

## Draft Environmental Assessment



# Sewage Treatment Plant Improvements at Kupuna Home O'Waialua

HPHA Job No. 07-046-150-S

December 2008



Prepared for:

The State of Hawaii  
Public Housing Authority

Prepared by:



**Draft Environmental Assessment**  
**SEWAGE TREATMENT PLANT IMPROVEMENTS AT**  
**KUPUNA HOME O'WAIALUA**

**Waialua, Oahu, Hawaii**

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

Responsible Officer: \_\_\_\_\_



Date: \_\_\_\_\_

12/5/08

Chad K. Taniguchi, Executive Director  
State of Hawaii  
Department of Human Services  
Hawaii Public Housing Authority

**Prepared For:**

**State of Hawaii**  
**Department of Human Services**  
**Hawaii Public Housing Authority**

**Prepared By:**

**The Limtiaco Consulting Group**  
**Civil Engineering and Environmental Consultants**  
**650 Iwilei Road, Suite 208**  
**Honolulu, Hawaii 96817**

**December 2008**

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## LIST OF ABBREVIATIONS

| <b><u>Abbreviation</u></b> | <b><u>Definition</u></b>   |
|----------------------------|--|
| %                          | Percent  |
| ATU                        | Aerobic Treatment Unit   |
| BMPs                       | Best Management Practices  |
| BOD                        | Biochemical Oxygen Demand  |
| BWS                        | City and County of Honolulu, Board of Water Supply                             |
| City                       | City and County of Honolulu  |
| CZM                        | Coastal Zone Management  |
| dBA                        | A-weighted Decibel   |
| DLNR                       | State of Hawaii, Department of Land and Natural Resources                      |
| DOH                        | State of Hawaii, Department of Health  |
| DPP                        | City and County of Honolulu, Department of Planning and Permitting             |
| DTS                        | City and County of Honolulu, Department of Transportation Services             |
| EA                         | Environmental Assessment   |
| EPA                        | U.S. Environmental Protection Agency   |
| FAST                       | Fixed Activated Sludge Treatment   |
| FFMS                       | Fixed-Film Media System  |
| FONSI                      | Finding of No Significant Impact   |
| ft                         | Feet   |
| gpd                        | Gallons per Day  |
| HAR                        | Hawaii Administrative Rules  |
| HECO                       | Hawaiian Electric Company, Inc.  |
| HPD                        | City and County of Honolulu, Honolulu Police Department                        |
| HPHA                       | State of Hawaii, Department of Human Services, Hawaii Public Housing Authority |
| HRS                        | Hawaii Revised Statutes  |
| mg/L                       | Milligrams per Liter   |
| MnC                        | Mamala Stony Silty Clay Loam   |
| MSL                        | Mean Sea Level   |
| NAAQS                      | National Ambient Air Quality Standards   |
| NPDES                      | National Pollutant Discharge Elimination System                                |
| NPS                        | United States Department of the Interior, National Park Service                |
| O&M                        | Operations and Maintenance   |
| Oceanic                    | Oceanic Time Warner Cable  |
| PIM                        | Public Infrastructure Map  |
| PKWWTP                     | Paalaa Kai Wastewater Treatment Plant  |
| PVC                        | Polyvinyl Chloride   |
| RAS                        | Return Activated Sludge  |
| SAAQS                      | State Ambient Air Quality Standards  |

**LIST OF ABBREVIATIONS (Continued)**

| <b><u>Abbreviation</u></b> | <b><u>Definition</u></b>   |
|----------------------------|--|
| SHPD                       | State of Hawaii, Department of Land and Natural Resources,<br>Historic Preservation Division |
| SBR                        | Sequencing Batch Reactor   |
| State                      | State of Hawaii  |
| STP                        | Sewage Treatment Plant   |
| TMDL                       | Total Maximum Daily Load   |
| TMK                        | Tax Map Key  |
| TSS                        | Total Suspended Solids   |
| UBC                        | Uniform Building Code  |
| UIC                        | Underground Injection Control  |
| WkA                        | Waialua Silty Clay   |

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## **EXECUTIVE SUMMARY**

The State of Hawaii, Department of Human Services, Hawaii Public Housing Authority (HPHA) proposes to improve the on-site package sewage treatment plant (STP) at Kupuna Home O'Waialua, an elderly public housing complex in Waialua, Oahu, Hawaii. The Kupuna Home O'Waialua housing complex site encompasses an approximately 3.3-acre parcel owned by the HPHA located at the corner of Goodale Avenue and Nahoa Street (Tax Map Key: 6-7-016:028).

The complex hosts 20 single-story duplex structures, a community building, a garden, two parking lots, and its own self-contained (i.e., non-municipal) wastewater system. The wastewater system includes a gravity sewer collection system, on-site package STP, and effluent disposal. With a design capacity of 10,000 gallons per day, the STP currently treats approximately 6,700 gallons of wastewater daily (based on July 2007 to April 2008 effluent flow data) from the complex's 24 studios, 16 one-bedroom units, and community building. Treated effluent is discharged into two seemingly inoperable underground injection wells that currently overflow into an on-site leach field located approximately north of the STP.

The proposed project was initiated to evaluate the structural and maintenance conditions of the complex's aging on-site package STP. The STP is the only wastewater treatment plant serving the Kupuna Home O'Waialua site and the typical service life of package wastewater treatment plants is approximately 25 years. Installed in 1977, the STP has not been significantly upgraded since its installation. Based on site investigations and interviews with maintenance staff and area residents conducted in support of the proposed project (between December 2007 and May 2008), it was determined that the STP is in fact near the end of its service life and in need of a major refurbishment. Additionally, it was identified that compliance with operations and maintenance (O&M) requirements can be made more efficient through upgrades to the Kupuna Home O'Waialua complex's existing STP.

The overall objectives of the proposed project are to replace aging infrastructure, address structural deficiencies, and improve O&M requirements and efficiencies at the Kupuna Home O'Waialua complex's on-site package STP. A number of alternatives to upgrade the existing wastewater treatment system were evaluated for the proposed project. Based on the evaluation, installation of a new on-site STP is proposed for the STP improvements project. The new STP for the Kupuna Home O'Waialua site will consist of a Fixed-Film Media System. Overall, the new on-site STP will be similar in size, capacity, and treatment level to the existing STP. The two underground injection wells will be retained in proper operating condition for disposal redundancy purposes. The existing leach field may be reused; however, pending further evaluation during the design phase, on-site replacement of the leach field is

recommended and may be carried out as part of the proposed project. Additionally, installation of a small shed is included as a component of the proposed project for storage of maintenance equipment and miscellaneous items.

The proposed project is not anticipated to result in significant short-term or long-term impacts. Temporary short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during construction activities. In the long-term, the proposed project will contribute to avoiding and/or mitigating potential adverse impacts to the environment. The proposed STP improvements will renew the service life of the Kupuna Home O'Waialua housing complex's STP, thus improving its reliability and reducing the likelihood for potentially harmful spills or overflows. Additionally, compliance with State of Hawaii, Department of Health (DOH) standards (Chapter 11-62, Subchapter 2, Hawaii Administrative Rules [HAR]) will be maintained.

The proposed STP improvements project is not expected to have a significant impact on any environmental, cultural, social, or economic resources based on the criteria set forth in Section 12 of the DOH Rules, Title 11, Chapter 200, HAR. A Finding of No Significant Impact determination is anticipated.

This Draft Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes (HRS) and associated Title 11, Chapter 200, HAR of the DOH Rules. The project would use State of Hawaii funds and lands and, therefore, requires the preparation of an EA pursuant to Chapter 343, HRS and associated Title 11, Chapter 200, HAR.

**PROJECT SUMMARY**

|   |  |
|---|--|
| <b>Proposing Agency:</b>                      | State of Hawaii<br>Department of Human Services<br>Hawaii Public Housing Authority   |
| <b>Approving Agency:</b>                      | State of Hawaii<br>Department of Human Services<br>Hawaii Public Housing Authority   |
| <b>Location:</b>                              | Waialua, Oahu, Hawaii  |
| <b>Tax Map Key:</b>                           | 6-7-016:028  |
| <b>Land Area:</b>                             | 3.3 acres  |
| <b>Recorded Fee Owner:</b>                    | State of Hawaii  |
| <b>Existing Use:</b>                          | State of Hawaii elderly public housing complex and associated infrastructure   |
| <b>State Land Use Classification:</b>         | Urban District   |
| <b>Development Plan Area:</b>                 | North Shore  |
| <b>Development Plan Land Use Designation:</b> | Rural Residential  |
| <b>County Zoning Designation:</b>             | R-5 Residential  |
| <b>Proposed Action:</b>                       | The State of Hawaii, Department of Human Services, Hawaii Public Housing Authority proposes to improve the on-site package sewage treatment plant (STP) at Kupuna Home O'Waialua, an elderly public housing complex in Waialua, Oahu, Hawaii. Installed in 1977, the STP has not been significantly upgraded since its installation and is in need of a major refurbishment. The proposed STP improvements project includes upgrade of the existing wastewater treatment system at the project site through installation of a new on-site STP as well as a new |

storage shed. The two underground injection wells will be retained in proper operating condition. Replacement of the existing leach field may occur as part of the proposed project. The proposed project seeks to address the structural and maintenance conditions of the Kupuna Home O'Waialua housing complex's on-site wastewater treatment system.

**Impacts:**

Temporary short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during construction of the proposed project. Such potential short-term impacts that may be incurred as a result of construction activities are not expected to be significant. Additionally, there are no significant adverse long-term impacts to any environmental, cultural, social, or economic resources associated with the completion and operation of the proposed STP improvements project. Conversely, in the long-term, the proposed project will contribute to avoiding and/or mitigating potential adverse impacts to the environment by renewing the service life of the Kupuna Home O'Waialua complex's STP, thus improving its reliability and decreasing the likelihood of harmful spills or overflows.

**Anticipated  
Determination:**

Finding of No Significant Impact (FONSI)

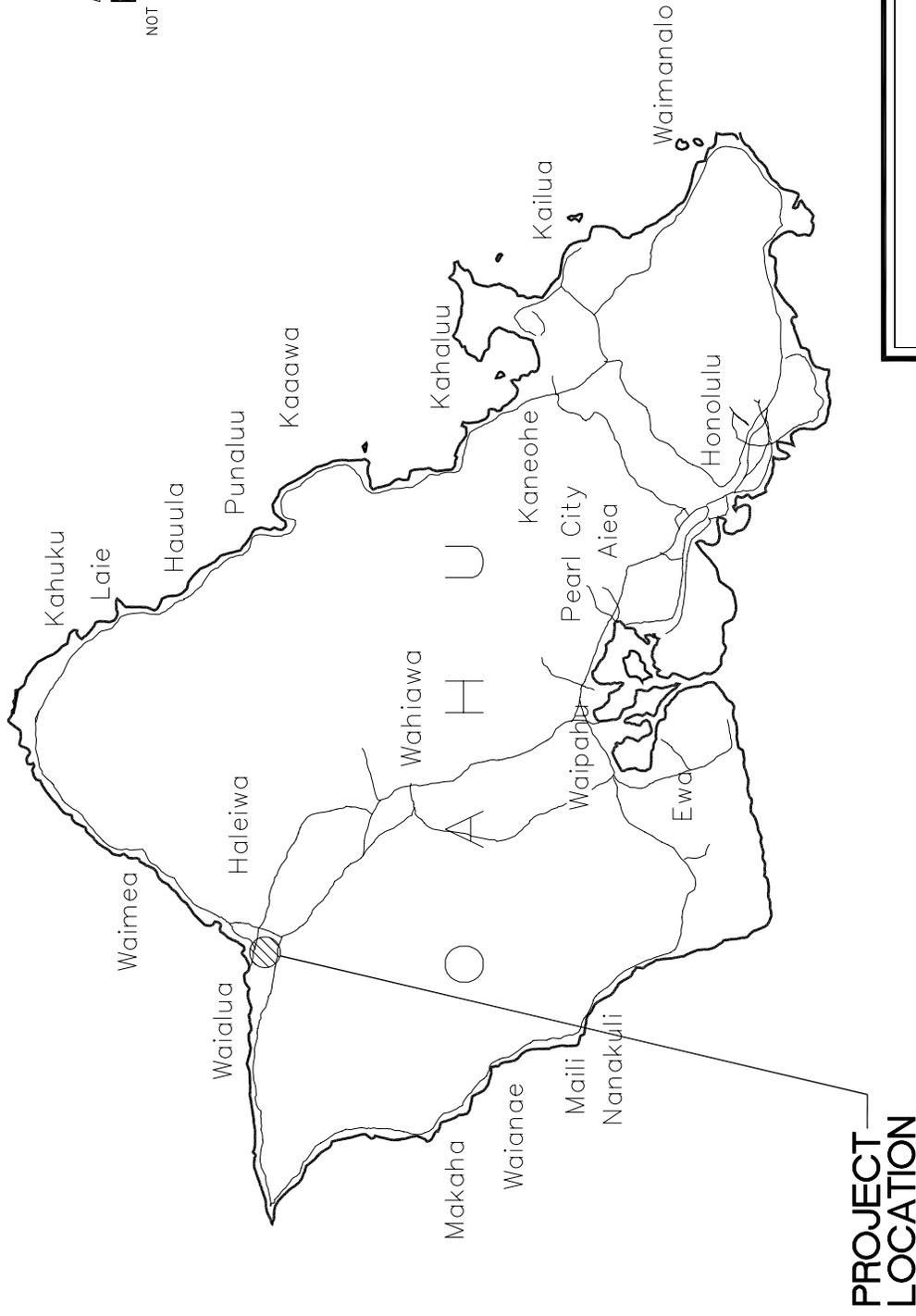
## 1. INTRODUCTION

The State of Hawaii, Department of Human Services, Hawaii Public Housing Authority (HPHA) proposes to improve the on-site package sewage treatment plant (STP) at Kupuna Home O'Waialua, an elderly public housing complex in Waialua, Oahu, Hawaii (**Figure 1**). The complex hosts its own self-contained (i.e., non-municipal) wastewater system, to include a gravity sewer collection system, on-site package STP, and effluent disposal. With a design capacity of 10,000 gallons per day (gpd), the STP currently treats approximately 6,700 gpd of wastewater (based on July 2007 to April 2008 effluent flow data) from the complex's 24 studios, 16 one-bedroom units, and community building. Treated effluent is released into two seemingly inoperable underground injection wells adjacent to the STP, and overflow from the injection wells is currently discharged to an on-site leach field located approximately north of the STP.

The STP is the only wastewater treatment plant serving the Kupuna Home O'Waialua site and has not been significantly upgraded since its installation in 1977. As such, the proposed project was initiated to evaluate the structural and maintenance conditions of the complex's aging on-site package STP. The proposed STP improvements project includes the upgrade of the existing wastewater treatment system through installation of a new on-site STP. The new STP for the Kupuna Home O'Waialua site will consist of a Fixed-Film Media System (FFMS). Overall, the new on-site STP will be similar in size, capacity, and treatment level to the existing STP. The two underground injection wells will be retained in proper operating condition for disposal redundancy purposes. The existing leach field may be reused; however, pending further evaluation during the design phase, on-site replacement of the leach field is recommended and may be carried out as part of the proposed project. Additionally, installation of a small shed is included for storage of maintenance equipment and miscellaneous items.

This Draft Environmental Assessment (EA) was prepared pursuant to the State of Hawaii (State) environmental review process as required and defined by Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR) of the State of Hawaii, Department of Health (DOH) Rules. The project would use State funds and lands and, therefore, requires the preparation of an EA pursuant to Chapter 343, HRS and associated Title 11, Chapter 200, HAR.

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**LOCATION MAP**  
SEWAGE TREATMENT PLANT  
IMPROVEMENTS AT  
KUPUNA HOME O'WAIALUA

FIGURE  
**1**

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## **2. SETTING AND PROJECT DESCRIPTION**

### **2.1. Project Need and Objectives**

#### **2.1.1. Project Need**

The overall purpose of the proposed project is to address the structural and maintenance conditions of the existing on-site wastewater treatment system serving the Kupuna Home O'Waiialua complex. Given it has not been significantly upgraded since its installation over 30 years ago, the STP is in need of a major refurbishment as it nears the end of its useful life.

The HPHA is seeking to renovate the State's aging inventory of public housing so that it does not continue to deteriorate, especially beyond the point of repair. Currently, the HPHA is in the midst of a massive "turnaround plan" without spending excess amounts of money. The plan includes tackling numerous urgent maintenance needs while facing a number of budgetary challenges.

The importance of maintaining wastewater infrastructure at its public housing projects is recognized by the HPHA. As a critical service with a life expectancy, wastewater infrastructure must be kept sustainable. It is widely recognized that the more time spent waiting to properly fund the sustainability of these critical assets, the higher the financial capital cost will be. Additionally, serious risks to public health and safety result when these assets are not maintained, rehabilitated, and/or repaired. When wastewater systems fail, sewage has no place to go and can back-up into homes and streets. It is critical to reinvest and make whole such aging infrastructure.

The HPHA's Kupuna Home O'Waiialua elderly public housing complex hosts 20 single-story duplex structures, a community building, a garden, two parking lots, and its own self-contained (i.e., non-municipal) wastewater system. The wastewater system includes a gravity sewer collection system, on-site package STP, and effluent disposal. With a design capacity of 10,000 gpd, the Kupuna Home O'Waiialua housing complex's on-site package STP currently treats approximately 6,700 gpd of wastewater (based on July 2007 to April 2008 effluent flow data) from the complex's 24 studios, 16 one-bedroom units, and community building. The STP, installed in 1977, has not been significantly upgraded since its installation. This is the only wastewater treatment plant serving the Kupuna Home O'Waiialua site, and the typical service life of package wastewater treatment plants is approximately 25 years.

As a result, the proposed STP improvements project was initiated to evaluate the structural and maintenance conditions of the existing on-site package STP serving the Kupuna Home O'Waiialua complex. The HPHA desires to

address and prevent any existing or potential future deficiencies at the STP. Through this proactive approach, the HPHA is interested in reviewing the existing conditions at the plant to determine how best to implement potential STP improvements.

Site investigations and interviews with maintenance staff and area residents were conducted in support of the proposed project between December 2007 and May 2008. Based on the information collected, it was determined that the STP is in fact nearing the end of its service life. Corrosion is present in the visible portions of the STP's steel components. Additionally, various mechanisms of the STP have been found to be not functional. Although remaining portions of the STP appear to be functional, it is difficult to fully assess the STP's condition without taking the system offline. However, as this is the only wastewater treatment plant serving the Kupuna Home O'Waiialua site, a full assessment of the STP's conditions could not be performed because the system cannot be taken offline without full back-up capabilities. Therefore, corrosion may occur in underground portions and components of the STP which were not visible and accessible during the site investigations.

Additionally, there are uncertainties regarding the conditions of the wastewater system's disposal features. Based on the aforementioned site investigations and interviews with maintenance staff, the two existing underground injection wells do not appear to be operating properly. While the leach field does appear to be operating properly, further investigation must be conducted in order to confirm the actual location and subsurface conditions of this component. Historical and construction records of the leach field are unavailable. As such, its approximate location is assumed from the site investigations and interviews, and its remaining service life cannot be estimated. *Decentralized Systems Technology Fact Sheet, Septic Tank – Soil Absorption Systems* (September 1999) indicates that the service life of leach fields is in excess of 20 years if properly maintained.

Additionally, the existing STP has operations and maintenance (O&M) requirements. These requirements include maintenance of the STP's equipment, performance of effluent sampling, and reporting of the STP's process to the DOH by a certified wastewater treatment plant operator. The HPHA currently contracts out the existing STP's O&M services. Based on the information collected during the abovementioned site investigations and interviews, it was identified that compliance with O&M requirements can be made more efficient through upgrades to the Kupuna Home O'Waiialua complex's existing STP.

It should be noted that the HPHA desires that any changes or improvements to the existing Kupuna Home O'Waiialua STP shall continue to meet DOH

compliance standards for wastewater treatment plants. Presently, flows from the STP are monitored weekly and the effluent quality is monitored monthly. The Kupuna Home O'Waialua STP's effluent quality is currently in compliance with DOH standards.

### **2.1.2. Project Objectives**

The proposed STP improvements project seeks to achieve the following objectives:

- Replace aging infrastructure,
- Address structural deficiencies, and
- Improve O&M requirements and efficiencies.

## **2.2. Project Location, Vicinity, and Conditions**

### **2.2.1. Project Location**

The proposed project is located entirely at the site of the Kupuna Home O'Waialua, an elderly public housing complex in Waialua, Oahu, Hawaii (**Figure 1**). The Kupuna Home O'Waialua housing complex encompasses an approximately 3.3-acre parcel located at the corner of Goodale Avenue and Nahoa Street (Tax Map Key [TMK]: 6-7-016:028) (**Figure 2**).

With access off of Nahoa Street and Goodale Avenue, the project site has two private entrance driveways that access two separate parking lots (Parking Lots A and B). The project site is bounded by Goodale Avenue to the west, Nahoa Street to the north, five privately-owned parcels with residential dwellings to the east, and St. Michael's Church (including St. Michael's School) to the south. Fencing surrounds the east and south boundaries of the project site.

### **2.2.2. Land Ownership**

As previously stated, the proposed project will occur entirely at the site of the Kupuna Home O'Waialua housing complex. The Kupuna Home O'Waialua complex is located on a parcel owned by the HPHA; therefore, the portions of the project site that would be affected by the proposed STP improvements project are under the jurisdiction of the State.

### **2.2.3. Surrounding Uses, Tenants, and Structures**

The Kupuna Home O'Waialua complex is located in a rural residential area characterized by single-family homes with institutional and agricultural uses in the immediate vicinity. The town center of Waialua is located approximately 1,000 feet (ft) north of the project site and includes commercial and light industrial uses. The light industrial uses occur at the site of the old Waialua

Sugar Mill and consist of, but are not limited to, chocolate production, soap manufacturing, surf board shaping, coffee production, wood cabinet production, and wood furniture production.

Nahoa Street, a two-lane road, runs along the site's northern property line. Four privately-owned parcels with residential dwellings are located directly north and across Nahoa Street from the Kupuna Home O'Waiialua housing complex site.

Immediately adjacent to and sharing the site's eastern boundary are five privately-owned parcels with residential dwellings. A chain-link fence separates the Kupuna Home O'Waiialua complex and these properties.

St. Michael's Church (including St. Michael's School) adjoins the Kupuna O'Waiialua complex on the south. A chain-link fence runs between these two properties.

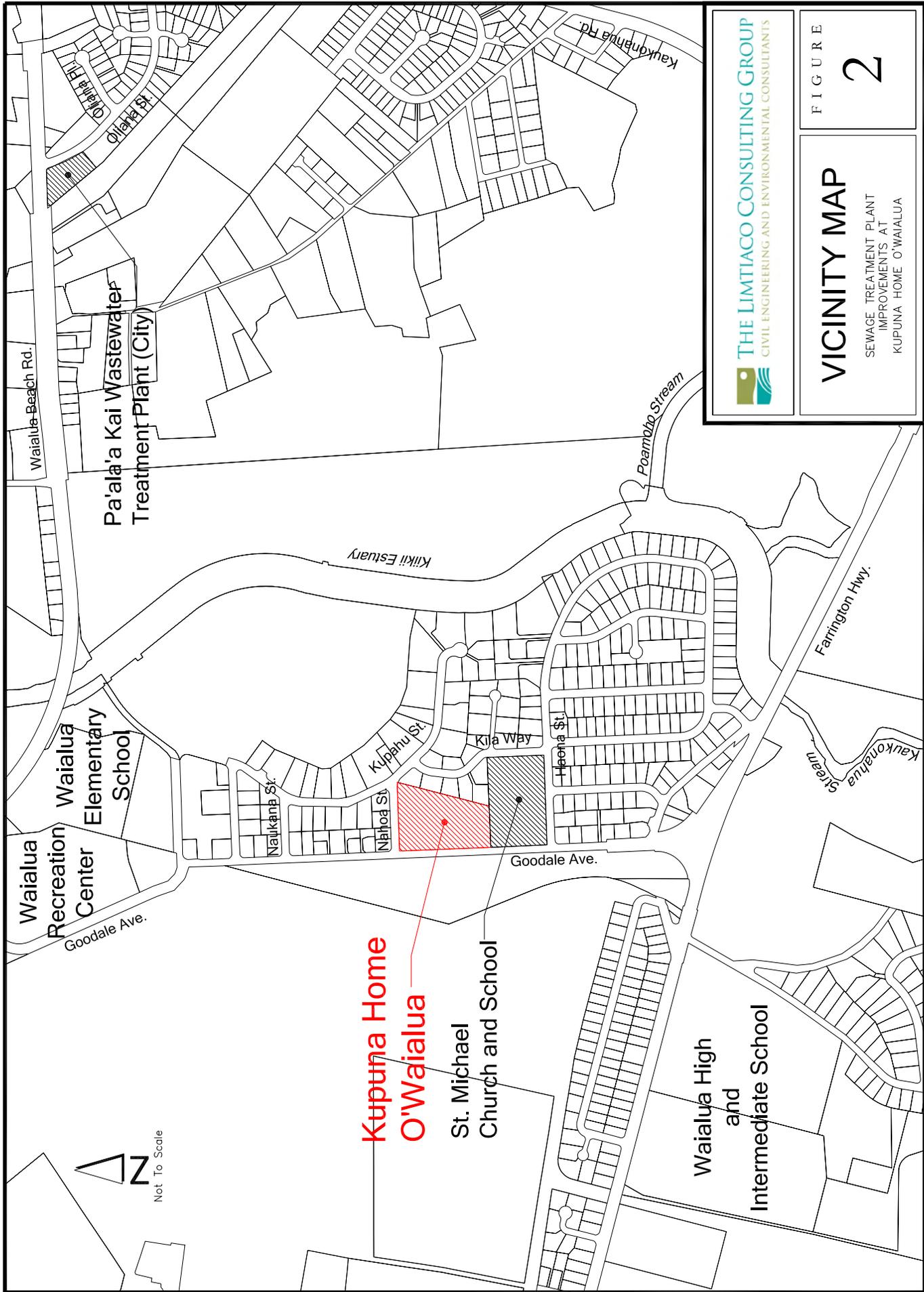
The project site is bounded by Goodale Avenue to the west. Goodale Avenue is a north-south connector road that provides two through lanes of traffic (one in each direction) and is used to access the town of Waiialua from Farrington Highway. Directly west of the project site and on the opposite side of Goodale Avenue is a parcel used for agriculture.

**Figure 3** presents the location and TMKs of the neighboring properties.

#### **2.2.4. Existing Kupuna Home O'Waiialua and Its On-Site Package Sewage Treatment Plant Conditions**

The Kupuna Home O'Waiialua is an elderly public housing complex owned and operated by the HPHA. The complex hosts 20 single-story duplex structures, a community building, a garden, and two parking lots (Parking Lots A and B). The residential dwellings of the complex are divided into five groups of four buildings each. In total, there are 24 studios and 16 one-bedroom units. The community building houses a small kitchen, two restrooms, and laundry facilities. The large chain-link fenced area adjacent to the project site's eastern boundary encloses the garden. **Figure 4** shows the site layout.

The Kupuna Home O'Waiialua complex also hosts its own self-contained (i.e., non-municipal) wastewater system. The wastewater system includes a gravity sewer collection system, on-site package STP, and effluent disposal. The on-site STP is located on the eastern portion of the project site within a chain-link fenced area. **Figure 4** shows the general layout and location of the complex's existing wastewater collection, on-site package treatment, and disposal system.




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 CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

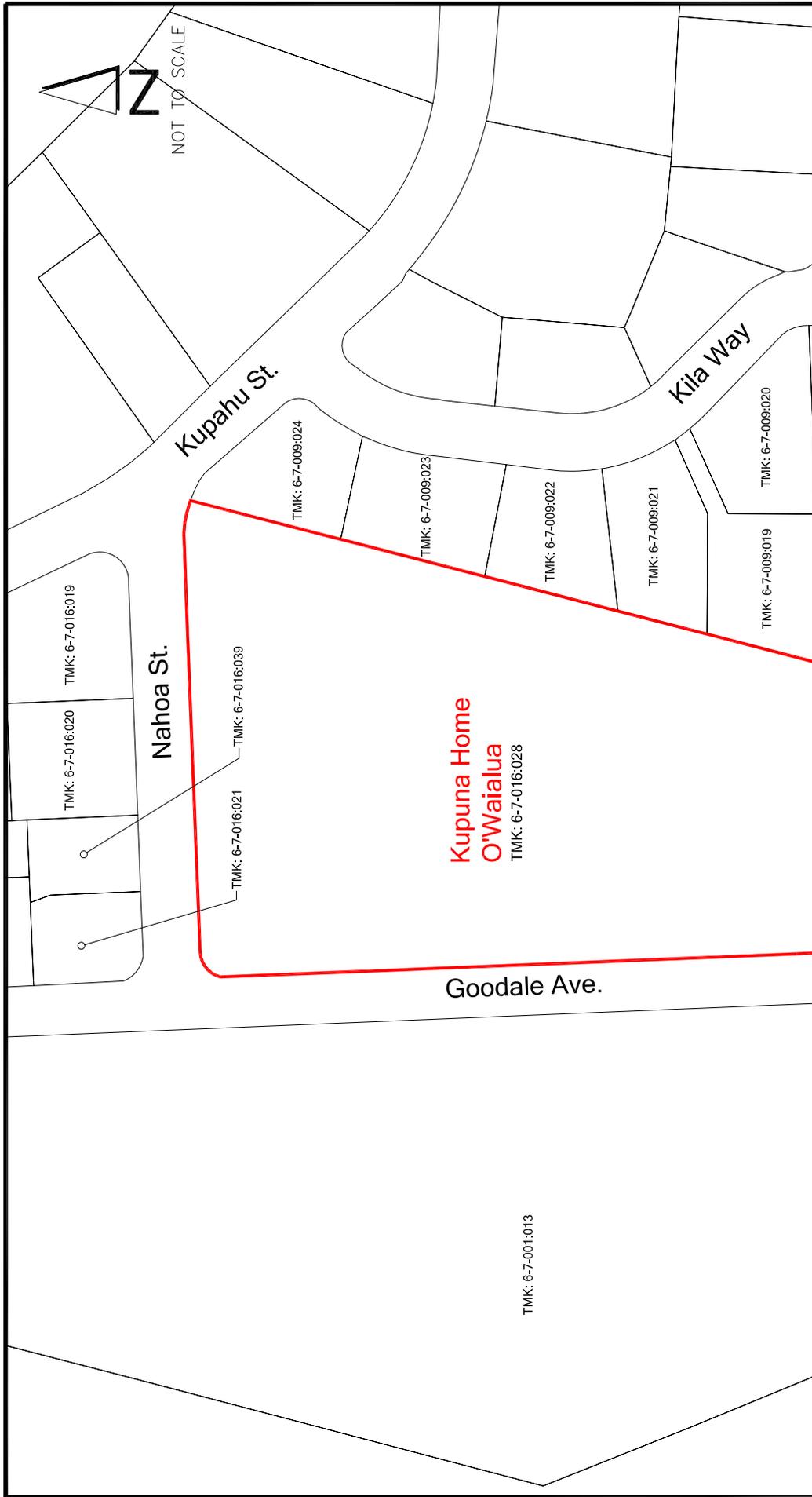
FIGURE  
**2**

**VICINITY MAP**  
 SEWAGE TREATMENT PLANT  
 IMPROVEMENTS AT  
 KUPUNA HOME O'WAIIALUA

**Kupuna Home  
 O'Waiialua**  
 St. Michael  
 Church and School

Waialua High  
 and  
 Intermediate School

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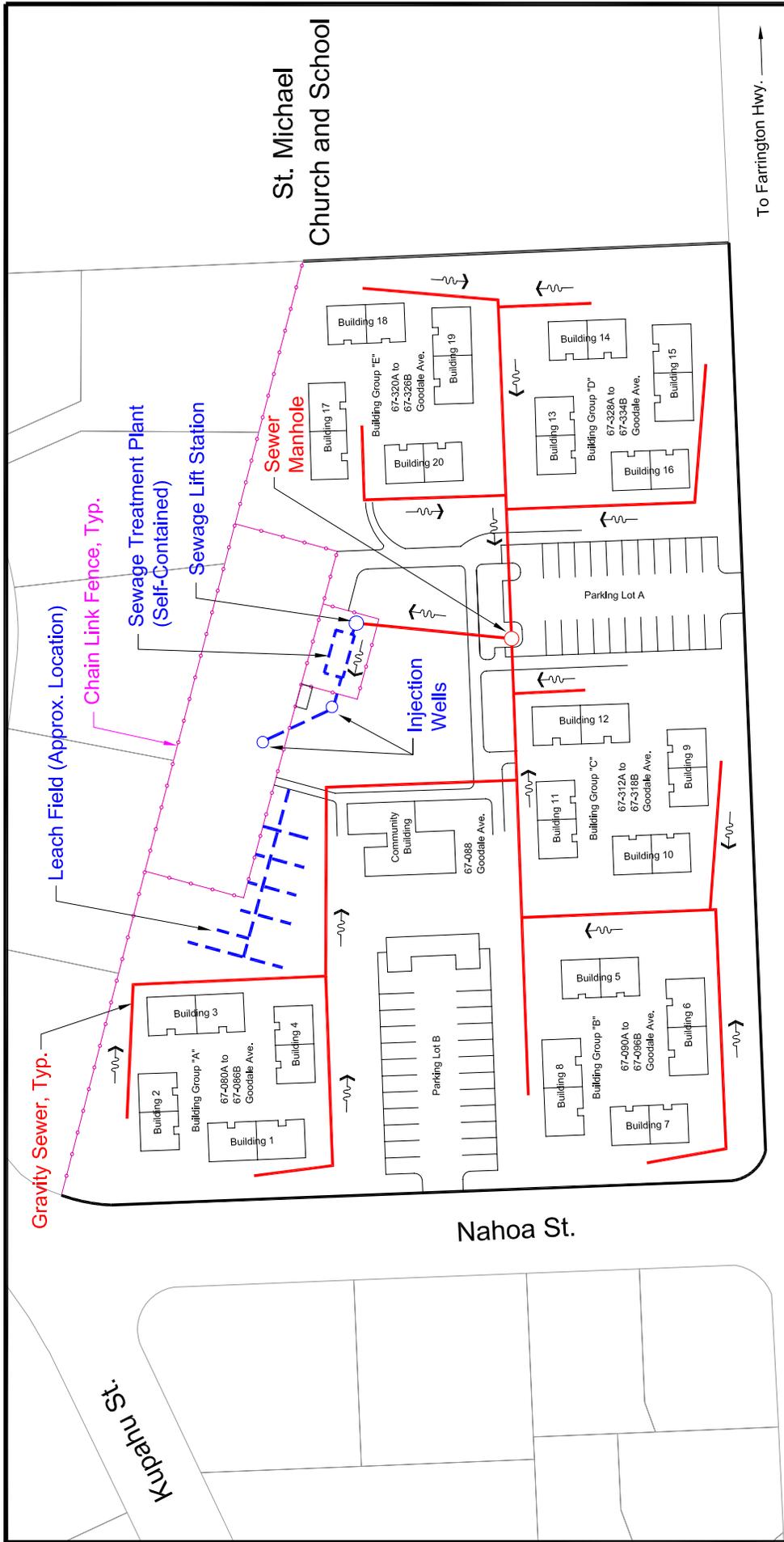
**TAX MAP KEYS**  
 SEWAGE TREATMENT PLANT  
 IMPROVEMENTS AT  
 KUPUNA HOME O'WAIIALUA

FIGURE  
**3**

**St. Michael's  
 Church and School**  
 TMK: 6-7-009:018

Source: *Geographic Information System Database*  
 City and County of Honolulu  
 Department of Planning and Permitting

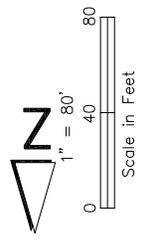
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**SITE LAYOUT**  
SEWAGE TREATMENT PLANT  
IMPROVEMENTS AT  
KUPUNA HOME O'WAIALUA

**FIGURE 4**



Goodale Ave.

To Farrington Hwy. →

→ To Naukana St.

Nahoa St.

St. Michael  
Church and School

Kupuhi St.

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The gravity sewer collection system consists of 4-, 5-, 6-, and 8-inch diameter pipes. The collection system pipes convey the site's wastewater to an influent sewer line and sewage lift station, which pumps the wastewater into the STP. The sewage lift station contains two submersible influent pumps (1 primary and 1 standby).

The STP was installed in 1977 and is the only wastewater treatment plant serving the Kupuna Home O'Waiialua site. Approximately 25 ft long x 10 ft wide x 10 ft deep, the STP contains an aeration tank, final clarifier, and a chlorine contact tank. The tanks stand approximately 3 ft aboveground, and the remaining portions of the tanks are buried underground. A shed, which holds the aeration tank's two blowers, rests on top of the tanks and is approximately 4 ft tall x 3 ft wide. Another shed sits adjacent to the tanks and contains the STP's flow meter controls. This shed is approximately 6 ft tall x 3 ft wide. An electrical transfer switch cabinet, which houses the electrical controls for the sewage lift station, is approximately 3 ft tall and hangs along the chain-link fence. A new emergency generator system was installed in 2007 and is located adjacent to the STP's southwest corner to back-up power to the STP and sewage lift station during power outages. The generator unit stands approximately 3 ft aboveground.

With a design capacity of 10,000 gpd, the STP currently treats approximately 6,700 gpd of wastewater (based on July 2007 to April 2008 effluent flow data) from the complex's 24 studios, 16 one-bedroom units, and community building. The treatment process begins when the wastewater enters the aeration tank. At this point, oxygen is provided to biological microorganisms which break down the organic constituents of the wastewater. The wastewater then flows into the final clarifier where the solids are allowed to settle to the bottom. Finally, the clarified wastewater flows through the chlorine contact tank where it is disinfected.

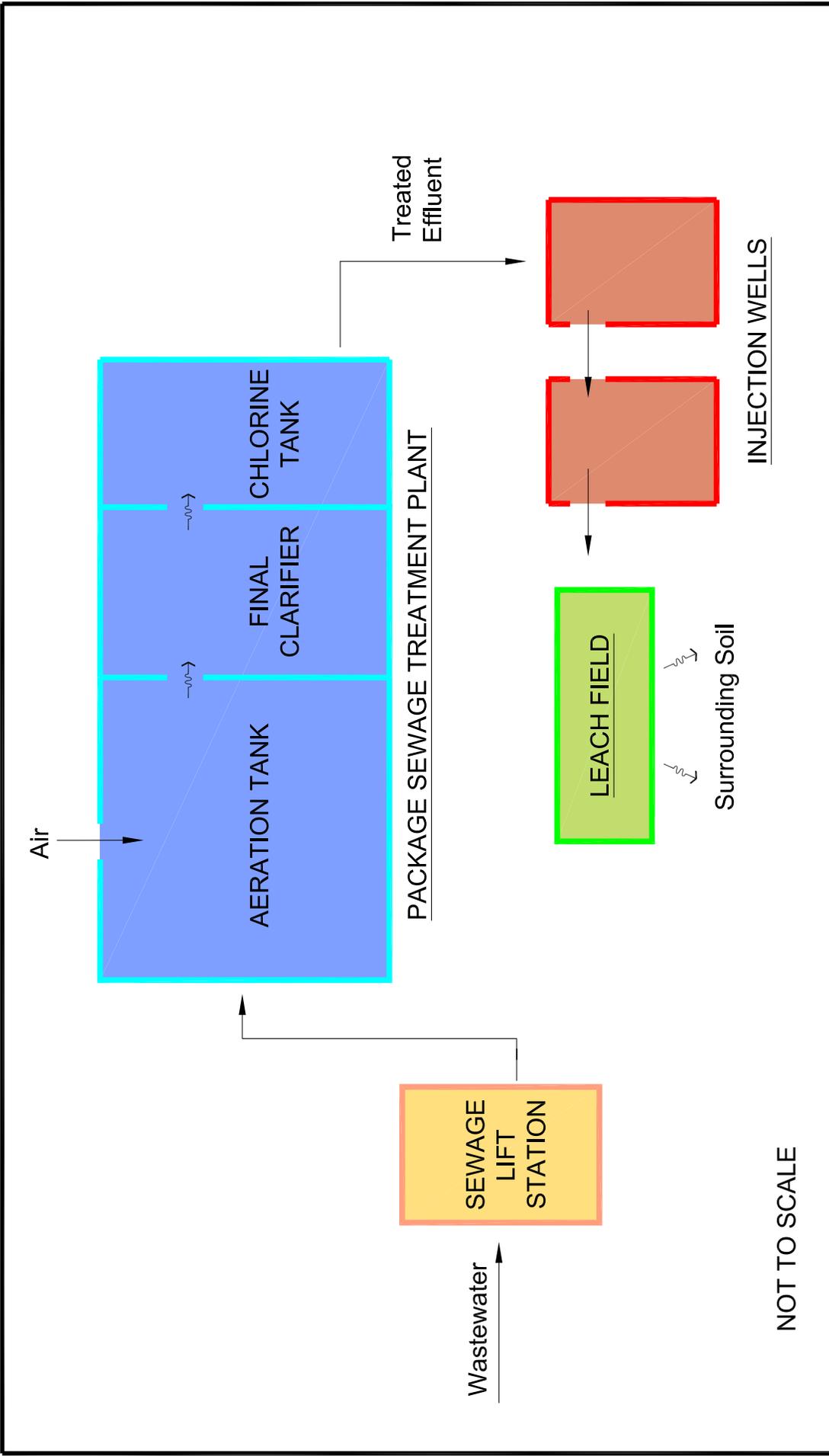
The resulting treated effluent is released into two seemingly inoperable underground injection wells adjacent to the STP. The injection wells were installed along with the STP in 1977 with the intent of discharging wastewater effluent into the subsurface. It should be noted that the Underground Injection Control (UIC) permit to operate the Kupuna Home O'Waiialua complex's two injection wells has expired. Currently, the injection wells are also used for effluent storage where any remaining solids in the effluent can settle. Overflow from the injection wells is discharged to an on-site leach field located approximately north of the STP. Over a period of time the effluent percolates into the surrounding soil, which absorbs and filters the effluent before it is consumed by vegetation and/or trickles into the subsurface. Design and construction records of the leach field are unavailable and its location in **Figure 4** is assumed from visual inspection and staff interviews.

The existing treatment process and flow schematic described above is illustrated in **Figure 5**. Flows are monitored weekly and the effluent quality is monitored monthly. Based on available flow data from July 2007 to April 2008, the current peak wastewater flow is approximately 8,000 gpd, average flow is approximately 6,700 gpd, and the treated effluent contains an average biochemical oxygen demand (BOD) of approximately 3 milligrams per liter (mg/L) and total suspended solids (TSS) of approximately 13 mg/L. The Kupuna Home O'Waialua STP's effluent quality is currently in compliance with DOH standards (Chapter 11-62, Subchapter 2, HAR).

As previously mentioned, the proposed project was initiated to evaluate the structural and maintenance conditions of the Kupuna Home O'Waialua complex's aging on-site package STP. The STP has not been significantly upgraded since its installation over 30 years ago, and the typical service life of package wastewater treatment plants is approximately 25 years.

Site investigations and interviews with maintenance staff and area residents were conducted in support of the proposed STP improvements project between December 2007 and May 2008. Based on the information collected, it was determined that the STP is in fact near the end of its service life and in need of a major refurbishment. Corrosion is present in the wetwell cover for the sewage lift station, the walkway grating support beams extending over the aeration tank and final clarifier, and at various locations along the aboveground portions of the aeration tank and final clarifier walls. The sewage lift station's standby pump (#1 pump), the sewage lift station high level alarm, the electrical transfer switch cabinet, and the aeration tank's standby blower (#2 blower) were found to be not functional. One of the Return Activated Sludge (RAS) polyvinyl chloride (PVC) lines is broken and has been temporarily repaired with a pipe clamp. Although remaining portions of the STP appear to be functional, it is difficult to fully assess the STP's condition without taking the system offline. However, as this is the only wastewater treatment plant serving the Kupuna Home O'Waialua site, a full assessment of the STP's conditions could not be performed because the system could not be taken offline without full back-up capabilities. Therefore, the condition of underground portions and components of the STP which were not visible and accessible during the site investigations is unknown.

Additionally, there are uncertainties regarding the conditions of the wastewater system's disposal features. Based on the abovementioned site investigations and interviews with maintenance staff, the two existing underground injection wells are partially clogged and do not appear to be operating properly. While the leach field does appear to be operating properly (i.e., no ponding or other indications of back-ups have been observed), further




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**EXISTING TREATMENT PROCESS FLOW DIAGRAM**  
 SEWAGE TREATMENT PLANT IMPROVEMENTS AT KUPUNA HOME O'WAI'ALUA

FIGURE  
**5**

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investigation must be conducted in order to confirm the actual location and subsurface conditions of this component. Design and construction records of the leach field are unavailable and its approximate location is assumed from the aforementioned site investigations and interviews with maintenance staff (**Figure 4**). Also, because of the limited amount of information regarding the leach field, its remaining service life cannot be estimated and it is possible that it is near the end of its service life. *Decentralized Systems Technology Fact Sheet, Septic Tank – Soil Absorption Systems* (September 1999) indicates that the service life of leach fields is in excess of 20 years if properly maintained.

The existing STP has O&M requirements. The requirements include maintenance of the STP's equipment, performance of effluent sampling, and reporting of the STP's process to the DOH. These services must be performed by a certified wastewater treatment plant operator. The HPHA currently contracts out these O&M services for the existing STP at approximately \$108,000 over 3 years, or roughly \$36,000 per year. Based on the information collected during the site investigations and interviews conducted in support of the proposed project, it was identified that compliance with O&M requirements can be made more efficient through upgrades to the existing Kupuna Home O'Waiialua STP.

## **2.3. Description of Project**

### **2.3.1. Proposed Action**

An Alternatives Analysis Report to assess the condition and performance of the Kupuna Home O'Waiialua housing complex's STP and provide recommendations has been prepared in support of the proposed project. The recommended proposed action includes the upgrade of the existing wastewater treatment system at the Kupuna Home O'Waiialua elderly public housing complex through installation of a new on-site STP. The proposed project would achieve the project needs and objectives and includes improvements as presented below.

Overall, the new on-site STP will be similar in size, capacity, and treatment level to the existing STP at the Kupuna Home O'Waiialua site. The new STP for the Kupuna Home O'Waiialua site will consist of a FFMS. A FFMS is a package system that provides aerobic treatment and clarification in a single tank. A FFMS uses a medium to grow biomass on its surface in order to allow bacteria to treat wastewater. Wastewater enters a reaction chamber that contains the medium, and aerobic treatment occurs as oxygen is provided for the biomass. After remaining solids are allowed to settle, the treated effluent is discharged to an appropriate disposal system. *Onsite Wastewater Treatment Systems Technology Fact Sheet 3, Fixed-Film Processes* (April

2008) indicates typical effluent quality will contain BOD and TSS in the range of 5 to 40 mg/L, respectively. Sludge pumping is also required periodically.

As with the site's existing STP, a FFMS type of treatment system requires a certified operator and is subject to DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR). In general, a FFMS has low O&M procedures (few mechanical components and consumes less energy) while producing good effluent quality. Effluent quality will need to be monitored and the system must be periodically tested.

More specifically, a particular type of FFMS is recommended for the Kupuna Home O'Waialua site's new STP under the proposed project: the Fixed Activated Sludge Treatment (FAST) System from Smith & Loveless, Inc. It is important to note that while the FAST System is the recommended new STP, the FAST System is comparable to other types of FFMS's and represents a basis for any FFMS which may be implemented under the proposed project. Also, regardless of the type of FFMS implemented, the design capacity of the new wastewater treatment system will remain the same as the existing STP: 10,000 gpd. As such, implementation of another type of FFMS would be similar to the FAST System discussed and evaluated herein.

The 10,000 gpd FAST System is approximately 16 ft long and 8 ft wide. It is placed inside a concrete tank, installed below existing grade, and utilizes no mechanical equipment except an aboveground aeration blower (which will be enclosed for protection from the elements and sound attenuation). Two aeration blowers will be installed with the second blower provided for redundancy purposes. Two septic tanks with a total capacity of approximately 10,000 gallons will be installed to perform pretreatment before wastewater enters the FAST System. The pretreatment septic tanks will also be installed below grade. The FAST System will produce effluent with an average of 20 mg/L in BOD and TSS. Sludge will need to be pumped approximately every 6 months, or as necessary, from the FAST System and septic tanks. Service life of the FAST System is typically 15-20 years, at which point, the biomass medium inside the reaction chamber is replaced to restore the treatment system's useful life. If needed, the useful life of the concrete tank can also be restored by repairs or replacement. The FAST System's start-up time (for biological activity) is approximately two weeks.

The project site's existing gravity sewer collection system will be utilized, and it should be noted that inspection and analysis of the collection system is not included in this project. However, a new 8-inch gravity influent sewer line will be installed to connect and divert the existing influent sewer line to the new septic tanks used for pretreatment. After pretreatment, wastewater will flow into the new STP for treatment. A flow meter will be installed on the discharge

portion of the new STP to measure effluent flow, and a high level alarm will be installed to notify maintenance personnel if problems occur (e.g., back-up of flows).

As mentioned above, the new STP (including the new septic tanks) will be buried underground. The majority of the surface above the new STP can be filled with gravel and remain an open area; however, housing will be installed aboveground for the two aeration blowers and miscellaneous controls (e.g., flow meter controls, blower controls). The housing unit for the aeration blowers will be a weather-proof and noise-attenuating enclosure. Under the proposed new STP, the approximate dimensions of this housing structure will be 4.5 ft x 3 ft x 4 ft. Although much smaller in size, the housing unit for the miscellaneous controls will also be a weather-proof enclosure.

The FAST System will produce effluent with an average of 20 mg/L in BOD and 20 mg/L in TSS. Although the treatment quality of the new STP may be slightly lower than that of the existing STP, the new STP will still comply with DOH treatment standards (Chapter 11-62, Subchapter 2, HAR).

After being treated by the STP, the effluent will be discharged via a new underground effluent lift station into the existing underground injection wells with overflow discharging to the existing leach field. Based on design and construction records, the elevation of the existing underground injection well inlets will likely be approximately 6 ft higher than the elevation of new STP outlet. To overcome this, a new belowground effluent lift station will likely be needed in order to pump discharge from the new STP to the existing injection wells. Treated effluent from the new STP will flow by gravity into the new effluent lift station and then be pumped to the injection wells. The size of the new effluent lift station will be similar to the existing sewage lift station, and two submersible effluent pumps (1 primary and 1 standby) will be installed inside the effluent lift station. The effluent lift station controls can be placed within the aforementioned housing unit for the miscellaneous controls. The elevation of the injection well inlets will be verified during the design phase in order to determine whether a gravity discharge from the new STP to the injection wells is feasible as a complete gravity flowing system is preferred.

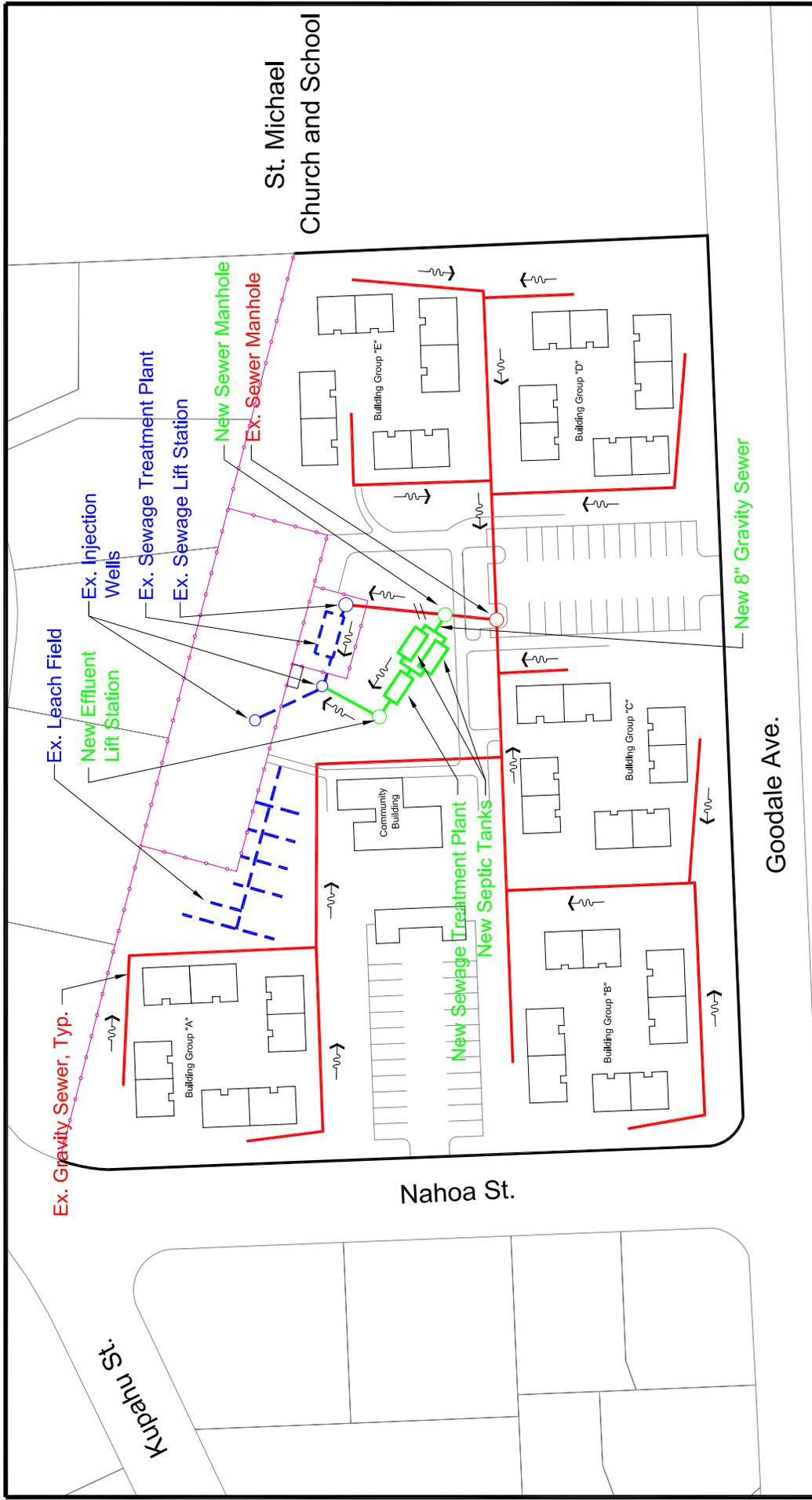
The two existing underground injection wells will be inspected, tested, and rehabilitated, if necessary. The injection wells will be retained in proper operating condition in order to meet the disposal redundancy requirements of Chapter 11-62, Section 25, HAR. Also, the Kupuna Home O'Waiialua's UIC permit renewal application will be submitted to the DOH in order to maintain the operation of these injection wells.

Overflow from the injection wells will flow by gravity to the existing leach field. The existing leach field may be reused; however, pending further evaluation during the design phase, on-site replacement of the leach field is recommended as part of the proposed project due to the uncertainty of the existing leach field's remaining service life (as historical and construction records are not available). As the project was not originally scoped to include consideration of the leach field, replacement of the leach field as a component of the proposed project will be carried out only if the HPHA construction budget allows. Adequacy of the existing leach field for its continued use to receive treated effluent will be determined during the design phase through thorough investigations. A subsurface investigation (e.g., percolation tests) will be done to confirm that the soil in the proposed disposal area is suitable. If a new leach field is constructed, it will be designed in order to adequately accommodate the new STP's effluent. In either case, through use of the existing leach field or a new leach field, the effluent will percolate over a period of time into the surrounding soil for absorption and filtration before being consumed by vegetation and/or trickling into the subsurface.

As a component of the proposed project, a small shed will be included for storage of maintenance equipment and miscellaneous items. A concrete slab-on-grade (approximately 15 ft x 15 ft) will be constructed and a prefabricated shed will be placed on top.

**Figure 6** illustrates the proposed locations and types of STP improvements for the Kupuna Home O'Waialua site. The new STP is expected to be located in the open area west of the existing STP as shown. If constructed, the new leach field will be located in approximately the same position as the existing leach field. The location of the storage shed and concrete pad will be placed near an existing walkway for accessibility purposes. The exact location of all these components will be determined during the design phase. Regardless, as shown in the figure, all proposed improvements will occur within the Kupuna Home O'Waialua housing complex project site and a 25 ft clearance of the new STP from the site's property line will be maintained as required by DOH (Chapter 11-62, Section 23.1, HAR). A 10 ft clearance of the new STP and its associated equipment from buildings or dwelling units will also be maintained as required by DOH.

The new STP will reduce O&M costs and requirements for the Kupuna Home O'Waialua housing complex's wastewater treatment system, which would benefit HPHA as it currently faces a number of budgetary challenges to maintain and upgrade its facilities across the State. Overall, the new STP will utilize less mechanical equipment and less energy than the existing STP. As with the existing STP, the new aeration blowers and pumps in the new effluent lift station will need to be inspected and maintained periodically.



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**PROPOSED STP IMPROVEMENTS AT KUPUNA HOME O'WAI'ALUA**

**FIGURE 6**

**Existing Wastewater Collection System** (Red line)

**Existing On-Site Package Sewage Treatment Plant and Disposal System** (Blue dashed line)

**Flow Direction** (Arrow with '00')

**New On-Site Sewage Treatment Plant System** (Green line)

**New 8" Gravity Sewer** (Green line)

**New Sewage Treatment Plant** (Green box)

**New Septic Tanks** (Green box)

**New Sewer Manhole** (Green circle)

**Ex. Sewer Manhole** (Red circle)

**Ex. Gravity Sewer, Typ.** (Red line)

**Ex. Injection Wells** (Blue dots)

**Ex. Sewage Treatment Plant** (Blue box)

**Ex. Sewage Lift Station** (Blue box)

**New Effluent Lift Station** (Green box)

**Ex. Leach Field** (Blue hatched area)

**Community Building**

**Building Group "A"**

**Building Group "B"**

**Building Group "C"**

**Building Group "D"**

**Building Group "E"**

**St. Michael Church and School**

**Kupuha St.**

**Nahoa St.**

**Goodale Ave.**

**Scale in Feet**  
 0 40 80  
 1" = 80'

**N**

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Effluent monitoring will still be required to ensure DOH standards (Chapter 11-62, Subchapter 2, HAR) are being complied with. Sludge will need to be pumped from the new STP and hauled from the project site about as frequently as is currently done so for the existing STP. Anticipated future upgrades to the new STP will require replacement of the biomass medium inside the reaction chamber (approximately every 15-20 years) and, if needed, the useful life of the new STP's concrete tank can also be restored by repairs or replacement.

Most of the proposed improvements within the project site will utilize construction methods that involve excavation or trenching activities. Aboveground work and activities will also be required for installation and placement of some of the improvement structures. The new STP, including the new septic tanks and gravity sewer line, will be placed belowground. The new effluent lift station will also be buried underground. Construction methods associated with these new components will involve excavation activities or open cut trenching. The new STP's housing units will be placed aboveground and involve aboveground construction activities while the remaining surface above the new STP will be filled with gravel and remain an open area. The existing STP and its associated aboveground structures will be removed and demolished after installation of the new treatment system is completed. Excavation activities and aboveground work will be required in order to remove these structures, and this area will be backfilled, finished, and restored to match the existing grade. Replacement of the leach field (if implemented) will also involve excavation and the reuse of existing soils to backfill and may require the import of more suitable soils (e.g., gravelly soils). The new concrete slab with prefabricated shed will be placed aboveground and involve aboveground construction activities.

Continued sewer service and treatment will be maintained during construction of proposed project. There will be a high degree of flexibility in construction sequencing for the proposed improvements. The new STP will be constructed off-line and independent of the existing STP. The existing STP will remain in service during construction of the new STP and until installation and startup of the new STP is completed. Once the new STP is operational, wastewater flows can be easily switched over and diverted to the new STP via the new influent sewer line.

The proposed STP improvements project is based on the conditions and deficiencies of the Kupuna Home O'Waiialua complex's existing STP mentioned in Section 2.2.4 above. The proposed improvements take into consideration treatment quality, capital cost, O&M cost, efficient use of space due to project site limitations, and ease of transitioning between existing and new or modified facilities with construction sequencing.

While implementing a recycled water program as a component of the project is not an economically feasible option for the HPHA at this time, it is worth noting that implementation of the proposed project could eventually result in future improvements in order to recycle wastewater effluent for irrigation use at the project site. This is an option available due to the higher treatment capabilities of modern package STPs, such as the one being proposed, and would decrease the amount of water being supplied to the Kupuna Home O'Waialua site. Approval from the DOH would need to be obtained, and the quality of recycled water would need to be monitored and meet DOH standards (HAR Chapters 11-62-26, 11-62-27, and 11-62-28 and *Guidelines for the Treatment and Use of Recycled Water*, dated May 2002). Additionally, reuse also requires additional planning, design, and construction requirements (e.g., a distribution system and additional treatment processes, such as disinfection and filtration, are required).

The completion of the proposed project will result in the replacement of aging infrastructure, address of structural problems, and improvement of O&M requirements and efficiencies. The proposed improvements will completely restore the useful service life of Kupuna Home O'Waialua's wastewater treatment system. Thus, reliability of the Kupuna Home O'Waialua complex's STP will be improved and the likelihood for potentially harmful spills or overflows will be reduced. Both O&M costs and requirements will decrease as a result of implementing the proposed project. Additionally, compliance with DOH standards (Chapter 11-62, Subchapter 2, HAR) will be maintained.

### **2.3.2. Additional Considerations**

The proposed project is located entirely at the site of the Kupuna Home O'Waialua elderly public housing complex—a parcel owned by the HPHA. Therefore, the portions of the project site that would be affected by the proposed STP improvements project are under the jurisdiction of the State. All construction activities will occur within the property boundaries of the Kupuna Home O'Waialua site, and access to the project site will be off of Goodale Avenue and Nahoia Street via the complex's two private entrance driveways. While entry and construction activity on private property is not expected, temporary off-site construction staging may be required due to space constraints within the project site.

The proposed project would not require the acquisition of new permanent easements as all of the proposed improvements will be accomplished within the existing property boundaries. Further, temporary construction easements would not be required for the proposed project. If for some reason temporary construction easements are necessary, they will be obtained prior to construction activities.

The proposed project includes the following design and construction considerations to minimize disruptions to existing residences, institutions, and traffic adjacent to and within the Kupuna Home O'Waialua project site:

- All construction activities will occur within the property boundaries of the Kupuna Home O'Waialua site; however, temporary off-site construction staging may be required due to project site constraints (i.e., limited space on site).
- Sewer service and treatment for the Kupuna Home O'Waialua site will be maintained during construction of the proposed project.
- In order to minimize disruptions to existing residences, the majority of construction work will be performed during daytime hours (as opposed to night work).
- Access to the site will be via the Kupuna Home O'Waialua complex's two existing private entrance driveways.
- Any open trenches will be covered with steel plates or barricaded during hours when construction operations are not occurring.
- Traffic and pedestrian detours will be provided as necessary.
- Adequate trench support and use of groundwater inflow control methods, if groundwater levels are encountered, will be employed during any excavation to mitigate soil consolidation and compression of soft deposits and to minimize dewatering efforts.
- The new STP will include an enclosure for noise attenuation in order to mitigate for potential noise impacts.
- All necessary permits and approvals will be acquired prior to the construction of the proposed improvements.
- Any changes or improvements to the existing STP shall continue to meet DOH compliance standards for wastewater treatment plants.

Several utilities exist throughout the project site and it is possible that utility relocations may be required. The need for utility relocations will be investigated further and verified during the design phase. If necessary, relocation of utilities would likely impact the actual construction cost.

### **2.3.3. Project Schedule and Cost**

It is anticipated that the design of the proposed STP improvements project will begin in March 2009, followed by construction activities to begin as early as August 2009.

The estimated capital cost is \$596,000 (which includes 20% contingency), of which \$119,000 is associated with the potential replacement of the leach field. The project would use State funds.

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### **3. DESCRIPTION OF THE EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION MEASURES**

#### **3.1. Climate**

The climate at the project site is typical of the climate that characterizes most of the State: relatively mild and constant temperatures throughout the year, moderate humidity, persistent northeasterly trade winds, and infrequent severe rainstorms. The northeasterly trade wind is the prevailing wind throughout the year for the island of Oahu, although its average frequency varies from more than 90% during the summer to only about 50% in January. The mean annual wind velocity recorded in the vicinity of the project site varies between approximately 9 and 10 miles per hour (WRRC, n.d.(a)).

Daily maximum temperatures in the vicinity range from the high 70s in the winter to the low-to-mid 80s in the summer. Daily minimum temperatures vary from the low 60s in the winter to the mid 60s in the summer. (WRRC, n.d.(b))

Hawaii's heaviest rains come from winter storms that generally occur between October and April. The terrain greatly affects trade wind showers, with some effects on storm rainfall. In general, large differences in rainfall occur over small distances because of topography and the location of the rain clouds. (WRRC, n.d.(c)) Rainfall in the vicinity of the project site is relatively moderate, with a median annual rainfall of approximately 30 inches (WRRC, n.d.(b)).

#### **Impacts and Mitigation Measures**

No impacts on climatic conditions are anticipated as a result of the construction and operation of the proposed STP improvements project. Therefore, no mitigation measures associated with climatic conditions are necessary.

#### **3.2. Geology and Soils**

According to the *Geology of the State of Hawaii* (1985), the project site is situated within a narrow plain that spans the northern coastline of Oahu, geologically referred to as the Coastal plain. The Coastal plain lies mostly along the island's coastline located north and south of the Schofield Plateau, which was formed by the lava flows from the Koolau Range to the east banking against the older Waianae Range to the west. The plain is comprised mainly of marine sediments deposited on lavas and was formed when the Waianae and Koolau Ranges were partly submerged by an elevated sea level during the mid-Pleistocene age. The great submergence was followed by various stints of emergences and partial re-submergences. Some of the later shorelines within the Coastal plain are well preserved in emerged reefs and beach deposits. The most important result of the rising and lowering of the sea level

was the drowning of the island's great valleys and their subsequent sedimentation and erosion. As such, the island's Coastal Plain consists mainly of various alternating layers of sedimentary rocks (limestone [reefs and dunes], alluvium, and beach and dune sand).

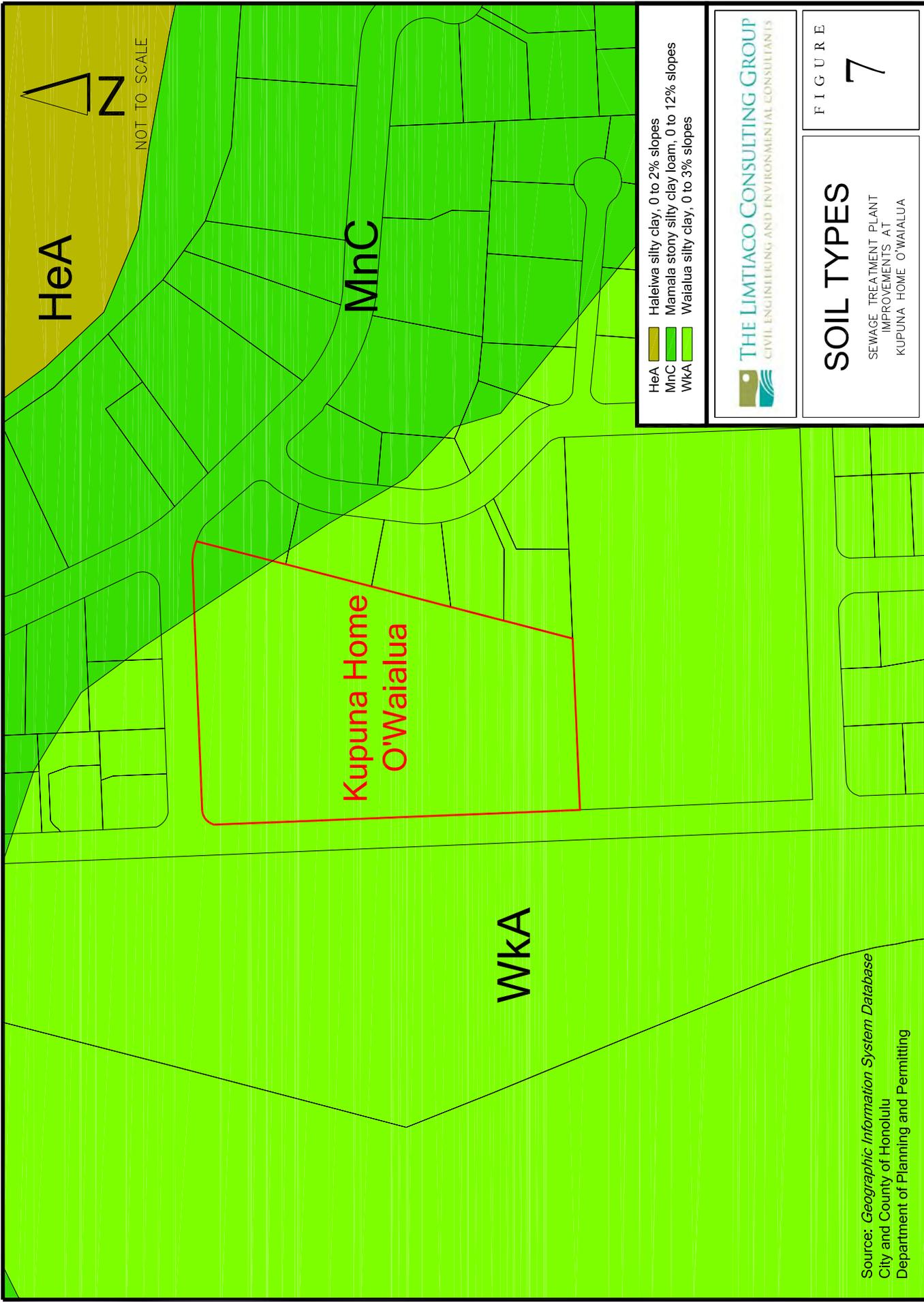
More specifically, the project site lies within the northern sector of the Coastal plain known as the Waialua-Haleiwa plain. Alluvial deposits from the Waianae and Koolau Ranges characterize the project site with areas of emerged reef limestone in close proximity.

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (August 1972) publication's General Soils Map of Oahu, the project site is of the Kaena-Waialua association, which occurs as a narrow band along the northern and eastern coastline that occur within elevation ranges from mean sea level (MSL) to 200 ft. These soils occur in drainageways, on coastal plains, and on talus slopes. They are nearly level and gently sloping for the most part (but are steeper on talus slopes), are formed in alluvium, and vary widely in texture and drainage. Kaena and Waialua soils make up about 50% of the association; Hanalei, Kawaihapai, Jaucas, Haleiwa, Kaloko, Keaau, Mokuleia, Pearl Harbor, and Pulehu soils and areas of coral outcrop and marsh make up the remaining 50%.

Kaena soils are poorly drained, dark-colored silty clays or clays underlain by alluvium. Waialua soils are moderately well-drained, dark reddish-brown silty clays or clays underlain by alluvium.

Nearly the entire project site consists of a Waialua series soil type: Waialua silty clay, 0 to 3% slopes (WkA) (**Figure 7**). This soil type occurs on smooth coastal plains. The profile of this soil type includes a surface layer that is dark reddish-brown silty clay about 12 inches thick, a subsoil that is dark reddish-brown and reddish-brown silty clay with a subangular blocky structure about 26 inches thick, and a substratum that is a dark reddish-brown, mottled silty clay. For the WkA soil type, runoff is slow, the erosion hazard is no more than slight, and permeability is moderate. The available water capacity is about 1.8 inches per foot in the surface layer and about 1.6 inches per foot in the subsoil.

A small portion of the project site (in the northeast corner of the property) consists of a Malama series soil type: Mamala stony silty clay loam, 0 to 12% slopes (MnC) (**Figure 7**). The Malama series consists of shallow, well-drained soils along the island's coastal plains, and these soils formed in alluvium deposited over coral limestone and consolidated calcareous sand. Stones, mostly coral rock fragments, are common in the surface layer and in the soil's profile. The profile of this soil type includes a surface layer that is dark reddish-brown stony silty clay loam about 8



Source: *Geographic Information System Database*  
 City and County of Honolulu  
 Department of Planning and Permitting

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inches thick, a subsoil that is dark reddish-brown silty clay loam about 11 inches thick, and an underlying layer of coral limestone and consolidated calcareous sand at depths of 8 to 20 inches. For the MnC soil type, runoff is very slow to medium, the erosion hazard is slight to moderate, and permeability is moderate. The available water capacity is about 2.2 inches per foot in the surface layer and about 1.9 inches per foot in the subsoil.

Additionally, a geotechnical survey will be conducted within the project site in support of the design phase. The survey will consist of geotechnical investigations performed at those specific locations targeted for improvements. Soil drilling, sampling, and analysis will be conducted during the geotechnical investigations, and the geotechnical information obtained will be utilized to properly design the proposed improvements and construction methods.

### **Impacts and Mitigation Measures**

No significant adverse impacts to geology or soils within the project site are anticipated.

The proposed project involves installation of STP improvements below the subsurface within the project site. The new STP, including the new septic tanks and gravity sewer line, will be placed belowground. The new effluent lift station will also be buried underground. Removal and demolition of the existing STP and its associated aboveground structures will be completed after installation of the new treatment system is completed. These proposed improvements will involve the use of excavation activities and the conventional construction method of open cut trenching within the project site. Additionally, after removal and demolition of the existing STP, this void space will be backfilled. Replacement of the leach field (if implemented) will also involve excavation. If constructed, replacement of the leach field will involve the reuse of existing soils to backfill and may also require the import of more suitable soils (e.g., gravelly soils).

Excavation and grading activities are not expected to have any significant impacts on the subsurface of the project site. Adequate trench support and use of groundwater inflow control methods, if groundwater levels are encountered during construction (refer to Section 3.4, Groundwater), will be employed during excavation to mitigate soil consolidation and compression of soft deposits and to minimize dewatering efforts. Erosion of soils due to site preparation and the construction of improvements is anticipated to be minimal. Some wind erosion of soils could occur without proper watering, and heavy rainfall could also cause erosion of soils within disturbed areas of the project site. All construction activities will comply with applicable federal, State, and County regulations and rules for erosion control. Appropriate

erosion control measures and Best Management Practices (BMPs), such as the installation of silt fences at the base of all slopes, will be utilized.

Backfill activities are not expected to have any significant impact on the subsurface of the project site. Any application of engineering fill will augment the onsite material to provide a geotechnically sound environment, and any soils imported for construction of the replacement leach field (if implemented) will be suitable to adequately accommodate the new STP's effluent. Some of the excavated soils may be reused as backfill material; soils unsuitable for reuse will be removed from the site. Any excess excavated material not reused during construction activities will be removed to ensure proper site drainage.

As previously stated, geotechnical investigations will be performed at those specific locations targeted for improvements in support of the design phase for the proposed project. The geotechnical information obtained will be utilized to ensure the proper design of the proposed improvements and construction methods.

### **3.3. Topography**

The topography throughout the project site ranges in elevation from approximately 25 ft above MSL near the northeast boundary at the intersection of Nahoa Street and Kupahu Street to approximately 40 ft above MSL at the property's southwest boundary. The project site is relatively flat and gently slopes.

Additionally, topographic surveys will be conducted at specific locations within the project site in support of the design phase for the proposed project. The topographic surveys will be performed at all locations targeted for improvements.

#### **Impacts and Mitigation Measures**

Most of the proposed improvements will involve the placement and installation of structures and pipelines belowground within the project site. Installation of these components will utilize construction methods that require excavation or trenching activities. The proposed project also involves installation and placement of some improvement structures aboveground (i.e., the new STP's housing units and the new concrete slab with prefabricated shed).

Additionally, the existing STP and its associated aboveground structures will be removed and demolished using excavation activities after installation of the new treatment system is completed. After removal and demolition of the

existing STP, this void space will be backfilled. Replacement of the leach field (if implemented) will also involve excavation and backfill activities.

The areas affected by excavation activities and open cut trenching, except for those few locations where a new improvement structure is placed aboveground, will be finished and restored to match with existing ground elevations. Additionally, the areas which require backfill activities will also be finished and restored to match the existing surface grade. Overall, the final grade of the project site will be approximately similar to existing grades. The final grading design for the site will be based on soil data and recommendations for grading and maximum slopes. Proper grading will alleviate potential negative environmental consequences, such as soil instability.

No significant adverse impacts to the topography of the project site are anticipated as a result of the completion of the project.

### **3.4. Groundwater**

According to the State of Hawaii, Department of Land and Natural Resources (DLNR) aquifer classification system, the aquifer underlying the project site is the Waialua Aquifer System Area of the North Aquifer Sector Area (CWRM, 2001).

#### **Impacts and Mitigation Measures**

The proposed project is not anticipated to have any significant adverse impact on groundwater resources.

As previously mentioned, excavation activities or open cut trench construction methods will be required for construction and installation of STP improvement structures and pipelines. The water table at the project site likely occurs below the bottom elevation of any proposed excavation and open cut trenching activities. Therefore, dewatering activities are not anticipated to be necessary during the construction and installation of proposed improvements. However, the aforementioned geotechnical survey to be conducted within the project site during and in support of the proposed project's design phase will determine whether groundwater is likely to be encountered within the project site. The survey will consist of geotechnical investigations performed at those specific locations targeted for improvements.

If groundwater levels are encountered during construction, dewatering activities will be minimized through the use of appropriate groundwater inflow control methods. Should dewatering activities be necessary for the proposed project, a National Pollutant Discharge Elimination System (NPDES) General

or Individual Permit for discharges of construction dewatering effluent into State waters may be required. A Notice of Intent to be covered by NPDES General Permit must be submitted to the DOH, Clean Water Branch at least 30 days before the commencement of discharge activities, while an application for a NPDES Individual Permit must be submitted at least 180 days before the commencement of discharge activities.

There are no adverse long-term groundwater related impacts associated with the completion and operation of the proposed STP improvements project. The long-term use of the new STP (including the new septic tanks), two underground injection wells, and existing or potential new on-site leach field is not anticipated to introduce contaminants into the groundwater aquifer. Although the treatment quality of the new STP may be slightly lower than that of the existing STP, the new STP will still comply with DOH treatment standards (Chapter 11-62, Subchapter 2, HAR). As such, the effluent will comply with DOH treatment standards upon exiting the new STP and does not require any further treatment. Nonetheless, through use of the two underground injection wells and existing leach field or a new leach field, the effluent will percolate over a period of time into the surrounding soil for absorption and filtration before being consumed by vegetation and/or trickling into the subsurface. Adequacy of the existing leach field for its continued use to receive treated effluent will be determined during the design phase through thorough investigations. A subsurface investigation (e.g., percolation tests) will be done to confirm that the soil in the proposed disposal area is suitable. As long as it is still operational, the existing leach field is adequate for effluent disposal. If constructed, the new leach field will be designed in order to adequately accommodate the new STP's effluent. The two existing underground injection wells will be inspected, tested, and rehabilitated, if necessary. The injection wells will be retained in proper operating condition in order to meet the disposal redundancy requirements of Chapter 11-62, Section 25, HAR. Also, the UIC permit renewal application will be submitted to the DOH in order to maintain the operation of these injection wells.

### **3.5. Surface Waters**

There are no freshwater streams, rivers, ponds, or open waterbodies located within or immediately adjacent to the Kupuna Home O'Waiialua housing complex site.

Located approximately 0.2 mile east of the site, the closest surface waterbody to the project site is Kiikii Estuary. Kiikii Estuary is a perennial, inland brackish waterbody that receives flows from two major freshwater tributaries and outlets to the ocean. The two freshwater tributary networks of this estuary are Kaukonahua Stream and Poamoho Stream. These streams flow northward and, approximately 0.4 mile from the project site, join to form the estuary. Kaukonahua Stream is one of the State's

longest streams and one of its most altered. An earthen rock-filled dam constructed in 1906 at the confluence of the north and south forks of Kaukonahua Stream, which commence in the Koolau Mountain Range, forms the Wahiawa Reservoir along this stream. The other major tributary of the estuary, Poamoho Stream, also commences in the Koolau Mountain Range. Approximately 1 mile from the confluence of Kaukonahua Stream and Poamoho Stream, Kiiikii Estuary drains northward and outlets to the ocean at Kaiaka Bay in Waiialua. This stream system follows the basic mauka-to-makai flow pattern.

Per the U.S. Fish and Wildlife Service's National Wetlands Inventory, there are no wetlands located within or immediately adjacent to the project site. The nearby Kiiikii Estuary is identified as a riverine and estuarine and marine deepwater resource, with some estuarine and marine wetland resources shown to exist along the estuary's alignment. (USFWS, 2008)

### **Impacts and Mitigation Measures**

No significant adverse impacts to surface water resources are anticipated to result from implementation of the proposed project. All project improvements and construction activities will occur within and be confined to the existing Kupuna Home O'Waiialua project site. There are no waterbodies located within the project site with the closest surface waterbody (Kiiikii Estuary) being located approximately 0.2 mile east of the site. As such, the proposed project will not involve activities or discharges (i.e., the placement of temporary or permanent structures) within the bed or along the banks of any waterbody. Additionally, the completion and operation of the proposed improvements will not involve alteration of the bed or banks of any waterbody or result in any changes to the course or capacity of the nearby Kiiikii Estuary. Refer to Section 3.9, Surface Water Quality for details regarding any potential impacts to the quality of surface water resources.

### **3.6. Flood, Tsunami, and Earthquake Hazards**

According the Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel Number 15003C 0105 G for the City and County of Honolulu (City) (revised June 2, 2005), the project site is identified as within Zone X (unshaded). On newer Flood Insurance Rate Maps, the unshaded Zone X corresponds to Zone C on older maps. Zone X, or Zone C, designates areas determined to be of minimal flood hazard and located outside of the 500-year flood plain (**Figure 8**).

According to the tsunami evacuation zone maps produced by the Joint Institute for Marine and Atmospheric Research and the State Civil Defense System, the project site is not within a tsunami evacuation zone.

Engineers, seismologists, architects, and planners have carefully evaluated seismic hazards related to building construction and have devised a system of classifying seismic hazards on the basis of the expected strength of ground shaking and the probability of the shaking actually occurring within a specified time. The results are included in the Uniform Building Code (UBC) seismic provisions. The UBC seismic provisions contain six seismic zones, ranging from 0 (no chance of severe ground shaking) to 4 (10% chance of severe shaking in a 50-year interval). In 1997, the State's seismic zone assignments were upgraded for the islands of Oahu and Hawaii. Currently, Oahu lies within the UBC seismic risk zone 2A (City, n.d.).

### **Impacts and Mitigation Measures**

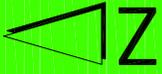
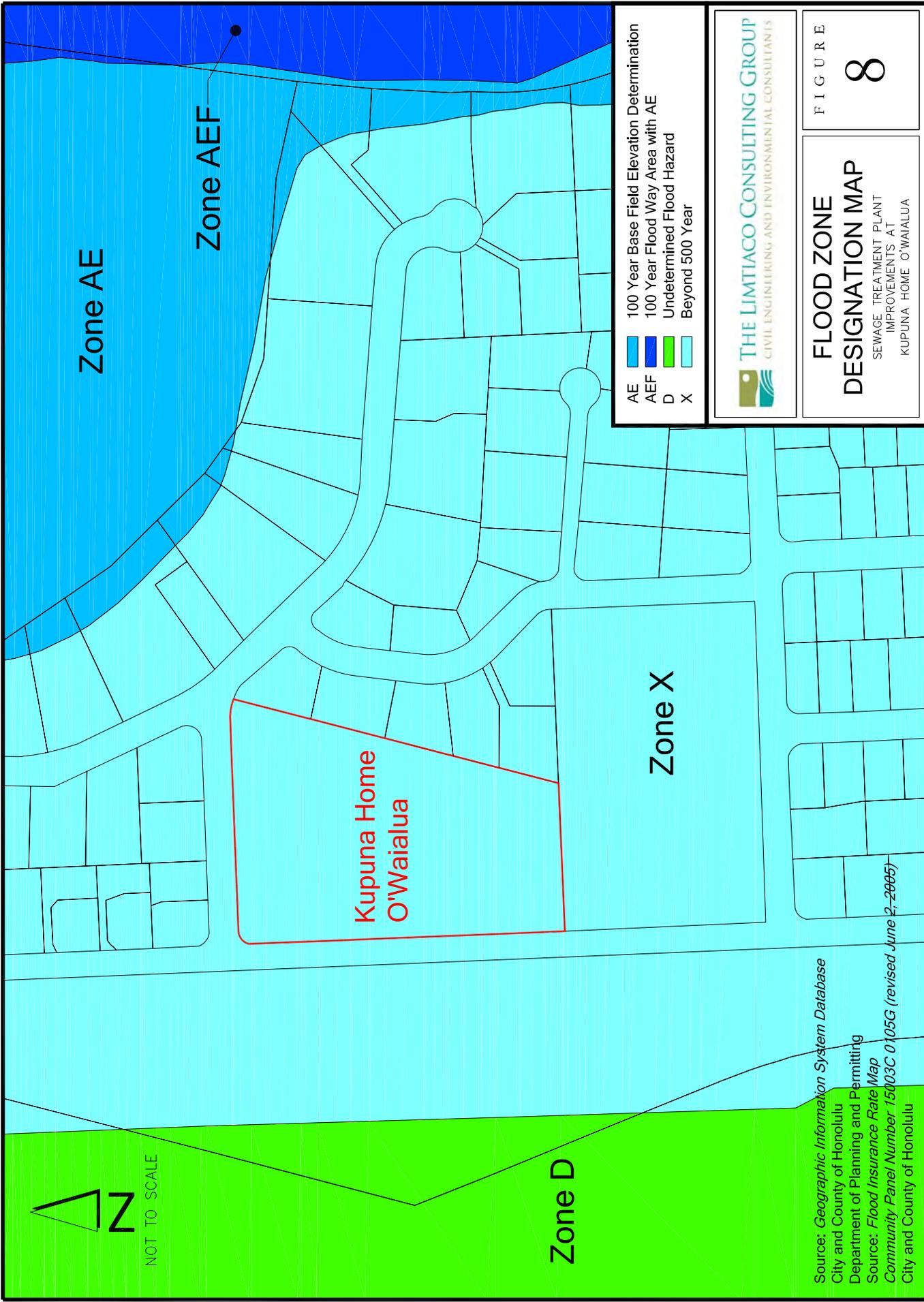
It is unlikely that the construction and operation of the proposed improvements will result in the flooding of the project site or the surrounding area. All activities will occur within and be confined to the Kupuna Home O'Waialua site. Overall, the final grade of the project site will be approximately similar to existing grades. After completion of construction activities, where the proposed improvements would require excavation activities or open cut trenching and except for those few locations where a new improvement structure is placed aboveground, the ground surface will be finished and restored to align with existing surface elevations. The final grading design for the site will be based on soil data and recommendations for grading and maximum slopes. Proper grading will alleviate potential negative environmental consequences such as flooding.

The proposed project is located outside of the island's tsunami evacuation zones and would not result in an increased risk of tsunamis.

Implementation of the proposed project would not result in an increase to the risk of earthquakes. Nonetheless, construction contractors will be required to employ sound engineering practices and adhere to the appropriate UBC requirements, which include structural design standards for earthquake resistance, for necessary structures.

### **3.7. Floral and Faunal Resources**

The project site consists of and solely contains the existing Kupuna Home O'Waialua elderly public housing complex. Hence, the proposed project is located on a highly altered site. Overall, the project site is located adjacent to and within an altered rural environment characterized by single-family homes with institutional and agricultural uses in the immediate vicinity. There are also commercial and light industrial uses in close proximity (approximately 1,000 ft north in the heart of Waialua).



NOT TO SCALE

Zone D

Zone AE

Zone AEF

Kupuna Home  
O'Waialua

Zone X

- 100 Year Base Field Elevation Determination**
- AE 100 Year Base Field Elevation Determination
  - AEF 100 Year Flood Way Area with AE
  - D Undetermined Flood Hazard
  - X Beyond 500 Year



**FLOOD ZONE  
DESIGNATION MAP**  
SEWAGE TREATMENT PLANT  
IMPROVEMENTS AT  
KUPUNA HOME O'WAIALUA

FIGURE  
**8**

Source: Geographic Information System Database  
City and County of Honolulu  
Department of Planning and Permitting  
Source: Flood Insurance Rate Map  
Community Panel Number 15003C 0105G (revised June 2, 2005)  
City and County of Honolulu

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Lands altered and influenced by a high degree of rural development and human activity, such as the project site, are often characterized by floral and faunal communities dominated by introduced species. Consequently, floral and faunal species found within and adjacent to the project site are primarily non-native species. Most of the vegetation within and adjacent to the project site consists of landscaping and cultivated plants. In association with its development as a public housing complex, the Kupuna Home O'Waiialua site has been landscaped with various ornamental trees and grasses. Additionally, the site contains a garden enclosed by a chain-link fence. The garden does not contain any native plants. Given the Kupuna Home O'Waiialua site is mostly developed with structures and paving, it lacks the necessary habitats to support or attract native faunal communities. Most native faunal species that may have once inhabited the project site have been displaced, and fauna and avifauna species presently found are predominantly introduced species and those that are common to and have adapted to an altered rural environment. Mongoose, rats, mice, and cats are common to the project site. Avifauna species presumed to frequent the site are those common to altered rural environments and may include the common mynah, house finch, house sparrow, Northern cardinal, red-vented bulbul, barred dove, spotted dove, and pigeon.

No Federal or State listed or candidate threatened or endangered floral and faunal species are known to occur within the project site.

### **Impacts and Mitigation Measures**

No significant adverse impacts to flora and fauna within or in the vicinity of the project site are anticipated to result from implementation of the proposed project. All project improvements and construction activities will occur within and be confined to the existing Kupuna Home O'Waiialua project site. The project site and surrounding area are highly altered, influenced by a high degree of rural development, and often characterized by floral and faunal communities dominated by introduced species. Sensitive species or habitats are not known to occur within the project site and generally do not occur within developed areas. No Federal or State listed or candidate threatened or endangered species are known to inhabit or occur within the project site.

Potential impacts on introduced, non-native floral and faunal species may result from construction activities and proposed improvements within the project site. During construction, vegetation within the project site and within and adjacent to the temporary off-site construction staging area (if necessary) may be negatively affected. Any existing vegetation or landscaping disturbed within these areas during construction activities will be restored and revegetated, to the extent practicable. However, as previously stated, all construction activities would occur on the already-developed and currently

existing Kupuna Home O'Waialua site, and no impacts to sensitive floral or faunal communities are expected.

### 3.8. Air Quality

Per the requirement of the Clean Air Act (last amended in 1990), the U.S. Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) in order to protect public health and welfare and prevent the significant deterioration of air quality. Additionally, the DOH has established State Ambient Air Quality Standards (SAAQS) to regulate air quality statewide. The State standards for carbon monoxide and nitrogen dioxide are more stringent than their federal counterparts. Hawaii also has a stringent standard for hydrogen sulfide, which is a common odorous pollutant associated with wastewater treatment facilities.

The DOH, Clean Air Branch monitors air quality at selected locations throughout the State. The 2007-2008 ambient air monitoring network consists of 14 State and Local Air Monitoring Stations and Special Purpose Monitoring stations. Currently, there are six State-maintained ambient air quality monitoring stations on Oahu that measure various types of pollutants. The Pearl City monitoring station, which is located approximately sixteen miles southeast of Waialua, is located nearest to the project site. The Pearl City monitoring station was established in 1979 and currently monitors for the volume of PM<sub>2.5</sub> and PM<sub>10</sub> particulate matter, PM<sub>2.5</sub> Speciation, and Air Toxics. The Sand Island monitoring station, which is located at the University of Hawaii's Anuenue Fisheries in the Sand Island Industrial Park, was established in 1980 and is the only ozone monitoring station in the State. None of the six air quality monitoring stations on Oahu measure hydrogen sulfide; however, the Big Island hosts three stations which monitor for this pollutant. (CAB & ASAS, 2008)

In general, air quality in the State of Hawaii continues to be one of the best in the nation, and criteria pollutant levels remain well below NAAQS and SAAQS. According to the *Annual Summary 2006 Hawaii Air Quality Data* and the *2005 Annual Summary Hawaii Air Quality Data*, air quality monitoring data compiled by the DOH indicates that the established air quality standards for all monitored parameters are consistently met throughout the State and on the island of Oahu. Data from all the State-maintained air quality monitoring stations indicate that air quality for the monitored parameters is within the NAAQS and SAAQS.

Overall, air quality in the vicinity of the project site is considered to be good and meets NAAQS and SAAQS. Air quality at the project site and vicinity is positively influenced by northeast tradewinds that predominate throughout the year and blow pollutants from inland areas out to sea. Problems with poor air quality and elevated pollutant levels generally occur when tradewinds diminish or give way to southerly and southwesterly winds (known as Kona wind conditions). It is under stable

conditions that the greatest potential for air pollutant buildup from groundlevel sources exists. Localized problems of poor air quality may occur under adverse Kona wind conditions at and in the vicinity of the Kupuna Home O'Waialua site.

Local air quality at the Kupuna Home O'Waialua housing complex may be affected by activities and structures surrounding the project site. The project site is located in a rural residential area, so effects of vehicle emissions on local air quality are expected to be minimal. Agricultural activities immediately west of the project site and in the vicinity may contribute to the concentration of exhaust emissions and fugitive dust in the air. Commercial and light industrial areas are located approximately 1,000 ft north of the site in the center of Waialua, with the industrial uses occurring at the site of the old Waialua Sugar Mill. Although the sugar mill is no longer in service, activities such as chocolate production, soap manufacturing, surf board shaping, coffee production, wood cabinet production, and wood furniture production still occur in this light industrial area. Because of their close proximity, these activities may affect air quality at the Kupuna Home O'Waialua site.

Although wastewater treatment plants can be sources of regulated air pollutants, such facilities are not often considered major sources of such pollutants. The more common association of wastewater treatment plants, including STPs, with air quality is related to odors. Odors frequently arise from such plants due to the nature of the material being processed and the process itself. The odorous compounds most commonly known in association with wastewater treatment plants are hydrogen sulfide and ammonia, though there are other odorous compounds associated with such facilities. These compounds generally arise from bacterial and fungal breakdown of the waste materials found in domestic sewage. In general, odorous gases and vapors disperse downwind from a source and become diluted. Using the EPA's model SCREEN3 against three atmospheric stability conditions, dilution factor computations indicate a sharp decline in odor concentration and intensity with distance (i.e., a reduction of 94% or more within 100 meters). (Morrow, 2007)

It should be noted that during the site investigations and interviews conducted in support of the proposed project, one of the area residents stated that generally any odors associated with the site's STP are not a problem and are only noticed on those occasions when the wind blows in the direction of that particular parcel (south-southeast). Even in such instances, the resident stated odors are not an issue. This particular resident's parcel (TMK 6-7-009:019) is located immediately adjacent to the Kupuna Home O'Waialua site's eastern boundary and within approximately 175 feet of the existing STP.

### **Impacts and Mitigation Measures**

The proposed project is anticipated to have short-term construction-related impacts on air quality, including the generation of dust and emissions from

construction vehicles and equipment. The contractor will be responsible for complying with DOH Administrative Rules, Title 11, Chapter 60, "Air Pollution Control".

During the construction of the proposed improvements, two potential types of air pollution emissions will likely occur: 1) Fugitive dust from soil excavation and the movement of construction vehicles; and 2) Carbon monoxide and nitrogen oxide emissions from on-site construction equipment.

Construction activities must comply with the provisions of HAR, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust. Compliance with State regulations will require adequate measures to control fugitive dust by methods such as, but not limited to:

- Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- Providing an adequate water source at the project site prior to initiation of construction activities;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Controlling of dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities;
- Controlling dust from debris being hauled away from the project site; and
- Constructing dust barriers/fences.

The DOH recommends that a dust control management plan be developed to identify and address all activities that have a potential to generate fugitive dust. The contractor will be responsible for the implementation of adequate dust control measures during all phases of development and construction activities.

Construction equipment and vehicles shall be properly maintained in order to control vehicular emissions. Exhaust emissions from construction equipment and vehicles are anticipated to have negligible impacts on air quality in the project vicinity as emissions would be relatively small and readily dissipated.

The proposed project is not anticipated to generate significant odors during construction since the existing STP will remain in service during construction of the new STP and until installation and startup of the new STP is completed. The new STP will be constructed off-line and independent of the existing

STP. Once the new STP is operational, wastewater flows can be easily switched over and diverted to the new STP via the new influent sewer line. Overall, the contractor will be required to schedule and plan all construction methods so as to allow continued sewer service and treatment during the installation of the new STP improvements (refer to Section 3.14.4, Wastewater System for more details). As such, any potential odors generated during construction should be similar to odor levels that are currently generated as a result of operating the STP.

As previously stated, the more common association of wastewater treatment plants with air quality is related to odors. This is often associated with the stagnation of wastewater during the treatment process. However, given that the nature of the existing STP's and the new STP's treatment process is aeration, the new STP is not anticipated to generate or emit any significant odors. The aeration process involves the constant addition and mixing of air into the wastewater through blowers, and the wastewater is not allowed to become stagnant. Overall, the aeration process keeps the wastewater "fresh" and, as a result, the wastewater does not tend to be odorous.

Furthermore, the new STP will be placed entirely underground. Only a small venting tube will extend aboveground so that air and any potential odors from the STP may be released. As such, any potential odors associated with the new STP are expected to be even less than the existing STP.

It should be noted that while the risk of odors can be minimized, it cannot be eliminated without additional treatment. The effects of odors depend on the location of nearby residents and their individual sensitivity and tolerance to such smells. Therefore, potential odor impacts at the new STP can be expected, particularly during periods of stable conditions and or Kona wind conditions. However, given the abovementioned operational conditions, the new STP improvements are not expected to result in adverse significant odor impacts.

Overall, air quality impacts during construction will be temporary in nature and will cease upon completion of the construction. Moreover, the proposed improvements to the STP will minimize the potential for any long-term odor impacts through the aeration process and by placing the new STP underground. No significant adverse air quality is anticipated upon completion and during operation of the proposed project.

### **3.9. Surface Water Quality**

As previously mentioned, there are no freshwater streams, rivers, ponds, open waterbodies, or wetlands located within or immediately adjacent the Kupuna Home

O'Waialua site. Located approximately 0.2 mile east of the project site, the closest surface waterbody to the project site is Kiiikii Estuary: a perennial, inland brackish waterbody that receives flows from two major freshwater tributaries and outlets to the ocean. Kiiikii Estuary receives water from Kaukonahua Stream and Poamoho Stream. These streams flow northward and, approximately 0.4 mile from the project site, join to form the estuary. Approximately 1 mile from the confluence of Kaukonahua Stream and Poamoho Stream, Kiiikii Estuary continues to drain northward and outlets to the ocean at Kaiaka Bay in Waialua. Refer to Section 3.5, Surface Water for more details regarding the hydrology of these surface waters.

It should be noted that stormwater runoff from the project site is eventually conveyed via storm drain pipes to a privately-owned parcel consisting of agricultural uses (i.e., cultivated crops). The parcel is located immediately adjacent to Kiiikii Estuary. It appears the storm drain pipes discharge the stormwater runoff into a drainage ditch that traverses the parcel and that the drainage ditch eventually flows into the estuary. Refer to Section 3.14.3, Drainage System for details regarding the storm drain system.

The DOH has classified State waters as either inland or marine waters for purposes of applying the standards set forth in Chapter 11-54, HAR and for the selection or definition of appropriate water quality parameters and uses to be protected in State waters. The current version of HAR 11-54 designates inland waters as "Class 1" and "Class 2" use categories and marine waters as "Class AA" and "Class A" use categories. (DOH, 2004) Kiiikii Estuary is classified as a Class 2 inland water. At the location where the Kiiikii Estuary drains into the Kaiaka Bay in Waialua, the bay is classified as Class A marine waters by the DOH. The lower reaches of both Kaukonahua Stream and Poamoho Stream (i.e., those reaches just upstream of and nearest Kiiikii Estuary) are both classified as Class 2 inland waters. (EPO, 1987)

According to the *2006 State of Hawaii Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to Sections §303(d) and §305(b), Clean Water Act (P.L. 97-117)*, herein referred to as the 2006 Integrated Report, Kiiikii Estuary and Kaiaka Bay are currently included on the State's 303(d) List of Impaired Waters. The impairing pollutants of concern for Kiiikii Estuary are listed as unknown; however, presently this waterbody is identified by DOH as not attaining applicable water quality standards for nutrients, turbidity, and total suspended solids. The impairing pollutants of concern for which Kaiaka Bay is listed are: total nitrogen, nitrite, nitrate, total phosphorous, nutrients, total suspended solids, and turbidity (nearshore waters to 60 ft from Puaena Point to a point 1.5 miles west of Kaiaka Point); total nitrogen, nitrite, nitrate, ammonium, chlorophyll a, and turbidity (at Kaiaka Bay). Additionally, the entire networks of Kaukonahua Stream and Poamoho Stream are listed as impaired waterbodies on the State's 303(d) List of Impaired Waters. The 2006 Integrated

Report separates the segments of Kaukonahua Stream between its downstream receiving lower reach, Wahiawa Reservoir, and its upstream tributary upper reaches. The lower reach of Kaukonahua Stream has the following impairing pollutants of concern listed: total nitrogen, nitrite, nitrate, and turbidity (both dry and wet seasons). The impairing pollutants of concern for which all reaches of Poamoho Stream is listed are: total nitrogen, nitrite, nitrate, total phosphorous, and turbidity. Overall, the impaired status of these various waterbodies requires the DOH to develop and establish total maximum daily loads (TMDLs) limits for each pollutant of these waterbodies suggesting the quantity by which pollutant loads, including load allocations for point and nonpoint source discharges into its tributaries, should be reduced in order to attain Hawaii's water quality standards.

Waterbodies have been prioritized as High, Medium, or Low for initiating TMDL development within the current monitoring and assessment cycle (through April 15, 2008) based on several factors, such as the number of pollutants listed, degree that levels of pollutants exceed the standard, and current and projected resource availability for completing the TMDL development process. Both Kiikii Estuary and Kaiaka Bay are prioritized as Low for TMDL development. The lower reach of Kaukonahua Stream and all reaches of Poamoho Stream are prioritized as Medium for TMDL development.

As stated, all of the abovementioned waterbodies are listed as impaired waterbodies, and it should be noted that currently TMDL limits do not exist for any of these waterbodies. The 2006 Integrated Report states that TMDLs for the upper reaches of Kaukonahua Stream are expected to be completed in 2008, with ongoing phased TMDL development in Kaukonahua receiving waters (i.e., Wahiawa Reservoir, lower reaches of Kaukonahua Stream, Kiikii Estuary, and Kaiaka Bay). In each case, TMDLs will be established for pollution by sediment, nutrients, and bacterial indicators.

### **Impacts and Mitigation Measures**

No significant adverse impacts to the water quality of any surface water resources are anticipated to result from implementation of the proposed project.

Construction activities will not increase the volume of peak stormwater runoff or contribution of contaminants to stormwater runoff. Additionally, as stated in Section 3.5, Surface Waters, the proposed project will not involve construction activities or discharges within the bed or along the banks of any existing waterbody.

The proposed project may have short-term construction-related impacts from erosion and sedimentation on water quality. While the proposed project will

involve the use of excavation activities and open cut trench construction methods within the project site for construction of some of the proposed improvement structures and pipelines, erosion of soils due to site preparation and the construction of improvements is anticipated to be minimal. Some wind erosion of soils could occur without a proper watering, and heavy rainfall could also cause erosion of soils within disturbed areas of the project site. All construction activities will comply with applicable federal, State, and County regulations and rules for erosion control. Appropriate erosion control measures and BMPs will be implemented to prevent pollutants from entering storm drain inlets, and thus surface waters, during construction. Measures, such as installing silt fences at the base of all slopes and sediment barriers at storm drain inlets and repaving and revegetating areas as soon as practicable, will be applied as appropriate during construction of the proposed project.

There are no long-term surface water quality impacts associated with the completion and operation of the proposed STP improvements project. The project is not anticipated to induce additional runoff or increase the volume of peak stormwater runoff. The contribution of contaminants to stormwater runoff will not increase as a result of the proposed project. The project will appropriately finish and restore areas to match the existing surface grade and revegetate areas that are disturbed during construction, to the extent practicable. Moreover, as stated in Section 3.5, Surface Waters, the completion and operation of the proposed improvements will not involve alteration of the bed or banks of any waterbody.

### **3.10. Noise**

The Kupuna Home O'Waiialua elderly public housing complex is generally located in a rural residential area, with the surrounding area including a mix of institutional, agricultural, commercial, and light industrial uses (see Section 2.2.3 for greater detail). The project site is located away from high volume roadways, in a relatively quiet residential area with residences located immediately adjacent to the project site. Therefore, background ambient noise levels in the vicinity of the project site are determined to be relatively low. Noise levels at the project site are primarily the result of the housing complex's residential activities and current operations, to include the existing STP. Existing agricultural operations to the west, commercial and light industrial operations to the north of the site, and activities at the adjacent St. Michael's Church (including St. Michael's School) are also sources of ambient noise in the area. Overall, no significant ambient noise levels were detected during the site investigations conducted in support of the proposed project.

The Kupuna Home O'Waiialua complex's existing STP emanates noise from its various mechanical operations. Sewage is pumped from the sewage lift station to

the existing STP via the two submersible influent pumps (1 primary and 1 standby). The pumps are activated only when the lift station fills to a certain level and operate intermittently throughout the day and night as needed. Air is supplied to the STP via the aeration tank's blowers with one blower operating continuously 24 hours a day. Some of the noise generated by the aeration tank's blowers is mitigated by the shed that houses both blowers. The relatively new emergency generator system powers the STP and sewage lift station during power outages, and its generator unit produces an average of less than 70 A-weighted decibels (dBA) at 23 ft according to the manufacturer's specifications. It should be noted that during the aforementioned site investigations and interviews conducted in support of the proposed project, one of the area residents stated that generally noise due to the operation of the existing STP is mainly noticeable during night hours and is not a major source of concern.

In addition to regulating noise associated with construction activities, the DOH regulates noise from stationary mechanical equipment. The DOH noise limits are expressed in maximum allowable property line noise limits rather than day-night average sound level, which incorporates a 24-hour average of instantaneous dBA levels as read on a standard sound level meter. The following maximum permissible noise limits apply to stationary noise sources and equipment related to agricultural, construction, and industrial activities. For agricultural or industrial lands, the allowable limits are 70 dBA for daytime and nighttime periods along the property boundaries. The applicable DOH property line limits are 60 and 65 dBA during day and night hours, respectively, for properties zoned for multi-family dwellings, apartment, commercial, or business uses. For single-family residences, public and open spaces, and preservation lands, the daytime and nighttime DOH limits are 55 and 45 dBA, respectively. With regard to each of the maximum permissible noise limits, daytime hours are defined as being from 7:00 am to 10:00 pm and the nighttime period is considered to be the remaining hours per the DOH rules. The DOH noise limits for single- and multi-family residences are more stringent than the Federal Housing Administration/Housing and Urban Development's noise standard.

### **Impacts and Mitigation Measures**

Audible noise from construction activities will likely be unavoidable during the entire construction period. Mitigation of construction noise to inaudible levels will not be practical in all cases due to the intensity and nature of some construction noise sources and due to the exterior nature of the work. Ambient noise levels in the vicinity of the project site will increase due to construction activities and the use of construction vehicles and equipment. Quieter construction activities, such as building erection and equipment installation, may not be audible. Overall, all noise impacts from construction will be temporary in nature and will cease upon completion of the construction.

Unavoidable short-term construction noise impacts will be mitigated to some degree by the contractor's compliance with the provisions of the DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" noise regulations. These rules require a noise permit if the noise level from construction activity is expected to exceed the allowable levels stated in the Chapter 46 rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment and to maintain 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, in accordance with the Chapter 11-46 rules.

Potential noise impacts will also be mitigated by performing construction work during daytime hours (as opposed to night work). Daytime work will ensure minimal impacts to existing residences within and adjacent to the project site, including reducing the inconvenience of construction noise impacts to residents during nighttime hours. It is recognized that performing construction work primarily during daytime hours in order to ensure minimal impacts to existing residences within and adjacent to the Kupuna Home O'Waiialua site has the potential to increase short-term noise impacts to the adjacent St. Michael's School during school hours. Nighttime, weekend, or holiday construction activities are not anticipated. Nonetheless, if for some reason such activities are necessary and will exceed allowable noise levels, a noise variance will be obtained prior to commencement of construction activities, in accordance with the Chapter 11-46 rules.

In the long-term, no significant adverse noise impacts are anticipated due to the completion and operation of the proposed STP improvements project. It is anticipated that the proposed improvements will result in no change or a reduction in the amount of noise attributed to Kupuna Home O'Waiialua's self-contained wastewater system. The new STP (including the new septic tanks) will be gravity fed and will significantly reduce noise impacts as compared to the existing STP. The new STP will require two aeration blowers similar to those currently in operation at the existing STP with one blower operating continuously 24 hours a day and the second blower provided for redundancy purposes. However, in order to minimize and mitigate potential noise impacts, the new STP will include an enclosure for noise attenuation as part of the proposed project improvements. Both new aeration tank blowers will be enclosed in the sound attenuating structure to reduce the risk of possible noise impacts and achieve compliance with DOH noise limits. While treated effluent from the new STP will also flow by gravity into the new belowground effluent lift station, two submersible effluent pumps (1 primary and 1 standby)

will be installed inside the effluent lift station in order to pump discharge from the new STP to the existing injection wells. These are the only pumps related to the proposed improvements and are not expected to generate significant noise. The pumps will activate only when the lift station fills to a certain level and operate intermittently throughout the day and night as needed. Submersible pumps are located underwater and are much quieter than typical pumps. In addition, the submersible pumps will be located underground. It should be noted that the elevation of the injection well inlets will be verified during the design phase in order to determine whether a gravity discharge from the new STP to the existing injection wells is feasible as a complete gravity flowing system is preferred. Overall, the proposed improvements are not anticipated to significantly impact noise levels and potential adverse noise impacts as a result of noise generating machinery will be minimized.

### 3.11. Archaeological and Cultural Resources

The proposed project is located in a highly altered rural environment. There are no known archaeological sites identified within the project site, and development (agricultural, residential, and industrial in nature) has destroyed most archaeological sites in the Waiialua area (i.e. Mōkūle'ia, Kamanamui, and Pa'ala'a ahupua'a). No written records were found indicating culturally significant resources or traditional and cultural practices occur within the project site.

Published archaeological and cultural surveys, past EA/Environmental Impact Statements, and databases of known historic and cultural sites were reviewed for pertinent information on archaeological sites or traditional and cultural practices at the project site and in the Waiialua area in general. Additionally, during the preparation of the Draft EA, pre-assessment phase letters were distributed to various government agencies, community organizations, and knowledgeable individuals seeking information regarding known archaeological sites or the traditional and cultural practices and beliefs of any cultural or ethnic group(s) that would potentially be affected by the proposed STP improvements project (see Section 8.1, Pre-Assessment Consultation for more information and **Appendix A** for a copy of the letter). Cultural Assessment Providers in the area, as listed by the State of Hawaii, Office of Environmental Quality Control, were contacted by regular mail. Per the suggestion of and information provided by the Office of Hawaiian Affairs during the pre-assessment phase, additional responsible and knowledgeable individuals were contacted via email. Contributions were received from the Kawaihapai Ohana, Mr. Thomas Shirai, the Office of Hawaiian Affairs, and the DLNR, Historic Preservation Division (SHPD) (see **Appendix A** for copies of the letters).

The following describes the findings of this research, including the contributions received:

- *Archaeology of Oahu* (1933) identifies a number of heiau, burial caves, and other archaeological sites in the Waialua Area. *Archaeological Reconnaissance Survey of Portions of the Waialua-Hale'iwa Wastewater Facilities System* (1982) reports that

*The number, variety and wide distribution of archaeological sites that once existed throughout the region, as well as related historical data indicate a large population and extensive land use before Western contact (1778)...*

Written records and historic photographs indicate that most of the Waialua area, likely including the project site, had been used for agricultural purposes. Given the project site's proximity to the Waialua Sugar Mill, it is highly likely that the site of the Kupuna Home O'Waialua was utilized for sugar cane cultivation by the Waialua Sugar Company, a subsidiary of the Dole Food Company. The Dole Food Company still owns large amounts of land in the immediate area. Because of this agricultural development and subsequent residential and industrial development throughout the Waialua area many of the sites identified by McAllister have been reported destroyed, missing, or highly altered.

- *Archaeology of Oahu* (1933) identifies three possible archaeological sites located within 0.5 mile of the Kupuna Home O'Waialua complex. They are as follows:

**Site 203. Heiau, near Kaukonahua Stream, Waialua**

*It is said that a small heiau once occupied the site where the Waialua Agricultural Company has installed their Pump Number 1. This is near the mountain side of the bridge which crosses Kaukonahua Stream near the plantation settlement. The name is not known. (McAllister, 1933)*

Wording in the past tense indicates that the heiau was no longer in existence at the time of McAllister's writing. Subsequent investigations also indicate that the heiau has been destroyed (Hommon, 1982). No written records were found indicating traditional and cultural practices or beliefs taking place at this site.

**Site 204. Approximate location of Oahunui, a stone whose outline is said to resemble that of Oahu, in the gulch near the division line between Ewa and Waialua.**

*The stone was formerly visited by the Hawaiians, for no one could say that he had been entirely around the island of Oahu unless he had been around this stone. In the nineties it seems to have been a favorite expedition for Honoluluans to ride out to Oahunui and walk around this stone. (McAllister, 1933)*

*Archaeological Reconnaissance Survey of Portions of the Waialua-Hale'iwa Wastewater Facilities System* (1982) reports the site to be destroyed. No written records were found that could identify the parcel in which the O'ahunui stone is located. No written records were found indicating traditional and cultural practices or beliefs taking place at this site.

**Site 205. Akua stone, Poloa grove, Kamananui (pl. 11, B).**

*The grove once sacred to Pele has been left untouched in the midst of cane, and covers an area of approximately 80 by 170 feet. On the eastern side is a stone, triangular in cross section, standing 1.7 feet high, 0.6 foot thick, surrounded by eight small stones. The plantation placed a small iron fence about this stone many years ago and it is now almost completely rusted. The stone was believed by Oscar Cox to be called Kaneaukai, but his uncle Hookala does not remember that name applied to this stone. Hawaiians have been buried in the grove within the last 50 years, though there is nothing to indicate such graves, which are shaded by breadfruit, mango, kukui, and Pride of India trees. (McAllister, 1933)*

*Sites of Oahu* (1978) reports that the grove in which the Akua stone had been located was deforested and the stone could not be located due to the overgrowth of tomatoes and squash. No written records were found indicating traditional and cultural practices or beliefs taking place at this site.

- The SHPD keeps formal records of districts, sites, structures, buildings, and objects with significance to Hawaii's history, architecture, archaeology, engineering, and culture. These significant properties are recorded in the Hawaii Register of Historic Places, which is available on the DLNR website. There are five sites listed on the Hawaii Register of Historic Places in the vicinity of the Kupuna Home O'Waialua complex: Pohaku Lanai, Waialua Courthouse, Waialua School (Haleiwa Elementary School), Kealii O Ka Malu Church, and Waialua Fire Station . All of these sites are located more than one mile from the Kupuna Home O'Waialua site.
- The United States Department of the Interior, National Park Service (NPS) keeps formal records of districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. These significant properties are recorded in the National Register of Historic Places, which is available on the NPS website. There are two sites listed on the National Register of Historic Places in the vicinity of the Kupuna Home O'Waialua complex: Waialua School (Haleiwa Elementary School) and Waialua

Fire Station. Both of these sites are located more than one mile from the Kupuna Home O'Waialua site.

- Some lands containing historic and natural resources are protected by the Hawaii state park system. A list of state parks on the island of Oahu can be found on the website of the DLNR, State Parks Division. There are no state parks within the vicinity of the Kupuna Home O'Waialua housing complex, with the closest being Pu'u o Mahuka Heiau State Historic Site at Kawaihoa (approximately 6 miles northeast of the project site).
- Some lands containing historic and natural resources are protected by the NPS under the national parks system. There are no national parks within the vicinity of the Kupuna Home O'Waialua housing complex. The NPS lists the U.S.S. Arizona as the only national park on the island of Oahu (approximately 18 miles southeast of the project site).
- The project is situated in the Kamananui Ahupua'a, which is part of the Waialua Moku (see **Appendix A** for a copy of Kawaihapai Ohana's and Mr. Thomas Shirai's pre-assessment phase comment letters both dated October 6, 2008).
- The Kupahu, Nahoa, and Kealohanui street names are culturally significant as they can be linked to families originating from the Waialua Moku. Kupahu owned a parcel of land during the time of The Mahele (Grant 855) which is situated in the Kamananui Ahupua'a. This parcel of land was used to grow food crops. Refer to Mr. Thomas Shirai's letter dated October 6, 2008 (see **Appendix A**).
- The project site is situated on ceded lands, which hold sentimental, historical, and legal significance to Native Hawaiians. The State holds ceded lands corpus in trust for Native Hawaiians and the general public. Refer to the Office of Hawaiian Affairs' pre-assessment phase comment letter dated October 7, 2008 in **Appendix A**.
- The SHPD noted that "no historic properties will be affected" by the proposed project because residential development and/or urbanization has altered the land (see the SHPD's pre-assessment phase comment letter dated November 21, 2008 in **Appendix A**).

### **Impacts and Mitigation Measures**

No significant adverse impacts to archaeological or cultural resources are anticipated to result from implementation of the proposed project.

Due to the highly altered rural environment of the area and given that excavation activities will occur within a project site that has been previously developed and disturbed, it is unlikely that any subsurface archaeological resources will be encountered within the project site. Based on the aforementioned research it was determined that no archaeological sites are present at the project site. It appears extremely unlikely that any potentially

significant archaeological resources will be encountered as a result of the proposed project activities.

The proposed construction activities will utilize excavation or open cut trench construction methods, and all construction activities will occur entirely within the Kupuna Home O'Waiialua site. With any construction project involving land disturbance and alterations, there is always the possibility that human burials or other potentially significant subsurface archaeological resources could be encountered. Therefore, the following measures will be implemented: For all construction activities conducted in association with the proposed project, work will cease immediately if any historic remains or other potentially significant subsurface archaeological resources are encountered during construction activities and the find will be protected from further damage. The contractor shall immediately contact the SHPD of DLNR to assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

No impacts to cultural resources or practices are anticipated. Based on the aforementioned research, including the contributions received, it was determined that no culturally significant resources are present within the project site and no traditional and cultural practices or beliefs occur within the project site. Additionally, the proposed STP improvements project is not expected to restrict access to any significant cultural resources or interfere with any traditional and cultural practices or beliefs which may occur within the vicinity of the project site. It should be noted that as a result of the proposed improvements, culturally significant street names will not be altered and the project site's status as ceded lands will be upheld given neither the current land uses nor ownership will change.

### **3.12. Visual Resources**

The current nature and use of the project site is an elderly public housing complex owned and operated by the HPHA, known as Kupuna Home O'Waiialua. Overall, the site is developed with numerous aboveground structures and paving. Specifically, the site contains 20 single-story duplex structures, a one-story community building, a garden, two parking lots, and its own self-contained wastewater system. Additional aboveground utility structures (e.g., light posts, pad-mounted transformers, gas tank) are located throughout. The current layout of the site is presented in **Figure 4**.

As discussed in Section 3.7, Floral and Faunal Resources, most of the vegetation within and adjacent to the project site consists of landscaping and cultivated plants. In association with its development as a public housing complex, the Kupuna Home O'Waiialua site has been landscaped with various ornamental trees and grasses.

Additionally, the site contains a garden enclosed by a chain-link fenced area adjacent to the project site's eastern boundary.

The Kupuna Home O'Waiialua complex's wastewater system includes an on-site package STP. The STP is located on the eastern portion of the project site within a chain-link fenced area. The STP is approximately 25 ft long x 10 ft wide x 10 ft deep and contains an aeration tank, final clarifier, and a chlorine contact tank. The tanks stand approximately 3 ft aboveground, and the remaining portions of the tanks are buried underground. An approximately 4 ft tall x 3 ft wide shed, which holds the aeration tank's blowers, rests on top of the tanks. Another shed (approximately 6 ft tall x 3 ft wide) sits adjacent to the tanks and contains the STP's flow meter controls. An electrical transfer switch cabinet is approximately 3 ft tall and hangs along the chain-link fence. A relatively new emergency generator system is located adjacent to the STP's southwest corner and the generator unit stands approximately 3 ft aboveground. **Figure 4** shows the general layout and location of the complex's existing on-site package STP.

The project site is bounded by Goodale Avenue to the west, Nahoia Street to the north, five privately-owned parcels with residential dwellings to the east, and St. Michael's Church (including St. Michael's School) to the south. The surrounding residential dwellings are primarily one-story, and one- and multi-story buildings are located on the adjacent St. Michael's Church (including St. Michael's School) property. Fencing surrounds the east and south boundaries of the project site.

Most views of the existing STP from adjacent properties and roadways are blocked by the existing structures and vegetation on the project site. Those residents and buildings within the project site have views of the STP. Additionally, some properties immediately adjacent to the site's eastern boundary may have views of the STP. However, the Kupuna Home O'Waiialua complex's garden provides for some obstruction of views of the STP from these residential dwellings.

### **Impacts and Mitigation Measures**

Construction activities may affect the aesthetics of the surrounding community in the short-term. Given that the proposed construction activities will be performed entirely at the Kupuna Home O'Waiialua site, potential visual impacts will be associated primarily with vehicles and equipment accessing the project site. Although all construction activities will occur within the property boundaries of the elderly public housing complex site, temporary off-site construction staging may be required due to the limited availability of space on the project site. Overall, any potential visual impacts from construction will be temporary in nature.

Completion and operation of the proposed STP improvements project is not expected to result in any significant adverse long-term impacts on visual resources. The current use, nature, and character of the project site will not change as a result of implementing the proposed project. Views to, from, and of the project site will not be negatively affected. No changes in the ambient light level and night glow are proposed as part of the project.

Overall, the final grade of the project site will be approximately similar to existing grade and additional space will be provided within the Kupuna Home O'Waiialua site after construction is completed. Most of the proposed improvements within the Kupuna Home O'Waiialua site will involve the placement and installation of structures and pipelines belowground. Additionally, the existing STP and its associated aboveground structures will be removed and demolished after installation of the new treatment system is completed. Only the housing units for the new STP's aeration blowers and miscellaneous controls and the new storage shed will be placed aboveground under the proposed project. Under the proposed new STP, the approximate dimensions of the housing structure for the aeration blowers will be 4.5 ft x 3 ft x 4 ft. The housing unit for the miscellaneous controls will be much smaller in size. Of the new improvement structures proposed to be constructed aboveground on the project site, the new prefabricated storage shed is expected to be the largest in size (height and diameter). Additionally, minimum necessary setbacks and height constraints will be maintained for all newly constructed structures per DOH requirements and/or City ordinances.

Finally, any existing vegetation or landscaping disturbed within the project site during construction activities will be restored and revegetated, to the extent practicable. The majority of the surface above the new STP can be filled with gravel and remain an open area. Additionally, vegetation in the existing garden is not expected to be impacted by this proposed STP improvements project.

Overall, the general aesthetics of the project site and surrounding community are not anticipated to change as a result of the proposed project.

### **3.13. Socio-Economic Characteristics**

#### **3.13.1. Existing Businesses and Surrounding Uses**

As described in Section 2, the proposed project is located entirely at the site of the Kupuna Home O'Waiialua elderly public housing complex. The approximately 3.3-acre parcel (TMK 6-7-016:028) that holds the Kupuna Home O'Waiialua complex is owned by the HPHA. Therefore, the portions of

the project site that will be affected by the proposed STP improvements project are under the jurisdiction of the State.

Generally, the project site is located in a rural residential area characterized by single-family homes with institutional and agricultural uses in the immediate vicinity. Several TMK parcels are located immediately adjacent to the eastern boundary of the Kupuna Home O'Waialua site. These parcels are privately owned and are currently occupied by residents and tenants with residential uses. St. Michael's Church (including St. Michael's School) adjoins the Kupuna O'Waialua complex along its southern boundary. Four privately-owned parcels with residential dwellings are located directly north and across Nahoia Street from the project site. Along Goodale Avenue and directly west of the project site is a parcel used for agriculture (i.e., cultivated crops). As presented in Section 2, **Figure 3** provides information on the location and TMKs of the uses surrounding the project site.

There are also commercial and light industrial uses in close proximity to and approximately 1,000 ft north (in Waialua's town center) of the project site. The industrial uses occur at the site of the old Waialua Sugar Mill and consist of, but are not limited to, chocolate production, soap manufacturing, surf board shaping, coffee production, wood cabinet production, and wood furniture production.

It should be noted that during the preparation of the Draft EA, those recorded fee owners with properties neighboring the Kupuna Home O'Waialua complex were consulted regarding the proposed project. Further relevant details regarding this consultation effort are presented in Section 8.1, Pre-Assessment Consultation.

### **Impacts and Mitigation Measures**

The proposed improvements and construction methods will minimize impacts to surrounding uses while addressing deficiencies and providing improvements to the existing wastewater treatment system at the Kupuna Home O'Waialua's site. Short-term impacts to existing surrounding uses may occur in the following areas: residential inconveniences, institutional operations, and pedestrian and vehicular traffic. Residents and institutions to be affected by construction activities will be notified by the City or by the contractor prior to the commencement of construction activities.

The proposed project is located entirely at the site of the Kupuna Home O'Waialua housing complex—a parcel owned by the HPHA. Therefore, the portions of the project site that would be affected by the

proposed STP improvements project are under the jurisdiction of the State. As previously stated in Section 2.3.2, the proposed project would not require the acquisition of new permanent easements as all of the proposed improvements can be accomplished within existing property boundaries. Further, temporary construction easements would not be required for the proposed project. If for some reason temporary construction easements are necessary, they will be obtained during the design phase prior to construction activities.

Access to the project site will be off of Goodale Avenue and Nahoia Street via the complex's two private entrance driveways. As such, entry and construction activity on private property is not expected. Appropriate traffic control devices and warning signs will be installed and construction workers will direct traffic flow, when necessary. No traffic lane closures or traffic detours are expected in conjunction with construction activities; however, if they are necessary, traffic and pedestrian detours (via a City-approved traffic control plan) will be provided.

Although all construction activities will occur within the property boundaries of the Kupuna Home O'Waialua site, temporary off-site construction staging may be required due to the limited availability of space on the project site. Additionally, some on-site parking may not be available during construction activities as the contractor may require use of portions of the site's parking lots for set-up and/or storage of construction equipment. If an off-site construction staging area is required, applicable permits and approvals and any necessary temporary construction easements will be obtained prior to construction. To the extent practicable, the temporary off-site construction staging area will be restored to pre-existing conditions upon the completion of construction activities.

The impacts of construction activities will be primarily mitigated by scheduling work during daytime hours (as opposed to night work). Daytime work will ensure minimal impact to existing residences within and adjacent to the project site, including reducing the inconvenience of construction noise- and dust-related impacts to residents during nighttime hours. Nonetheless, it is recognized that performing construction work primarily during daytime hours in order to ensure minimal impacts to existing residences within and adjacent to the Kupuna Home O'Waialua site has the potential to increase short-term noise impacts to the nearby St. Michael's School during school hours. Furthermore, traffic volumes are generally low within the residential

neighborhoods adjacent to the project site during daytime hours. With the project site located adjacent to a church and school, the appropriate administrators will be notified of the construction schedule and coordinated with as appropriate throughout the design and construction phases.

As indicated in Section 3.10 above, it is not expected that nighttime, weekend, or holiday construction activities will be required. Nonetheless, if for some reason such activities are necessary and will exceed allowable noise levels, a noise variance will be obtained prior to commencement of construction activities, in accordance with the Chapter 11-46 rules.

During the night, all associated construction equipment will be secured and located within the project site and/or temporary off-site construction staging area (if necessary) so as not to impede nighttime activities. Open trenches outside of the project site's boundaries are not expected, and any on-site open trenches associated with the project's construction activities will be covered with steel plates or barricaded during hours when construction operations are not occurring. Traffic and pedestrian detours will be provided within the project site as necessary.

Minimum necessary setback and height constraints will be maintained for all newly constructed improvement structures per DOH requirements and/or City ordinances. Additionally, as addressed in the appropriate sections of this EA, any potential operational air quality (odor) and noise impacts will be minimized and mitigated through measures implemented as part of the proposed project.

Overall, potential impacts or inconveniences that may occur to residents and surrounding institutions during construction of the proposed project will be temporary in nature and will cease upon completion of the construction. Additional open area will be provided within the Kupuna Home O'Waialua site after construction is completed. The proposed project will in fact completely restore the useful service life of Kupuna Home O'Waialua's wastewater treatment system. The reliability of the Kupuna Home O'Waialua STP will be improved and the likelihood for potentially harmful spills or overflows, which would adversely affect public health and safety, will be reduced. Additionally, compliance with DOH standards (Chapter 11-62, Subchapter 2, HAR) will be maintained. Both O&M costs and requirements will decrease as a result of implementing the proposed

project. Therefore, the project will provide long-term benefits to residents and the HPHA. There are no adverse long-term socio-economic impacts anticipated due to the completion and operation of the proposed project.

### **3.13.2. Police, Fire and Ambulance Service**

Police: Police protection services in the vicinity of the project site are provided by the City and County of Honolulu, Honolulu Police Department (HPD). The project site is located within HPD's Patrol District 2, which is bounded by the Waianae mountains on the west, Kipapa Gulch and Waiahole Stream on the south, the Koolau mountains on the east, and the shoreline from Kaena Point to Sunset Beach on the north. The administrative offices for District 2 are located in the Wahiawa Police Station located at 330 North Cane Street, approximately one mile east of the project site. (HPD, n.d.)

Fire: Fire protection services are provided by the City and County of Honolulu, Honolulu Fire Department. The nearest fire station in the vicinity of the project site is the Waialua Fire Station (Station 14) located on Haleiwa Road, approximately 1.5 mile northeast of the project site. (HFD, n.d.)

Ambulance: The nearest Emergency Medical Service ambulances are based at the Wahiawa General Hospital, approximately 8.5 miles southeast of the project site.

### **Impacts and Mitigation Measures**

Although the existing residences within the project site may occasionally require police, fire, and ambulance services, the proposed STP improvements project will not affect the demand for such services as the project would not increase the resident population or visitors to the area. Additionally, given that the proposed project is located entirely at the site of the Kupuna Home O'Waialua housing complex, this project should have minimal impacts on police, fire, and ambulance operations or their ability to provide adequate services to the surrounding area. The project site is located within existing service areas. Therefore, no mitigation measures associated with police, fire, and ambulance services are necessary.

### **3.14. Infrastructure and Utilities**

The following section includes discussions regarding roadways and utility lines, including water, drainage, wastewater, electrical, telephone, cable, and gas lines.

### 3.14.1. Roadways and Traffic Considerations

The Kupuna Home O'Waiialua site is bounded by Goodale Avenue to the west and Nahoa Street to the north. Vehicular access to the project site is provided via two private entrance driveways located along Goodale Avenue and Nahoa Street with each leading to a separate parking lot: Parking Lot A or B (**Figure 4**).

Goodale Avenue is a north-south connector road that parallels the site's western boundary. Two through lanes (one in each direction) accommodate traffic along this roadway in the vicinity of and adjacent to the project site. Approximately 0.3 mile south of the Kupuna Home O'Waiialua site, Goodale Avenue intersects with the Farrington Highway (Highway 930). The Farrington Highway is a two-lane east-west thoroughfare used to access Oahu's northwestern most coastline and community: Mokuleia.

Goodale Avenue is a key connector road used to access the town of Waiialua from the Farrington Highway. As such, Goodale Avenue typically carries traffic to and from the commercial and industrial uses found in Waiialua's town center, the town's numerous residences (including the single-family homes adjacent to the project site), Kupuna Home O'Waiialua complex's Parking Lot A, institutional uses (namely, St. Michael's Church and St. Michael's School), and nearby agricultural uses. The roadway's width provides available clearance for large and small vehicles.

A sidewalk is located along the east side of Goodale Avenue in the vicinity of and adjacent to the project site. There are no crosswalks located along Goodale Avenue adjacent to the project site; however, there are crosswalks at the corner of Goodale Avenue and Haona Street adjacent to St. Michael's Church.

Nahoa Street is a connector roadway that parallels the site's northern boundary and carries traffic in the east-west direction. Two through lanes (one in each direction) accommodate traffic along this street. This street carries traffic to and from Kupuna Home O'Waiialua complex's Parking Lot B, the single-family homes along Nahoa Street, and the residences in the adjacent neighborhood.

Parked cars can occasionally be found along the shoulders of Nahoa Street. Sidewalks are located along either side of this street, and there are no crosswalks located along Nahoa Street.

Traffic operations along the roadways adjacent to and in close proximity to the project site are under the jurisdiction of the City and County of Honolulu,

Department of Transportation Services (DTS). Public transit system buses also operate along Goodale Avenue with two bus routes along this roadway: one with an approximate service frequency of 60 minutes and the other provides rush-hour only service. There is a bus stop located directly in front of the project site near the corner of Goodale Avenue and Nahoa Street. The public transit system is administered by the DTS through its contractor, Oahu Transit Services, Incorporated.

### **Impacts and Mitigation Measures**

The proposed project is anticipated to have minimal short-term construction impacts on traffic. Given that the proposed construction activities will be performed entirely at the Kupuna Home O'Waiialua site, potential traffic impacts will be associated primarily with vehicles and equipment accessing the project site. Although all construction activities will occur within the property boundaries of the elderly public housing complex site, temporary off-site construction staging may be required due to the limited availability of space on the project site. Additionally, some on-site parking may not be available during construction activities as the contractor may require use of portions of the site's parking lots for set-up and/or storage of construction equipment. Overall, disruptions to vehicular and pedestrian traffic will be minimal, and any traffic impacts from construction will be temporary in nature.

Construction vehicles, equipment, and materials will access the project site via the complex's two private entrance driveways along Goodale Avenue and Nahoa Street. Goodale Avenue is accustomed to frequent traffic and use by large and small vehicles. Additionally, the width of this roadway also provides available clearance for larger vehicles. Overall, the roadways can accommodate the construction traffic that would be associated with the project, and currently existing traffic patterns and roadway layouts will remain the same during construction activities. No traffic lane closures or traffic detours are expected in conjunction with construction of the proposed project. In addition, no sidewalks or bus stop areas are expected to be affected by the proposed project and/or subject to construction impacts.

Appropriate traffic control devices and warning signs will be installed and construction workers will direct traffic flow, when necessary. Although no traffic lane closures or traffic detours are expected in conjunction with construction activities, if they are necessary, a City-approved traffic control plan shall be prepared prior to the construction of the proposed STP improvements project. Additionally, a traffic

control plan will be prepared if an off-site construction staging area is required. A street usage permit may be required and will be obtained prior to construction activities if such a temporary off-site staging area is within the City right-of-way.

Coordination with both the DTS and Oahu Transit Services, Inc. will also be carried out to ensure minimal inconvenience to motorists and public transportation services. Both entities will be informed of the project construction schedule prior to the commencement of construction activities. Specifically, if any bus routes, bus stops, or paratransit operations are affected by the proposed project, the contractor will be responsible for notifying the necessary DTS and Oahu Transit Services, Inc. personnel of the pertinent project details at least two weeks prior to construction activities.

The majority of construction work will be scheduled during daytime hours (as opposed to night work) when traffic volumes are generally low within the residential neighborhoods adjacent to the project site. With the project site located near a church and school, the appropriate church and school administrators will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases.

During the night, all associated construction equipment will be secured and located within either the project site or the designated off-site construction staging area (if one is necessary) so as not to impede nighttime traffic. Open trenches outside of the project site's boundaries are not expected, and any on-site open trenches associated with the project's construction activities will be covered with steel plates or barricaded during hours when construction operations are not occurring to allow vehicular and pedestrian movement within the project site. Traffic and pedestrian detours will be provided within the project site as necessary.

There are no adverse long-term traffic related impacts associated with the completion and operation of the proposed STP improvements project. Currently existing vehicular and pedestrian traffic patterns and roadway layouts will remain the same as pre-existing conditions. In addition, the quantity and frequency of vehicles used to transport and haul sludge from the project site are expected to remain approximately the same based on the improvements proposed.

### **3.14.2. Water System**

The original as-built plans for the Kupuna Home O'Waiialua complex indicate that the current uses within the project site receive water service from the City and County of Honolulu, Board of Water Supply (BWS). These plans include information on the water valves, water meters, and underground water utility lines that traverse the project site. In addition to the BWS supply system, the as-built plans indicate that an internal irrigation system exists on the project site.

In order to obtain and verify information regarding the location of the existing water system utilities within the project site, The Limtiaco Consulting Group requested as-built plans from the BWS in January 2008 of the water system within the project site. The plans obtained from the BWS corroborate the original as-built plans discussed above.

Topographic surveys will be performed at all locations targeted for improvements within the project site in support of the design phase for the proposed project. The topographic surveys to be conducted will include information on any BWS distribution system utilities in the project site, and the location of all underground water utility lines will be verified.

#### **Impacts and Mitigation Measures**

The proposed STP improvements project will involve the use of excavation activities and the conventional construction method of open cut trenching within the project site. The requests for utility information made by The Limtiaco Consulting Group to the BWS verified the location of BWS utility lines within the project site. The proposed STP improvements are not located above any BWS utility lines, and no disruptions to potable water supply are expected as a result of the proposed improvements. The aforementioned topographic surveys to be performed in support of the design phase will identify the locations of the underground water utility lines within the project site. The location of all water system utilities will be verified, and the proposed project will seek to avoid any disruptions to water service and damage to the water system.

Short-term construction impacts may possibly affect the water system utilities within the project site. To avoid any infrastructure conflicts and any damage to the water distribution system, the construction drawings will be submitted to the BWS for review and approval. Additionally, the construction schedule will be coordinated with the BWS to minimize any possible impacts to the water system. It is unlikely that BWS utility

line relocations will be required. The need for utility relocations would be investigated further and verified during the design phase.

Based on the as-built plans, the irrigation lines internal to the housing complex appear to traverse under the proposed STP improvements structures and pipelines. Service to portions of the irrigation system may be temporarily interrupted and some irrigation lines may need to be relocated as a result. The need for such irrigation line relocations would be investigated further and verified during the design phase.

There are no long-term water system impacts associated with the completion and operation of the proposed STP improvements project. The proposed project will not induce any additional water demand within and in the vicinity of the project site.

### **3.14.3. Drainage System**

The original as-built plans for the project site show that there is a storm drain system internal to the project site consisting of four inlets and underground drain pipes that collect stormwater runoff from locations throughout the project site. As such, the on-site drainage system is not part of the City drainage system and the City has no as-built records for these structures.

This internal storm drain system discharges and connects to an existing City storm drain pipe located along Nahoia Street near the site's northeast boundary. The City's records indicate that from this point (located outside of the project site boundaries), the storm drain pipes continue to run underground in the east-northeast direction for approximately 500 ft until the runoff flows are discharged onto a privately-owned parcel. The parcel consists of agricultural uses (i.e., cultivated crops) and is located immediately adjacent to Kiiiki Estuary. It appears the storm drain pipes discharge the stormwater runoff into a drainage ditch that traverses the parcel and that the drainage ditch eventually flows into the estuary.

Topographic surveys will be performed at all locations targeted for improvements within the project site in support of the design phase for the proposed project. The topographic surveys to be conducted will include information on any storm drain system utilities in the project site, and the location of all underground storm drain utility lines will be verified.

### **Impacts and Mitigation Measures**

Based on the location of the storm drain utilities as presented in the as-built plans and the City's records, the proposed STP improvements will

not traverse any known storm drain utility lines. Nonetheless, as excavation activities or open cut trench construction methods will be required for construction and installation of STP improvement structures and pipelines, the aforementioned topographic surveys previously will be performed in support of the design phase in order to identify the location of storm drain system utilities within the project site. The location of all underground storm drain utility lines will be verified, and the proposed project will seek to avoid any infrastructure conflicts and any damage to the storm drain system. While it is unlikely that storm drain utility relocations will be required, the need for utility relocations would be investigated further and verified during the design phase.

Short-term construction impacts may possibly affect the storm drain system in the project site. To avoid any infrastructure conflicts and any damage to the storm drain system, the HPHA will review and approve the construction drawings. Further, as mentioned in Section 3.9, Surface Water Quality, appropriate measures and BMPs will be implemented to prevent pollutants from entering the storm drain system during construction. Such measures may include installing sediment barriers at storm drain inlets and repaving and revegetating areas as soon as practicable. Overall, all construction activities will comply with applicable federal, State, and County regulations and rules for erosion control.

There are no long-term drainage impacts associated with the completion and operation of the proposed STP improvements project. The project will not increase the amount of impervious surface area within the project site, induce additional runoff within and in the vicinity of the project site, or significantly alter drainage patterns.

#### **3.14.4. Wastewater System**

The project site consists of and solely contains the Kupuna Home O'Waiialua, an elderly public housing complex. As previously discussed in detail in Section 2.2.4, the complex hosts its own self-contained (i.e., non-municipal) wastewater system to include a gravity sewer collection system, on-site STP, and effluent disposal. The STP is located on the eastern portion of the project site within a chain-link fenced area. **Figure 4** shows the general layout and location of the complex's existing wastewater collection and on-site package treatment system.

The on-site treatment system was installed in 1977. With a design capacity of 10,000 gpd, the STP currently treats approximately 6,700 gpd of wastewater

(based on July 2007 to April 2008 effluent flow data) from 24 studios, 16 one-bedroom units, and the community building within the project site. The STP contains an aeration tank, final clarifier, and a chlorine contact tank. A new emergency generator system was installed in 2007 and is located adjacent to the STP's southwest corner to back-up power to the STP and sewage lift station during power outages. Treated effluent is released into two seemingly inoperable underground injection wells adjacent to the STP, and overflow from the injection wells is currently discharged to an on-site leach field located approximately north of the STP. The existing treatment process is illustrated in **Figure 5**. Flows are monitored weekly and the effluent quality is monitored monthly. The Kupuna Home O'Waialua STP's effluent quality is currently in compliance with DOH standards.

The STP has not been significantly upgraded since its installation over 30 years ago. This is the only wastewater treatment plant serving the Kupuna Home O'Waialua site and the typical service life of package wastewater treatment plants is approximately 25 years. As such, the proposed project was initiated to evaluate the structural and maintenance conditions of the complex's aging on-site package STP.

As noted in Section 2, the existing STP located within the project site is proposed for improvement. Assorted structural deficiencies were identified at the Kupuna Home O'Waialua complex's aging on-site package STP in support of the proposed project as part of the Alternatives Analysis Report (see Section 2.2.4 for details). Based on the information collected during site investigations and interviews conducted in support of the proposed project (between December 2007 and May 2008), it was determined that the STP is in fact nearing the end of its service life. It was also identified that compliance with O&M requirements can be made more efficient through upgrades to the existing Kupuna Home O'Waialua's STP. Specifically, the proposed improvements seek to replace aging infrastructure, address structural deficiencies, and improve O&M requirements and efficiencies at the Kupuna Home O'Waialua's on-site package STP.

It should be noted that the majority of homes in the North Shore area, to include Waialua, are served by individual cesspools and septic tanks. An existing City gravity sewer collection system and municipal wastewater treatment facility, known as the Paalaa Kai Wastewater Treatment Plant (PKWWTP), are located approximately 0.75 mile northeast of the project site (**Figure 2**). This sewer collection and treatment system services 314 homes in the Paalaa-Kai subdivision. The PKWWTP, which is currently near its capacity, provides secondary and tertiary treatment to the wastewater, and its effluent is discharged into injection wells. There are also more than 20 private

wastewater treatment plants serving various apartment complexes with effluent disposal into injection wells within the North Shore area. It is recognized that privately owned and operated injection wells are a convenient, long-term disposal alternative to the current lack of a municipal wastewater collection, treatment, and, disposal system in this area. (DPP, 2000)

### **Impacts and Mitigation Measures**

The proposed improvements and construction methods will address deficiencies and provide improvements to the existing on-site wastewater treatment system serving the Kupuna Home O'Waialua complex. The improvements will address the structural and maintenance conditions of the existing wastewater treatment system. Completion of the proposed project will result in the replacement of aging infrastructure, address of structural problems, and improvement of O&M requirements and efficiencies. The useful service life of Kupuna Home O'Waialua's wastewater treatment system will be completely restored. The STP's reliability in treating wastewater will be improved and the likelihood for potentially harmful spills or overflows will be reduced. Both O&M costs and requirements will decrease as a result of implementing the proposed project. Moreover, while the effluent and treatment quality of the new STP may be slightly lower than that of the existing STP, the new STP will maintain compliance with DOH treatment standards (Chapter 11-62, Subchapter 2, HAR).

It should be noted that the design capacity of the new wastewater treatment system will remain the same as the existing STP: 10,000 gpd. The proposed STP improvements are intended to be a replacement of existing facilities and are not intended to increase the design capacity of the existing on-site wastewater treatment system serving the project site. As such, the STP improvements will not support further population growth at the Kupuna Home O'Waialua housing complex or in the surrounding area.

Given the nature of the project, all construction methods will be scheduled and planned so as to maintain continued sewer service and treatment for the Kupuna Home O'Waialua site during construction. The proposed improvements allow for a high degree of flexibility in construction sequencing: the new STP will be constructed off-line and independent of the existing STP, and wastewater flows can be easily switched over and diverted to the new STP via the new influent sewer line once the new STP is operational.

There are no long-term adverse effects as a result of the proposed improvements. The long-term beneficial impacts of the project will be realized by renewing the service life of and decreasing the O&M costs and requirements of the Kupuna Home O'Waiialua STP. The proposed project will involve improvements such that the reliability and O&M of the Kupuna Home O'Waiialua's wastewater system will be improved and compliance with DOH standards will be maintained. Overall, the proposed project will allow for environmentally sound treatment and disposal of wastewater.

### **3.14.5. Electrical, Telephone, Cable, and Gas Service**

Electrical Service: The original as-built plans for the Kupuna Home O'Waiialua complex illustrate that the current uses within the project site receive electrical service from Hawaiian Electric Company, Inc. (HECO) through connections to an aboveground power line that runs along Goodale Avenue. The plans include information on and indicate the presence of two aboveground pad-mounted transformers and numerous underground electrical lines within the project site.

Topographic surveys will be performed at all locations targeted for improvements within the project site in support of the design phase. The topographic surveys to be conducted will include information on any HECO electrical facilities in the project site, and the location of all facilities will be verified.

Telephone Service: The project site's original as-built plans indicate that there are underground telephone utilities located throughout the site. The plans illustrate that these utility lines typically run along the same conduits as the site's underground electrical lines, and telephone service is provided via a connection to an aboveground service pole located along Goodale Avenue.

Topographic surveys to be conducted in support of the design phase for the proposed project will include information on any telephone facilities, and the location of all telephone utilities within the project site will be verified.

Cable Service: The original as-built plans for the Kupuna Home O'Waiialua complex indicate that there are underground cable facilities within the project site and that these utility lines typically run along the same conduits as the site's underground electrical lines. As with the site's telephone service mentioned above, the plans illustrate that cable service is provided via a connection to an aboveground service pole located along Goodale Avenue.

In a transmittal letter dated September 15, 2008 (see Section 8.1, Pre-Assessment Consultation for more information and **Appendix A** for a copy of this letter), Oceanic Time Warner Cable (Oceanic) supplied drawings depicting its utilities located at the project site. The drawings provided by Oceanic corroborate the original as-built plans discussed above. The drawings indicate that Oceanic has an underground plant in telephone infrastructure within the project site and aboveground cable utilities situated along the western boundary of the project site along Goodale Avenue. The underground plant within the project site connects to the aboveground lines just west of Building Group "C". The underground plant's network of underground utility lines and infrastructure extends and connects to each major building structure within the project site.

Topographic surveys to be conducted in support of the design phase for the proposed project will include information on any cable facilities, and the location of all cable utilities within the project site will be verified.

Gas Service: The Kupuna Home O'Waiialua complex's original as-built plans illustrate that there is a self-contained gas utility system internal to the project site. These plans show a single gas tank and various underground utility gas mains that traverse the project site.

In a letter dated September 23, 2008 (see Section 8.1, Pre-Assessment Consultation for more information and **Appendix A** for a copy of this letter), The Gas Company supplied drawings showing its utilities located at the project site. The supplied drawings corroborate the original as-built plans for the Kupuna Home O'Waiialua housing complex discussed above. The drawings indicate that gas is supplied to the project site via a 1,150 gallon gas tank located west of the existing STP and on the eastern border of Parking Lot A. An underground network of ¾- and 1-inch pipes distribute gas from the tank to each building at the project site. However, drawings indicate that there is a ¾-inch gas pipe located under the proposed new STP that does not seem to be servicing any building at the project site.

Topographic surveys to be conducted in support of the design phase for the proposed project will include information on any gas facilities, and the location of all gas utilities within the project site will be verified.

### **Impacts and Mitigation Measures**

Based on the original as-built plans for the Kupuna Home O'Waiialua and the drawings supplied by Oceanic, the proposed improvements do not cross any known electrical, telephone, or cable utility lines or structures. No disruptions to such services are expected as a result,

and no electrical, telephone, or cable utility structure relocations are anticipated. The location of the gas utilities as presented in the as-built plans and the The Gas Company's drawings indicates the proposed STP improvements may traverse a gas pipe that does not seem to be servicing any building at the project site.

While the proposed STP improvements project will involve excavation activities and open cut trenching within the project site, the aforementioned topographic surveys to be performed in support of the design phase will identify the location of electrical, telephone, cable, and gas facilities within the project site. The location of all aboveground and underground utilities will be verified, and the proposed project will seek to avoid any infrastructure conflicts, disruptions, and damage to these utility services.

HECO's facilities will be verified during the design phase, and two sets of the construction plans for the proposed STP improvements project will be submitted for HECO review. Additionally, it is recognized that HECO will need continued access to its facilities located within the project site for maintenance purposes. Telephone facilities and Oceanic's cable lines will also be confirmed, and any necessary adjustments will be made to avoid disturbance to the telephone and cable systems. Likewise, gas utility lines will be identified and provisions will be made to avoid any infrastructure conflict or damage to the gas distribution system. It is possible that utility relocations may be required, and the need for such utility relocations will be investigated further and verified during the design phase. HECO, Hawaiian Telcom, Oceanic, and The Gas Company will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases.

Long-term impacts to electrical, telephone, cable, and gas service within the project site are not anticipated with regard to completion and operation of the proposed STP improvements project. The proposed project will not use any telephone, cable, or gas service; therefore, it will not directly result in any additional or increased demands on those services. Additionally, the new STP will require less electricity to operate than the existing STP because it has fewer mechanical components. As such, the proposed STP improvements are expected to reduce the demand for electricity at the project site, although the change will likely be negligible.

## 4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

### 4.1. 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, Agricultural, Conservation, and Rural. The entire project site is within the State "Urban" district.

Comment:

The existing Kupuna Home O'Waialua complex and its associated infrastructure is allowed per the State's Urban district zoning designation. Therefore, the proposed STP improvements project is consistent with this designation.

### 4.2. Hawaii State Plan

The Hawaii State Plan, HRS Chapter 226, outlines broad goals, policies and objectives to serve as guidelines for the future growth and development of the State. The plan includes the following objectives, policies, and priority guidelines relating to the subject project:

*§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:*

*(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.*

*§226-14 Objectives and policies for facility systems – in general.*

*(b) To achieve the general facility systems objective, it shall be the policy of this State to:*

*(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*

- (4) *Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.*

§226-15 *Objective and policies for facility systems – solid and liquid wastes.*

- (a) *Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:*

- (1) *Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*  
(2) *Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.*

- (b) *To achieve solid and liquid waste objectives, it shall be the policy of this State to:*

- (2) *Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.*

§226-16 *Objective and policies for facility systems - water.*

- (b) *To achieve the facility systems water objective, it shall be the policy of this State to:*

- (3) *Reclaim and encourage the productive use of runoff water and waste water discharges.*

§226-19 *Objectives and policies for socio-cultural advancement--housing.*

- (b) *To achieve the housing objectives, it shall be the policy of this State to:*

- (4) *Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.*  
(5) *Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.*

Comment:

The proposed project responds to and is consistent with the above objectives and policies by providing improvements to Kupuna Home O'Waiialua's STP that support statewide social, economic, and physical objectives. Overall, the proposed improvements will provide continued wastewater treatment and disposal services at the Kupuna Home O'Waiialua housing complex in a manner consistent with the Hawaii State Plan. The proposed improvements will have no significant long-term impact on the natural environment, including surface or ground water quality and air quality. The improvements will ensure continued adequate wastewater service for the housing complex with the desire to address and prevent any existing or potential future deficiencies at

the STP. This proactive approach seeks to prevent costly breakdowns and emergency repairs and, in the long-term, will contribute to avoiding and/or mitigating potential adverse impacts to the environment by renewing the service life of the Kupuna Home O'Waialua housing complex's STP. Thus, reliability of the STP will be improved and the likelihood for potentially harmful spills or overflows will be reduced. The proposed project will accommodate and takes into account the needs of the existing Kupuna Home O'Waialua housing complex, and it maintains basic public health and sanitation standards relating to treatment and disposal of wastes as the STP improvements will be consistent with DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR).

It should be noted that reuse and recycling of treated wastewater has been considered as a component of the project. While implementing a recycled water program is not an economically feasible option for the HPHA at this time, implementation of the proposed project could eventually result in future improvements in order to recycle wastewater effluent for irrigation use at the project site. Approval from the DOH would need to be obtained, and the quality of recycled water would need to be monitored and meet DOH standards. Additionally, further STP planning, design, and construction requirements may later be considered to allow for the reuse and recycling of the treated wastewater.

#### **4.3. City and County of Honolulu General Plan**

The General Plan of the City and County of Honolulu sets forth broad statements of social, economic, environmental, and design objectives and polices which are desired over the long-term. The following policies and objectives are relevant to the subject project:

##### *III. Natural Environment*

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

##### *V. Transportation and Utilities*

*Objective B To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.*

*Policy 5: Provide safe, efficient, and environmentally sensitive waste-collection and waste-disposal services.*

*Policy 6: Support programs to recover resources from solid-waste and recycle wastewater.*

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

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

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

#### *VII. Physical Development and Urban Design*

*Objective F To promote and enhance the social and physical character of Oahu's older towns and neighborhoods.*

*Policy 2: Encourage, wherever desirable, the rehabilitation of existing substandard structures.*

#### *VIII. Public Safety*

*Objective B To protect the people of Oahu and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.*

*Policy 9: Design safe and secure public buildings.*

#### Comment:

The proposed project is consistent with the policies and objectives listed above. The completion of the proposed project will result in the replacement of aging infrastructure, address of structural problems, and improvement of O&M requirements and efficiencies. Overall, the STP improvements are not anticipated to have any significant long-term impacts on air quality, water quality, or noise levels. In fact, the proposed project will contribute to avoiding and/or mitigating potential adverse impacts to the environment. The proposed STP improvements project will renew the service life of the Kupuna Home O'Waialua complex's STP, thus improving its reliability and reducing the likelihood for potentially harmful spills or overflows. Additionally, compliance with DOH standards (Chapter 11-62, Subchapter 2, HAR) will be maintained.

The proposed project would involve improvements to the project site's existing wastewater system such that the wastewater treatment and disposal systems can continue to reliably and adequately serve the present facilities and uses at the Kupuna Home O'Waialua housing complex. Given the nature of the project, all construction methods will be scheduled and planned so as to maintain continued sewer service and treatment during construction. The improvements themselves will provide continued wastewater service for the housing complex with the desire to address and prevent any existing or potential future deficiencies at the STP. This proactive approach seeks to prevent costly breakdowns and emergency repairs that may result from the aging facility and as the existing STP nears the end of its useful life. The

proposed project accounts for the needs of the existing housing complex and will maintain basic public health and sanitation standards relating to treatment and disposal of wastes as the STP improvements will be consistent with DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR). Overall, the proposed project will allow for environmentally sound treatment and disposal of wastewater.

It should be noted that reuse and recycling of treated wastewater has been considered as a component of the project. While implementing a recycled water program is not an economically feasible option for the HPHA at this time, implementation of the proposed project could eventually result in future improvements in order to recycle wastewater effluent for irrigation use at the project site. Approval from the DOH would need to be obtained, the quality of recycled water would need to be monitored and meet DOH standards, and further STP planning, design, and construction requirements may later be considered to allow for the reuse and recycling of the treated wastewater.

#### **4.4. North Shore Sustainable Communities Plan**

The Island of Oahu is divided into eight Development Plan areas; the plans for six of these areas have been designated as Sustainable Community Plans. Each plan implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision making within each respective region. Together with the General Plan, they guide population and land use growth over a 20- to 25-year time span.

The project site is located within the region encompassed by the *North Shore Sustainable Communities Plan*. A major revision of the Development Plans, based on a 1992 City Charter change, was recently completed. The revised plans are visionary, conceptual plans without the parcel specific detail of the first Development Plans adopted in the early 1980s. The *North Shore Sustainable Communities Plan* Revision Program was completed in July 2000.

The *North Shore Sustainable Communities Plan* incorporates input received from eight Community Advisory Committee meetings, three community-wide meetings, and many meetings with community leaders and representatives of government agencies. The plan establishes policy to shape the growth and development of the North Shore region to the year 2020. Chapter 1 defines the region's role and identity within the overall framework of islandwide planning and land use management; Chapter 2 sets forth the overall vision for the future of the North Shore region and lists important elements of that vision; Chapter 3 is the plan's policy core with policy guidance for the region's various land use elements; Chapter 4 outlines the policies, principles, and actions needed to support the land use policies; and Chapter 5 discusses the plan implementation.

The *North Shore Sustainable Communities Plan* indicates that the project site is within an area designated as Rural Residential. The density and height guidelines for the Rural Residential category of residential development are 5-8 housing units per acre and not over two stories per 25 ft, respectively.

It should be noted that, the first 5-year review of the *North Shore Sustainable Communities Plan* is currently underway with completion expected the end of 2008. The purpose of the 5-year comprehensive review is to assess the appropriateness of the plan's regional vision, policies, design principles and guidelines, and implementing actions, as well as consistency with the General Plan.

The plan includes the following infrastructure and public facilities elements, policies, and principles applicable to the subject project:

## 2.2. Key Elements of the Vision

### 2.2.7 Provide Adequate Public Infrastructure, Facilities, and Services

*Public agencies and private developers should work together to provide adequate infrastructure and needed facilities and services for residents and workers in the area. Infrastructure should not detract from scenic amenities, recreational opportunities, open space, or other amenities. New major facilities should be centrally located.*

*Adequate, environmentally sensitive wastewater treatment systems with minimal impact on groundwater and ocean resources, to meet residents' and visitors' needs, should be a high priority.*

## 3.1 Open Space and Natural Environment

### 3.1.2 Planning Principles

- **Limit Impacts from Utility Installations.** *If utility installations are permitted in this district, they should be developed and/or managed in ways that maintain or enhance the natural, cultural, and visual resource qualities.*

## 3.5 Residential Communities

### 3.5.1 General Policies

*Encourage creative site and housing design options to achieve site planning flexibility, creative site utilization, creation of internal open spaces, and achievement of rural character.*

## 4.3 Wastewater Treatment

*The plan recommends that a centralized subregional wastewater treatment system (collection and conveyance system, treatment plant, and effluent disposal by means of irrigation and rapid filtration) be constructed to serve Waialua, Haleiwa and a*

portion of Kawaihoa. The proposed system consists of two 0.7 mgd capacity WWTPs, one southwest of Waialua and the other east of Haleiwa, each requiring approximately 35 acres.

While there are currently no funds to implement a centralized system, the City will continue to work with the community to develop, implement, or facilitate appropriate, effective, and environmentally sound wastewater treatment systems that will not impact groundwater and ocean resources. The City will be exploring various alternatives for providing small regional wastewater treatment solutions in areas such as Haleiwa and Waialua.

#### 4.3.1 General Policies

- *Providing adequate public or private wastewater treatment facilities and improving the existing wastewater management services on the North Shore is the highest priority. Identify appropriate areas and technologies to provide effective sewage treatment. However, the scale of these improvements should be proportionate to the desired growth pattern.*

Of Oahu's eight Development Plan areas, each area has a Public Infrastructure Map (PIM) with exception to the Primary Urban Center planning area. The PIMs are administered by the City and County of Honolulu, Department of Planning and Permitting (DPP). Each PIM is adopted by City Council resolution, and revised by resolution in accordance with Section 4-8.1, Revised Ordinances of Honolulu as amended, and with the procedures set forth in the Administrative Rules of the DPP.

Revisions to the PIM are requested to identify major planned facilities projects needed to support the desired land use. A request for revision of the PIM may be submitted for consideration through the filing of a completed application with the DPP. Each application for revision of the PIM is reviewed from the perspective of its contribution to the well-being of the people of Oahu and how it will support implementation of the applicable Development Plan and/or Sustainable Communities Plan. All phases of a project are considered when determining whether the project meets the PIM applicability criteria.

#### Comment:

The proposed improvements are consistent in supporting the *North Shore Sustainable Communities Plan* and land use designations. Furthermore, the proposed project supports the plan's policies and principles pertaining to wastewater treatment within the north shore region.

The HPHA is taking a proactive role in proposing the subject STP improvements project at the Kupuna Home O'Waialua elderly public housing complex. Planning and coordinating the potential STP improvements has

involved determining how best to implement potential improvements to the project site's existing wastewater system such that the wastewater treatment and disposal systems can continue to reliably and adequately serve the current facilities and uses within the project site. The improvements themselves will provide continued wastewater service for the housing complex with the desire to address and prevent any existing or potential future deficiencies at the STP. Completion of the proposed project will result in the replacement of aging infrastructure, address of structural problems, and improvement of O&M requirements and efficiencies.

The proposed project accounts for the needs of the existing housing complex and will maintain basic public health and sanitation standards relating to treatment and disposal of wastes as the STP improvements will be consistent with DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR). Overall, the proposed project will allow for environmentally sound treatment and disposal of wastewater.

The proposed improvements would occur entirely at the site of the Kupuna Home O'Waialua housing complex, and use of the site for rural residential purposes as a State of Hawaii elderly public housing complex (with associated infrastructure) will continue. Additionally, the rural nature and character of the project site will be maintained. The proposed improvements at the Kupuna Home O'Waialua site account for spatial considerations. Views to, from, and of the project site will not be negatively affected. The new STP being proposed will require less space than the existing STP, and most of the proposed STP improvements will involve the placement and installation of structures and pipelines belowground. Overall, the final grade of the project site will be approximately similar to existing grade and additional internal open areas will be provided within the project site after construction is completed. While some aboveground structures will be required, these structures will be no taller than other structures currently located at the project site and will not detract from scenic amenities or visual resources. The proposed improvements will occur entirely within the project site and will not infringe on open spaces or restrict access to recreational opportunities.

The proposed improvements are not anticipated to have any adverse long-term impacts on the natural environment. In fact, in the long-term, the proposed project will contribute to avoiding and/or mitigating potential adverse impacts to the environment by renewing the service life of the Kupuna Home O'Waialua housing complex's STP. The likelihood for potentially harmful spills or overflows that would adversely affect the environment and public health and safety will be reduced. Additionally, there will be no adverse effects on surface, ground, or coastal water resources as the STP improvements will be

consistent with DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR).

The housing complex's wastewater system would continue to be self-contained (i.e., non-municipal) and the design capacity of the new wastewater treatment system will remain the same as the existing STP. The proposed project would not and does not seek to support further population growth at the Kupuna Home O'Waialua housing complex or in the surrounding area.

#### **4.5. City and County of Honolulu Land Use Ordinance**

The City and County of Honolulu Land Use Ordinance regulates land use in accordance with adopted land use policies, including the City and County of Honolulu General Plan and the Development/Sustainable Community Plans. The project site is designated as within the R-5 Residential zoning district.

Comment:

The existing Kupuna Home O'Waialua complex and its associated infrastructure is allowed per the City's zoning designation of R-5 Residential. Therefore, the proposed STP improvements project is consistent with this designation.

#### **4.6. 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 provides for the beneficial use, protection, and development of the State's coastal zone. Any significant development activity within the coastal zone is required by law to conform to Hawaii's CZM program objectives and policies. The objectives and policies of the Hawaii CZM program encompass broad concerns such as impacts on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development.

Through the CZM program and pursuant to the Hawaii Coastal Zone Management Act (Chapter 205A, HRS, as amended), all counties have enacted ordinances establishing Special Management Areas (SMAs). Development within the SMA, including most development proposed by the State, requires a SMA permit from the appropriate county. On Oahu, the SMA permit is administered by the DPP and acted upon by the City Council pursuant to Chapter 25, Revised Ordinances of Honolulu.

Comment:

The proposed STP improvements project is not located within the coastal zone with the SMA boundary located anywhere from approximately 300 ft to

approximately 700 ft east of the project site's eastern boundary. Therefore, the project site is located outside the boundaries of the City's SMA, and approval of a SMA permit is not required.

## **5. ALTERNATIVES TO THE PROPOSED ACTION**

### **5.1. No-Action Alternative**

Under the No-Action Alternative, the Kupuna Home O'Waiialua elderly public housing complex's STP would remain in its existing state. The service life of the Kupuna Home O'Waiialua STP would not be extended, and the conditions and assorted structural deficiencies that were identified in support of the proposed project as part of the Alternatives Analysis Report (see Section 2.2.4 for details) would remain unresolved. The existing and any potential future deficiencies would continue to exist, and further degradation would be likely.

No construction related impacts to the environment or to existing and surrounding uses would occur. There would be no commitment of funding or capital improvement costs. However, without improvements, the existing STP's service life would remain limited and risks of a costly malfunction or potentially harmful sewage spills or overflows would continue to increase. This alternative would expose Kupuna Home O'Waiialua residents and features of the natural environment to potentially hazardous untreated sewage, thus endangering the environment and public health and safety.

### **5.2. Alternatives Analysis Report Alternatives**

The Limtiaco Consulting Group prepared an Alternatives Analysis Report to evaluate upgrade options for addressing structural and maintenance conditions at the Kupuna Home O'Waiialua's on-site wastewater treatment system. In addition to the proposed action, several upgrade alternatives were evaluated, but not selected for this project. The report identifies, evaluates, and examines design scenarios with preliminary layouts and the pros and cons of each project alternative, including estimated capital costs.

#### **5.2.1. Upgrade Alternatives**

In addition to the proposed action (described in detail in Section 2.3, Description of Project), several upgrade alternatives were formulated and evaluated. The following sections provide descriptions of these upgrade alternatives considered, including the work involved and some advantages and disadvantages of each as would specifically pertain to the Kupuna Home O'Waiialua project site and vicinity, as well as the proposed action selected for this project.

##### **5.2.1.1. Upgrade Alternative 1 – Connect to City Sewer System**

This alternative involves connecting to a nearby City sewer system for conveyance and treatment at a municipal wastewater treatment plant. This

is usually a preferred choice of wastewater treatment and disposal, if feasible. A City sewer system typically collects and treats wastewater to an acceptable level before discharging it back into the environment. Connecting to a City sewer system would eliminate the need for the HPHA to own and operate its Kupuna Home O'Waiialua housing complex's STP, but would require sewer payments to the City as well as extensive and costly capital costs.

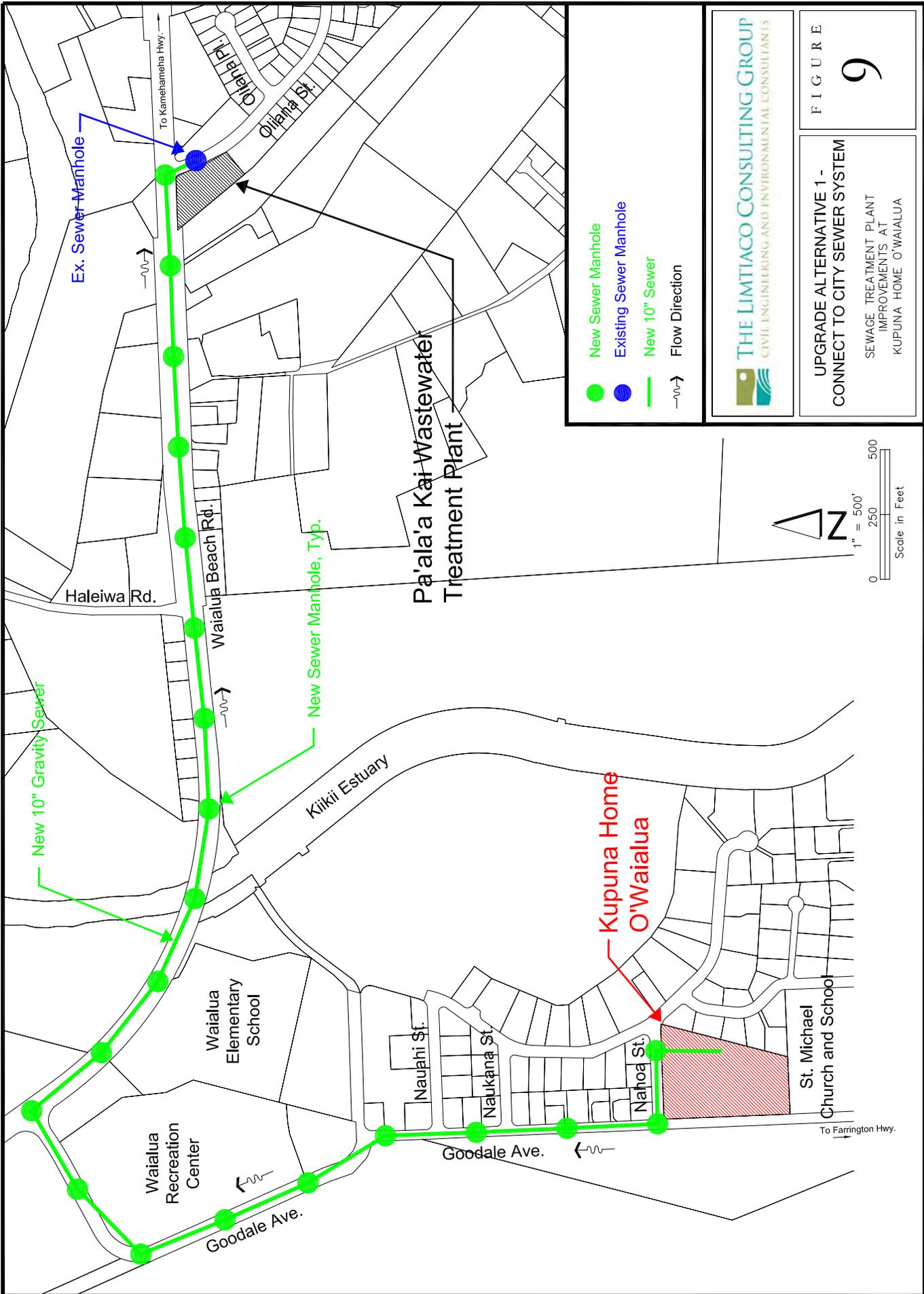
An existing City gravity sewer collection system and municipal wastewater treatment facility, known as the PKWWTP, are located approximately 0.75 mile northeast of the project site. This sewer collection and treatment system services 314 homes in the Paalaa-Kai subdivision. The PKWWTP, which is currently near its capacity, provides secondary and tertiary treatment to the wastewater, and its effluent is discharged into injection wells. The location of PKWWTP with respect to the project site is illustrated in **Figure 9**.

The design average daily flow of the PKWWTP is 144,000 gpd. The current flow rate of the treatment plant is approximately 100,000 gpd. During peak flow, flow rates as high as 200,000 gpd have been recorded.

The most feasible connection point from the project site is an existing manhole on Oliana Street near the entrance of the PKWWTP. Following the alignment of Goodale Avenue in the north direction and then Waiialua Beach Road in the east direction, approximately 7,300 lineal feet of sewer line will be required to connect the project site to the PKWWTP. The general terrain of this alignment is relatively flat along Goodale Avenue and slightly downhill along Waiialua Beach Road. A proposed alignment of the sewer line is shown in **Figure 9**.

Following this alignment, connecting the project site (invert of 32.0) to the existing manhole will require an approximate slope of 0.003 ft/ft. The *Design Standards of the Department of Wastewater Management, Vol. 1* (July 1993) requires a 10-inch sewer line for this slope and a minimum mean full velocity of 2.0 ft/sec. The mean full velocity of a 10-inch sewer line at a slope of 0.003 ft/ft would be 2.9 ft/sec, which complies with City standards. The City also requires sewer manholes to be installed at most every 350 feet along the sewer. Installation of approximately 21 sewer manholes will be required under this alternative.

The *North Shore Sustainable Communities Plan* (July 2000) recommended a new wastewater system to be built in the vicinity of the



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project site. This system is proposed to include the construction of two 0.7 million gallons per day municipal wastewater treatment plants: one approximately 1.5 miles southwest of the project site and one approximately 3 miles northeast of the project site. The location of the sewer collection system flowing to these proposed wastewater treatment plants is unknown. A 5-year review of the *North Shore Sustainable Communities Plan* is currently underway with its completion expected at the end of 2008; however, based on current opinion, it appears that construction of the two proposed wastewater treatment plants will no longer be recommended. Therefore, connection to these wastewater systems was not evaluated.

Key factors of this alternative include:

- With treated effluent from the PKWWTP typically less than 10 mg/L BOD and 5 mg/L TSS, the treatment quality under this alternative would be slightly better than the treatment quality produced by the existing STP.
- The estimated capital cost for this alternative is \$3,430,000. This cost is significant and does not account for additional design and construction costs that may be required (e.g., the City may require an upgrade the PKWWTP before allowing a connection).
- The only O&M cost will be a sewer usage payment to the City. Based on City sewer service rates of July 1, 2008, O&M costs would be reduced; however, City sewer rates are expected to rise in future years.
- The existing STP will be removed after construction of the sewer line to the PKWWTP is completed, and additional space would be created within the Kupuna Home O'Waiialua site.
- Connecting to the PKWWTP would prove to be difficult as the facility is already near its capacity. As previously indicated, flows have reached 200,000 gpd, which exceeds the treatment plant's design average daily flow. The City may require an upgrade to the PKWWTP before allowing a connection.
- There will be a substantial amount of public disturbance during construction and installation of the sewer line along Goodale Avenue and Waialua Beach Road.

#### **5.2.1.2. Upgrade Alternative 2 – Rehabilitate Existing Sewage Treatment Plant**

The existing STP can be rehabilitated by replacing its failed equipment and repairing corrosion to allow sustained operation in the future. The existing STP produces clear effluent that routinely meets DOH standards

despite the fact that the facility has a number of items in need of repair or replacement. The existing facility could be improved by repairing or replacing failed equipment and repairing corroded components. Broken equipment will need to be replaced for DOH compliance, to allow future maintenance to the facility, and to ensure safe operation that causes no harm to the environment. The electrical transfer switch cabinet should be replaced with a weather-proof enclosure and the interior controls should also be inspected. The RAS PVC line will be repaired or replaced.

Visible corrosion will need to be repaired to make the facility structurally sound and to address unsafe conditions associated with the corroding walkway grating support beams. The aeration tank will be drained and the interior inspected. The aeration tank diffusers and aeration tank piping will be replaced. The blowers will be relocated and housed in a well vented fiberglass structure.

The leach field, although appearing to function properly, should be inspected thoroughly prior its continued use to receive treated effluent. *Decentralized Systems Technology Fact Sheet, Septic Tank – Soil Absorption Systems* (September 1999) indicates that the service life of leach fields is in excess of 20 years if properly maintained. Since the age and construction records of the leach field are unavailable, it is possible that the leach field is near the end of its service life and may need to be replaced to allow long-term operation of the rehabilitated STP. The existing injection wells will be kept in operation to comply with DOH effluent disposal system redundancy requirements (Chapter 11-62, Section 25, HAR). The injection wells will be inspected, tested, and rehabilitated, if necessary, and the UIC permit renewal application will be submitted to the DOH in order to maintain the operation of these injection wells.

During the rehabilitation process, primarily when the corrosion of the facility's steel tank is being inspected and repaired, wastewater must be pumped from the facility's sewage lift station by a tanker truck and hauled to a wastewater treatment plant. A comprehensive management plan must be developed that would ensure that wastewater is safely stored and treated not discharged to the environment. This plan must also include provisions to "reseed" the facility's activated sludge after all repairs have been made.

This alternative will require a long-term commitment by HPHA to operate and maintain the facility to DOH standards (Chapter 11-62 Subchapter 2).

Effluent quality must continue to be monitored and equipment must be periodically tested.

Key factors of this alternative include:

- Rehabilitating the existing STP will allow the level of treatment to continue to routinely meet DOH treatment standards.
- The estimated capital cost for these improvements is \$331,000. However, additional costs may be incurred as there are portions of the STP unable to be evaluated until the STP is completely shut down.
- The O&M procedures and cost of the rehabilitated STP will be similar to present in addition to future repairs, equipment replacement, and energy required to run the STP. Current O&M costs would not be reduced, and the conditions of some equipment remain unknown. Additional repairs to equipment will likely be required in the near future.
- The relocation of the blower housing will occupy and require additional space within the project site.
- This STP will need to be shut down for an extended period for tank inspection and structural repair. Wastewater generated from Kupuna Home O'Waiialua housing complex will need to be redirected and treated with an alternate method during the STP tank inspection and rehabilitation. This would prove difficult as there are no nearby sewer systems to which the flows can temporarily be redirected. The wastewater flows would need to be continuously pumped out and hauled away for disposal.
- Rehabilitating the existing STP would not completely restore or extend its useful life. Continuously pumping and hauling wastewater during construction may cause odors adjacent and nearby residents.

#### **5.2.1.3. Upgrade Alternative 3 – Install Gang Septic Tanks**

This alternative involves the removal the existing STP and installation of septic tanks within the Kupuna Home O'Waiialua project site. Ten 1,000-gallon septic tanks can be installed near the existing STP, servicing wastewater from the site's existing sewer collection system.

Septic tanks are one of the most commonly used on-site individual wastewater systems. As raw wastewater enters the septic tank (which is entirely underground) from the collection sewers, the heavy solids settle to the bottom while fats, oils, and grease float to the top and some organic matter is broken down by anaerobic bacteria. The remaining liquid portion of the wastewater (i.e., effluent) flows into another chamber and then eventually out of the septic tank. The effluent is then released into an absorption field where remaining solids left in the effluent are absorbed by

the soil or consumed by plants. The soil removes pathogens, organic matter, and solids from the effluent through filtration and aerobic microorganisms. The effluent then slowly trickles through the soil and eventually recycles into the groundwater or evapotranspiration occurs through vegetation. The septic tank process requires minimal O&M and no electricity.

One drawback with septic tanks is that effluent quality is typically not as good as wastewater treatment plants. Septic effluent typically contain more than 100 mg/L of BOD and more than 40 mg/L of TSS. Another drawback is that septic tanks are limited in capacity because they are classified as individual wastewater systems by DOH (see Chapter 11-62-31.1); therefore, the maximum flow capacity for each septic tank is 1,000 gpd. Individual wastewater systems are not subject to the effluent requirements of wastewater treatment works (Chapter 11-62-26). Larger size tanks could potentially be used but it is unlikely DOH would allow them to be installed due to the high peak daily flow rate of 8,000 gpd.

Considering the average daily flow of the project, a minimum of eight septic tanks would be required. Ten septic tanks would be required to fully replace the existing 10,000 gpd STP; hence, this is a "gang" septic tank alternative. There are open areas west of the existing STP and inside the garden east of the existing STP which would be good locations to install the septic systems. The housing units could be divided into two groups with wastewater from each housing group flowing into five septic tanks (in parallel) where it would be treated and then discharged into the existing effluent disposal system. Solids would need to be pumped out of the gang septic tanks every year.

Based on design and construction records, the elevation of the existing injection well inlets will likely be approximately 6 ft higher than the elevation of the new septic tank outlets. A new belowground effluent lift station similar to the existing sewage lift station would likely be needed to pump discharge from the new septic tanks into the existing injection wells. Effluent from each group of septic tanks would flow by gravity into the new effluent lift station and be pumped to the injection wells. Housing would be installed aboveground for the new effluent lift station controls and would consist of a new weather-proof enclosure. The elevation of the injection well inlets would require verification during design of the new STP to determine if a gravity discharge from the new STP is feasible as a complete gravity flowing system would be preferred. The existing injection wells should be inspected, tested, and rehabilitated, if necessary, and the UIC permit renewal application will be submitted to the DOH in order to

maintain the operation of these injection wells. Overflow from the injection wells would flow into the existing leach field.

The approximate locations of the septic tanks are identified in **Figure 10**. One group of septic tanks will take flows from the northern portion of the project site (Building Groups A, B, C and the Community Building) and the other group (Building Groups D and E) will take flows from the southern portion of the project site. Each 1,000 gpd septic tank will be approximately 11 ft long and 7 ft wide.

With this alternative, majority of Kupuna Home O'Waiialua housing complex's existing gravity sewer collection system can be utilized. Tests must be performed to ensure that the potential absorption soil will be suitable for use as a septic absorption field. Septic effluent is generally lower in quality when compared to treatment plant effluent; therefore, the absorption system must be able to accommodate for higher solids in the effluent which has higher potential to plug the system. If present, unfavorable subsurface conditions (e.g., low permeability or a shallow groundwater table) could cause concerns. The existing leach field may be reused, but replacement of the leach field may be required upon inspection. The existing STP can be kept in service during construction of the new STP, minimizing the disturbance to the wastewater system.

Key factors of this alternative include:

- Septic tanks only provide primary treatment of wastewater, and the treatment quality would be lower compared to package wastewater treatment plants. Effluent typically contains more than 100 mg/L in BOD and more than 40 mg/L in TSS. Septic tanks rely heavily on the absorption field to further treat effluent.
- The estimated capital cost for this alternative is \$392,000 and will completely restore the wastewater treatment system's useful life with a lower construction cost. The low construction cost would allow HPHA to divert funds to other facilities.
- The primary O&M procedure required is solids pumping every year. The pumps in the effluent lift station should be inspected and maintained periodically. Assuming that septic pumping is done every year and effluent lift station service is performed, the projected O&M cost would be reduced as compared to present. Additional future repairs, equipment replacement, and energy costs required to run the effluent lift station would be necessary.
- The septic tanks and effluent lift station will be buried underground, but a considerable amount of underground space would be required. The existing STP can be removed after installation of the septic tanks is

completed. The septic tanks would require no additional aboveground space (with the exception of manholes or covers), though an aboveground housing unit would be installed for the effluent lift station controls. Overall, additional space would be created within the Kupuna Home O'Waiialua site.

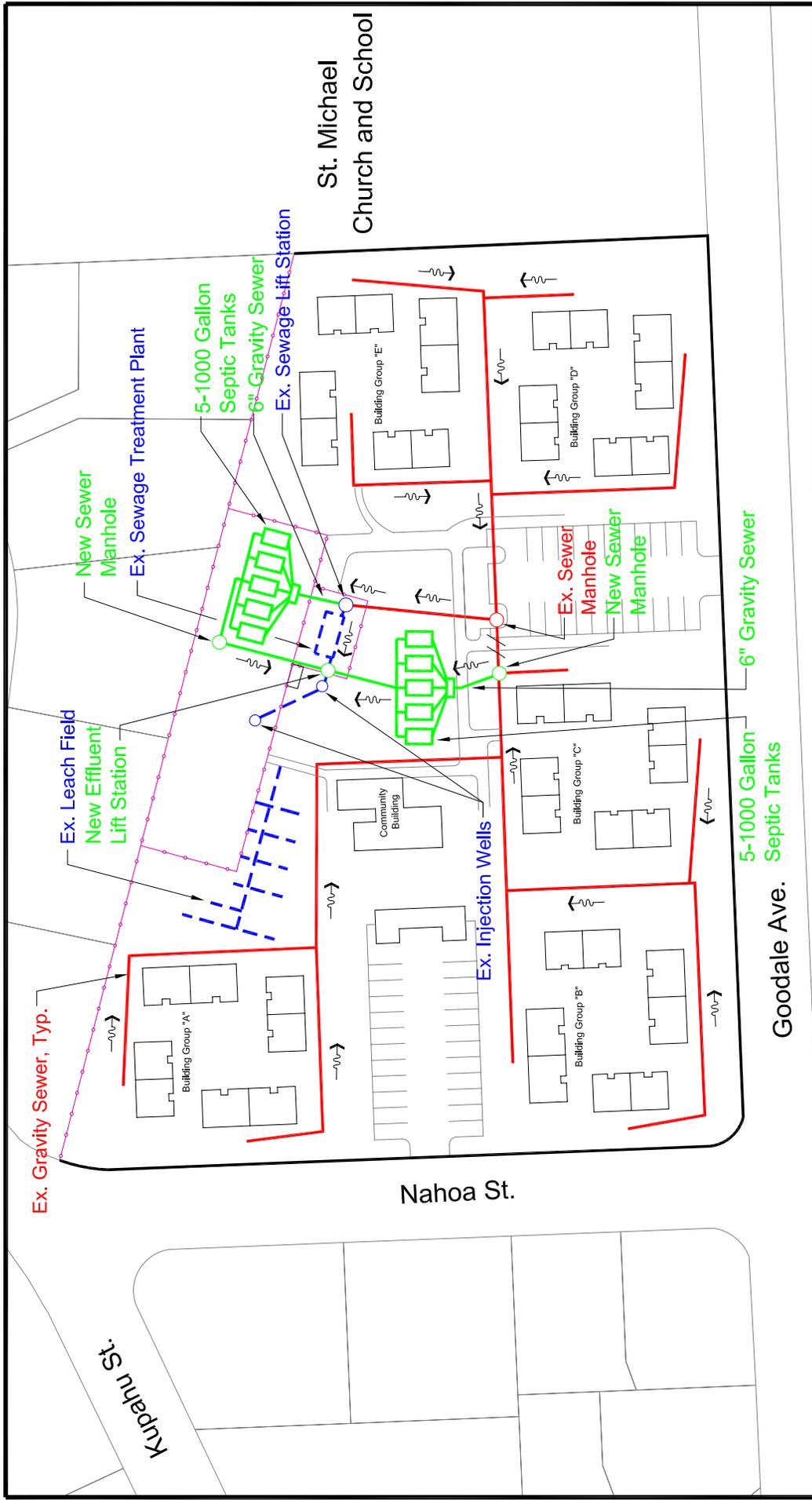
- During the majority of construction, the septic tanks could be constructed off-line while the existing STP remains in service. However, the DOH typically does not approve “downgrades” in wastewater treatment (in this case, wastewater treatment plant to septic tanks). The HPHA would need to apply for a variance from the DOH to install gang septic tanks. Based on preliminary discussions with the DOH, it is “highly unlikely” that this alternative will be approved. Large flows such as the existing 8,000 gpd peak flows generally require a wastewater treatment system.
- Installing gang septic tanks would completely restore the useful life of the site’s wastewater treatment system. However, this alternative currently does not appear to be feasible given the DOH’s position.

#### **5.2.1.4. Proposed Action – Install New Sewage Treatment Plant**

This alternative involves the installation of a new on-site STP to replace the Kupuna Home O'Waiialua complex's existing STP. Installing a “package” wastewater treatment system is one of the most effective methods of on-site wastewater treatment. This alternative considers a new package STP similar in size and capacity to the existing STP. The treatment process would be similar to existing conditions and shall produce effluent quality that meets DOH standards (Chapter 11-62-26, HAR).

Installation of the new STP would occur while the existing STP remains in service in order to minimize any disruption to wastewater service at the project site. The new STP will be designed as a replacement to the existing STP and will not have a greater capacity than the current 10,000 gpd design capacity of the existing STP. Installation of a new STP would completely renew the service life of the Kupuna Home O'Waiialua STP and result in increased sewage treatment reliability.

Three types of replacement wastewater treatment systems were considered and evaluated: FFMS, Sequencing Batch Reactor (SBR), and Aerobic Treatment Unit (ATU). Of the three, the recommended treatment system is the FFMS due to its low O&M procedures while producing good effluent quality. The FFMS is cheaper, consumes less energy, and requires less O&M than the SBR system. While the FFMS and ATU have



**THE LIMTIACO CONSULTING GROUP**  
 CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

**FIGURE 10**

**UPGRADE ALTERNATIVE 3 -  
 INSTALL GANG SEPTIC TANKS**  
 SEWAGE TREATMENT PLANT  
 IMPROVEMENTS AT  
 KUPUNA HOME O'WAI'ALUA

**Existing Wastewater Collection System**  
**Existing On-Site Package Sewage Treatment Plant and Disposal System**  
**Flow Direction**  
**New Gang Septic Tank Treatment System**

Scale in Feet  
 0 40 80  
 1" = 80'

**St. Michael Church and School**

**Goodale Ave.**

**Nahoa St.**

**Kupuha St.**

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similar installation methods and O&M procedures, the FFMS would require less space.

As the proposed action, replacement of the existing STP with an FFMS (including its key factors) is described in detail in Section 2.3, Description of Project. The following sections provide descriptions of the two other types of package wastewater treatment systems considered and evaluated, but eliminated from consideration.

### **Sequencing Batch Reactor**

A SBR is an aerobic system that provides aerobic treatment and clarification in a single tank. Once the tank is filled, oxygen is provided to activated sludge for aerobic treatment. Solids are allowed to settle, and treated effluent is decanted from the tanks so that it can be refilled. According to the *Onsite Wastewater Treatment Systems Technology Fact Sheet 3* major components of the SBR include the batch tank, aerator, mixer, decanter device, process control system (including timers), and pumps (EPA, 2008). Typical SBR effluent quality will contain BOD in the range of 5 to 15 mg/L and TSS in the range of 10 to 30 mg/L. Of the three types of treatment systems considered, an SBR provides the highest level of treatment; however, it has the highest associated O&M cost as mechanical equipment (i.e., pumps, blowers, decanters) would need to be maintained and sludge would need to be pumped approximately every 6 months.

### **Aerobic Treatment Unit**

An ATU is a self-contained unit containing both an aeration chamber and clarification chamber. ATUs utilize activated sludge to treat wastewater. Oxygen is provided to the aeration chamber where aerobic treatment occurs. After remaining solids settle in the clarification chamber, it is discharged to a proper disposal system. ATUs produce treated effluent that contains both a BOD and TSS of less than 30 mg/L. The ATU provides the lowest level of treatment of the three types of treatment systems considered, but is small in size and has low O&M requirements.

## **5.2.2. Evaluation of Upgrade Alternatives**

The Alternatives Analysis Report evaluated various upgrade alternatives at the Kupuna Home O'Waialua complex's on-site package STP to determine the feasibility of implementing potential improvements. In addition to the proposed action, each proposed upgrade alternative for the improvement of the subject STP was evaluated against the following criteria:

- Treatment Quality: The effluent produced should not cause harm to the environment when discharged. Primary parameters for treatment quality are BOD and TSS. Alternatives that provide treatment quality similar to the existing STP are preferred.
- Capital Cost: The HPHA is facing a number of budgetary challenges to maintain and upgrade its facilities across the State; therefore, construction cost is strongly considered. Alternatives with low capital cost and good cost efficiency are preferred.
- O&M Cost: The HPHA is in urgent need of improving housing facilities throughout the State, and reduction of O&M cost to the Kupuna Home O'Waiialua wastewater treatment system will allow the HPHA to divert funds to other facilities. Alternatives that reduce the O&M costs are preferred.
- Space Efficiency: Residential dwellings surround the STP area, so efficient use of space is important. Alternatives that do not consume additional space or would create more space for the Kupuna Home O'Waiialua housing complex are preferred.
- Constructability: Construction sequencing for improvements to operating facilities is always a challenge. There are no alternate treatment facilities nearby to accommodate temporary wastewater flows from the Kupuna Home O'Waiialua elderly public housing complex. Thus, alternatives that allow the existing STP to remain operational during construction are preferred. The likeliness of approvals from the City and DOH will also be considered.
- Overall benefit to Kupuna Home O'Waiialua: Feasibility, long-term benefits, service life, and anticipated future upgrades are considered along with negative impacts to Kupuna Home O'Waiialua residents and the surrounding neighborhood.

A matrix, presented in **Table 1** below, was generated to allow comparison of the various upgrade alternatives by assigning numerical values to the evaluation criteria of each. Within the matrix, each criterion was rated with a number between 1 and 10, with "10" being the best and "1" being the worst for a given category. A total score was then derived for each alternative based on the individual ratings.

**Table 1 Comparison of Upgrade Alternatives**

| <b>Criteria</b>                           | <b>Upgrade Alternative 1</b> | <b>Upgrade Alternative 2</b> | <b>Upgrade Alternative 3</b> | <b>Proposed Action</b> |
|---|------------------------------|------------------------------|------------------------------|------------------------|
| Treatment Quality                         | 9                            | 8                            | 4                            | 7                      |
| Capital Cost                              | 1                            | 7                            | 6                            | 4                      |
| O&M Cost                                  | 4                            | 3                            | 9                            | 4                      |
| Space Efficiency                          | 10                           | 4                            | 6                            | 8                      |
| Constructability                          | 1                            | 4                            | 2                            | 9                      |
| Overall Benefit to Kupuna Home O'Waiialua | 3                            | 5                            | 4                            | 8                      |
| <b>TOTAL</b>                              | <b>28</b>                    | <b>31</b>                    | <b>31</b>                    | <b>40</b>              |

Based on the analysis, the proposed action ranked the highest when evaluated against the preceding criteria. Hence, the Alternative Analysis Report concluded that the proposed action should be implemented in order to best accomplish the project need and objectives, and the other upgrade project alternatives were eliminated from further consideration.

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## **6. REQUIRED PERMITS AND APPROVALS**

The following permits and approvals may be required for the proposed project:

### **6.1. State of Hawaii**

National Pollutant Discharge Elimination System General or Individual Permit  
(e.g., Discharges of construction dewatering effluent)

Community Noise Permit

Community Noise Variance

Underground Injection Control Permit Renewal

### **6.2. City and County of Honolulu**

Grubbing, Grading, and Stockpiling Permit

Erosion Control Plan/Best Management Practices

Street Usage Permit

Construction Dewatering Permit (Temporary)

Traffic Control Plans

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## 7. ANTICIPATED DETERMINATION

A Finding of No Significant Impact (FONSI) determination is anticipated for the proposed project. The proposed STP improvements project is not expected to have a significant impact based on the criteria set forth in the DOH Rules, Chapter 200, Title 11, Section 12. The proposed project's relationship to the criteria is discussed below.

- (1) *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

Completion of the proposed STP improvements project is not anticipated to involve an irrevocable commitment to loss or destruction of natural or cultural resources. As discussed in detail in the various sections of Chapter 3 of this EA, the proposed improvements would not negatively or significantly impact any natural or cultural resources.

The project site consists of and solely contains the Kupuna Home O'Waialua housing complex. Hence, the proposed project would be constructed on an already disturbed and developed site, and the project site is located adjacent to and within an altered rural environment. There are no known proposed, candidate, or listed threatened or endangered species or habitat for such species present within the project site. No archaeological sites have been identified within the project site, and no impacts to archaeological sites are anticipated as a result of construction or operation of the project. No cultural resources or practices have been identified within or in the immediate vicinity of the project site; thus, no impacts on cultural resources or practices are anticipated as a result of construction or operation of the project. No other natural resources of significance are known to occur within the project site.

In the long-term, the proposed STP improvements at the Kupuna Home O'Waialua site are expected to avoid and/or mitigate potential adverse impacts to the environment by renewing the service life of the housing complex's STP. By replacing aging infrastructure and addressing structural deficiencies, the proposed improvements will improve the STP's reliability and reduce the risk of malfunctions or harmful spills at the project site.

- (2) *Curtails the range of beneficial uses of the environment;*

The project would not curtail the range of beneficial uses of the surrounding environment. The present and recent historic use of the project site has been the Kupuna Home O'Waialua housing complex, and the primary present and recent historic uses of the immediately adjacent area have been residential, institutional,

and agricultural. The proposed project would not change the existing uses of any lands.

The completion of the proposed project would result in the replacement of aging infrastructure, address of structural problems, and improvement of O&M requirements and efficiencies. The project would involve improvements to the project site's existing wastewater system such that the wastewater treatment and disposal systems can continue to reliably and adequately serve the present facilities and uses at the Kupuna Home O'Waialua housing complex. In fact, restoration of the existing STP's service life will have long-term favorable effects by improving its reliability and reducing the risk of malfunctions or harmful spills that would adversely affect the environment and public health and safety.

- (3) *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

The proposed project is consistent with the environmental policies, goals, and guidance set forth in Chapter 344, HRS. This EA addresses the potential environmental impacts associated with the project, most of which would be short-term temporary impacts associated with construction activities. The proposed project would improve the existing STP at the Kupuna Home O'Waialua site with the design intent of minimizing impacts to surrounding resources. Design and construction considerations are included as components of the proposed project in order to minimize disruptions to existing residences, institutions, and traffic adjacent to the project site and within the surrounding area.

- (4) *Substantially affects the economic or social welfare of the community or State;*

The project would not have any significant adverse impacts on the economic or social welfare of the Kupuna Home O'Waialua housing complex or surrounding Waialua community. The proposed project is anticipated to have short-term beneficial economic impacts due to the hiring of construction workers and the purchasing of materials. Short-term negative impacts or inconveniences (e.g., air quality impacts, increases in ambient noise levels, and traffic disruptions) may occur to residents and surrounding institutions and agricultural uses during construction of the proposed project and would be minimized through the application of appropriate mitigation measures and BMPs, as appropriate. In the long-term, the project would have positive economic and social welfare effects by maintaining reliable wastewater treatment for the Kupuna Home O'Waialua housing complex and reducing O&M costs and requirements for the complex's wastewater treatment system.

(5) *Substantially affects public health;*

Public health would not be adversely affected by the proposed project, which will renew the service life of the Kupuna Home O'Waiialua complex's STP and maintain compliance with DOH effluent standards (Chapter 11-62, Subchapter 2, HAR). The use of proper construction techniques and BMPs and compliance with applicable DOH rules and regulations will be implemented to minimize and mitigate any potential short-term impacts or inconveniences (such as fugitive-dust, increases in ambient noise levels, or storm water runoff quality impacts during construction). Conversely, the proposed project would provide positive, long-term public health and safety benefits to residents, institutions, and agricultural uses within and adjacent to the Kupuna Home O'Waiialua elderly public housing complex by implementing measures that would improve the reliability of the housing complex's wastewater system and reduce the risk of malfunctions or harmful spills that would adversely affect public health and safety.

(6) *Involves substantial secondary impacts, such as population changes or effects on public facilities;*

No substantial secondary impacts are anticipated given that the proposed project involves the replacement of the Kupuna Home O'Waiialua complex's existing aging wastewater treatment and disposal system infrastructure with similar sized, capacity, and treatment level components. Improvements are expected to renew the STP's service life and improve its reliability. The proposed STP improvements are intended to be a replacement of existing facilities and are not intended to increase the design capacity of the existing on-site wastewater treatment system serving the project site. The proposed project would provide improvements to the project site's existing wastewater system such that the wastewater treatment and disposal systems can continue to reliably and adequately serve the present facilities and uses within the project site. Therefore, the project would not contribute to development and or growth within the existing Kupuna Home O'Waiialua housing complex or in the surrounding area. Additionally, the project would not significantly impact any existing public facilities or infrastructure within or in the vicinity of the project site.

(7) *Involves a substantial degradation of environmental quality;*

The proposed STP improvements project is not anticipated to involve a substantial degradation of environmental quality. As discussed in detail in the various sections of Chapter 3 of this EA, short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during

construction of the proposed project. Environmental impacts that may be incurred as a result of construction activities would be mitigated through the implementation of BMPs, as appropriate.

The proposed improvements would not negatively or significantly impact the quality of the existing environment in the long-term. Design measures and considerations are included as components of the proposed project in order to minimize potential impacts on environmental factors. For example, the STP improvements will be consistent with DOH Wastewater Treatment Works standards and requirements (Chapter 11-62, Subchapter 2, HAR) and compliance with such standards will be maintained. In fact, the proposed STP improvements would completely renew the service life of the Kupuna Home O'Waiialua complex's STP, thereby increasing its reliability and decreasing the risk of potentially harmful spills or overflows that would adversely affect the environment.

(8) *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;*

The proposed STP improvements project would have no foreseeable cumulative effect on the surrounding environment or require a commitment to any larger actions. The project is planned to meet the existing and future needs of the project site's wastewater system. The proposed project would provide improvements to the site's existing wastewater system so that the wastewater treatment and disposal systems may continue to reliably and adequately serve the needs of and present uses at the Kupuna Home O'Waiialua housing complex. Overall, the proposed project involves the replacement of existing wastewater system infrastructure which serves the present facilities within the project site. The design capacity of the new STP will remain the same as existing; therefore, the proposed improvements would not support further population growth or an increase in population density. Additionally, the HPHA's proactive approach in proposing the subject project seeks to prevent costly breakdowns and emergency repairs that may result from the aging facility and as the existing STP nears the end of its useful life. By completely renewing the service life of Kupuna Home O'Waiialua's STP, potential future deficiencies and other major rehabilitation efforts that may otherwise have been required will be avoided and deferred. In fact, the proposed STP improvements would reduce the risk of malfunctions or harmful spills that would adversely affect the environment and public health and safety.

- (9) *Substantially affects a rare, threatened, or endangered species, or its habitat;*

The project site consists of and solely contains the Kupuna Home O'Waialua elderly public housing complex. Hence, the proposed project is located on a previously disturbed and developed site and is located adjacent to and within an altered rural environment. Lands altered and influenced by a high degree of rural development and human activity, such as the project site, are often characterized by floral and faunal communities dominated by introduced species. Consequently, species found within and adjacent to the project site are primarily non-native species. There are no known proposed, candidate, or listed threatened or endangered species or habitat for such species present within the project site.

- (10) *Detrimentially affects air or water quality or ambient noise levels;*

A detailed discussion of the project's potential affects on air quality, water quality, and ambient noise levels is provided in the applicable sections of this EA (Sections 3.8, 3.9, 3.10). As discussed in those various sections, short-term impacts to air quality, water quality, and ambient noise levels may occur during construction of the proposed project. Such environmental impacts will be mitigated through the use of proper construction techniques and compliance with applicable DOH rules and regulations. In the long-term, no significant adverse impacts related to these resources are anticipated due to the completion and operation of the proposed STP improvements project. Design measures are included as components of the proposed project in order to minimize any such potential impacts.

- (11) *Affects 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. Although the project site is located approximately 0.2 mile west of Kiikii Estuary, the proposed project is not anticipated to negatively affect this water resource. Appropriate erosion control measures and BMPs will be implemented to prevent pollutants from entering this surface water during construction. Additionally, the current subsurface wastewater disposal methods utilized at the Kupuna Home O'Waialua site are to be replaced and/or retained in proper operating condition and the proposed improvements shall continue to meet DOH compliance standards for wastewater treatment plants (e.g., effluent quality, disposal redundancy, and monitoring requirements).

- (12) *Substantially affects scenic vistas and view planes identified in county or state plans or studies; or*

The *North Shore Sustainable Communities Plan* (July 2000) identifies several continuous and intermittent scenic views, and the plan's vision seeks to retain those resources. The scenic views identified are typically of the north shore's coastline features (e.g., ocean, bays, beaches) or expanses of inland agricultural lands and preservation areas (e.g., reserves, streams, and mountain ranges). Additionally, the Plan emphasizes the Waialua Sugar Mill as the scenic focal point of the Waialua area and seeks to maintain the rural quality of the area through the construction of one- and two-story structures and an emphasis on pedestrian and bike paths.

The Kupuna Home O'Waialua housing complex site is not identified as a visual landmark and is not located within the orientation of any of the scenic view areas identified in the Plan. Additionally, the proposed improvements are to be constructed mainly underground with aboveground components of limited height. The proposed improvements would occur entirely within the Kupuna Home O'Waialua site, and obstruction of pedestrian or bike paths is not expected. As such, the proposed STP improvements project is not expected to detract from the rural quality of the area or views of the Waialua Sugar Mill or any other identified scenic vistas.

- (13) *Requires substantial energy consumption.*

Completion of the proposed STP improvements project is not anticipated to result in an increase in energy consumption at the Kupuna Home O'Waialua housing complex as the proposed project represents a continuation of the current use of the project site. In fact, the proposed STP improvements are expected to reduce the demand for electricity at the project site (although the change is likely to be negligible). Energy consumption directly related to operating the new STP is expected to be decreased as the new STP would have less mechanical equipment than the existing STP. No indirect increases in energy consumption would result from the proposed STP improvements as the design capacity of the new STP serving the project site would remain the same as existing and the proposed improvements will not support further population growth or a higher population density.

## 8. CONSULTATION

### 8.1. Pre-Assessment Consultation

The following agencies, organizations, and individuals were consulted during the preparation of the Draft EA. A total of 20 of these parties formally replied during the pre-assessment period, as indicated by the √ below. In addition to providing comments on behalf of Kawaihapai Ohana, Mr. Thomas Shirai provided individual comments. Comments and responses are reproduced herein (**Appendix A**). Two individuals responded with a phone call during the pre-assessment period and provided comments, as indicated by the X below.

#### Federal Agencies

Department of the Interior, U.S. Fish and Wildlife Service – Pacific Region  
U.S. Environmental Protection Agency, Region 9 – Pacific Islands

#### State of Hawaii

- Department of Agriculture
- Department of Business, Economic Development & Tourism, Office of Planning
- √ Department of Business, Economic Development & Tourism, Hawaii Housing Finance and Development Corporation
- Department of Health, Environmental Planning Office
- Department of Health, Environmental Management Division
- Department of Health, Environmental Management Division, Clean Air Branch
- √ Department of Health, Environmental Management Division, Clean Water Branch
- √ Department of Health, Environmental Management Division, Safe Drinking Water Branch
- √ Department of Health, Environmental Management Division, Wastewater Branch
- Department of Health, Environmental Health Services Division
- √ Department of Health, Environmental Health Services Division, Noise, Radiation and Indoor Air Quality Branch
- √ Department of Land & Natural Resources
- √ Department of Land & Natural Resources, Historic Preservation Division
- √ Department of Transportation
- √ Office of Hawaiian Affairs
- Senator Robert Bunda, 22<sup>nd</sup> Senatorial District
- Representative Michael Magaoay, 46<sup>th</sup> Representative District

#### City and County of Honolulu

- Department of Community Services
- Department of Design and Construction
- Department of Environmental Services
- Department of Facility Maintenance
- √ Department of Parks and Recreation
- √ Department of Planning and Permitting
- √ Department of Transportation Services
- √ Board of Water Supply
- √ Honolulu Fire Department

- √ Honolulu Police Department  
City Councilmember Donovan M. Dela Cruz, District 2  
Neighborhood Board No. 27, North Shore

### Utilities

- √ Hawaiian Electric Company, Inc.
- √ Hawaiian Telcom
- √ Oceanic Time Warner Cable
- √ The Gas Company

### Other Interested Parties

- Castle Cooke Hawaii
- Moku O Waialua Watershed Actiongroup Inc.
- North Shore Outdoor Circle
- Waialua Community Association
- Thomas Lenchanko
- √ Thomas T. Shirai, Jr., Kawaihapai Ohana
- Leimaile Quitevis
- Kaleo Paik

### Neighboring Property Recorded Fee Owners

- X 6-7-009:024
- X 6-7-009:023
- 6-7-009:022
- 6-7-009:021
- 6-7-009:020
- 6-7-009:019
- 6-7-009:018
- 6-7-001:013
- 6-7-016:021
- 6-7-016:039
- 6-7-016:020
- 6-7-016:019

## 8.2. Draft Environmental Assessment Consultation

The following agencies and interested parties will be consulted during the public review period of the Draft EA.

### Federal Agencies

Department of the Interior, U.S. Fish and Wildlife Service – Pacific Region  
U.S. Environmental Protection Agency, Region 9 – Pacific Islands

### State of Hawaii

Department of Agriculture  
Department of Business, Economic Development & Tourism, Office of Planning  
Department of Business, Economic Development & Tourism, Hawaii Housing Finance and Development Corporation  
Department of Health, Environmental Planning Office (3 hardcopies)  
Department of Health, Environmental Management Division, Clean Air Branch  
Department of Health, Environmental Management Division, Clean Water Branch  
Department of Health, Environmental Management Division, Safe Drinking Water Branch  
Department of Health, Environmental Management Division, Wastewater Branch  
Department of Health, Environmental Health Services Division, Indoor and Radiological Health Branch  
Department of Health, Office of Environmental Quality Control (2 hardcopies and 1 electronic copy [PDF version])  
Department of Land & Natural Resources (5 hardcopies)  
Department of Land & Natural Resources, Historic Preservation Division  
Department of Transportation  
Office of Hawaiian Affairs  
Senator Robert Bunda, 22<sup>nd</sup> Senatorial District  
Representative Michael Magaoay, 46<sup>th</sup> Representative District

### City and County of Honolulu

Department of Community Services  
Department of Design and Construction  
Department of Environmental Services  
Department of Facility Maintenance  
Department of Planning and Permitting (5 hardcopies)  
Department of Transportation Services  
Board of Water Supply  
Honolulu Fire Department  
Honolulu Police Department  
City Councilmember Donovan M. Dela Cruz, District 2  
Neighborhood Board No. 27, North Shore

### Utilities

Hawaiian Electric Company, Inc.  
Hawaiian Telcom  
Oceanic Time Warner Cable  
The Gas Company

### **Other Interested Parties**

Castle Cooke Hawaii  
Moku O Waialua Watershed Actiongroup Inc.  
North Shore Outdoor Circle  
Waialua Community Association  
Thomas Lenchanko  
Thomas T. Shirai, Jr., Kawaihapai Ohana

### **Libraries and Repositories**

Department of Business, Economic Development & Tourism Library  
Hawaii State Library, Hawaii Documents Center (2 hardcopies)  
Waialua Public Library (2 hardcopies)  
Legislative Reference Bureau  
Library, Honolulu Department of Customer Services

### **Neighboring Property Recorded Fee Owners <sup>1</sup>**

6-7-009:024  
6-7-009:023  
6-7-009:022  
6-7-009:021  
6-7-009:020  
6-7-009:019  
6-7-009:018  
6-7-001:013  
6-7-016:021  
6-7-016:039  
6-7-016:020  
6-7-016:019

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<sup>1</sup> A letter will be sent to the recorded fee owners of these neighboring properties. The letter will notify each owner of the availability of the Draft EA at the Waialua Public Library and Hawaii State Library and solicit comments during the public review.

## 9. REFERENCES

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**APPENDIX A  
PRE-ASSESSMENT CONSULTATION CORRESPONDENCE**





THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

September 10, 2008

Mr. Henry Eng, Director  
City & County of Honolulu  
Department of Planning & Permitting  
650 S. King Street, 7th floor  
Honolulu, HI 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Waiialua, Oahu, Hawaii  
Tax Map Key: 6-7-016:028

Dear Sir or Madam,

On behalf of the State of Hawaii's Hawaii Public Housing Authority, The Limtiaco Consulting Group is preparing a Draft Environmental Assessment (EA) for the subject proposed sewage treatment plant improvement project. Pursuant to Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200, Hawaii Administrative Rules of the Department of Health, we are soliciting comments for the pre-assessment consultation phase of the Draft EA.

To address and assess potential cultural and archaeological resource impacts in the Draft EA, we would appreciate any input and information that you may have related to the subject project's possible impacts on the traditional and cultural practices and beliefs of any cultural or ethnic group(s). Additionally, the name(s) and contact information of any responsible and knowledgeable individual(s) whom we could contact regarding any such beliefs, practices, or resources that may be affected would be very helpful to us.

A summary of the proposed project is attached for your review. We would appreciate the submission of any comments by Friday, October 3, 2008.

**Please send your original comments to:**

Chad K. Taniguchi, Executive Director  
Attn: Mitchell Kawamura, Project Engineer  
State of Hawaii  
Hawaii Public Housing Authority  
P.O. Box 17907  
Honolulu, Hawaii 96817  
Fax: 832-6030

**Please provide a copy of your comments to:**

John Katahira, Project Manager  
The Limtiaco Consulting Group  
650 Iwilei Road, Suite 208  
Honolulu, Hawaii 96817  
Fax: 596-7361

Thank you for your participation in the environmental review process. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority (w/ attachment)

LINDA LINGLE  
GOVERNOR



KAREN SEDDON  
EXECUTIVE DIRECTOR

**STATE OF HAWAII**

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM  
HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION  
677 QUEEN STREET, SUITE 300  
Honolulu, Hawaii 96813  
FAX: (808) 587-0600

IN REPLY REFER TO:

08:PEO/118

September 12, 2008

Mr. Chad K. Taniguchi  
Executive Director  
Hawaii Public Housing Authority  
P.O. Box 96817  
Honolulu, Hawaii 96817

Attention: Mr. Mitchell Kawamura  
Project Engineer

Dear Mr. Taniguchi:

Re: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvement at Kupuna Home O'Waiialua  
Waiialua, Oahu, Hawaii  
Tax Map Key: 6-7-016:028

Thank you for consulting the Hawaii Housing Finance and Development Corporation on the above-referenced project. We have no housing-related comments to offer at this time.

Sincerely,

A handwritten signature in cursive script, appearing to read "Karen Seddon".

Karen Seddon  
Executive Director

c: ✓ John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Ms. Karen Seddon, Executive Director  
State of Hawaii  
Department of Business, Economic Development and Tourism  
Hawaii Housing Finance and Development Corporation  
677 Queen Street, Suite 300  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Ms. Seddon,

Thank you for your letter dated September 12, 2008 (08:PEO/118) indicating the Hawaii Housing Finance and Development Corporation has no housing-related comments regarding the subject sewage treatment plant improvements project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



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

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

In reply, please refer to  
EMD / CWB

09088PMT.08

September 25, 2008

Mr. Chad K. Taniguchi  
Executive Director  
Hawaii Public Housing Authority  
State of Hawaii  
P.O. Box 17907  
Honolulu, Hawaii 96817

Attention: Mitchell Kawamura, Project Engineer

Dear Mr. Taniguchi:

**Subject: Pre-Assessment Consultation, Draft Environmental Assessment (DEA)  
Sewage Treatment Plant Improvements at Kupuna Home O`Waiialua  
Waiialua, Oahu, Hawaii  
Tax Map Key: 6-7-016:028**

The Department of Health, Clean Water Branch (CWB), has reviewed the The Limtiaco Consulting Group letter dated September 10, 2008, that was submitted on your behalf regarding the subject project and offers these comments. Please note that our review is based solely on the information provided in your letter for the subject project and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

- c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. The Kiikii Estuary is identified as a Priority Category 5 waters in the Section 303(d) of the Clean Water Act list of impaired water bodies. Priority 5 waters are described as surface waters where available data and/or information indicate that at least one (1) designated use is not being supported or is threatened, and a Total Maximum Daily Loads (TMDL) is needed. The Kiikii Estuary is presently identified as not attaining the applicable water quality standard for nutrients, turbidity, and total suspended solids. Accordingly, the subject DEA should also include this consideration toward ensuring the protection and improvement of this water body with respect to the subject project.
3. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff (if applicable), into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:
  - a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.
  - b. Construction dewatering effluent.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

4. For types of wastewater not listed in Item 3 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

Mr. Chad K. Taniguchi  
September 25, 2008  
Page 3

09088PMT.08

5. You must also submit a copy of the NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.
6. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,



THOMAS E. ARIZUMI, P.E., CHIEF  
Environmental Management Division

- c: John Katahira, The Limtiaco Consulting Group  
Mitchell Kawamura, Hawaii Public Housing Authority, State of Hawaii [via fax 832-6030 only]



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Thomas E. Arizumi, P.E., Chief  
State of Hawaii  
Environmental Management Division  
Clean Water Branch  
P.O. Box 3378  
Honolulu, Hawaii 96801-3378

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Arizumi,

Thank you for your letter dated September 25, 2008 (EMD/CWB 09088PMT.08) regarding the subject sewage treatment plant improvements project. Your letter included the State Department of Health (DOH), Clean Water Branch's (CWB's) written comments on the subject project. The following are offered in response to those written comments:

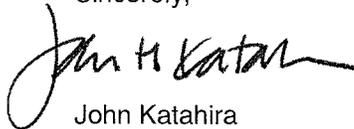
1. It is acknowledged that any project and its potential impacts to State waters must meet the rules and regulations contained in the Hawaii Administrative Rules (HAR) of the DOH, Sections 11-54-1.1, 11-54-3, and 11-54-4 through 11-54-8.
2. It is recognized that according to the *2006 State of Hawaii Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to Sections §303(d) and §305(b), Clean Water Act (P.L. 97-117)*, herein referred to as the 2006 Integrated Report, Kiikii Estuary is currently included on the State's 303(d) List of Impaired Waters. Kiikii Estuary is identified as Category 5 waters, which entails waterbodies where available data and/or information indicate that at least one designated use in not being supported or is threatened and a Total Maximum Daily Load (TMDL) is needed. The impairing pollutants of concern for Kiikii Estuary are listed in the 2006 Integrated Report as unknown; however, we understand that presently this waterbody is identified by DOH as not attaining applicable water quality standards for nutrients, turbidity, and total suspended solids. The subject project's forthcoming Draft Environmental Assessment (EA) will include this consideration toward the protection and improvement of this waterbody. Specifically, this written comment has been incorporated and addressed in Section 3.9 of the forthcoming Draft EA.
3. We acknowledge the requirement to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for the discharge of pollutants into State waters. We are aware of the various Notice of Intent (NOI) forms which may be submitted for NPDES general permit coverage associated with the different types of discharges and the submittal requirements of the NOI forms. For the subject project, the Hawaii Public Housing Authority (HPHA) will apply for NPDES general permit coverage and comply with the NOI form submittal requirements as necessary. Specifically, a NPDES permit for discharges of construction dewatering effluent will be required should dewatering activities be necessary. Dewatering activities are not anticipated to be necessary during the construction and installation of project improvements; however, a geotechnical survey will be conducted within the project site during and in support

of the design phase and will determine whether groundwater is likely to be encountered within the project site. This type of activity associated with the subject project which may result in discharges into State surface waters has been incorporated and addressed in the forthcoming Draft EA.

4. It is also understood that a NPDES individual permit may be required for those types of discharges of pollutants into State waters not associated with or covered by the various NOI forms which may be submitted for NPDES general permit coverage or for discharges into inland and marine waters designated as "Class 1" and "Class AA" use categories, respectively. We are aware that a NPDES individual permit application must be submitted under such circumstances and of the general submittal requirements of such an application. If necessary and/or applicable, the HPHA will apply for a NPDES individual permit and comply with the application submittal requirements for the subject project. As stated under Item #3 above, should dewatering activities be necessary for the subject project, a NPDES (general or individual) permit for discharges of construction dewatering effluent will be required.
5. We understand the requirement to either submit a copy of the NOI form or NPDES permit application to the State Department of Land and Natural Resources, Historic Preservation Division (SHPD) or demonstrate to the satisfaction of the CWB that the SHPD has evaluated/is in the process of evaluating the subject project. Along with the submittal of any NOI form or NPDES permit application for the subject project, the HPHA will submit a copy of the request for review by the SHPD or SHPD's determination letter.
6. We acknowledge that any discharges related to the subject project's construction or operation activities shall comply with the applicable State Water Quality Standards and requirements specified in HAR, Chapters 11-54 and 1-55.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



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

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
**SAFE DRINKING WATER BRANCH**  
919 Ala Moana Boulevard, Room 308  
Honolulu, Hawaii 96814

In reply, please refer to:  
File: SDWB

September 16, 2008

Mr. Chad K. Taniguchi  
Executive Director  
Hawai`i Public Housing Authority  
State of Hawai`i  
P. O. Box 17907  
Honolulu, Hawai`i 96817

ATTENTION: Mitchell Kawamura, Project Engineer

SUBJECT: PRE-ASSESSMENT CONSULTATION,  
DRAFT ENVIRONMENTAL ASSESSMENT (DEA)  
SEWAGE TREATMENT PLANT IMPROVEMENTS AT  
**KUPUNA HOME O ` WAIALUA, WAILUA, O`AHU, HAWAI`I**  
T.M.K. NO. (1) 6-7-016:028

Thank you for soliciting our comments for the DEA's pre-assessment consultation phase.

The facility's Underground Injection Control (UIC) permit, under assigned permit number UO-2018, expired on November 22, 2006, and has not been renewed. Thus, the two injection wells that currently serve the facility for the disposal of treated domestic wastewater are being operated without a valid UIC permit.

Section 11-23-07(c) of the UIC rules states, "No injection well owner or operator shall construct, operate, maintain, or close its injection well unless authorized by this chapter, a permit, or an order to do so." Further, section 11-23-11(a) states, "No injection well shall be operated, modified or otherwise utilized without a UIC permit issued by the department." Therefore, for the continued use of the two injection wells, a valid UIC permit is necessary, and enforcement action may be used to attain compliance.

Mr. Chad K. Taniguchi  
September 16, 2008  
Page 2

Should you desire to review our UIC file, please call the UIC program at 586-4258 to make an appointment.

Sincerely,



STUART YAMADA, P.E., CHIEF  
Safe Drinking Water Branch  
Environmental Management Division

JR:nbp

c: Mr. John Katahira, Project Manager  
The Limtiaco Consulting Group  
650 Iwilei Road, Suite 208  
Honolulu, Hawai`i 96817



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Stuart Yamada, P.E., Chief  
State of Hawaii  
Environmental Management Division  
Safe Drinking Water Branch  
919 Ala Moana Boulevard, Room 308  
Honolulu, Hawaii 96814

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Yamada,

Thank you for your letter dated September 16, 2008 regarding the subject sewage treatment plant improvements project. Per your letter, we understand that the Underground Injection Control (UIC) permit to operate the Kupuna Home O'Waiialua elderly public housing complex's two injection wells (which are effluent disposal components of the complex's self-contained wastewater system) has expired. The requirements of Sections 11-23-07(c) and 11-23-11(a) of the State Department of Health Administrative Rules (HAR) (i.e., UIC rules) are acknowledged.

Currently, the subject project proposes the installation of a new on-site sewage treatment plant, use of the existing leach field or on-site replacement of the leach field, and retention of the two underground injection wells. The Hawaii Public Housing Authority plans to assess the condition of the two underground injection wells, and the injection wells will be retained in proper operating condition in order to meet the disposal redundancy requirements of Chapter 11-62, Section 25, HAR. As such, the Kupuna Home O'Waiialua complex's UIC permit renewal application will be submitted to the Department of Health in order to maintain the operation of these injection wells. The status of the UIC permit has been incorporated and addressed in the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



CHIYOME LEINAALA FUKINO, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
EMD / WB

LUD-6 7 016 028.doc

September 17, 2008

Mr. John H. Katahira  
Project Manager  
The Limtiaco Consulting Group  
650 Iwilei Road Suite 208  
Honolulu, Hawaii 96817

Dear Mr. Katahira:

Subject: **Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Waiialua, Oahu, Hawaii TMK (1) 6-7-016: 028**

Thank you for allowing us the opportunity to review the above subject project which states the preparation of the Draft Environmental Assessment (EA) for the subject proposed sewage treatment plant improvement project. We have the following comments to offer:

We have no objections to the upgrades and improvements that are proposed for the existing wastewater treatment plant. All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

We do encourage the developer to utilize recycled water and other non-potable water for irrigation of landscaping areas.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808)586-4294.

Sincerely,

A handwritten signature in black ink, appearing to read "T. See".

TOMAS S. SEE, P.E., CHIEF  
Wastewater Branch

c: Hawaii Public Housing, Mr. Chad K. Taniguchi, Executive Director  
Attn: Mr. Mitchell Kawamura, Project Engineer  
City & County of Honolulu's Department of Planning & Permitting  
DOH's Environmental Planning Office Jiakai Liu



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Tomas S. See, P.E., Chief  
State of Hawaii  
Department of Health  
Wastewater Branch  
P.O. Box 3378  
Honolulu, Hawaii 96801

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. See,

Thank you for your letter dated September 17, 2008 (LUD-6 7 016 028.doc) indicating that the Department of Health's (DOH's) Wastewater Branch has no objections to the subject sewage treatment plant improvements project. It is acknowledged that due to the nature of the subject project conformance with the applicable provisions of the DOH's Administrative Rules, Title 11, Chapter 62, "Wastewater Systems" is necessary. Additionally, it is understood that the DOH's Wastewater Branch reserves the right to review the wastewater plans associated with the subject project for conformance with applicable rules.

The DOH Wastewater Branch's encouragement for the utilization of recycled water and other non-potable water for irrigation of landscaped areas is appreciated. While implementing a recycled water program as a component of the subject project is not an economically feasible option for the Hawaii Public Housing Authority at this time, implementation of the subject sewage treatment plant improvements could eventually result in future improvements in order to recycle wastewater effluent for irrigation use at the project site. Additionally, further STP planning, design, and construction requirements may later be considered to allow for the reuse and recycling of the treated wastewater in accordance with the *Guidelines for the Treatment and Use of Recycled Water*, dated May 2002).

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



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

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

In reply, please refer to:  
File:

September 22, 2008

TO: Mr. Chad K. Taniguchi, Executive Director  
State of Hawaii  
Hawaii Public Housing Authority

FROM: *f* Russell S. Takata, Program Manager  
Indoor and Radiological Health Branch 

SUBJECT: **Comments to Pre-Assessment Consultation, Draft Environmental  
Assessment Sewage Treatment Plant Improvements at Kupuna Home  
O'Waiialua Waiialua, Oahu, Hawaii  
Tax Map Key: 6-7-016:028**

Our comments should be printed as follows:

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

- Chapter 11-46 Community Noise Control.

Should there be any questions, please contact me at 586-4701.

cc: *f* Mr. John Katahira



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Russell S. Takata, Program Manager  
State of Hawaii  
Department of Health  
Indoor and Radiological Health Branch  
P.O. Box 3378  
Honolulu, Hawaii 96801-3378

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Takata,

Thank you for your letter dated September 22, 2008 regarding the subject sewage treatment plant improvements project. Your written comment item has been incorporated and addressed in Section 3.10 of the forthcoming Draft Environmental Assessment, which discusses the subject project's compliance with the provisions of the Administrative Rules of the State Department of Health, Title 11, Chapter 46, "Community Noise Control" noise regulations.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

October 2, 2008

Hawaii Public Housing Authority  
Box 1797  
Honolulu, Hawaii 96817

Attention: Mr. Michael Kawamura

Gentlemen:

Subject: Pre-assessment consultation for draft environmental assessment for  
sewage treatment plant improvements

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

  
Morris M. Atta  
Administrator

Cc: The Limitiaco Consulting Group

LINDA LINGLE  
GOVERNOR OF HAWAII

RECEIVED  
LAND DIVISION



LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT



2008 SEP 24 P 4: 01

DEPT. OF LAND AND NATURAL RESOURCES  
STATE OF HAWAII

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

September 12, 2008

MEMORANDUM

TO:

**DLNR Agencies:**

- Div. of Aquatic Resources
- ~~Div. of Boating & Ocean Recreation~~
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division -

FROM:

*for* Morris M. Atta *Charlotte*

SUBJECT:

Pre-assessment consultation for draft environmental assessment for sewage treatment plant improvements

LOCATION: Waialua, Oahu, TMK: (1) 6-7-16:28

APPLICANT: The Limtiaco Consulting Group

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by October 1, 2008.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed:

*Charlotte*

Date:

9/23/08

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/MorrisAtta  
Ref.: PreAssesConDEASewageTreatmentWaialua  
Maui.641

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone \_\_\_\_.
- Please take note that based on the map provided the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone C. The National Flood Insurance Program does not have any regulations for developments within Zone C.**
- Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is \_\_\_\_.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
  - Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
  - Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
  - Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
  - The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
  - Additional Comments: \_\_\_\_\_  
\_\_\_\_\_
  - Other: \_\_\_\_\_  
\_\_\_\_\_

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed:   
ERIC T. HIRANO, CHIEF ENGINEER

Date: 9/23/08



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Morris M. Atta, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
Land Division  
P.O. Box 621  
Honolulu, Hawaii 96809

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Atta,

Thank you for your letter dated October 2, 2008 regarding the subject sewage treatment plant improvements project. With your letter, you included a memorandum (dated September 12, 2008) sent from your office to two divisions of the Department of Land and Natural Resources (DLNR) requesting comments on the subject project. You received written comments from the Engineering Division. The following are offered in response to those written comments:

- It is acknowledged that the Kupuna Home O'Waiialua elderly public housing complex site is located in Zone C according to the Flood Insurance Rate Map referenced and referred to by DLNR's Engineering Division. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel Number 15003C 0105 G for the City and County of Honolulu (revised June 2, 2005), the subject project site is identified as within Zone X (unshaded). It is understood that on newer Flood Insurance Rate Maps, the unshaded Zone X corresponds to Zone C on older maps. Zone X, or Zone C, designates areas determined to be of minimal flood hazard and located outside of the 500-year flood plain, and it is recognized that the National Flood Insurance Program does not have any regulations for developments in this flood zone. This written comment has been incorporated and addressed in Section 3.6 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR OF HAWAII



LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

November 21, 2008

Mr. John Katahira, Project Manager  
The Limtiaco Consulting Group.  
650 Iwilei Road, Suite 208  
Honolulu, Hawai'i 96871

LOG NO: 2008.4139  
DOC NO: 0811WT35  
Archaeology

Dear Mr. Katahira:

**SUBJECT: Pre-assessment Consultation, Draft Environmental Assessment, Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua, Waiialua, O'ahu, Hawai'i**  
**TMK: (1) 6-7-016: 028**

We are in receipt of your Pre-Assessment Consultation regarding a Draft Environmental Assessment/Environmental Impact Statement, which we received on September 11, 2008. We apologize for the delay in reviewing this document within the allotted time period, as we were short staffed. Had we been able to respond during the allotted time period this would have been our comments:

We determine that **no historic properties will be affected** by this project because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other

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

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Ms. Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State of Hawaii  
Department of Land and Natural Resources  
State Historic Preservation Division  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawaii 96707

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Ms. McMahon,

Thank you for your letter dated November 21, 2008 regarding the subject sewage treatment plant improvements project. The following are offered in response to those written comments:

- We acknowledge your determination that no historic properties will be affected by the proposed sewage treatment plant improvements project given that residential development and/or urbanization has altered the Kupuna Home O'Waiialua elderly public housing complex site. Your written comment has been incorporated and addressed in Section 3.11 of the forthcoming Draft Environmental Assessment (EA).
- It is acknowledged that with any construction project involving land disturbance and alterations, there is always the possibility that human burials or other potentially significant subsurface archaeological resources could be encountered. Therefore, the following measures will be implemented: For all construction activities conducted in association with the subject project, work will cease immediately if any historic remains or other potentially significant subsurface archaeological resources are encountered during construction activities and the find will be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division of the Department of Land and Natural Resources to assess the significance of the find and recommend an appropriate mitigation measure, if necessary. This written comment has been incorporated and addressed in Section 3.11 of the forthcoming Draft EA.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

LINDA LINGLE  
GOVERNOR



BRENNON T. MORIOKA  
DIRECTOR

Deputy Directors  
MICHAEL D. FORMBY  
FRANCIS PAUL KEENO  
BRIAN H. SEKIGUCHI  
JIRO A. SUMADA

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.2997

September 18, 2008

Mr. Chad K. Taniguchi  
Executive Director  
State of Hawaii  
Hawaii Public Housing Authority  
P. O. Box 17907  
Honolulu, Hawaii 96817

Attention: Mr. Mitchell Kawamura  
Project Engineer

Dear Mr. Taniguchi:

Subject: Kapuna Home O'Waiialua Sewage Treatment Plan (STP)  
Pre-Assessment for Draft Environmental Assessment (DEA)  
TMK: 6-7-016: 028

The proposed project to replace the elderly public housing complex's existing STP will not significantly impact any State highway facilities.

The DOT appreciates the opportunity to provide comments.

Very truly yours,

*Francis Paul Keeno*

*for* BRENNON T. MORIOKA, PH.D., P.E.  
Director of Transportation

c: John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Brennon T. Morioka, Ph.D., P.E., Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Morioka,

Thank you for the Department of Transportation's letter dated September 18, 2008 (STP 8.2997) indicating that the subject sewage treatment plant improvements project is not anticipated to significantly impact any State highway facilities.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

PHONE (808) 594-1888

FAX (808) 594-1865



**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD08/3839

October 7, 2008

Mitchell Kawamura  
Hawai'i Public Housing Authority  
P.O. Box 17907  
Honolulu, Hawai'i 96817

**RE: Request for comments on the pre-assessment consultation, sewage treatment plant improvements, Kupuna Home O'Waialua, Wailua, O'ahu TMK: 6-7-16:28.**

Aloha e Mitchell Kawamura,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated September 10, 2008. OHA has reviewed the project and offers the following comments.

OHA looks forward to reviewing the draft environmental assessment for this proposed project. In terms of a cultural assessment, OHA notes that the lands are ceded lands which hold a considerable amount of sentimental, historical and legal significance for Native Hawaiians and OHA. OHA urges that future documents refer to this parcel as ceded lands so that their special status is known to others and to facilitate the continued registry, creation and maintenance of an accurate ceded lands inventory. Today, the state holds the Ceded Lands corpus in trust for Native Hawaiians and the general public.

OHA can be consulted for general information about the history and cultural significance of the area; however, for the type of specific information you are seeking we suggest that you contact:

Leimaile Quitevis [Leimaile.q@gmail.com](mailto:Leimaile.q@gmail.com)

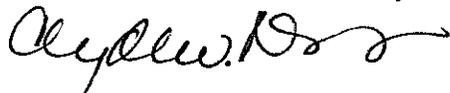
Tom Shirai [kawaihapai@hawaii.rr.com](mailto:kawaihapai@hawaii.rr.com)

Kaleo Paik [kaleopaik@yahoo.com](mailto:kaleopaik@yahoo.com)

Mitchell Kawamura  
October 7, 2008  
Page 2

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at [granta@oha.org](mailto:granta@oha.org).

‘O wau iho nō me ka ‘oia‘i‘o,



Clyde W. Nāmu‘o  
Administrator

John Katahira  
The Limtiaco Consulting Group  
650 Iwilei Road, Suite 208  
Honoulu, Hawai‘i 96817



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Clyde W. Nāmu'o, Administrator  
State of Hawaii  
Office of Hawaiian Affairs  
711 Kapi'olani Boulevard, Suite 500  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Nāmu'o,

Thank you for your letter dated October 7, 2008 (HRD08/3839) regarding the subject sewage treatment plant improvements project. The following are offered in response to the Office of Hawaiian Affairs' (OHA's) written comments:

- We acknowledge that the Kupuna Home O'Waiialua elderly public housing complex site is situated on ceded lands, which hold sentimental, historical, and legal significance for Native Hawaiians and the OHA. It is understood that the State holds ceded lands corpus in trust for Native Hawaiians and the general public. The project site's status as ceded lands has been incorporated and addressed in Section 3.11 of the subject project's forthcoming Draft Environmental Assessment (EA), a copy of which will be distributed to the OHA.
- We appreciate your willingness to be consulted for general information about the history and cultural significance of the area and your assistance in providing the names and contact information of responsible and knowledgeable individuals whom we could contact regarding any known archaeological sites or traditional and cultural beliefs, practices, or resources that may be affected in association with the subject project. We contacted individuals per your suggestion as well as based on a review of the State Office of Environmental Quality Control's list of Cultural Assessment Providers in the area. Contributions were received and the information obtained assisted in evaluating any potential impacts to archaeological or cultural resources anticipated to result from implementation of the subject project. Please refer to Section 3.11 of the forthcoming Draft EA for a discussion of any potential archaeological or cultural impacts.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

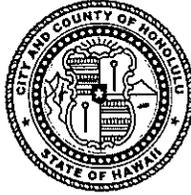
John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**

KAPOLEI HALE • 1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 768-3003 • FAX: (808) 768-7053 • INTERNET: www.honolulu.gov

MUFI HANNEMANN  
MAYOR



LESTER K.C. CHANG  
DIRECTOR

GAIL Y. HARAGUCHI  
DEPUTY DIRECTOR

September 17, 2008

Mr. Chad K. Taniguchi, Executive Director  
Attention: Mitchell Kawamura, Project Engineer  
State of Hawaii  
Hawaii Public Housing Authority  
P.O. Box 17907  
Honolulu, Hawaii 96817

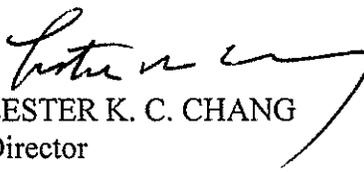
Dear Mr. Taniguchi:

Subject: Pre-Assessment Consultation/DEA  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua

Thank you for the opportunity to review and comment on the proposed sewage treatment plan improvements at Kupuna Home O'Waiialua.

The Department of Parks and Recreation has no comment and as the proposed project will not impact any program or facility of the department, ~~you are invited to remove us as a~~ consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

  
LESTER K. C. CHANG  
Director

LKCC:jr  
(278605)

cc: Mr. John Katahira, Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Lester K.C. Chang, Director  
City and County of Honolulu  
Department of Parks and Recreation  
1000 Uluohia Street, Suite 309  
Kapolei, Hawaii 96707

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Chang,

Thank you for your letter dated September 17, 2008 indicating the Department of Parks and Recreation (DPR) has no comments regarding the subject sewage treatment plant improvements project. Per your request, given that the subject project will not impact any DPR program or facility, your department will be removed as a consulted entity from the remainder of the environmental review process.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

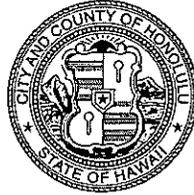
Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 768-8000 • FAX: (808) 527-6743  
INTERNET: www.honolulu.gov • DEPT. WEB SITE: www.honoluluapp.org



MUFI HANNEMANN  
MAYOR

HENRY ENG, FAICP  
DIRECTOR

DAVID K. TANOUE  
DEPUTY DIRECTOR

2008/ELOG-2238 (TH)

September 30, 2008

Mr. Chad K. Taniguchi, Executive Director  
Hawaii Public Housing Authority  
State of Hawaii  
P.O. Box 17907  
Honolulu, Hawaii 96817

Attn: Mr. Mitchell Kawamura, Project Engineer

Dear Mr. Taniguchi:

Subject: Pre-Assessment Consultation, Draft Environmental Assessment (DEA)  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua,  
Waiialua, Oahu, Hawaii, Tax Map Key: 6-7-016:028

In response to your letter of September 10, 2008, we have reviewed the subject project and offer the following comments.

1. The DEA should include a discussion of how the proposed project supports City plans and policies such as the General Plan and North Shore Sustainable Communities Plan.
2. The Sewage Treatment Plant and disposal system serving the Kupuna Home O'Waiialua is not a municipal facility and is under the regulatory jurisdiction of the State Department of Health.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

  
for Henry Eng, FAICP, Director  
Department of Planning and Permitting

HE:js

cc: The Limtiaco Consulting Group, Attn: Mr. John Katahira

P:/DivFunction/EA-EIS/2008/2008elog2238



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Henry Eng, FAICP, Director  
City and County of Honolulu  
Department of Planning and Permitting  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Eng,

Thank you for your letter dated September 30, 2008 regarding the subject sewage treatment plant improvements project. The following items are offered in response to your written comments:

1. This written comment item has been incorporated and addressed in Sections 4.3 and 4.4 of the forthcoming Draft Environmental Assessment (EA), which discuss the subject project's relationship to and general consistency with the City and County of Honolulu General Plan and North Shore Sustainable Communities Plan.
2. Regarding your comment item #2, the forthcoming Draft EA states throughout that the Kupuna Home O'Waiialua elderly public housing complex hosts its own self-contained (i.e., non-municipal) wastewater system to include a gravity sewer collection system, on-site package sewage treatment plant, and effluent disposal. Additionally, it is recognized that the complex's wastewater system is under the regulatory jurisdiction of the State of Hawaii, Department of Health (DOH).

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

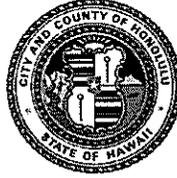
John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: [www.honolulu.gov](http://www.honolulu.gov)

MUFI HANNEMANN  
MAYOR



WAYNE Y. YOSHIOKA  
DIRECTOR

RICHARD F. TORRES  
DEPUTY DIRECTOR

TP9/08-278803R

September 25, 2008

Mr. John Katahira, Project Manager  
The Limtiaco Consulting Group  
650 Iwilei Road, Suite 208  
Honolulu, Hawaii 96817

Dear Mr. Katahira:

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua

This is in response to your letter of September 10, 2008, requesting our review of the Pre-Assessment Consultation for the Draft Environmental Assessment (DEA) of the Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua. We offer the following comments:

1. The Draft Environmental Assessment should address the short-term and permanent traffic impacts of the improvements on the adjacent roadways and neighborhood.
2. The project may affect bus routes, bus stops, and para-transit operations. Therefore, notification of the scope of work, location, proposed closure of any street, traffic lane, or bus stop and duration of project must be made two weeks prior to construction by informing the Department of Transportation Services, Sandra Abelaye at 768-8371 or [sabelaye@honolulu.gov](mailto:sabelaye@honolulu.gov), and Oahu Transit Services, Inc. (bus operations: Art Akana 852-6030 – para-transit operations: John Black 454-5041).
3. The appropriate neighborhood board as well as the area residents businesses, emergency and bus personnel should be kept apprised of the progress and details of the project as it moves forward.

Mr. John Katahira, Project Manager  
Page 2  
September 25, 2008

Should you have any questions on the matter, please contact Mr. Brian Suzuki at 768-8349.

Very truly yours,

A handwritten signature in black ink, appearing to read "Wayne Y. Yoshioka". The signature is fluid and cursive, with the first name "Wayne" being the most prominent.

WAYNE Y. YOSHIOKA  
Director



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Wayne Y. Yoshioka, Director  
City and County of Honolulu  
Department of Transportation Services  
650 South King Street, 3<sup>rd</sup> Floor  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Yoshioka,

Thank you for your letter dated September 25, 2008 (TP9/08-278803R) regarding the subject sewage treatment plant improvements project. The following items are offered in response to your written comments:

1. Section 3.14.1 of the forthcoming Draft Environmental Assessment (EA) discusses the subject project's potential short-term and long-term traffic impacts on the City and County of Honolulu (City) roadways and neighborhoods adjacent to the project site. Mitigation measures proposed to minimize any potential impacts on traffic and/or existing City transportation facilities are also provided in this section of the forthcoming Draft EA.
2. Regarding your comment item #2, coordination with both the Department of Transportation Services (DTS) and Oahu Transit Services, Inc. will be carried out to ensure minimal inconvenience to motorists and public transportation services as a result of the subject project, and both entities will be informed of the project construction schedule prior to the commencement of construction activities. Specifically, if the subject project will affect bus routes, bus stops, or paratransit operations, the contractor will be responsible for notifying the necessary DTS and Oahu Transit Services, Inc. personnel regarding the pertinent project details at least two weeks prior to construction activities. This written comment has been incorporated and addressed in Section 3.14.1 of the forthcoming Draft EA.
3. Numerous agencies, organizations, and individuals were consulted regarding the subject project during its planning stages and preparation of the forthcoming Draft EA. For example, Neighborhood Board No. 27 (North Shore) and recorded fee owners with properties neighboring the Kupuna Home O'Waiialua elderly public housing complex site were consulted as part of the pre-assessment consultation phase of the environmental review process. Such individuals and parties will continue to be consulted during the remainder of the environmental review process for the subject project. Details regarding this consultation effort are presented in Section 8 of the forthcoming Draft EA. Additionally, the necessary individuals and parties will be kept apprised of the progress and details of the subject project as it moves forward. For example, with the project site located near a church and school, the appropriate church and school administrators will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases.

Mr. Yoshioka  
December 1, 2008  
Page 2

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

A handwritten signature in black ink, appearing to read "John H. Katahira". The signature is fluid and cursive, with a long horizontal stroke at the end.

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843



September 22, 2008

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman  
SAMUEL T. HATA  
ALLY J. PARK  
ROBERT K. CUNDIFF  
MARC C. TILKER

CRAIG I. NISHIMURA, Ex-Officio  
BRENNON T. MORIOKA, Ex-Officio

CLIFFORD P. LUM  
Manager and Chief Engineer

DEAN A. NAKANO  
Deputy Manager and Chief Engineer

Mr. Chad K. Taniguchi, Executive Director  
Attn: Mitchell Kawamura, Project Engineer  
State of Hawaii  
Hawaii Public Housing Authority  
P.O. Box 17907  
Honolulu, Hawaii 96817

Dear Mr. Taniguchi:

Subject: The Letter Dated September 10, 2008 Regarding the Pre-Assessment Consultation, Draft Environmental Assessment Sewage Treatment Plant Improvements at Kupuna Home O'Waialua, TMK: 6-7-016:028

Thank you for the opportunity to comment on the proposed Sewage Treatment Plant Improvements at Kupuna Home O'Waialua.

We have no objections to the proposed project.

If you have any questions, please contact Robert Chun at 748-5440.

Very truly yours,

KEITH S. SHIDA  
Program Administrator  
Customer Care Division

cc: Mr. John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Keith S. Shida, Program Administrator  
City and County of Honolulu  
Board of Water Supply  
630 South Beretania Street  
Honolulu, Hawaii 96843

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Shida,

Thank you for your letter dated September 22, 2008 indicating the Board of Water Supply has no objections regarding the subject sewage treatment plant improvements project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

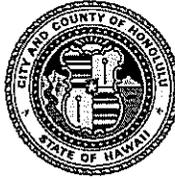
John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

HONOLULU FIRE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

636 South Street  
Honolulu, Hawaii 96813-5007  
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN  
MAYOR



KENNETH G. SILVA  
FIRE CHIEF

ALVIN K. TOMITA  
DEPUTY FIRE CHIEF

September 25, 2008

Mr. Mitchell Kawamura, Project Engineer  
Hawaii Public Housing Authority  
Department of Human Services  
State of Hawaii  
P.O. Box 17907  
Honolulu, Hawaii 96817

Dear Mr. Kawamura:

Subject: Preassessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waialua  
Waialua, Oahu, Hawaii  
Tax Map Key: 6-7-016: 028

In response to your letter of September 10, 2008, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the material provided and has no objections to the project.

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kenneth G. Silva".

KENNETH G. SILVA  
Fire Chief

KGS/SK:bh

cc: John Katahira, The Limtiaco Consulting Group ✓  
Chad Taniguchi, Hawaii Public Housing Authority



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Kenneth G. Silva, Fire Chief  
City and County of Honolulu  
Honolulu Fire Department  
636 South Street  
Honolulu, Hawaii 96813-5007

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Silva,

Thank you for your letter dated September 25, 2008 indicating that the Honolulu Fire Department has no objections to the subject sewage treatment plant improvements project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

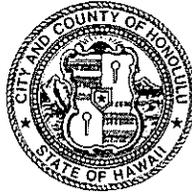
John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813  
TELEPHONE: (808) 529-3111 · INTERNET: www.honoluluupd.org

MUFI HANNEMANN  
MAYOR



BOISSE P. CORREA  
CHIEF

PAUL O. PUTZULU  
KARL A. GODSEY  
DEPUTY CHIEFS

OUR REFERENCE BS-KP

September 17, 2008

Mr. Chad K. Taniguchi, Executive Director  
Hawaii Public Housing Authority  
P.O. Box 17907  
Mililani, Hawaii 96817

Attention: Mr. Mitchell Kawamura, Project Engineer

Dear Mr. Taniguchi:

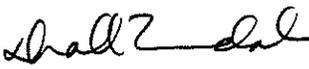
This is in response to a letter from The Limtiaco Consulting Group requesting comments for a Pre-Assessment Consultation, Draft Environmental Assessment, for the Sewage Treatment Plant Improvements at Kupuna Home O`Waialua project.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Bart Huber of District 2 at 621-3725 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

BOISSE P. CORREA  
Chief of Police

By   
DEBORA A. TANDAL  
Assistant Chief of Police  
Support Services Bureau

cc: ✓ Mr. John Katahira,  
The Limtiaco Consulting Group

*Serving and Protecting With Aloha*



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Boisse P. Correa, Chief of Police  
City and County of Honolulu  
Police Department  
801 South Beretania Street  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Correa,

Thank you for your letter dated September 17, 2008 indicating that the subject sewage treatment plant improvements project should have no significant impact on the Honolulu Police Department's facilities or operations.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority



October 31, 2008

Mr. Chad K. Taniguchi, Exec. Dir.  
Attn: Mr. Mitchell Kawamura, Project Engr.  
Hawaii Public Housing Authority  
State of Hawaii  
P.O. Box 17907  
Honolulu, HI 96817

Dear Mr. Taniguchi:

**Re: Sewage Treatment Plant Improvements  
Kupuna Home O'Waiialua  
Waiialua, Oahu (TMK: 6-7-016:028)**

Thank you for the opportunity to comment on the above-referenced project. Hawaiian Electric Company, Inc. (HECO) has no objections at this time. The following pre-assessment comments were received from the Transmission & Distribution Division of our Engineering Department:

- (1) HECO has underground facilities in the area of the proposed project, and will require continued access for maintenance purposes. We appreciate your efforts to keep us apprised of the planning process. As the renovation project progresses, please continue to keep us informed. We will be better able to evaluate any effects on our system facilities further along in the project's development. We request that development plans show all affected HECO facilities and address any conflicts between the proposed plans and our existing facilities. Please forward the pre-final development plans to HECO for review. A brief description and environmental analysis of any requirements for relocation or new facilities should be included in the DEA.
- (2) Should it become necessary to relocate HECO's facilities, please submit a request in writing and we will work with you so that construction of the project may proceed as smoothly as possible. Please note that there may be costs associated with any relocation work, and that such costs may be borne by the requestor. Because any redesign or relocation of our facilities may cause lengthy delays, upon determination that HECO facilities will need to be relocated or built, HECO should be notified immediately in order to minimize any delays in or impacts on the project schedule.

Our point of contact for this project is Michael Lum, Transmission & Distribution Division, Engineering Department (543-7030). I suggest dealing directly with him to coordinate HECO's continuing input in this project.

Sincerely,

Kirk S. Tomita  
Senior Environmental Scientist

cc: Mr. John Katahira (Limtiaco Cons. Group)  
M. Lum/R. Tamayo



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Kirk S. Tomita, Senior Environmental Scientist  
Hawaiian Electric Company, Inc.  
P.O. Box 2750  
Honolulu, Hawaii 96840-0001

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waiialua, Oahu, Hawaii

Dear Mr. Tomita,

Thank you for your letter dated October 31, 2008 regarding the subject sewage treatment plant improvements project. The following items are offered in response to your written comments:

1. It is recognized that Hawaiian Electric Company, Inc. (HECO) has existing underground facilities in the area of the Kupuna Home O'Waiialua elderly public housing complex site. HECO's facilities have been identified, and the location of all electrical utilities will be verified. Additionally, it is recognized that HECO will need continued access to its facilities located within the project site for maintenance purposes. Per your request, HECO will continue to be informed as the subject project develops and the construction plans will show any affected HECO facilities and address any conflicts between the proposed plans and such facilities. Two sets of the construction plans for the proposed sewage treatment plant improvements project will be submitted for review. HECO will also be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases. Your comments have been incorporated and addressed in Section 3.14.5 of the forthcoming Draft Environmental Assessment (EA).
2. As discussed in Section 3.14.5 of the forthcoming Draft EA, it is possible that utility relocations may be required and the need for such utility relocations will be investigated further and verified during the design phase. It is understood that if the relocation of HECO facilities is necessary, a written request should be submitted to HECO so that construction of the subject project may proceed as smoothly as possible. It is acknowledged that the relocation of utilities would likely impact the actual construction cost of the subject project. Overall, it is recognized that if any HECO facilities require relocating or any new HECO facilities are required, HECO shall be notified immediately.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

Hawaiian Telcom

September 12, 2008

Mr. Chad K. Taniguchi, Executive Director  
Attention: Mitchell Kawamura, Project Engineer  
State of Hawaii  
Hawaii Public Housing Authority  
P.O. Box 17907  
Honolulu, Hawaii 96817

Dear Mr. Kawamura:

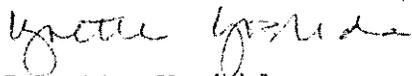
Subject: **Pre-Assessment Consultation, Draft Environmental  
Assessment Treatment Plant Improvements at Kupuna Home  
O'Waialua**

Thank you for the opportunity to review and comment on the subject project for the pre-assessment consultation phase of the draft Environmental Assessment.

At this time, Hawaiian Telcom does not have any comments to offer regarding any potential cultural and archaeological resource impacts.

If you have any questions or require assistance in the future on this project, please call Les Loo at 546-7761.

Sincerely,



Lynette Yoshida  
Section Manager - OSP Engineering  
Network Engineering & Planning

cc: J. Katahira - The Limtiaco Consulting Group  
File [Waialua]



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Ms: Lynette Yoshida, Section Manager  
Hawaiian Telcom  
Network Engineering and Planning  
OSP Engineering  
1177 Bishop Street  
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Ms. Yoshida,

Thank you for your letter dated September 12, 2008 indicating that Hawaiian Telcom has no comments to offer regarding any potential cultural or archaeological resource impacts associated with the subject sewage treatment plant improvements project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

# Transmittal



200 Akamainui Street • Mililani HI 96789  
(808) 625 - 2100

Date: September 15, 2008

RE: PROJECT LOCATION/WORK ORDER

To: Hawaii Public Housing Authority  
P.O. Box 17907  
Honolulu, HI 96817  
Fax 832-6030

Sewage Treatment Plant Improvements  
At Kupuna Home O'Waialua  
Waialua  
E-12886

Attention: Mr. Mitchell Kawamura

GENTLEMEN: We are sending you the following:

- |   |  |
|---|--|
| <input type="checkbox"/> Pole / Conduit Application | <input checked="" type="checkbox"/> Preliminary / Final Drawings |
| <input type="checkbox"/> Permit Applications        | <input type="checkbox"/> Return Prints                           |
| <input type="checkbox"/> Copy of Letter             | <input type="checkbox"/> Other                                   |

| Copies | Sht / Appl. # | Description       |
|--------|---------------|-------------------|
| 1      |               | CATV site drawing |
|        |               |                   |
|        |               |                   |
|        |               |                   |

The Above is transmitted:

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> For Your Approval                 | <input type="checkbox"/> As Requested |
| <input type="checkbox"/> For Review and Comment            | <input type="checkbox"/> As Approved  |
| <input checked="" type="checkbox"/> For Your Use / Records | <input type="checkbox"/> Other        |

Comments / Remarks: Oceanic TWC has underground plant in a telephone infrastructure within the housing area. Please see attached drawing. If any questions, pls call me at 625-8456 and reference# E-12886.

Thank-you,

CC: E-12886

Sewage Plant at Kupuna  
Home O'Waialua.dwg.

Signed: Dean Yonezawa  
Title: OSP Engineer (Dean Yonezawa)

JOHN KATAHIRA





THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Dean Yonezawa, OSP Engineer  
Oceanic Time Warner Cable  
200 Akamainui Street  
Mililani, Hawaii 96789

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waiialua, Oahu, Hawaii

Dear Mr. Yonezawa,

Thank you for your transmittal dated September 15, 2008 regarding the subject sewage treatment plant improvements project. Per the as-built drawings you provided with your transmittal, the existing location of all Oceanic Time Warner Cable's (Oceanic's) aboveground and underground cable utilities adjacent to and within the Kupuna Home O'Waiialua project site have been identified. Additionally, it is understood that Oceanic has underground cable utilities in telephone infrastructure within the project site. Your comments have been incorporated and addressed in Section 3.14.5 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority



**GAS**

P.O. Box 3000  
Honolulu, Hawaii 96802-3000

September 23, 2008

Mr. Chad K. Taniguchi  
Executive Director  
State of Hawaii  
Hawaii Public Housing Authority  
P. O. Box 17907  
Honolulu, Hawaii 96817

Attention: Mr. Mitchell Kawamura  
Project Engineer

Gentlemen:

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Waiialua, Oahu, Hawaii  
Gas Map Request

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In response to your letter dated September 10, 2008, we are sending one (1) gas supply line plan of the project site for your use and information. Also enclosed is a copy of our gas line symbols for your information.

All information provided by The Gas Company, LLC, including but not limited to plans, maps, prints, and site indications are approximations only of its facilities and its pipelines. The party receiving such information shall have sole responsibility for field verification to determine the actual locations of such facilities and pipelines.

Should there be any questions, or if additional information is desired, please call Stason Nishimura at 594-5689.

Sincerely,

The Gas Company, LLC

Charles E. Calvet, P.E.  
Manager, Engineering

CEC:krs  
08-175

Attachments

cc: ✓ Mr. John Katahira, The Limtiaco Consulting Group



SUPPLY LINE (SIZE NOTED)

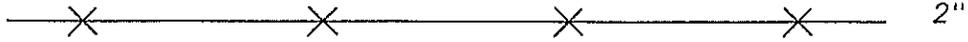
GREATER THAN 4"



4"



3"



2"



1 1/2 "



1 1/4 "



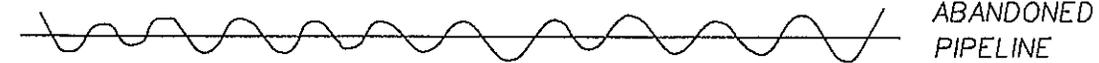
1 "



3/4 "



1/2" or 5/8"



ABANDONED PIPELINE

\*PLASTIC PIPES NOTED WITH "PE" or "PT"

|  |                        |                    |                |                  |
|--|------------------------|--------------------|----------------|------------------|
|  | Engineering Department |                    | project number |                  |
|  | GAS LINE SYMBOLS       |                    |                |                  |
|  | T.M.K.                 |                    |                |                  |
|  | prepared by:<br>RP     | checked by:<br>KKY | scale:<br>NONE | date:<br>10-2-03 |



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Charles E. Calvet, P.E., Manager  
The Gas Company  
Engineering Department  
P.O. Box 3000  
Honolulu, Hawaii 96802-3000

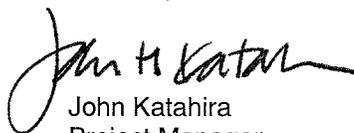
Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waiialua  
Tax Map Key: 6-7-016:028  
Waiialua, Oahu, Hawaii

Dear Mr. Calvet,

Thank you for your letter dated September 23, 2008 regarding the subject sewage treatment plant improvements project. Per the gas supply line plans you provided with your letter, the existing location of all The Gas Company's underground gas lines within the Kupuna Home O'Waiialua project site have been identified. Additionally, it is understood that the plans provided are approximations of The Gas Company's facilities and utility lines. As such and per your comments, the actual locations of all gas utilities within the project site will be verified through topographic surveys to be conducted in support of the design phase for the subject project. Your comments have been incorporated and addressed in Section 3.14.5 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

***Kawaihapai Ohana***

***c/o Thomas T Shirai Jr***

***P O Box 601***

***Waiialua, HI 96791***

***Email: [Kawaihapai@hawaii.rr.com](mailto:Kawaihapai@hawaii.rr.com)***

**October 6, 2008**

**The Limtiaco Consulting Group**

650 Iwilei Road, Suite 208

**Honolulu, HI 96817**

**Attn: John Katahira, Project Manager**

**RE: Comments Regarding Draft Environmental Assessment for Sewage Treatment Plant Improvements**

**At Kupuna Home O 'Waiialua (TMK: 6-7-016:028)**

*Aloha Kakou,*

The *Kawaihapai Ohana* would like to thank you for the opportunity to provide comments regarding this project for your *Draft Environmental Assessment (DEA)*. This project is needed to upgrade the sewage facility and accommodations for the residents which includes *Kupuna*.

Included in the mission statement of the *Kawaihapai Ohana* is recognition of *Na Kupuna of Waiialua Moku* with an emphasis on those of our *Ohana* originating at *Kawaihapai Ahupua'a*. Therefore *mo'okuauhau (genealogy)* is very important. There are (2) streets named after our *Kupuna* and (1) with an affiliation with our *Ohana*:

***Kupahu Street***

***Nahoa Street***

***Kealohanui Avenue***

Although these comments reflect the *Kawaihapai Ohana*, there were other *Po'e Kanaka Ohana* that also have ties here. Another facet of the mission statement of *Kawaihapai Ohana* is preservation of *Aina Inoa (Place Names)* and this project is situated in *Kamananui Ahupua'a* which is apart of *Waialua Moku*.

The *Kawaihapai Ohana* supports this project and in the event that ancestral remains (*Iwi Kupuna*) are encounter we'd like assurance that it would comply in accordance with *HRS Chapter 6E* and or *NAGPRA (Native American Graves Protection Act) Chapter 106*.

The *Kawaihapai Ohana* request to be continued on your notification list especially in regards to previously mentioned. *Malama Aina*.

*Thomas T Shirai Jr*

*Kawaihapai Ohana – Po'o*



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Kawaihapai Ohana  
c/o Mr. Thomas T. Shirai, Jr.  
P.O. Box 601  
Waialua, Hawaii 96791

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Kawaihapai Ohana,

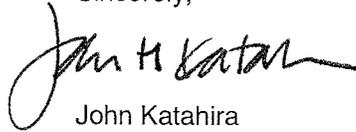
Thank you for your letter dated October 6, 2008 regarding the subject sewage treatment plant improvements project. As you point out, the subject project will improve the existing sewage treatment plant and wastewater system accommodations at the Kupuna Home O'Waialua elderly public housing complex. The following are offered in response to your written comments:

- We acknowledge that the *Kawaihapai Ohana's* mission statement includes recognition of *Na Kupuna* of the *Waialua Moku* (with an emphasis on those originating at the *Kawaihapai Ahupua'a*) and that genealogy is important to the *Kawaihapai Ohana*. As such and per your contributions, it is understood that the *Kupahu*, *Nahoa*, and *Kealohanui* street names are culturally significant as they can be linked to families originating from the *Waialua Moku*. It is also understood that there are other *Po'e Kanaka Ohana* that have ties to this area. As such, in addition to the contacting *Kawaihapai Ohana*, we have contacted individuals based on a review of the State Office of Environmental Quality Control's list of Cultural Assessment Providers in the area and per the guidance of the State of Hawaii, Office of Hawaiian Affairs. Additionally, we acknowledge that the *Kawaihapai Ohana's* mission statement also includes preservation of place names. As such and per your contributions, it is understood that the project site is situated *Kamananui Ahupua'a*, which is part of the *Waialua Moku*. This written comment has been incorporated and addressed in Section 3.11 of the subject project's forthcoming Draft Environmental Assessment (EA).
- We appreciate the *Kawaihapai Ohana's* support of the subject project. It is acknowledged that with any construction project involving land disturbance and alterations, there is always the possibility that human burials or other potentially significant subsurface archaeological resources could be encountered. Therefore, the following measures will be implemented: For all construction activities conducted in association with the subject project, work will cease immediately if any historic remains or other potentially significant subsurface archaeological resources are encountered during construction activities and the find will be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division of the Department of Land and Natural Resources to assess the significance of the find and recommend an appropriate mitigation measure, if necessary. This written comment has been incorporated and addressed in Section 3.11 of the forthcoming Draft EA.
- A copy of the subject project's forthcoming Draft EA will be distributed to the *Kawaihapai Ohana*.

Kawaihapai Ohana  
December 1, 2008  
Page 2

Your interest and participation in the pre-assessment consultation phase of the environmental review process is appreciated. Your letter, along with this response, will be included in the forthcoming Draft EA. Should you have any questions, please contact me at 596-7790.

Sincerely,

A handwritten signature in black ink, appearing to read "John H. Katahira". The signature is fluid and cursive, with a large initial "J" and a long horizontal stroke at the end.

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

**Thomas T Shirai Jr**

**P O Box 601**

**Waialua, HI 96791**

**Email: [Kawaihapai@hawaii.rr.com](mailto:Kawaihapai@hawaii.rr.com)**

**October 6, 2008**

**The Limtiaco Consulting Group**

**650 Iwilei Road, Suite 208**

**Honolulu, HI 96817**

**Attn: John Katahira, Project Manager**

**RE: Comments Regarding Draft Environmental Assessment for Sewage Treatment Plant Improvements**

**At Kupuna Home O 'Waialua (TMK: 6-7-016:028)**

*Aloha Kakou,*

I would like to thank you for the opportunity to provide comments regarding this needed project to improve the quality of life conditions for residents and reflect me as an individual.

I'd like to provide some pertinent background about myself. I'm a 10<sup>th</sup> generation of a *Hawaiian Ohana* of *Waialua Moku* with an emphasis on the *Northwest Coastline* that includes *Kawaihapai Ahupua'a* where my *Ohana* originated from. My *Kupuna* were informants for the *Bishop Museum* and featured in their publications entitled:

***Archeology of Oahu (McAllister – 1933):***

***Annie Keahipaka – (Great-Great Grand Aunt/Grandmother)***

***The Hawaiian Planter (Handy – 1940):***

***Kaaemoku Kakulu – (Great-Great Grandfather)***

***David Keaau (Keao) – (Great Grandfather)***

**Page 2**

Please note that the informant is my *Grandfather's (David Peahi Keao Jr)* Father and is his oldest child. My Grandfather was a noted carpenter in *Waialua* and a testament to his expertise is why *Otake Store* is still standing. My Grandmother (*Abigail Kalomi Akau*) worked as a custodian at *Waialua High & Intermediate School* for 30 years (1948-1978). Prior to that my Great Grandfather was the custodian when it was known as *Andrew E Cox School*.

I have served on the *Oahu Island Burial Council (Waialua Moku Representative)* working with the *State Historic Preservation Division (SHPD)* regarding protection of *Iwi Kupuna*. I've also been recognized by the *State Historic Preservation Division* as a *lineal or cultural descendant* for specific places within *Waialua Moku* regarding protection of *Iwi Kupuna*.

I've also served on *The Office of Hawaiian Affairs's (OHA) Native Hawaiian Historic Preservation Council (NHHPC)*. Additionally, I'm an active community constituent which attends the *North Shore Neighborhood Board 27* monthly meetings.

My *kuleana* the keeper of my family's *mo'okuauhau (genealogy)*. There are (2) streets named after our *Kupuna* and (1) street name affiliated with my *Ohana* and they are:

***Kupahu Street***

***Nahoa Street***

***Kealohanui Avenue***

Among these names *Kupahu* is the most known because he owned a parcel during the time of *The Mahele (Grant 855)* which is situated in *Kamananui Ahupua'a* and was used to grow *mea ai (food crops)*. Additionally old *Waialua Sugar Company* maps indicated a *tract* of land running thru that location and adjacent to *Waialua High & Intermediate School (Mokuleia boundary)* known as the *Kaemoku Tract (informant)*

Although these comments reflect my *Ohana*, there were other *Po'e Kanaka Ohana* that also have ties here. Another *kuleana* I have is preservation of *Aina Inoa (Place Names)* and this project is situated in *Kamananui Ahupua'a* which is apart of *Waialua Moku*.

In the event that *Iwi Kupuna* are encounter we'd like assurance that it would comply in accordance with *HRS Chapter 6E* and or *NAGPRA (Native American Graves Protection Act) Chapter 106*.

I respectfully request to be continued on your notification list during this process to completing an *Environmental Accessment (EA)*. Look forward hearing from you regarding these comments for this important project. *Malama Aina*.

*Thomas T Shirai Jr*



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Thomas T. Shirai, Jr.  
P.O. Box 601  
Waialua, Hawaii 96791

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Shirai,

Thank you for your letter dated October 6, 2008 regarding the subject sewage treatment plant improvements project. As you point out, the subject project will improve the existing sewage treatment plant and wastewater system accommodations at the Kupuna Home O'Waialua elderly public housing complex. The following are offered in response to your written comments:

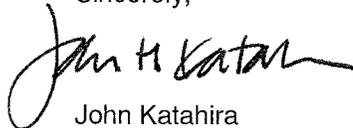
- We appreciate you providing and sharing such pertinent background information about yourself as well as your *Kupuna*.
  - We recognize that you are a 10<sup>th</sup> generation descendant of a *Hawaiian Ohana* of the *Waialua Moku* with an emphasis on the area that includes the *Kawaihapai Ahupua'a* (which is were your *Ohana* originated from).
  - It is understood that your *Kupuna* were informants for the Bishop Museum, featured in some of their publications, and worked and served in the *Waialua* area for numerous years.
  - We understand you have served on the Oahu Island Burial Council to work with the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR) and have been recognized by the SHPD as a lineal or cultural descendant for specific places within the *Waialua Moku* regarding the protection of *iwi kupuna*. In fact, during the pre-assessment consultation phase, we received a comment letter from the State of Hawaii, Office of Hawaiian Affairs (OHA) suggesting we may contact you regarding information you may have related to the subject project's possible impacts on the traditional and cultural practices and beliefs of any cultural or ethnic group(s).
  - We also recognize that you have served on the OHA's Native Hawaiian Historic Preservation Council and that you are an active community member (attending the North Shore Neighborhood Board No. 27 monthly meetings). Please note that the Neighborhood Board No. 27 was consulted during the pre-assessment consultation phase regarding the subject project.
- We acknowledge your *kuleana* as the keeper of your family's genealogy. As such and per your contributions, it is understood that the *Kupahu*, *Nahoa*, and *Kealohanui* street names are culturally significant as they can be linked to families originating from the *Waialua Moku*. It is also understood that *Kupahu* is the most know as he owned a parcel of land during the time of *The Mahele* (Grant 855), which is situated in the *Kamananui Ahupua'a*. This parcel of land was used to grow food crops. Your comment has been incorporated and addressed in Section 3.11 of the subject project's forthcoming Draft Environmental Assessment (EA).
- It is recognized recognize there are other *Po'e Kanaka Ohana* that have ties to this area. As such, in addition to contacting your *Ohana*, we have contacted individuals based on a review

of the State Office of Environmental Quality Control's list of Cultural Assessment Providers in the area and per the guidance of the OHA. Additionally, we acknowledge that your *kuleana* also includes preservation of place names. As such and per your contributions, it is understood that the project site is situated *Kamananui Ahupua'a*, which is part of the *Waialua Moku*. This written comment has been incorporated and addressed in Section 3.11 of the forthcoming Draft EA.

- It is acknowledged that with any construction project involving land disturbance and alterations, there is always the possibility that human burials or other potentially significant subsurface archaeological resources could be encountered. Therefore, the following measures will be implemented: For all construction activities conducted in association with the subject project, work will cease immediately if any historic remains or other potentially significant subsurface archaeological resources are encountered during construction activities and the find will be protected from further damage. The contractor shall immediately contact the SHPD of the DLNR to assess the significance of the find and recommend an appropriate mitigation measure, if necessary. This written comment has been incorporated and addressed in Section 3.11 of the forthcoming Draft EA.
- A copy of the subject project's forthcoming Draft EA will be distributed to your *Ohana* specifically to your attention.

Your interest and participation in the pre-assessment consultation phase of the environmental review process is appreciated. Your letter, along with this response, will be included in the forthcoming Draft EA. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

## Phone Log

|   |            |            |         |               |           |
|---|------------|------------|---------|---------------|-----------|
| Contact:  | Vena Chang | Date:      | 9/18/08 | Time of Call: | 9:15 a.m. |
| Company:  |            | Position:  |         |               |           |
| Phone:  |            | Fax:       |         |               |           |
| Email address:  |            | Project #: | 16901   |               |           |
| <input checked="" type="checkbox"/> Call/conference call <input type="checkbox"/> Voicemail/message <input type="checkbox"/> Will call back <input type="checkbox"/> Follow-up required   |            |            |         |               |           |
| <p>Notes:</p> <p>Vena Chang is a resident of a neighboring parcel (TMK 6-7-009:024).</p> <ul style="list-style-type: none"><li>• The previous on-site property manager at the Kupuna Home O'Waialua, Donnie, has left. There has since been no property manager present 24/7. New property management comes and goes during the day, but there is no evening supervision.</li><li>• Since Donnie has left homeless have begun to stay at the property overnight, on-site domestic situations have increased significantly, there has been and increase in break-ins, and the on-site parking lot seems to be full all of the time. HPD is called frequently.</li><li>• Vena has been working with Representative Mike Magaoay to resolve these problems.</li><li>• There is concern that construction equipment will not be safe under current conditions.</li><li>• Vena does not have problems concerning the existing STP.</li><li>• Vena is not aware of any cultural or architectural impacts.</li></ul> |            |            |         |               |           |



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Ms. Vena Chang  
P.O. Box 1155  
Waialua, Hawaii 96791

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Ms. Chang,

Thank you for your phone call on September 18, 2008 regarding the subject sewage treatment plant improvements project. The following items are offered in response to your verbal comments:

- It is our understanding that you have concerns regarding the property management and domestic situations at the Kupuna Home O'Waialua elderly housing complex site. You stated that since the housing complex's previous on-site property manager left, there has been no property manager present 24-hours-a-day seven-days-a-week and the new property management comes and goes during the day with no overnight supervision. You also stated that since the housing complex's previous on-site property manager left, various problems have occurred: homeless have begun to stay at the property overnight, on-site domestic situations have increased significantly, there has been an increase in break-ins, and the on-site parking lot seems to be full all of the time. As such, the Honolulu Police Department is called frequently and you have been working with Representative Mike Magaoay of the 46<sup>th</sup> Representative District to resolve these problems. Please note that management and domestic issues regarding the Kupuna Home O'Waialua elderly public housing complex are not part of the scope of work for the subject project, although your concerns have been forwarded to the Hawaii Public Housing Authority.
- You stated that construction equipment will not be safe and may be stolen under current conditions at the project site, and we acknowledge your concern. Please note that it is the responsibility of the contractor to ensure all associated construction equipment is secured. As such, the contractor will be informed of your concern and the current conditions at the site.
- It is our understanding that you do not have concerns regarding the existing on-site package sewage treatment plant serving the Kupuna Home O'Waialua elderly housing complex.
- Finally, we recognize that you have no comments to offer regarding and are not aware of any potential cultural or archaeological resource impacts associated with the subject project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority

650 WILEI ROAD, SUITE 208 HONOLULU, HAWAII 96817

TEL (808) 596-7790 FAX (808) 596-7361

www.tlcbhawaii.com



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

## Phone Log

|   |              |            |         |               |  |
|---|--------------|------------|---------|---------------|--|
| Contact:  | Carl Higgins | Date:      | 9/22/08 | Time of Call: |  |
| Company:  |              | Position:  |         |               |  |
| Phone:  |              | Fax:       |         |               |  |
| Email address:  |              | Project #: | 16901   |               |  |
| <input type="checkbox"/> Call/conference call <input checked="" type="checkbox"/> Voicemail/message <input type="checkbox"/> Will call back <input checked="" type="checkbox"/> Follow-up required  |              |            |         |               |  |
| Notes:<br><br>Carl Higgins is a neighboring land owner (TMK 6-7-009:023). <ul style="list-style-type: none"><li>• There are concerns over noise generated by the sewage treatment plant. Would like to request a quieter system.</li><li>• Wondering whether the sewage treatment plant improvements will support higher population densities.</li><li>• Concerned that construction equipment may be stolen.</li></ul> |              |            |         |               |  |



THE LIMTIACO CONSULTING GROUP  
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

December 1, 2008

Mr. Carl Higgins  
P.O. Box 55  
Waialua, Hawaii 96791

Subject: Pre-Assessment Consultation, Draft Environmental Assessment  
Sewage Treatment Plant Improvements at Kupuna Home O'Waialua  
Tax Map Key: 6-7-016:028  
Waialua, Oahu, Hawaii

Dear Mr. Higgins,

Thank you for your voice message on September 22, 2008 regarding the subject sewage treatment plant improvements project. The following items are offered in response to your verbal comments:

- It is our understanding that you have concerns regarding noise that may be generated by the on-site package sewage treatment plant serving the Kupuna Home O'Waialua elderly public housing complex. Please note that the subject project will involve the replacement of the existing on-site package sewage treatment plant which serves the present facilities within the project site. The new wastewater treatment system will be buried underground and will include an aboveground noise-attenuating enclosure in order to mitigate for potential noise impacts. The forthcoming Draft Environmental Assessment (EA) discusses the sewage treatment plant improvements in detail and Section 3.10 of the Draft EA addresses any potential noise impacts associated with the subject project.
- We understand that you inquired as to whether the sewage treatment plant improvements will support higher population densities. Please note that the subject project does not seek to support further population growth or an increase in population density at the Kupuna Home O'Waialua housing complex or in the surrounding area. The improvements are intended to be a replacement of existing wastewater system infrastructure which serves the present facilities and uses within the project site. Specifically, the subject project will involve the replacement of the existing on-site package sewage treatment plant with a new wastewater treatment system of the same design capacity. Therefore, the improvements will not support further population growth or an increase in population density.
- You stated that construction equipment will not be safe and may be stolen under current conditions at the project site, and we acknowledge your concern. Please note that it is the responsibility of the contractor to ensure all associated construction equipment is secured. As such, the contractor will be informed of your concern and the current conditions at the site.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira  
Project Manager

cc: Mr. Mitchell Kawamura, Project Engineer, Hawaii Public Housing Authority