Alan S. Downer, PhD, Administrator
State of Hawai‘i, Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Rm. 555
Kapolei, HI 96707
Email: dlnr.intake.shpd@hawaii.gov

May 23, 2019

Dear Dr. Downer:

Subject: National Historic Preservation Act (NHPA)
Request to Initiate Section 106 Consultation
Lanikai Wastewater Pump Station Force Main Replacement
Clean Water State Revolving Fund Project No. C150006-31
Lanikai 1-2/Mo’aleo ‘Ahu’u’a, Kona Moku, Island of Hawai’i
TMK: (3) 7-5-006:999 (Road Right-of-Way)

On behalf of the Environmental Protection Agency (EPA), the State of Hawai‘i Department of Health (DOH) would like to invite you to participate in consultation for the proposed Lanikai Wastewater Pump Station Force Main Replacement project located in Lanikai 1-2/Mo’aleo ‘Ahu’u’a, Kona Moku, Island of Hawai‘i.

The proposed project will utilize federal funding that is administered by the DOH through the Clean Water State Revolving Fund (CWSRF) and will be considered a federal action and undertaking, as defined by Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (2006).

The EPA has authorized the DOH to act on behalf of the EPA regarding NHPA Section 106 notification and consultation. This letter is to initiate Section 106 consultation with the State Historic Preservation Division (SHPD) in accordance with Title 36 of the Code of Federal Regulations (CFR), Section 800.3.

The DOH is providing funding under the CWSRF to the County of Hawai‘i, Department of Environmental Management Wastewater Division (WWD) for the Lanikai Wastewater Pump Station Force Main Replacement project. The proposed project will utilize federal funding and is considered and undertaking, as defined by Section 106 of the NHPA, 54 U.S.C. Section 36101 et seq., and 36 CFR Part 800.

In addition, the EPA requests the State Historic Preservation Officer’s (SHPO’s) concurrence on the Area of Potential Effect (APE), pursuant to Section 106 of the NHPA and 36 CFR Section 800.4(a)(1).
Undertaking Description and Area of Potential Effect

The project will replace a sewer force main under Palani Road between Kuakini Highway and Aliʻi Drive, located in Kailua-Kona, Hawai‘i. Please refer to Enclosure 1: Project Location and Vicinity Map.

The replacement of the Lanihau Force Main is a prime concern for the WWD. The force main’s deteriorated condition led to a rupture on June 12, 2017 that resulted in an accidental discharge of untreated wastewater into Kailua Bay. The two points of failure were found under Palani Road and emergency repairs were completed on June 15, 2017. The WWD made a determination that the 55-year-old Lanihau Force Main reliability has been compromised due to corrosion, and the pipe is at the end of its useful life. The existing 6-inch cast iron force main was constructed in 1962. The cast iron pipe material has deteriorated from likely both internal corrosion from sewage flow as well as external corrosion from the environment the pipe is buried in. The consequences of failure for the Lanihau FM are substantial considering the high indirect cost associated with damage to the environment and closure of the popular tourist destination, Kailua Bay. A decision to replace the force main was made taking into account its age, high consequence of failure, history of previous failure, and strong likelihood of future failure based on the corrosion levels observed when the pipe was exposed during the repairs.

The proposed undertaking is shown on Enclosure 2: Force Main Replacement and Enclosure 3: Construction Plans. The planned work includes:

- Removal of an existing 6-inch diameter cast iron force main beneath the roadway.
- Installation of a new 8-inch diameter PVC pipe force main in same location and trench as removed pipe.
- Connection of the new force main to existing discharge piping inside of the Lanihau Waste Water Pump Station valve vault
- Connection of the new force main to the discharge manhole on Kuakini Highway
- Trenching for approximately 684 linear feet, at a maximum width of 30 inches, and to a depth of 3 to 10 feet (variable).
- Roadway pavement restoration following force main installation.
- Rehabilitation of discharge manhole on Kuakini Highway and one other manhole on Kuakini Highway.

The proposed project’s APE lies entirely in the existing County of Hawai‘i roadway right-of-way. Please refer to Enclosure 4: TMK Map and Enclosure 5: Area of Potential Effect (APE) Boundary. The APE includes all construction, access, and staging areas. All of the surrounding parcels are developed as commercial properties built between 1971 and 2013, including hotel and resort uses and a commercial retail property. For images of the project area, please see Enclosure 6: Photographs of Project Area.

There are no National Register of Historic Places (NRHP) listed or eligible historic properties identified in the APE or any of the adjacent parcels, and no buildings or structures that are more than 50 years of age. The proposed project would not affect any historic buildings, structures, or previously identified archaeological sites.
Environmental, Historical, and Archaeological Background

The project area is located on the western side of Hawai‘i Island in the Kona (meaning “leeward”) District, in the coastal area at the foot of Mount Hualālai. It is entirely within the urban area of Kailua-Kona. The project lies within the ahupua‘a of Lanihau 1-2 (meaning “cool heaven” and Moeauoa (meaning “current going in various directions”). In this part of Kona, the land divisions are narrow and some such as these converge when they reach the shoreline. Soil types in the project area are lava flows with 2-20% slopes, part of the Hualālai volcano’s activity from more than 200 years ago.

Expansion of the pre-Contact population in Kona is believed to have occurred in the late 15th century under the leadership of ‘Umi-a-Liloa (ancestor of Kamehameha I), a chief who transferred his court to Kona from Waipi‘o. The people practiced diversified agriculture in what was later described as the Kona Field System (Newman 1970, in Ellison and Kennedy 2004). Land uses roughly corresponded to zones from mauka to makai. The project area lies within the makai area of the kula zone, where land uses would have included permanent residences, small gardens of sweet potato, coconut trees, and land-based activities supporting nearshore aquaculture and fishing (Ellison and Kennedy 2004). This settlement was initially known as Kaiakeakua. A long-established canoe landing and a cluster of hale, some of them homes of the royal family and court, were located at Kailua Bay, near the makai end of the project APE, where the large Kailua Pier currently stands (John Papa ʻĪʻī). Pa ʻo ʻUmi, a small point of land along the seawall in this area, is said to have been the location of the residence of ‘Umi-a-Liloa.

The village of Kaiakeakua, later known as Kailua-Kona, was formally King Kamehameha I’s seat of government prior to his unification of the Hawaiian Islands in 1795. He later returned and lived at Kamakahonu (meaning “eye of the turtle”), on the western side of Kailua Bay, continuing to rule the Kingdom of Hawai‘i from this seat from 1812 until his death in 1819. The rock for which Kamakahonu was named appears on early maps, but is now covered by the Kailua Pier. Maps show that the inland area in the APE vicinity had a few buildings on the outskirts of, likely associated with the Kamakahonu compound as early as 1819. Although these buildings were demolished and changed multiple times as the town developed.

In 1820, the first Christian missionaries to land in Hawai‘i stepped ashore at Kailua Bay, on a rock that was later covered over by Kailua Pier. These missionaries established the Mokuaikaua Church.

In the 19th century, Kailua-Kona served as a favorite residence and retreat for members of the Hawaiian royal family. Despite its association with Hawaiian royalty, Kailua-Kona remained essentially a small village, with the population of the area focused on fishing and subsistence agriculture. By the turn of the century, Kailua Bay had a shipping wharf used by the ranching and sugar industries. However, little changed until tourism became the area’s primary economic driver in the late 20th century.

During the Māhele ʻĀina beginning in 1846, the system of land ownership and use patterns across the Hawaiian Islands was altered under the direction of Kamehameha III. Land was divided into Crown Lands, Government Lands, and lands granted to the ali‘i. By 1850, commoners and foreigners were also permitted to own land. Royal Patent Grants (RPG) were issued in government land purchase transactions as proof of ownership. Many of the lands in Kailua-Kona were retained in government and royal family ownership. The project is located within an area that was designated Government Land in 1848. Several land grants were
awarded later in the vicinity. The entire ahupua’a of Lanihau Nui, which covered the current project APE, was granted to William C. Lunalilo (King of Hawai‘i 1873-1874). In 1875, two years before his death at age 22, William Pitt Leleiohoku II, a prince of the Kingdom of Hawai‘i, brother of King Kalākaua and hānai heir to Ruth Ke‘elikōlani, was granted the ahupua’a of Moeauoa as well as a house lot at Kaiakea kua. These holdings appear to have included the project area (RPG 7465, Helu 9971:41).

A 1913 map shows substantial changes by the turn of the twentieth century as Kailua-Kona became a more commercial center. The current alignment of Palani Street is shown as “Government Road” connecting the bayfront road to inland routes. A wharf and warehouses supporting the sugar trade dominated the bayfront in the vicinity, and American Factors had a large building on the corner of the Government Road.

The project area vicinity was thoroughly transformed by development for tourism in the 1970s and 1980s. All parcels along both sides of the road are fully developed, with extensive paving and large commercial buildings including high-rise hotels. A review of the property records show that the development of these parcels occurred primarily from 1971 to 1975, with numerous modifications in subsequent years.

Historic Properties Identification

The APE and adjacent parcels are heavily developed and do not include any known historic properties. While there are NRHP-listed and eligible historic properties in the vicinity, these all lie outside and out of sight of the project APE and would not be affected by project activities.

Archaeological Surveys and Historical Studies

Numerous archaeological surveys have occurred in the general vicinity. See Table 1 for a summary of reports related to the surveys that have occurred in and near the APE.

<table>
<thead>
<tr>
<th>Name (Year)</th>
<th>Location</th>
<th>Study type</th>
<th>Sites identified and notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stokes (1906)</td>
<td>Lanihau and Keaholū coast.</td>
<td>General survey</td>
<td>Heiau and numerous other sites throughout the coastal region noted.</td>
</tr>
<tr>
<td>Reinicke (1930)</td>
<td>Lanihau and Keaholū coast.</td>
<td>Reconnaissance Survey</td>
<td>Heiau and numerous other sites throughout the coastal region noted.</td>
</tr>
<tr>
<td>Rosendahl (1979)</td>
<td>Three parcels totaling 220 acres, including parcels adjacent to Queen Kaahumanu Highway and Palani Road, starting about 100 feet outside the current project APE.</td>
<td>Archaeological Reconnaissance Survey</td>
<td>13 features or feature complexes recorded in survey area; none within or near current project APE.</td>
</tr>
<tr>
<td>Donham (1990)</td>
<td>1,100 acre six-parcel area owned by Queen Liliuokalani Trust on the</td>
<td>Archaeological Inventory Survey</td>
<td>239 sites, including 1,810 features were located, almost all</td>
</tr>
<tr>
<td>Reference</td>
<td>Location</td>
<td>Description</td>
<td>Survey Type</td>
</tr>
<tr>
<td>-----------</td>
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<td>-------------</td>
</tr>
<tr>
<td>O’Hare and Rosendahl (1993)</td>
<td>east side of Queen Ka’ahumanu Highway north of Palani Road; edge of area is adjacent to north end of current project APE.</td>
<td>agricultural features, mostly in upland areas away from APE.</td>
<td>Archaeological Inventory Survey</td>
</tr>
<tr>
<td>Perzinski et al. (2004)</td>
<td>TMK (3) 7-4-008:020, more than 2,000 feet outside of the current project APE.</td>
<td>Archaeological Inventory Survey</td>
<td>One habitation site (50-10-28-23798); not within or near current APE.</td>
</tr>
<tr>
<td>Elison and Kennedy (2004)</td>
<td>Kailua-Kona, TMK (3) 7-5-006:001, about 900 feet outside the current project APE.</td>
<td>AIS Report</td>
<td>Two sites, including a complex of mortared stone structures and a complex of boundary walls (Sites 50-10-28-24184 and -24185), not within APE.</td>
</tr>
<tr>
<td>Simonson, Schideler and Hammatt (2010)</td>
<td>Kailua-Kona, TMK (3) 7-5-005:007 and 083, directly southwest of the current project APE.</td>
<td>Literature Review and Field Inspection</td>
<td>32 archaeological sites including burials, concentrated in the central and western portions of the surveyed area, away from the APE. No site numbers are provided.</td>
</tr>
</tbody>
</table>

**Historic Properties Inventory**

Outside and out of view of the project, but within approximately 0.25 mile of the APE along the Kailua Bay waterfront, are three NHRP-listed historic properties: Kamakahonu National Historic Landmark, Hulihe‘e Palace, and Mokuauikaua Church. Known historic properties within 0.25 mile of the APE are shown in Table 2 below and on Enclosure 7: Map of Historic Properties Relative to APE. The project activities will not be visible from or otherwise affect these historic properties.

A request was made on April 30, 2019 to the State Historic Preservation Division (SHPD) for available GIS data showing locations and information for State Inventory of Historic Places (SIHP) sites in the project vicinity. A response has not yet been received. When information is received, any other sites that have been determined NRHP eligible within 0.25 mile of the project APE will be added to the table.
Table 2. Inventoried historic properties located in the project vicinity, identifying relationship to APE.

<table>
<thead>
<tr>
<th>SIHP #, NRHP, HRHP status (if applicable)</th>
<th>Historic Property Name</th>
<th>Description</th>
<th>Relationship to APE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-10-27-7002; NRHP #66000288</td>
<td>Kamakahonu National Historic Landmark (NHL)</td>
<td>Located on the grounds of the King Kamehameha Hotel, Kamakahonu’s documented history dates to 1812. This is the location where Kamehameha I resided in his later years as well as where the first missionaries landed in Hawai‘i in 1820. Many of the NHL’s associated structures were destroyed, but were reconstructed in the 1970s.</td>
<td>On Kaahumanu Place, TMKs (3) 7-5-006:024 and :032, approximately 600 feet outside the APE, across part of Kailua Bay</td>
</tr>
<tr>
<td>50-10-28-7001; NRHP #73000653</td>
<td>Hulihe‘e Palace</td>
<td>Located about 1,000 feet to the east of the current project APE along Ali‘i Drive, this royal residence was built in 1838.</td>
<td>75-5718 Ali‘i Drive, TMK (3) 7-5-007:020. Approximately 1,000 feet outside APE.</td>
</tr>
<tr>
<td>50-10-28-7231; NRHP #78001015</td>
<td>Mokuakaua Church</td>
<td>Located about 1,000 feet to the east of the current project APE along Ali‘i Drive, this large stone church built in 1837 by early Christian missionaries is significant as one of the first and largest stone churches in Hawai‘i.</td>
<td>75-5713 Ali‘i Drive, TMK (3) 7-5-007:018. Approximately 1,000 feet outside APE.</td>
</tr>
<tr>
<td>50-10-28-24184 and -24185</td>
<td>Unnamed sites</td>
<td>Surveyed by Elison and Kennedy (2004), these two sites include a complex of mortared stone structures and a complex of boundary walls.</td>
<td>TMK (3) 7-5-006:001, approximately 900 feet outside APE.</td>
</tr>
</tbody>
</table>

Consultation

Consultation has not yet been initiated. The following section describes planned efforts and provides a list of potential consulting parties for SHPD review and comment.

A NHPA Section 106 notice/advertisement will be published in the Office of Environmental Quality Environmental Notice. Letters will be sent to Native Hawaiian organizations (NHOs) and Native Hawaiian descendants with ancestral, lineal or cultural ties to, cultural knowledge or concerns for, and cultural or religious attachment to the proposed project area. In addition to NHOs, letters will be sent to other historically-focused and community groups that have interest in and knowledge about the local historic and cultural sites.

The letters will provide a project description, APE description, and summary of archaeological and historic properties. Letters will request a written response within 30 days stating whether the recipient would like to participate in the Section 106 process for this project. In addition, letters
will request any initial comments on the proposed improvements and any information they may have about other historic and cultural sites, practices, or knowledge.

We have prepared the following initial list of NHOs and interested parties to be consulted:

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Office of Hawaiian Affairs</td>
</tr>
<tr>
<td>2</td>
<td>Aha Moku – Moku a Keawe</td>
</tr>
<tr>
<td>3</td>
<td>Historic Hawai‘i Foundation</td>
</tr>
<tr>
<td>4</td>
<td>Kona Historical Society</td>
</tr>
<tr>
<td>5</td>
<td>National Park Service, National Historic Landmarks Program</td>
</tr>
<tr>
<td>6</td>
<td>Council of Hawaiian Civic Clubs</td>
</tr>
<tr>
<td>7</td>
<td>Daughters of Hawai‘i</td>
</tr>
</tbody>
</table>

Pursuant to 36 CFR 800.3 (f) in consultation with the SHPO, we are interested in information if your agency is acquainted with any persons or organization that is knowledgeable about the proposed project area, or any descendants with ancestral, lineal or cultural ties to or cultural knowledge or concerns for, and cultural or religious attachment to the proposed project area. We would appreciate receiving their names and contact information within the 30 days of notification.

We welcome any comments that you may have on this project’s proposed improvements.

We would appreciate a written response within thirty (30) calendar days from receipt of this letter. Please address any written comments you may have to email jonathan.nagato@doh.hawaii.gov or the following:

Attn: Jon Nagato  
Department of Health, Wastewater Branch  
2827 Waimano Home Road, Room 207  
Pearl City, HI 96782

Should you have any questions, please call Jon Nagato of our Branch at (808) 586-4294.

Sincerely,

[Signature]
SINA PRUDER, P.E., CHIEF  
Wastewater Branch

JN:sp  
c: Ms. Dora Beck (via email at Dora.Beck@hawaiicounty.gov)  
Mr. Anthony Medrano (via email at Anthony.Medrano@hawaiicounty.gov)  
Mr. Jarrett Brown, AECOM
Enclosure 1. Project Location and Vicinity Map
Enclosure 2. Force Main Replacement
Enclosure 3. Construction Plans
SOLID WASTE CONSTRUCTION NOTES:
1. UNLESS SPECIFIED OTHERWISE, THE CONTRACTOR IS RESPONSIBLE FOR THE PLACER MARKING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED ON THIS CONSTRUCTION, INCLUDING DRILLING AND REQUESTED EXCAVATION MATERIAL. ALL WASTE GENERATED ON COUNTY PROPERTY WILL BE SUBMITTED TO THE RELEVANT TYPING-fee SYSTEM, WITH NO EXCEPTIONS OR EXEMPTIONS.
2. ALL WASTES GENERATED ON CONSTRUCTION, INCLUDING DRILLING, EXCAVATION AND REQUESTED EXCAVATION MATERIAL, MAY BE DISPOSED OF IN THE WASTE STORAGE AND/OR LANDFILL, BUT CONTRACTOR SHALL OBTAIN AND SUBMIT WRITTEN CONSENT FROM THE COUNTY SUPERINTENDENT OF DEPARTMENT OF PUBLIC WORKS, WHOSE AUTHORITY IS DERIVED FROM THE DIRECTOR OF THE COUNTY. THE DIRECTOR OF THE COUNTY MAY REQUIRE THE CONTRACTOR TO PROVIDE WRITTEN CONSENT.
3. CONTRACTOR, EXCAVATION AND REQUESTED EXCAVATION MATERIAL, MAY BE DISPOSED OF AT ANY COUNTY TRANSFER STATION SUBMITTAL, BUT SHALL BE TRANSPORTED FOR DISPOSAL TO EITHER THE WASTE STORAGE AND/OR LANDFILL.
4. ASSED WASTE MUST BE STACAFOLDED, SOLIDIFIED AND LINFURICATED IN ACCORDANCE WITH THE COUNTY DEPARTMENT OF PUBLIC WORKS REQUIREMENTS, WHICH MAY REQUIRE THE CONTRACTOR TO PROVIDE WRITTEN CONSENT FROM THE DIRECTOR OF THE COUNTY.

WATER LINE NOTES:
1. ALL WORK SHALL BE DONE ACCORDING TO THE WATER LINE WORK STANDARDS, STATE OF HAWAII, DATED 2002, AS AMENDED.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY TWO (2) DAYS PRIOR TO THE BEGINNING OF ANY WATER LINE WORK AND ONE (1) WEEK PRIOR TO ANY CONSTRUCTION, EXCAVATION, SHUT-OFF OR RECONNECTION.
3. ALL WORK, MATERIAL, AND EQUIPMENT, SHALL BE PREPAID FOR BY THE CONTRACTOR.
4. ALL EXISTING WATER LINE WATER LINE APPURTEMENTS AND OTHER UTILITY LOCATIONS SHOWN ON THE PLANS ARE DEPARTED FROM LATEST RESEARCH SOURCES. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
5. MATERIAL LOCATION: A CLEARANCE BETWEEN WATER LINES AND OTHER UTILITY LINES TO 18 INCHES FROM THE EXISTING WATER LINE WHICH IS NOT CONNECTED TO ANY OTHER UTILITY LINES AT 30 INCHES FROM THE EXISTING WATER LINE WHICH IS NOT CONNECTED TO ANY OTHER UTILITY LINES. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
6. MAINTENANCE: THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
7. MAINTENANCE: THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
8. FIRE PROTECTION: THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
9. PUBLIC WORKS REQUIREMENTS: THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGE DONE UPON THEIR DISCOVERING.
DESTRUCTION NOTES:
1. REMOVE EXISTING 6" CI FORCE MAIN JUST PRIOR TO INSTALLATION OF 8" PVC FORCE MAIN.
2. PLUG AND ABANDON 8" CI FORCE MAIN WHERE INDICATED ON THE DRAWINGS. MINIMUM SEPARATION BETWEEN 8" PVC FORCE MAIN AND ABANDONED PIPE IS 3 FT.
NOTES:

1. ALL TREES OUTSIDE OF EASEMENT LINE SHALL REMAIN AND PROTECTED AS NECESSARY FROM ALL CONSTRUCTION ACTIVITIES UNLESS APPROVED BY OWNER.

2. FOR SIDEWALK RESTORATION, SEE

3. FOR CURB REPAIR RESTORATION, SEE

4. TRAFFIC STRIPING AND WARNING SIGNS OR OTHER PRECAUTIONARY MEASURES DURING CONSTRUCTION SHALL BE REMOVED TO ORIGINAL CONDITION AS PART OF THIS WORK. PARTIAL REMOVAL AND/or RELOCATION OF SIGNS SHALL BE RESTRUCTION AS PER INSTRUCTIONS.

5. LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD.
CONSTRUCTION WORK AREA PLAN (PHASE 3)

CONSTRUCTION WORK AREA PLAN (PHASE 4)

LAKENI WWPS FORCE MAIN REPLACEMENT
ASB TOWER, SUITE 1600
1001 BISHOP ST, HONOLULU, HAWAII 96813
COUNTY OF HAWAII, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

LEGEND:

NOTE AREA
DIRECTION OF TRAFFIC
CLEAR ZONE
Enclosure 4: TMK Map
Enclosure 5: Area of Potential Effect (APE) Boundary Map
Enclosure 6. Photographs of Project Area Existing Conditions

Photograph 1. Sewer pump station located on west mauka corner of Palani Road and Kaahumanu Place within the APE.

Photograph 2. View of sewer pump station, looking west from the intersection of Palani Road and Kaahumanu Place/Ali`i Drive in the APE.
Photograph 3. Looking northeast from the sewer pump station, up and across Palani Road within the APE.

Photograph 4. View north along Palani Road within the project area, from near the sewer pump station.
Photograph 5. View south (makai) on Palani Road in the APE – sewer pump station visible at right.

Photograph 6. View north (mauka) along Palani road within the APE, at the bend in the roadway adjacent to King Kamehameha Kona Beach Hotel (just out of view on the left).
Photograph 7. View north (mauka) along Palani Road within the APE. Looking towards the intersection with Kuakini Highway.

Photograph 8. View across Kuakini Highway at the north (mauka) end of the APE, intersection with Palani Road.
Enclosure 7. Map of Historic Properties Relative to APE
Enclosure 8: References

Dunbar, Helene R.

Elison, Mina and Joseph Kennedy

Handy, E.S. Craighill and Elizabeth Green Handy, with Mary Kawena Pukui

Hua‘olelo, Kōmike

Office of Hawaiian Affairs
2018 Kipuka Database. Accessed online at http://www.kipukadatabase.com

Pukui, Mary Kawena, Samuel H. Elbert and Esther T. Mookini

Ricando, Dorothy and Robert M. Fox
1972 National Register of Historic Places Nomination Form, Hulihee Palace, Hawai‘i County.

Simonson, Mindy, David Shideler, and Hallett H. Hammatt

Soehren, Lloyd J.

Waihona ‘Aina

Wright, John and John T. Jacobsen
1973 National Register of Historic Places Nomination Form, Mokuaiakua Church, Hawai‘i County.