflats near water. The average clutch is four eggs. Adults are very aggressive and noisy when apparent danger to eggs or chicks occurs (Hawaii Audubon Society 2005).

To avoid disturbing breeding stilts activity (cleaning or clearing of habitat) should be confined to October through January. If nesting stilt are present they will quickly announce their concerns by calling and "dive bombing" the intruder. Stilt will still call and fly around the area outside of the breeding season but are not nearly as demonstrative.

Sources Noted:

Hawaii Audubon Society. 2005. Hawaii's Birds. Sixth edition. Hawaii Audubon Society, Honolulu. 141pp.

Robinson, J.A., J. M. Reed, J.P.Skorupa, and L.W. Oring. 1999. Black-necked Stilt (*Himantopus mexicanus*). *In* The Birds of North America, No 449 (A. Poole and F. Gill, eds.). The Birds of North America, Inc. , Philadelphia, PA.

TABLE 1

Native waterbirds and migratory shorebirds observed at Mailiilii Channel in Maili, West Oahu on 31 August 2009.

Common Name	Scientific Name	Total Recorded
Black-necked Stilt	*Himantopus mexicanus knudseni*	7
Koloa	*Anas wyvilliana*	4
Black-crowned Night-Heron	*Nycticorax nycticorax hoactli*	5
Pacific Golden-Plover	*Pluvialis fulva*	21
Wandering Tattler	*Heteroscelus incanus*	2
Ruddy Turnstone	*Arenaria interpres*	1

APPENDIX G
Biological Reconnaissance Survey
AECOS, Inc., September 2009

Biological reconnaissance survey of Māʻiliʻili Stream for an unauthorized fill restoration project, Māʻili, Oʻahu.

September 9, 2009 **DRAFT** *AECOS* No. 1216

Eric B. Guinther & Chad Linebough
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Introduction

This report presents results of a biological reconnaissance survey made on a segment of lower Māʻiliʻili Stream, leeward Oʻahu. The purpose of the survey is to inventory biological resources at the site of an unauthorized landfill in the channelized lower reach of the stream. The survey location is shown in Fig. 1. This report is part of the environmental due diligence for a proposed fill removal and stream restoration project by the City and County of Honolulu (C & C) under the direction of R. M. Towill.[1]

Methods

A visit to the project area was made on September 8, 2009. The survey area encompassed the lower, estuarine reach of Maʻiliʻili Stream from Pakea Road (bridge) up to the U.S. Navy, Lualualei Reservation fence (Fig. 2). The survey area was traversed on foot over several hours by the two biologists, who made observations on the plants and aquatic biota present.

Basic water quality measurements were made using field instruments to characterize the aquatic environment. Sampling was conducted at three locations: under the Paʻakea St. bridge, at the very upper end of the pond in the project area, and at the lower end of the pond, where the stream channel bed transitions from mixed sediments to concrete.

[1] This report will become part of the public record for the project environmental assessment.

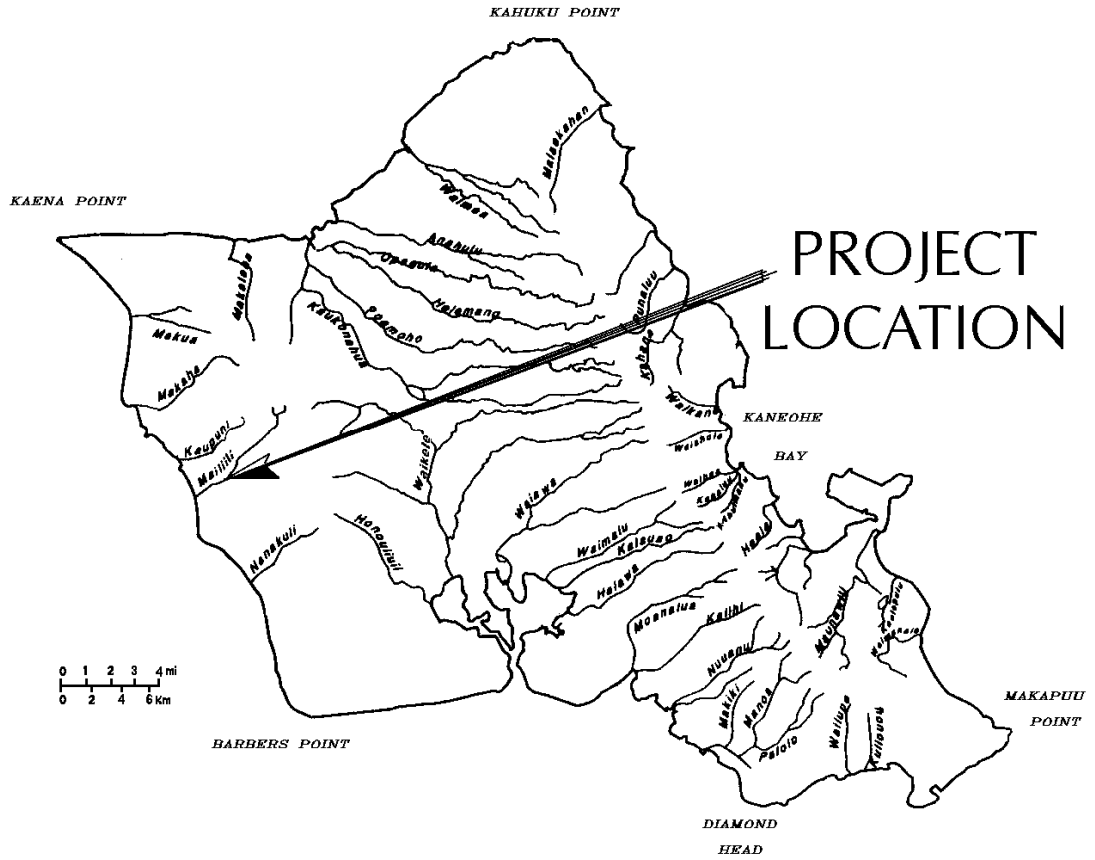

Figure 1. Project location on stream map of the Island of Oʻahu.

Results

Lower Māʻiliʻili Stream

Māʻiliʻili Stream (state ID No. 3-5-04) is an interrupted stream[2] that arises from several branches that drain the leeward face of Waiʻanae Mountain between Puʻukaʻilio and Puʻukaua, two prominent peaks on the ridgeline above Lualualei.

[2] Maʻiliʻili Stream is listed (Hawaii Cooperative Park Service Unit. 1990) as a continuously-flowing perennial stream. It is possible that this categorization applies to just the north branch. The remainder of the stream, including the section at the project site is dry much of the time.

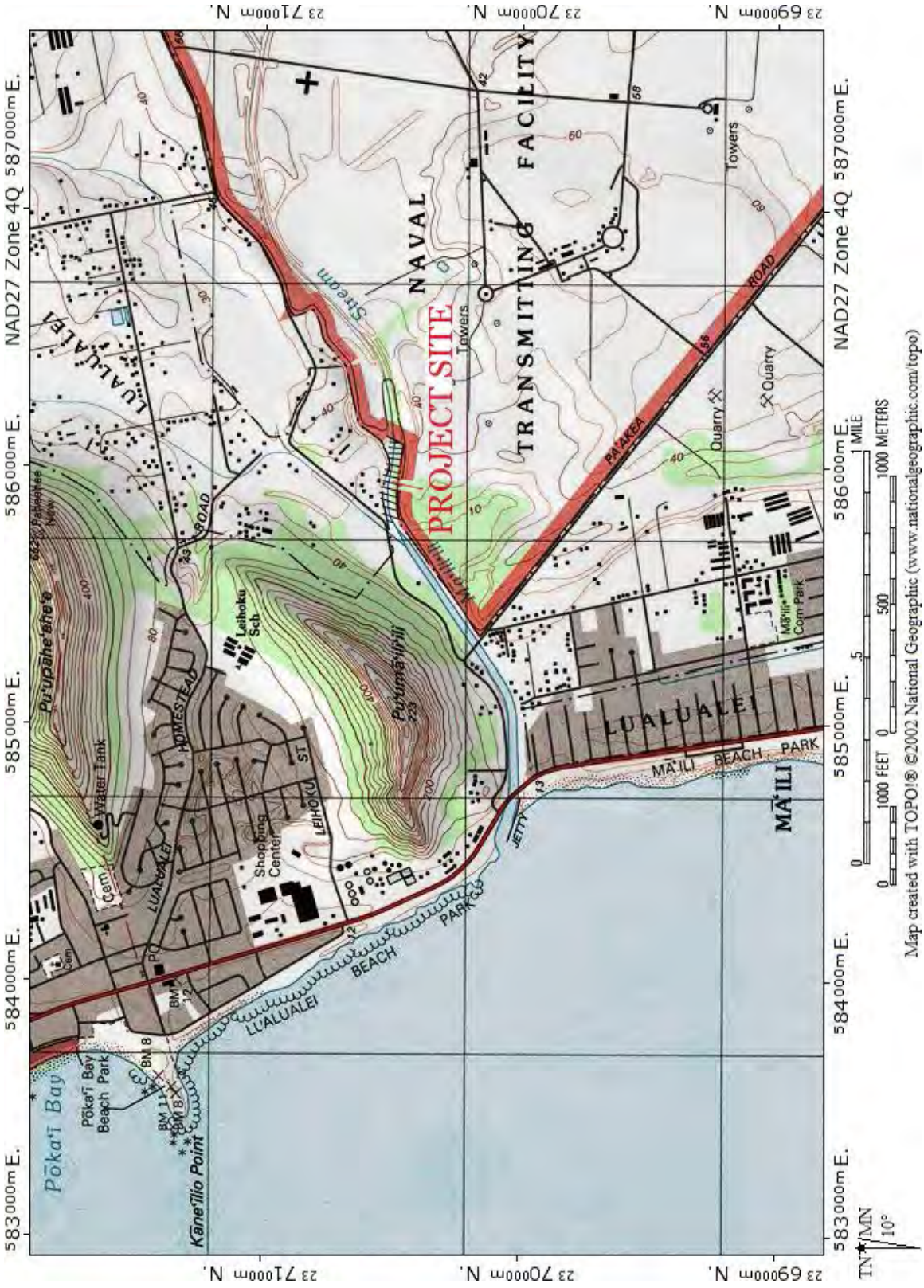

Figure 2. Project site (cross-hatched) on Māʻiliʻili Stream. Survey extended from site down channel to Paʻakea Road.

The upper watershed is mostly within the Naval Transmitting Facility at Lualualei Reservation. These several branches converge between 15 and 24-m (50 to 80-ft) elevations. A northern branch drains the west side of Puʻukaʻilio and joins the main stream just downstream of the project site. The concrete-lined channel of this northern branch is crossed by a bridge carrying Māʻiliʻili Road adjacent to the project site.

The entire reach of Māʻiliʻili stream (and it's several branches), from the mouth located at the north end of Māʻili Beach Park to well within the Naval Reservation (to about the 20-m or 70-ft elevation) is contained in a highly modified, trapezoidal channel (see Appendix A for photographs in the survey area). This channel is concrete-lined (floor and side walls) from the Farrington Highway bridge, to a point approximately 45 m (150 ft) upstream of the smaller northern branch confluence (see Appendix photos A5 and A6). The concrete side wall continues along the right bank of the main branch for an additional 90 m (300 ft; see Photos A3 and A4) to provide erosion protection on the outside of a bend in the channel. The foot of this wall extension appears to be protected by a layer of loose-laid basalt boulders.

From the appearance of flotsam of dead seaweed and other debris of marine origin, the tide must reach at least to the end of the concrete floor of the channel, a distance of nearly 410 m (1350 ft) inland from the stream mouth. Thus, saline water mixes with fresh water within the project area to create a slightly brackish environment (see Table 1).

Table 1. Basic water quality data from the project vicinity, collected September 8, 2009.

Location	Time	Temp. °C	Sal. ppt	pH	DO mg/l (% sat)
Pond upper end	11:40	29.2	4	8.76	8.33 (111)
Pond lower end	10:45	26.3	4	7.87	7.34 (93)
Confluence*	11:00	28.8	2	8.42	16.73 (219)
Paʻakea St. bridge	11:10	27.2	20	8.08	10.32 (145)

* Of north and main branch; in concrete-lined channel

In the project area, the aquatic environment is a pond running down the center of the channel for a distance of about 150 m (500 ft). Width of this pond is on the order of 5 to 8 m (15 - 25 ft). Concrete debris lines a part of the right bank (Photos A3 and A4), the upper end of the pond (Photo A2), and a small portion

of the left bank (Photos A2 and A3). No evidence could be seen of water entering the pond area from upslope, and the bed appears dry up from the concrete debris crossing the channel for as far as could be seen from outside the U.S. Government fence. Nonetheless, a steady outflow of water was observed leaving the pond over the low sill that is the start of the concrete channel bed at the downstream, end of the pond. This flow was modest in volume but more than a trickle. Possibly some of the flow may be accounted for as representing the outgoing tide, but the low salinity suggests the pond is being maintained by other than tidal influx. The slightly brackish salinity could as well be that of groundwater feeding into the pond rather than mixing of saline tidal influx and fresh groundwater. A phytoplankton bloom not evident in any other area was observed in a small, semi-isolated area at the very upper end of the pond (Photo A2). This observation suggests there is groundwater with elevated nutrient content entering in this area. Because the salinity here was the same as measured elsewhere, the pond water at the time of our observations would seem to be brackish groundwater.

Figure 3. Portion of the pond at the project site with dense areas of submergent (widgeon grass) and emergent (sprangletop) vegetation.

The bottom of the pond is mostly a soft muck several centimeters (inches) deep, with scattered boulders. Water depths are generally under 0.3 m (1 ft). Vegetation lines the shallow areas, dominated by widgeon grass (*Ruppia maritima*; a grass-like aquatic plant) and sprangletop (*Leptochloa fusca uninervia*; a wetland grass; see Fig. 2, above). This "pond" feature would qualify as a wetland under the definition used by the U.S. Army Corps of Engineers (USACE, 1987).

Project Area Flora

Table lists all of the plant species noted during the survey, which concentrated on the bottom of the channel, but also included are species found on the artificial banks and along the access road (left bank) into the channel. Relative abundances are given. Species marked with note <1> are those associated with the channel bottom in the project area.

Table 2. Listing of plants (flora) for the lower Māʻiliʻili Stream channel restoration project, Māʻili, Oʻahu.

Species listed by family	Common name	Status	Abundance	Notes
	FLOWERING PLANTS			
	DICOTYLEDONES			
AIZOACEAE				
Trianthema portulacastrum L.	---	Nat	U	<1, 2>
AMARANTHACEAE				
Amaranthus spinosus L.	spiny amaranth	Nat	R2	
Amaranthus virdis L.	slender amaranth	Nat	R	
ASTERACEAE (COMPOSITAE)				
Lactuca serriola L.	wild lettuce	Nat	† R	
Pluchia carolinensis (Jacq.) G. Don	sourbush	Nat	C	<1>
Pluchia indica (L.) Less.	Indian fleabane	Nat	C	<1>
Verbesina encelioides (Cav.) Benth.	golden crownbeard	Nat	U3	
Xanthium strumarium var. *canadense* (Mill.) Torr. ex A. Gray	cocklebur	Nat	† R	<1>
BATACEAE				
Batis maritima L.	pickleweed	Nat	A	<1>
BORAGINACEAE				
Heliotropium curassavicum L.	*kīpūkai*, seaside heliotrope	**Ind**	C	<1>
Heliotropium procumbens Mill.	---	Nat	U	<1>

Table 2 (continued).

Species listed by family	Common name	Status	Abundance	Notes
CHENOPODIACEAE				
Atriplex semibaccata R. Br.	Australian saltbush	Nat	C	<1>
Atriplex suberecta Verd.	---	Nat	A	<1>
Chenopodium murale L.	*ʻāheahea*	Nat	U	
CONVOLVULACEAE				
Ipomoea obscura (L.) Ker-Gawl.	field bindweed	Nat	U	
Ipomoea triloba L.	little bell	Nat	U	<1, 2>
Merremia aegyptica (L.) Urb.	hairy merremia	Nat	R	
CUCURBITACEAE				
Coccinia grandis (L.) Voigt	scarlet-fruited gourd	Nat	R	
EUPHORBIACEAE				
Chamaesyce hirta (L.) Millsp.	garden spurge	Nat	U3	
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	Nat	U	
Ricinus communis L.	castor bean	Nat	U2	
FABACEAE				
Desmanthus pernambucanus (L.) Thellung	virgate mimosa	Nat	R	
Desmodium tortuosum (Sw.) DC	Florida beggarweed	Nat	R	
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	U	
Indigofera hendecaphylla Jacq.	creeping indigo	Nat	U	
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	*kiawe*	Nat	O	<1>
Sena cf. *surattensis* (N.L. Burm.) H. Irwin & Barneby	*kolomana*	Nat	R	
LAMIACEAE				
Leonotis nepetifolia (L.) R. Br.	lion's ear	Nat	† U3	
MALVACEAE				
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	Nat	R	
Malvastrum coromandelianum (L.) Garck	false mallow	Nat	U	
Sida ciliaris L.	---	Nat	U	
Sida rhombifolia L.	Cuba jute	Nat	R	
Sida spinosa L.	prickly sida	Nat	U	<1>
NYCTAGINACEAE				
Boerhavia coccinea Mill.	false alena	Nat	O	<1>
PORTULACACEAE				
Portulaca oleracea L.	pigweed	Nat	U	
RHIZOPHORACEAE				
Rhizophora mangle L.	American mangrove	Nat	U	<1>

Table 2 (continued).

Species listed by family	Common name	Status	Abundance	Notes
SOLANACEAE				
Nicandra physalodes (L.) Gaertn.	apple-of-Peru	Nat	† R	
Nicotiana glauca R.C. Graham	tree tobacco	Nat	R	
Solanum sp.	juv.	?	R	<2>
STERCULIACEAE				
Waltheria indica L.	*ʻuhaloa*	Nat	R	
FLOWERING PLANTS				
MONOCOTYLEDONES				
CYPERACEAE				
Cyperus rotundus L.	nut grass	Nat	R1	<1>
POACEAE				
Cenchrus ciliaris L.	buffelgrass	Nat	C	<1>
Chloris barbata (L.) Sw.	swollen fingergrass	Nat.	U	<1>
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat	O	<1>
Leptochloa fusca uninervia (J. Presl.) N. Snow	sprangletop	Nat	AA	<1>
Setaria verticillata (L.) P. Beauv.	bristly foxtail	Nat.	† U	<1>
Sporobolis cf. *indicus* (L.) R. Br.	West Indian dropseed	Nat	O	<1>
Urochloa maxima (Jacq.) Webster	Guinea grass	Nat.	O	<1>
RUPPIACEAE				
Ruppia maritima L.	widgeon grass	**Ind**	AA	<1>

Legend to Table 2

STATUS = distributional status for the Hawaiian Islands:
Ind = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

ABUNDANCE = occurrence ratings for plants by area:

R – Rare	seen in only one or perhaps two locations.
U - Uncommon-	seen at most in several locations
O - Occasional	seen with some regularity
C - Common	observed numerous times during the survey
A - Abundant	found in large numbers; may be locally dominant.
AA - Very abundant	abundant and dominant; defining vegetation type.

Numbers following an occurrence rating indicate clusters within the survey area. The ratings above provide an estimate of the likelihood of encountering a species within the specified survey area; numbers modify this where abundance, where encountered, tends to be greater than the occurrence rating:
1 – several plants present
2 - many plants present
3 – locally abundant

NOTES: <1> – Plants generally associated with stream, stream banks.
<2> – Plant lacking key diagnostic characteristics (flower, fruit).
† -- Seen only as dead plant matter (dry season remnant).

The flora is overwhelmingly dominated by non-native species, exceptions being the abundant widgeon grass and seaside heliotrope (*Heliotropium curassavicum*), which are regarded as an indigenous species (native to Hawai'i and other Pacific locations). A majority of the species listed are found growing on and along the top of the high, manmade sidewalls of the channel where these are not concrete-lined. Parts of these "banks" are maintained by cutting (*kiawe* and *koa haole*) and spraying. The floor of the channel in the project area, aside from the two species described from the pond itself, supports pickleweed (*Batis maritima*), sourbush (*Pluchia indica* and *P. carolinensis*), saltbush (*Atriplex semibaccata* and *A. suberecta*), and seaside heliotrope as common to abundant. This vegetation (the species marked by note <1> in Table 2) is characteristic of saline, limestone soils found near the coast on O'ahu. Several small mangrove trees (*Rhizophora mangle*) are established in the pond, further evidence that the ocean tide reaches this far inland.

Stream/Estuarine Biota

Two distinct aquatic environments are represented in the project area: 1) a concrete-line tidal estuary (Photos A5 and A6); and 2) a slightly brackish, pond-like feature with mixed sediment bottom and minimal tidal influence at the project site (Photos A2 to A4). These areas share much of the same biota with some exceptions indicating the stronger influence of the sea on the estuarine reach and of the land on the ponds-like reach.

Mozambique tilapia (*Orechromis mossambicus*), black-chin tilapia (*Sarotherodon melanotheron*) and mollies (*Poecilia salvatoris*/*mexicana* hybrid) are abundant throughout the shallow waters of the project area. A glass shrimp (*Palaemonetes* sp.) is also abundant, clinging to the prop roots of mangrove trees (*Rhizophora mangle*) and sheltering in widgeon grass (*Ruppia maritima*). Mullet (*Mugil cephalus*), Samoan crabs (*Scylla serrata*), and crenate swimming crabs (*Thalamita crenata*) are sighted occasionally in deeper parts of the estuary. The chlorophyte, *Schizomeris leibleinii* is the only macro-algae identified growing attached to the substrate, though several marine species (including *Acanthophora spicifera*, *Liagora* sp., *Padina* sp., and *Ulva fasciata*) are present drifting unattached in the water column of the estuary.

The long shallow run down the concrete channel is home to less biota than either the pond at the project site or the estuary at and bewlow the Pa'akea Road bridge. The concrete stream channel is encrusted with blue green algae (*Anabaena* sp., *Leptolyngbya tenuis*; Fig. 4) and diatoms (*Synedra ulna*). Juvenile tilapias (*O. mossambicus*) school abundantly near the stream confluence downstream just down from the project site. The Samoan crab and estuarine grapsid (*Metopograpsus thukuhar*) are also present near the confluence as well

as further downstream near Paʻakea St. Mullet, tilapia, mollies and *āholehole* (*Kuhlia xenura*) form multi-specific schools in the channel near the Paʻakea St. bridge.

Table 3. Checklist of marine and aquatic biota observed on September, 8, 2009 in the estuarine reach of Māʻiliʻili Stream, Oʻahu.

PHYLUM, CLASS, ORDER FAMILY ***Genus species name***	**Common name**	**Abundance**	**Status**
	BLUE-GREEN ALGAE		
CYANOPHYTA			
Anabaena sp.		P	--
Calothrix sp.		P	--
Leptolyngbya tenuis		P	--
Lyngbya semiplena		P	**Ind**
	SEAWEEDS		
CHLOROPHYTA			
Schizomeris leibleinii		P	
Ulva fasciata		R	**Ind**
PHAEOPHYTA			
Padina sp.		U	**Ind**
RHODOPHYTA			
Acanthophora spicifera		O	**Ind**
Liagora sp.		R	**Ind**
	DIATOMS		
BACILLARIOPHYTA			
Synedra ulna		P	
	INVERTEBRATES		
ARTHROPODA, INSECTA, ODONATA			
AESHNIDAE			
Anax junius	common green darner	O	**Ind**
COENAGRIONIDAE			
Ischnura posita	fragile forktail	R	**Ind**
Ischnura ramburii	Rambur's forktail	O	**Ind**
LIBELLULIDAE			
Crocothemis servilla	scarlet skimmer	C	**Ind**
Orthemis ferruginea	wine-colored dragonfly	O	Nat
ARTROPODA, MOLLUSCA, GASTROPODA			
RANELLIDAE			
Cymatium intermedium†	Hawaiian hairy triton	R	**Ind**

Table 3 (continued).

PHYLUM, CLASS, ORDER FAMILY ***Genus species name***	**Common name**	**Abundance**	**Status**
ARTHROPODA, MALASTRACA, DECAPODA			
PALAEMONIDAE			
Palaemonetes sp.	grass shrimp	A	Nat
PORTUNIDAE			
Scylla serrata	Samoan crab	O	**Ind**
Thalamita crenata	crenate swimming crab	O	**Ind**
GRAPSIDAE			
Metopograpsus thukuhar	shore crab *kūkūau*	U	**Ind**
	FISHES		
CHORDATA, ACTINOPTERYGII			
MUGILIDAE			
Mugil cephalus	mullet, *ʻamaʻama*	O	**Ind**
POECILIIDAE			
Gambusia afffinis	mosquitofish	A	Nat
Poecilia sp. hybrid complex (*salvatoris*/*mexicana* group)	liberty/Mexican molly	A	Nat
KUHLIIDAE			
Kuhlia xenura	Hawaiian flagtail, *āholehole*	R	**End**
CICHLIDAE			
Oreochromis mossambicus	Mozambique tilapia	A	Nat
Sarotherodon melanotheron	black chin tilapia	A	Nat
	BIRDS		
CHORDATA, AVES			
ARDEIDAE			
Bubulcus ibis	cattle egret	(1)	Nat
CHARADRIIDAE			
Himantopus mexicanus knudseni	Hawaiian stilt; *aeʻo*	(3)	**End**
SCOLOPACIDAE			
Heteroscelus incanus	*ʻulili*, wandering tattler	(3)	**Ind**

Table 3 (continued).

KEY TO SYMBOLS USED:

Status:

Nat. - naturalized. An introduced or exotic species.
Ind. - indigenous. A native species also found elsewhere in the Pacific.
End. - endemic - A native species found only in the Hawaiian Islands.

Abundance

P - present; not common, but unable to assess abundance.
R - rare; only one or two individuals seen.
U - uncommon; several individuals seen, in some habitat places visited.
C - common; numerous individuals seen, or seen in most habitat places visited.
A - abundant; numerous in most or all habitat places visited
(n) – actual number counted in survey area.

† - species identified from non-living material, test, or shell

Figure 4. Wetted surface of the concrete channel of lower Māʻiliʻili Stream supporting an encrusting growth of blue-green algae and diatoms adapted to extreme conditions of heat, light, salinity, and moisture fluctuations.

Conclusions

Although a highly modified aquatic environment, lower Māʻiliʻili Stream, includes a brackish wetland and associated pond(s) that are attractive to a number of aquatic organisms, including the endangered, Hawaiian stilt (*Himantopus mexicanus knudseni*; USFWS, 2005, 2009). Given the dryness of summer season conditions on leeward Oʻahu, it is likely that suitable aquatic habitats for many of these organisms are limited to the man-made flood-control channels found all along the Waiʻanae coast. Although no native *ʻoʻopu* (gobies/eleotrids) were observed during our survey, conditions (wide, shallow pond with easily stirred up fine sediment) were not at all conducive to their discovery. The three common native Oʻahu species were observed recently in nearby Māʻili Stream (*AECOS*, 2009) and would likely be present at the project site in small numbers.

References

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Appendix A

Lower Māʻiliʻili Stream

September 8, 2009

Figure A1.

Dry bed of Māʻiliʻili Stream at the upper end of the project site. Naval Reservation boundary marked by chainlink fence crossing stream bed. Stream bed is entirely concrete debris fill in this area.

Figure A2.

Edge of recent concrete debris fill across channel at upper end of pond. Portion of pond seen here was turbid green, indicating an algal blume in the water. Typically this means water high in nutrients is seeping in at this location. The salinity at 4 ppt was the same as measured elsewhere in the pond.

Figure A3.

View from the upper end of the pond at the project site. Note concrete debris placed on both sides of the channel and end of concrete sidewall along right bank midway along pond.

Figure A4.

View of pond at project site looking downstream (channel centerline has been staked). Note concrete debris on right channel.

Figure A5.

View looking upstream from just below the confluence of the northern branch (left) and main branch (right) of Māʻiliʻili Stream. Green patch in main channel above floating boom is the pond at the project site. Bridge on northern branch is Māʻiliʻili Road crossover.

Figure A6.

View down the channel towards the Paʻakea Road bridge (note biologist under bridge sampling just to right of the bridge support column). Flow in channel is combined flows from Māʻiliʻili Stream and the northern branch of Māʻiliʻili Stream. Aquatic fauna is very sparse in this area, but increases near the bridge.

Photo A1 (above) and Photo A2 (below).

Photo A3 (above) and Photo A4 (below).

Photo A5 (above) and Photo A6 (below).