

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



March 14, 2023

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Deputy Manager

Mr. Scott Glenn, Director
Office of Planning and Sustainable Development
Environmental Review Program
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Glenn:

SUBJECT: Honolulu Board of Water Supply Final Environmental Assessment
for the Proposed Newtown 550' Exploratory Well in Waimalu, Island of
Oahu, Tax Map Key (1) 9-8-062:099

With this letter, the Honolulu Board of Water Supply (BWS) transmits a Final Environmental Assessment and Finding of No Significant Impact (FEA-FONSI) for the Newtown 550' Exploratory Well project. BWS kindly requests publication of the notice of availability for the FEA-FONSI for the subject project at 98-1876 Piki Street in Waimalu in the next edition of the periodic bulletin.

BWS kindly submits the required items for publication including a searchable pdf file of the FEA.

If there are any questions about this submittal, please contact our consultant, Ian Arakaki of The Limtiaco Consulting Group (TLCG) at 808-596-7790 or via email to ian@tlcghawaii.com.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Erwin Kawata, Deputy Manager
Ian Arakaki, TLCG

From: webmaster@hawaii.gov
To: [DBEDT OPD Environmental Review Program](#)
Subject: New online submission for The Environmental Notice
Date: Wednesday, March 15, 2023 1:51:45 PM

Action Name

Newtown 550' Exploratory Well in Waimalu

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Honolulu, O'ahu

Tax Map Key(s) (TMK(s))

(1) 9-8-062:099

Action type

Agency

Other required permits and approvals

Numerous, identified in Final Environmental Assessment

Proposing/determining agency

Honolulu Board of Water Supply

Agency contact name

Erwin Kawata

Agency contact email (for info about the action)

ekawata@hbws.org

Agency contact phone

(808) 748-5066

Agency address

630 South Beretania Street
Honolulu, HI 96843
United States
[Map It](#)

Was this submittal prepared by a consultant?

Yes

Consultant

The Limtiaco Consulting Group

Consultant contact name

Ian Arakaki

Consultant contact email

ian@tlcghawaii.com

Consultant contact phone

(808) 596-7790

Consultant address

1622 Kananui Street
Honolulu, HI 96817
United States
[Map It](#)

Action summary

BWS proposes to install an exploratory well and test pump at its existing facility at 98-1876 Piki Street in Waimalu, Oahu to collect data about the quantity and quality of the underlying groundwater source. The project site involves land that was previously disturbed for the development of the Newtown 550' Reservoir facility. The testing data will allow BWS to determine if the project site is a suitable location for a permanent groundwater well.

In early December 2021, BWS shut down its Halawa Shaft and halted pumping at the Aiea and Halawa Wells due to contamination of the groundwater aquifer by petroleum fuel releases from the Navy's Red Hill Bulk Fuel Storage Facility and Pipeline. The project is proposed at this time in response to the ongoing emergency situation and the uncertainty of returning all previously used water sources to full production. Once water testing is completed, the test pump would be removed and the well would be covered with a well cap.

Reasons supporting determination

HRS 343 significance criteria is discussed in Section 6, Determination of the Final EA

Attached documents (signed agency letter & EA/EIS)

- [Newtown-550-Agency-Letter.pdf](#)
- [FEA-Newtown-550.pdf](#)

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- [Newtown-550.zip](#)

Authorized individual

Ian Arakaki

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

**Final Environmental Assessment
for the
Newtown 550' Exploratory Well in Waimalu,
Island of Oahu, Hawaii**



Prepared For:

City and County of Honolulu
Board of Water Supply



Prepared By:



TOWNSCAPE, INC.
Environmental & Community Planning

March 2023

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Final Environmental Assessment
for the
Newtown 550' Exploratory Well in Waimalu,
Island of Oahu, Hawaii

Tax Map Key (1) 9-8-062:099

This environmental document has been prepared pursuant to
Chapter 343, Hawaii Revised Statutes

Prepared For:

City and County of Honolulu
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

Prepared By:

The Limtiaco Consulting Group
Civil Engineering and Environmental Consultants
1622 Kananui Street
Honolulu, Hawaii 96817

Townscape, Inc.
Environmental and Community Planning
900 Fort Street Suite 1160
Honolulu, Hawaii 96813

March 2023

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Appendix D	Archaeological Literature Review and Field Inspection Report
Appendix E	Architectural Inventory Survey
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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Definition</u>
ASA	Aquifer System Area
BMPs	Best Management Practices
BWS	Honolulu Board of Water Supply
CAB	State of Hawaii, Department of Health, Clean Air Branch
City	City and County of Honolulu
CSH	Cultural Surveys Hawaii, Inc.
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DOFAW	State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife
DLNR	State of Hawaii, Department of Land and Natural Resources
DOH	State of Hawaii, Department of Health
DOT	State of Hawaii, Department of Transportation
DPP	City and County of Honolulu, Department of Planning and Permitting
DTS	City and County of Honolulu, Department of Transportation Services
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
HAR	Hawaii Administrative Rules
HECO	Hawaiian Electric Company, Inc.
HFD	City and County of Honolulu Fire Department
HPD	City and County of Honolulu Police Department
HRS	Hawaii Revised Statutes
IRHB	State of Hawaii Department of Health, Indoor and Radiological Health Branch
LUO	(City and County of Honolulu) Land Use Ordinance
MASON	Mason Architects, Inc.
MGD	million gallons per day
msl	mean sea level

LIST OF ABBREVIATIONS (Continued)

<u>Abbreviation</u>	<u>Definition</u>
NPDES	National Pollutant Discharge Elimination System
OISC	Oahu Invasive Species Committee
OTS	Oahu Transit Services, Inc.
PUC	Primary Urban Center
sf	square foot/feet
SDWB	State of Hawaii Department of Health, Safe Drinking Water Branch
SHPD	State of Hawaii Department of Land and Natural Resources, Historic Preservation Division
SMA	Special Management Area
TMK	Tax Map Key
USFWS- PIFWO	U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office

PROJECT SUMMARY

Applicant:	Honolulu Board of Water Supply (BWS) 630 South Beretania Street Honolulu, Hawaii 96843 Erwin Kawata, Deputy Manager
Proposing/Determining Agency:	BWS
Location:	Aiea, Oahu, Hawaii
Tax Map Keys:	(1) 9-8-062:099
Land Area:	1.1937 acres (or 51,998 square feet) parcel area
Recorded Fee Owner:	City & County of Honolulu
Existing Use:	Newtown 550' Reservoir (BWS facility)
Proposed Use:	Newtown 550' Reservoir, Exploratory Well and Site Improvement (BWS facility)
Community Plan Region:	Primary Urban Center
Land Use Designations:	
State Land Use	Urban
Development Plan	Urban
County Zoning	P-2 Preservation
Action Requested:	The BWS proposes to install an exploratory well at its existing facility at 98-1876 Piki Street in Waimalu, Oahu to collect data about the quantity and quality of the underlying groundwater source. The testing data will allow BWS to determine if the project site is a suitable location for a permanent groundwater production well. In early December 2021, BWS shut down its Halawa Shaft and halted pumping at the Aiea and Halawa Wells due to contamination of the groundwater aquifer by petroleum fuel releases from the Navy's Red Hill Bulk Fuel Storage Facility and Pipeline. The project responds to the uncertainty of returning all previously used water sources to full production.
Agency Determination:	Anticipated Finding of No Significant Impact

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1. SETTING AND PROJECT DESCRIPTION

1.1. Introduction and Background

The Honolulu Board of Water Supply (BWS) is a semi-autonomous agency of the City and County of Honolulu (hereafter the City). BWS monitors the quality of domestic water to ensure it is safe to drink, and manages the development, operation, and maintenance of Oahu's municipal water system. The agency is responsible for maintaining the water resource and distribution system throughout Oahu in order to meet the current and future water supply needs of its customers.

In early December 2021, BWS shut down its Halawa Shaft and halted pumping at the Aiea and Halawa Wells due to contamination of the groundwater aquifer by petroleum fuel releases from the Navy's Red Hill Bulk Fuel Storage Facility and Pipeline. BWS increased the pumping rate at its other wells as a short-term remedy to meet the potable water demands for Oahu (Hofschneider, 2021). The defueling plan submitted to the Department of Health (DOH) indicates petroleum fuel will continue to be stored at the Navy's facility through 2024 (Ordonio, 2022; Jedra, 2022). The emergency measures implemented by BWS were still in effect at the time of this writing, and BWS is monitoring affected locations for indications of stress (e.g., higher chloride levels which may signify salt water intrusion) on the underlying groundwater aquifer. The time frame to reopen Halawa Shaft is unknown, according to BWS (Ibid.).

In May 2022, BWS publicly announced via a published Notice of Consultation that up to six prospective water source locations would be investigated. New water supplies would replace the water loss from the shutdown of the BWS Halawa Shaft, and the Aiea and Halawa Wells. Five sites identified in the notice are BWS facilities that contain existing water system infrastructure:

- Aiea 497' Reservoir & Booster 2
- Aiea 782' Reservoir & Booster 3
- Kaonohi 850' Reservoir
- Kaonohi 550' Reservoir & Booster
- Waimalu 217' Reservoir

In July 2022, BWS publicly announced via a published Notice of Consultation that the Newtown 550' Reservoir would be investigated as a potential water source location. Site-specific testing results will be analyzed to determine the feasibility of water source development at each site. The exploratory investigations are site and time specific, and each project proposed by BWS is subject to funding opportunities and constraints. The identification of new water sources is important from the perspective of BWS due to the uncertainty of returning all previously used water sources to full production.

BWS is proposing the use of County lands and funds to develop an exploratory well at the existing Newtown 550' Reservoir facility (hereafter Newtown 550' facility) to assess the viability of establishing a permanent groundwater production well. Consequently, the preparation of an Environmental Assessment (EA) pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and associated Title 11, Chapter 200.1, Hawaii Administrative Rules (HAR) is required. This EA was prepared to examine potential project impacts and to provide for public participation as required and defined in the statutes. The project will not occur within the Special Management Area (SMA).

In May and June 2022, BWS shared information about its investigation of new water sources via presentations and announcements at neighborhood board meetings, and distributed letters pertaining to the exploratory well at the Newtown 550' facility to agencies, organizations, and neighboring or nearby property owners and recorded lessees. The agencies and interested parties that provided formal comments to BWS are identified in Section 7, Public Agency Review and Consultation. Information and regulatory guidance from the formal comments is referenced throughout this EA; all of the received comments and responses are appended to this EA.

1.2. Project Need and Objectives

The proposed project involves the installation of an exploratory well and test pump at the Newtown 550' facility to facilitate the investigation of a prospective water source. The existing BWS facility is located within a developed residential neighborhood in the upper Waimalu neighborhood between Pearl City and Aiea. The parcel identified as Tax Map Key (TMK) (1) 9-8-062:099 is hereafter referred to as the project site. The proposed exploratory well at the project site will facilitate the necessary testing and analysis that will allow BWS to determine if the location is feasible for a permanent groundwater production well. Proposed actions at the project site will involve two phases:

- Phase 1 involves drilling an exploratory well and testing the water; and
- Phase 2 would convert the exploratory well into a permanent groundwater production well if the testing results are favorable.

Site preparation activities (e.g., tree stump removal and grading) in the area to be utilized for the exploratory well and test pump would occur during Phase 1. The exploratory well will allow BWS to collect data about the quantity and quality of the underlying groundwater source. The collected information will allow BWS to determine if the project site is a suitable location for a permanent groundwater production well. This EA examines the proposed activities in Phase 1 for the exploratory well.

Phase 2 would proceed after the water testing provides sufficient information about the yield, water quality, and aquifer properties at the project site. A permanent production well requires the installation of support facilities such as a well pump, motor, and piping. The Newtown 550' facility would need further improvements for the conversion of the exploratory well to a permanent groundwater production well. BWS will conduct additional consultations and prepare a subsequent EA for the permanent well when necessary. A new production well connected to the existing BWS system is expected to improve reliability when water sources are temporarily suspended due to the repair or periodic maintenance of BWS facilities, or due to sudden emergency situations.

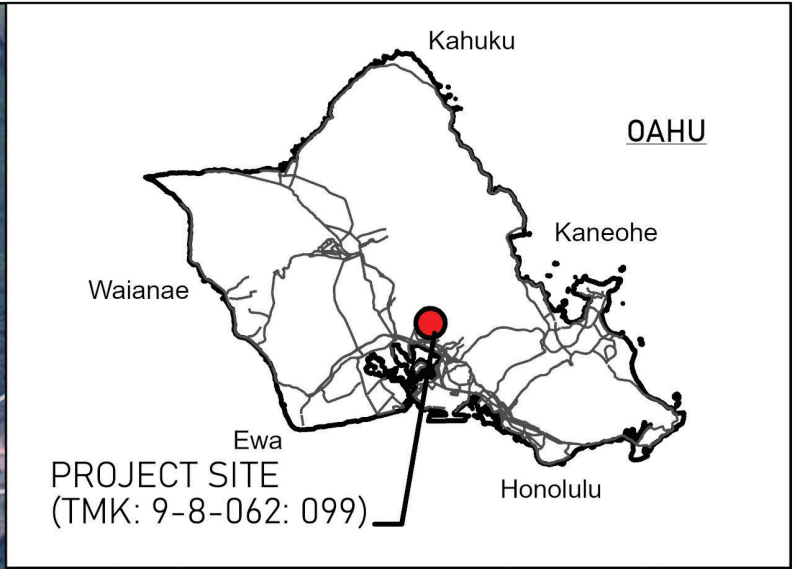
1.3. Site Location and Description

The Newtown 550' facility is located at 98-1876 Piki Street in the Newtown Estates residential development in Waimalu, Aiea, Hawaii. The facility is bordered to the west and east by residential homes, with one adjacent residence to the west and three adjacent residences to the east (see Figure 1). Piki Street borders the property to the south, and Punanani Gulch borders the property to the north. This northern adjacent parcel is part of a large undeveloped parcel owned by the Newtown Estates Community Association, which buffers the residential development.

The project site is approximately 1.19 acres and contains existing water infrastructure: a 500,000-gallon above-ground reservoir tank and a monitoring/control building. The existing BWS facility is surrounded by chain link fencing with three (3) strands of barbed wire extending above the chain link fence. Vehicular access to the project site is via an asphalt driveway that enters from the south of the parcel off of Piki Street and travels north to the reservoir and monitoring/control station (see Figure 2). There are some trees dotting the parcel surrounding the reservoir tank, and the remainder of the undeveloped areas of the property consist of exposed soil and grass.

The reservoir is constructed of reinforced concrete walls with a reinforced concrete cover and a low parapet wall. The large circular reservoir is 72 feet in diameter, approximately 20 feet high, and partly recessed into the sloping topography. Pedestrian access to the top of the reservoir tank consists of a narrow concrete walkway from the stairs and extends to a concrete ramp with curbs on either side. A small six (6) foot by nine (9) foot concrete cinder block building is located just west of the reservoir and is a monitoring/control building. The reservoir structure and monitoring/control building are painted the same green color as is typical of BWS buildings today. Photographs of the project site are in Appendix A.

The State land use designation for the project site is Urban (see Figure 3), which is characterized by city-like concentrations of people, structures and services. Urban land uses are subject to the City's land use policies and controls. The City's Land Use Ordinance (LUO) classifies the project site as P-2 Preservation (see Figure 4).





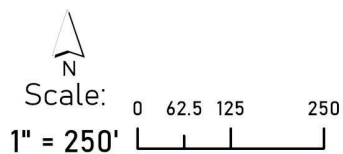
**PROJECT LOCATION
NEWTOWN 550' RESERVOIR
98-1876 PIKI ST
TMK: 9-8-062:099**



DRAWN BY: TOWNSCAPE, INC.

LEGEND

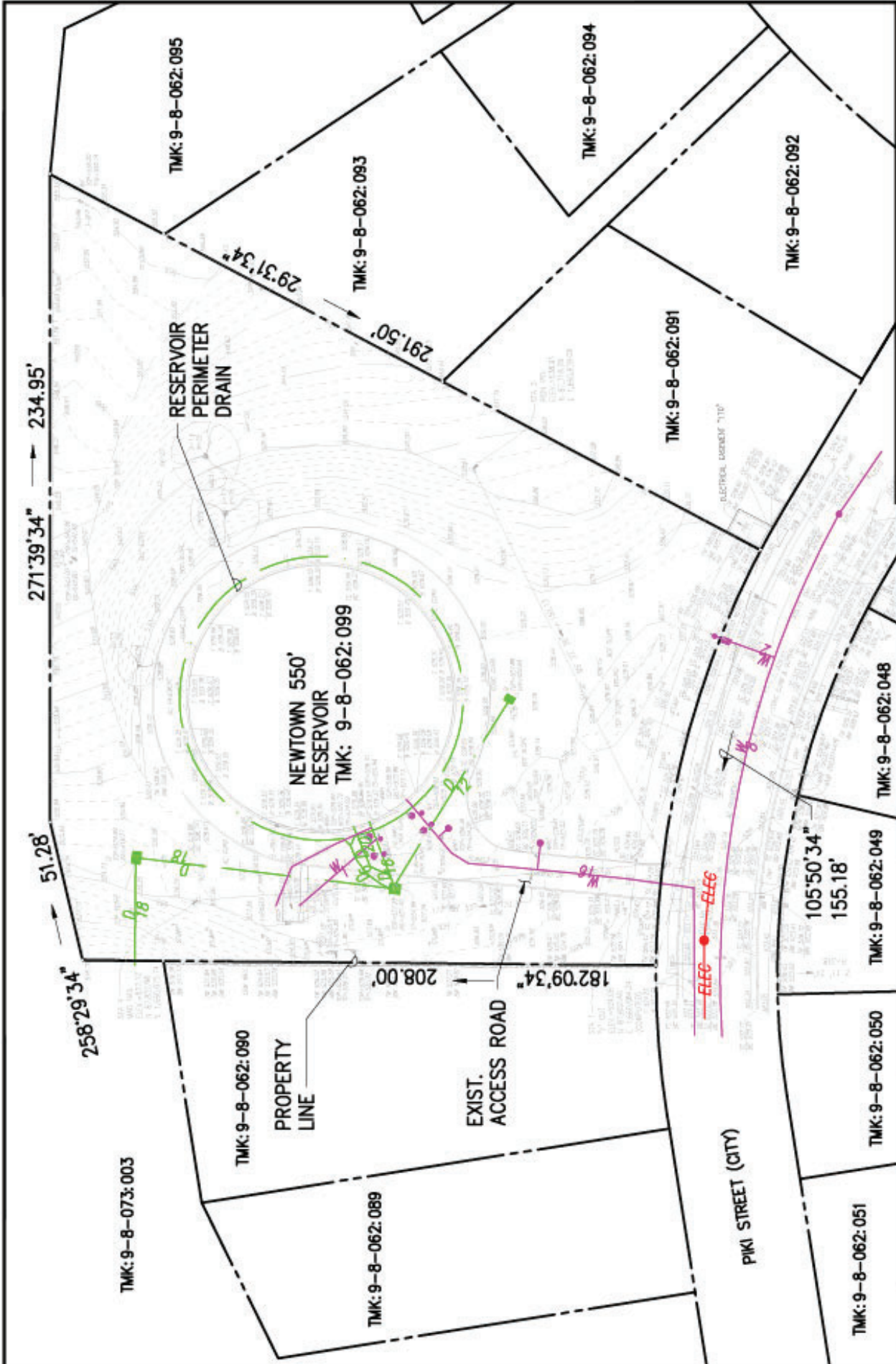
-  PROJECT LOCATION
-  PROPERTY LINE



NEWTOWN 550'
EXPLORATORY WELL
LOCATION & VICINITY MAP

FIGURE

1



LEGEND

- PROPERTY LINE
- WATER LINE
- DRAIN LINE
- ELECTRIC LINE

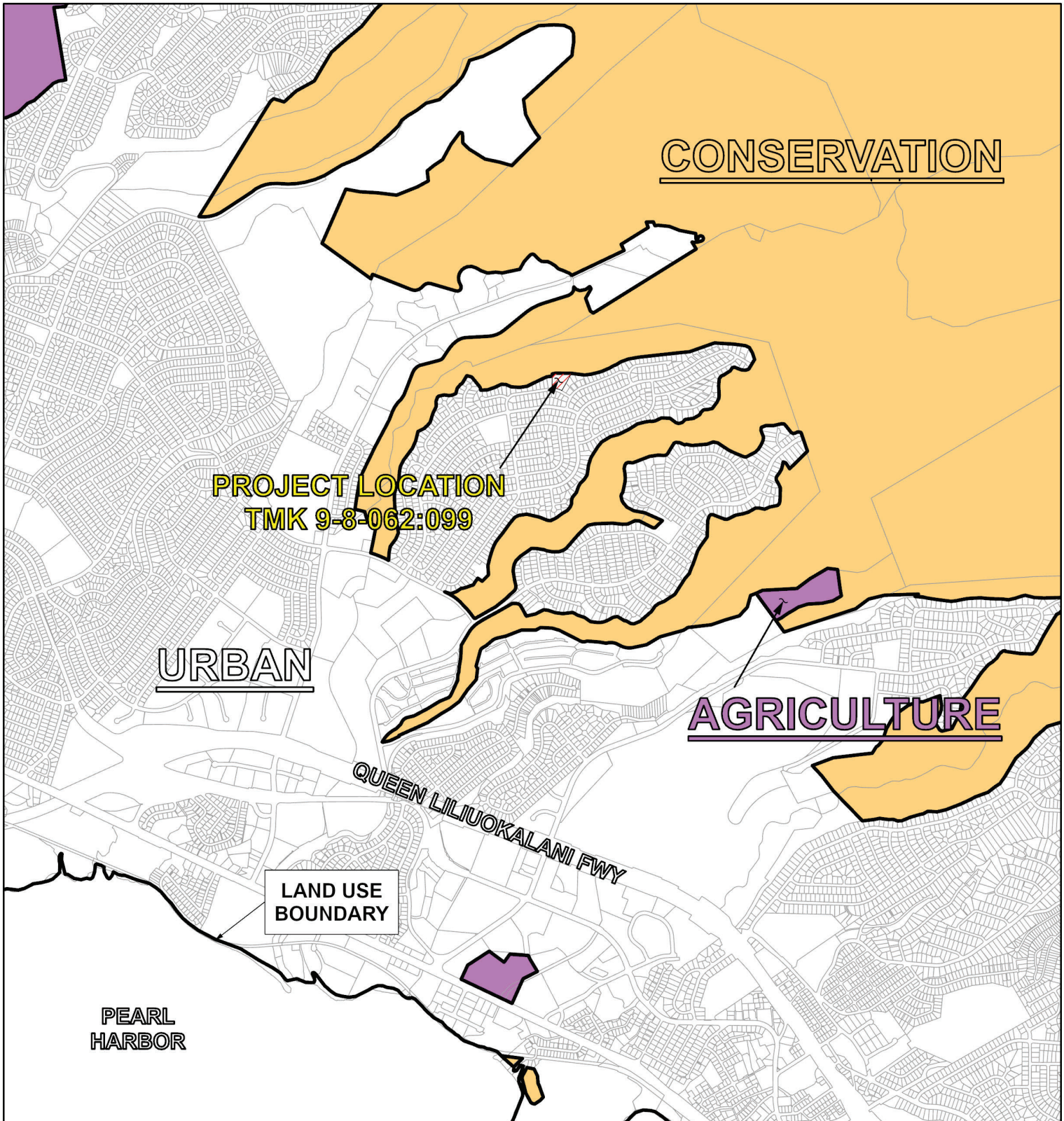
DRAWN BY: THE LIMITACO CONSULTING GROUP

Scale: 1" = 50'

Scale: 0 25 50

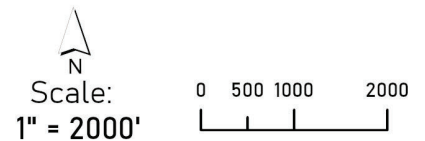
NEWTOWN 550' EXPLORATORY WELL
EXISTING CONDITIONS

FIGURE 2



DRAWN BY: TOWNSCAPE, INC.

SOURCE:
DEPARTMENT OF PLANNING AND PERMITTING HONOLULU LAND INFORMATION SYSTEM

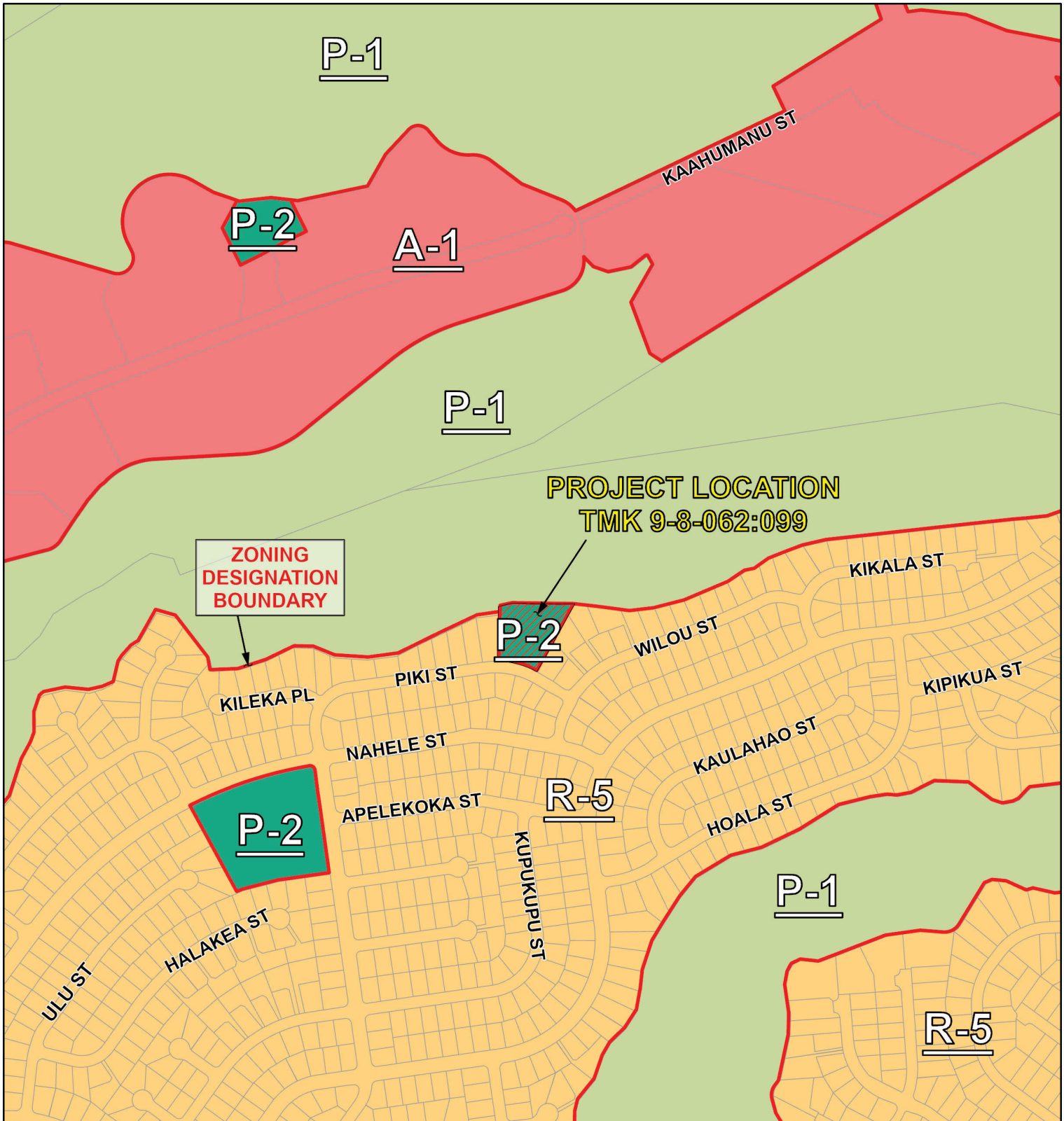


LEGEND

- | | | | |
|--|------------------|---|-------------------|
|  | PROJECT LOCATION |  | CONSERVATION |
|  | PROPERTY LINE |  | URBAN |
|  | AGRICULTURE |  | LAND USE BOUNDARY |

NEWTOWN 550'
EXPLORATORY WELL
STATE LAND USE MAP

FIGURE
3

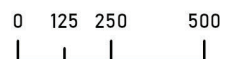


DRAWN BY: TOWNSCAPE, INC.

SOURCE:
DEPARTMENT OF PLANNING AND PERMITTING HONOLULU LAND INFORMATION SYSTEM



Scale:
1" = 500'



LEGEND

- | | | | |
|--|-----------------------------|--|-----------------------------|
| | PROJECT LOCATION | | P-1 RESTRICTED PRESERVATION |
| | PROPERTY LINE | | P-2 GENERAL PRESERVATION |
| | A-1 APARTMENT | | R-5 RESIDENTIAL |
| | ZONING DESIGNATION BOUNDARY | | |

NEWTOWN 550'
EXPLORATORY WELL
COUNTY ZONING MAP

FIGURE

4

P-2 is the General Preservation District and according to LUO §21-3.40, these are “lands designated urban by the State, but well-suited to the functions of providing visual relief and contrast to the City’s built environment, or serving as outdoor space for the public’s use and enjoyment” and for “areas unsuitable for other uses because of topographical considerations related to public health, safety, and welfare concerns.”

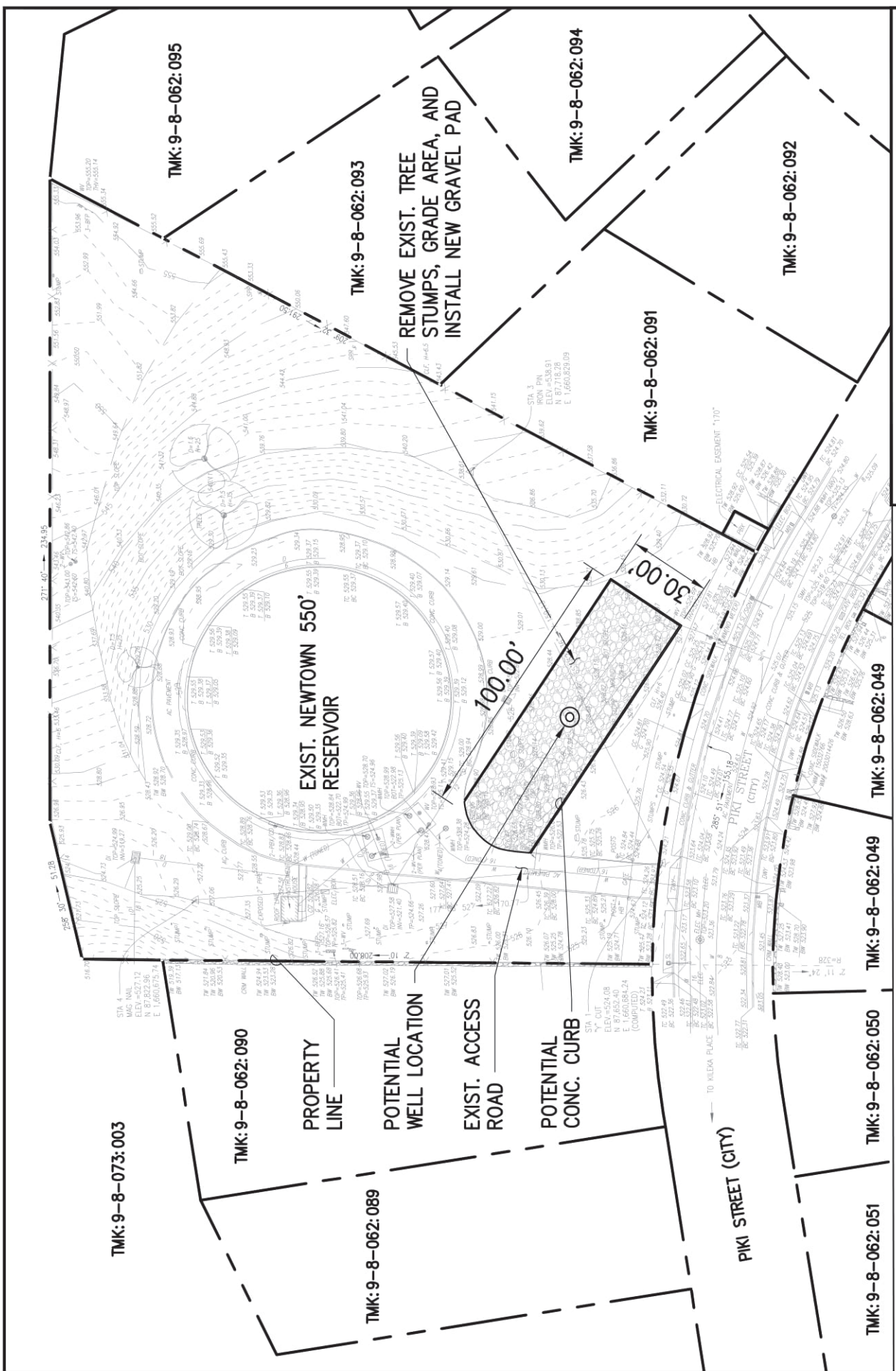
Existing facilities on the site are considered a public use and structure and similarly, the installation of an exploratory well would also be considered a public use / structure. Public uses and structures are permitted in all zoning districts. No discretionary land use permit is required for uses conducted by or structures owned or managed by the federal government, the State of Hawaii or the City to fulfill a governmental function, activity or service for public benefit and in accordance with public policy.

Utility installations including accessory uses and structures directly associated with the distribution of utility service are a permitted use. The definition of utility installations includes uses or structures, including all facilities, devices, equipment, or transmission lines, used directly in the distribution of utility services, such as water, gas, electricity, telecommunications other than broadcasting antennas, and refuse collection other than facilities included under waste disposal and processing. Pursuant to §21-2.130 of the City’s LUO, the Director of DPP may waive the strict application of development or design standards for public or public/private uses and structures, and utility installations.

1.4. Technical Considerations

The proposed project includes the placement of an exploratory well located to the south of the reservoir tank between the existing reservoir and the chain link fence line and adjacent to the existing vehicular driveway access (see Figure 5). A large gravel pad measuring 100 feet by 30 feet will be created for the placement of the exploratory well. The construction of this 3,000 square foot pad will consist of the removal of existing tree stumps, grading of the pad area, installation of the gravel pad, and potential construction of a small concrete curb surrounding the pad.

The preliminary well design is shown in Figure 6. The proposed exploratory well will be located at an elevation of 535 feet above mean sea level. The top of the basal aquifer in this location is approximately 15 feet above mean sea level or about 520 feet below ground surface. The well shaft will consist of a 40 inch in diameter open borehole extending from ground level to about 30 feet below the ground surface. The shaft will then taper to a 26 inch in diameter open borehole from about 30 feet below ground surface to about 518 feet below ground surface. From there, a 20 inch in diameter open borehole will extend from about 518 feet below ground surface to about 674 feet below ground surface.



LEGEND

- PROPERTY LINE
- ▨ NEW GRAVEL PAD
- ⊙ POTENTIAL WELL LOCATION

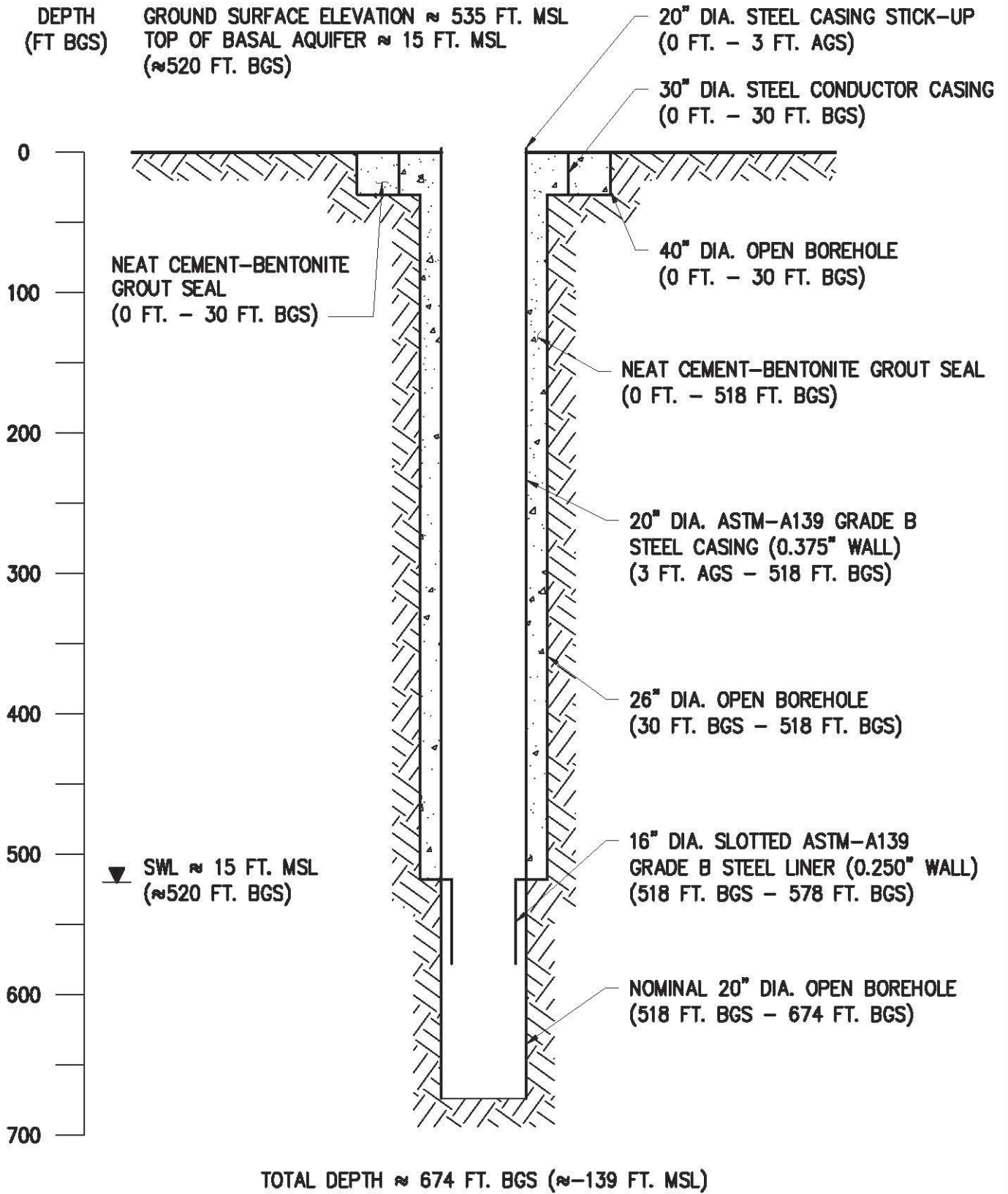
SCALE:
1" = 50'

0 25 50

FIGURE 5

**NEWTOWN 550' EXPLORATORY WELL
PROPOSED SITE PLAN**

DRAWN BY: THE LIMITACO CONSULTING GROUP



DRAWN BY:
INTERA INCORPORATED

Scale:
1" = 100' 0 25 50 100

NEWTOWN 550' EXPLORATORY WELL
PRELIMINARY WELL DESIGN

FIGURE

6

A 20 inch in diameter steel casing will be located at the top of the well shaft that will begin at ground level and will stick up about three feet above ground surface. A steel conductor casing measuring about 30 inches in diameter will extend from the top of the well shaft at ground level to about 30 feet below ground surface. The well shaft will have a 20 inch in diameter ASTM-A139 Grade B steel casing with a 0.375-inch wall extending from three (3) feet below ground surface to about 518 feet below ground surface. From 518 feet below ground surface, a 16-inch in diameter slotted ASTM-A139 Grade B steel liner with a 0.250-inch wall will extend to a depth of 578 feet below ground surface. No casing will extend from 578 feet below ground surface into the 20 inch in diameter open borehole. A neat cement bentonite grout seal will be used between the well shaft and the surrounding subsurface soils. See Figure 6 Preliminary Well Design for more details on the design of the proposed exploratory well.

After the completion of exploratory well construction, the well would be tested to determine yield, water quality, and aquifer properties. The testing period would include step-rate and constant-rate pumping that is expected to span approximately 5 days. Once water testing is completed, the test pump would be removed and the well would be covered with a well cap. A 20-inch diameter casing that protrudes 3 feet above ground would remain in place at the Newtown 550' facility. If the testing results indicate that the well is viable as a new water source, the exploratory well would be converted into a production well. A permanent groundwater production well requires a pump, motor, and piping. The Newtown 550' facility would need further improvements to connect the production well to the existing water supply system.

Anticipated short-term impacts associated with construction will be mitigated to the extent practical with the use of appropriate construction techniques and Best Management Practices (BMPs). For example, the construction contractor is expected to follow the guidelines in the City's "Rules Relating to Water Quality," which require erosion prevention and sediment control. Measures to control erosion and other pollutants are expected to be in place before any earthwork is initiated, and all disturbed areas would be permanently stabilized prior to removing the erosion and pollutant control measures. General guidance for selecting and implementing BMPs is available from the City's *Storm Water BMP Manual - Construction* (2017). All construction activities will comply with applicable Federal, State and County regulations and rules for erosion control.

Construction equipment such as the drill rig and other machinery will generate temporary noise that can be mitigated (e.g., use temporary sound wall to buffer noisy activities, monitor noise to avoid excessive levels). The construction contractor is expected to utilize BMPs such as scheduling construction activities during business hours on weekdays while many residents are away from their homes. Unavoidable and short-term noise would occur at the project site during the 12-hour step-rate pumping test and 96-hour constant-rate pumping test. Noise and other short-term

effects such as fugitive dust, intermittent traffic, and the generation of solid waste would cease upon project completion.

1.5. Project Schedule and Cost

Construction of the exploratory well may be able to proceed in fiscal year 2023. The estimated cost for the proposed exploratory well is approximately \$1.8 million.

2. DESCRIPTION OF EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION

2.1. Climate and Air Quality

The climate in the State of Hawaii is generally characterized by a two-season year: the summer period is warm and dry whereas the winter season is cool and wet. Rainfall distribution across Hawaii varies greatly according to geographic conditions, elevation, and long-term climatic cycles.

The project site is in the upper Waimalu area of Aiea, which has a mild semi-tropical climate similar to the rest of the State of Hawaii. Average temperatures at the project site range from 70 degrees Fahrenheit in February to 77 degrees Fahrenheit in August (Giambelluca, 2014). The average annual rainfall at the project site is estimated to be 42 inches; the wetter months of the year are November through April (Ibid). Trade winds in the project vicinity are generally from the northeast. Strong winds are known to occur in connection with storm systems that disrupt climatic patterns.

The Newtown 550' facility is located within a developed residential area, and ambient air quality may be influenced by nearby human activities, emissions from vehicular travel in the area, and natural pollutants such as plant pollens and spores. The prevailing northeast trade winds help to circulate and transport vehicular emissions and other airborne pollutants away from the source.

Impacts and Mitigation Measures

No measurable adverse effect on climatic conditions is anticipated from an exploratory well at the existing BWS facility that is installed and capped while BWS evaluates the potential use of the project site for a permanent groundwater production well. No mitigation is warranted or proposed.

Ambient air quality will be temporarily affected by construction-related vehicles, equipment, and activities that would generate fugitive dust and emissions. Fugitive dust concerns fall within the purview of the DOH Clean Air Branch (CAB) Enforcement Section.

Airborne, visible fugitive dust during construction of the exploratory well will be controlled at the project site by the contractor in accordance with Air Pollution Control standards stated in HAR §11-60.1-33, "Fugitive dust." Reasonable measures are required to control airborne, visible fugitive dust from the road areas and during the various phases of construction. Exhaust emissions can be reduced by keeping construction equipment and vehicles properly tuned and maintained, and minimizing unnecessary idle time. The contractor will be required to develop and submit a dust control management plan to BWS that identifies all activities that may generate airborne, visible fugitive dust and

proposed mitigative measures. The measures may include and are not limited to the following:

- Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas after ground disturbance;
- Providing reasonable dust control measures during work hours, weekends, after hours, and prior to daily start-up of construction activities; and
- Controlling airborne, visible fugitive dust from debris being hauled away from the project site.

No long-term adverse impacts to air quality are anticipated from a proposed exploratory well at the Newtown 550' facility that is installed and capped. The proposed project consists of water system infrastructure that is not considered to be a major source of air pollutant emissions. Upon project completion, BWS personnel will periodically travel to the project site for routine activities, which represents a continuation of the travel patterns and activities that currently occur at the project site. No mitigation measures are warranted or proposed.

2.2. Topography, Geology and Soils

The Island of Oahu contains the Waianae and Koolau mountain ranges, which are connected by a central plateau. The older Waianae mountain range spans a distance of about 20 miles across the western third of Oahu. The younger Koolau mountain range extends for 37 miles in a northwest to southeast alignment across the eastern two thirds of the island. The project site is located on the leeward side of the Koolau range at approximately 535 feet above mean sea level. The project site and surrounding area is characterized by the steep northeast to southwest slopes of the Aiea Heights ridge. The flatter portions of the project site were previously graded for the development of the existing BWS reservoir and monitoring/control building.

The following information in this section is from the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (U.S. Department of Agriculture, Soil Conservation Service, 1972) unless noted otherwise. The Koolau Range is comprised of thin, narrow layers of basaltic lava flows. Dissected valleys were etched into the basalt range formations through weathering and natural erosion processes. Numerous dikes and small amounts of volcanic ash are present. The valley floors contain alluvium (e.g., clay, silt, sand, gravel, or similar material) and unconsolidated non-calcareous sediments transported from valley slopes by stream flows.

The project area consists of predominantly Manana Silty Clay Loam soil at a range of 12 to 25 percent slopes. A small section of the property along the northwest corner is made up of Helemano Silty Clay soil at a range of 30 to 90 percent slopes, and a very small section of the southeast corner of the property is Manana Silty Clay Loam at a range of 2 to 6 percent slopes. The Manana soil series is characterized by deep, well drained soils that were formed in material from weathering of basic igneous rock. These soils are found typically in the uplands and have slopes from 2 to 40 percent. These soils are found in the medial uplands of the Koolau mountain ranges on the island of Oahu from Honolulu to Waialua, and are not extensive comprising about 5,300 acres of area.

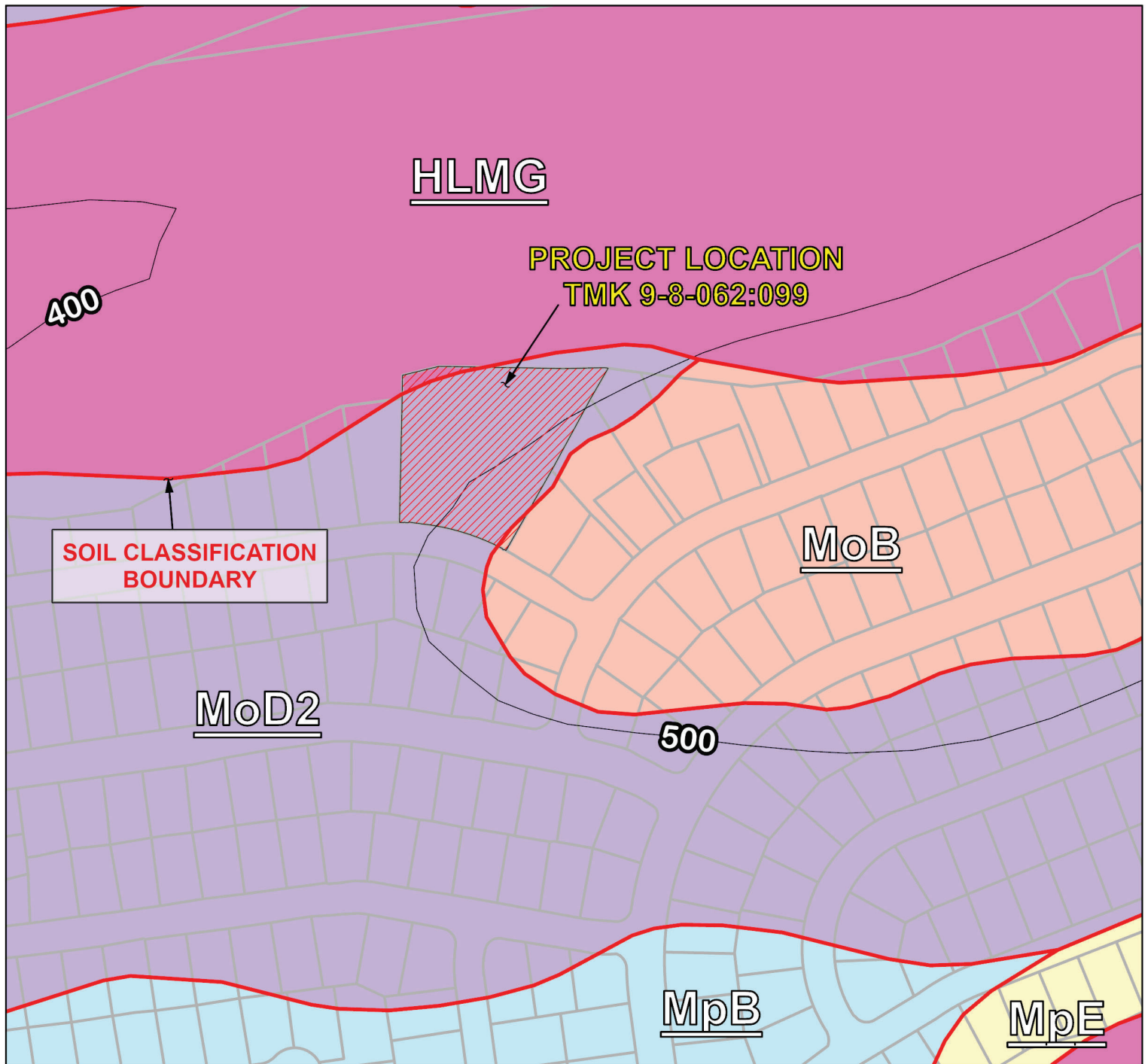
The Helemano soil series consists of deep, well drained soils that formed in alluvium and colluvium from basic igneous rock of the Waianae and Koolau mountain ranges. These soils are often found on the sides of gulches with slopes of 30 to 90 percent. The mean annual temperature is about 72 degrees Fahrenheit, and main annual rainfall is 30 to 60 inches. These soils are found in deep gulches and drainageways in the Wahiawa basin at the foothills of both the Koolau and Waianae mountain ranges and have a moderate extent of about 28,000 acres in area.

Figure 7 depicts the soil classifications and topographic map. According to preliminary recommendations from Hirata & Associates, Inc. (see Appendix B), the soil on the project site is expected to be dark reddish brown clayey silt with low to moderate expansion potential.

Impacts and Mitigation Measures

Project actions are expected to generally retain the overall topographic profile of the site. Grading and grubbing will be accomplished to the extent necessary within the limits of the affected construction area. Site work and grading will be minimized by siting the new exploratory well and appurtenant facilities close to the reservoir and monitoring/control building as shown in Figure 5.

The proposed exploratory well will consist of slab-on-grade. Preliminary recommendations from Hirata & Associates, Inc. (see Appendix B) state that the finish grades for the proposed exploratory well slab-on-grade and gravel pad are generally expected to match that of the existing topography. Site grading is therefore expected to consist of relatively shallow cuts and fills. Geotechnical engineers will conduct further investigations to provide recommendations for the proper design of proposed improvements such as the new gravel pad and retaining wall around it. The new retaining wall will hold the existing soil and sloping terrain in place.

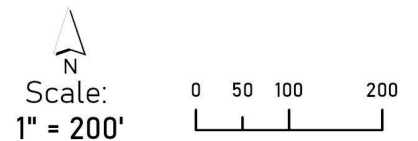


DRAWN BY: TOWNSCAPE, INC.

SOURCE:
 DEPARTMENT OF PLANNING AND PERMITTING HONOLULU LAND INFORMATION SYSTEM
 U.S. DEPT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE

LEGEND

- PROJECT LOCATION
- CONTOUR LINE
- PROPERTY LINE
- SOIL CLASSIFICATION BOUNDARY
- HLMG, HELEMANO SILTY CLAY, 30 TO 90 PERCENT SLOPES
- MoB, MANANA SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
- MoD2, MANANA SILTY CLAY LOAM, 12 TO 25 PERCENT SLOPES
- MpB, MANANA SILTY CLAY, 3 TO 8 PERCENT SLOPES
- MpE, MANANA SILTY CLAY, 25 TO 40 PERCENT SLOPES



NEWTOWN 550'
 EXPLORATORY WELL
 SOIL CLASSIFICATION AND
 TOPOGRAPHIC MAP

FIGURE
7

Proposed infrastructure will be properly designed with respect to the moderate expansion potential of subsurface soil within the footprint of new construction. Due to the moderate expansion potential of the clayey silt soil found at the site, the exploratory well concrete slab-on-grade should be underlain by a minimum 12 inches of granular fill with the upper six inches consisting of aggregate base course. The base course and structural fill should be compacted to a minimum 95 percent compaction. Project actions are expected to have no adverse impacts on the underlying geology and soils at the project site.

Earth disturbing activities during construction and site development may create exposed areas that are susceptible to erosion from wind and rain. BWS is expected to ensure that its construction contractor utilizes standard BMPs during construction such as the implementation of dust control measures that effectively minimize or prevent nuisance concerns from airborne, visible fugitive dust and the effects of wind erosion. Areas affected by project actions will be stabilized with gravel or landscape material, which reduces the long-term potential for erosion by water and wind. Mitigation that addresses sediment-laden runoff concerns is discussed in Section 2.3, Water Resource Considerations.

2.3. Water Resource Considerations

The proposed project will withdraw freshwater from the Waimalu Aquifer System Area (ASA) that is part of the Pearl Harbor Aquifer Sector Area. All aquifer sectors on Oahu except for the Waianae sector are designated Ground Water Management Areas under the regulatory authority of the Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM). Applicants for water use permits in designated Ground Water Management Areas must demonstrate that the proposed water use is reasonable and beneficial, necessary for economic and efficient utilization, and in the public interest.

The Waimalu aquifer is the 2nd largest aquifer on Oahu with an adopted *sustainable yield* of 45 MGD. *Sustainable yield* is defined in the State Water Code (Chapter 174C HRS) as the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the commission. Water Use Permits issued to BWS total 45.86 MGD in the Waimalu ASA out of a total 46.951 MGD in 2019. Water use permits exceed sustainable yield by 1.951 MGD, however, pumpage prior to the shut down of BWS sources from the Red Hill fuel release was 35.5 MGD or approximately 10 MGD less than the sustainable yield, largely due to water conservation savings and aquifer management. The total pumpage reduction from the three BWS sources that were shut down in December 2021 is 11 MGD. BWS was able to increase pumpage from other sources in the Waimalu ASA by 2 MGD, but the loss of the three sources has impacted the available pumping capacity to meet maximum day demand in the summer months. The loss

has caused an Alert Water Shortage condition in the Aiea-Halawa and Honolulu water systems with a voluntary 10 percent water conservation target during summer months until new replacement wells are on-line, which is expected to take approximately 5 to 7 years. If summer demand is not curtailed through water conservation, a Critical Water Shortage Condition could be declared resulting in mandatory water restrictions including conditions on building permit approvals.

Coordination between BWS and CWRM to install replacement wells and manage existing source pumpage within permitted uses through water conservation outreach is ongoing. The situation is influenced by the indefinite suspension of the three water sources mentioned in Section 1.1. Introduction and Background that were previously in use for the BWS water system.

Streams, wetlands, and other sensitive surface water resources are not present within the project site. The Waimalu ahupuaa includes two streams in the vicinity of the project area. Punanani Stream flows through Punanani Gulch which is located along the western end of the Newtown residential development approximately 0.1 miles from the project site. Waimalu Stream is located to the east of the residential development in Waimalu Gulch approximately 0.25 miles from the project site. Waimalu Stream flows from the upper reaches of the Koolau mountain range, and Punanani Stream drains the lower western portion of the Waimalu ahupuaa. Small tributaries in surrounding gulches drain into these streams. The Punanani Stream joins the Waimalu Stream between the area of the H1 Freeway and Kamehameha Highway south of the project area, where it then flows into Puuloa or Pearl Harbor.

Impacts and Mitigation Measures

Waimalu Aquifer. The proposed exploratory well addressed in this EA is a part of phase 1 activities as previously discussed in Section 1.2. Project Need and Objectives. If the exploratory well is successful, it could lead to phase 2 and the installation of a groundwater production well that would replace the water loss from the shutdown of the BWS Halawa Shaft, and the Aiea and Halawa Wells. The Waimalu aquifer pumpage is approximately 26 MGD or 58 percent of the 45 MGD sustainable yield with the shut down. Prior to the shut down, BWS pumped 35 MGD or 78 percent of the 45 MGD sustainable yield due to water conservation savings and aquifer management. Aquifer heads are high at 16-feet and source chloride content is low, below 130 milligrams per liter (mg/l) because pumpage is significantly below the sustainable yield. The comments from CWRM dated June 2, 2022 indicate that a Water Use Permit is required prior to the use of water, a Well Construction Permit is required before the commencement of any well construction work, and a Pump Installation Permit is required before ground water is developed as a source of supply. The permitting process provides additional assurances that the exploratory well and testing would not adversely impact water resources. If the exploratory well

testing is favorable, BWS intends to administratively transfer permitted use from the suspended water sources such that no increase in BWS permitted use will occur.

Streams, nearshore water resources and traditional and customary practices. No detrimental impacts to Punanani and Waimalu Streams are anticipated. These streams are not located near the proposed project, and the project will not alter existing drainage systems within the Waimalu ASA, therefore no impacts are anticipated.

As stated in *Geology and Ground-Water Resources of the Island of Oahu, Hawaii* (Stearns and Vaksvik, 1935), there are 5 large Pearl Harbor springs located near the coast well below the project site. Oriented east to west, these springs are: Kalauao, Waiau, Waimano, Waiawa and Waikele Springs. Aiea Stream is closest to and south of Kalauao Spring. Submarine springs are noted in the bulletin but are difficult to measure given the extended area of the Pearl Harbor lochs and estuaries. Large springs discharge freshwater from the basalt formation at the low points in the upper boundary of the caprock, which represents overflow of the artesian basin. In other words, the naturally occurring springs provide an abundant supply of water that flows to wetland areas surrounding Pearl Harbor. BWS monitors the chloride levels in Kalauao Spring that flow past the Sumida watercress farm. The chloride levels are stable at approximately 400 mg/l.

Approximately 20 fishponds that were once along the shoreline of Pearl Harbor have been reduced to two relatively intact fishponds as a result of sugarcane cultivation, the development of urban areas, and the expansion of military facilities (McDaniel, 2018). According to BWS, fishponds in the Aiea project area include Loko la Paaiau on the western edge of McGrew Point and a private unnamed fishpond makai of Pearl Kai Center. The effort to restore Loko la Paaiau has been underway since 2014. *Loi kalo* (or irrigated terraces for taro) cultivation is prominent at Waimano Spring west of the HECO Waiau power plant, at the Lau farm adjacent to the Sumida watercress farm makai of the Pearlridge Shopping Center and in lower Waiawa adjacent to Leeward Community College.

CWRM enhances freshwater flows to groundwater dependent ecosystems (GDE) by applying a conservative approach in selecting the lower range of groundwater sustainable yields in the State Water Resources Protection Plan. CWRM adopted the sustainable yield of the Waimalu aquifer at 45 MGD accepting the fact that 18 MGD of the USGS 2017 recharge estimate of 63 MGD will always flow into the nearshore waters supporting GDE and traditional and customary practices, if the aquifer was pumped to the full sustainable yield.

Since BWS reduced pumpage below the sustainable yield through water conservation, the unused balance will continue flowing to the coast.

Should CWRM consider increasing groundwater flows to the coast to enhance GDE, sustainable yields could be decreased based upon the results of future studies. Physical restoration of coastal habitats and fishponds and removal of invasive species can enhance ecosystems, supplementing actions that increase natural groundwater flows to nearshore waters.

Project Site. No detrimental impacts to water resources are anticipated at the project site, which is located in the upper Waimalu area at 550' in elevation. The exploratory well will allow BWS to investigate the quantity and quality of the underlying aquifer at this site. The regulatory processes that apply to public water system owners and operators are discussed in Section 2.11. Utilities (Water, Wastewater, Drainage).

Project actions are not expected to affect the water quality of any State waterbodies including surface water resources since the project site contains no wetlands, perennial streams, or other sensitive riparian habitats. Construction activities such as soil disturbance and material storage have the potential to cause short-term and temporary impacts to storm water runoff quality; however, the construction contractor will be required by BWS to implement temporary BMPs to mitigate these impacts. Treated process wastewater from well drilling activities will be properly controlled by the construction contractor to avoid improper discharges.

A National Pollutant Discharge Elimination System (NPDES) Permit for discharges of pollutants, including storm water runoff is required for the disturbance of one acre or more of total land area pursuant to HAR §11-55, "Water Pollution Control" effective January 15, 2022. The proposed project is anticipated to disturb an area of less than one acre, and DOH will be consulted if it is determined that the NPDES Permit is necessary. The permits that may apply include the NPDES General Permit Form I - Treated Process Wastewater Associated with Well Drilling Activities and the Industrial Wastewater Discharge Permit.

All construction activities will comply with applicable Federal, State and County regulations and rules for erosion control. BWS is expected to require its contractor to follow storm water BMP strategies such as the use of an inlet protection device to protect storm drain inlets that could receive runoff from the project site. The construction contractor is expected to provide controls that minimize the movement of sediment from the project site to off-site areas. All pollutants and materials that are dropped, washed, tracked, spilled, or

otherwise discharged from the project site to off-site areas must be cleaned using dry methods such as sweeping or vacuuming. Washing pollutants and materials that are discharged from the project site would be prohibited unless the material is sediment and is directed to a sediment basin or sediment trap.

In order to mitigate the cumulative effects that urbanization has on surface water quality, the City regulates new development and redevelopment projects that disturb at least one acre of land. Projects regulated under the City's storm water quality program must consider the use of Low Impact Development, source control, and retention/biofiltration in order to minimize the effects of development on storm water quality. The proposed project is expected to disturb an area of less than one acre and thus, will not be regulated under the City's storm water quality program.

2.4. Hazardous Materials and Solid Waste

There are no known threats pertaining to hazardous materials at the project site. Based on record drawings, the presence of asbestos-cement is not anticipated.

Normal operations at the BWS facility do not generate solid waste, and the existing BWS facility does not receive regular solid waste collection service from the City's Department of Environmental Services, Refuse Division or a private hauler.

Impacts and Mitigation Measures

If the presence of hazardous materials such as asbestos-cement is discovered, the DOH Indoor and Radiological Health Branch (IRHB) will be contacted and the contractor will be required to comply with all applicable State regulations regarding work with asbestos-cement. The exposure risks from hazardous materials such as asbestos-containing substances and lead-based paint are greatest when these materials are intentionally disturbed and handled. BWS will refer to the regulatory guidance of the DOH IRHB as the project proceeds. BWS will ensure that the contractor complies with guidance provided from the DOH.

2.5. Natural Hazards

Natural hazards that may threaten life and property on Oahu include tropical cyclones, earthquakes, floods and tsunami inundation, drought, wildfires, high wind and landslides. Many tropical cyclones have passed close enough to affect the State of Hawaii since the recording of such events began in the 1950s. Hurricane Iwa in 1982 and Hurricane Iniki in 1992 both brought destructive winds and torrential rains that resulted in significant property damage. Hurricane Iniki was connected to six deaths.

Recent earthquakes that had statewide impacts occurred on October 15, 2006. The earthquakes, which occurred off the Kona coast of Hawaii, had magnitudes of 6.7 and 6.0. The event caused property damage and triggered an island-wide electrical blackout on Oahu.

Tsunami evacuation zone maps for the State of Hawaii (Hawaii State Civil Defense, n.d.) identify low lying areas where evacuation is recommended since extensive damage to life and property may occur from seismic sea waves. The project site in the Waimalu area is away from the shoreline, beyond the reach of seismic sea waves, and outside the tsunami evacuation zone.

Climate change is expected to impact water resources. While acknowledging the uncertainty of future climate change scenarios, “researchers expect wet areas in Hawaii to get wetter and dry areas to get drier” (Townscape, Inc., 2019). Long sustained periods of drought have the potential to affect ground and surface water resources. In addition to temperature and precipitation changes, the effects of climate change may include sea level rise, and wildfires that occur with more frequency or more intensity. Climate change may also affect the frequency and intensity of severe storms that cause flooding.

Sea level rise has the potential to threaten life and property in coastal and low elevation areas. The existing BWS facility, which is located approximately 460 feet above msl, does not contain and is not adjacent to sea level rise vulnerability zones, which are areas impacted by 3.2 feet of sea level rise, according to the Hawaii Sea Level Rise Viewer (Hawaii Climate Change Mitigation and Adaptation Commission, 2021).

The project site is within Zone D according to the Flood Insurance Rate Map Panel No. 15003C0241G for Hawaii (effective date January 19, 2011) prepared by the Federal Emergency Management Agency. The Zone D designation refers to unstudied areas where flood hazards are undetermined but flooding is possible. The Flood Hazard Assessment Report for the project site is provided in Appendix C.

Landslides have destroyed built structures and covered roads, which jeopardize access for affected communities. Steep cliffs and areas containing an abundance of dry vegetation may be more susceptible to rockfalls and wildfires, respectively. The project area is mostly developed such that the threats from wildfires are unlikely but possible, especially when vegetation is dry. Drought conditions and high winds could exacerbate the fire hazard. Many wildfires are caused by human actions of an intentional nature or as a result of negligence.

Impacts and Mitigation Measures

The threats to humans and property from unpredictable natural events will always be present. The proposed project is not expected to affect or exacerbate the occurrence of naturally occurring hazards.

2.6. Floral and Faunal Resources

The project site was previously disturbed for the construction of the BWS facility and is within a developed urban area. The U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office (USFWS-PIFWO) states in its letter dated July 6, 2022 that several state and/or federally listed endangered and threatened species may occur or transit through the vicinity of the proposed project area:

Hawaiian hoary bat (*Lasirus cinereus semotus*)

Hawaiian petrel (*Pterodroma sandwichensis*)

Hawaii Distinct Population Segment band-rumped storm-petrel
(*Oceanodroma castro*)

Newell's shearwater (*Puffinus auricularis newelli*)

Hawaii distinct population segment (DPS) of band-rumped storm-petrel
(*Oceanodroma castro*)

The letter from DLNR Division of Forestry and Wildlife (DOFAW) dated July 15, 2022 indicates that the State listed Hawaiian Hoary Bat could potentially occur in the vicinity and may roost in nearby trees, and seabirds may pass through the area at night.

Impacts and Mitigation Measures

The proposed action includes stump removal as part of site preparation activities. In consideration of recommendations from the USFWS-PIFWO and DOFAW that would avoid or minimize impacts to the Hawaiian hoary bat, the cutting or removing of trees greater than 15 feet tall shall not occur between June 1 and September 15, which is the bat birthing and pup rearing season.

The contractor is expected to abide by the measures listed below that were recommended by USFWS-PIFWO and DOFAW with regards to protecting Hawaiian seabirds. No new permanent lighting is anticipated as a part of the project. If permanent lighting at the project site is determined to be necessary, the contractor will adhere to the following guidance:

- Fully shield all outdoor lights so the bulbs can only be seen from below;

- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area; and
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

DOFAW recommended minimizing the movement of plant or soil material between work sites. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid Ohia Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetle), or invasive plant parts that could harm native species and ecosystems. BWS expects its contractor to implement recommended measures such as cleaning excess soil and debris from all equipment, materials, and personnel to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70 percent alcohol solution to prevent the spread of Rapid Ohia Death and other harmful fungal pathogens. Additional recommendations from DOFAW are provided below.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e., climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawaii-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (<https://sites.google.com/site/weedriskassessment/home>). We recommend that you refer to www.plantpono.org for guidance on selection and evaluation for landscaping plants.

The proposed project includes hydromulching, which stabilizes disturbed areas to prevent erosion. If additional landscaping at the project site is determined to be necessary, no invasive species will be planted.

The standard comments from DOH CAB indicate that demolition and land clearing have the potential to disperse rodents. The DOH Vector Control Branch administers the regulatory controls pursuant to HAR §11-26-35, "Rodents; Demolition of Structures and Clearing of Sites and Vacant Lots."

2.7. Archaeological, Architectural and Cultural Resources

Archaeologists with Cultural Surveys Hawaii, Inc. (CSH) conducted a field inspection on September 6, 2022, which consisted of a pedestrian survey of the Newtown 550' reservoir and monitoring/control building and the surrounding area within the perimeter fence. No historic archaeological resources were identified during the

survey. The following information is summarized from the report prepared by CSH (see Appendix D) unless otherwise noted.

The project area is located in the *moku* (a regional land division) of Ewa within the lower valley of Waimalu, between the *ahupuaa* (a smaller traditional land division within the *moku*) of Kalauao to the east and Waiau to the west. Waimalu literally translates to sheltered water, which likely refers to the many fishponds along the coastline as well as Pearl Harbor. Some historic accounts of the lands and agriculture found in Waimalu describe extensive taro flats in the coastal and lower valley regions, as well as along Waimalu Stream and Waipi spring. A westward trail from Honolulu was described as being located along the taro flats just mauka or inland of the floodplains near Pearl Harbor.

The concepts of private property ownership led to vast changes in settlement patterns starting from the late 1840s. The *ahupuaa* of Waimalu was granted to *alii* (a ruling noble or chief) Miriam Kekauonohi. All but two of the Land Court Awards in Waimalu are for areas within 500 meters of the coast. One award within Waimalu valley is for an area located to the south of the project area and the other award is for an area located in the upper valley to the southeast of the project area. Traditional Hawaiian activities near the project area would have included agriculture, habitation, pathways or trails, resource gathering and burials. The distribution of individual land awards or lack thereof in the vicinity of the project area suggests that indigenous land use was focused in the lowlands of Pearl Harbor, and that the project area and surrounding plateau lands were not intensively utilized.

In the latter half of the nineteenth century, traditional agriculture in Ewa was displaced by other agricultural crops such as rice, sugar and pineapple. The Honolulu Plantation Company, incorporated in 1899, stretched from Halawa to Waimalu, including the project area. Though this parcel is located on the Honolulu Plantation Company lands, it is documented as being just upland of the sugarcane production. The Honolulu Plantation was incorporated into the Oahu Sugar Company in 1947.

Large portions of lands of the Honolulu Plantation were turned over to the government for military use for the expansion of U.S. Naval Facilities at Pearl Harbor, and the construction of Hickam Air Field. The current project area and its vicinity remained undeveloped through 1968, as depicted in historic maps and aerial photographs. An aerial photograph taken in 1978 depicts the BWS facility within the current project area, and the surrounding residential neighborhood. The project area and vicinity remain relatively unchanged since this 1978 photograph.

Mason Architects, Inc. (MASON) conducted an Architectural Inventory Survey of the structures at the Newtown 550' facility as a part of this EA. MASON conducted a site

visit on October 11, 2022, and undertook historical research on the structures and their historical context.

The Newtown Estates residential development began with the purchase of 789 acres in 1970 from the former landowners, The Austin Family Trust, by Oceanview Ventures, a development company represented by Herbert Horita Realty. The purchase price was \$19.6 million, and was noted in the Honolulu Star Bulletin as the largest land sale on Oahu in 1970. The land was formerly agricultural lands under the Austin Family Trust, and was rezoned to accommodate the Newtown development in 1971, and the development was approved by the City Planning Commission in January 1972.

Original plans for the Newtown 550' reservoir are dated April 20, 1971, and it was a part of the Newtown Estates Unit 1, the Hillside Terrace community, which included 2,100 single family homes and townhouses. The first units were completed by July 1973 and sales started in May of that year. The fee simple development plan for Newtown Estates envisioned 4,200-4,600 homes over a six-year period, and a projected value of \$240 to \$250 million.

Both of the existing structures on the site (i.e., the reservoir and monitoring/control building) are identified as historic properties since they exceed fifty years in age. Both were assessed by MASON for significance in keeping with HAR §13-275-6 Criteria a through d. The following excerpt is from the report by MASON (2022), which is included with this EA as Appendix E:

- *The Newtown 550 Reservoir property does not individually meet HAR §13-275-6 Criterion 'a' significance requirements. Functionally, it is one component of Oahu's Mid-to-Late 20th Century residential water system.*
- *Currently, as a stand-alone site, or even in tandem with other BWS water supply infrastructure, the property does not rise to the level of significance required for Criterion a. (It is also doubtful this property could be individually listed on the Hawaii or National Registers of Historic Places.)*
- *Under HAR §13-275-6 significance Criterion b, it is not significant, having no known association with the lives of persons important in our past. For example, Hart Wood was not involved in the design of this property.*
- *Under HAR §13-275-6 significance Criterion c, it is a relatively mundane utilitarian structure, with few notable details or landscape characteristics. Honolulu's renowned architect Hart Wood, who prepared many thoughtful designs for BWS, was not involved in the design of this property, and the property does not compare aesthetically to HART's BWS work.*
- *Under HAR §13-275-6 significance Criterion d, it is not significant for being likely to yield information important in history.*

Traditional and cultural practices are not known to have occurred at the project site within recent times because access to the premises is restricted to authorized BWS personnel via padlocked gates. As previously stated in this EA, the existing BWS facility was built in the 1970s, there is chain link fencing topped with barbed wire along the site boundaries to deter unauthorized access, and the project site has a history of restricted access during its use as a BWS facility.

Impacts and Mitigation Measures

There are no known archaeological and cultural resources at the project site that would be endangered by project actions. The presence of subsurface remnants of pre-Contact and post-Contact agricultural deposits is evaluated by CSH as unlikely.

The reservoir and monitoring/control building at the Newtown 550' facility are identified as historic properties since they are greater than 50 years old and retain their integrity in keeping with HAR §13-275-6 integrity requirements. The historic properties do not meet significance criteria under HAR §13-275-6 and are evaluated by MASON as not historically significant. The proposed project would not alter directly or indirectly any characteristics of any significant historic properties. The proposed project would not partially or totally destroy or alter any significant historic properties, represent a detrimental alteration of the properties' surrounding environment, or pose any detrimental visual, spatial, noise or atmospheric impingement. Nor does the proposed project increase access with the chances of damage to any significant historic properties. MASON states that the proposed action will result in a "No historic properties affected" finding under HAR §13-275-7.

Traditional gathering rights, access, or other customary activities by native Hawaiians or other ethnic groups would not be disrupted by the proposed project because site access is restricted to authorized BWS personnel via padlocked gates. BWS will continue to restrict access to the Newtown 550' facility.

In the event that any unexpected historic remains or other potentially significant subsurface resources are encountered during the various phases of construction (e.g., excavation and trenching), the contractor will be required to halt construction activities and to immediately notify the State Historic Preservation Division (SHPD) of the discovery. BWS will prevent the disturbance or taking of any discovered archaeological, historic, or cultural resources to the extent possible by instituting the described mitigation measures (i.e., halt construction and immediately notify SHPD) and enforcing their implementation by its contractors.

2.8. Visual Resources

The visual character of Waimalu is dominated by single-family homes, churches, parks, and public use facilities. Some municipal and institutional land uses (e.g., parks, libraries, schools, and churches) and commercial establishments are in lower Aiea. Single-family residences in the project vicinity have been modified and expanded over time. Overall, the residential setting in the upper Waimalu and Newtown area that developed around the Newtown 550' facility has prevailed. Urban landforms in the immediate vicinity of the project site include single-family homes, local roadways, and utility infrastructure.

The BWS facility is distinguished by perimeter fencing topped with barbed wire and a gated entry along Piki Street (refer to site photographs in Appendix A). The reservoir and monitoring/control building are painted green, which is the typical color currently used for BWS buildings.

Impacts and Mitigation Measures

The proposed project represents a continuation of existing water system infrastructure that would not significantly alter the visual character along Piki Street. The proposed exploratory well is primarily underground. Other necessary facilities such as the test pump would be removed after the completion of water testing. A 20-inch diameter casing that protrudes 3 feet above ground would add a minor visual element around the much larger 500,000-gallon above-ground reservoir tank at the project site. The gravel pad and curb would also be minor visual elements at the Newtown 550' facility. No adverse impacts to scenic vistas or view planes are anticipated from the proposed project including tree stump removal.

2.9. Noise

The project site is located in a developed residential area where the primary noise source is related to vehicular traffic along nearby two-lane residential roadways owned by the City such as Piki Street, Nāhele Street, and Wilou Street. In general, there is low background noise in the vicinity of the Newtown 550' facility.

Impacts and Mitigation Measures

Audible noise from demolition and construction activity is expected to be intermittent and unavoidable since construction vehicles, heavy equipment and impact tools generate noise as part of normal operations. The mitigation of noisy activities to inaudible levels will not be practical in all cases due to the intensity and exterior nature of the work. Ambient noise levels in the vicinity of the project site will therefore increase from the operation of construction equipment (e.g., trucks, grading equipment, drilling compressor, rig motor, and

generator) during construction periods. Quieter construction activities, such as equipment installation, may not be audible. Construction noise is temporary in nature and will cease upon completion of the different phases of the project.

The maximum permissible day and night noise levels assigned to zoning districts are expressed in the Hawaii Administrative Rules Title 11, Chapter 46 "Community Noise Control" in measurements of decibels A (dBA). For lands zoned residential, the maximum permissible noise level that may be emitted beyond the property line is 55 dBA during the day (7:00 a.m. to 10:00 p.m.) and 45 dBA at night (10:00 p.m. to 7:00 a.m.). The regulations require a permit for excessive noise (e.g., noise that exceeds allowable levels stated in the administrative rules for more than 10 percent of the time within any 20-minute period).

Comments received during pre-assessment consultation with nearby residents expressed concern over increased noise due to construction activities. Project activities shall comply with the provisions of HAR §11-46, "Community Noise Control" which are administered by the DOH IRHB. The construction contractor will be responsible for minimizing noise by properly maintaining noise mufflers and other noise-attenuating equipment and for maintaining noise levels within regulatory limits. If construction activities occur outside of the allowable timeframes designated for the noise permit (i.e., nighttime, Sunday, holiday) and exceed allowable noise levels, a noise variance must be obtained prior to commencement of construction activities, as required. The construction contractor will obtain the appropriate permit or approvals (e.g., Notice of Intent to Construct, Community Noise Permit, or Noise Variance). Portable generators and currently available testing equipment used for the Step-Rate Pumping Test and 96-hour Constant-Rate Pumping Test are expected to generate noise that exceeds the maximum permissible sound levels found in Table 1 of HAR §11-46-4. A noise variance will be needed for the pumping tests, which are performed after well installation is largely completed.

Anticipated noise will be mitigated by performing the majority of construction work during daytime hours (as opposed to night work), thereby avoiding the creation of construction noise impacts during nighttime hours. Daytime work will ensure minimal impacts to existing users adjacent to and in the vicinity of the project site. The 96-hour Constant-Rate Pumping Test needs to be conducted for a continuous 96-hour time period in order to ensure proper, accurate data is collected. Besides the 96-hour Constant-Rate Pumping Test, construction operations will not be allowed at night. The contractor will be required to follow BMPs to control noise levels at all times. Temporary noise reduction measures during construction may include but are not limited to the

use of sound-walls, sound blankets and curtains, equipment mufflers and low-noise generators.

A comment from a nearby resident on Piki Street expressed concern over increased noise levels from pumping equipment. An exploratory well at the existing BWS facility that is capped until the conversion to a permanent groundwater production well will not produce noise. The potential noise from the normal operation of a permanent production well that requires a pump, motor, and piping will be considered in a subsequent EA.

2.10. Site Access, Circulation and Traffic

Vehicular access to the project site is via a 12-foot-wide asphalt driveway with a padlock-secured gate along Piki Street. Perimeter chain link fencing topped with barbed wire provides an additional deterrent to unauthorized entry. BWS personnel in BWS vehicles infrequently travel to the project site as part of normal operations since existing water system infrastructure does not require manual operation.

Queen Liliuokalani Freeway (Interstate H-1) is roughly one mile south of the project site. This freeway is the primary arterial route connecting Waimalu to downtown Honolulu. Residential roadways provide access from Interstate H-1 to the project site. There are no known traffic concerns in the vicinity of the project site and residential traffic in the surrounding area is observed to be low.

Municipal bus and paratransit services on Oahu are under the purview of the City's Department of Transportation Services (DTS) and Oahu Transit Services, Inc. (OTS). There is bus service to the upper Waimalu and Newtown area via Ka'ahumanu Street and Komo Mai Drive.

Impacts and Mitigation Measures

No offsite road improvements are required as part of the proposed project and no alterations to the existing driveway at the BWS facility are anticipated. The transportation of equipment and material to the site along with the removal of debris and construction waste from the site may cause intermittent and temporary inconvenience to residents who live in the immediate vicinity. The construction contractor shall not close, block, or otherwise obstruct streets, parking lots, or other occupied facilities without prior acceptance by authorities having jurisdiction. Acceptable alternate routes around work that obstructs the existing pedestrian and vehicular traffic ways will be provided by the contractor.

Construction-related traffic will be restricted to only stabilized construction areas. Construction work and the moving of heavy equipment or construction-related supplies is expected to occur during daytime hours (as opposed to night

work). At night and when work is not occurring, all associated construction equipment will be secured and appropriately sited to prevent obstructions to traffic.

The transport of oversized and/or overweight materials and equipment on State highway facilities requires a permit from the State of Hawaii, Department of Transportation (DOT). The construction contractor is expected to apply for the permit if the operation or transportation of any oversized and/or overweight vehicles and loads is required during construction.

Bus routes, bus stops and paratransit operations are not expected to be impacted by project actions. The temporary increase in traffic due to vehicles and equipment accessing the project site will cease upon the completion of construction activities. An exploratory well at the existing BWS facility that is capped until the conversion to a permanent groundwater production well will not increase vehicular traffic or affect site access and circulation patterns such that no mitigation is warranted or proposed. BWS personnel will continue to infrequently access the project site for monitoring and maintenance purposes as part of normal operations.

2.11. Utilities (Water, Wastewater, Drainage)

The project site is developed and contains a 500,000-gallon reservoir and small monitoring/control building built in the 1970s as a part of the Newtown Development. The existing reservoir facility is connected to the BWS water system and the City's municipal storm water system. Drainage system infrastructure at the project site includes aboveground drainage channels, underground drain lines, and drain inlets. The *Water System Standards* of the BWS require washout and overflow drainage lines for reservoirs. Storm water runoff and discharges associated with current operations are conveyed to the City's municipal storm water drainage system.

Impacts and Mitigation Measures

The contractor shall utilize electro-magnetic location, often referred to as toning, to locate existing underground utilities wherever excavation work will occur. Electro-magnetic location works by sending a signal along a metal line that is tracked using a receiver. Modern equipment provides a tone, but also provides visual cues as to the strength of the signal. This type of equipment is used to estimate approximate depths for utilities to avoid any damage during site work and construction. Any damaged utilities shall be promptly repaired by the contractor to the satisfaction of the utility owner. No long-term impacts are anticipated from establishing necessary utility connections for a new well and support facilities.

A short-term and temporary impact of the project would occur from the generation of sediment-laden surface runoff during construction. BMPs will be incorporated into a storm water management plan. Appropriate erosion control BMPs will be used to minimize the amount of soil transported in storm water runoff during construction activities. All construction activities will comply with applicable Federal, State and County regulations and rules for erosion control as previously discussed in Section 2.3, Water Resource Considerations.

2.12. Power and Communications

Electrical power is provided by Hawaiian Electric Company, Inc. (HECO) via overhead lines along roadways in Waimalu. Hawaiian Telcom and Charter Communications provide communications service via overhead lines in the project area. The BWS facility receives power and communications service from existing service providers.

Impacts and Mitigation Measures

The construction contractor is expected to follow standard procedures such as providing its own power for construction equipment and avoiding the disruption of existing HECO services to the project site and to the surrounding residential community. Greenhouse gas emissions from diesel-power construction equipment and generators would occur during the temporary period of construction and during a short-term data collection period. The contractor shall protect existing surface and subsurface utilities and poles within and abutting the project site, excavations, and other work areas. Disruptions to communications service during construction would also be avoided. Any damaged utilities shall be promptly repaired by the contractor to the satisfaction of the utility owner. No mitigation is proposed for short-term and temporary impacts.

The Newtown 550' facility already receives power and communications service for current operations. An exploratory well at the existing BWS facility that is capped until the conversion to a permanent groundwater production well does not require new service connections for power and communications service, and does not represent an increase in energy consumption.

2.13. Socio-Economic Characteristics

The project site is located within the City's Primary Urban Center planning region, which was forecasted to accommodate a significant portion of Oahu's projected growth in residential population and jobs for the considered 20-year period from 2004 through 2025. The Primary Urban Center functions as an economic center of importance to both Oahu and the State of Hawaii. Honolulu is a leading city and travel destination in the Pacific region. The census tract area of upper Waimalu has a median

household and family income of \$143,750. In 2019, the same census tract area had a resident population of 3,602 inhabitants and 1,128 households (U.S. Census Bureau, 2019).

Single-family homes in the Newtown residential development were constructed in the 1970s. Schools in the project area include Calvary Chapel Christian School, Alphabetland Pre School Center, Waiiau Elementary School and Waimalu Elementary School.

Impacts and Mitigation Measures

The proposed installation of a new well at an existing BWS facility involves construction activities that will create short-term jobs in design and construction. A capped exploratory well will not affect population levels, housing, or schools. No staffing increase is expected from the proposed project because maintenance and monitoring activities at the BWS facility are currently conducted as needed by BWS staff. An exploratory well at the Newtown 550' facility would not help sustain the municipal water system until it is converted to a groundwater production well. Reliable water supplies support the economic and social welfare of the communities served by the BWS water system.

2.14. Emergency Service Facilities and Shelters

Law enforcement services are provided by the Honolulu Police Department (HPD). The nearest HPD police station is the Pearl City Police Station located at 1100 Waimano Home Road approximately 2.8 miles from the project site.

The Honolulu Fire Department (HFD) provides fire protection and first responder emergency services. HFD's Waiiau Fire Station 38 is located at 98-1109 Komo Mai Drive approximately 1.1 miles from the project site.

Emergency service providers include critical care providers such as hospitals and clinics. Queen's Island Urgent Care Pearl Kai is located at 98-199 Kamehameha Highway approximately 2.7 miles from the project site.

Waimalu Elementary School, Waiiau Elementary School, Pearl City Highlands Elementary School, Pearl Ridge Elementary School, Highlands Intermediate School, Momilani Elementary School, and Pearl City High School are all designated hurricane evacuation shelters. The schools are all located within a three (3) mile drive of the project site. People who have special health needs will be accommodated and provided limited support at active shelters during or in response to emergency situations.

Impacts and Mitigation Measures

No significant adverse impacts to police, fire, medical or emergency shelter services will occur from the installation of water system infrastructure at an existing BWS facility. As stated in the letter dated July 11, 2022, HPD does not have any concerns at this time. The project will be designed in consideration of fire department access and required fire flow for fire protection as stated in the letter from HFD dated July 20, 2022. Upon further discussion with HFD in August 2022, it was clarified that the civil drawings do not need to be submitted to HFD for review or approval since no occupiable structures will be developed as a result of the proposed project.

2.15. Recreational Resources

The City's Department of Parks and Recreation operates and maintains County Park facilities including Nāhele Neighborhood Park, Waiiau District Park, Waiiau Neighborhood Park, Waiiau Gardens Mini Park and Newtown On-Leash Dog Park, which are in the project vicinity. Other recreational resources in the Waimalu project area include the Waimano Valley/Ridge Trail, 'Iliahi Trail, and Aiea Loop Trail. The project site is surrounded by residential homes and no recreational resources are adjacent to the project site.

Impacts and Mitigation Measures

The proposed project is the installation of water system infrastructure at an existing BWS facility, which creates no additional demand for recreational facilities. No mitigation is warranted or proposed.

3. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

3.1. State Land Use District

The State Land Use Law (Chapter 205, HRS) is intended to preserve, protect, and encourage the development of lands in the State for uses which are best suited to the public health and welfare for Hawaii's people. All lands in the State are classified into four land use districts by the State of Hawaii, Land Use Commission: Urban, Rural, Agricultural, and Conservation. The project site is entirely located within the Urban District, which is regulated by county zoning (see Section 3.6. City and County of Honolulu Land Use Ordinance). The proposed project is a permissible public use and structure within the Urban District, which has residential neighborhoods, commercial enterprises, industrial development, and community facilities such as public buildings.

3.2. State Coastal Zone Management Program

Hawaii's Coastal Zone Management (CZM) program, established pursuant to Chapter 205A, HRS, as amended, is administered by the State of Hawaii, Office of Planning and Sustainable Development. The CZM program provides for the beneficial use, protection, and development of the State's coastal zone. The CZM area consists of the entire state of Hawaii since there is no point of land more than 30 miles from the ocean. The objective of the act is to protect, preserve, and restore recreational, historic, and scenic resources as well as implement the state's ocean resources management plan and protect coastal ecosystems. The CZM Act involves a system of permits including the SMA use permit, to manage development within coastal areas and encourage public participation. Any significant development within the SMA requires a permit from the appropriate County. On Oahu, the SMA permit is administered by DPP. The project area is inland and outside the SMA. No SMA permit is required for the project, which supports the following policies and objectives of the CZM from HRS §205A-2.

1. Recreational Resources

Objectives. Provide coastal recreational opportunities accessible to the public.

Policies. Improve coordination and funding of coastal recreational planning and management; and

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.*

The project is located away from the coast and outside the SMA. Coastal water quality will be protected since appropriate erosion control BMPs will be used to minimize the amount of soil transported in storm water during construction.

2. *Historic Resources*

Objectives. *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. *Identify and analyze significant archaeological resources;*

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

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

No known historic resources would be endangered by the project. Concurrence from SHPD with regards to a “no historic properties affected” determination will be requested by BWS. The construction contractor will be required by BWS to comply with all State and County rules and laws pertaining to historic preservation. Construction activities will be halted and SHPD will be notified in the event any unanticipated archaeological or historic sites are encountered.

3. *Scenic and Open Space Resources*

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

Policies. Identify valued scenic resources in the coastal zone management area; Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline; Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and Encourage those developments that are not coastal dependent to locate in inland areas.

The project is located inland and is not expected to diminish coastal scenic view areas or open space resources.

4. Coastal Ecosystems

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

Policies. Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

Improve the technical basis for natural resource management;

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

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

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.

The project is sited away from the shoreline and is not expected to disrupt or degrade coastal water ecosystems. The construction contractor will be responsible for following the City's "Rules Relating to Water Quality" by implementing a storm water management plan and controlling runoff that can transport loose soil, excess nutrients and other pollutants. Construction activities will comply with applicable Federal, State and County regulations and rules for erosion control.

5. Economic Uses

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

Policies. Concentrate coastal dependent development in appropriate areas;

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

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.*

The project does not involve coastal development; therefore, the policies pertaining to coastal economic development do not apply.

6. Coastal Hazards

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

Policies. *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*

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

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

Prevent coastal flooding from inland projects.

Coastal hazards are not expected to be exacerbated by the project, which is located inland and away from the coastline. BWS is expected to ensure that its construction contractor utilizes BMPs to address erosion prevention and sediment control. Treated process wastewater from well drilling activities will be properly controlled by the construction contractor to avoid improper discharges. Storm water BMP strategies would also be implemented at the project site.

7. Managing Development

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

Policies. *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*

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

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.

The project does not impact or influence the development review process pertaining to the management of coastal resources and hazards. The environmental review process includes opportunities for public participation and comments pertaining to a variety of issues and topics including coastal resources and hazards.

8. Public Participation

Objectives. Stimulate public awareness, education, and participation in coastal management.

Policies. Promote public involvement in coastal zone management processes; 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

Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

The environmental review process provides public participation opportunities. A description of the outreach and consultation for the proposed project is described in Section 7, Public Agency Review and Consultation.

9. Beach Protection

Objectives. Protect beaches for public use and recreation.

Policies. 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;

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

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

Public access to beach areas will not be affected by the project, which is located inland and away from beaches and the shoreline. The project does not involve the construction of erosion-protection structures seaward of the shoreline.

10. Marine Resources

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

Policies. *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*

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

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;

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

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

The project is located inland and does not involve the use or development of marine and coastal resources.

3.3. Hawaii State Plan

The Hawaii State Plan (Chapter 226, HRS) outlines broad goals, policies, and objectives to serve as guidelines for the future growth and development of the State. The excerpts below are Hawaii State Plan objectives, policies, and priority guidelines that pertain to the proposed project in Honolulu, Oahu.

§226-5 Objectives and policies for population.

(b) To achieve population objective, it shall be policy of the state to:

(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.

§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.

(2) Effective protection of Hawaii's unique and fragile environmental resources.

- (b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:*
- (3) Take into account the physical attributes of areas when planning and designing activities and facilities.*
- (8) Pursue compatible relationships among activities, facilities, and natural resources.*

§226-12 Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.

- (a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historic resources.*
- (b) To achieve scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:*
 - (1) Promote the preservation and restoration of significant natural and historic resources.*
 - (4) Protect those special areas, structures, and elements that are integral and functional part of Hawaii's ethnic and cultural heritage.*

§226-13 Objectives and policies for the physical environment--land, air, and water quality.

- (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
 - (1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.*
 - (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:*
 - (2) Promote the proper management of Hawaii's land and water resources.*
 - (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.*
 - (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.*
 - (5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.*

§226-14 Objective and policies for facility systems--in general.

- (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.*

- (b) *To achieve the general facility systems objective, it shall be the policy of this State to:*
- (1) *Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.*
 - (2) *Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.*
 - (3) *Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*

§226-16 Objectives and policies for facility systems - water.

- (a) *Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.*
- (b) *To achieve the facility systems water objective, it shall be the policy of this State to:*
- (4) *Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.*

§226-26 Objectives and policies for socio cultural advancement – public safety.

- (a) *Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:*
- (1) *Assurance of public safety and adequate protection of life and property for all people.*
- (2) *Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic wellbeing of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.*

§226-27 Objectives and policies for socio cultural advancement – government.

- (a) *Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:*
- (1) *Efficient, effective, and responsive government services at all levels in the State.*
- (b) *To achieve the government objectives, it shall be the policy of this State to:*

- (1) *Provide for necessary public goods and services not assumed by the private sector.*
- (5) *Assure that government attitudes, actions, and services are sensitive to community needs and concerns.*

BWS is a semi-autonomous government agency that manages Oahu's municipal water resources and distribution system to meet the needs of customers now and in the future. The proposed project responds to the objectives and policies of the Hawaii State Plan with regards to water systems. Reliable water supplies support the economic and social welfare of the communities served by the BWS water system. The new exploratory well and test pump would be sited adjacent to the existing 500,000-gallon reservoir and monitoring/control building at the project site in Waimalu. BWS has considered the importance of collecting data about the quantity and quality of the underlying groundwater source along with the impacts of the proposed project on the surrounding community and the physical environment.

3.4. City and County of Honolulu General Plan

The *Oahu General Plan* (2021, Resolution 21-23, CD1) contains aspirational objectives and policies that address the physical, social, cultural, economic, and environmental concerns affecting the City. The Honolulu City Council adopted the General Plan on December 1, 2021 and the Mayor signed it on January 14, 2022.

I. Population

Objective A: To plan for anticipated population in a manner that acknowledges the limits of Oahu's natural resources, protects the environment, and minimizes social, cultural, and economic disruptions.

Policy 1: Allocate efficiently the money and resources of the City in order to meet the needs of Oahu's current and future population.

III. Natural Environment and Resource Stewardship

Objective A: To protect and preserve the natural environment.

Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.

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

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

Objective B: To preserve and enhance the natural monuments and scenic views of Oahu for the benefit of both residents and visitors.

Policy 3: Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.

V. Transportation and Utilities

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

Policy 1: Maintain and upgrade utility systems in order to avoid major breakdowns and service interruptions.

Policy 2: Provide improvements to utilities in existing neighborhoods to reduce substandard conditions, and increase resilience to fluctuations, natural hazards, extreme weather, and other climate impacts.

Policy 3: Plan for the timely and orderly expansion of utility systems.

Objective D: To maintain transportation and utility systems which will help Oahu continue to be a desirable place to live and visit.

Policy 1: Give primary emphasis in the capital-improvement program to the maintenance and improvement of existing roads and utilities.

Policy 4: Evaluate the social, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.

VII. Physical Development and Urban Design

Objective A: To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy 7: Encourage the clustering of developments to reduce the cost of providing utilities and other public services.

Policy 9: Locate community facilities on sites that will be convenient to the people they are intended to serve.

Objective F: To create and maintain attractive, meaningful, and stimulating environments throughout Oahu.

Policy 3: Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.

IX. Health and Education

Objective A: To protect the health and well-being of residents and visitors.

Policy 3: Coordinate City and County health codes and other regulations with State and Federal health codes to facilitate the enforcement of air-, water-, and noise-pollution controls.

The proposed exploratory well at the project site will facilitate the necessary testing and analysis that will allow BWS to determine if the location is feasible for a permanent groundwater production well. BWS has considered the social, economic, and

environmental impacts of proposed water system improvements that respond to the uncertainty of returning all previously used water sources to full production.

3.5. Primary Urban Center Development Plan

Eight community-oriented plans are intended to help guide land use planning and development on Oahu. The Primary Urban Center (PUC) encompasses the area from Pearl City to Waialae-Kahala and from the shoreline to the westerly slopes of the Koolau Range. The key elements of the vision for the Primary Urban Center Development Plan are summarized below:

Protecting and Enhancing Natural, Cultural and Scenic Resources;
Cultivating Livable Neighborhoods;
In-town Housing Choices of all Ages and Incomes;
The Pacific's Leading City and Travel Destination;
Develop a Balanced Transport System.

The City's Plan that was adopted in June 2004 recognizes that the PUC is where major growth in population and economic activity will occur over the twenty-year time period of the plan (i.e., 2004 to 2025). The following excerpts are from the 2004 Plan:

The Primary Urban Center is a lively, metropolitan city that is home to almost half the island's population and three-quarters of Oahu's jobs.

The East and Central sections of the Primary Urban Center overlie the Honolulu aquifer. The western Primary Urban Center area overlies the Pearl Harbor aquifer, the largest supplier of groundwater on Oahu and the source of most of the PUC's municipal supply.

The project site is within the Urban Community Boundary, which represents the extent of urbanized areas within the PUC. The project area is representative of a typical urbanized area within the PUC. The proposed project will facilitate the necessary testing and analysis that will allow BWS to determine if the location is feasible for a permanent groundwater production well. The project supports the established community and the long-term commitment by BWS to provide municipal water and distribution services to the community it serves. A safe, dependable, and affordable water supply meets key vision elements of the City's 2004 Plan.

3.6. City and County of Honolulu Land Use Ordinance

The LUO regulates land use in accordance with adopted land use policies, including the City's General Plan and the Development/Sustainable Community Plans. The project site is located within the P-2 Preservation District, and is considered a public use and structure, which are permitted in the P-2 District. No discretionary land use

permit is required for uses conducted by or structures owned or managed by the federal government, the State of Hawaii or the city to fulfill a governmental function, activity or service for public benefit and in accordance with public policy.

Water system infrastructure is a utility installation that is a permitted use. The definition of utility installations includes uses or structures, including all facilities, devices, equipment, or transmission lines, used directly in the distribution of utility services, such as water, gas, electricity, telecommunications other than broadcasting antennas, and refuse collection other than facilities included under waste disposal and processing. Pursuant to §21-2.130 of the City's LUO, the Director of DPP may waive the strict application of development or design standards for public or public/private uses and structures, and utility installations.

4. POSSIBLE ALTERNATIVES

4.1. No Action

No action implies that there would be no funding or capital expenditures for an exploratory well and test pump, which are needed to collect data about the quantity and quality of the underlying groundwater source at the project site. As a result of no action, BWS would be unable to determine if the Newtown 550' facility is a suitable location for a permanent groundwater production well. The area around the existing reservoir and pump station building would remain as is for the foreseeable future. Existing BWS water system infrastructure located at the project site would remain unchanged as a result of maintaining status quo.

The project is proposed by BWS at this time due to the emergency shut down of several water sources (i.e., Halawa Shaft and the Aiea and Halawa wells) that were in use prior to December 2021. BWS has increased the pumping rates at other water supply sources to maintain municipal water service; however, the higher pumping rates at other wells is a short-term measure. The investigation of a new water source at the project site is proposed by BWS in response to the emergency situation. The installation of a new exploratory well that may be converted to a permanent groundwater production well at the Newtown 550' facility is proposed by BWS due to the uncertainty of returning all previously used water sources to full production. The no action alternative is unacceptable from the perspective of BWS, which has a commitment to sustain the performance and reliability of its water supply system in Honolulu.

4.2. Delayed Action

A delayed action implies that a project of similar scope and size to the proposed action would occur at an unspecified future date. The environmental impacts resulting from a delayed action are generally expected to be the same as the proposed action so long as environmental conditions remain similar to the evaluated conditions described in this EA. The delay of the proposed project would postpone and does not avoid anticipated environmental impacts associated with the installation of a new exploratory well and test pump at the Newtown 550' facility.

The initiation of the proposed project at a later date may result in increased construction costs due to inflation, changes in economic conditions or the labor supply. Building materials and labor costs tend to increase with time. A delayed action may therefore necessitate a greater funding commitment and capital expenditures as compared to the project that is proposed to occur at this time.

Project delay implies that BWS would be unable to collect data about the quantity and quality of the underlying groundwater source until an unspecified time in the future.

The emergency situation is ongoing as of this writing, and the Navy has indicated that petroleum fuel will continue to be stored at its Red Hill facility through 2024 (Ordonio, 2022; Jedra, 2022). BWS was striving for a 10 percent voluntary reduction in water use by the public to lower the water demand while this emergency situation is in effect (Bodon, 2022). While it is possible to delay the proposed project until an unspecified future date, this would presumably extend emergency measures (e.g., higher pumping rates at other wells) for a longer period of time. A delayed action is not favored by BWS.

4.3. Alternative Location

A similar environmental review process would be required for the installation of an exploratory well and test pump at an alternative location instead of at the project site in Waimalu if state or county lands will be utilized. A site that requires additional processes to acquire or transfer land, or to negotiate access or easements may require a greater funding commitment and may result in increased construction costs as previously discussed for a delayed action. An alternative location with no developed infrastructure may require more land disturbance and further delay for site development, which increases the impacts on the environment as compared to the proposed installation of a well and test pump at the Newtown 550' facility.

The option to utilize an alternative location implies that BWS would not consider the Newtown 550' facility as a possible location for a permanent groundwater production well. The inability to conduct necessary water testing due to the absence of an exploratory well and test pump means BWS would be unable to sufficiently investigate the yield, water quality, and aquifer properties at the project site. The Newtown 550' facility has several favorable characteristics from the perspective of BWS such as available space that can accommodate an exploratory well and test pump; existing water system infrastructure; and no land ownership, easement or access concerns. For all of these reasons, an alternative unspecified location is less desirable than the proposed action described in this EA.

4.4. Construct New Exploratory Well at Project Site (Preferred Alternative)

The proposed action is the installation of a new exploratory well and test pump at an existing BWS facility in Waimalu. The project site involves land that was previously disturbed for the development of the Newtown 550' facility. The reservoir and monitoring/control building plans are dated April 20, 1971, and the site and facilities are well maintained, and will remain in service after the construction of the new well and appurtenant facilities. The Newtown 550' facility has no land ownership, easement or access concerns, and the project site contains available space that can accommodate an exploratory well, test pump and other support facilities for a groundwater production well if the testing results are favorable.

Water testing at the Newtown 550' facility will be possible once the exploratory well and test pump are installed. Collected data about the yield, water quality, and aquifer properties at the project site will allow BWS to determine if this location is feasible for use as a permanent groundwater production well. The conversion of the exploratory well into a production well would only occur if the collected data indicates favorable conditions. Support facilities (e.g., a well pump, motor, and piping) and further improvements at the Newtown 550' facility would be needed if the exploratory well is converted for use as a permanent groundwater production well. A permanent well located close to existing BWS facilities at the project site may reduce the time, resources, and environmental impacts of the project by avoiding the need for new water conveyance infrastructure.

The project is proposed at this time in response to the ongoing emergency and the uncertainty of returning all previously used water sources to full production. More data about underlying aquifer conditions is expected to better inform BWS as it continues to manage its water system while the Navy resolves the fuel contamination concerns. In the long-term, a groundwater production well at the Newtown 550' facility is expected to provide water system reliability when water sources are temporarily suspended due to the repair or periodic maintenance of BWS facilities, or due to sudden emergency situations. For all these reasons, the proposed action is the preferred alternative at this time from the perspective of BWS.

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5. PERMITS AND APPROVALS

The exact permitting and approval requirements will be determined during the design phase, and the following list contains permits and approvals that may be required for the proposed project.

State of Hawaii

- Well Construction Permit
- Pump Installation Permit
- Water Use Permit
- National Pollutant Discharge Elimination System Permit including
General Permit Form I - Treated Process Wastewater
Associated with Well Drilling Activities
- Community Noise Permit
- Community Noise Variance
- Non-Covered and/or Covered Source Permit (Air Quality)
- Oversized and Overweight Vehicles on State Highways Permit
- Disability and Communication Access Board Review
- State Historic Preservation Division Review

City and County of Honolulu

- Building Permit
- Grubbing, Grading, and Stockpiling Permit
- Erosion Control Plan/Best Management Practices
- Indirect Drain Connection License
- Industrial Wastewater Discharge Permit
- Street Usage Permit for Construction

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6. DETERMINATION

The proposed project is not likely to have a significant impact on the physical or human environment based on the analysis presented in this document. In consideration of the potential environmental effects and consultations with governmental agencies and interested parties, a Finding of No Significant Impact (FONSI) has been determined for the project by BWS. The supporting rationale for this finding as set forth in HAR §11-200.1-13 is discussed below.

(1) Irrevocably commit a natural, cultural, or historic resource;

The proposed investigation of the Newtown 550' facility as a prospective water source will not endanger any natural, cultural, or historic resource. BWS is proposing the project at this time due to the uncertainty of returning all previously used water sources to full production. The proposed exploratory well will facilitate the necessary testing and analysis that will allow BWS to determine if the project site is feasible for a permanent groundwater production well. The construction contractor shall stop work and contact SHPD immediately in the event any unanticipated buried archaeological or cultural resources are encountered.

(2) Curtail the range of beneficial uses of the environment;

No beneficial uses of the environment will be curtailed as a result of the proposed project, which involves the installation of water system infrastructure at an existing BWS facility. The installation of an exploratory well that may be converted into a permanent groundwater production well at the Newtown 550' facility is a continuation of the beneficial use of the BWS site for a public purpose.

(3) Conflicts with the State's environmental policies or long-term environmental goals established by law;

The proposed project would be in conformance with State Environmental Policy, inclusive of its individual policies, goals, and guidelines for population growth; natural resources; biological resources; transportation; energy; and culture, as discussed in the individual resource categories throughout this EA.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community or State;

The proposed project does not substantially or negatively affect the economic or social welfare and cultural practices of the community or State. The project creates short-term jobs for the design and installation of the exploratory well. The proposed project at the Newtown 550' facility may ultimately contribute to more reliable water supplies that support the economic and social welfare of the communities served by the BWS water system.

(5) Have a substantial adverse effect on public health;

Public health will not be adversely affected by the proposed project. Short-term and temporary effects such as surface runoff, fugitive dust, noise, intermittent traffic, and solid waste are expected to cease upon project completion. The implementation of mitigation measures will minimize temporary impacts. Completion of the project will facilitate the necessary water testing and analysis that will allow BWS to determine if the project site is feasible for a permanent groundwater production well.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

No substantial secondary impacts such as population shifts are anticipated from the proposed project, which involves the installation of water system infrastructure at the Newtown 550' facility. The exploratory well will allow BWS to collect data about the quantity and quality of the underlying groundwater source. The collected information will allow BWS to determine if the project site is a suitable location for a permanent groundwater production well. Reliable water supplies support the current urban population that is served by the BWS water system.

(7) Involves a substantial degradation of environmental quality;

The proposed project is not expected to degrade environmental quality. Environmental impacts that may occur during the various phases of construction will be mitigated through the implementation of mitigation measures, as appropriate. Appropriate mitigation measures have been identified throughout this EA.

(8) Be individually limited but cumulatively has substantial adverse effect upon the environment or involves a commitment for larger actions;

The proposed project, which involves the installation of water system infrastructure at the Newtown 550' facility, would not result in adverse cumulative effects and represents a continuation of the long-term commitment by BWS to provide municipal water and distribution services to the community it serves.

(9) Have a substantial effect on rare, threatened, or endangered species, or its habitat;

There is no federally designated critical habitat within the immediate vicinity of the project site. Endangered and threatened species may occur or transit through the vicinity of the proposed project area. The proposed project is not

anticipated to displace or have a substantial effect on protected federal or State of Hawaii listed species.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels;

Short-term impacts to air quality, water quality or ambient noise levels may occur during construction and demolition. The implementation of mitigation measures is expected to avoid the exceedance of Federal or State air quality, noise and water quality standards. Environmental impacts will be mitigated through proper construction techniques and compliance with permits and applicable administrative rules and regulations.

(11) Have a substantial adverse effect or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The project site is not situated within an environmentally sensitive area and is not anticipated to affect such areas.

(12) Have a substantial adverse effect on scenic vistas and view planes identified in county or state plans or studies; or

Proposed water system infrastructure will not obstruct or affect scenic vistas and view planes. The proposed exploratory well is primarily underground and a 20-inch diameter casing that protrudes 3 feet above ground would add a minor visual element around the much larger 500,000-gallon above-ground reservoir tank at the project site.

(13) Require substantial energy consumption or emit substantial greenhouse gas.

The exploratory well and test pump would operate during a short-term period and would not require substantial energy consumption. Greenhouse gas emissions from diesel-power construction equipment and generators would occur during the temporary period of construction and during a short-term data collection period. No mitigation is proposed for temporary impacts. In the long-term, permanent water system infrastructure represents a continuation of current BWS operations that already receive power and communications service

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7. PUBLIC AGENCY REVIEW AND CONSULTATION

7.1. Pre-Assessment Consultation

The consulted agencies, organizations, and individuals are listed below. There were 14 formal responses to the pre-assessment consultation letter, as indicated by the ✓ below. Comments and responses are included in Appendix F.

Federal Agencies

- ✓ U.S. Fish and Wildlife Service

State of Hawaii

- Department of Land and Natural Resources
 - ✓ Commission on Water Resource Management
 - State Historic Preservation Division
 - Oahu Island Burial Council
- ✓ Division of Forestry and Wildlife
- ✓ Land Division
- ✓ Engineering Division
- Department of Health
 - ✓ Safe Drinking Water Branch
 - Clean Air Branch
 - Clean Water Branch
 - Environmental Management Division
- ✓ Indoor and Radiological Health Branch
- Office of Hawaiian Affairs
- Office of Planning and Sustainable Development
- Department of Education
 - Honolulu District Office
- Department of Hawaiian Home Lands
- Senate District 16 (Senator Bennette E. Misalucha)
- House District 33 (Representative Sam Satouru King)
- House District 34 (Representative Gregg Takayama)

City and County of Honolulu

- ✓ Department of Design and Construction
- Department of Environmental Services
- ✓ Department of Planning & Permitting
- Department of Transportation Services
- ✓ Honolulu Fire Department
- ✓ Honolulu Police Department

City and County of Honolulu (continued)

Honolulu City Council District 8 (Brandon J. C. Elefante)
Neighborhood Commission Office
Aiea Neighborhood Board No. 20

Organizations and Associations

Aha Kane
Aha Malama, Corp.
Aiea Community Association
Aina Momona
Aha Wahine
Association of Hawaiian Civic Clubs
Au Puni O Hawaii
Council for Native Hawaiian Advancement
Friends of Iolani Palace
Hawaiian Community Assets, Inc.
Hawaiian Kingdom Task Force
Hui Huliau Inc.
Imua Hawaii
Kalihi Plama Hawaiian Civic Club
Kamehameha Schools, Community Relations & Comm. Group, Government
Relations
Kawaileo Law a Limited Liability Law Company
Ke One O Kakuhihewa
Koolau Foundation
Koa Ike
Mana Health Services, Inc.
Menehune Foundation
Na Koa Ikaika Ka Lahui Hawaii
Na Kuauhau o Kahiwakaneikopolei
Office of Hawaiian Affairs
Papa Ola Lokahi
Papakolea Community Development Corporation
Partners in Development Foundation
The Makua Group
The Mary Kawena Pūku'i Cultural Preservation Society

Neighboring or Nearby Property Owners and Recorded Lessees

- 9-8-063:024
- 9-8-063:025
- 9-8-063:026
- 9-8-063:027
- 9-8-063:028
- 9-8-063:029
- ✓ 9-8-063:033
- 9-8-062:045
- 9-8-062:046
- 9-8-062:047
- 9-8-062:048
- 9-8-062:049
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There were several opportunities during the EA process to participate and provide input to BWS with regards to the proposed project. In June 2022, BWS distributed letters pertaining to the exploratory well at the Newtown 550' facility to agencies, organizations, and neighboring or nearby property owners and recorded lessees. A Notice of Consultation was published in July 2022 to announce the investigation of the Newtown 550' Well.

Information and regulatory guidance from the formal comments is included throughout this EA. All of the received comments and responses are included in Appendix F.

7.2. Public Review

A notice of availability for the Draft EA and Anticipated Finding of No Significant Impact (DEA-AFONSI) was published in The Environmental Notice by the Environmental Review Program. The published notice issued on January 23, 2023 initiated the statutory 30-day public review and comment period. Copies of the DEA-AFONSI were available at the Pearl City and Hawaii State public libraries during the review and comment period, which ended on February 22, 2023.

No comments were received during the public review and comment period. Consequently, Appendix F contains no new public comments or response letters.

Minor revisions such as updating the title of the document from "Draft" to "Final" and the date from "January 2023" to "March 2023" were made to the EA. Most occurrences of "groundwater well" have been clarified to "groundwater production well" throughout this EA (e.g., Sections 1.1 Introduction and Background; 1.2 Project Need and Objectives; 2.9. Noise; 2.10 Site Access, Circulation, and Traffic; Section 2.12 Power and Communications; 3.4 City and County of Honolulu General Plan; 3.5 Primary Urban Center Development Plan; 4.1 No Action; and 4.3 Alternative Location).

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Appendix A

Site Photographs

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Photo #1. View looking northwest towards the existing above-ground reservoir tank and control building. The project site was previously graded for the initial site development of the Newtown 550' facility and the flatter portions are towards the front of the parcel. An adjacent single-family residence along the western border of the project site is visible in the photograph.



Photo #2. View of the existing above-ground reservoir tank and control building from the gated entrance along Piki Street. The project site is secured with perimeter chain link fencing topped with barbed wire. Access to the facility is restricted by a gated entry. The access road to the reservoir is paved.



Photo #3. View looking north from the area near the gated entry and motion sensor. Perimeter fencing topped with barbed wire and a single-family residence along the western border are to the left in the photograph. Vegetation along the paved access road is sparse.



Photo #4. View looking east from within the project site near the gated entry and motion sensor. Single-family residences along the eastern border are in the background. The steeper portions of the project site are along the northeast corner of the project site and behind the reservoir.



Photo #5. View from within the project site looking south towards the gated entry along Piki Street. The Newtown 550' facility is located within a developed residential neighborhood. A drainage inlet on the west side of the project site and along the paved access road is visible in the photograph.



Photo #6. View of the reservoir and control building from within the project site. The built structures are painted green, which is the typical color currently used for BWS facilities.



Photo #7. View of the steeper areas behind the existing reservoir and along the rear portions of the project site. A densely wooded area defines the rear property line and is behind and along the perimeter chain link fencing. Vegetation within the project site includes grasses and a few tall trees around the reservoir.



Photo #8. View looking southwest from the northeastern corner of the project site. The northern border of the project is defined by the densely wooded area beyond the perimeter chain link fencing along the rear property line. Pearl Harbor is about two miles south of the project site and visible in the distance.



Photo #9. View of the existing reservoir from steeper areas on the eastern portion of the project site. There are a few tall trees around the reservoir. Single-family residences along the eastern site boundary and along Piki Street are visible in the photograph. The steeper areas of the project site provide glimpses of Pearl Harbor.



Photo #10. View looking west from the rear portion of the project site and behind the existing reservoir. The northwestern corner of the project site slopes towards the adjacent wooded area beyond the perimeter chain link fencing.



Photo #11. View looking north towards the rear portion of the project site. The adjacent wooded area is behind the perimeter chain link fencing. The project site in this area slopes towards the northwestern corner.



Photo #12. View looking south from the Nahele and Piki Street intersection towards Nahele Neighborhood Park and Pearl Harbor. Nahele Neighborhood Park is approximately 0.16 miles (or 825 feet) from the project site. Parking for park users is along Nahele and Piki Streets.

Appendix B

Preliminary Geotechnical Engineering Study

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MEMORANDUM

September 23, 2022
W.O. 22-6790

TO: Jason Lau
The Limitaco Consulting Group
via email: jason@tcghawaii.com

FROM: Barron Leu

RE: Preliminary Recommendations
BWS Newtown 550 Reservoir
Exploratory Well and Site Improvement

As requested, preliminary recommendations are being provided prior to performing the fieldwork for our geotechnical investigation. The preliminary recommendations will either be confirmed or revised in our geotechnical investigation report upon completion of the fieldwork, laboratory testing, and analyses.

Project Considerations

The proposed project will consist of a new exploratory well in the southern portion of the site which will include a circular concrete slab-on-grade, with a diameter of about 7 feet, around the top of the exploratory well and a gravel pad for the exploratory well drilling equipment.

Finish grades for the proposed exploratory well slab-on-grade and gravel pad are generally expected to match that of the existing. Site grading is therefore expected to consist of relatively shallow cuts and fills.

Soil Conditions

Based on the Soil Survey (prepared by the U.S. Soil Conservation Service), and our past experience in the project area, we anticipate that the soil in the project area will generally consist of dark reddish brown clayey silt. The Soil Survey, prepared by the U.S. Soil Conservation Service, also describes the soil in the project area as having a low to moderate expansion potential.

Preliminary Recommendations

Concrete Slab-On-Grade

Due to the moderate expansion potential of the onsite clayey silt, the exploratory well concrete slab-on-grade should be underlain by a minimum 12 inches of granular fill with the upper six inches consisting of aggregate base course. The remainder of the fill should consist of granular structural fill. Over-excavation of the onsite clayey silt may be required for the placement of the granular fill section.

Prior to placement of the granular structural fill, the exposed subgrade should be sacrificed to a minimum depth of 6 inches, moisture conditioned to about 2 percent above optimum moisture content, and compacted to between 90 and 95 percent compaction as determined by ASTM D 1557. The base course and structural fill should be compacted to a minimum 95 percent compaction as determined as ASTM D 1557.



Hirata & Associates

Geotechnical
Engineering

Hirata & Associates, Inc.
99-1433 Koala Pl
Aiea, HI 96701
tel 808.486.0787
fax 808.486.0870

Gravel Pad

The gravel pad area should consist of a minimum 6 inches of base course underlain by a Tensar InterAx NX650 geogrid or approved equivalent may be used. The base course should also be compacted to a minimum 95 percent compaction as determined as ASTM D 1557.

Site Grading

Site Preparation - The project site should be cleared of all vegetation and other deleterious material. Prior to placement of fill, the exposed subgrade should be scarified to a minimum depth of 6 inches, moisture conditioned to about 2 percent above optimum moisture content, and compacted to between 90 and 95 percent compaction as determined by ASTM D 1557.

Onsite Fill Material - The onsite clayey silt will be acceptable for use in compacted fills and backfills except in the granular structural fill section recommended beneath the concrete slab. Rock fragments larger than 3 inches in maximum dimension should be removed prior to reuse.

Import Fill Material - Imported structural fill should be well-graded, non-expansive granular material. Specifications for imported granular structural fill should indicate a maximum particle size of 3 inches, and state that between 8 and 20 percent of soil by weight shall pass the #200 sieve. In addition, the plasticity index (P.I.) of that portion of the soil passing the #40 sieve shall not be greater than 10. Granular structural fill should also have a minimum CBR value of 15 and a CBR expansion value less than 1.0 percent when tested in accordance with ASTM D 1883.

Compaction - Backfill consisting of cohesive soils, such as the onsite clayey silt, should be placed in horizontal lifts restricted to eight inches in loose thickness, and compacted to between 90 and 95 percent compaction as determined by ASTM D 1557. Backfill consisting of cohesionless soils, such as the imported granular structural fill should be placed in horizontal lifts restricted to eight inches in loose thickness, and compacted to at least 95 percent compaction as determined by ASTM D 1557.

Fill placed in areas which slope steeper than 5H:1V should be continually keyed and benched as the fill is brought up in lifts.

Structural Excavations - Based on the Soil Survey and our past experience in the project area, we believe that excavations into the onsite soils can generally be accomplished using conventional excavating equipment.

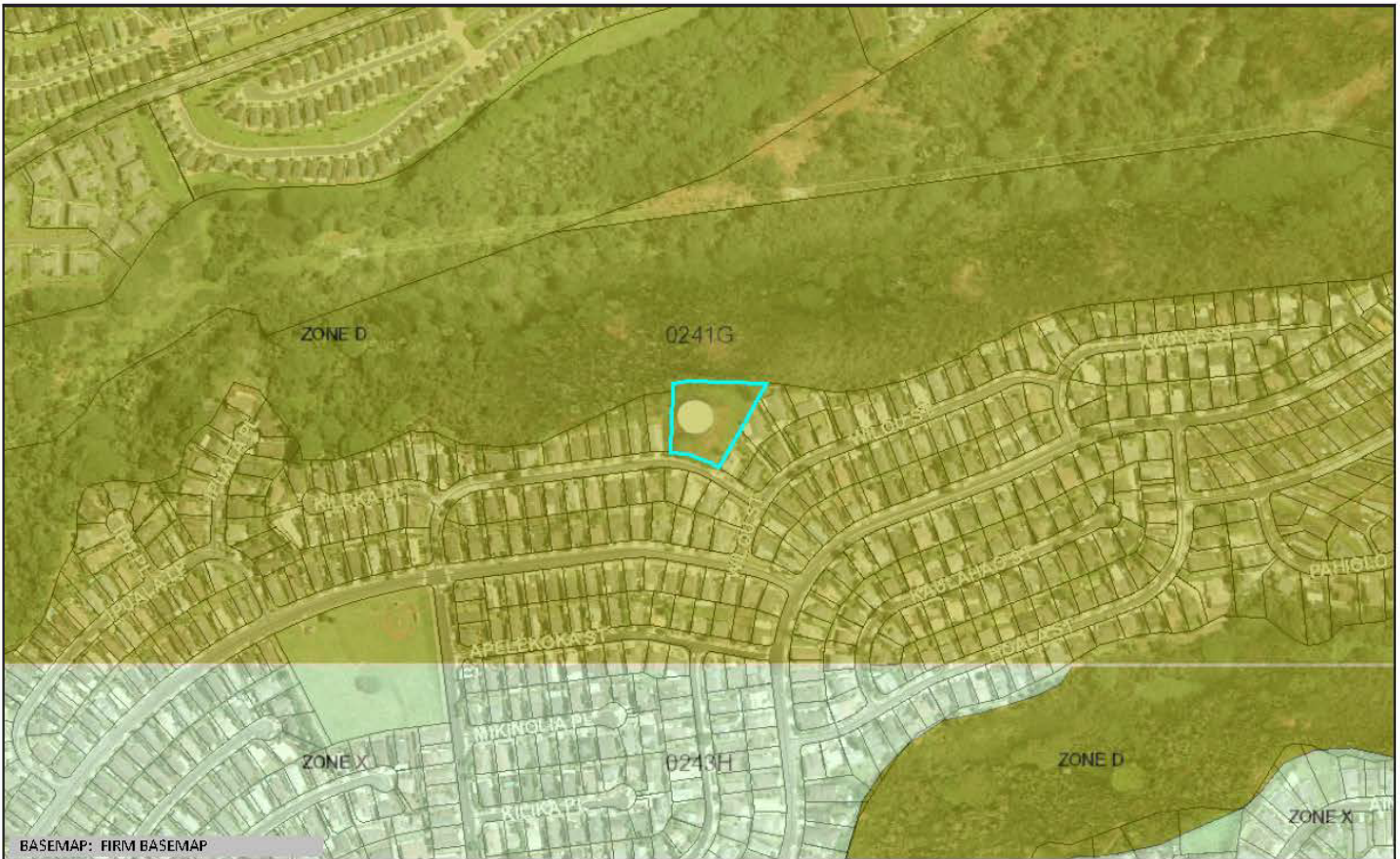
We hope that the above is sufficient for your work at this time. Feel free to call us if you have any questions or need additional information.

6790.M01

Appendix C

Flood Hazard Assessment Report

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Flood Hazard Assessment Report

www.hawaiiifip.org

Property Information

COUNTY: HONOLULU
 TMK NO: (1) 9-8-062:099
 WATERSHED: WAIMALU
 PARCEL ADDRESS: ADDRESS NOT DETERMINED
 AIEA, HI 96701

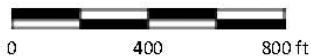
Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 05, 2014
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL: 15003CD241G
 PANEL EFFECTIVE DATE: JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



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

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

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

(Note: legend does not correspond with NFHL)

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

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

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

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

OTHER FLOOD AREAS

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

Archaeological Literature Review and Field Inspection Report

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Draft
Archaeological Literature Review and Field Inspection to
Support Consultation with SHPD for the
BWS Newtown 550 Project,
Waimalu Ahupua'a, Ewa District, O'ahu
TMK: (1) 9-8-062:099

Prepared for
 Board of Water Supply

Prepared by
 Katherine I. Placher, Ph.D.,
 Scott Belluomini, B.A.,
 and
 Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.
 Kailua, Hawai'i
 (Job Code: WAIMALU 5)

November 2022

O'ahu Island P.O. Box 1114 Kailua, HI 96734 Ph: (808) 262-9972 Fax: (808) 262-4950	Mau'i Island 1860 Main Street Waihihoku, HI 96793 Ph: (808) 242-9882 Fax: (808) 244-1994	Hawai'i Island 399 Hualani St. Suite 124 Hilo, HI 96720 Ph. (866) 956-6478	Kaua'i Island 2970 Kele St. Suite 114 Lihue, HI 96 Ph. (808) 245-
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Management Summary

Reference	Archaeological Literature Review and Field Inspection to Support Consultation with SHPD for the BWS Newtown 550 Project, Waimalu Ahupua'a, Ewa District, O'ahu, TMK: (1) 9-8-062:099 (Placher et al. 2022)
Date	November 2022
Project Number	5
Investigation Permit Number	CSH completed the fieldwork component of this study under archaeological fieldwork permit number 22-02, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-282.
Agencies	SHPD; Honolulu Board of Water Supply (BWS)
Project Proponent	BWS
Project Funding	BWS
Project Location	The proposed project is at 98-1876 Piki Street, Aiea, in Waimalu Ahupua'a, Ewa District, O'ahu (TMK: [1] 9-8-062:099). The project area is bounded by Piki Street to the south, residential houses to the east and west, and a vegetated slope to the north. It is depicted on a portion of the 1998 Waipahu U.S. Geological Survey (USGS) topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2019 aerial photograph (Figure 3).
Project Land Jurisdiction	City and County of Honolulu
Project Acreage	1.16 acres (0.469 hectares)
Project Description and Ground Disturbance	The BWS is evaluating an exploratory well at the existing reservoir facility.
Document Purpose	This investigation was designed—through historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the proposed project and based on findings, to consider cultural resource management recommendations. This document is intended to facilitate the project's planning and to support the project's historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey (AIS) investigation, per HAR §13-276.
Built Environment	The built environment of the project area consists of the BWS reservoir well and its facilities. In the surrounding vicinity, the built environment consists of residential neighborhoods, streets, and utility infrastructure (see Figure 3).

<p>Natural Environment</p> <p>The project area is approximately 3 km inland from the coast and is 160 m (525 feet [ft]) above sea level; land within the project area is heavily modified with a stepped hillside on the east portion of the project. The rest of the project area is relatively flat with additional sloping in the northwest corner. The average temperature is 22.5° C (72.5° F) (Giambelluca et al. 2014), and annual rainfall averages 1152 mm (45.3 inches) (Giambelluca et al. 2013), with most of the rain falling between October and March. Vegetation within the project area consists of manicured grass with a few trees.</p> <p>According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist primarily of Manana silty clay loam, 12 to 25% slopes, eroded (Figure 4). The Manana series is described as follows:</p> <p>This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in material weathered from basic igneous rock. They are gently sloping to steep. [...] These soils are used for sugarcane, pineapple, and pasture. The natural vegetation consists of bermudagrass, Christmas berry, false staghornfern, glenwoodgrass, guava, koa, ohia, and sedges. [Foote et al. 1972:94]</p>	<p>Background Research Methods</p> <p>Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library at the University of Hawai'i at Mānoa, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historical photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historical maps at the Survey Office of the Department of Land and Natural Resources (DLNR). Historical maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waithona 'Aina database (Waithona 'Aina 2021).</p> <p>This research provided the environmental, cultural, historical, and archaeological background for the project area. Historical maps and aerial photographs provide a cultural context and chronology of the changing landscape of the project area and surrounding vicinity.</p>
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<p>Pre- and Early Post-Contact Background Research</p>	<p>The project area is located within the lower valley of Waimalu Ahupua'a, which is between the <i>ahupua'a</i> (traditional land divisions) of Kalaao and Waiau in the traditional 'Ewa District ('Ewa Moku). The word "Waimalu" literally translates to "sheltered water" (Pukui et al. 1974:225), likely in reference to the numerous fishponds as well as Pearl Harbor. 'Ewa District was a former political center on O'ahu (Handy and Handy 1972:470). According to ʻĪʻĪ, Waimalu was also the residence of one of Kamehameha I's sons, Kina'u, as well as Kina'u's people and one of his chiefs: "In late 1803 or early 1804, while he was living with the chiefs at Halaulani, Waipio, 'Ewa, the king became ill. At this time, Kina'u, his people, and one of the chiefs—either Keliiamaikai or Kalaimamahū—were residing at Waimalu" (ʻĪʻĪ 1959:33).</p> <p>A few descriptions of the lands and agricultural practices of Waimalu are provided by historic accounts. These accounts indicate there were extensive taro flats in the coastal and lower valley portions of the <i>ahupua'a</i>, and agricultural terraces along Waimalu Stream and Waipi spring (Handy 1940; ʻĪʻĪ 1959). Along the taro flats, just <i>mauka</i> (inland) of the floodplains near Pearl Harbor, a trail extended westward from Honolulu (Figure 5; ʻĪʻĪ 1959).</p> <p>During the first decades of the nineteenth century, western visitors begin to describe the 'Ewa landscape above Pearl Harbor as it had been developed by the Hawaiians. Archibald Campbell, travelling through 'Ewa in 1809, recorded the following:</p> <p>We passed by footpaths winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains are covered with wood to a great height. [Campbell 1967:103]</p> <p>A contrasting picture of 'Ewa is recorded in the missionary William Ellis' description from 1823–1824 of the 'Ewa lands away from the coast:</p> <p>The plain of 'Ewa is nearly twenty miles in length, from the Pearl River to Waiauru, and in</p>
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	<p>some parts nine or ten miles across. The soil is fertile, and watered by a number of rivulets, which wind their way along the deep water-courses that intersect its surface, and empty themselves into the sea. Though capable of a high state of improvement, a very small portion of it is enclosed or under any kind of culture, and in travelling across it, scarce a habitation is to be seen. [Ellis 1963:7]</p>
<p>Land Commission Awards (LCAs)</p>	<p>The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the Crown and the <i>aliʻi</i> (chiefly class) received their land titles (Chinen 1958:15–16). <i>Kuleana</i> awards for individual parcels within the <i>ahupuaʻa</i> were subsequently granted in 1850 (Chinen 1958:29–31). These awards were presented to tenants comprising Native Hawaiians, naturalized foreigners, non-Hawaiians born in the Islands, or long-term resident foreigners who could prove occupancy on the parcels before 1845. Waimalu was awarded to the <i>aliʻi</i> Miriam Kekau ʻōnohi in the Māhele (Land Commission Award [LCA] 11216). In all, 93 people claimed land in Waimalu, and 63 claims were awarded. Of these awards, most were within 500 m of the coast and only two were within the valley: LCA 70 located to the south of the current project area, and LCA 8525B in the upper valley to the southeast of the current project area (Figure 6). LCA 70 was awarded to Waiaha and the records indicate the land was used for a house lot. According to the Waiohona ʻAina database (2021), LCA 8525B was not awarded and there is no land use information for this record.</p>
<p>Late Nineteenth Century to the Present</p>	<p>During the second half of the nineteenth century, traditional agricultural pursuits in ʻEwa were displaced by other agricultural interests including rice, sugar, and pineapple cultivation. Beginning in the 1860s, rice cultivation displaced taro on the <i>makai</i> (seaward) flatlands of the ʻEwa district, reflecting the influx of Chinese immigrants to the Hawaiian Islands. The Chinese had been hired as contract laborers on newly developed sugar plantations. The Honolulu Plantation Company, stretching from Hālaawa to Waimalu, was incorporated in 1899 (Figure 7 through Figure 9). While the current project area is located within the Honolulu Plantation lands on the 1906 Donn map (see Figure 8), it is documented as just <i>mauka</i> of the upper limits of</p>

	<p>sugarcane production on the 1924 Evans map (see Figure 9). The plantation was unique as it was the only one in the Islands that carried on the sugar refining process (Condé and Best 1973). In 1947 the Honolulu Plantation Company lands were incorporated into the Oahu Sugar Company by Benjamin Dillingham (Condé and Best 1973:313). Large shares of Honolulu Plantation land were gradually turned over to the government for military use (see Figure 8). In 1907 a sizeable portion was used for the expansion of the U.S. Naval Facilities at Pearl Harbor. In 1935, all of the Puʻuloa lands (approximately 15% of the plantation) were handed over for the construction of Hickam Air Field. More plantation land was given up during World War II and post-war urbanization brought an end to the Honolulu Plantation Company in 1947. The plantation equipment and remaining land was sold to the neighboring Oahu Sugar Company, and the mill was dismantled and shipped to the Philippines. However, the refinery continued to operate, producing a liquid sugar product for canners and bottlers, until the Hawaiʻi bottlers switched to corn syrup and the operation shut down in 1996. The refinery building is now the site of the Hawaiʻi Agriculture Research Center (HARC) (Dorrance and Morgan 2000:50). The current project area remained undeveloped through to the late twentieth century (Figure 10 through Figure 17). An unimproved road is depicted extending along the southeast side of the project area on early to mid-twentieth century historic maps (see Figure 10 through Figure 12). On the 1954 and 1968 maps (see Figure 14 and Figure 16), an unimproved road is shown extending through the northern edge of the project area. These unimproved roads can be seen on historic aerial photographs (see Figure 13 and Figure 15), which also depict the project area among agricultural fields. As urbanization extended from the coastal regions <i>mauka</i> after the mid-twentieth century, the agricultural fields were replaced with the BWS facility within the current project area and the surrounding residential neighborhood (see Figure 17). The project area and its vicinity have remained relatively unchanged since the 1978 aerial photograph (see Figure 17; compare to Figure 3).</p>
<p>Summary of Prior Archaeological Studies in the Vicinity</p>	<p>While no previous archaeological studies have been conducted within the project area, several studies have been conducted in the vicinity. Previous archaeological studies in the vicinity are depicted in Figure 18 and summarized in</p>

<p>Table 1. The previously identified historic properties are depicted in Figure 19 and summarized in Table 2. The previous archaeological studies in which historic properties were identified in the immediate vicinity of the current project area are discussed below.</p> <p>Dunn and Haun (1992a) conducted an archaeological inventory survey for the Waimalu Golf Course project. The survey consisted of a pedestrian survey of the project area and excavation of one test unit. Four historic properties were identified during the survey: State Inventory of Historic Places (SIHP) #s -04205 through -04208. SIHP #s -04205 and -04208 consisted of subsurface, cylindrical, concrete structures that functioned as water containment structures. SIHP # -04205 was inscribed with "1924." SIHP #s -04206 and -04207 are circular excavated pits whose functions are indeterminate. The excavation test unit was placed within SIHP # -04206. Two carbon samples collected from the unit were sent for radiocarbon analysis, yielding date ranges of AD 1490–1950 for the first sample, and AD 1684–1738, 1810–1930, and 1955 for the second sample. Based on these results, the SIHP # -04206 excavated pit was interpreted as being historic.</p> <p>The majority of the previously identified historic properties are identified well to the southeast of the current project area (Dunn and Haun 1992b; Emory 1957; Frost 1976; Kawachi 1991).</p> <p>Traditional Hawaiian activities in the vicinity of the project area would have included agriculture, habitation, transportation/pathways, resource gathering, and burials. However, the distribution of LCAs (or lack thereof) in the vicinity of the survey area suggests indigenous Hawaiian land use was focused in the lowlands of Pearl Harbor and along streams, and that the plateau lands, where the current survey area is situated, were not intensively utilized.</p> <p>Beginning in the mid-nineteenth century, the Honolulu Plantation Company utilized the lowlands and plateaus of Waimalu and the surrounding <i>ahupua'a</i> for the cultivation of sugar. Historic maps have indicated the survey area was just <i>mauka</i> of the sugarcane fields, but historic aerials depict the project area among agricultural fields. By the late twentieth century, these agricultural fields were replaced by the extant neighborhoods and the BWS facility.</p>	<p>Background Summary and Predictive Model</p>
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<p>While no archaeological studies have been conducted within the project area, previous archaeological studies and historic documents indicate land use in the vicinity of the current survey area is long and varied, extending from pre-Contact times into the modern era. Thus, there is the potential to encounter historic properties on the surface during the field inspection and sub-surface historic properties during any future ground-disturbing activities, including pre- and post-Contact habitation and agricultural deposits.</p>	<p>Fieldwork Effort</p> <p>The field inspection was conducted on 6 September 2022 by CSH archaeologists Scott Belluomini, B.A., and Ryan Harismendy, B.A. It took approximately 0.5 person-days to complete (Figure 20).</p> <p>The project area is entirely fenced in with minimal vegetation (Figure 21 through Figure 24). Two BWS structures are within the project area. The project area was observed as being heavily modified with evidence of cut and fill due to the stepped topography to the east of the BWS reservoir (see Figure 23 and Figure 25).</p> <p>No potential surface archaeological historic properties were identified within the project area during the field inspection. However, the BWS facility structures (see Figure 21 and Figure 26) are older than 50 years of age. The building and well will not be impacted by the proposed exploratory well.</p>
	<p>Historic Preservation Review Steps</p> <p>Based on the findings of the current study, it is unlikely for historic properties to be affected by the proposed project and no archaeological historic properties are likely to be present. The proposed replacement of fencing will not affect the existing BWS structures. Hence, the current study supports a project effect determination of "no historic properties affected" pursuant to HAR § 13-275-7(a)(1).</p> <p>No further historic preservation work is warranted following SHPD concurrence with the effect determination.</p> <p>If, in the unlikely event that subsurface cultural deposits or human skeletal remains are encountered during project-related construction activities, all work in the immediate area should stop and the SHPD should be notified immediately.</p>

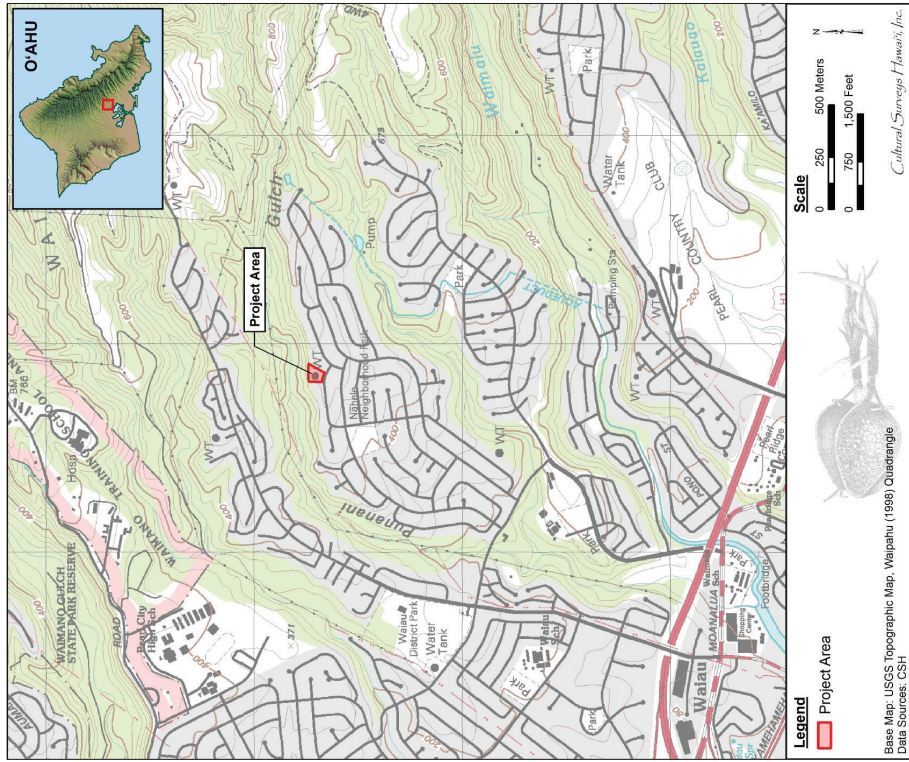


Figure 1. A portion of the 1998 Waipahu U.S. Geological Survey (USGS) topographic quadrangle, showing the project area

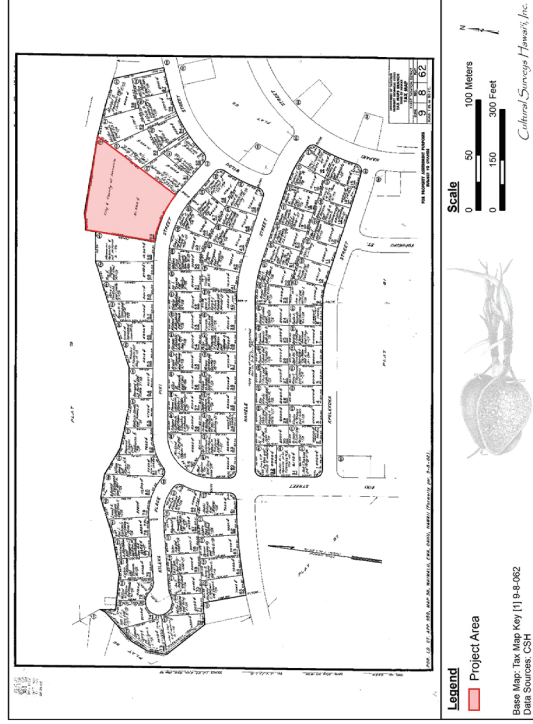


Figure 2. Tax Map Key (TMK) (1) 9-8-062, showing the project area (Hawai'i TMK Service 2014)



Figure 3. Aerial photograph showing the project area (ESRI 2019)

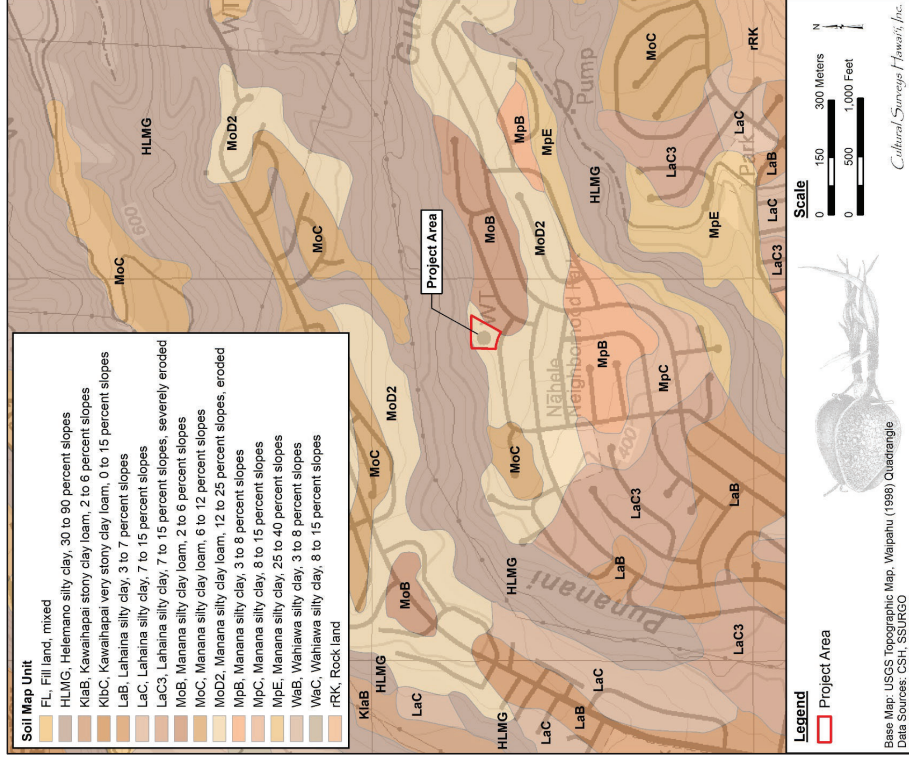


Figure 4. Portion of the 1998 Waipahu USGS topographic quadrangle with overlay of Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (Foote et al. 1972; USDA SSURGO 2001), indicating soil types within and surrounding the project area

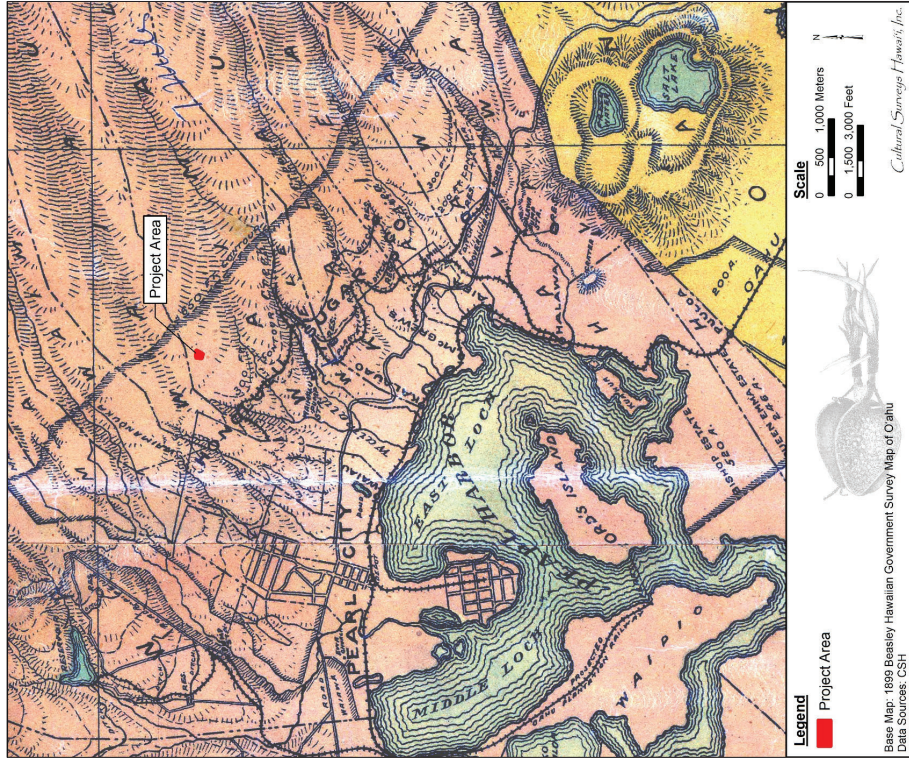


Figure 7. Portion of the 1899 Beasley Hawaiian Government Survey map of Oahu showing the project area within Honolulu Sugar Company lands

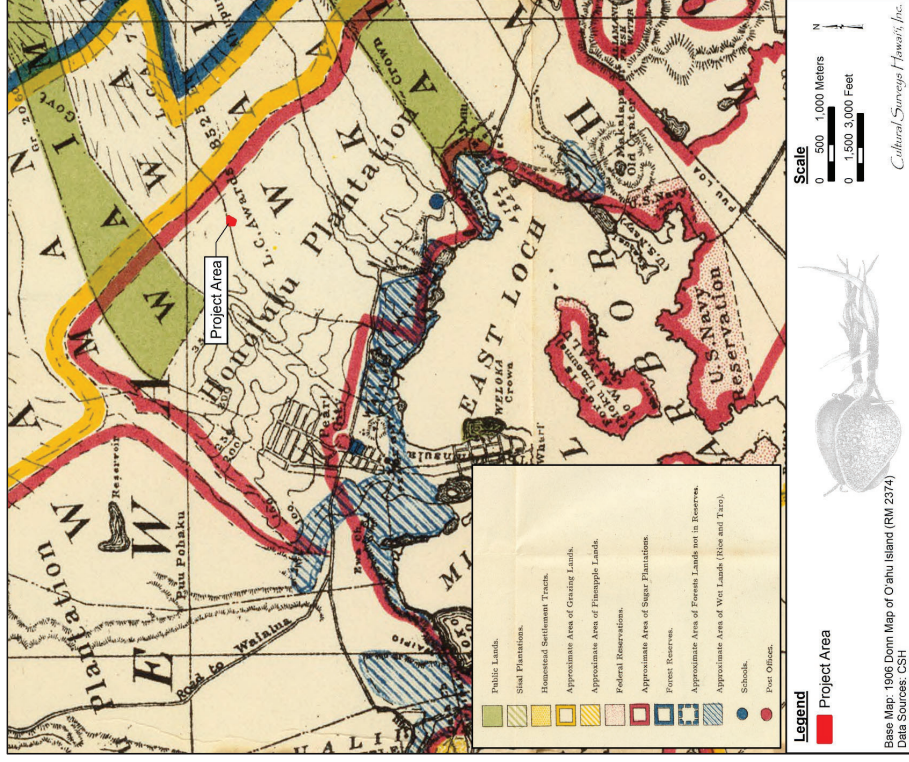


Figure 8. Portion of the 1906 Donn map (Registered Map [RM] 2374) showing the location of the project area within Honolulu Plantation lands

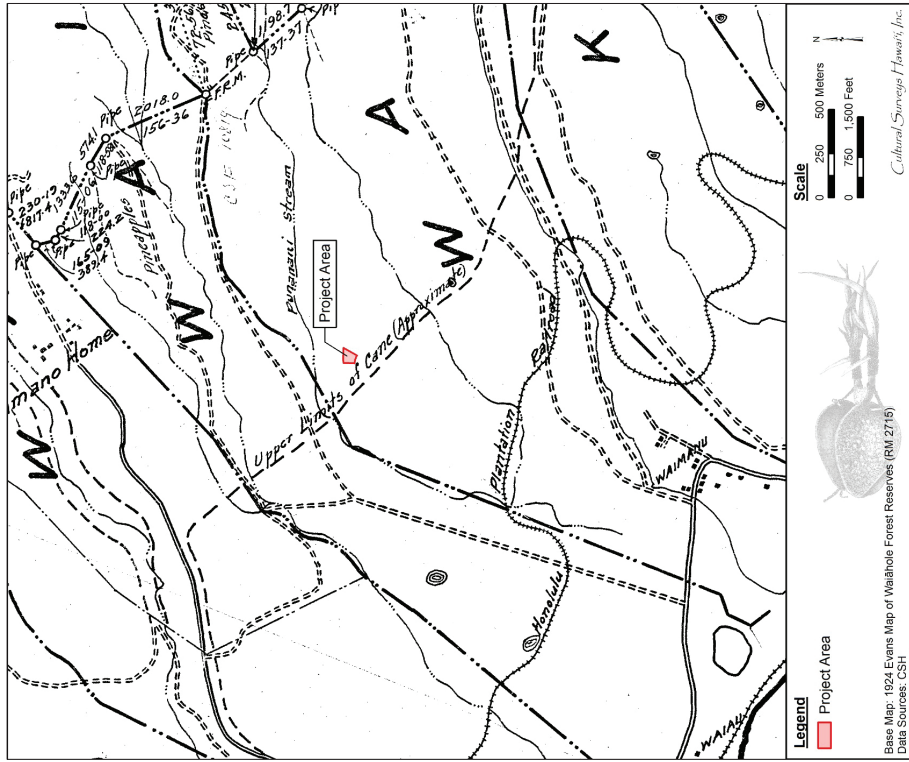


Figure 9. Portion of the 1924 Evans map (RM 2715) showing the location of the project area just mauka of the upper limits of the sugarcane fields

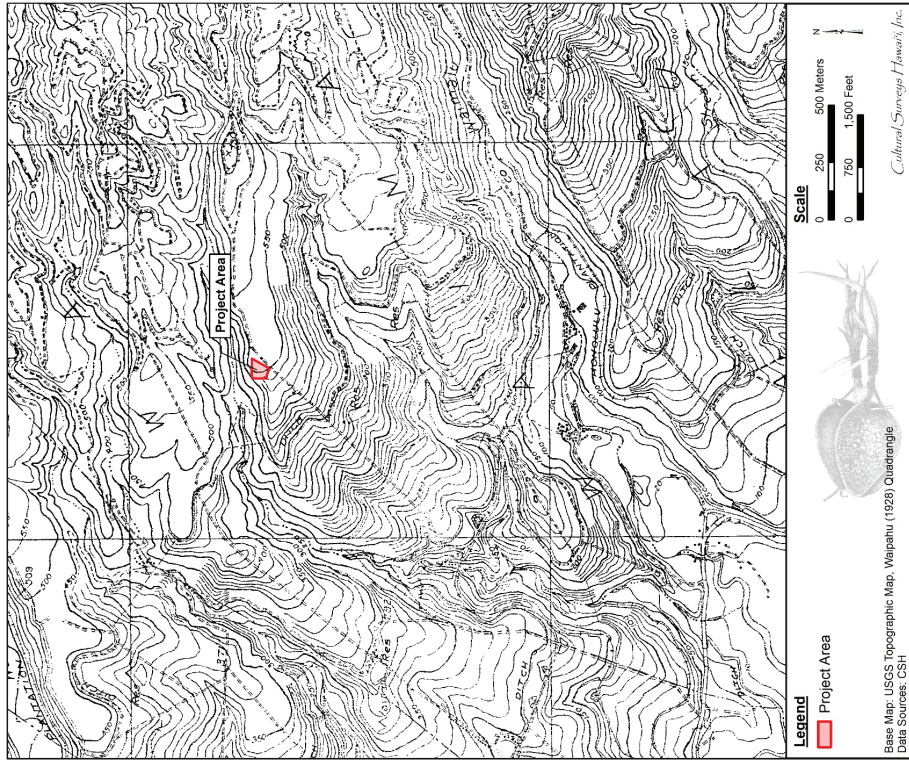


Figure 10. Portion of the 1928 Waipahu USGS topographic quadrangle showing the project area in an undeveloped area; note the unimproved road extending along the southeast side of the project area

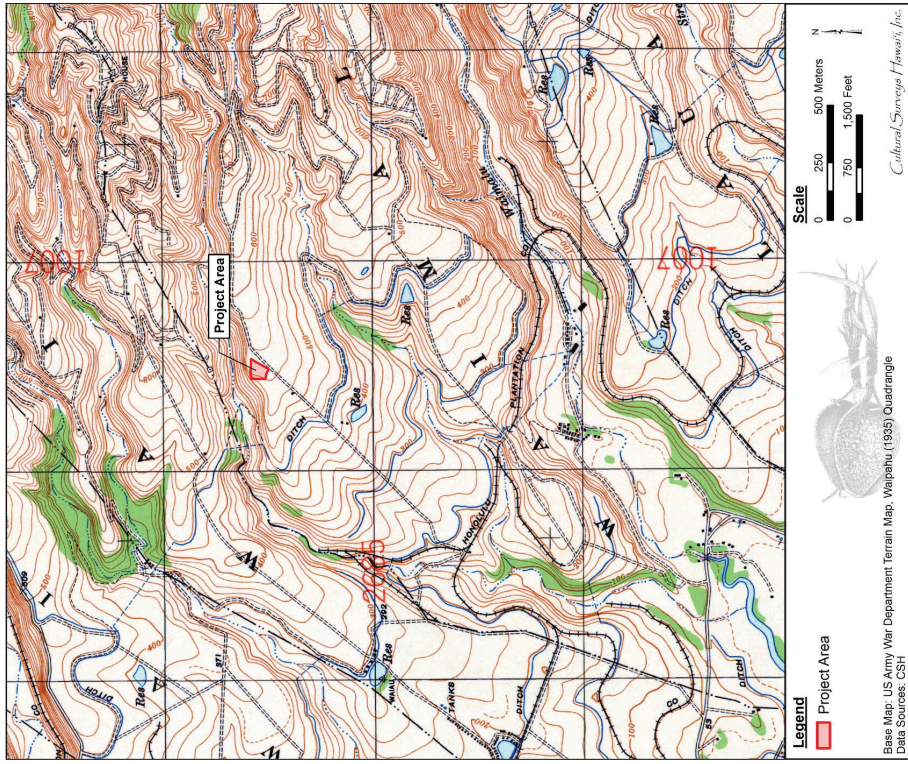


Figure 11. Portion of the 1935 U.S. Army War Department terrain map, Waipahu quadrangle, showing the project area in an undeveloped area; note the unimproved road extending along the southeast side of the project area

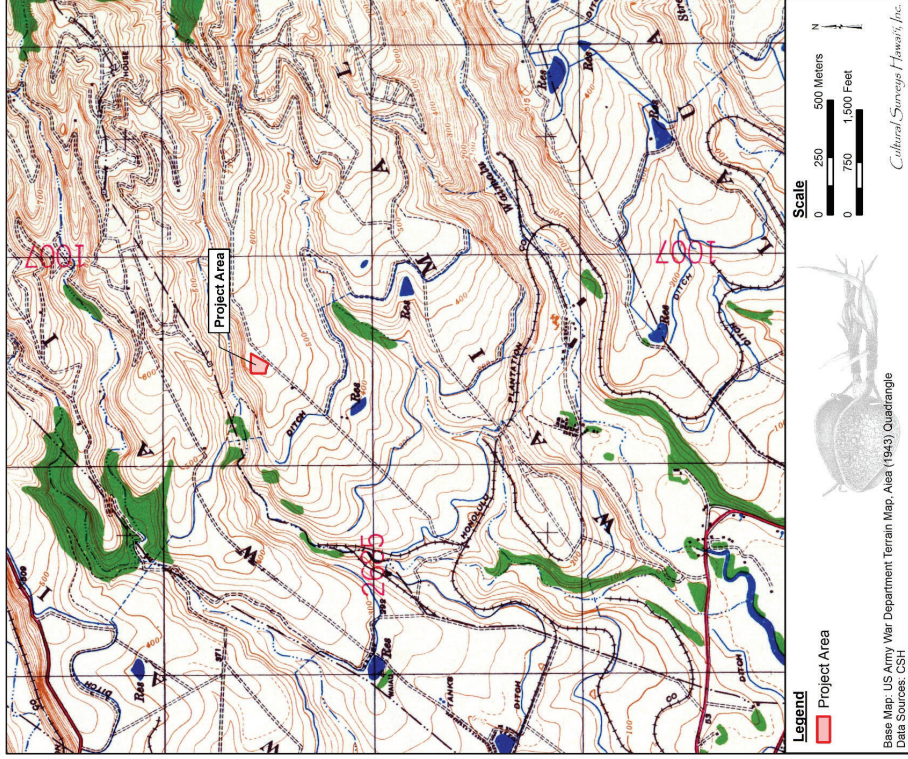


Figure 12. Portion of the 1943 U.S. Army War Department terrain map, Aiea quadrangle, showing the project area in an undeveloped area; note the unimproved road extending along the southeast side of the project area

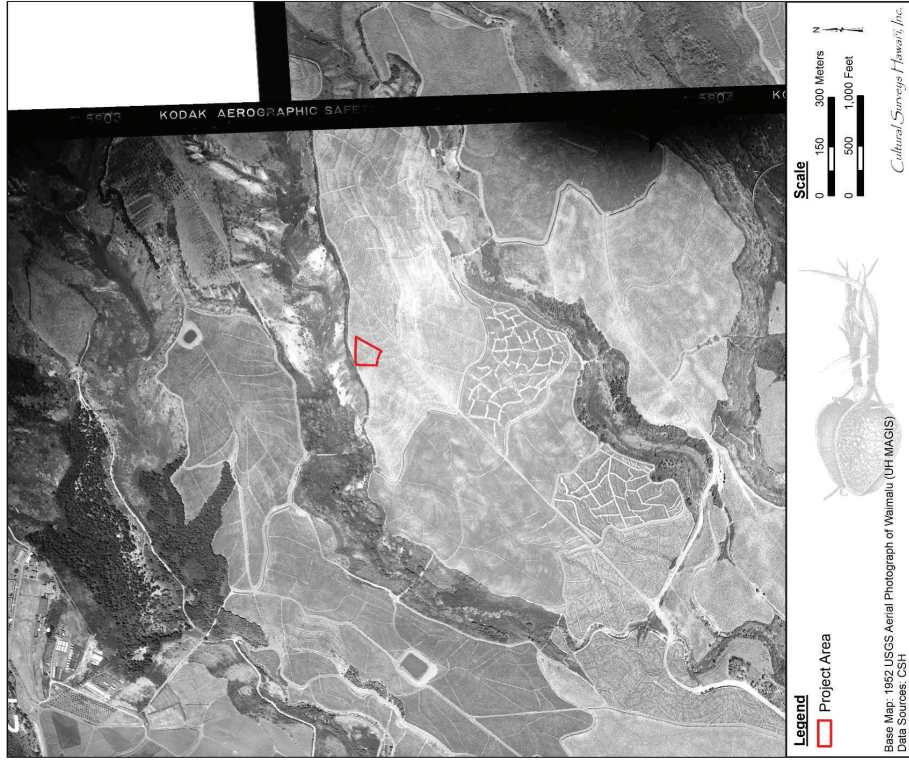


Figure 13. 1952 USGS aerial photograph (UH MAGIS) showing the project area among agricultural fields; note the unimproved road extending along the southeast side of the project area

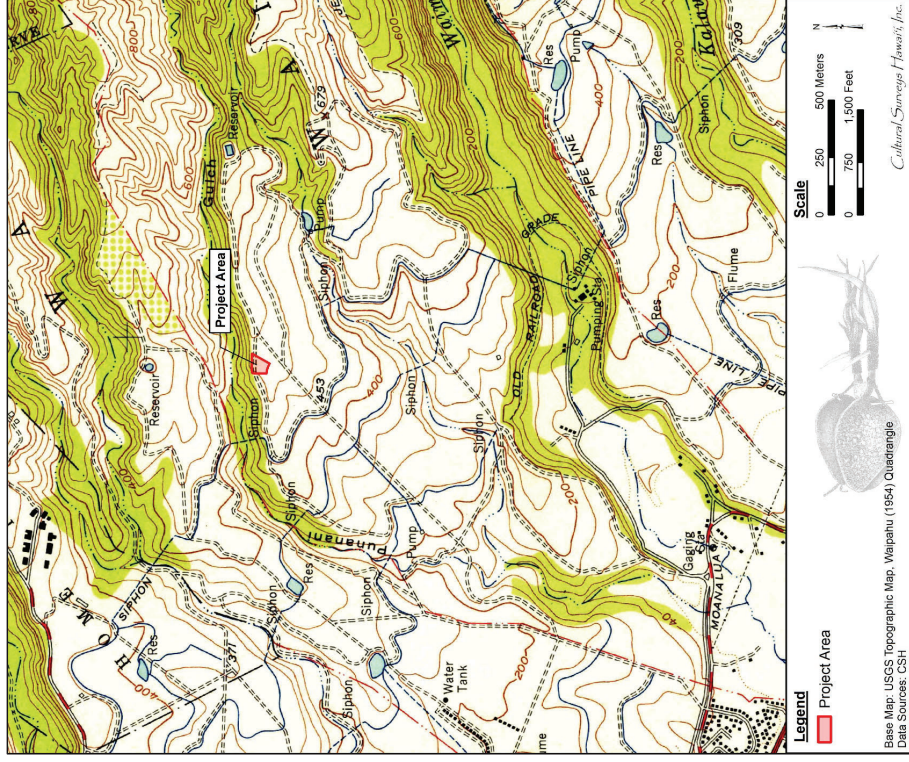


Figure 14. Portion of the 1954 Waijahu USGS topographic quadrangle showing the project area in an undeveloped area; note the unimproved roads extending through the north portion and along the southeast side of the project area

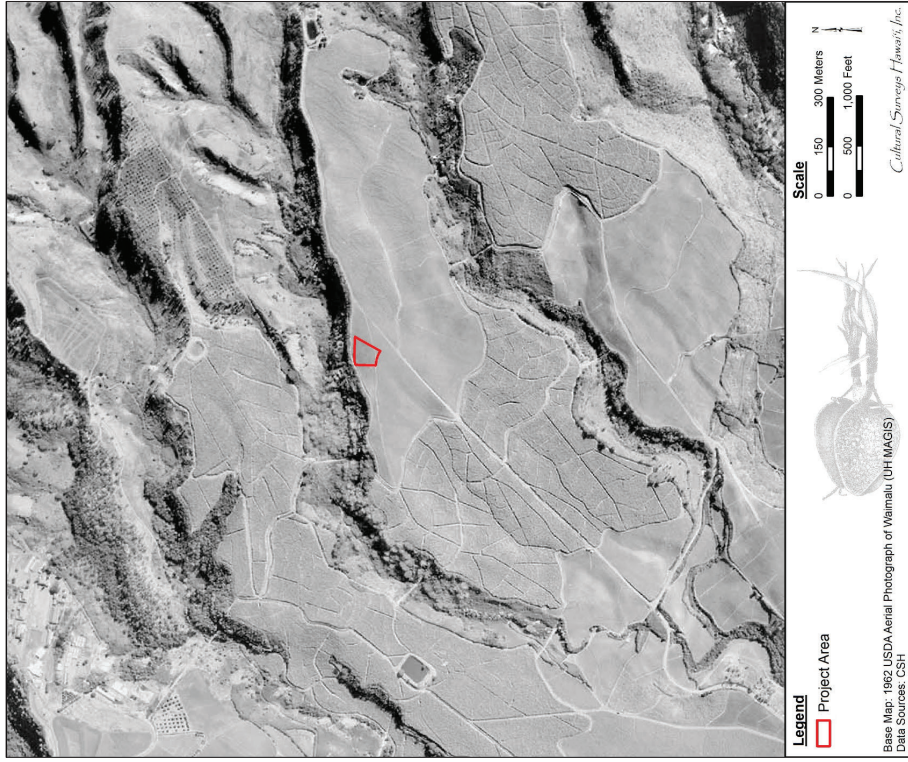


Figure 15. 1962 USDA aerial photograph (UH-MAGIS) showing the project area among agricultural fields; note the unimproved roads extending along the north side and southeast side of the project area

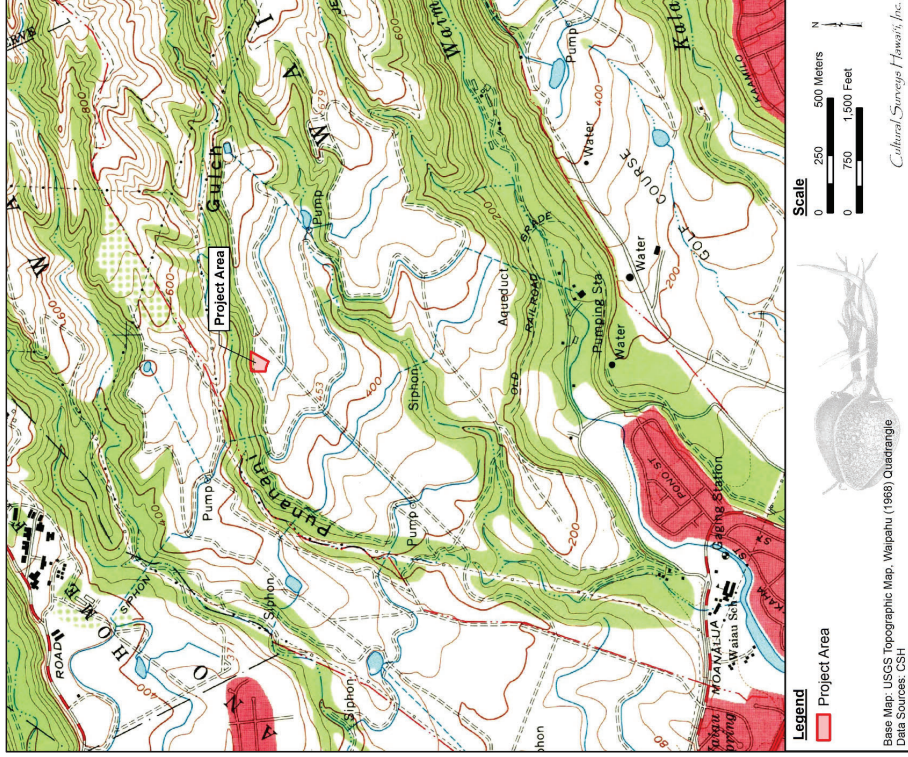


Figure 16. Portion of the 1968 Waipahu USGS topographic quadrangle showing the project area in an undeveloped area; note the unimproved roads extending through the north portion and along the southeast side of the project area

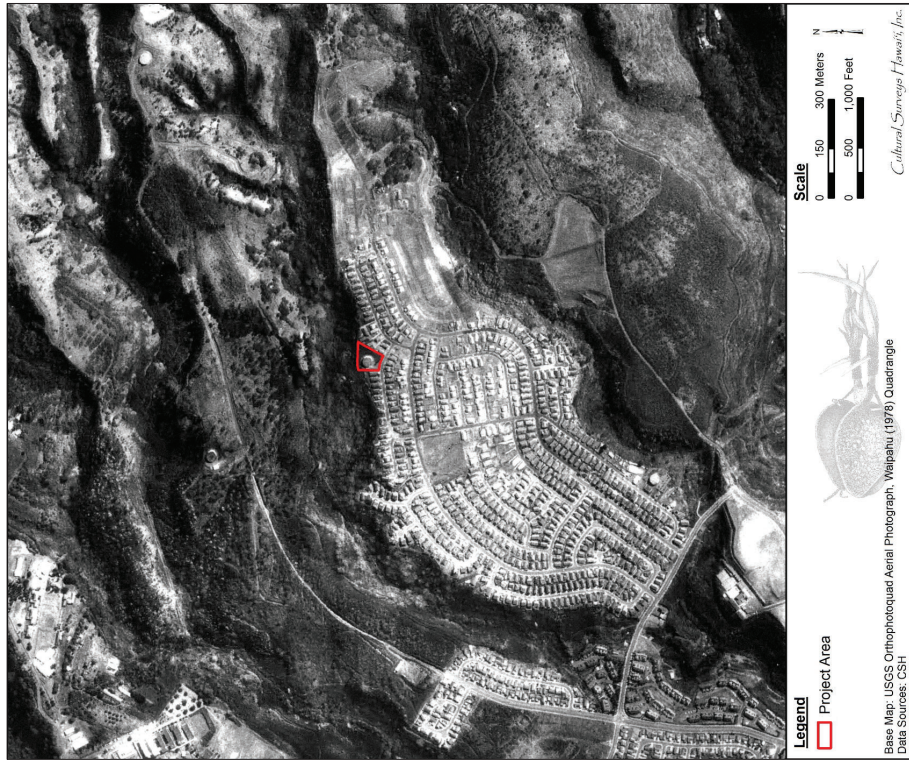


Figure 17. 1978 USGS orthophotoquad aerial photograph showing the urban development in the vicinity of the project area; note the presence of the BWS facility at the project area location and the surrounding neighborhood

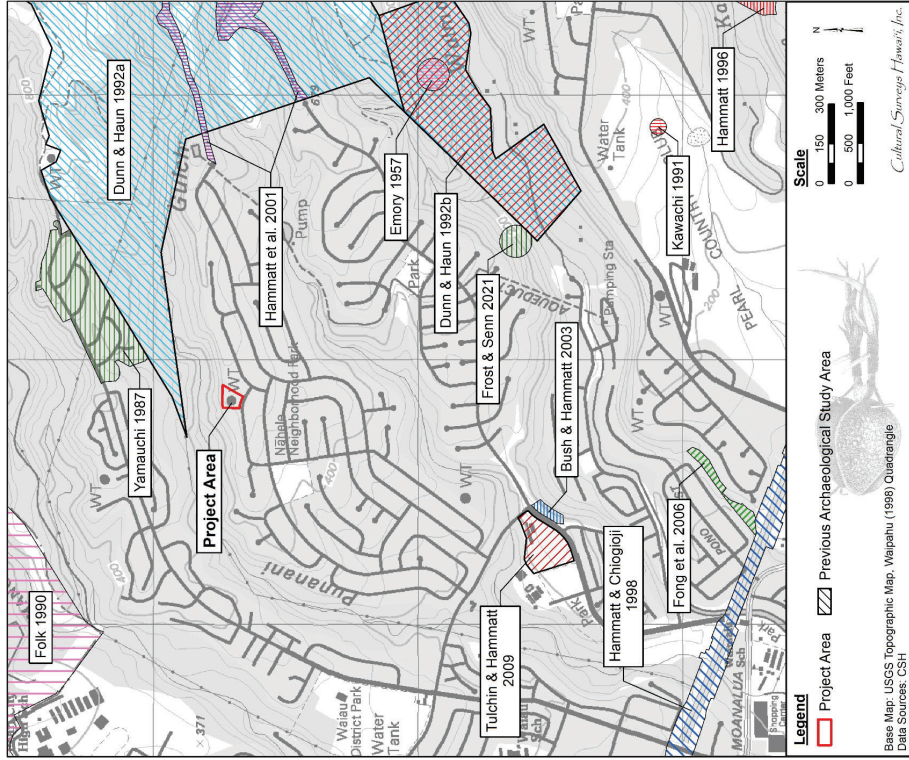


Figure 18. A portion of the 1998 Waipahu USGS topographic quadrangle with overlay of previous archaeological studies in the vicinity of the project area

Table 1. Previous archaeological studies in the vicinity of the project area

Reference	Type of Investigation	General Location	Results (SIHP # 50-80-09)
Emory 1957	Archaeological site survey	Waimalu Burial Cave; TMK: (1) 9-8-011:014	SIHP # -02311, Waimalu Burial Cave with disturbed human burials and wooden bowl No historic properties identified
Yamauchi 1987	Archaeological reconnaissance	Wailuna Subdivision; TMK: (1) 9-8-002:003	
Folk 1990	Archaeological reconnaissance	Waimao Training School and Hospital; TMK: (1) 9-7-025:001	Dressed-stone irrigation ditch and a cemetery, no site number assigned
Kawachi 1991	Memorandum	Pearl Country Club; TMK: (1) 9-8-011:048	SIHP # -04732, inadvertent discovery of human skeletal remains
Dunn and Haun 1992a	Archaeological inventory survey	Waimalu Golf Course; TMK: (1) 9-8-073	SIHP #s -04205, subsurface concrete structure for water containment; -04206, excavated pit; -04207, excavated pit; and -04208, subsurface concrete structure for water containment

Reference	Type of Investigation	General Location	Results (SIHP # 50-80-09)
Dunn and Haun 1992b	Archaeological inventory survey	Waimalu Golf Course; TMK: (1) 9-8-073	SIHP #s -02311 lava tube with nine features and a disturbed human burial; -04248 rock shelter containing a disturbed human burial; -04249 cave containing disturbed human remains; -04250 rock shelter containing one adult human vertebra; -04251 rock shelter containing one adult human scapula fragment; -04252 cave and rock shelter complex with a human burial component; -04253 cave and rock shelter complex with human burial and habitation; -04254 rock shelter with a human burial component; -04255 cave and rock shelter complex with human burial and habitation; -04256 lava tube with human habitation component; -04257 human habitation complex consisting of a mound and a midden scatter; -04258 cave with human habitation component; -04259 rock shelter with human habitation component; -04260 one terrace associated with animal husbandry; -04261 cave with a human burial component
Hammatt 1996	Archaeological reconnaissance	TMK: (1) 9-8-011:001 por.	Cattle wall, no site number assigned
Hammatt and Chigiogji 1998	Archaeological assessment	Interstate H-1 from Hālawā to H1-H2 interchange	Historic structures identified in Pearl City; no site numbers assigned
Hammatt et al. 2001	Archaeological assessment (no finds AIS)	Proposed reservoir sites; TMKs: (1) 9-8-002:002, 003, 009, 021, 033	1936 reservoir and associated T-shaped spillway identified, no site numbers assigned
Bush and Hammatt 2003	Archaeological inventory survey	2-acre parcel; TMK: (1) 9-8-073:002	No historic properties identified

Reference	Type of Investigation	General Location	Results (SIHP # 50-80-09)
Fong et al. 2006	Archaeological assessment	BWS Waimalu Wells Site 1; TMK: (1) 9-8-026:072 (por.)	No historic properties identified
Tulchin and Hammatt 2009	Archaeological assessment	LDS Meetinghouse; TMK: (1) 9-8-060:009	No historic properties identified
Frost and Senn 2021	Archaeological reconnaissance	Waimalu rock shelter; TMK: (1) 9-8-002:003	SIHP # -01169, rock shelter

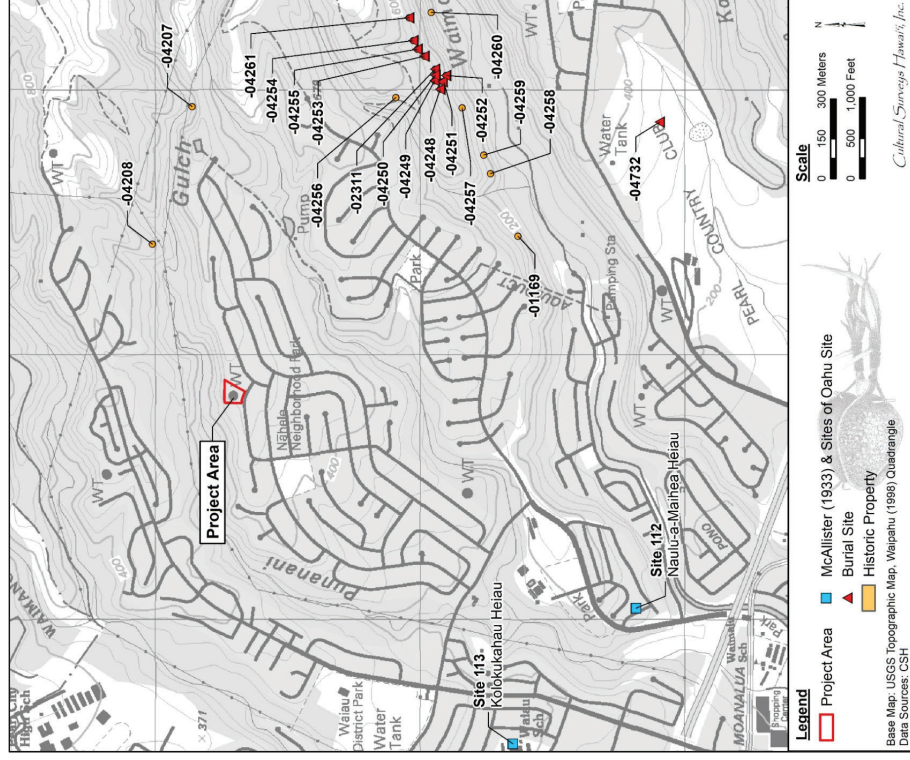


Figure 19. A portion of the 1998 Waipahu USGS topographic quadrangle with overlay of historic properties in the vicinity of the project area

Table 2. Historic properties previously identified in the vicinity of the project area

SIHP #	Formal Type/ Name	Comment	Source
50-80-09 Site 112	Naulu-a-Maihea Herai	<i>Heraiu</i>	McAllister 1933
Site 113	Kolokukahau Heiau	<i>Heraiu</i>	McAllister 1933
-01169	Wooden structure	Wooden structure with corresponding cement cistern, hewn stone foundation	Frost and Senn 2021
-02311	Waimalu Burial Cave	Burial cave with previously disturbed human skeletal remains, carved wooden bow; Bernice Pauahi Bishop Museum (BPBM) site # B2-7	Emory 1957; Dunn and Haun 1992b
-04207	Pit feature	Circular excavated pit of indeterminate function	Dunn and Haun 1992a
-04208	Water containment structures	Subsurface cylindrical concrete structure	Dunn and Haun 1992a
-04248	Rock shelter	Rock shelter with human skeletal remains	Dunn and Haun 1992b
-04249	Burial cave	Burial cave with disturbed human skeletal remains	Dunn and Haun 1992b
-04250	Rock shelter	Rock shelter with human skeletal remains	Dunn and Haun 1992b
-04251	Rock shelter	Rock shelter with human skeletal remains	Dunn and Haun 1992b
-04252	Rock shelter and Cave	Rock shelter and cave with human skeletal remains	Dunn and Haun 1992b
-04253	Rock shelter and Cave	Rock shelter and cave with human skeletal remains and temporary habitation component	Dunn and Haun 1992b
-04254	Rock shelter	Rock shelter with human skeletal remains	Dunn and Haun 1992b
-04255	Rock shelter and Cave	Rock shelter and cave with human skeletal remains and temporary habitation component	Dunn and Haun 1992b
-04256	Lava tube	Lava tube with a temporary habitation component	Dunn and Haun 1992b
-04257	Habitation site	Habitation site with a mound of indeterminate function and a midden scatter	Dunn and Haun 1992b

SIHP #	Formal Type/ Name	Comment	Source
50-80-09 -04258	Cave	Cave with a temporary habitation component	Dunn and Haun 1992b
-04259	Rock shelter	Rock shelter a temporary habitation component	Dunn and Haun 1992b
-04260	Terrace	Terrace associated with historic animal husbandry	Dunn and Haun 1992b
-04261	Burial cave	Burial cave with human skeletal remains	Dunn and Haun 1992b
-04732	Mandibular bone fragment	Likely isolated find in fill, not in situ burial	Kawachi 1991

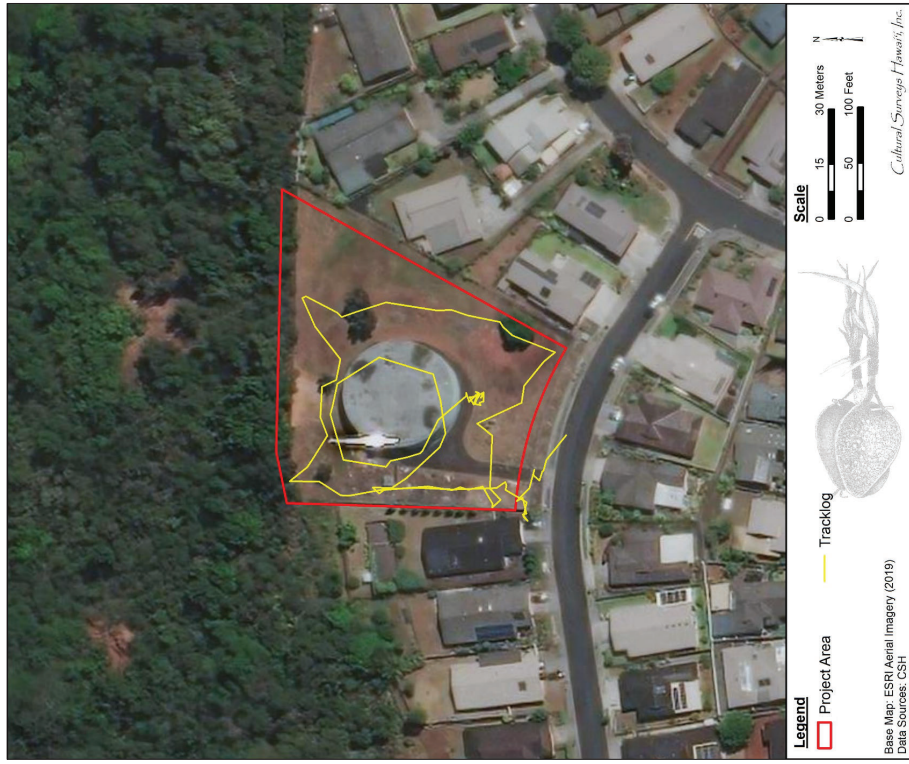


Figure 20. Aerial photograph (ESRI 2019) with overlay of the project area and one archaeologist's GPS track log



Figure 21. View of project area from the southwest corner of the project area, view to northeast



Figure 22. View of general location for proposed wells, view to southwest

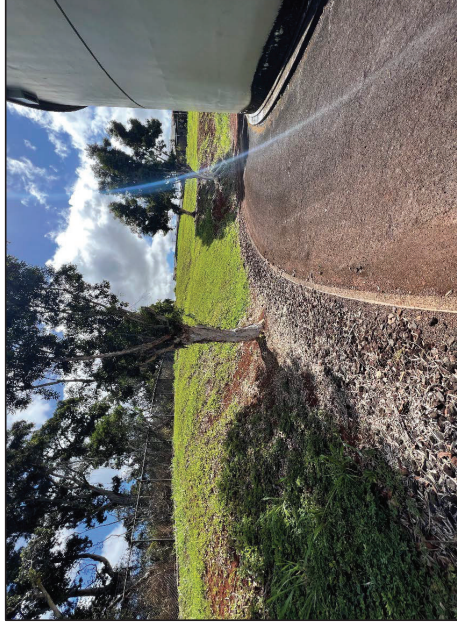


Figure 23. View of north and east portion of the project area, showing evidence of former land alteration, view to east



Figure 24. View of west edge of project area, view to north

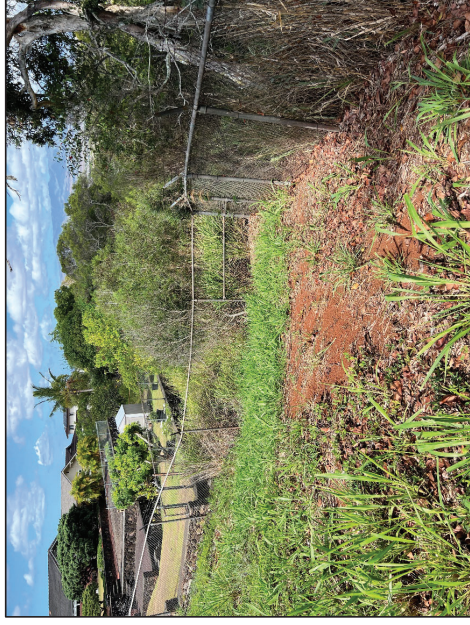


Figure 25. Northwest corner of the project area showing sloping toward gulch, view to west



Figure 26. BWS structure in project area, view to northwest

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Appendix E

Architectural Inventory Survey

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Architectural Inventory Survey, Newtown 550 Reservoir,
Exploratory Well Project, Honolulu, Hawai'i

Prepared by MASON under contract to
Limtiaco Consulting Group for
Board of Water Supply

October 2022

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Introduction

Mason Architects, Inc. (MASON) was hired by Limitiaco Consulting Group to develop an Architectural Inventory Survey of the Newtown 550 Reservoir. This survey was prepared in support of the Board of Water Supply's (BWS) Environmental Assessment (EA) for the Newtown 550 Reservoir Exploratory Well Project. MASON surveyed the structures on the site and evaluated them for historical significance and effects. The property was evaluated as not meeting HAR §13-275-6 significance criteria, and the proposed project was evaluated as having "No effect to historic properties" per HAR §13-275-7.

Project Objectives

This survey is intended to fulfill historic property identification, significance evaluation, and evaluation of effect requirements for the project's EA being prepared in accordance with Chapter 343, HRS, and in support of an HRS §6E-8 review by the State Historic Preservation Division (SHPD).

Methodology

MASON visited the property on October 11, 2022, to digitally photograph and record the structures, and undertook historical research to understand their historical context. MASON evaluated the properties for significance under HAR §13-275-6 Criteria a-d, but did not evaluate the resources for Criterion e ("having important value to the native Hawaiian people or to other ethnic group") as MASON is not qualified or scoped to undertake this work. Referencing the proposed work schematics (Figures 1 and 6) as the basis of work, MASON also evaluated effects to historic properties.

This report preparation was prepared by Polly Tice, Principal and Research Section Director at MASON. Ms. Tice meets the Secretary of the Interior's Professional Qualification Standards for Architectural History.

Project Area (Boundary Explanation and Justification)

The project area is the BWS Newtown 550 Reservoir property, located at 98-1876 Piki Street, Aiea, Hawaii, 96701. See Figure 1.

Setting

The project area is located within a residential area of Waimalu, Honolulu, O'ahu. The reservoir sits just below Punanani Gulch within the Newtown Estates residential development. The reservoir is surrounded by residential development with the exception of the gulch and woods to the north. Two structures are found on the site which faces Piki Street; a 500,000-gallon above-ground reservoir tank and a monitoring/control building. An asphalt driveway leads directly to the reservoir and an asphalt and concrete pathway accesses the monitoring/control building.



Figure 1: Project Area map. Source: Limitiaco Consulting Group, 2022

Architectural Description and Character Defining Features

Reservoir



Figure 2: Driveway to the reservoir and cinder block monitoring/control building. View looking north. Source: Limtiaco Consulting Group 2022.

Description

The 500,000-gallon reservoir tank structure is constructed of reinforced concrete, with a reinforced concrete cover with a very low parapet wall. The reservoir is circular in plan; 72' in diameter, and approximately 20' high, partly recessed into the sloping topography. A narrow concrete walkway from the stair extends to a concrete ramp with curbs on either side, that provides pedestrian access to the top of the reservoir. The reservoir is painted the same green that is typical of BWS buildings today. Also on the site is an approximately 6' by 9' concrete monitoring/control building.

Alterations

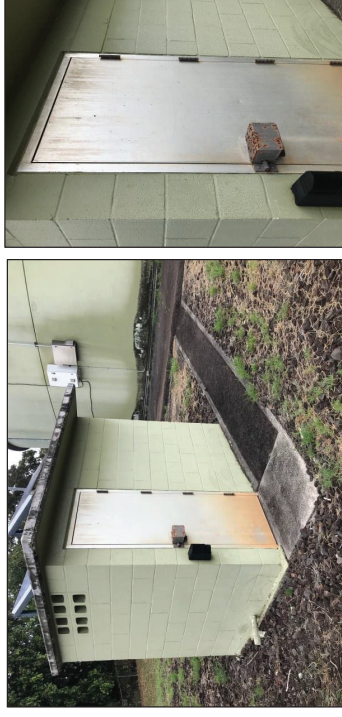
The reservoir and adjacent monitoring/control building both appear unaltered.

Character Defining Features of the Reservoir

- Circular in plan
- Partly recessed into topography
- Reinforced concrete cover with a parapet wall
- Curbed pedestrian ramp to top of reservoir
- Monitoring/control building adjacent to the reservoir tank with vents, an aluminum door, and a flat roof.
- Painted green (typical of BWS buildings today)



Figure 3: Reservoir, view looking west. Source: MASON 2022.



Figures 4 and 5: Monitoring/control building with original concrete pathway and curb (above), and detail of aluminum door (right). Source: MASON 2022.

Historical Overview Oahu's Water System

Prior to BWS' management of the supply of water on Oahu, which began in 1929, Honolulu's drinking water was managed by Honolulu Water Works. This agency was a highly politicized organization fraught with corruption. Under its mismanagement, the city suffered with reduced aquifer levels and water shortages for decades. Honolulu's drinking water (from Nuuanu's four reservoirs) caused outbreaks of typhoid fever and other water-borne diseases. The agency did manage to chlorinate Honolulu's reservoir water system and put into service circular covered concrete tanks to hold the flow from water development tunnels in the mountains in 1917. By early 1923, Honolulu Water Works supplied all of Honolulu's water from groundwater sources.

In 1929, the BWS was created in response to public outcry for better water management. The board was formed by the territorial legislature as a semi-autonomous agency, free from political influence. The first manager and Chief Engineer of the BWS was Frederick Ohrt, who successfully ran the Board until 1952. Ohrt established the principle that the construction necessary to support a utility need not spoil the landscape!¹

Beginning in the 1930s, Honolulu architect Hart Wood began working with BWS, and formed a partnership of sorts with Frederick Ohrt. BWS projects were partly funded by the Works Progress Administration at that time. Wood argued for the privatization of public design work, as an advocate of good design for public projects, and collaborated with renowned landscape architects Robert O. Thompson and Catherine Richards Thompson. In the 1930s, they conceived thoughtful building designs and landscapes for pumping stations at Pacific Heights Reservoir, Makiki-Manoa Pumping Station, the Kalihi Uka Pumping Station and the Nuuanu Aerator. Later, Wood designed the lauded EWS Administration Building (1957) on Beretania Street, and an addition to the adjacent EWS Engineering Building (ca. 1950).² Wood's early work for BWS often incorporated regional materials and forms, such as lava rock and double-pitched roof lines, and later, more Modern forms.

Suburban Water System (SWS) was established in 1941 under Bill 35 to replace the agency formerly known as "rural waterworks of Department of Public Works." SWS was a division of Honolulu's municipal government directly controlled by the Mayor and Board of Supervisors that supplied water to rural areas outside Honolulu. Hart Wood did not design facilities for SWS; his work was for BWS. However, in 1959, the BWS acquired the SWS, thereby incorporating all water works on Oahu into an island-wide operation.

The Waimalu aquifer was an important water source for the residential development of the rural areas north of Honolulu, and for the city itself. A much larger water infrastructure project was developed for the Waimalu system. In a January 1955 *Honolulu Advertiser* article the BWS announced this project:

¹ Engineers and Architects of Hawaii. EAH History. <https://sites.google.com/site/eahawaii2/eahhistory>, accessed on February 10, 2015.

² Don Hibbard, Glenn Mason, and Karen Weitzel. *Hart Wood Architectural Regionalism in Hawaii*. University of Hawaii Press. Honolulu, HI. 2010.

Acquisition of some 263.75 acres of land in Waimalu Valley back of Pearl Harbor was announced yesterday by Edward J. Morgan, chief engineer of the board of water supply. Acquisition of the land, Mr. Morgan said, was the first step in what ultimately will be an estimated \$6,000,000 installation of an underground pumping station. The station will convey through large transmission main some 20 more million gallons of water per day to Honolulu.³

Hart Wood, a prolific designer at the time for the BWS, was not responsible for the Newtown 550 Reservoir design, as it was developed by Community Planning and Engineering Inc. (CP&E).

History and Development of Newtown 550 Reservoir

In the early twentieth century the land in Waimalu that later became Newtown Estates and the Newtown 550 Reservoir site was part of Kahu Ranch Co. and owned by the Austin family (approximately 1,300 acres). Waimalu means "shaded water" and the area was known for its abundance of water and agriculture. Approximately 400 acres of the land was leased for agricultural purposes by the Honolulu Plantation Company (HPC) in the early twentieth century.

The Austin Family Trust sold 789 acres of the 1,300 acres to Oceanview Ventures, a development company represented by Herbert Horita Realty, for \$19.6 million in 1970. This was noted in the *Honolulu Star Bulletin* as the largest land sale on Oahu in 1970. The land was rezoned from its agricultural use to accommodate the Newtown development in 1971 and the development was approved by the Honolulu City Planning Commission in January 1972.

The original plans for the Newtown 550 Reservoir are dated April 20, 1971 and were prepared by Community Planning, Inc., an engineering and planning consultancy founded in 1957. The firm exists today as Community Planning and Engineering Inc., CP&E and the City and County of Honolulu BWS is still a client of CP&E.

The reservoir was built in support infrastructure for the Newtown Estates Unit I, and is estimated to have been completed in 1972. The Newtown Hillside Terrace community included 2,100 homes, single family and townhomes. In 1972 and 1973 there were many full-page ads in the local Honolulu newspapers touting, "the elegance...the excitement...the adventure...of this new concept in a totally land planned community with its recreational amenities is one of the first to be offered in any real estate development in Hawaii."⁴

The fee simple development plan for Newtown Estates was comprised of "a total of some 4,200 to 4,600 homes...over the next six years, with a projected value of \$240-to \$250-million."⁵ The development included a six-acre recreational center with an Olympic size swimming pool and indoor steam baths, and a private greenbelt covering more than 100 acres for outdoor recreation. Horita stated "we are tempering with nature only to the extent of landscaping, giving

³ "Water Board Acquires Waimalu Land." *Honolulu Advertiser*, January 29, 1955. Page 9.

⁴ "NewTown Estates is what others would like to be!" *Honolulu Star-Bulletin*, November 11, 1973. Page 67.

⁵ "Horita Readies Huge Central Oahu Project." *Honolulu Star-Bulletin*, June 24, 1973. Page 44.

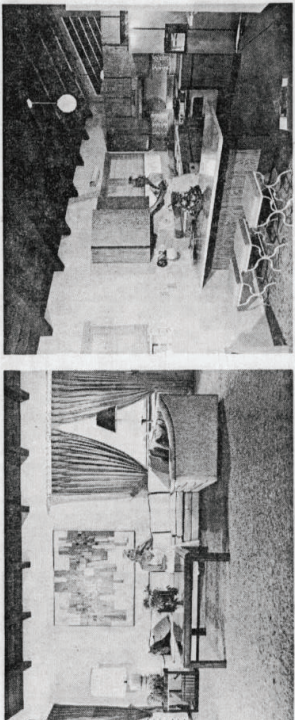
improved hiking trails, cleared picnic grounds, and camp sites.⁶ The first units were completed by July 1973 and sales started in May of that year.

The more you look for elegance and luxury...the more you belong in...

NEWTOWN estates

In every development, there are those who place a special premium on design of the home, recreation and location . . . for those, **Newtown Estates** is so widely admired, its very name describes a new life style in a new concept in a total land-planned community with its recreational amenities and luxurious homes. In a beautiful, unspoiled setting . . . **Newtown Estates** has emerged as a most desirable community of **SINGLE FAMILY HOMES AND TOWNHOMES IN FEE SIMPLE.**

**NOW AVAILABLE FOR SALE!
NEWTOWN ESTATES SINGLE FAMILY HOMES**



In a search for pure luxury, these magnificent 3 and 4 bedroom split level single family homes offer an exciting opportunity to own one of these homes designed with sophisticated features contributing to an air of excellence. Select one of 16 attractive exterior designs and accompanying floor plan.

Figure 6: Advertisement for Newtown Estates. Source: Honolulu Star-Bulletin, Dec. 2, 1973, P. H-12.

⁶ *Ibid.*

Evaluation of Significance and Integrity

Both of the architectural resources located at the Newtown 550 Reservoir site (the reservoir and monitoring/control building) are identified as historic properties since they are fifty years in age. Both were assessed for significance in keeping with HAR §13-275-6 Criteria a-d. (MASON is not a qualified ethnographer that meets the qualifications in Chapter §13-281, and did not evaluate this property for Criterion e significance.) Note that in 2016, MASON undertook a Reconnaissance Level Survey (RLS) of 58 BWS properties on Oahu, but that survey did not include the Newtown 550 Reservoir.

MASON's evaluation for the Newtown 550 Reservoir property is as follows:

- The Newtown 550 Reservoir property does not individually meet HAR §13-275-6 Criterion a significance requirements. Functionally, it is one component of Oahu's Mid-to-Late 20th Century residential water system.
- Currently, as a stand-alone site, or even in tandem with other BWS water supply infrastructure, the property does not rise to the level of significance required for Criterion a. (It is also doubtful this property could be individually listed on the Hawaii or National Registers of Historic Places.)
- Under HAR §13-275-6 significance Criterion b, it is not significant, and has no known association with the lives of persons important in our past. For example, Hart Wood was not involved in the design of this property.
- Under HAR §13-275-6 significance Criterion c, it is a relatively mundane utilitarian structure, with few notable details or landscape characteristics. Honolulu's renowned architect Hart Wood, who prepared many thoughtful designs for BWS, was not involved in the design of this property, and the property does not compare aesthetically to HART's BWS work.
- Under HAR §13-275-6 significance Criterion d, it is not significant for being likely to yield information important in history.

The property retains its integrity in keeping with HAR §13-275-6 integrity requirements. There are small changes noted below that slightly detract from the integrity of design, workmanship, materials, and feeling of the building:

Location – The Newtown 550 Reservoir property retains integrity of location; the resources have not been moved.

Design – The Newtown 550 Reservoir's integrity of design appears original, as do the concrete curb and pathway leading to the monitoring/control building adjacent to the reservoir. Utility boxes, conduit, and solar panels were added later to both the reservoir and the monitoring/control building. Despite these additions, the reservoir's design appears intact.

Setting – Generally, the setting for the Newtown 550 Reservoir and above monitoring/control building are intact. The facilities were built to support the surrounding residential housing areas. While residences have been modified and expanded, the overall residential setting is retained.

Materials – The reservoir's integrity of materials is intact. The monitoring/control building is a simple utilitarian concrete structure, and its materials also appear intact.

Workmanship – The reservoir's integrity of workmanship appears intact.

Feeling – The reservoir's integrity of feeling appears intact since no notable changes have occurred.

Association – Integrity of association appears intact as the reservoir continues to function as originally designed, to supply water to the surrounding residential area.

Proposed Action

Installation of the exploratory well will start with preparing a level surface from which a drill rig can operate. Approximately 35 linear feet of existing concrete curb along the access road will be removed to provide access to the well location. An area approximately 100-feet by 30-feet will be graded level (primarily cut) and covered in gravel. A concrete curb will be constructed around the graded area. After this work is completed, the exploratory well will be installed.

The exploratory well will be used to test of the viability of siting a source well at the project location. An additional review will be performed at a later time if a source well will be installed at the project location. This review is for installation of the exploratory well only.

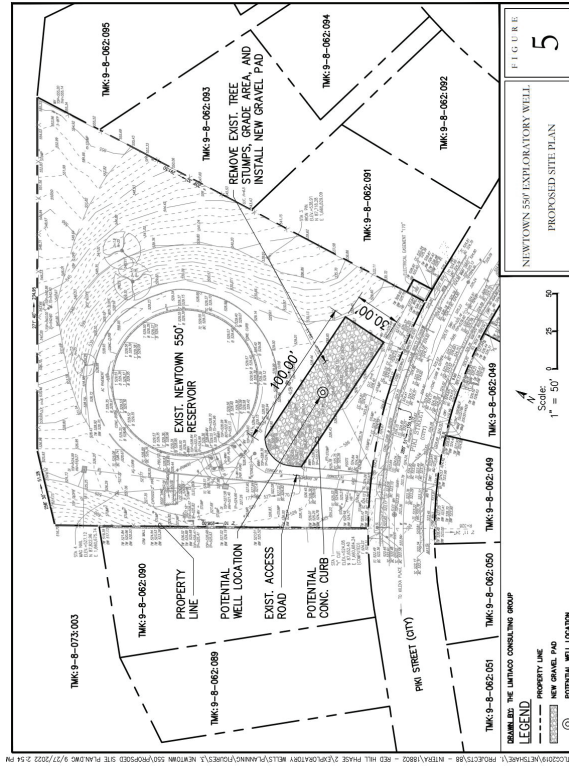


Figure 6: Schematic shows proposed placement of exploratory well. Source: Limitiaco Consulting Group.

The proposed exploratory well will consist of 20-inch diameter (0.375-inch wall) steel casing from approximately 3 feet above ground surface (approximate ground surface elevation 535 feet above mean sea level [msl]) to a depth of approximately 518 feet below ground surface (approximate elevation 17 feet above msl) followed by an approximately 20-inch diameter open bore hole for another 156 feet to its terminal depth of approximately 674 feet below ground surface where dike free basalt rock is expected host the basal aquifer. A 16-inch diameter (0.250-inch wall) steel slotted linear will be installed that extends approximately 60 feet below the bottom of the 20-inch diameter steel casing to approximately 578 feet below ground surface and serve to protect the pump.

Evaluation of Effect on Historic Properties

Criteria Used for Evaluations of Effect

The proposed action was evaluated for its effects on the integrity of historic properties against HAR §13-275-7 criteria. See Appendix B for more information. HAR §13-275-7 - "Determining effects to significant historic properties" describes effects on historic properties as follows:

Effects include, but are not limited to, partial or total destruction or alteration of the historic property, detrimental alteration of the properties' surrounding environment, detrimental visual, spatial, noise or atmospheric impingement, increasing access with the chances of resulting damage, and neglect resulting in deterioration or destruction.

Further, §13-275-7 - "Determining effects to significant historic properties" explains that one of two effect determinations must be established; "No historic properties affected" or "Effect, with agreed upon mitigation commitments."

Evaluations of Effect Findings

MASON found that the proposed action will result in a "No historic properties affected" finding under HAR §13-275-7, as follows:

The properties are evaluated as not historically significant. The proposed work would not alter directly or indirectly any characteristics of any significant historic properties. The proposed work would not partially or totally destroy or alter any significant historic properties, represent a detrimental alteration of the properties' surrounding environment, or pose any detrimental visual, spatial, noise or atmospheric impingement. The proposed project does not increase access to the site with the chances of damage to any significant historic properties.

Mitigation Recommendations

No mitigation is recommended or required since no significant historic properties are affected.

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Appendix A – HAR §13-275-6 Evaluation of Significance

The following is an excerpt from HAR §13-275-6:

- (a) Once a historic property is identified, then an assessment of significance shall occur. The agency shall make this assessment or delegate this assessment, in writing, to the SHPD. This information shall be submitted in the survey report, if historic properties were found through the survey.
- (b) To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criterion:
 - (1) Criterion "a". Be associated with events that have made an important contribution to the broad patterns of our history;
 - (2) Criterion "b". Be associated with the lives of persons important in our past;
 - (3) Criterion "c". Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
 - (4) Criterion "d". Have yielded, or is likely to yield, information important for research on prehistory or history; or
 - (5) Criterion "e". Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts-- these associations being important to the group's history and cultural identity.

A group of sites can be collectively argued to be significant under any of the criteria.

Appendix B – HAR §13-275-7 Determining effects to significant historic properties

The following is an excerpt from HAR §13-275-7:

- (a) The effects or impacts of a project on significant properties shall be determined by the agency. Effects include direct as well as indirect impacts. One of the following effect determinations must be established:
- (1) "No historic properties affected". The project will have no effect on significant historic properties; or
 - (2) "Effect, with proposed mitigation commitments". The project will affect one or more significant historic properties, and the effects will be potentially harmful. However, the agency has proposed mitigation commitments involving one or more forms of mitigation to reasonably and acceptably mitigate the harmful effects.
- (b) Effects include, but are not limited to, partial or total destruction or alteration of the historic property, detrimental alteration of the properties' surrounding environment, detrimental visual, spatial, noise or atmospheric impingement, increasing access with the chances of resulting damage, and neglect resulting in deterioration or destruction.

Appendix C - HAR §13-275-8 Mitigation

According to Hawai'i Administrative Rules Chapter §13-275-8, mitigation for an architectural resource may take the form of one or more of the following:

- A. Preservation. Preservation may include avoidance of the effect and protection, rehabilitation, restoration, or reconstruction.
- B. Architectural Recordation. Recordation involves the photographic documentation and possibly the measured drawing of a building, structure or object prior to its alteration. Architectural recordation plans and photos shall meet the minimal standards as provided by Historic American Building Survey (HABS).
- C. Historical Data Recovery. Data recovery involves researching historical source materials to document an adequate and reasonable amount of information about the property when a property will be altered or destroyed.
- D. Ethnographic Documentation. Ethnographic documentation consists of interviewing knowledgeable individuals and researching historical materials to document an adequate and reasonable amount of information about the property.

Appendix F

Consultation and Comments

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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honolulu.gov • CITY WEB SITE: www.honolulu.gov



RICK BLANGIARDI
MAYOR

DEAN UCHIDA
DIRECTOR
DAWN TAKEUCHI APUNIA
DEPUTY DIRECTOR

July 22, 2022

2022/ELOG-1347(ZS)

Mr. Erwin Kawata
Board of Water Supply
Water Quality Division
630 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Kawata:

SUBJECT: Pre-Environmental Assessment (EA) Consultation
Newtown 550-foot Exploratory Well
98-1876 Piki Street - Aiea
Tax Map Key 9-8-062: 099

This is in response to your letter, received on June 28, 2022, requesting comments for a forthcoming EA. The proposed work involves the construction of a new exploratory well. Our comments are as follows:

1. The EA should include a discussion on how the Project is consistent with the Oahu General Plan and the Primary Urban Center Development Plan
2. The Applicant should submit a formal request for determination on whether a Public Infrastructure Map Amendment will be required for the Project.
3. The property is within the P-2 General Preservation District. The draft EA should address consistency with the P-2 development standards established in the Land Use Ordinance (Revised Ordinances of Honolulu, Chapter 21).
4. The site has a structure over 50 years old, and all building permits must be routed to the State Historic Preservation Division. We highly recommend that you submit a request for comments through their new online system as early as possible (i.e., before publication of the draft EA), if you have not done so already.

Mr. Erwin Kawata
July 22, 2022
Page 2

We look forward to reviewing and providing additional comments on the draft EA. Should you have any questions, please contact Zack Stoddard, of our staff, at (808) 768-8019 or via email at zachary.stoddard@honolulu.gov.

Very truly yours,

Dean Uchida
Director

cc: The Limitiaco Consulting Group (Ian Arakaki)



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Director Dean Uchida
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Director Uchida:

Thank you for your department's comments in the letter dated July 22, 2022 (Ref 2022IELOG-1347) and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. The discussion of the Oahu General Plan and the Primary Urban Center Development Plan will be included in the Environmental Assessment.

On behalf of Mr. Kawata and the BWS, we acknowledge the statement pertaining to the Public Infrastructure Map Amendment. We appreciate your comments that the project site is currently considered a P-2 General Preservation District and has a structure over 50 years old. The Environmental Assessment will identify the required development standards and permits for the proposed project.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

1622 Kanakamui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcg.hawaii.com

**DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU**
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4697
Web site: www.honolulu.gov



RICKY BLANGIARDI
MAYOR

HAKU MILLES, P.E.
ACTING DIRECTOR

July 7, 2022

SENT VIA EMAIL

Mr. Erwin Kawata
ekawata@honolulu.gov

Mr. Ian Arakaki
ian@tlcg.hawaii.com

Dear Messrs. Kawata and Arakaki:

Subject: Pre-Assessment Consultation
Preparation of an Environmental Assessment for the
Newtown 550' Exploratory Well in Aiea, Island of Oahu, Hawaii
TMK: (1)-9-8-062:099

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any questions, please contact me at (808) 768-8481.

Sincerely,

Haku Milles, P.E.
Acting Director

HMI:krm (883605)



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Acting Director Haku Miles
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Acting Director Miles:

Thank you for your department's letter dated July 7, 2022 and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we acknowledge that the Department of Design and Construction has no comments at this time.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Atakaki
Principal

cc: Erwin Kawata, Program Administrator

1622 Kanakamaui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tfcg.hawaii.com



DAVID V. CASE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHIEF OF BUREAU
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ELIZABETH A. CHAR, M.D.
NIEL J. HANNAH
AURORA HANAUSS
WAYNE K. KATAVANA
PAUL J. MEYER
M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

July 22, 2022

TO: Mr. Erwin Kawata, Program Administrator
Water Quality Division, Honolulu Board of Water Supply

FROM: M. Kaleo Manuel, Deputy Director *LMC*
Commission on Water Resource Management

SUBJECT: Pre-Assessment Consultation, Preparation of an Environmental Assessment for the Newtown 550' Exploratory Well in Aiea, Island of Oahu

FILE NO.: RFD.5912.3
TRK NO.: (1) 9-8-062:099

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://dlnr.hawaii.gov/cwrn>.

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://planning.hawaii.gov/czm/initiatives/low-impact-development/>
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at

Mr. Erwin Kawata
Page 2
July 22, 2022



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Deputy Director M. Kaleo Manuel
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Deputy Director Manuel:

Thank you for your department's letter dated July 22, 2022 (Ref. RFD.5912.3) and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we appreciate the comments pertaining to Best Management Practices for stormwater management, ground or surface water degradation/contamination, and well construction and pump installation permits. We will include comments from the letter in the Environmental Assessment.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

1622 Kanakamaui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tleg.hawaii.com

- 9. http://www.hawaitrans.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. The Hawaii Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawaii Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area.
- 12. A Well Construction Permit(s) is (are) required before the commencement of any well construction work.
- 13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 15. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 16. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a stream channel.
- 17. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 18. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 19. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:

If you have any questions, please contact Ryan Imata of the Regulation Branch at 808.587.0225 or Katie Roth of the Planning Branch at 808.587.0216.

c: Ian Arakaki, Principal, The Limtiaco Consulting Group



DAVID Y. LEE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARDS OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 631
HONOLULU, HAWAII 96809

July 28, 2022



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 631
HONOLULU, HAWAII 96809

June 29, 2022

MEMORANDUM

LD 0679

LD 0679

FROM: ~~FO:~~

TO: ~~FO:~~

LD 0679

- DLNR Agencies:**
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division (via email: DLNR_engr@hawaii.gov)
 - Div. of Forestry & Wildlife (via email: rubyrosa.terrago@hawaii.gov)
 - Div. of State Parks
 - Commission on Water Resource Management (via email: DLNR_CWRM@hawaii.gov)
 - Office of Conservation & Coastal Lands
 - Land Division – Oahu District (via email: barry.w.cheung@hawaii.gov)

TO:

Russell Y. Tsuji, Land Administrator

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Pre-Assessment Consultation for Preparation of Environmental Assessment
Newtown 550' Exploratory Well

LOCATION:

98-1876 Piki Street, Aiea, Island of Oahu, Hawaii

APPLICANT:

TMK: (1) 9-8-062:099
The Limitaco Consulting Group on behalf of the Board of Water Supply

Erwin Kawata, Program Administrator
Water Quality Division
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813

Dear Sirs:

SUBJECT: Pre-Assessment Consultation for Preparation of Environmental Assessment
Newtown 550' Exploratory Well
98-1876 Piki Street, Aiea, Island of Oahu
TMK: (1) 9-8-062:099

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various divisions for their review and comment.

Enclosed are comments received from our (a) Engineering Division, and (b) Division of Forestry and Wildlife. Should you have any questions, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Y. Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files
Ian Arakaki, The Limitaco Consulting Group via email: ian@tlcgahawaii.com

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline of **July 21, 2022** to barbara.j.lee@hawaii.gov at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at the above email address. Thank you.

BRIEF COMMENTS:

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

Print Name: Cary S. Chang, Chief Engineer

Division: Engineering Division

Date: Jul 13, 2022

Attachments
Cc: Central Files



DAVID Y. LEE
GOVERNOR OF HAWAII



SUZANNE CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji
**Ref: Pre-Assessment Consultation for Preparation of Environmental Assessment
Newtown 550' Exploratory Well**
Location: 98-1876 Piki Street, Aiea, Island of Oahu, Hawaii
TMK(s): (1) 9-8-062:099
**Applicant: The Limitaco Consulting Group on behalf of the Board of Water
Supply**

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 29, 2022

LD 0679

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaii.nfip.org/FHAT>) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai: County of Maui, Department of Planning (808) 270-7139.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER
Date: Jul 13, 2022

MEMORANDUM

TO: DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division (via email: DLNR_engr@hawaii.gov)
- Div. of Forestry & Wildlife (via email: rhrysos.terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands
- Land Division – Oahu District (via email: barry.w.cheung@hawaii.gov)

Russell Y. Tsuji
Land Administrator

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Pre-Assessment Consultation for Preparation of Environmental Assessment
Newtown 550' Exploratory Well

LOCATION: 98-1876 Piki Street, Aiea, Island of Oahu, Hawaii


APPLICANT: TMK: (1) 9-8-062:099
The Limitaco Consulting Group on behalf of the Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline of July 21, 2022 to barbara.j.lee@hawaii.gov at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at the above email address. Thank you.

BRIEF COMMENTS:

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included attached.

Signed: 
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Jul 17, 2022

Attachments
Cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

SUZANNE D. CASE
CHAIRPERSON
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AGRICULTURE RESOURCES
BUREAU OF CONSERVATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND MARSHAL LANDS
DIVISION OF FORESTRY AND WILDLIFE
HONOLULU, HAWAII 96813
STATE PARKS

MEMORANDUM

July 15, 2022

Log no. 3731

TO: RUSSELL Y. TSUJI, Land Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments for a Pre-Assessment Consultation for Preparation of an Environmental Assessment (EA) for the Newton 550th Exploratory Well on O'ahu

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your pre-assessment consultation request for the development of an EA regarding the upcoming Board of Water Supply (BWS) installation of an exploratory well at the Newton 550th Reservoir located at 98-1876 Piki Street in 'Aiea, on the island of O'ahu, TMK: (1) 9-8-062:099. The proposed project consists of installing an exploratory well on an existing BWS-owned site, which involves drilling a groundwater well and installing a test pump to determine the quantity and quality of groundwater at this location. Clearing and grading of a portion of the site will be required to prepare the facility for the installation of the exploratory well. If the site is suitable for a permanent groundwater well, the facility will need further improvements.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasionycteris cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used to be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky.

For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit <https://dnr.hawaii.gov/wildlife/files/2016/03/DOC432.pdf>.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain pathogens, pests such as Little Fire ants and/or Coconut Rhinoceros beetles, or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the O'ahu Invasive Species Committee (OISC) at (808) 266-7994 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

To prevent the spread of Rapid 'Ōhi'a Death (ROD), DOFAW requests that the information and guidance at the following website be reviewed and followed if 'ōhi'a trees are present at the project site that will be removed, trimmed, or potentially injured: <https://cms.ctahr.hawaii.edu/rod>.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e., climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW also recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (<https://sites.google.com/site/weedriskassessment/home>). Please refer to www.plantpomo.org for guidance on the selection and evaluation of landscaping plants.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or paul.m.radley@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Wildlife Program Manager

LD 0479



RECEIVED
LAND DIVISION

2022 JUN 27 PM 4:49
THE LIMITACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

MAIL ROOM
MAIL ROOM
MAIL ROOM

June 23, 2022

Russell Y. Tsuji, Administrator
Land Division
Department of Land and Natural Resources
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

Subject: Pre-Assessment Consultation, Preparation of an Environmental Assessment for the Newtown 550' Exploratory Well in 'Aiea, Island of O'ahu, Hawaii
Tax Map Key (1) 9-8-062:099

Dear Mr. Tsuji,

On behalf of the Board of Water Supply (BWS), we are contacting you to inform you and solicit comments regarding an upcoming BWS project. The BWS plans to install a new exploratory well at its existing Newtown 550' Reservoir located at 98-1876 Piki Street (TMK 9-8-062:099) in Aiea, Hawaii. In the next section, we have provided an explanation of the project's purpose and a written description of the proposed action.

The project is currently in the early planning stage and we are soliciting comments as part of the environmental review process. Comments you provide will be considered in the preparation of the forthcoming Environmental Assessment (EA), which will be prepared by the BWS and made available for public review and comment pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200.1, Hawaii Administrative Rules (HAR) of the Department of Health.

Project Purpose

In early December 2021, after fuel releases from the Navy's Red Hill Bulk Fuel Storage Facility and Pipelines, BWS shut down its Halawa Shaft, Aiea Wells, and Halawa Wells to prevent any petroleum contamination present in the groundwater aquifer from entering the BWS water system. The purpose of this project is to locate new water supplies to replace the capacity lost from the shutdown of these wells. The first step in locating new water sources is installing and testing exploratory wells at prospective water source locations. The exploratory well will be used to collect data on the underlying groundwater and determine if the location is suitable for the installation of a permanent groundwater well. The BWS has chosen its Newtown 550' Reservoir for the installation of an exploratory well (see Figure 1- Location and Vicinity Maps).

If the site is suitable for a permanent groundwater well, the facility will need further improvements. The BWS will conduct additional consultations and prepare a subsequent EA for those improvements when necessary.

Project Description

The project proposes the installation of an exploratory well on an existing BWS-owned site in Aiea. The project includes drilling a groundwater well and installing a test pump to determine the

1622 Kanakanaui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlc@hawaii.com

Pre-Assessment Consultation for the Newtown 550' Exploratory Well
June 23, 2022
Page 2

quantity and quality of groundwater at this location. Clearing and grading of a portion of the site will be required to prepare the facility for the installation of the exploratory well.

We would greatly appreciate the input that you or your organization may have regarding the subject project. Your comments will be considered in the forthcoming EA document which will be made publicly available for review. You are welcome to provide input at this time or be a consulted party while the EA is being prepared. You will have an additional opportunity to remark on the EA when it is published. We would appreciate your response to this pre-assessment consultation letter by July 25th, 2022.

Please send comments to:

Erwin Kawata, Program Administrator
Water Quality Division
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813

And please provide a copy to:

Ian Arakaki, Principal
The Limitaco Consulting Group
1622 Kanakanaui Street
Honolulu, HI 96817
email: ian@tlcghawaii.com

Thank you for your interest and participation in the environmental review process. Should you have any questions, please contact me at (808) 596-7790 or via email at ian@tlcghawaii.com.

Best regards,

The Limitaco Consulting Group, Inc.

Ian Arakaki
Principal

Attachments:

Figure 1 – Location and Vicinity Map



DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
SAFE DRINKING WATER BRANCH
ULUKUPU BLDG. 4
630 South Beretania Street
Honolulu, HI 96813

In reply, please refer to:
File: [30WS](#)
Number: [CR20.006](#)

August 26, 2022

Mr. Erwin Kawata, Program Administrator
Water Quality Division
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813
[via ekawata@hbws.org only]

Dear Mr. Kawata:

SUBJECT: PRE-ASSESSMENT CONSULTATION, PREPARATION OF AN ENVIRONMENTAL ASSESSMENT FOR THE NEWTOWN 550 EXPLORATORY WELL, AIEA, OAHU, HAWAII
TMK (1) 9-8-062:099

The Department of Health (DOH), Safe Drinking Water Branch (SDWB) acknowledges receipt of your letter dated June 23, 2022, regarding the subject project. The SDWB comments are as follows:

1. This well qualifies as a source that serves a regulated public water system. All public water system owners and operators are required to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, "Rules Relating to Public Water Systems."
2. Projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of HAR 11- 20-29, entitled "Use of new sources of raw water for public water systems." This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report, which addresses the requirements set in HAR Section 11-20-29.
3. The engineering report must identify all potential sources of contamination and evaluate alternative control measures, which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a

Mr. Erwin Kawata
August 26, 2022
Page 2

laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

4. All public water system sources must undergo a source water assessment, which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the drinking water source.

If there are any questions, please contact Michael Miyahira, SDWB Engineering Section Supervisor, at (808) 586-4258 or michael.miyahira@doh.hawaii.gov.

Sincerely,

For
GAUDENCIO C. LOPEZ, P.E., CHIEF
Safe Drinking Water Branch

SW:mb

c: Mr. Ian Arakaki, The Limitaco Consulting Group
[via ian@tqghawaii.com only]



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

September 28, 2022

Guadencio Lopez (Dennis), Chief
Department of Health
Safe Drinking Water Branch
2385 Waimano Home Road, Suite 110
Uluakupu Building 4
Pearl City, Hawaii 96782-1400

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Branch Chief Lopez:

Thank you for your agency's comments in the letter dated August 26, 2022 (Ref. SDWB Newtown550.docx) and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. Pertinent information from the letter will be included in the Environmental Assessment. On behalf of Mr. Kawata and the BWS, we will refer to your department's regulatory guidance as the project proceeds and acknowledge the following itemized comments from your letter:

1. The new well qualifies as a source that serves a regulated public water supply.
2. A satisfactory engineering report will be prepared and submitted as required should the exploratory well become a production well.
3. Laboratory analyses of water quality is required for the engineering report.
4. The process pertaining to a source water assessment will be followed.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.


Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

1622 Kanakamui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcg@hawaii.com

DAVID Y. IGE
GOVERNOR OF HAWAII



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

June 27, 2022

Mr. Erwin Kawata, Program Administrator
Water Quality Division
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813

Dear Mr. Kawata:

Thank you for your submittal requesting comments to the Pre-assessment Consultation, Preparation of an Environmental Assessment for the Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-41 Lead-based Paint Activities
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-504 Asbestos Abatement Certification Program

Information pertaining to other health and environmental issues may be addressed by other programs within our department.

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,



Thomas G. Lileikis
Program Manager
Indoor and Radiological Health Branch

C: Ian Arakaki, ian@tlcg.hawaii.com, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Mr. Thomas G. Lileikis, Program Manager
Indoor and Radiological Health Branch
State of Hawaii Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Mr. Lileikis:

Thank you for your department's comments in the letter dated June 27, 2022 and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we will include pertinent statements in the Environmental Assessment about the Administrative Rules of the Department of Health and will refer to the regulatory guidance as the project proceeds.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

1622 Kanakama Street • Honolulu, Hawaii 96817
(808) 596-7790 • tclg.hawaii.com

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, HI 96813-5007
Phone: 808-728-7138 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd



July 20, 2022

RICK BLANGIARDI
MAYOR

SHELDON K. HAO
FIRE CHIEF
JASON SAMALA
DEPUTY FIRE CHIEF

Mr. Erwin Kawata
Program Administrator
Water Quality Division
Honolulu Board of Water Supply
620 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Kawata:

Subject: Preassessment Consultation for an Environmental Assessment
Newtown 550 Feet Exploratory Well
98-1876 Piki Street
Aiea, Hawaii 96701
Tax Map Key: 9-8-062: 099

In response to a letter from Mr. Ian Arakaki of the Limtiaco Group received on June 27, 2022, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended)

A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1)

2. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which

Mr. Erwin Kawata
Page 2
July 20, 2022

facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.

3. The fire department access roads shall be in accordance with NFPA 1; 2018 Edition, Section 18.2.3.
4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Acting Battalion Chief Kendall Ching of our Fire Prevention Bureau at 808-723-7154 or kching3@honolulu.gov.

Sincerely,



CRAIG UCHIMURA
Acting Assistant Chief

CU/EO:bh

cc: Ian Arakaki, The Limitiaco
Consulting Group



THE LIMITIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Acting Assistant Chief Craig Uchimura
City and County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813-5007

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Acting Assistant Chief Uchimura:

Thank you for your department's letter dated July 20, 2022 and addressed to Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we will include the following comments in the Environmental Assessment: the project will be designed in consideration of fire department access and required fire flow for fire protection. The civil drawings will be submitted to the Honolulu Fire Department for review and approval.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limitiaco Consulting Group, Inc.



Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET - HONOLULU HAWAII 96813
TELEPHONE: (808) 528-3111 - INTERNET: www.honolulu.gov



RICK BLANGHARD
MAYOR

ARTHUR J. LOGAN
CHIEF
KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS

ian@tloghawaii.com
Subject Line: Pre-Assessment Consultation, Environmental Assessment, for the
Newtown 550' Exploratory Well

OUR REFERENCE EO-DC

July 11, 2022

TO: Erwin Kawata, Program Administrator, Water Quality Division
Honolulu Board of Water Supply

FROM: Glenn Hayashi, Acting Assistant Chief of Police, Support Services Bureau

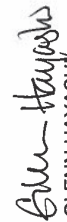
SUBJECT: Pre-Assessment Consultation, Environmental Assessment
Newtown 550' Exploratory Well
Tax Map Key: (1) 9-8-062:099

This is in response to a letter from The Limitaco Consulting Group requesting input on the proposed project to install a new exploratory well at the existing Newtown 550' Reservoir located at 98-1876 Piki Street in Aiea.

Based on the information provided, the Honolulu Police Department does not have any concerns at this time.

If there are any questions, please call Major Robert Towne of District 3 (Pearl City) at 808-723-8802.

Thank you for the opportunity to review this project.


GLENN HAYASHI
Acting Assistant Chief of Police
Support Services Bureau

cc: Mr. Ian Arakaki, Principal
The Limitaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Acting Assistant Chief of Police Glenn Hayashi
Honolulu Police Department
801 South Beretania Street
Honolulu, Hawaii 96813

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062-099

Dear Assistant Chief Hayashi:

Thank you for your department's letter dated July 11, 2022 (Ref. EO-DC) and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we acknowledge that the Honolulu Police Department does not have any concerns at this time.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

July 14, 2022

Mr. Erwin Kawata and ✓ Mr. Ian Arakaki,

I have received your letter of June 23, 2022 addressed to Current Resident regarding an exploratory well at Newtown 550 Reservoir at 98-1876 PiKi Street.

While we're all for new water sources selecting this location is a bit puzzling for some of us. I suppose it is expedient as it is BWS property although one might think better City, State, and Federal locations should be readily accessible under the circumstances. However, that's a question for later.

We have been residents here since 1976 and one would be amazed at the level of quiet one finds here. Breezes rustling through the trees and leaves and birds clearly chirping throughout the day. Also this street has little vehicular traffic noise due to its location.

Thus the primary concern here is pumping equipment and the noise created. So does this EA consider the base as the level of quiet we have experienced for decades or is it based on EPA standards which we know most sounds will be 'acceptable'? I look forward to your reply.

Thank you,

Wallace Hirai
Current Resident
98-1867 PiKi Street
Aiea HI 96701



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

Aug 22, 2022

Mr. Wallace Hirai
98-1867 Piki Street
Aiea, HI 96701

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Mr. Wallace Hirai:

Thank you for your letter dated July 14, 2022 and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator and myself.

Noise levels will be considered based on provisions of the Hawaii Administrative Rules Title 11, Chapter 46 "Community Noise Control." Additional details regarding noise generated from the project will be provided in the Environmental Assessment. It is anticipated to be published during the first quarter of 2023. You can access the published Environmental Assessment on the Environmental Review Program's website at <https://planning.hawaii.gov/erp/ea-and-eis-new-rules/>.

On behalf of Mr. Kawata and the BWS, we thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator
Kathleen M. Pahini, Information Officer

From: Mel Kaku

Sent: Wednesday, July 6, 2022 10:46 AM

To: Ian Arakaki

Subject: Request Work Plan info for BWS Exploratory Well Project Newtown 550 Reservoir

Good morning Mr. Arakaki. My name is Melvin Kaku, a resident of Newtown Estates.

In response to BWS's Legal notice published July 5, 2022, I am requesting the project's work plan including information on environmental and health protection/mitigation measures to be implemented during the life of this project.

Look forward to the information packet. Please mail to 98-1868 Hapaki Street, Aiea 96701.

Mahalo. Mel

Sent from my Verizon, Samsung Galaxy smartphone



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Mr. Mel Kaku
98-1868 Hapaki Street
Aiea, Hawaii 96701

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Mr. Kaku:

Thank you for your comments in the email sent on July 6, 2022. Mitigation measures that address construction impacts will be discussed in the Environmental Assessment that is anticipated to be published during the first quarter of 2023. You can access the published Environmental Assessment on the Environmental Review Program's website at <https://planning.hawaii.gov/erp/ea-and-eis-new-rules/>. If you have any questions after reviewing the Environmental Assessment, please contact me at (808) 596-7790.

On behalf of Mr. Kawata, Program Administrator at the BWS, we thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator
Kathleen M. Pahinui, Information Officer

1622 Kanakamui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tdeg.hawaii.com



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

July 6, 2022

In Reply Refer To:
2022-0061042-S7-001

Mr. Erwin Kawata, Program Administrator
Water Quality Division
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96813

Subject: 2022-0061042-S7-001 Species List for Proposed Newtown 550' Exploratory Well Project at 98-1876 Piiki Street, TMK 1-9-8-062:099, Aiea, O'ahu

Dear Mr. Kawata:

Thank you for your letter of June 23, 2022 requesting a species list and guidance for the proposed Newtown 550' Exploratory Well Project at 98-1876 Piiki Street, TMK 1-9-8-062:099, on the island of Oahu. The proposed project is the installation of an exploratory well on an existing Board of Water Supply owned site in Aiea and includes drilling a groundwater well and installing a test pump to determine the quantity and quality of groundwater at this location. Clearing and grading of a portion of the site will be required to prepare the facility for the installation of the exploratory well.

This letter has been prepared under the authority of and in accordance with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended (ESA). We have reviewed the information you provided and pertinent information in our files, as it pertains to federally listed species in accordance with section 7 of the ESA. Our data indicate the following federally listed species may occur or transit through the vicinity of the proposed project area: the endangered Hawaiian hoary bat (*Lasiurus cinereus semotis*); endangered Hawaiian petrel (*Pterodroma sandwichensis*), threatened Newell's shearwater (*Puffinus auricularis newelli*), and endangered Hawaii distinct population segment (DPS) of band-rumped storm-petrel (*Oceanodroma castro*) (hereafter collectively referred to as Hawaiian seabirds).

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or

PACIFIC REGION 1

IDAHO, OREGON*, WASHINGTON,
AMERICAN SAMOA, GUAM, HAWAII, NORTHERN MARIANA ISLANDS
*PARTIAL

Mr. Erwin Kawata, Program Administrator

2

taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you consider incorporating the following applicable measure into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Hawaiian seabirds

Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators.

Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

We appreciate your efforts to conserve protected species. If you have questions regarding this response, please contact Charmian Dang, Fish and Wildlife Biologist (phone: 808-792-9400, email: Charmian_Dang@fws.gov). When referring to this project, please include this reference number: 2022-0061042-S7-001.

Sincerely,

Island Team Manager
O'ahu, Kaua'i, Northwestern Hawaiian
Islands, and American Samoa



THE LIMTIACO CONSULTING GROUP

CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

August 22, 2022

Mr. Aaron Nadig, Island Team Manager
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Subject: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Dear Mr. Nadig:

Thank you for your agency's comments in the letter dated July 6, 2022 (Ref. 2022-0061042-S7-001) and addressed to Mr. Erwin Kawata, Board of Water Supply (BWS) Program Administrator. On behalf of Mr. Kawata and the BWS, we acknowledge that federally listed species including the endangered Hawaiian hoary bat and several protected Hawaiian seabirds may occur or transit through the vicinity of the project area. We will include pertinent information and recommendations from the letter in the Environmental Assessment.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Ian Arakaki
Principal

cc: Erwin Kawata, Program Administrator

From: sginzoa001@hawaii.rr.com
Sent: Tuesday, September 13, 2022 11:37 AM
To: Ian Arakaki
Subject: Newtown 550 Exploratory Well

Ian Arakaki, Principal
The Limitaco Consulting Group

We are the current resident of this community Newtown, 98-1920 Wilou st. Aiea HI for over 46 years. We enjoy the peaceful and quiet tranquility of this neighborhood. The sounds of the many birds, the rushing of the trees in the wind are some of the peacefulness that we enjoy.

Our concerns about this project are, the noise and dust pollutions the drilling eq. will generate. Would like some isolation from these problems. If a permanent well is installed how much noise will it generate during the day and night operations. Hoping it doesn't run at night. Will the pumps be installed in a building with noise reducing equipment? Hoping for the best outcome, no pumping station and the Navy closes the fuel depot, results safe drinking for all. It is unfortunate situation with the Navy's Red Hill Fuel Tanks, but the BWS company will solve this problem the Navy can't fix.

Thank you BWS management and employees.

Stanley T. Ginoza
Patricia C. Ginoza
98-1920 Wilou St.
Aiea, HI.
sginoza001@hawaii.rr.com

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



October 20, 2022

RICK BLANGIARDI, MAYOR
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ERNESTY. W. LAU, P.E.
Manager and Chief Engineer
ERWIN M. KAWATA
Deputy Manager

Stanley and Patricia Ginoza
98-1920 Wilou Street
Aiea, Hawaii 96701

Dear Mr. and Mrs. Ginoza:

SUBJECT: Response to Pre-Assessment Consultation, Preparation of the Environmental Assessment for the Proposed Newtown 550' Exploratory Well in Aiea, Island of Oahu, Tax Map Key (1) 9-8-062:099

Thank you for your comments to our Newtown 550' Exploratory Well project sent to our consultant, Ian Arakaki of The Limitaco Consulting Group (TLCG), by email dated September 13, 2022. The Board of Water Supply (BWS) acknowledges your concerns with this project and appreciates the recognition of the unfortunate position that the issue with the Navy's Red Hill Fuel Tanks has put our drinking water supply in as stated in your email.

The maximum permissible day and night noise levels assigned to zoning districts are expressed in the Hawaii Administrative Rules (HAR) Title 11, Chapter 46 "Community Noise Control" in measurements of loudness as A-weighted decibels (dBA). Construction equipment such as the drill rig and other machinery may produce noise levels up to approximately 80 dBA (at 50 feet from the source), which is comparable to the sound of a garbage disposal and will likely need a Noise Permit. Temporary noise reduction measures during construction may include but are not limited to the use of sound-walls, sound blankets and curtains, equipment mufflers and low-noise generators. Potential noise impacts will also be mitigated by performing the majority of construction work during daytime hours (as opposed to night work), thereby avoiding the creation of construction noise impacts during nighttime hours.

After the well is drilled a test pump needs to be installed to determine if the well is able to produce adequate quantity and quality of water. Short-term noise will occur at the project site during a 12-hour step-rate pumping test and 96-hour constant-rate pumping test. During the testing period the Contractor is expected to obtain a Noise Variance for nighttime activities and must use best management practices to keep the sound levels within permissible limits as specified in the permit. Besides the 96-hour constant-rate pumping test, construction operations will not be allowed at night. Once water testing is completed, the test pump would be removed, and the exploratory well would be covered

with a well cap. If the exploratory well is determined to be a viable source of water, efforts to plan and design for the conversion into a permanent production well will be undertaken. At that time, another Environmental Assessment specific to the production well will be initiated with additional details of what would be involved, including noise and noise control measures. The noise from normal operation of a permanent production well that requires a pump, motor, and piping will be considered.

Airborne, visible fugitive dust during construction of the exploratory well will be controlled at the project site by the Contractor in accordance with Air Pollution Control standards stated in the HAR Title 11, Chapter 60.1-33 "Fugitive Dust." The Contractor will be required to develop and submit a dust control management plan to BWS that identifies all activities that may generate airborne, visible fugitive dust and proposed mitigative measures. The measures may include but are not limited to the following:

1. Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities;
2. Providing an adequate water source at the site prior to start-up of construction activities;
3. Landscaping and providing rapid covering of bare areas after ground disturbance;
4. Providing reasonable dust control measures during work hours, weekends, after hours, and prior to daily start-up of construction activities; and
5. Controlling airborne, visible fugitive dust from debris being hauled away from the project site.

We hope that the information in this letter helps your understanding of the project and our efforts to minimize the disruption from construction activities. Our consultants will include your comments and this response in the Draft Environmental Assessment, which is anticipated to be published during the first quarter of 2023. Once published, you can access the Draft Environmental Assessment on the Environmental Review Program's website at <https://planning.hawaii.gov/erp/ea-and-eis-new-rules/>.

The subject Environmental Assessment addresses the exploratory well only. A second Environmental Assessment will be completed should the exploratory well process indicate a permanent production well and supporting facilities are a viable option. You may comment on issues such as the permanent pumps and associated noise reducing measures at that time.

We thank you for your interest and participation in the environmental review process. Should you have further comments, please email Ian Arakaki at ian@tlcgohawaii.com.

Very truly yours,



ERWIN KAWATA
Deputy Manager

cc: Kathleen M. Pahinui, Information Officer
Ian Arakaki, The Limtiaco Consulting Group