DAVID Y. IGE
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FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:
HAR-PM
6306.17

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
October 27, 2016

TO: THE HONORABLE SCOTT GLENN, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: FORD N. FUCHIGAMI, DIRECTOR
DEPARTMENT OF TRANSPORTATION

SUBJECT: THE GAS COMPANY, LLC, DBA AS HAWAIIGAS
ADDITIONAL LIQUIFIED PETROLEUM STORAGE FACILITY
DRAFT ENVIRONMENTAL ASSESSMENT
NAWILIWILI HARBOR, KAUA'I, TMK: (4) 3-2-004:021-23,
(4) 3-2-004:053, (4) 3-2-004:016

The Department of Transportation (DOT) hereby transmits the subject *Draft Environmental Assessment* (DEA) for publication in the next edition of *The Environmental Notice.* The DOT hereby issues an Anticipated Finding of No Significant Impact (DEA-AFONSI) prepared pursuant to Chapter 343, Hawaii Revised Statutes and Chapter 11-200, Hawaii Administrative Rules.

We have enclosed the following items:

1. Hard copy of the publication form.
2. Compact disc containing the DEA in PDF format and the publication form in Word format.
3. One hard copy of the DEA-AFONSI.

Simultaneous with this memorandum, we have submitted the summary of the action in a text file by electronic mail to your office.

17-197

If there are any questions, please have your staff contact Mr. Calvert Chun of our Harbors Property Management Section at 587-1944.

Enclosures

APPLICANT PUBLICATION FORM

Project Name:	Additional Liquified Petroleum Gas Storage Facility, Nawiliwili Harbor, Kaua'i, Hawai'i
Project Short Name:	Nawilwili Harbor Liquified Petroleum Gas Storage Facility DEA (AFNSI)
HRS §343-5 Trigger(s):	Use of State land
Island(s):	Kauai
Judicial District(s):	Lihue
TMK(s):	(4) 3-2-004:021, 022, 023, 053, 016 (por.), 008, 018, 019, 034, 039, 041; and (4) 3-2-003: 001, 002, 003, 004, 999, 007
Permit(s)/Approval(s):	Special Management Area Permit, Class IV Zoning Permit, Shoreline Setback Determination, Grading Permit, Building Permits
Approving Agency:	State of Hawa'i, Department of Transporation, Harbor's Division
Contact Name, Email, Telephone, Address	Darrell T. Young, Deputy Director, Harbors Division, State of Hawaii, Department of Transportation, darrell.t.young@hawaii.gov (808) 587-3650 79 S. Nimitz Hwy, Honolulu, HI 96813-4898
Applicant:	The Gas Company, LLC
Contact Name, Email, Telephone, Address	Glen Takenouchi, General Manager- Kaua'i gtakenou@hawaiigas.com (808) 245-7957 3990 Rice Street Lihue, Hawaii 96766
Consultant:	Shiramizu, Loo & Nakamura, LLLP
Contact Name, Email, Telephone, Address	Galen Nakamura galen.nakamura@hawaiiantel.net (808) 632-2267 4357 Rice Street, Suite 102 Lihue, Hawaii 96766

Status (select one)	**Submittal Requirements**
__X__ DEA-AFNSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
____ FEA-FONSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the approving agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
____ FEIS Acceptance Determination	The approving agency simultaneously transmits to both the OEQC and the applicant a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no

comment period ensues upon publication in the Notice.

____ FEIS Statutory Acceptance	The approving agency simultaneously transmits to both the OEQC and the applicant a notice that it did not make a timely determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and therefore the applicant's FEIS is deemed accepted as a matter of law.
____ Supplemental EIS Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
____ Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
____ Other	Contact the OEQC if your action is not one of the above items.

Project Summary
Provide a description of the proposed action and purpose and need in 200 words or less.

The Gas Company, LLC (dba "Hawai'i Gas") proposes to construct an additional liquefied petroleum gas ("LPG") storage tank facility on State lands located across Pier 2 of Kauai's Nawiliwili Harbor. The project will include construction of connecting underground gas transmission pipelines, also on State lands, from Hawai'i Gas' existing LPG storage tank facility near Pier 3 of Nawiliwili Harbor. The project propses to construct up to 22 mounded 30,000 gallon LPG storage tanks and related appurtenances and facilities on State lands across Pier 2.

The Gas Company, LLC, dba Hawai'i Gas

Additional Liquefied Petroleum Gas Storage Facility
Nawiliwili Harbor, Kaua'i, Hawai'i 96766

Draft Environmental Assessment

Submitted Pursuant to Hawai'i Revised Statutes
Chapter 343

Applicant:
The Gas Company, LLC, doing business as Hawai'i Gas
Glen Takenouchi, General Manager, Kaua'i
3990 Rice Street
Lihue, HI 96766

Approving Agency:
Darrell T. Young, Deputy Director
State of Hawai'i
Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, HI 96813

Prepared by:
Shiramizu, Loo & Nakamura, LLLP
4357 Rice Street, Suite 102
Lihue, Hawai'i 96766

October 2016

Project:	Additional liquefied petroleum gas ("LPG" or "propane") storage facility near Nawiliwili Harbor Pier 2 and Construction of connecting transmission pipelines from Pier 3 to Pier 2 Proposed Storage Tank Facility.
Applicant:	The Gas Company, LLC, dba Hawai'i Gas ("TGC") 3990 Rice Street Lihue, Hawaii 96766 Contact: Mr. Glen Takenouchi, General Manager, Kaua'i (808) 245-7957
Project Owner:	The Gas Company, LLC, dba Hawai'i Gas ("TGC") P.O. Box 3000 Honolulu, HI 96802-3000 Contact: Mr. Glen Takenouchi, General Manager, Kaua'i (808) 245-7957
Accepting Agency:	Darrell T. Young, Deputy Director State of Hawai'i Department of Transportation Harbors Division 79 South Nimitz Highway Honolulu, HI 96813
Location:	Nawiliwili Harbor, Lihue, Kaua'i 96766
Tax Map Keys affected by Proposed Project:	Project Parcels: • (4) 3-2-004:021 • (4) 3-2-004:022 • (4) 3-2-004:023 • (4) 3-2-004:053 • (4) 3-2-004:016 (por.) Pipeline Parcels (portions of following parcels affected by construction of new transmission lines): • (4) 3-2-003: 001, 002, 003, 004, 999, and 007 • (4) 3-2-004: 008, 018, 019, 034, 039, and 041
Proposed Action:	Construction of new/additional liquefied petroleum gas ("LPG" or "propane") tank storage facility in the Nawiliwili Harbor area; and construction of connecting transmission pipelines from Pier 3 to Pier 2 proposed Project Parcels.
Size of Proposed Project Area:	Project Parcels: approximately 73,118 sq. ft. (≈1.68 acres) Pipeline Parcels: approximately 13,750 sq. ft. (≈0.32 acre)
Present Uses:	Project Parcels are currently unimproved, vacant, and not in use; Pipeline Parcels have limited or no improvements on them
State Land Use District:	Urban
State action or permits required:	Grant of long-term land lease from State of Hawaii Board of Land and Natural Resources

	Other State permits (including, but not limited to, NPDES permit) may be required; however, need for such permits will not be known until project design or construction, or both, have been completed.
County General Plan:	Transportation
County Permits or Applications Required:	Land Use Permits: Special Management Area Permit, and Class IV Zoning Permit, Shoreline Setback Determination Application Other County Permits: Building, grading, electrical, plumbing, etc.
Anticipated Determination:	Finding of No Significant Impact ("FONSI")

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LIST OF FIGURES

SECTION 1.0 PROJECT SUMMARY

This Environmental Assessment is being undertaken by The Gas Company, LLC, a Hawaii limited liability company ("TGC"), doing business as Hawai'i Gas, to propose:

- the development of an additional liquefied petroleum gas ("LPG" or "propane") storage tank facility on lands[1] owned by the State of Hawaii ("State") across from Pier 2 of Kauai's Nawiliwili Harbor, and;
- the construction of appurtenant underground LPG transmission pipelines and related infrastructure from TGC's existing LPG storage tank facility located near Pier 3 of Kauai's Nawiliwili Harbor[2], to TGC's proposed Pier 2 storage tank facility (collectively the "proposed project" or "project").

Figure 1 immediately below is a location map depicting the various tax map key parcels affected by the proposed project, the location of TGC's existing 8" and 4" LPG transmission pipelines serving TGC's existing Pier 3 storage tank facility, and the proposed new 8" and 6", or 6" and 4" underground LPG transmission pipelines from TGC's existing Pier 3 facility that would serve the proposed storage tank facility.

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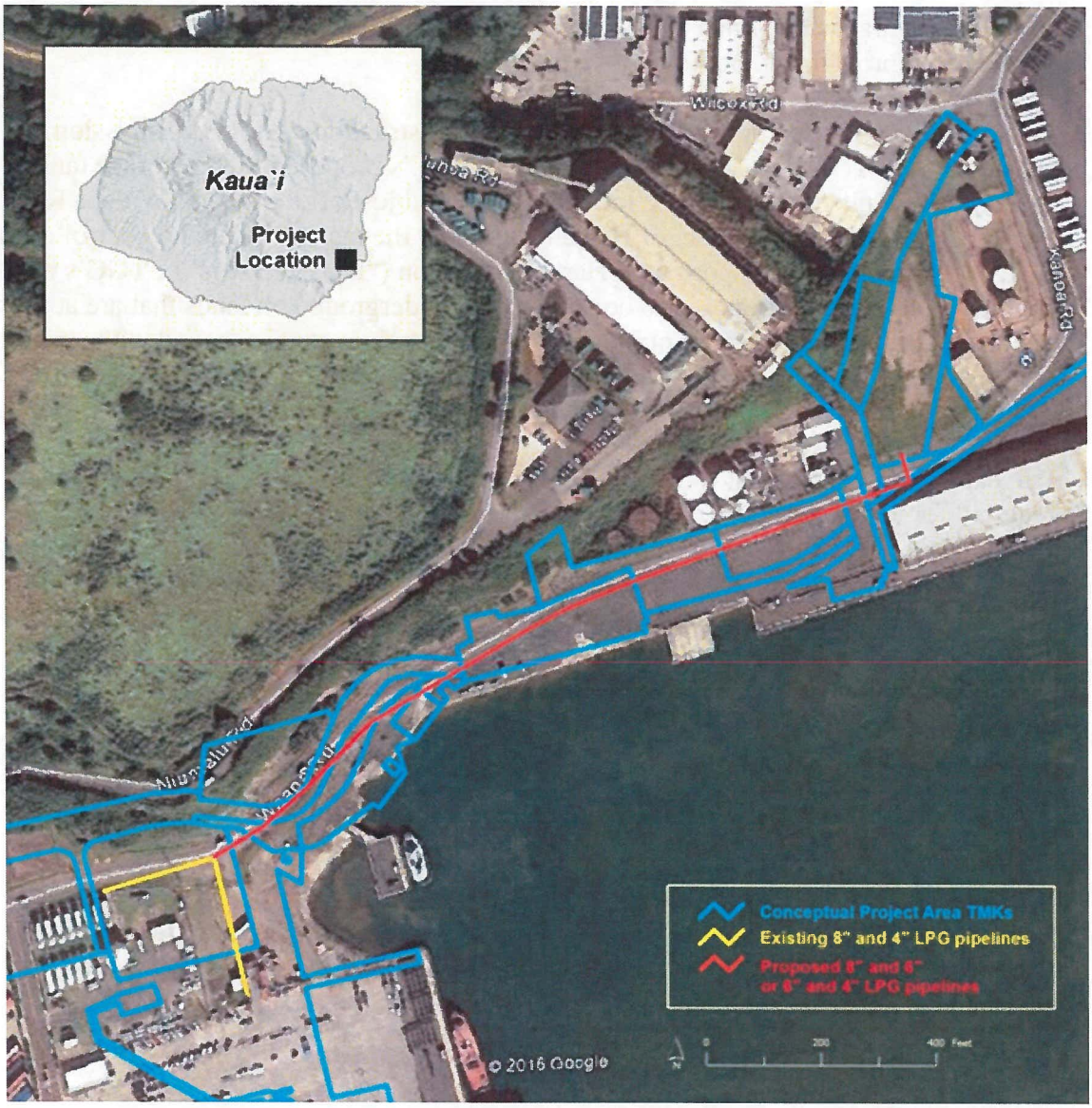
[1] The proposed LPG storage tank facility would be located on TMK nos. (4): 3-2-004:016 (por.), 3-2-004:021, 3-2-004:022, 3-2-004:023, and 3-2-004:053 (herein the "*Project Parcels*"). *See also* **Exhibit A**.

[2] TGC's existing storage tank facility is located on TMK no. (4) 3-2-003-030

Figure 1: Proposed Project Area (including affected tax map key parcels)



Although TGC has requested the issuance of a long-term land lease from the State's Board of Land and Natural Resources ("BLNR") for the Project Parcels area, the BLNR has deferred action on TGC's request until an environmental assessment pursuant to Haw. Rev. Stat. chapter 343, relating to the proposed project, has been completed.[3] The BLNR is requiring this environmental assessment to be completed ***before*** the BLNR will consider TGC's application to enter into a long-term lease for the Project Parcels. As such, as of the processing of this environmental assessment, **TGC does *not* have site**

[3] Because TGC does not yet have site control of the proposed storage tank facility area, it has also not yet secured pipeline easements from the State for the underground LPG transmission lines that would serve the new storage tank facility.

control of the entire proposed project area.

Presently, the lands on which TGC's proposed storage tank facility would be located are vacant, unimproved, and not in use.

As noted, the proposed project also includes the construction of LPG transmission pipelines from TGC's existing Pier 3 facility to TGC's proposed Pier 2 storage tank facility. These pipelines would be located *makai*[4] and just off the side of Wa'apa Road, on property owned by the State of Hawaii and under the management and control of the State Department of Transportation, Harbors Division ("DOT Harbors")[5]; TGC's new transmission lines are proposed to be constructed underground on lands that are at present and, generally, unimproved, minimally improved (fencing, etc.), or paved with asphalt.

1.1 Trigger for Haw. Rev. Stat. Chapter 343 Environmental Assessment

Pursuant to Haw. Rev. Stat ("H.R.S.") §343-5(a)(1), an environmental assessment[6] is required for actions that:

> 1. *Propose the use of* ***state*** *or county* ***lands*** *or use of state or county funds.....;* (emphasis added)

By Executive Order Nos. 509 and 1270, the Project Parcels were encumbered to the State of Hawaii's Department of Transportation for Nawiliwili Harbor Front purposes. The lands on which the proposed project is located are under the control and management of DOT Harbors. As such, an environmental assessment is required for the proposed project because the project proposes the use of State lands. (*Haw. Rev. Stat §343-5(a)(1)*)

Because the lands on which the proposed project is under the control and management of DOT Harbors, DOT Harbors will be the accepting and approving agency for this environmental assessment.

1.2 Purpose of and need for Proposed Project

For decades, TGC has shipped LPG to Kaua'i. TGC's prior source of LPG on Oahu used to produce larger amounts of LPG; however, TGC's current LPG production source on Oahu, Chevron Hawaii Refinery, only produces limited amounts of LPG. As such,

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[4] Toward the sea

[5] *See* **Figure 1** above for location of proposed LPG transmission lines.

[6] Under H.R.S. §343-2, ""Environmental assessment" means a written evaluation to determine whether an action may have a significant effect." The purpose of H.R.S. chapter 343 is "to establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations." The requirements for an environmental assessment, as well as its processing, are prescribed in H.R.S. chapter 343 and Hawaii Administrative Rules ("H.A.R.") Title 11, Chapter 200.

because of the current limited quantity of LPG produced in Hawai'i, the purpose of the project is to increase the amount of TGC's LPG storage capacity and facilities on Kaua'i.

Increased storage capacity is needed to ensure an adequate and uninterrupted supply of LPG is available at all times to meet the demands of TGC's current and future Kaua'i customers. Additional storage of LPG from the proposed project will provide a secure, steady product supply for TGC's existing customers, and allow additional supplies of LPG to be readily available for future anticipated demand, a particularly important consideration for TGC.

1.3 Proposed Project's Location and Description

1.3.1 Project Location

The proposed project is generally located in the heavily developed general industrial Nawiliwili Harbor[7] and bay area shown in **Figure 1**. Nawiliwili Bay is located on the southeast coast of Kaua'i, approximately two miles south of Lihue. Geographically, the area is bounded by Ninini Point to the northeast and Carter's Point to the southwest. The natural shoreline in the bay area is characterized by small pocket beaches interspersed among basaltic headland.

The street address of TGC's proposed storage tank facility is 3145 Wa'apa Road. The facility will be located on the *mauka*[8] side of Wa'apa Road across from Pier 2, Nawiliwili Harbor's warehouse and passenger cruise ship terminal area. Petroleum fuel storage tanks and related facilities operated by Kaua'i Petroleum Company, Ltd. are located directly adjacent to the Project Parcels.

The proposed LPG tank storage facility is anticipated to involve five tax map key parcels, as shown in **Figure 2**. The land area of each parcel is:

• (4) 3-2-004:016	57,298 sq. ft. (1.32 acres)
• (4) 3-2-004:021	31,698 sq. ft. (0.73 acres)
• (4) 3-2-004:022	4,474 sq. ft. (0.10 acres)
• (4) 3-2-004:023	30,927 sq. ft. (0.71 acres)[9]
• (4) 3-2-004:053	10,493 sq. ft. (0.24 acres)
Total area	134,890 sq. ft. (≈3.097 acres)

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[7] *See* page IV-1, et. seq. of *Kaua'i Commercial Harbors 2025 Master Plan*. Additional information regarding Nawiliwili Harbor can be found in the *Kaua'i Commercial Harbors 2025 Master Plan*. Available online at: http://hidot.hawaii.gov/harbors/files/2013/01/Kaua'i-Commercial-Harbors-2025-Master-Plan.pdf .

[8] Toward the mountain (i.e., away from the sea)

[9] Parcel 23 includes a small drainage stream/canal running along, generally, its northwestern boundary; however, the area TGC leases will **not** include this drainage stream/canal, and TGC's proposed operations will not impact this drainage stream/canal.

However, the proposed area TGC intends to actually lease for its storage facility may only encompass approximately ≈73,118 sq. ft., or ≈1.68 acres. The specific land area TGC leases will be determined once a long term land lease has been issued by the State's Board of Land & Natural Resources for, and a formal survey has been undertaken of, TGC's proposed storage facility site. The large variation between the total land area of the Project Parcels and the proposed land area TGC actually intends to lease arises because TGC intends to lease only a small portion of tax map key ("TMK") no. 3-2-004:016, and because TGC may not lease the entirety of the other TMKs shown in **Exhibit A**.

As mentioned, new underground LPG transmission pipelines will be constructed to transport LPG from TGC's existing LPG storage tank facility at Pier 3 to TGC's proposed LPG storage facility near Pier 2. These new transmission lines, to be constructed along the *makai* side of Wa'apa Road, will occupy approximately 13,750 square feet. Parcels that may be affected by the construction of these new pipelines include:

- (4) 3-2-003: 001, 002, 003, 004, 999, and 007
- (4) 3-2-004: 008, 018, 019, 034, 039, and 041

Exhibit H depicts the 12 parcels, identified by TMK, which will be affected by the construction of the new transmission lines. As used in this environmental assessment, the parcels on which the proposed pipelines will be constructed are called the "*Pipeline Parcels*".

1.3.2 Project Description

Concerning the proposed storage tank facility, TGC proposes to install up to twenty two (22) new mounded LPG storage tanks and related supporting infrastructure in the general area across from Nawiliwili Harbor's Pier 2 shown in **Figure 2** immediately below.

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Figure 2: Earth View of Proposed TGC Storage Tank Facility Area (including affected tax map key parcels)

Figure 3 below is a conceptual site plan depicting the construction of 22 mounded LPG storage tanks, along with other facility improvements, in the Project Parcels area.[10]

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[10] Mounded tanks are required to be set back at least ten feet from the boundaries of the land area leased by TGC from the State. (*See* "Tank Setback" in legend to **Figure 3**.)

(Mounded tanks are propane storage tanks installed at or below ground level, which are covered with sand, then gravel.)

In addition to the mounded tanks shown in conceptual site plan shown below, the proposed storage tank facility will, as shown in the conceptual plan, contain the following related improvements:

- 8 foot tall security fence topped with barbed wire along entire perimeter of facility;
- LPG transmission pipelines connecting the storage tanks to each other and the LPG transmission pipeline from Pier 3 to the proposed Pier 2 facility;
- Electrical lines and conduits;
- An improved access road allowing vehicular ingress from Wa'apa Road and egress to Wilcox Road at the rear of the proposed facility;
- Facility lighting[11] and security cameras mounted on elevated poles;
- Office trailer with sink and toilet;
- Approved septic system and appurtenant leach field;
- Potable water transmission lines;
- Parking area for TGC vehicles;
- LPG Refilling station (to transfer LPG from storage tanks to TGC's tanker trucks); and
- Related miscellaneous facilities and appurtenances needed to properly operate and maintain the storage facility.

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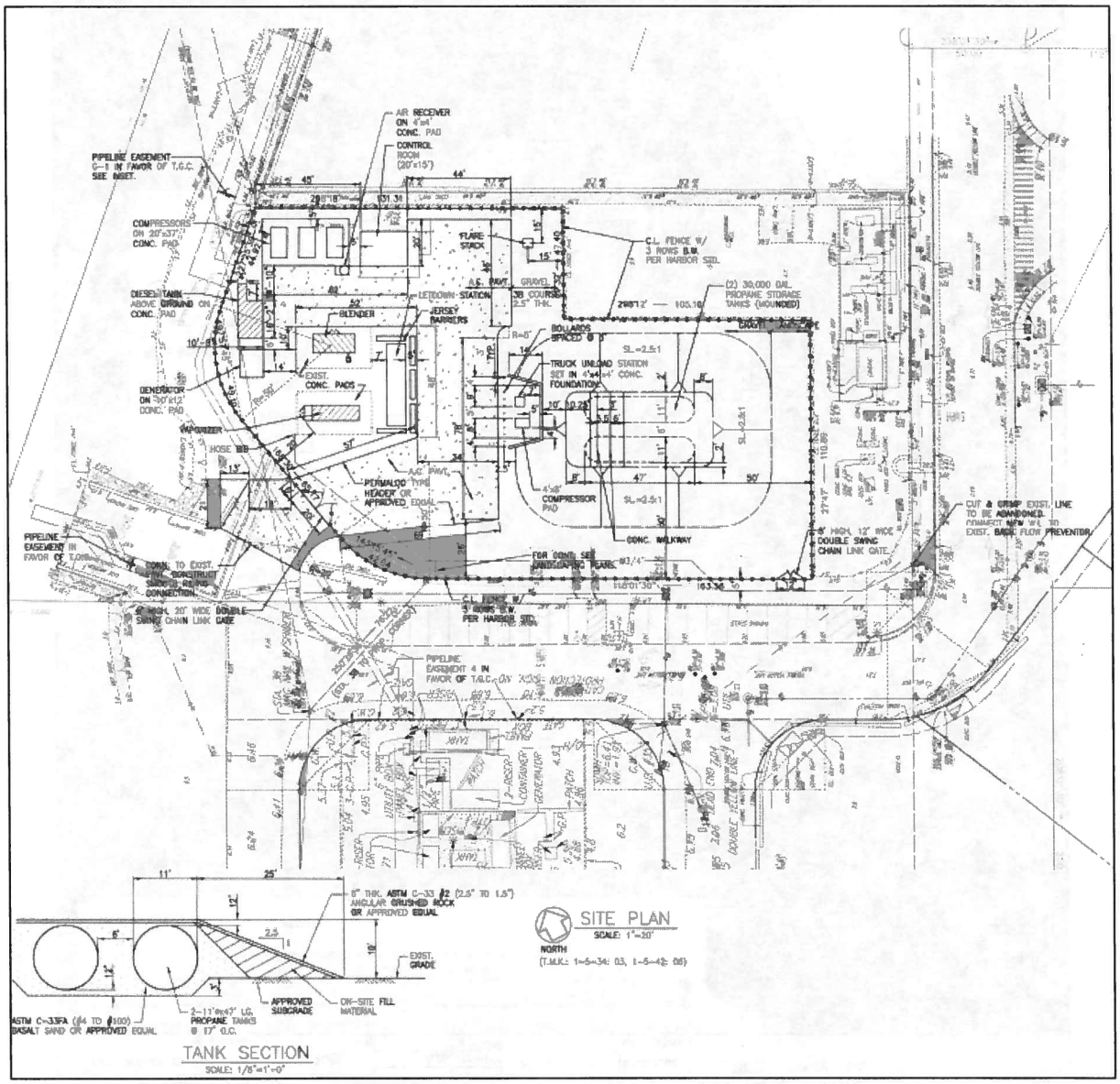
[11] All such lighting will be *downlights and fully shielded.*

Figure 3: Conceptual Site Plan of TGC's Proposed Pier 2 Project

Each 30,000 LPG storage tank depicted in the conceptual site plan will be able to store approximately 25,500 gallons of liquid propane. The height of each mound will be approximately 10-15 feet above the existing grade. Of the 22 planned storage tanks, 19 will be covered by a single mound of sand and gravel, and 3 tanks will be covered by a single mound of sand and gravel, as shown in **Figure 3** above.

A construction plan view (including section view) of a typical mounded LPG storage tank is shown in **Figure 4** below. *See also* **Exhibit O** for larger view of this plan.

Figure 4: Construction Plan View of typical TGC mounded tank



Various photograph views of existing TGC mounded tanks at Honolulu's Pier 38 are also included in section 6.6 (concerning Scenic and Visual Resources) of this environmental assessment.

As mentioned, the LPG transmission lines necessary to transport/transfer LPG from TGC's existing Pier 3 storage facility to the proposed Pier 2 storage facility will be constructed underground along the *makai* side of Wa'apa Road, from TGC's Pier 3 storage facility to the proposed Pier 2 storage facility, a distance of approximately 1,500 ft. Trenches dug to install these lines may be approximately 3½ feet deep and approximately 4 feet in width. Once site control is secured, two separate transmission lines approximately 8" and 6", *or* 6" and 4" in diameter (depending on engineering considerations) will be designed and installed to serve the project. Under either scenario, liquefied petroleum gas will be transported through one pipeline, and LPG vapor will be pumped through the second pipeline.

A typical construction detail of a trench that may be dug to install TGC's proposed transmission lines is attached as **Exhibit Q** TGC intends to secure a formal grant of easement from the State Department of Transportation, Harbors Division to accommodate the proposed transmission lines constructed on State lands after a formal lease has been secured from the State for the Project Parcels.

1.3.3 Development Alternatives Considered, and Potential Impacts of Each Alternative

TGC considered several design alternatives before selecting the proposed LPG storage tank facility design described in this environmental assessment. The two design alternatives considered were (1) up to 22 mounded LPG storage tanks, or (2) up to 14 above-ground, concrete pedestal mounted LPG storage tanks.

Regarding the merit of each design alternative, the development of up to 14 above-ground storage tanks may be less costly than the construction of up to 22 mounded storage tanks. Further the construction of above-ground tanks may involve less grading as a construction matter, since grading to install such tanks may be required only for the concrete pedestals on which 14 above-ground tanks would be mounted. Conversely, the construction of mounded tanks might require more grading to install since all such tanks would be set either at or not greater than three feet below existing grades. More grading could also more so impact any buried historical or archeological resources in the proposed Pier 2 facility area; however, any such impact in general is unlikely given the highly disturbed nature and history of extensive development of the proposed Pier 2 facility area.[12] Further, safety considerations require above-ground storage tanks to be set back a greater distance from boundaries of the proposed lease area than mounded tanks. (Above-ground tanks require a setback of 50 feet, whereas mounded tanks require a

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[12] See section 5.2 of this environmental assessment for more discussion of proposed project's impact on such resources including, but not limited to, the State Historic Preservation Division's determination of *no historic properties affected* as to the proposed project.

setback of only ten feet.) Because above-ground storage tanks require a greater setback than mounded tanks, a lesser number of storage tanks can be constructed on the proposed Pier 2 facility area. Conversely, because mounded storage tanks require a lesser setback than above-ground tanks, a greater number of storage tanks can be constructed on the proposed Pier 2 facility area. Also, more temporary construction activity may occur if 22 mounded tanks, versus 14 above-ground tanks, are installed. Finally, some may view above-ground storage tanks as more visually intrusive than mounded tanks inasmuch as above-ground tanks sit on mounted concrete pedestals and achieve a maximum finished height of approximately 15-16 feet above existing grades; however, the visual exterior of mounded tanks is covered with gravel and such mounds achieve a height of only approximately 10-15 feet above ground level.

For reasons explained in this section, TGC's primary aim in developing the proposed Pier 2 storage facility is to maximize the amount of LPG TGC can store on the Project Parcels, subject to industry design and safety standards and requirements. A mounded tank design, while more costly and requiring more grading and initial construction activity, will allow TGC to maximize the amount of LPG TGC can store on the Project Parcels; an above-ground tank design will not maximize the LPG storage capacity of the Project Parcels. One may view a mounded tank design as less visually intrusive than an above-ground tank design. However, this opinion becomes less urgent given the industrial nature, uses and improvements of the surrounding area in which the proposed tank storage facility will be located. (For example, a number of large, above-ground storage petroleum fuel tanks exist on the parcel directly adjacent to TGC's proposed Pier 2 storage tank facility.)

Given foregoing considerations and after due consideration, TGC has selected the mounded tank design described in this environmental assessment as the preferred development alternative for the Project Parcels.

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The following matrix explains the various potential impacts of mounded storage tanks versus above-ground storage tanks.

POTENTIAL IMPACTS OF EACH DESIGN ALTERNATIVE	Mounded LPG Storage Tanks	Above-Ground LPG Storage Tanks
Construction Impacts[13]	More construction activity as (up to) 22 mounded tanks would be installed; more grading as tanks are set at or a maximum of three feet below existing grade	Less construction activity as (up to) 14 above-ground tanks would be installed; less grading involved as tanks are set on concrete pedestals
Impacts on Historic and Archeological Resources	More grading required, which could more so impact buried resources in the proposed Pier 2 facility area; however, any such impact is unlikely given highly disturbed nature and history of extensive development of the proposed tank storage facility area	Probably none given highly disturbed nature and history of extensive development of the proposed tank storage facility area
Impacts on View Resources	Arguably less given tanks are located at or slightly below grade and covered with gravel to a height of ≈10-15 feet	Arguably more since tanks are set on concrete pedestals; overall height of each tank (≈15-16 feet) could be higher than mounded tanks; however, proposed tank facility is located in heavily developed industrial area
Development Costs	Higher since 22 tanks may be constructed	Lower since 14 tanks may be constructed
Traffic Impacts[14]	Approximately equivalent	Approximately equivalent

[13] Generally, such impacts will be temporary and may include increased noise, dust, and vehicular construction traffic to and from the proposed Pier 2 storage facility, as well as temporary construction activity on the Project Parcels and within the Pipeline Parcels. Construction will only occur during daylight hours.

POTENTIAL IMPACTS OF EACH DESIGN ALTERNATIVE	Mounded LPG Storage Tanks	Above-Ground LPG Storage Tanks
Impacts to shoreline and coastal resources[15]	Approximately equivalent	Approximately equivalent
Economic Impacts	Possibly greater construction activity attributable to construction of more tanks (22) Also, more tanks allows for greater LPG storage capacity, which could in turn facilitate TGC's ability to supply greater amount of LPG as demand for LPG on Kauai increases over time	Possibly less construction activity attributable to construction of less tanks (14)
Impacts to Marine Resources	Approximately equivalent or possibly *less* than above-ground storage tanks. (Because more mounded tanks than above-ground tanks may be located on the Project Parcels, possibly less shipments of LPG may be required given greater available storage capacity.)	Approximately equivalent or possibly *more* than mounded tanks since less above-ground tanks than mounded tanks may be located on the Project Parcels. (Less storage tanks mean more shipments of LPG might be required given less available storage capacity.)

[14] Both design alternatives are not anticipated to result in a material increase of TGC tanker truck traffic; however, over time such traffic may materially increase; as demand for LPG increases, more tanker trucks or truck trips, or both, may be required to satisfy such demand. At present, the rate at which demand for LPG will increase is unknown and may be dependent on the rate of economic growth and growth of residential and commercial development on Kauai.

[15] Proposed project is located inland from artificial, heavily-developed harbor water's edge. Further, any either inadvertent or intentional discharges (controlled excess emissions) of LPG will either vaporize or be burned off through an installed on-site flare. (Unless burned off, LPG vaporizes when exposed to air.) As such, there are no sensitive coastal ecosystems adversely affected by proposed project.

POTENTIAL IMPACTS OF EACH DESIGN ALTERNATIVE	Mounded LPG Storage Tanks	Above-Ground LPG Storage Tanks
Impacts on potable water resources[16]	Approximately equivalent	Approximately equivalent
Impacts on Fire, Police, and Medical Services[17]	Approximately equivalent	Approximately equivalent
Impacts on Utility Services (electrical, telephone, and cable TV service)	Approximately equivalent	Approximately equivalent
Wastewater Impacts[18]	Approximately equivalent	Approximately equivalent
Impacts on Biological and Botanical Resources[19]	Approximately equivalent	Approximately equivalent

SECTION 2.0 PROPOSED PROJECT DESCRIPTION

2.1 Project Location

The proposed project will be located within the area of Nawiliwili Harbor and Nawiliwili Bay, Kauai described in the Project Summary of this environmental assessment.

Nawiliwili Harbor is Kaua'i's principal port for incoming and outgoing commercial cargo, and is a port-of-call for passenger cruise ships. The harbor area consists of piers that accommodate passenger ships and vessels handling inbound and outbound cargo and

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[16] Under both design alternatives, sufficient potable water from existing water meters is present to serve the proposed project; the project will not require additional potable water.

[17] Concerning impacts on fire services, upon consultation with the Kauai County Fire Department ("KFD"), KFD recommended that TGC consult with a licensed engineer specializing in fire protection to evaluate the proposed project for appropriate fire mitigation and/or prevention measures, and that TGC present the engineer's findings and recommendations to KFD for evaluation and potential implementation. *See* section 4.2 of this environmental assessment for further discussion in this regard.

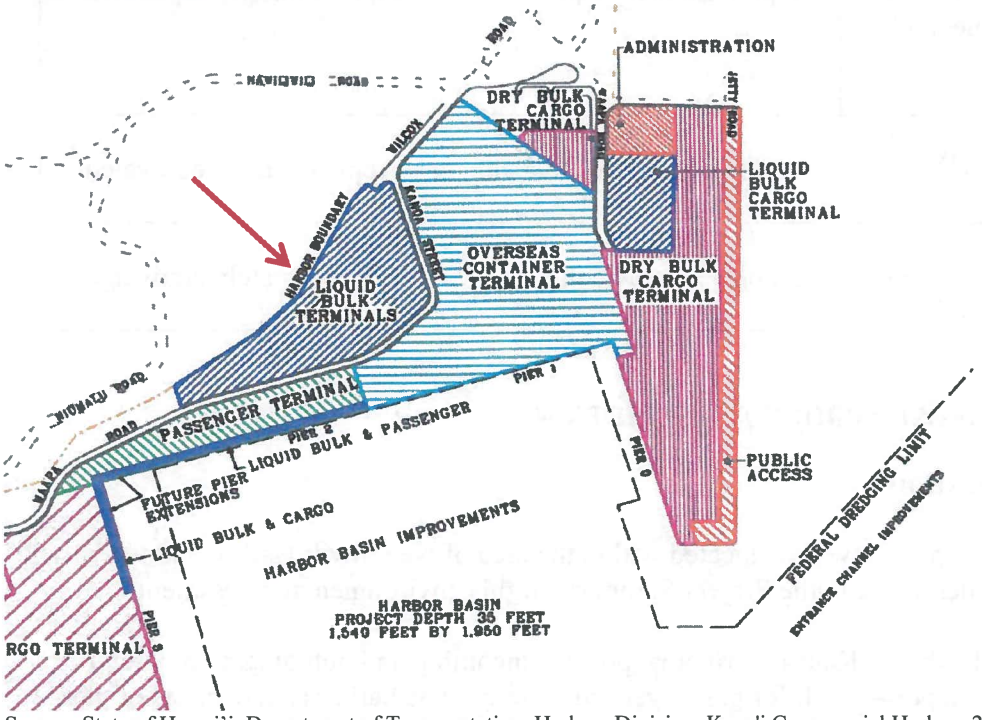
[18] Both alternatives call for the construction of an on-site toilet and sink.

[19] The Project Parcels and Pipeline Parcels are situated in the heavily developed industrial Nawiliwili Harbor area, with little, if any, native flora and fauna found in the vicinity.

fuel deliveries, and also consists of storage facilities used for the handling and storage of automobiles, containers and other products and materials. Included in this overall harbor area is TGC's existing LPG storage tank facility (sometimes the "Pier 3 Nawiliwili Fuel Tank Farm & Operating Yard" in this environmental assessment).

Consistent with the recommendations in the State Department of Transportation, Harbors Division's *Kaua'i Commercial Harbors 2025 Master Plan (September, 2001)* (the "*Kaua'i Commercial Harbors 2025 Master Plan*")[20] the proposed LPG storage tank facility will be situated in the "Liquid Bulk Terminals" portion of Nawiliwili Harbor. *See* **Figure 5** immediately below.

Figure 5: Location of TGC's proposed LPG tank storage facility within portion of Liquid Bulk Terminals area.



Source: State of Hawai'i, Department of Transportation, Harbors Division, Kaua'i Commercial Harbors 2025 Master Plan.

As mentioned, LPG transmission lines connecting TGC's existing Pier 3 LPG storage tank facility to the proposed Pier 2 storage tank facility will be located as shown in **Figure 1** of this environmental assessment.

2.2 Project Description

As described in the Project Summary of this environmental assessment, the proposed project consists of the development of its primary component (an LPG storage tank facility) and an ancillary component (LPG transmission lines that will transport LPG

[20] *See* page VI-5 of *Kaua'i Commercial Harbors 2025 Master Plan.*

from TGC's existing LPG storage tank facility near Pier 3 to the proposed Pier 2 storage facility). A detailed description of both components of the proposed project is contained in the Project Summary to this environmental assessment.

Construction activities related to the proposed project include, but are not limited to, those development activities necessary to construct or install those improvements shown in **Figures 3** and **4** and described in the Project Summary of this environmental assessment. Such activities include grading for access road improvements and other project improvements for which grading may be required.

A limited amount of excavation will also be conducted for pipelines and foundations for the mounded tanks and the planned septic tank to be installed in conjunction with the septic system and leach field to be developed on site. Excavation depths for the foundations of mounded tanks (if set below grade) will be not greater than three feet. Areas excavated to set the mounded tanks on will be backfilled with basalt sand or approved equal to provide the base for the tanks to lie on.

Any underground pipelines constructed within the Project Parcels and Pipeline Parcels shall be installed in trenches similar to those shown in the construction detail attached as **Exhibit Q**. Attached as **Exhibit P** is a standard pipe bollard detail of the bollards to be constructed to protect any sensitive improvements from inadvertent damage.

Utmost care will be exercised to ensure that excavation and installation of TGC's new transmission lines within the Pipeline Parcels do not disturb any existing pipelines owned or operated by others within this area.

LPG stored at the proposed Pier 2 storage tank facility will be shipped to Nawiliwili Harbor's Pier 3 from either Honolulu by barge or foreign ports by foreign-flagged propane tanker ships, and then off-loaded at TGC's existing Nawiliwili Fuel Tank Farm & Operating Yard near Pier 3.[21] The LPG will then be piped via new underground transmission lines to TGC's proposed storage facility *mauka* of Pier 2; these proposed transmission lines would be located in the area shown in **Figure 1** of this environmental assessment.

2.3 Description of TGC Operational Protocols relating to TGC's Proposed Pier 2 LPG Storage Tank Facility

This section describes TGC's operational protocols which will apply to TGC's proposed Pier 2 storage tank facility. These protocols relate to:

- Calling of LPG vessels
- Transfer of LPG from vessels to the proposed Pier 2 storage tank facility;
- Training of Operators handling LPG and its transfer to the proposed storage tank facility;

[21] *See* section 2.3.6 below.

- Security procedures applicable to proposed storage facility; and
- General Operation of proposed tank storage yard.

2.3.1 Calling of Vessels; Transfer of LPG from Vessels to Proposed Storage Tank Facility

Foreign LPG tanker ships, which can range from between 380' to 525' in length, or inter-island barges from Honolulu carrying sealed LPG storage tanks, will berth at Pier 3 and connect to existing transfer piping at Pier 3 to offload their LPG.

Such shipments will occur approximately once a month.[22] (It should be noted that additional propane storage capacity created through the construction of the proposed project may allow TGC to *reduce* the number of propane tanker shipments to Kaua'i, depending on future demand for LPG and growth of the island's population, since fewer shipments may be necessary due to the additional storage capacity created by the existence of an additional propane storage facility; with the construction of the new Pier 2 facility, such tanker ship traffic might be *reduced* to once every two months due to additional available storage capacity from the new Pier 2 facility.)

Transfers of LPG between a LPG tanker ship or barge and the proposed storage facility may require a maximum of three (3) key operators: the (1) Dockside Operator; (2) Yard Operator, and (3) Tankerman or Person in charge of the LPG tankship or barge. Their duties will be as follows:

The **Dockside Operator** will:

- Be considered the "person in charge" of the waterfront facility (Pier 3 area).
- Maintain supervision of the marine transfer area during the transfer.
- Before transfer begins, ensure that a Declaration of Inspection is executed and signed by both the person in charge of the vessel and the person in charge of the facility:
  - The Declaration of Inspection is a form required by 33 Code of Federal Regulations §156.150 which includes a list of requirements for the persons in charge of the vessel and facility to indicate that the operational and safety requirements for the transfer of LPG have been satisfied.
- Maintain communication with the person in charge of transfer aboard the LPG vessel (Tankerman or Captain of the Ship) and the Yard Operator.

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[22] Whether foreign tanker ships or interisland barges call at Nawiliwili depends on the availability of LPG from various sources at a given time. Interisland barges are used to transport LPG from Oahu's refinery, when LPG is available there. (As noted in section 1.2 of this environmental assessment, TGC's current LPG production source on Oahu, Chevron Hawaii Refinery, only produces LPG in limited amounts.) When LPG is not available from Oahu, TGC commissions foreign tanker vessels to ship LPG to Kaua'i.

- Inspect transfer piping and equipment for leaks, defects and other threats to safety.

- Ensure that transfer of LPG is immediately discontinued when a release or fire is detected in the area or aboard the vessel.

- Ensure transfer of LPG is discontinued when electrical storms or uncontrolled fires approach near the area.

- Ensure outdoor lighting is turned on between sunset and sunrise.

- Upon completion of transfer of LPG, ensure that transfer hoses are drained of LPG and depressurized before disconnecting such hoses from the vessel.

The **Yard Operator** will:

- Be the person in charge of the proposed Pier 2 LPG tank storage facility.

- Maintain supervision of the tank storage facility during the transfer.

- Before transfer begins, ensure that the tanks, piping, valves and equipment are ready for the transfer of the LPG. (Dock Operator will need to confirm readiness for transfer with the Yard Operator in order to complete the Declaration of Inspection).

- Maintain communication with the person in charge of transfer aboard the LPG vessel (Tankerman for barge transfers) and the Dockside Operator.

- Operate the tank storage yard in accordance with company procedures.

- Monitor the status of the storage tanks, piping and valves.

The **Tankerman** will:

- Be considered the person in charge of the tanker vessel.

- Maintain supervision of vessel operations during transfer of LPG from the vessel to the tank storage facility.

- Before transfer begins, sign and execute the Declaration of Inspection.

- Maintain communication with the person in charge of the facility (Dockside Operator) and the person in charge of the tank storage facility (Yard Operator).

- Operate the vessel in accordance with applicable U.S. Coast Guard regulations.

2.3.2 Maximum Allowable Working Pressure of the System

The maximum allowable working pressure ("MAWP") of the system will be 250 psig[23].

2.3.3 Security Systems

Description of security systems:

A valve pit[24] will be located well within the confines of TGC's Nawiliwili Harbor Pier 3 facility and may also be located within the Project Parcels area. A heavy lockable steel plate cover will be located over the pits. An 8-foot tall chain link fence topped with barbed wire will also surround the proposed tank storage facility area.[25]

The proposed storage facility will be monitored with security cameras locally (on Kauai) during regular business hours and remotely (by TGC's dispatch center on Oahu) during non-business hours. As such, the facility will be monitored by security cameras 24 hours a day, seven days a week. Additionally, the facility will be monitored by a roaming harbors security guard after regular business hours.

Whenever LPG is transferred between a vessel and the storage facility, a security guard will be present to ensure that:

- Access to the marine transfer area is limited to TGC personnel assigned to the transfer operations; tugboat personnel; Federal, State and local officials; and other persons authorized by the Dockside Operator.

- No vehicles are operated inside the designated, secure waterfront facility (Pier 3 area) during the transfer.

Procedures for security violations:

- Any breach of security shall be reported to the Facility Security Officer ("FSO") or alternate FSO.

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[23] Pounds per square inch gauge.

[24] A valve pit is a fuel isolation mechanism that allows for routine and emergency shut-off of fuel flow for pipeline or hose ruptures, and general maintenance.

[25] *See* **Figure 3**. *See also* **Figure 11** for view of typical fencing that will surround proposed Pier 2 tank storage facility.

2.3.4 Operator Training Programs

Persons assigned to act as a person in charge of the waterfront facility during transfers will be trained in the following subject matter areas:

1. Properties and hazards of LPG.
2. Use of the gas detectors.
3. Basic firefighting procedures, including the use of the portable fire extinguishers.
4. Contents of TGC's Operations and Emergency Manuals.
5. The configuration and limitations of cargo systems of LPG vessels.
6. Procedures for transferring LPG to and from LPG vessels.
7. Procedures for response to a release of LPG at the proposed tank storage facility.
8. First Aid (including burn care and CPR).
9. Restrictions on access to the marine transfer area.

Refresher training on the subject matter areas described above will be required at least once every five years.

The operator of the facility will maintain records of each person's training and retain them for the duration of the person's employment plus 12 months.

2.3.5 Communication Procedures

The communication system used by the various operators described above will consist of handheld two-way battery operated portable radios. These will enable the Dockside operator (person-in-charge of the facility) and the Tankerman (person in charge of the vessel) and the Yard operator to maintain continuous two-way voice communication. The radios are intrinsically safe and meet U.S. Coast Guard Class I Division I, Group D requirements.

2.3.6 General Operation of Proposed Storage Tank Yard

Typically, six to eight tanker trucks may enter ***either*** TGC's Pier 3 storage tank facility ***or*** the proposed Pier 2 facility each day to load LPG, then leave to deliver their LPG to TGC customers around the island. *(Although possible because of increased overall demand for LPG over time, TGC does not currently anticipate a need to increase its tanker truck fleet, the number of truck trips, or the number of its employees once the proposed Pier 2 facility is completed and operational.)*[26] Operationally, most likely one of TGC's two

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[26] During winter months, TGC's existing tanker truck traffic may sometimes temporarily increase to ten to twelve trips per day due to seasonal demand. TGC does not anticipate this temporary seasonal increase in truck traffic to

storage facilities would first be drained of its stored LPG, then the other facility would be drained of its stored LPG.

Tanker trucks loading at the new Pier 2 facility would enter through the Wa'apa Road entrance gate and exit to Wilcox Road at the rear of the proposed facility. All such vehicles will be owned and operated by TGC, and will deliver propane to commercial and residential customers throughout the island.

The proposed storage facility may also be utilized to store other, smaller LPG tanks and cylinders necessary to serve future customers and function as replacements for existing tanks in the field. There may also be instances when 6,000 gallon trailer mounted propane tanks are shipped to Kaua'i and stored at the proposed facility to supplement existing propane inventory; these trailer-mounted tanks can then be utilized when barges or ships transporting LPG to Kaua'i are delayed.

Maintenance and repair of improvements at the proposed Pier 2 facility, as well as other miscellaneous activities similar to those conducted at TGC's existing Pier 3 facility, will also be periodically conducted at this site.

TGC's activities and operations at the proposed Pier 2 storage facility will not materially differ from those conducted at TGC's Pier 3 facility.

Since the proposed Pier 2 storage tank farm will be connected to the Pier 3 area (where LPG will be off-loaded from tanker ships and barges) via a system of transmission pipelines, TGC's operations will be governed by and subject to the following federal regulations:

- 33 CFR Part 154 – Facilities Transferring Oil or Hazardous Material in Bulk; and
- 33 CFR Part 156 – Oil and Hazardous Material Transfer Operations.

2.4 History of TGC; Description of TGC's Existing Pier 3 Storage Tank Facility and Facility Operations

The Gas Company, LLC ("TGC"), doing business as Hawai'i Gas, has conducted business in Hawai'i for over 100 years, and is the State's only franchise gas utility. TGC has over 300 employees statewide serving over 68,000 customers.

Hawai'i Gas is the largest distributor of propane gas on the island of Kaua'i. TGC services 8,550 residential, commercial and industrial gas customers. Of these, 950 customers are served through TGC's gas utility system and 7,600 customers are served through TGC's non-utility propane delivery system.

TGC has a long, reliable, and safe history of storing and handling liquefied propane gas ("LPG"). Currently in the Hawaiian Islands, TGC manages approximately 3 million

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grow larger due to the construction of TGC's proposed Pier 2 facility; this existing temporary additional increase in tanker truck trips will be spread between TGC's Pier 3 and Pier 2 facilities.

gallons of stored LPG at any given time, including 545,000 gallons of stored LPG on Kaua'i.

Currently, tanker ships or inter-island barges transporting LPG in sealed steel containers berth at Nawiliwili Harbor's Pier 3, and offload LPG through a system of transmission pipelines and related appurtenances from Pier 3 to TGC's LPG storage facility near Nawiliwili Harbor's Pier 3 (as used in this environmental assessment, the "Nawiliwili Fuel Tank Farm & Operating Yard"). Offloaded LPG is stored at this yard pending its distribution throughout Kaua'i.

Presently located on this 1.39 acre site leased from the State and operated by TGC are thirteen (13) above-ground 30,000 gallon cylindrical propane storage tanks, one 250,000 gallon above-ground spherical propane tank, an office and refilling station, and a parking area for vehicle operations.

Typically, six to eight TGC tanker trucks may enter the Nawiliwili Fuel Tank Farm & Operating Yard on a given day to load LPG for distribution throughout the island. Maintenance and repair of improvements at this yard, as well as other miscellaneous activities, are also periodically conducted at this site.

The following **Figure 6** depicts the site plan of TGC's existing Pier 3 facility. Additional construction plan information and details regarding TGC's Pier 3 facility, including the system of transmission pipelines within this facility, is attached to this environmental assessment as **Exhibit S**.

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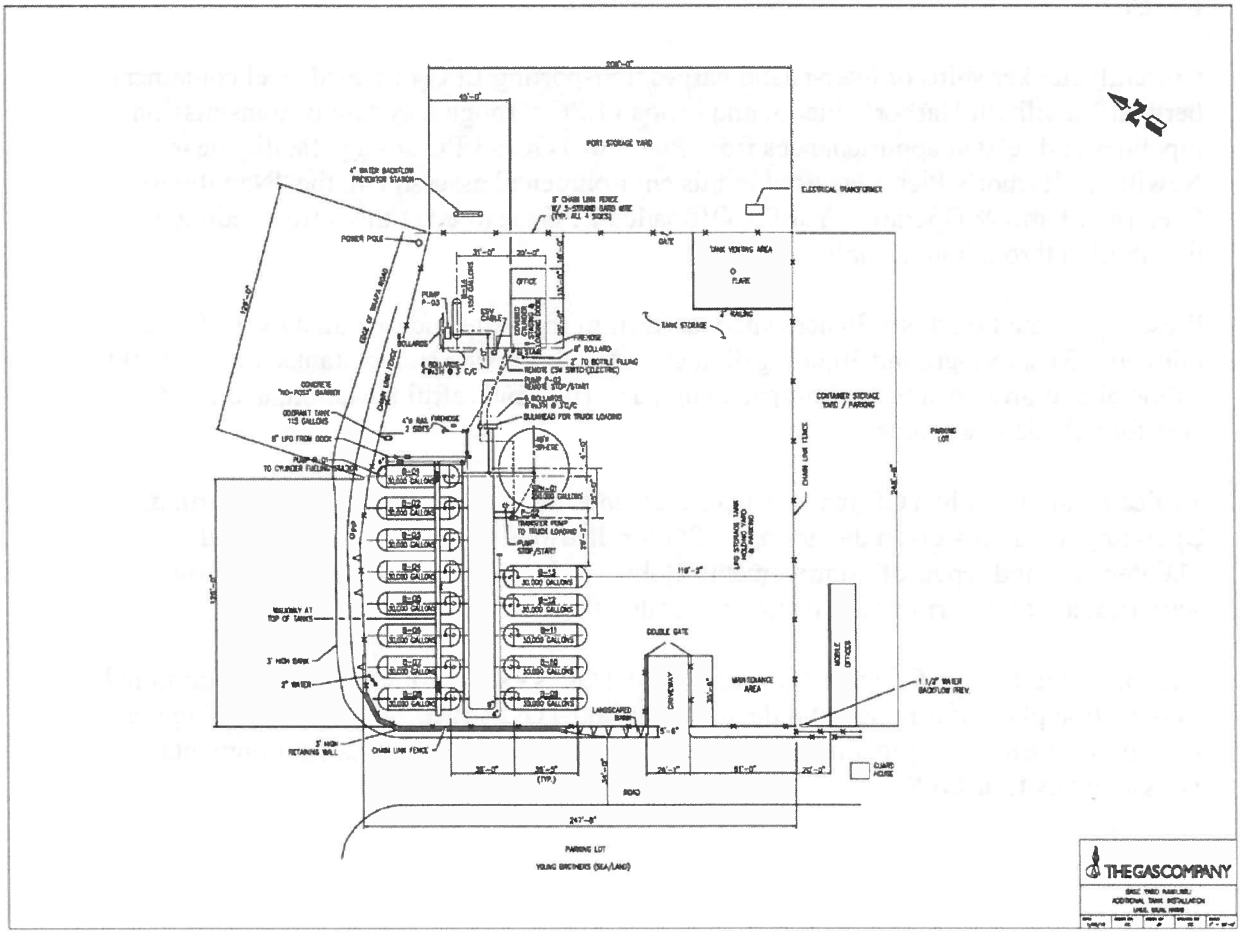
Figure 6: Site Plan of TGC's existing Pier 3 LPG Storage Tank Facility



TGC's proposed LPG storage tank facility will constitute a straight-forward extension of TGC's current LPG storage facility operations near Pier 3. Sales of LPG from both TGC's existing Pier 3 and proposed Pier 2 storage facilities will be to existing customers and new customers on Kaua'i as demand for clean, affordable gas and energy needs grow.

See also section 2.8 of this environmental assessment for photographs of TGC's existing Pier 3 facility.

2.5 Prior Environmental Reports relevant to TGC's Proposed Project

Whenever a government agency receives a request for approval, the agency may consider and, when applicable and appropriate, incorporate by reference, in whole or in part, previously accepted statements.[27] Previous determinations and previously accepted statements may be incorporated by applicants whenever the information contained in

[27] H.A.R. §11-200-13(a)

such statements is pertinent to the discussion at hand and has logical relevancy to the action being considered.[28]

According to a January 2016 final environmental assessment ("EA") completed for two proposed additional above-ground petroleum fuel storage tanks on a parcel adjacent to TGC's proposed storage tank facility:

> Several EAs and EISs[29] have been prepared for projects in the Nawiliwili Harbor area. Although these reports address projects of different scope and intent, they each address potential impacts to the environment. Some focus primarily on potential impacts marine flora and fauna, while others focus on potential social and economic impacts.[30]

As described in the foregoing January 2016 final EA, the referenced reports are:

EA and EIS Reports relating to Nawiliwili Area Projects			
Project Type	Year	Project	Reference
Draft EA	2008	Nawiliwili-Ahukini Shared Use Path	R.M Towill
Final EA	2005	Segmented Pier 3 Improvements	Arnold Okubo & Associates
Final EA	1998	Realignment of Wa'apa Road	NKN Project Planning
Final EA	1996	Nawiliwili Reservoir and Transmission Line	Belt Collins Hawaii
Final EA	1993	Pier 1 Improvements	DOT Harbors Division
Final EA	1993	Nawiliwili Pier Cargo Pipelines	Gasco, Inc.
Final EA	1993	Drainage Outlet for the NNCP	Case & Lynch
Final EA	1991	Nawiliwili Road-Wa'apa Road Improvements	Environmental Communications
Revised EIS	1978	Coral Fill Industrial Subdivision	VTN Pacific
Final EIS	1973	Nawiliwili Small Boat Harbor	U.S. Department of the Army

According to the foregoing January 2016 final environmental assessment, except for the Draft EA for the Nawiliwili-Ahukini Shared Use Path, all of the listed projects listed above resulted in a Finding of No Significant Impact ("FONSI"). With regard to the Draft

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[28] H.A.R. §11-200-13(b).

[29] "EA" means environmental assessment. "EIS" means environmental impact statement.

[30] Executive Summary, *Final Environmental Assessment, Kauai Petroleum Fuel Terminal, 3185 Waapa Road, Nawiliwili, Kauai, TMK No. (4) 3-2-004-016* (January 22, 2016).

EA for the Nawiliwili-Ahukini Shared Use Path, the Final EA for this project received a FONSI in June 2016.[31]

To the extent applicable, the sections in the foregoing final reports concerning environmental or ecological conditions that are relevant to TGC's proposed project are incorporated by reference into this environmental assessment. Also incorporated by reference is the archeological condition information regarding the Ahukini Point area (approximately 2.7 miles away from TGC's proposed project) contained in **Appendix D** to the Final EA for the Nawiliwili-Ahukini Shared Use Path project.

2.6 Estimated Project Schedule & Approximate Project Cost

Pre-consultation with various County/State agencies and public	July 2013-Present
Submit Draft Environmental Assessment to the State of Hawaii[32]	4th Qtr. 2016
Submit Final Environmental Assessment to the State of Hawaii	1st Qtr. 2017
Seek BLNR approval for property lease	1st Qtr. 2017
Design storage and transmission pipeline	2nd Qtr. 2017
Submit Application for SMA Permit, Class IV Zoning Permit, Shoreline Setback Permit, to the County of Kaua'i, Dept. of Planning	3rd - 4th Qtr. 2017
Public Hearing before the County Planning Commission	3rd - 4th Qtr. 2017
Application for construction and other permits (egs- building, grading, electrical, plumbing, NPDES, etc.)	2017-2018

The overall cost of the project is estimated to be approximately $6 million; this cost includes: the construction of new LPG underground transmission pipelines from TGC's existing Pier 3 storage facility to TGC's proposed Pier 2 facility, costs to design, engineer, permit, and construct the proposed Pier 2 facility improvements including, but not limited to: all LPG storage tanks, pipelines, valves, and related LPG transmission pipelines, sand/gravel mounds over the storage tanks, the interior access road, parking area, septic system and leach field, security lighting and cameras, electrical improvements, an office trailer with sink and toilet, and other related Pier 2 facility improvements.

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[31] *See* Final Environmental Assessment, *Ahukini to Lydgate Bicycle/Pedestrian Path, Kaua'i, Hawai'i*, Project No. STP-0700 (51) (June 2016)

[32] Both the Draft and Final Environmental Assessments will be submitted to the State of Hawaii, Department of Transportation, Harbors Division, and the Department of Health, Office of Environmental Quality Control ("OEQC"). Both documents will be submitted to OEQC, and then published in OEQC's *The Environmental Notice*. Public comments will then be received for 30 days; thereafter, the applicant will prepare responses to such comments, incorporate such responses into the environmental assessment, then assuming a finding of no significant impact by the State of Hawaii, Department of Transportation, Harbors Division, submit a Final Environmental Assessment to OEQC.

2.7 Photographic Views of Proposed Project Area

The following photographs depict the existing condition of the Project Parcels and general area where underground LPG transmission pipelines will be constructed.

Figure 7: Project Parcels as seen from directly across Wa'apa Road. Some of Kaua'i Petroleum's improvements are visible at far right. (April 2016)

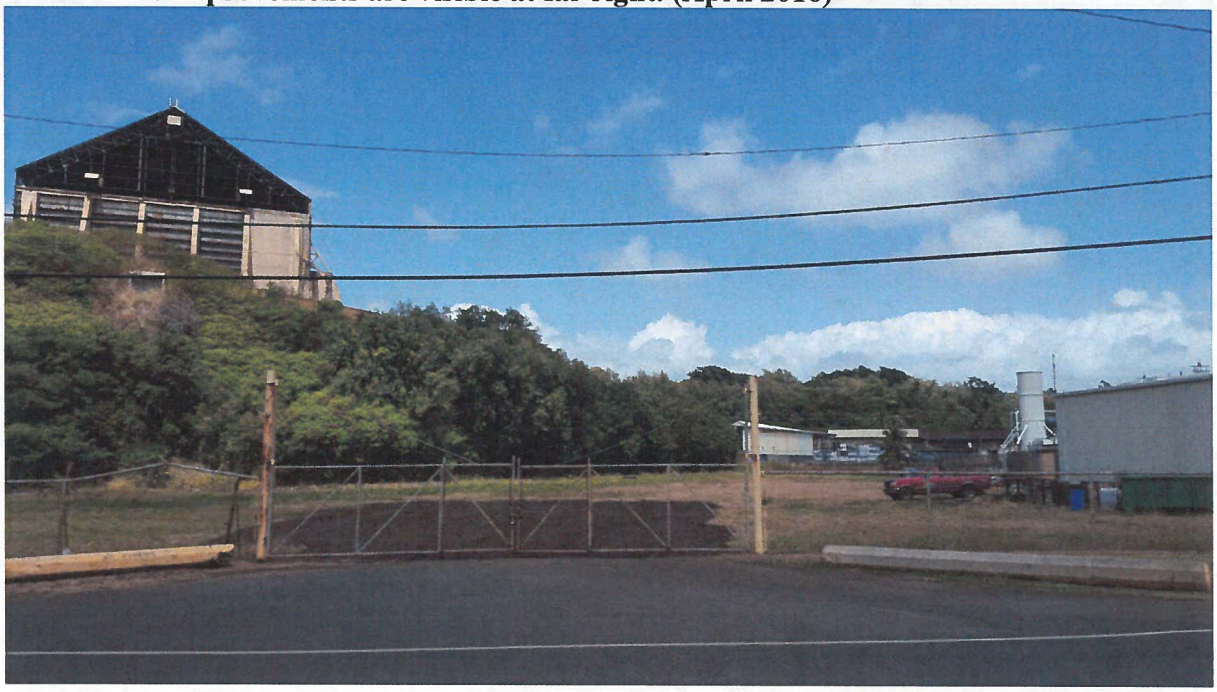

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Figure 8: Northeast view of Project Parcels from across Wa'apa Road, showing Kaua'i Petroleum's improvements and storage tanks on adjacent TMK parcel (4) 3-2-004:016. (April 2016)

Figure 9: Southerly view of *makai* area of Wa'apa Road where LPG transmission lines will be installed, taken from driveway of Project Parcels. TGC's 250,000 spherical storage tank is visible in the distance. (April 2016)

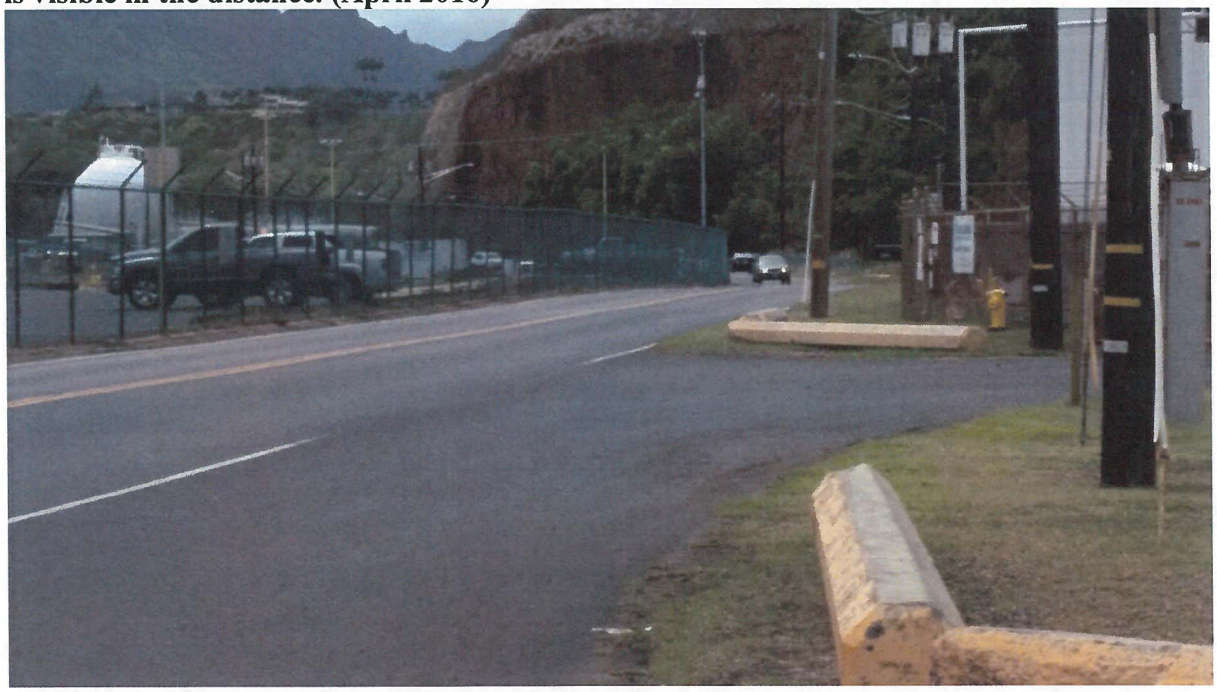

Figure 10: **Northerly view of general area where TGC's LPG transmission pipelines will be installed underground along *makai* side of Wa'apa Road, near TGC's existing Pier 3 storage tank facility. (April 2016)**

2.8 View of TGC's Existing Pier 3 LPG Storage Facility

Figure 11: TGC's existing Pier 3 LPG storage tank facility along Wa'apa Road, facing North toward proposed Pier 2 project area. Proposed Pier 2 project area is approximately 0.38 miles away from TGC's Pier 3 storage facility.

Figure 12: Row of 30,000 LPG above-ground storage tanks within TGC's Pier 3 storage facility.

3.0 ENVIRONMENTAL POLICIES, PLANS, PERMITS, AND CONTROLS

3.1 State Land Use District Classification

The existing State Land Use District classification for the project area (including areas affected by the proposed construction of TGC's new LPG transmission pipelines as part of this project) is *Urban*. These classifications are shown in **Exhibits B** and **I.** Under Haw. Rev. Stat. ("H.R.S.") §205-2(b), "*Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.*" As such, if ordinances of the County of Kaua'i ("County") allow the Project Parcels and Pipeline Parcels area to be used a LPG storage tank facility with its related appurtenances (transmission pipelines, etc.), then TGC's proposed Pier 2 storage tank project is an allowable use under State land use laws.

3.2 Hawaii State Plan

According to H.R.S. §226-1, the Hawaii State Plan serves as a guide for the future long-range development of the State; identifies the goals, objectives, policies, and priorities for the State; provides a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improves coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and establishes a system for plan formulation and program coordination to provide for an integration of all major state, and county activities.

TGC's proposed Pier 2 project is consistent with the goals, objectives, and policies described in the Hawaii State Plan. Specific objectives and policies which could apply to the proposed project include:

- the economy (H.R.S. §226-6);
- land-based, shoreline, and marine resources (H.R.S. §226-11);
- land, air, and water quality (H.R.S. §226-13);
- facility systems (H.R.S. §226-14);
- energy (H.R.S. §226-18); and
- sustainability (H.R.S. §226-108).

3.3 The Economy

As explained in section 1.2 of this environmental assessment, the additional LPG storage capacity generated by the proposed Pier 2 tank facility will provide additional supplies of LPG to Kaua'i's existing and especially future residential and commercial customers, thereby ensuring that a secure, steady supply of LPG exists to support and facilitate both current and future residential and business activities on Kaua'i. By providing such support and facilitating such activities, the proposed project conforms to the State objective of increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people. *H.R.S. 226-6(a)(1)*

The construction of an additional, new LPG storage facility will also contribute toward a "steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands." *H.R.S. §226-6(a)(2)*

3.4 Land-based, Shoreline, and Marine resources

The State Plan states that planning for the State's physical environment concerning land-based, shoreline, and marine resources should be directed toward achieving the following objectives:

- Prudent use of Hawaii's land-based, shoreline, and marine resources.
- Effective protection of Hawaii's unique and fragile environmental resources.

H.R.S §226-11(a)(1) and (2).

TGC's proposed project constitutes a prudent use of land-based and shoreline resources in that the Project Parcels area has been historically used for intensive industrial purposes for decades, is zoned for industrial uses, and the State of Hawaii, Department of Transportation, Harbors Division's *Kaua'i Commercial Harbors 2025 Master Plan (September 2001)* specifically calls for the Project Parcels area to be used for storage of LPG. Historically, the project area has been subject to intensive commercial and industrial development and use; as such, original shoreline resources no longer exist due to the area's development as Kaua'i's principal commercial shipping harbor decades ago. No fragile environmental resources have been identified in the project area, most likely

due to decades of development of the Nawiliwili Harbor and its related facilities. Given the foregoing considerations, the proposed project does not conflict with the objective of protecting Hawaii's unique and fragile environmental resources.[33]

3.5 Land, Air, and Water Quality

The proposed project does not contravene the following objectives of the State Plan:

- Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources; and
- Greater public awareness and appreciation of Hawaii's environmental resources.

H.R.S §226-13(a)(1) and (2).

A flare to be installed as part of the project improvements will reduce any resulting controlled excess emissions from proposed project improvements. Further, as noted in section 6.1 of this environmental assessment, any unintended releases of LPG will dissipate into the air as vapor because LPG vaporizes when not under pressure. (It is pressurization that keeps LPG in its liquid state.)

3.6 Facility Systems

TGC's proposed Pier 2 facilities do not conflict with the objectives and policies of the State, as expressed in H.R.S. §226-14.

A policy expressed in H.R.S. §226-14(b)(1) is the accommodation of needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans. As explained in section 3.0, *et seq.* of this environmental assessment, the proposed project is consistent with State and County land use plans for the proposed project area.

Further, as explained in section 4.4 of this environmental assessment, sufficient domestic water service exists to serve the project's minimal anticipated potable water needs.

As explained in section 4.1 of this environmental assessment, transportation impacts of the proposed project are anticipated to be minimal, and any substantive impacts will be addressed through State Department of Transportation, Highways Division conditions imposed on the project through the County land use permitting process, when project land use permits are applied for.

With regard to waste disposal, a septic system and leach field constructed in accordance with State Department of Health requirements will be installed to address limited

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[33] *See* section 6.2 of this environmental assessment in this regard.

wastewater generated by the project since no County sewer service exists in the vicinity of the Project Parcels.[34]

The proposed project improvements will require telephone service and may require service from a cable television provider. Inasmuch as these services will support the overall project, which is consistent with State and County land use plans for the project area, the proposed project is consistent with State objectives expressed in H.R.S. §226-14.

3.7 Energy

By creating additional, reliable storage supplies of LPG, TGC's proposed project will also support the State objective of achieving "dependable, efficient and economical statewide energy systems capable of meeting the needs of the people". (*H.R.S. §226-18 (a)*)

The proposed project also conforms to and supports the State's policies of:

- ensuring "the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand." (*H.R.S. §226-18 (b)*); and
- promoting alternative fuels. (*H.R.S. §226-18 (c)(7)*)

Concerning the first bullet point above, an additional LPG storage facility will ensure TGC's ability to provide on a short- and long-term basis an adequate, dependable supply of LPG for Kaua'i's existing and especially growing future customer base. Further, the possibility exists that additional storage supplies may assist in keeping LPG reasonably priced since fewer shipments of LPG might be needed because additional LPG storage facilities would be available with the development of a new Pier 2 storage facility.

With regard to the second bullet point above, additional storage facilities would assist in promoting an alternative fuel source to petroleum.

3.8 Sustainability

TGC's proposed project also conforms to various guidelines and principles to promote sustainability under H.R.S. §226-108.

Specifically, creating additional, dependable supplies of LPG will facilitate TGC's ability to reliably provide LPG to Kaua'i's current and future commercial and residential customers, which in turn will help promote or facilitate a diversified and dynamic economy. (*H.R.S. §226-108(3)*)

Further, the proposed Pier 2 facility, which is itself industrial in nature, is located in an area zoned and historically used for industrial purposes, and is located only a short distance (≈1,500 ft) from TGC's existing Pier 3 facility, and will be constructed in compliance with all applicable governmental requirements applicable to construction of

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[34] *See* section 4.3 of this environmental assessment.

wastewater systems, drainage run off, flaring of excess emissions, etc., all of which are consistent with the principle of encouraging balanced economic, social, and environmental priorities. (*H.R.S. §226-108(1) and (2)*)

3.9 Coastal Zone Management

According to the State Office of Planning, the purpose of the coastal zone management (or "CZM") program is to provide for the effective management, beneficial use, protection, and development of the coastal zone.[35] The "Coastal zone management area" means all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the United States territorial sea.[36] The CZM program guides and regulates public and private uses in the coastal zone management area, and its objectives and policies[37] concern:

- recreational resources;
- historic resources;
- scenic and open space resources;
- coastal ecosystems;
- economic uses;
- coastal hazards;
- managing development;
- public participation;
- beach protection; and
- marine resources;

Inasmuch as a large portion of the Project Parcels area and all portions of the Pipeline Parcels area are situated within the shoreline management area[38], the proposed project is situated within the CZM. For the reasons below, the project does not conflict with the objectives and policies of the CZM.

3.10 Recreational Resources

TGC's Project Parcels area and the immediate surrounding area are designated for various industrial uses, including intensive industrial uses. As such, the proposed project will not hinder or impede the provision of recreational opportunities accessible to the public.[39]

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[35] *See* http://planning.hawaii.gov/czm/

[36] H.R.S. §205A-1

[37] H.R.S. §205A-2

[38] *See* section 3.23 of this environmental assessment.

[39] H.R.S. §205A-2(b)(1)

3.11 Historic Resources

The principal project area was previously occupied by two molasses tanks and related infrastructure, remnants of Kaua'i's now defunct sugar industry. Those tanks and related infrastructure could be considered historic resources given the historical economic prominence of the sugar industry in Hawaii; however, several years ago all physical improvements in the project area were demolished and removed down to bare dirt, and the Project Parcels area currently sits vacant. As such, development of the proposed project will not conflict with the preservation, protection, and restoration of historic resources that may be significant in Hawaiian history.[40]

3.12 Scenic and Open Space Resources

The proposed storage tank facility and its related transmission lines are located amidst a general industrial area where there are few, if any, scenic and open space resources. As such, the proposed project and its improvements will not contravene the objectives of protecting and preserving coastal scenic and open space resources.[41] Further discussion of the project's impact on visual and scenic resources may be found in section 6.6 of this environmental assessment.

3.13 Coastal Ecosystems

The proposed storage tank facility and its related transmission lines are located inland from the artificial, heavily-developed water's edge; as such, there are no sensitive coastal ecosystems that could be adversely affected by the proposed project. As noted in section 3.1.11.4 of the *Kaua'i Petroleum Draft Environmental Assessment, Nawiliwili Harbor, Kaua'i, TMK (4) 3-2-004:016* (October 23, 2015), the "reefs in Nawiliwili Bay were dredged during the construction of the harbor and the Terminal property is fill land constructed during development of the harbor."[42] The proposed project will therefore not adversely impact the protection of valuable coastal ecosystems.[43]

3.14 Economic Uses

The proposed project is consistent with the objective of providing private facilities and improvements important to the State's economy in suitable locations[44], inasmuch as

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[40] H.R.S. §205A-2(b)(2). As concerns areas where TGC's new LPG underground transmission lines will be constructed, note also the statement by the State Historic Preservation Division ("SHPD") that "construction of the road likely disturbed some of the area proposed for the new pipeline", as well as SHPD's determination of "no historic properties affected" as to the overall project in SHPD's April 5, 2016 letter to TGC attached as **Appendix E**.

[41] H.R.S. §205A-2(b)(3)

[42] The referenced Terminal property is directly adjacent to the Project Parcels.

[43] H.R.S. §205A-2(b)(4)

[44] H.R.S. §205A-2(b)(5)

construction of additional LPG storage tanks will provide increased LPG storage capacity, which will help ensure an adequate and uninterrupted supply of LPG is available to meet the demands of TGC's current and future Kaua'i customers, which in turn will facilitate economic activity on Kaua'i. Also, TGC's planned facility is located in a suitable location according to County zoning laws and State and County land use development plans.

3.15 Coastal Hazards

The Project Parcels are located in the Tsunami Evacuation Area[45], and could therefore be subject to the effects of a major tsunami. With regard to other costal hazards such as storm surges, being located over 200 feet inland from protected harbor waters with various intervening buildings between such waters and the project area, project improvements are unlikely to be subject to effects of storm waves. Because of its location and topography, project improvements are unlikely to be subject to stream flooding, erosion, subsidence and pollution from coastal sources as well. For the forgoing reasons, except for effects of a major tsunami, the project should not conflict with the objectives of H.R.S. §205A-2(b)(6)[46].

3.16 Managing Development

The planned project improvements are not anticipated to create or contribute toward coastal hazards inasmuch as the principal project area is located 200+ feet inland from the water's edge of Pier 2 (an artificial structure), and even farther away from natural, undeveloped coastal waters. Further, as previously noted the project area is located amidst a historically, heavily developed industrial area which has few remaining, if any, coastal resources. As such, the project will not conflict with the objectives of H.R.S. §205A-2(b)(7).[47]

3.17 Public Participation

As noted in section 10.0 of this environmental assessment, four separate opportunities for the public to comment on the proposed project have been provided. One invited approximately 121 adjacent and area commercial and residential property owners to a community meeting hosted by TGC approximately 0.5 miles from the Project Parcels, the purpose of which was to explain the project to area owners and hear community concerns about the project. These 121 adjacent and area owners were subsequently sent letters

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[45] *See* section 6.5 of this environmental assessment in this regard.

[46] "(b) Objectives:.....(6) Coastal Hazards: (A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution."

[47] "(b) Objectives:.....(7) Managing Development: (A) Improve the development review process, communication and public participation in the management of coastal resources and hazards."

updating them regarding the two possible conceptual design alternatives[48] which were being considered by TGC, and were advised they could contact TGC's Kauai General Manager with any questions or comments regarding TGC's project.[49]

The second was a presentation to an area business association; there, TGC presented the project then fielded questions regarding various aspects of the project's development and operations. This association was subsequently updated by letter of the two possible design alternatives which were being considered by TGC, and advised that the association's members could contact TGC's Kauai General Manager with any questions or comments regarding the project in general.[50]

Further opportunities for public participation in this project will occur through this environmental assessment process and through the County land use permitting process, when TGC submits applications for County *SMA* and a *Class IV Zoning* permits for the project.

Given the foregoing, TGC's project is not in conflict with the objectives of stimulating public awareness, education, and participation in coastal management.[51]

3.18 Beach Protection

No beaches are located in the immediate vicinity of TGC's principal project improvements. The closest source of ocean water, approximately 200+ feet away, is the harbor waters of Nawiliwili Harbor's Pier 2, an active passenger cruise ship terminal under the management of the State of Hawaii Department of Transportation's Harbors Division. As such, TGC's project will not affect the objective of protecting beaches for public use and recreation.[52]

3.19 Kaua'i Commercial Harbors 2025 Master Plan

Regarding liquid-bulk terminals on Kaua'i, the State of Hawaii, Department of Transportation, Harbors Division's *Kaua'i Commercial Harbors 2025 Master Plan (September 2001)* (the "2025 Master Plan") acknowledges Kaua'i's liquid-bulk cargo industries that provide the island with its gasoline, jet fuel, fuel oil, and propane. With regard to such liquid bulk cargo, the 2025 Master Plan includes the following recommendations:

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[48] Either above-ground LPG storage tanks, or mounded LPG storage tanks.

[49] *See* section 10.0 of this environmental assessment.

[50] *See* section 10.0 of this environmental assessment.

[51] *See* H.R.S. §205A-2(b)(10)

[52] *See* H.R.S. §205A-2(b)(11)

> *A 6.1-acre bulk storage parcel, bounded by Wa'apa, Kanoa and Wilcox Roads, accommodates the petroleum and molasses terminals.*[53] *The Liquified Petroleum Gas (LPG) terminal remains on a 1.6-acre lot leased from the State Department of Land & Natural Resources. A two-acre lot will be made available on the jetty should the LPG terminal operators decide to relocate to this area.* ***A possible expansion area for the LPG terminal is within the 6.1 acre area bulk storage parcel (e.g. JMB tanks, molasses tanks).*** *Piers 1, 2 and 3 are currently locations of liquid bulk transfer facilities and may remain.* (emphasis added)

As such, the State's 2025 Master Plan explicitly acknowledges and suggests the use of the Project Parcels area as an additional storage site for LPG; the proposed use is therefore consistent with and in fact supported by the 2025 Master Plan.

3.20 Kaua'i General Plan

The Kaua'i County General Plan (November 2000) ("General Plan") fulfills legal mandates of State law and the Charter of the County of Kaua'i. More importantly, it provides guidance for land use regulations, the location and character of new development and facilities, and planning for County and State facilities and services.[54]

The General Plan land use designation for the project area (including areas affected by the construction of new LPG transmission pipelines) is *Transportation*, as shown on the County General Plan map attached as **Exhibits C** and **J** According to the General Plan:

> *Lands included within the Transportation designation shall be used predominantly for major shipping and transportation facilities. Uses include commercial harbors and airports managed by the State of Hawaii Department of Transportation. Transportation uses have industrial characteristics, such as high noise levels, and shall be buffered from surrounding urban uses.*[55]

Inasmuch as the proposed project is industrial in nature, the proposed use is consistent with uses contemplated by the General Plan.

Kaua'i County is currently in the process of updating its General Plan; this update is known as the Kaua'i 2035 General Plan.

Kaua'i's General Plan further recognizes two commercial harbors, Nawiliwili Harbor and Port Allen[56], which are owned by the State of Hawai'i and operated by the State

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[53] The Sugar/Molasses Storage and Loading Facility materials were removed from the area following the 2001 Harbors Master Plan.

[54] Section 1.2, General Plan

[55] Section 5.4.4.1, General Plan

[56] Section 5.4.4.2, General Plan

Department of Transportation ("DOT"), Harbors Division. The General Plan also acknowledges the State Department of Transportation, Harbors Division's long range plan for Nawiliwili Harbor, stating:

> *The 2010 Master Plan for Nawiliwili Harbor (1987) provides a general, long-range guide for growth, improvement, and efficient consolidation of land usage at Nawiliwili Harbor. The Master Plan was updated in 1993 in response to Hurricane Iniki. The Harbors Division is currently revising the Nawiliwili Master Plan as part of preparing* ***Commercial Harbors Plan 2025****.*[57]

With respect to the referenced *Commercial Harbors Plan 2025* and as mentioned in section 2.1 of this environmental assessment, the *Kaua'i Commercial Harbors 2025 Master Plan* specifically acknowledges and suggests the use of the proposed Project Parcels area as an additional storage site for LPG.

3.21 Līhu'e Community Plan

The Kaua'i General Plan is a policy document for the long range comprehensive development of the island of Kaua'i, encompassing County-wide goals. The County of Kaua'i *Līhu'e Community Plan (June 2015)*[58] ("LCP") translates community input into policies and plans that shape the future of the Līhu'e District. It also forms broad General Plan statements into specific actions and outlines area-specific proposals and policies for the communities of Līhu'e, Hanamā'ulu, Puhi, and Nāwiliwili.[59] The LCP's recommended future land use for the Nawiliwili Harbor area is industrial, with an urban center to the north of the Project Parcels area. The LCP therefore anticipates that the Nawiliwili Harbor industrial area will continue to be used for heavy industry.[60]

Inasmuch as the land use proposed by TGC's new project is industrial in nature, the proposed project is consistent with the LCP's recommendations.

3.22 County Zoning

The County zoning of the Project Parcels and Pipeline Parcels is *Industrial (General) District (I-G)*, and is shown in **Exhibits D** and **K**. Such districts are also generally referred to as the Industrial District. Kaua'i County Code ("K.C.C."), Title IV, Chapter 8 Comprehensive Zoning Ordinance, Article 7, Section 8-7.2(c), defines the General Industrial District as follows:

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[57] Section 4.8.1.2, General Plan. The *Kaua'i Commercial Harbors 2025 Master Plan* was published by the State in September 2001.

[58] *See* http://lihuecp.com/.

[59] Executive Summary, LCP

[60] Section 5.1.1 and Figure 5-1, LCP

General Industrial shall include all business, industrial processing, or storage uses that are generally considered offensive to the senses or pose some potential threat or hazard to health, safety and welfare. This District shall not be located adjacent to Residential or Resort Districts unless there is physical or geographical protection from those characteristics of the uses considered to be offensive or hazardous.

The proposed project may be considered a business or storage use; further, because the proposed use involves storage and transfer of LPG, it may be generally considered offensive to the senses, or posing some potential hazard to health, safety and welfare. Given the foregoing, the use contemplated by the proposed project is consistent with uses permitted within the Industrial District under Kaua'i County zoning codes, subject to the County's issuance of a Class IV zoning permit as explained in section 3.24 below of this environmental assessment. Both the Project Parcels and Pipeline Parcels area is surrounded by properties in industrial use.

3.23 Special Management Area

Part II of H.R.S. chapter 205A imposes special controls and regulatory requirements on developments within an area along the shoreline to avoid permanent losses of valuable resources and the foreclosure of management options.[61] This area is known as the special management area, or "SMA".[62] Although a creature of State law, the SMA is regulated and administered by Kaua'i County's Planning Department.

A large portion of the Project Parcels area and all portions of the Pipeline Parcels area are situated within the County SMA as shown in attached **Exhibits E** and **L** and are therefore subject to County rules regarding development within the SMA. No development is allowed within the SMA without first obtaining an SMA permit from the Kaua'i County Planning Commission.[63]

3.24 Required Government Approvals and Permits

3.24.1 H.R.S. Chapter 343

Since the subject land has been encumbered to the State Department of Transportation ("SDOT"), the Applicant understands SDOT, Harbors Division will serve as the approving agency for this Environmental Assessment, and will

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[61] H.R.S. §205A-21.

[62] H.R.S. §205A-22 defines "Special management area" as the land extending inland from the shoreline as delineated on the maps filed with the authority as of June 8, 1977, or as amended pursuant to section 205A-23. The authority means the County Planning Commission. *Id.*

[63] H.R.S. §205A-28

be the agency that considers whether a Finding of No Significant Impact ("FONSI") should be made in response to this environmental assessment.

Assuming the issuance of a Final Environmental Assessment, a finding of no significant impact ("FONSI"), and the granting of a land lease to TGC from the State for the Project Parcels area, TGC intends to submit applications to the County of Kaua'i, Department of Planning ("Planning Department"), for an *SMA Permit* and a *Class IV Zoning Permit*. The foregoing permits must be approved by the County of Kaua'i's Planning Commission before development of TGC's proposed project may proceed.[64]

3.24.2 County Class IV Zoning Permit

No development is permitted within an Industrial District under the Kaua'i County Code unless a zoning permit is secured. As concerns the proposed project, a Class IV Zoning permit is required for the proposed storage facility and its appurtenant new transmission pipelines as the overall project area exceeds one (1) acre in size.[65]

3.24.3 County SMA Permit

A Special Management Area ("SMA") permit is required for the project improvements (including its LPG transmission pipelines) as the project area is within the SMA.[66] (*See* discussion in section 3.23 above of this environmental assessment.)

3.24.4 County Shoreline Setback Ordinance

The purposes of the Kaua'i County shoreline setback ordinance[67] ("SSO") are to protect life and property, ensure the longevity and integrity of Kaua'i's coastal and beach resources along Kaua'i's shoreline and to strengthen shoreline setback requirements in the ordinance by incorporating science-based erosion rates

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[64] A **Use Permit** is *not* required since the proposed use is permitted outright in the General Industrial zone. See K.C.C. Title IV, Chapter 8, Article 7, Sec. 8-2.4(n)(14) in this regard. This conclusion has been confirmed in consultation with the County Planning Department.

[65] K.C.C., Title IV, Chapter 8 (CZO), Article 7, Sec. 8-7.4 (a) (4) Permits Required, (A) larger than one(1) acre, whether or not the parcel is located in a Constraint District or Special Treatment District, and whether or not a use permit, variance permit or environmental impact statement is required.

[66] H.R.S. § 205A-2 (c)(5)(B), Coastal Zone Management program; the objectives and policies for economic uses are to: "Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area," among others.

[67] K.C.C. chapter 8, article 27

established in the Kaua'i Coastal Erosion Study and current coastal hazard mitigation best practices and strategies.[68]

The SSO applies to, among other matters, all lands within Kaua'i County that are not abutting the shoreline where structures are proposed within approximately five hundred fifty (550) feet of the shoreline. The land on which the proposed storage facility will be located is not abutting the shoreline, and the proposed storage facility improvements will be more than 550 feet away from the shoreline.

Concerning Nawiliwili Harbor, the County's Planning Department has acknowledged that the shoreline runs across the mouth of Nawiliwili Harbor.[69] As such, the requirements of the County's SSO do not apply to TGC's proposed Pier 2 project since the principal project improvements (the proposed storage tank facility) will be more than 550 feet away[70] from the shoreline[71].

Nevertheless, the County's Planning Department has indicated in pre-consultation it may require TGC to submit a *Shoreline Setback Determination Application* for purposes of establishing a record concerning the application of the SSO to TGC's proposed project. This application would be submitted after TGC secures a lease for the project area.

Upon issuance of an *SMA Permit* and *Class IV Zoning Permit*, and upon issuance of a determination by the County Planning Department that the requirements of the County's shoreline setback ordinance do not apply to the proposed project, the proposed project will be in compliance with all known applicable County land use permit approvals.

3.24.5 Other County Permits (Grading, Building, Electrical, etc.)

Pursuant to the Kaua'i County Code, the proposed project may also require a County grading permit depending on the amount and type of grading the project improvements will need; at present, grading will be necessary for the foundations of the mounded LPG storage tanks located in the Project Parcels area. Grading

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[68] K.C.C. Sec. 8-27.0

[69] By letter dated December 14, 2011, the State Surveyor opined that under Hawaii Administrative Rules § 13-222-16(b)(l3), the shoreline for Nawiliwili Harbor (Kaua'i) runs along the upper reaches of the wash of the waves along the exterior of the harbor and across the mouth of the harbor.

[70] The principal project area is approximately 1,300 feet away from the shoreline pursuant to Hawai'i Administrative Rule §13-222-16 (b) (13). *See* footnote immediately above.

[71] The SSO also applies to lands abutting the shoreline where structures are proposed within 500 feet of the shoreline. (K.C.C. Sec. 8-27.1) TGC's new LPG transmission lines will be located, in some areas, on lands abutting the shoreline; however, the new transmission lines will be located more than 500 feet away from the shoreline of Nawiliwili Harbor, as established by the State Surveyor. As such, the new transmission lines will also not be subject to the SSO.

will also be required for underground pipelines serving the project. The specific cubic feet of graded material will be determined upon completion of final engineering plans and specifications for the proposed project. The project may also require applicable County building permits for improvements constructed within the project area including, but not limited to, building, electrical, and plumbing permits.

SECTION 4.0 TECHNICAL CHARACTERISTICS & PUBLIC SERVICES

4.1 Transportation and Vehicular Access

As previously described, the principal project area is located at Nawiliwili Harbor, *mauka* of the Pier 2 area. From Lihue, vehicular access to the Project Parcels area will be from the south to east direction on Rice Street, and then down to Wa'apa Road. Wa'apa Road is a fairly narrow two-lane County road used primarily by various businesses and industrial uses within the area. The traffic is generally slow, with a speed limit of 25 MPH. TGC anticipates that the number of TGC trucks and/or employees will not materially increase after the proposed Pier 2 facility is constructed; as such, TGC does not anticipate a material increase in vehicular traffic arising from the proposed project.(As mentioned in section 2.3.6 of this environmental assessment, once the new Pier 2 facility becomes operational, typically six to eight tanker trucks may enter *either* TGC's Pier 3 storage tank facility *or* the proposed Pier 2 facility to load LPG each day.)

Concerning potential traffic impacts on State highways and right-of-ways, representatives of TGC met with the Hawai'i State Department of Transportation ("HDOT"), Highways Division, Kaua'i District Engineer ("District Engineer") and his staff on March 2, 2016 and again with the District Engineer on July 6, 2016 to seek HDOT's preliminary impressions and comments regarding the proposed project (including the project's mounded tanks conceptual design alternative). HDOT's preliminary, substantive comments revolved around traffic impacts caused by potential additional trips by TGC's tanker trucks to and from the proposed facility. No HDOT requirements are anticipated to be imposed if the proposed project causes no material increase in TGC's tanker truck operations. However, if the amount of additional tanker truck trips generated over time by the new Pier 2 facility warrant traffic mitigation measures, HDOT could require certain intersection improvements to be made at a future time at the intersection of Nawiliwili Road and Kanoa Road to address traffic impacts arising from potential additional tanker truck traffic generated by TGC's new storage facility. (Should demand for LPG from TGC increases, the amount of TGC tanker trucks, TGC tanker truck trips, and TGC employees may increase over time.)

TGC acknowledges that its LPG operations shall comply with 49 CFR Part 130 (re: Oil Spill Prevention and Response Plans) and 49 CFR Part 172 (re: Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans). These regulations are generally intended to protect public health and welfare, and prevent releases at transportation-related facilities and releases from vehicles transporting hazardous materials.

4.2 Fire, Police and Medical Services

Located on Rice Street, the Lihue Fire Station is located approximately 1.8 miles from the Project Parcels area. The Kaua'i Police Department headquarters is approximately 2.1 miles from the Nawiliwili Harbor area, and is located on Kaana Street, near Kapule Highway.

As described in section 10.0 of this environmental assessment, on or about August 2, 2013 and July 5, 2016 representatives of TGC consulted with representatives of the Kaua'i County Fire Department ("KFD") to seek the KFD's preliminary impressions and comments in response to the proposed project, including the two conceptual design alternatives[72] that were being considered at that time by TGC. Among other comments offered, KFD recommended that TGC consult with a licensed engineer specializing in fire protection to evaluate the project for appropriate fire mitigation and/or prevention measures, and that TGC present the engineer's findings and recommendations to KFD for further evaluation and potential implementation. Further consultation with KFD regarding requirements it may impose in response to the project will occur after a long-term lease has been secured from the State Board of Land & Natural Resources for the Project Parcels area.

Emergency medical services are provided through the County's 911 communications center. Ambulance service is provided by American Medical Response. Emergency and regional medical services are available at the Wilcox Memorial Hospital, which is in Lihue about four miles away and about a 10 minute drive.

4.3 Solid Waste Disposal and Wastewater Treatment

Currently, solid waste disposal for the Nawiliwili Harbor area is provided by a private contractor, Garden Isle Disposal, Inc. ("GID"). GID also picks up any materials to be recycled. The solid waste materials generated from within the project are expected to be minimal.

Concerning wastewater, the following improvements may be constructed in conjunction with the Project Parcels area: an office trailer, a sink, and a toilet. Approximately three to four employees of TGC will be periodically present at the proposed Pier 2 storage tank facility to handle operational matters at the storage tank facility (load tanker trucks with LPG, transfer LPG from Pier 3 to the proposed Pier 2 facility, perform needed maintenance and repair, etc.).

Representatives of TGC met with representatives of the Hawaii State Department of Health ("DOH"), Wastewater Branch, Kaua'i District Health Office, on March 1, 2016 and July 6, 2016 to seek DOH's preliminary impressions and comments regarding

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[72] Above-ground pedestal mounted storage tanks, or mounded storage tanks.

wastewater and other impacts the project (including the two conceptual design alternatives[73] that were under consideration) may generate.

The DOH responded with various preliminary comments, including the following:

- No sewer transmission lines exist in the Project Parcels area to serve wastewater generated by the project;
- A septic system and leach field must be constructed/installed in compliance with Hawaii Administrative Rules Title 11, Chapter 62 (re: Wastewater Systems) to address wastewater impacts generated by the proposed project;
- If water is encountered and removed while digging foundations for the LPG storage tanks, any such discharged water must comply with federal National Pollutant Discharge Elimination System ("NPDES") requirements[74]; and
- During the project's construction, best management practices ("BMPs") including, but not limited to, dust control and controls to prevent the tracking of dirt/mud on roadways, must be complied with.

4.4 Water Service

Concerning potable water, Representative of TGC met with engineers of the Kaua'i County Department of Water ("DOW") Water Resources and Planning Division in Spring 2015 to seek DOW's preliminary impressions and comments regarding the proposed project, including any requirements DOW may impose in response to the project's need for potable water service. DOW requested that TGC follow up with written correspondence in this regard. Through written correspondence dated November 13, 2015, DOW responded that at present, although DOW does not provide water service to TMK parcels 3-2-004:022, 3-2-004:023, and 3-2-004:053, an existing 2" water meter[75] assigned to TMK 3-2-004:021 is available to serve the entire project across the various Project Parcels.[76] TGC also informed DOW that the proposed project will not require any additional fixture units, water meter(s), or increase in size of the existing meter. Although the DOW noted various miscellaneous requirements that may apply at the time of building permit approval (including, but not limited to, securing DOW approval of construction drawings for any water connections, payment of applicable impact fees, and receiving a certificate of completion from DOW for construction of any necessary water facilities, if applicable), the DOW did not impose additional major requirements relating

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[73] Above-ground pedestal mounted storage tanks, or mounded storage tanks.

[74] State requirements relating to such discharges including, but not limited to, those contained in Hawaii Administrative Rules chapters 11-54 and 11-55, will also be complied with.

[75] For comparison purposes, a standard residential dwelling meter size is 5/8".

[76] On April 4, 2016, DOW was informed that the project area would include a small portion of TMK 3-2-004:016 as well. DOW opined that the addition of a portion of parcel 16 would not affect the contents of DOW's November 13, 2015 letter to TGC. On July 6, 2016 DOW was informed of the possible 22 mounded tanks conceptual design alternative, in addition to the possible 14 above-ground, pedestal mounted tank alternative; DOW opined that the mounded tanks alternative would not affect the contents of DOW's described November 13, 2015 letter to TGC.

to source, storage, and transmission lines[77] relating to the project. No requirements were imposed with regard to fire protection.

Currently, TGC anticipates the Project Parcels area will need potable water to serve an office trailer, sink, and toilet to be located on the Project Parcels. Given that an existing 2" water meter is currently assigned to one of the Project Parcels and will therefore be available to serve the storage tank facility's limited water needs, the project will generate no additional impacts as to potable water use.

4.5 Utilities: Electrical, Telephone, and Cable Service

Available utilities to the proposed Pier 2 storage tank facility include electrical service by Kaua'i Island Utility Cooperative ("KIUC") and telephone service by Hawaiian Telcom, or the use of a personal cellphone. Broadband Internet access within the area is provided by Oceanic Time Warner Cable.

The project will require electrical service from KIUC and may require telephone service from Hawaiian Telcom.

A general description of former or existing utility pipelines owned or operated by third parties in the general project area is attached as **Exhibit N**.[78] (Both the above ground molasses storage tanks, miscellaneous improvements, and various pipelines shown in the area to be occupied by TGC's proposed Pier 2 storage facility have been removed.)

4.6 Schools and Libraries

Located to the north and about one mile away from the project area, on Lala Road, is Kaua'i High School, a public school. Kaua'i High School is located about one mile away from the proposed project. School busses do not travel along Wa'apa Road, which fronts the Project Parcels area. About two miles away from the project area, in the town of Lihue, is the Lihue Public Library on Hardy Street; the library is situated across from Wilcox Elementary School, another public school.

Because the proposed project is located in an industrial zone some distance from schools and libraries, the project is not anticipated to impact any schools or libraries.

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[77] Requirements relating to source, storage, and transmission would include the drilling of additional water wells (source), construction of water storage tanks (storage), and upsizing or construction of additional transmission lines (transmission) for purposes of fire protection and provision of domestic water service.

[78] This exhibit is from the Phase I Environmental Site Assessment (April 2012), Sugar/Molasses Storage and Loading Facility, Lihue Kaua'i, Hawaii, TMK: (4) 3-2-4: Parcels 21, 41, 53, and 63 (portion); Gay and Robinson, Inc.

SECTION 5.0 SOCIO-ECONOMIC CHARACTERISTICS

5.1 Demographic Data

According to the 2010 Census, the Kaua'i population was 67,091 residents. The 2010 Census data population for the Lihue area was 6,455.[79] Other relevant data is:

Description	Census Tract 405
Population: Lihue	6,455
Number of Households	2,196
Median Household Income	$67,448
Per Capita Income (2013)	$27,815

In the 2010 census, the predominant ethnic groups within the Lihue area were, approximately, Asian (44.4%), Two or More Races (24.8%), White (22.2%), and Native Hawaiian and other Pacific Islanders (7.0%).

The February 2014 *Kaua'i General Plan Update: Socioeconomic Analysis and Forecasts* projects the Kaua'i population growth on Kaua'i to be 88,013 in 2035. This is expected to increase the demand for propane by Kaua'i residents, businesses, and visitors.

5.2 Historic, Cultural and Archaeological Resources

Due to the highly developed nature of the Project Parcels and Pipeline Parcels area[80], and considering that the Project Parcels area consists of land recently cleared of improvements under the direction of the State of Hawaii, Department of Transportation, Harbors Division, the proposed storage tank site is heavily disturbed and no archaeological resources are believed to be present at the site or in the excavated trenches that will accommodate the project's related LPG transmission lines[81]. Nevertheless, an archeological or cultural survey, or both, will be undertaken prior to construction if deemed necessary.

Nawiliwili History[82]

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[79] Source: http://quickfacts.census.gov/qfd/states/15/1545200.html Accessed 1-19-15.

[80] *See* page IV-1, et. seq. of *Kaua'i Commercial Harbors 2025 Master Plan.*

[81] As noted by SHPD's Kauai Lead Archeologist in her April 5, 2016 letter to TGC concerning the proposed project, "construction of the [Wa'apa] road likely disturbed some of the area proposed for the new pipeline." *See* **Appendix E** to this environmental assessment.

[82] Source: "Historical and Cultural Assessment for the Proposed Improvement Project at Nawiliwili Harbor" by Cultural Surveys Hawai'i, 2004, and "Archaeological Literature Review and Field Inspection report for the Nawiliwili-Ahukini Bike Path Project" by Cultural Surveys Hawai'i, Inc. 2008. *See* Reference section.

From the early days of Hawaiian settlement on Kaua'i to the arrival of Captain James Cook in 1778, Nawiliwili was the center of island life, a home to fishing and taro farming. Then, with the advent of westernization in the early 19th century, Nawiliwili Bay also became an important harbor on Kaua'i's eastside.[83]

Nawiliwili *ahupua'a* apparently took its name from the blossoms of the wiliwili trees that grew in great numbers on the rocky slopes above the bay.

Because of the modern developments in and around the harbor, little or no archaeological vestiges survive of what must have been a well-populated area. The coast of Nawiliwili, because of its natural harbor, was the focus of commercial activity from an early date. Most of the Development surrounding Nawiliwili Bay took place before archaeological surveys were a common practice.

Nawiliwili Bay was early recognized as virtually the only natural harbor for sailing ships on Kaua'i. During the 1830's, Kaikioewa, Governor of Kaua'i, established a village at Nawiliwili that developed into Lihue. By 1830, the sandalwood trade had waned and the whaling industry was just beginning. At the same time, commercial agriculture was being established on Kaua'i.

The development of the Nawiliwili Harbor began with the River and Harbor Act of March 2, 1919 with the construction of a modern harbor. Construction of the breakwater began in October 1921 and by 1924 had been set in place, and the harbor was opened in 1930.[84] Construction of the wharf facilities took place throughout the 1930s.

Further historical information and photographs about Nawiliwili Harbor may be found in **Appendix D** to this environmental assessment.

History of Project and Related Parcels

TGC's proposed storage facility will encompass TMK (4) 3-2-4: parcels 21, 22, 23, 53, and a portion of parcel 16. Concerning parcels 21 and 53, which comprise a substantial portion of the proposed storage facility area (and TMK nos. (4) 3-2-4: parcels 41 and a portion of parcel 63, both of which will *not* be a part of the Project Parcels area), the following historical information is relevant: [85]

> *"A review of historic maps, aerial photographs, and other documents indicates that the subject property was developed as part of Nawiliwili Harbor in the 1930s, after the area was filled, and that a railway ran through a portion of*

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[83] Also see *Kalapaki Beach Guide* and *History of Nawiliwili Harbor* for additional history of Nawiliwili.

[84] See *Kaua'i, The Separate Kingdom.*

[85] References below to the "subject property" mean TMKs (4) 3-2-4: parcels 21, 41, 53 and 63 (portion).

Parcel 41, up to at least 1945. The 1945 Sanborn Map shows the two steel AST currently at the site; however, they are labeled as fuel tanks, not molasses tanks. This is possibly an error, since the ASTs were reportedly used for bulk molasses storage in the 1930s. In 1950, the site was developed for sugar loading with the addition of a gantry (conveyor system) from the adjacent bulk sugar storage facility to the pier. Prior to October 2001, when G&R was issued the Revocable Permit, Lihue Plantation- AMFAC (doing business as Kaua'i Sugar Storage) conducted equipment maintenance and repair operations at the site. Since 2001, only minor facility/equipment maintenance and repair operations were conducted."[86]

Further:

"The [subject] property is located within Nawiliwili Harbor and has been used since 1930 for storing molasses and since 1950 for loading raw sugar and molasses onto ocean-going vessels..."[87]

About one mile to the west of the proposed Pier 2 storage facility is a historic Hawaiian fishpond, the Menehune Fishpond (a.k.a. Alekoko Fishpond); it is listed on the National Register of Historic Places. Less than one mile away on the hillside to the north of the proposed storage facility is a historic cemetery located on Lala Road.

Potential Impacts and Mitigation Measures

The proposed storage facility is situated in a general industrial zoned area which in the past was occupied by two molasses tanks, as described in the ESA.[88] Because of the highly developed industrial nature of the proposed Project Parcels area and the Pipeline Parcels area, the loss or destruction of any natural or cultural resources is therefore highly unlikely. Should any natural or cultural resources appear during the construction phase, construction activities would immediately cease.

On March 7, 2016, representatives of TGC met at the proposed storage facility with the Kaua'i Lead Archeologist for the State Historic Preservation Division ("SHPD"), a division of the Hawaii State Department of Land and Natural Resources. The meeting's purpose was to seek SHPD's preliminary impressions and comments concerning the

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[86] Executive Summary, Phase I Environmental Site Assessment, April 2012 (the "ESA"), commissioned by Gay and Robinson, Inc. ("G&R").

[87] See ESA section 4.3.3, "*Historic Use of Area*" for additional information. ESA section 4.3.3. also includes a discussion of historic uses of adjacent properties.

[88] According to a recent real property tax (plat) map obtained from the County's Real Property Tax Division that shows TMK (4) 3-2-004:023 , the plat map showing TMK (4) 3-2-004:023 depicts two molasses tanks operated by The Lihue Plantation Co., Ltd., Rev. Pmt. H-80-892. As mentioned, these tanks have been demolished and removed, and no longer exist on this parcel. The proposed *transmission lines* serving the proposed Pier 2 storage facility are also located in an area zoned general industrial. (*See* **Exhibit K**.)

project's potential impacts on historical resources which may exist within the proposed Project Parcels area and Pipeline Parcels area.

Background information regarding the Project Parcels area and the project itself was provided to SHPD. The parties noted that presently, the Project Parcels area consists of vacant land that has been previously disturbed and developed. SHPD was also informed that:

- If mounded storage tanks are constructed in the Project Parcels area, TGC may need to excavate up to three feet of earth[89] to set the storage tanks to be located either at or slightly below ground level; and
- Underground LPG transmission lines necessary to transport/transfer LPG will need to be constructed along Wa'apa Road between Pier 3 and the proposed storage facility across Pier 2, a distance of approximately 1,500 ft.[90] Trenches dug to install these lines may be approximately 3½ feet deep and approximately 4 feet in width. (As noted in section 1.3, *et seq.* of this environmental assessment, a typical construction detail of the trench to be constructed to install proposed transmission lines is attached as **Exhibit Q**.)

In response to the preceding information, on April 5, 2016 SHPD stated in summary that: "*The State Historic Preservation Division has made a determination of* ***no historic properties affected.*** *However, once the project commences, please [contact] the Kaua'i Lead Archaeologist for a site inspection of the excavated trenches as inspection of the trenches may inform similar assessments in this area.*" A copy of SHPD's written response is attached to this environmental assessment as **Appendix E**.[91]

5.3 Environmental Justice

According to the U.S. Environmental Protection Agency ("EPA"):

> *Environmental Justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.*[92]

The State Department of Health, draft definition of Environmental Justice for Hawai'i is:

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[89] A soils analysis will determine the amount of excavation required when mounded tanks are installed.

[90] *See* **Figure 1** of this environmental assessment.

[91] **Figure 3** in this environmental assessment (conceptual site plan showing mounded tanks design alternative) and a conceptual site plan showing TGC's above-ground tanks design alternative were also provided to Kauai's SHPD representative on July 5, 2016 to update SHPD of TGC's ongoing development plans concerning TGC's Pier 2 project.

[92] *See* State of Hawai'i, Department of Health, http://health.hawaii.gov/epo/ej/.

> *Environmental justice is the right of every person in Hawai`i to live in a clean and healthy environment, to be treated fairly, and to have meaningful involvement in decisions that affect their environment and health; with an emphasis on the responsibility of every person in Hawai`i to uphold traditional and customary Native Hawaiian practices that preserve, protect, and restore the `aina for present and future generations. Environmental justice in Hawai`i recognizes that no one segment of the population or geographic area should be disproportionately burdened with environmental and/or* ES-2 *health impacts resulting from development, construction, operations and/or use of natural resources.*[93]

The Nawiliwili and Niumalu area has no resident community association that could be consulted with regarding TGC's proposed project. Notwithstanding, TGC held two community meetings to generate opportunities for public input and participation in the proposed project. Specifically, the following forums were held to inform and solicit feedback from the community about the proposed project.

Approximately 121 letters were mailed to residents and businesses in the Nawiliwili Harbor and Niumalu areas[94] inviting area occupants to a community forum regarding the project on November 10, 2015 at Kaua'i County's Niumalu Beach Pavilion located about a half-mile away from TGC's proposed storage facility. A report summarizing the results of this forum is attached to this environmental assessment as **Appendix A**. Also attached is the letter that invited addressees to this forum, and a list of all addressees to whom this letter was sent.

A further letter updating the same list of addressees as to the two possible design alternatives which were under consideration (i.e., *either* above-ground, pedestal mounted tanks *or* mounded tanks) was mailed on July 1, 2016. **Figure 3** in this environmental assessment and a conceptual site plan of an above-ground tanks design alternative were included in this update, and addressees were advised they could contact TGC's Kauai General Manager with any questions or comments regarding the proposed development. Addressees were also advised they could provide comments in response to the draft environmental assessment ("DEA") regarding the proposed project when the DEA is published, and were provided the website address where the DEA can be found. The foregoing update letter is attached to this environmental assessment as **Appendix B-1**.

A separate meeting was held with the Lihue Business Association ("LBA") regarding the project on November 19, 2015 at a location also about a half-mile from the proposed storage facility. A report summarizing the results of this meeting is attached as **Appendix**

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[93] *See* State of Hawai'i, Department of Health, Hawai'i Environmental Justice Initiative Report, http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc_Documents/2008_Hawaii_Environmental_Justice_Report.pdf

[94] Niumalu is a residential community that is adjacent to the Nawiliwili Harbor area.

A to this environmental assessment. On July 1, 2016 the LBA was updated via a mailed letter as to the two possible design alternatives TGC was considering (i.e., *either* above-ground, pedestal mounted tanks *or* mounded tanks). **Figure 3** in this environmental assessment and a conceptual site plan of an above-ground tanks design alternative were included in this update letter, and the LBA was advised its members could contact TGC's Kauai General Manager with any questions or comments regarding the project. The LBA was also advised its members could provide comments in response to the draft environmental assessment ("DEA") regarding the project when the DEA is published, and was provided the website address where the DEA can be found. The foregoing update letter is attached to this environmental assessment as **Appendix A-1**.

Concerning environmental justice generally and according to the U.S. Environmental Protection Agency's EJScreen[95] website, the one mile ring centered at TGC's Project Parcels area possesses the demographic and environmental indicators shown in **Exhibit R** attached to this environmental assessment. Of note is that the described ring area has a high population of persons less than five years of age. Also of note is that this area has a high percentage of RMPs [96] (99%) within proximity of the Project Parcels. While significant, this percentage should be viewed through the lens that the proposed storage facility is located within an area populated by various industrial uses, consistent with the area's *industrial* land use zoning.

SECTION 6.0 ENVIRONMENTAL CHARACTERISTICS

6.1 Air Quality and Ambient Noise Levels

There will be no release of pollutants from this proposed project. Due to the properties of LPG, if a leak of LPG ever were to occur, any escaping LPG would immediately dissipate into the air as vapor. Further, a flare to be installed as part of the project improvements will reduce any resulting controlled excess emissions from proposed project improvements. The ambient noise level within the project area will not increase, except temporarily during the construction of the project.

6.2 Biological and Botanical Resources

The Project Parcels and Pipeline Parcels are situated in the heavily developed industrial Nawiliwili Harbor area, with little, if any, native flora and fauna found in the vicinity.

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[95] EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. EJSCREEN users choose a geographic area; the tool then provides demographic and environmental information for that area. All of the EJSCREEN indicators are publicly-available data (https://www.epa.gov/ejscreen/what-ejscreen).

[96] RMP means *Regulated Management Plans*, and refers to potential chemical accident management plan facilities within five kilometers of the Project Parcels area. *See* attached **Exhibit R** for a more detailed explanation of RMP by the EPA.

Potential Impacts and Mitigation Measures

Subject to the following discussion, no Federal or State listed or candidate threatened or endangered species are believed to be found at the Project Parcels, which was recently completely cleared to ground level of improvements, under the direction of the State of Hawaii, Department of Transportation, Harbors Division.[97] Since the Project Parcels area was recently cleared, it currently contains only common botanical resources; no known native vegetation exists on the Project Parcels. Nevertheless, a biological survey of the Project Parcels will be undertaken prior to construction if deemed necessary.

Perhaps one of the more important impacts to fauna in the Nawiliwili Harbor area may be danger to Newell's Shearwater birds posed by night lighting installed within the Project Parcels, inasmuch as these birds are attracted to coastal lights, and are known to fly to their nesting colonies at night.

Regarding endangered birds, a recent final environmental assessment concerning the parcel occupied by Kaua'i Petroleum Company, Ltd.[98] directly adjacent to TGC's proposed storage facility noted that:

> Other endangered seabirds potentially affected by night lighting are the Hawaiian Petrel or *uau* in Hawaiian (*Pterodroma sandwichensis*), also known as the Hawaiian Dark-Rumped Petrel, and the Band-Rumped Storm Petrel or *akeake* in Hawaiian (*Oceanodroma castro*). The Hawaiian Petrel was identified in the October 2001 fauna survey that was included as an appendix to the 2005 EA for the segmented Pier 3 improvements (Okubo, 2005). According to the State of Hawaii Department of Forestry and Wildlife [DOFAW], these birds transit the Nawiliwili Harbor area at night, during the nesting season, which is from April to mid-December (DOFAW, 2015). The most critical period is from mid-September to mid-December, when young seabirds depart from their mountain nesting grounds to the sea.

See section 4.4.2, *Final Environmental Assessment, Kauai Petroleum Fuel Terminal, 3185 Wa'apa Road, Nawiliwili, Kauai, TMK (4) 3-2-004-016* (January 22, 2016)

To mitigate potential adverse impacts to endangered seabirds from night lighting at the proposed storage facility, any security night lighting installed at the facility will conform to guidelines for wildlife lighting issued by the State of Hawaii's Department of Land &

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[97] *See* section 7.2 of this environmental assessment for photographs of TGC's proposed Pier 2 storage facility cleared down to bare dirt by the prior occupant of the project area, Gay and Robinson, Inc. *See also* section 2.7 of this environmental assessment for photographs of current condition of Project Parcels.

Similarly, subject to the following paragraphs, no Federal or State listed or candidate threatened or endangered species are believed to exist within areas to be trenched within the Pipeline Parcels as well, given the heavily disturbed nature of and development within the Nawiliwili Harbor area.

[98] Tax map key no. (4) 3-2-004-016

Natural Resources. Any such lighting will be *downlights and fully shielded*. Further, construction of the project improvements will not occur at night.

Concerning the potential for introduction of unwanted invasive biological matter from foreign tanker ships transporting LPG to Nawiliwili Harbor, on March 30, 2016 representatives of TGC met with an agent of the University of Hawaii at Manoa's College of Tropical Agriculture and Human Resources ("CTAHR") who specializes in invasive pests and plant pathology, to seek information regarding applicable State regulatory requirements and/or guidance concerning potential introduction of invasive species from TGC's foreign ships.[99]

Background information regarding the proposed project was provided, including an overview of how LPG would be transferred from Pier 3 to the Project Parcels area via new pipelines to be constructed along Wa'apa Road. TGC's representatives elaborated that:

- Currently, foreign tanker ships commissioned by TGC transport LPG to Kaua'i from South America.
- Sealed containers holding the LPG are located within the ships internal hull.
- Since tanker ships arrive filled with LPG, the ships *do not take on ballast water* for ship stabilization purposes unless and until LPG is transferred from such ships to TGC's Nawiliwili land-based holding containers. As such, no foreign ballast water is discharged into Hawaiian waters.
- Mooring ropes are fitted with rat guards to inhibit rats, if any, from leaving docked ships and trying to make land fall.
- Tanker ships are usually dry-docked annually for maintenance purposes; at that time foreign biological matter, if any, that has attached itself to the ships' hulls are cleaned off and removed.
- TGC's shipping agent reports it has not seen much marine growth on the hull of ships arriving from foreign ports, and that generally, the likelihood of foreign organisms attaching themselves to ships, then falling off ("*hull fouling*") is low because the ships are moving through water except when docked.
    - However, there is some concern of unwanted marine growth if tanker ships are idled in Hawaiian waters at *Penguin Bank* (off Molokai) for too long a period of time.[100]

Responsive to the information above, the CTAHR agent provided various comments, including:

- That because TGC's ships discharge no foreign ballast water while in Hawaiian waters, the introduction of foreign invasive biological matter from any such discharges is not in issue.

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[99] The agent is located in the State Department of Agriculture's Kaua'i offices.

[100] If there is no space available for a tanker ship to dock, the ship must remain at sea until space is available for docking. "Penguin Bank" is the name given to a now-submerged shield volcano of the Hawaiian Islands. Its coral-capped remains lie immediately west of the island of Moloka'i, under relatively shallow water.

- That since LPG is shipped in sealed, pressurized containers, in liquid form, and transferred in liquid form from such pressurized containers through pressurized, land-based pipelines, to other sealed pressurized containers in TGC's land-based tank farms, the potential for introduction of invasive species is minimal. (Of greater concern would be products that are shipped on pallets and transported using usual steel-constructed, unsealed, rectangular shipping containers with open/dead spaces.)
- That she is unaware of any applicable State regulatory requirements relating to "hull fouling" of organisms from ships.[101]
- That she is unaware of any applicable State regulatory requirements relating to inspection of foreign cargo ships for invasive species, while ships are docked at Nawiliwili.

As to discharge of ballast water, TGC's tanker ships are also subject to various federal and State regulatory laws which either prohibit or strictly regulate the discharge of any such water including, but not limited to:

- 33 Code of Federal Regulations Part 151 (including Subpart D "*Ballast Water Management for Control of Non-Indigenous Species in Waters of the United States*");
- H.R.S. chapter 342D "*Water Pollution*"[102], as amended;
- Hawaii Administrative Rules Title 11, Chapter 54, "Water Quality Standards".

6.3 General Climate, Rainfall and Wind[103]

The range in normal temperatures from the coolest month, February, to the warmest month, August, is less than 8 degrees. The daily range in temperature is also small, less than 15 degrees. The average range of temperatures in Lihue for 2014 was between approximately 65 and 78 degrees.

The trade winds blow across the island during most of each year and the dominance of these winds has a marked influence on the climate of the area. Trade wind showers are relatively common. Although heavy at times, most of the showers are light and of short duration.

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[101] Notwithstanding, TGC is informed that the State Department of Land and Natural Resources' ("DLNR") Division of Aquatic Resources regulates or may regulate hull fouling; TGC's ships will comply with all applicable legal requirements of the DLNR's Division of Aquatic Resources bearing on the introduction of non-native aquatic species into waters of the State of Hawaii, or "hull fouling".

[102] *See*, egs, H.R.S. §342D-50 "*Prohibition*" at paragraph (a), which states: "*No person, including any public body, shall discharge any water pollutant into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the director.*"

[103] Source: http://www.prh.noaa.gov/hnl/climate/phli_clim.php. Accessed January 19, 2015

Normal annual rainfall is over 40 inches in the area. Three-fourths of this total, on the average, falls during the seven month wet season which extends from October through April. Normal precipitation in January, the wettest month, is over 6 inches.

The dry season includes the months of May through September. June, the driest month, receives only about 1.5 inches of rain, on average.

Hurricanes and other severe windstorms are quite rare. Strong winds do occur at times in connection with storm systems moving through the area, but seldom cause extensive damage.

Relative humidity, moderate to high in all seasons, is slightly higher in the wet season than in the dry. However, even during periods when the temperature and humidity are both high, the weather is seldom oppressive. This is due to the trade winds, which provide a system of natural ventilation during most of each year.

6.4 Coastal, Marine, Shoreline Resources, and Climate Change/Sea-Level Rise

See section 3.24, *et seq.* of this environmental assessment for a discussion of the application of the County's Shoreline Setback Ordinance to the proposed project. As noted in section 3.24, *et seq.* of this environmental assessment, pursuant to H.A.R. §13-222-16 (b) (13) and according to the State Surveyor, the mouth of Nawiliwili Harbor constitutes the "shoreline" as concerns the harbor. As such, in this instance the Project Parcels area is some 1,300 feet away from Nawiliwili Harbor's "shoreline".[104] Given the project's distance from this technical shoreline, coupled with the fact that there is no naturally-occurring coast or shoreline in the immediate vicinity of the proposed project, the project will not adversely affect naturally-occurring coastal, marine, or shoreline resources. *See also* section 3.9, *et seq.* of this environmental assessment for additional discussion of the proposed project's impact on coastal resources.

Climate change is "a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity."[105]

Since the industrial age, the climate has been changing in unprecedented ways. The chemical composition of the atmosphere is in flux, mostly due to human emission of greenhouse gases that contribute to excessive global warming (IPCC 2007, 2013).[106] While warming of the earth's ocean and air are at the heart of global climate change, the

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[104] Further, the proposed LPG transmission lines will be located more than 500 feet away from the shoreline of Nawiliwili Harbor, as established by the State Surveyor.

[105] University of Hawai'i at Manoa Sea Grant College Program, "Climate Change Impacts in Hawai'i". (June 2014)

[106] "Kaua'i Climate Change and Coastal Hazards Assessment", University of Hawai'i Sea Grant College Program (June 2014). IPCC means Intergovernmental Panel on Climate Change (IPCC).

effects of this change are not limited to warming - they include a multitude of complex and often compounding feedback mechanisms and localized changes to earth's natural systems that extend from pole to tropics.

The sea level has been rising globally and around the Hawaiian Islands over the last century or longer. As concerns Kaua'i, sea levels have risen about 6 inches around the island over the past century.[107] Rates of sea-level rise ("SLR"), globally and locally around Hawai'i are expected to accelerate over this century.

Potential Impacts and Mitigation Measures

Concerning the effects of climate change on TGC's proposed project, the *Līhu'e Community Plan (June 2015)* ("LCP") states:

> The Kaua'i County Planning Department commissioned a technical study, the *Kaua'i Climate Change and Coastal Hazards Assessment* (UH Sea Grant Program 2014) to address climate change related risks and hazards in anticipation of the General Plan update. The study included sea-level rise hazard assessments using the National Oceanic and Atmospheric Administration (NOAA) sea-level rise (SLR) viewer, showing the effects of sea-level rise under three different scenarios: 1-foot, 3-foot, and 6-foot SLR.
>
> Nāwiliwili was highlighted as an area with key infrastructure that may require protection to maintain essential services such as shipping. Figures 3-7 through 3-9 show potential inundation from sea-level rise at Nāwiliwili under the 1, 3, and 6 foot scenarios. The study recommended that potential climate change impacts be factored into planning and policy-making. Policy recommendations related to climate change are provided in Section [5.10].[108]

Attached to this environmental assessment as **Appendix G** are **Figures 3-7** through **3-9** of the LCP referenced above.

Regarding the LCP's policy recommendations concerning climate change in the Nawiliwili area, the LCP provides:

> The Sea Grant College Center for Island Climate Change Adaptation Policy (ICAP) recommends planning for a one foot rise in sea level by 2050 and a three foot rise by 2100. In Līhu'e, these measures are felt most acutely in Nāwiliwili. To be consistent with adaptation, structures and facilities in that area should be eventually moved in a more mauka direction. There should either be no new

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[107] "Kaua'i Climate Change and Coastal Hazards Assessment", University of Hawai'i Sea Grant College Program (June 2014).

[108] Section 3.7, LCP

> facilities or any built (such as bridge replacement) should be designed for up to six feet rise in sea level to provide cushion.[109]

As these findings apply to TGC's proposed project, the ICAP's planning recommendations focus on a one to three foot rise by, respectively, 2050 and 2100, and recommends that structures and facilities in these areas either be eventually moved in a *mauka* direction or that no new structures be built in this area, or that any new structures built in this area be designed for up to a six foot sea level rise.

A one foot SLR would not affect the proposed project. As shown in **Appendix G** (Figure 3.8), a three foot SLR, (which the ICAP suggests could occur by 2100) would not affect the TGC's improvements on the Project Parcels, but might affect certain limited areas where new TGC LPG transmission pipelines would be constructed along Wa'apa Road; in such limited areas where TGC's transmission lines may be adversely affected by SLR, mitigative measures could include construction of above-ground transmission lines in such areas.

TGC acknowledges that under the six foot SLR scenario posited by the ICAP, not only the proposed project, but the entirety of the Pier 2 area and some portions of the Pier 3 area as well would be inundated. Effective mitigation measures that may be implemented to address a six foot SLR are outside the scope of TGC's planned and future construction activities as concern this project; any such measures would likely be part of a State-wide response to such a severe event.

TGC in any event plans to monitor potential negative impacts of SLR so that appropriate mitigation can be undertaken in a proactive manner, in coordination and compliance with measures that may be undertaken or mandated by the DOT, Harbors Division.

Concerning the potential impacts of possible precipitation severity due to climate change, the State of Hawai'i, Department of Health's Office of Environmental Quality Control ("OEQC") recently commented as follows in response to a 2015 draft environmental assessment conducted by Kaua'i Petroleum Company, Ltd. to construct two additional above-ground storage tanks on the parcel adjacent to the Project Parcels:

> .....the OEQC recommends considering potential climate change impacts in project design and operation. Changing weather patterns in the Pacific are projected to result in localized increased precipitation severity. Such an event, if occurring during a high tide and storm surge, could exceed standard design criteria. Kaua'i County has prepared a comprehensive report of its climate change issues. As recommended in that report, conducting a *Risk and Vulnerability Assessment* may help to identify potential risks and solutions. The State of Hawai'i Coastal Zone Management Program has prepared guidance on considering cumulative impacts from stormwater, which would be relevant to this project.

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[109] Section 5.10, LCP

TGC acknowledges the statement in the *Kaua'i Climate Change and Coastal Hazards Assessment* (University of Hawai'i Sea Grant College Program, June 2014) (the "Kaua'i Climate Change and Coastal Hazards Assessment")[110] that "[i]n the future, the IPCC reports that climate changes in the Equatorial (Tropical) Pacific are expected to cause an increase in precipitation."[111] TGC further acknowledges that increased precipitation severity could affect TGC's proposed project in three ways, to wit:

- Run on to the Project Parcels from increased storm precipitation;
- Run off from the Project Parcels from increased storm precipitation; and
- Potential flooding of the Project Parcels area from increased storm precipitation.

In light of the foregoing considerations, upon the State Board of Land and Natural Resources' issuance and execution of a lease with TGC for the Project Parcels area, TGC will consider conducting a Risk and Vulnerability Assessment, as suggested by OEQC, to identify potential risks and solutions arising from possible severe precipitation events, as noted above.

Additionally, TGC acknowledges that localized increased precipitation severity could occur during high tide and storm surges. However, as previously noted, because TGC's Project Parcels area is located above and over 200 feet from Pier 2's harbor waters, with intervening large buildings between harbor waters and TGC's proposed Pier 2 storage facility, it's unlikely that such tides and surges would affect TGC's operations at its Pier 2 facility sufficient to exceed standard design criteria of TGC's prospective improvements to be located at its new facility.

6.5 Hazards: Flooding, Hurricanes and Tsunami

The Kaua'i coastline is susceptible to a variety of natural hazards, including coastal storms, high wave events, flooding, coastal erosion, and tsunamis.[112] All of these hazards threaten lives, property, the natural environment, and, ultimately, economies. Increasing development in coastal areas not only places more people and property at risk to coastal hazards, but it can also degrade the natural environment and interfere with nature's ability to protect the human environment from severe hazard events. Although little can be done to prevent coastal hazard events, their adverse impacts can be reduced through proper planning.

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[110] The Kaua'i Climate Change and Coastal Hazards Assessment is a technical study that was commissioned by Kaua'i County for the Kaua'i General Plan Update process.

[111] *See* section I. *Kaua'i's Coastal Hazards*, Kaua'i Climate Change and Coastal Hazards Assessment.

[112] "Kaua'i Climate Change and Coastal Hazards Assessment", University of Hawai'i Sea Grant College Program (June 2014)

Potential Impacts and Mitigation Measures

All Project Parcels are located in Zone X of the National Flood Insurance Rate maps. Zone X is an area determined to be *outside* the 0.2% annual chance floodplain. No base flood elevations or depths are shown within this zone. The proposed project is therefore in a low-risk flood zone. *See* **Exhibit F**. The National Flood Insurance Program (NFIP) does not regulate developments within Zone X.[113] The proposed project improvements will satisfy all requirements of the Flood Plain Management Ordinance of the County of Kaua'i, as contained in Chapter 15, Article 1 of the Kaua'i County Code.

Within this general industrial district, there is the possibility of impacts from a future hurricane. The propane tanks proposed to be constructed on the Project Parcels are designed to withstand hurricane force winds, as proven by TGC's existing propane tanks and facility located at Pier 3, which have experienced no detrimental effects during past storms and hurricanes, including Hurricane Iniki- a Category 4 hurricane on the Saffir–Simpson hurricane scale.

The Project Parcels are located in the Tsunami Evacuation Zone ("TEZ"). This evacuation zone is shown in **Exhibit G** attached to this environmental assessment. Should a major tsunami affect the Project Parcels area, TGC's plans include the securing of all of its physical facilities in the project area, then evacuation of all TGC personnel in the storage facility area prior to the arrival of the first tsunami wave.

6.6 Scenic and Visual Resources

The project is industrial in nature; however as the project is located within the existing Nawiliwili Harbor general industrial area, adverse scenic and visual impacts within the context with surrounding industrial uses and improvements will not be increased.

See **Figure 13** below, which depicts the typical, visual impact that mounded tanks developed at the Pier 2 project is expected to have.

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[113] All areas of the Pipeline Parcels area (except for a small portion) are also located in Zone X of the National Flood Insurance Rate maps ("FIRM"). (*See* **Exhibit M** in this regard.) The small portion *not* located in Zone X is located in Zone AE of the FIRM. According to the U.S. Federal Emergency Management Agency, Zone AE areas are subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Mandatory flood insurance purchase requirements and floodplain management standards apply to development in such zones.

Figure 13: Various views of existing TGC mounded tanks at Honolulu's Pier 38.

6.7 Soils

According to the U.S. Soil Conservation Service, the soil in the area of the site is classified as Fill Land, Broken Land, and Mokuleia fine sandy loam.

- Fill Land consists of areas filled with material from dredging of the ocean or hauled from nearby areas, garbage, and general material from other sources. This land type is used for urban development including airports, housing areas, and industrial facilities.
- The Rough Broken Land consists of very steep land broken by numerous intermittent drainage channels. In most places it is not stony. It occurs in gulches and on mountainsides on all the islands. The slope is 40 to 70%. Runoff is rapid.
- The Mokuleia series consists of well-drained soils on coastal plains on the island of Kaua'i. These soils formed in recent alluvium deposited over coral sand. Permeability is moderately rapid in the surface layer and rapid in the subsoil, runoff is very slow and the erosion hazard is slight.

Potential Impacts and Mitigation Measures

A geotechnical investigation of the project area will be conducted by TGC to determine soil density and soil conditions which may influence the project's design or construction.

6.8 Water and Watersheds

Groundwater in the area of the project, which belongs to the *Hanama'ulu Aquifer System* of the *Lihue Aquifer Sector*, is a basal, unconfined aquifer residing in flank lavas. It is not currently used as a drinking water source. The direction of groundwater flow in the area is probably to the south, toward Nawiliwili Harbor.[114]

Both an upper and a lower aquifer underlie the project. Groundwater in the upper aquifer occurs close to sea level at the Project Parcels area, and due to this area's close proximity to the ocean this area is likely impacted by tidal fluctuations.[115]

During soil sampling conducted as part of a Phase II environmental site assessment of the general Project Parcels area, groundwater was observed at depths of 2.5 to 4 feet below ground surface at the site during soil sampling activities taken in conjunction with Gay and Robinson, Inc.'s demolition of its previous existing improvements on the Project Parcels.[116]

According to the Division of Aquatic Resources ("DAR"), a Nawiliwili watershed occurs on the island of Kaua'i. These current watershed and stream ratings are based on the data

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[114] *See* section 4.3.1, *Kaua'i Petroleum Draft Environmental Assessment, Nawiliwili Harbor, Kaua'i, TMK (4) 3-2-004:016* (October 23, 2015)

[115] *See* section 2.2.3 of *Phase II ESA* referred to in the below section 7.2 of this environmental assessment.

[116] *See* section 2.2.3 of *Phase II ESA* referred to in the below section 7.2 of this environmental assessment.

contained in the DAR Aquatic Surveys Database. The ratings provide the score for the individual watershed or stream, the distribution of ratings for that island, and the distribution of ratings statewide. Details are found in the *Atlas of Hawaiian Watersheds & Their Aquatic Resources, Island of Kaua'i.*[117] The ratings for and other features of the Nawiliwili watershed are attached to this environmental assessment as **Appendix F**.

Potential Impacts and Mitigation Measures

TGC is committed to protection of groundwater near or under the site. The applicant will comply with EPA requirements applicable to the construction and operation of the proposed project; the use of lawn and garden products, pesticides, herbicides, fertilizers or other lawn type chemicals will be minimized; non-toxic products will be chosen over toxic products, if used at all, within the proposed storage tank facility; use of potable water will be minimalized(occasional hosing down of a vehicle or office porch, or intermittent watering of landscaping, if any, etc.). Mounded tanks are usually set at or a maximum of three feet below existing grades. If groundwater is encountered within three feet below existing grades where mounded tanks will be located on the Project Parcels, foundations for the mounded tanks will be designed, engineered, and constructed taking into account the existence of such groundwater (most likely the tanks will need to be set above such groundwater).

During site design and construction, TGC will ensure that storm water discharges associated with any industrial activities will conform to all applicable governmental standards. These standards will be considered when designing any drainage measures required for the project. Upon approval of TGC's request for a land lease from the State's BLNR for the general project area, TGC will survey the Project Parcels to determine the exact area TGC intends to lease from the State. Upon completion of the foregoing land survey and also a topographical survey, a drainage plan for the leased area can be developed.

As mentioned in section 4.3 of this environmental assessment, if water is encountered and removed while digging foundations for the LPG storage tanks, any such discharged water must comply with federal National Pollutant Discharge Elimination System ("NPDES") requirements.

Because of the measures described in this section 6.8 concerning the protection of groundwater and the discharge of water, TGC does not anticipate its project will adversely impact the Nawiliwili watershed.

6.9 Wetlands

No wetlands or coastal wetlands are known to exist within the Project Parcels or Pipeline Parcels area; nevertheless, a wetlands survey will be undertaken prior to construction if

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[117] *See* Department of Land and Natural Resources, Division of Aquatic Resources, *Atlas of Hawaiian Watersheds & Their Aquatic Resources Island of Kaua'i*, Nawiliwili, Kaua'i, DAR Watershed Code: 22013.

deemed necessary. Notwithstanding that no wetlands are known to exist on the Project Parcels area, a small unnamed drainage stream/canal runs along the western border of tax map key parcel (4) 3-2-004:023 which flows into Nawiliwili Bay[118]. Although parcel 23 in general will be part of the Project Parcels area, as previously mentioned this drainage stream/canal will ***not*** be part of the proposed area to be leased by TGC.

SECTION 7.0 AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

The project does not affect an environmentally sensitive area as construction related to the proposed project would occur in an existing general industrial area. The natural shoreline in the area of Applicant's Project Parcels and Pipeline Parcels was permanently altered by human action decades ago; the nearest existing *coastline*, a rock revetment wall constructed over half a century ago, is an artificial construct designed to protect and mitigate impacts of ocean waters on the harbor's operation. The mouth of Nawiliwili Harbor, by administrative rule, constitutes the shoreline for Nawiliwili Harbor.

7.1 Economy

TGC's project will provide short-term economic benefits to the island, such as employment of contractors and construction workers who will work on the site and along Wa'apa Road to construct the project components. It is possible new long-term employment will result from this project since a greater supply of LPG on island will facilitate possible expansion of various businesses on Kaua'i.

Potential Impacts and Mitigation Measures

The proposed project may have positive long-term economic impacts in that the proposed storage facility will provide additional capacity and a source of LPG for both existing and future businesses, and for a growing island population. The proposed project would also mitigate future, temporary delivery interruptions of propane to Kaua'i. There will be positive short term economic impacts as jobs will be created during the construction phase of the project.

7.2 Hazardous Waste

Two 863,656 gallon bulk holding tanks for molasses, as well as other related or miscellaneous improvements (maintenance building, concrete slab, hopper, gantry conveyor system, pump house, storage shed, etc.) were previously located within the general Project Parcels area. However, these tanks and other improvements, which were owned by Gay and Robinson, Inc. ("G&R") or entities other than TGC, were demolished

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[118] ESA section 4.2.2, "*Geologic and Hydrogeological Setting*", and section 5.5.1 "*Pits, Ponds, or Lagoons*".

between October 2012 and December 2013[119] as a requirement prior to the surrendering of the general Project Parcels area to the Hawaii State Department of Transportation Harbors Division ("DOT-HAR")[120]. The following photos of the Project Parcels area were taken immediately after Gay & Robinson's molasses tanks and related improvements were removed (circa 2013).

Figure 14: View from south to north of Project Parcels area.

[119] *See* section 1.2, *Final Environmental Assessment, Kauai Petroleum Fuel Terminal, 3185 Wa'apa Road, Nawiliwili, Kauai, TMK No. (4) 3-2-004-016* (January 22, 2016)

[120] ESA page vii, "*Executive summary*". G&R also informed TGC that a cesspool located on the Project Parcels was filled and closed in conformance with County and State requirements when G&R demolished its other improvements on the Project Parcels. (*See also* section 2.2.5 of Phase II ESA referred to in this section 7.2 of the environmental assessment.)

Figure 15: View from northwest to southeast of Project Parcels area, taken from land above Project Parcels area. Kauai Petroleum's improvements are seen at the top left of the photo.

In conjunction with G&R's surrendering of the area, G&R commissioned a Phase I Environmental Site Assessment dated April 2012 (the "ESA")[121] to identify the presence of recognized environmental conditions associated with tax map key nos. (4) 3-002-004: parcels 021, 041, 053, and 063 (portion) (collectively the "G&R Property"). The ESA included a review of environmental regulatory records in the site vicinity, a review of the site history, a review of the site geology and hydrogeology, a site reconnaissance, and interviews.[122]

Concerning a review of environmental regulatory records in the site vicinity, a number of federal and state environmental record databases were searched to identify the presence

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[121] The ESA was performed in accordance with the scope and limitations of the American Society of Testing and Materials ("ASTM") Practice E 1527-05. (ESA page vii, "Executive Summary")

[122] ESA page vii, "*Executive Summary*"

of adverse environmental conditions at the G&R Property. According to the ESA, the G&R Property was not identified on the databases searched.[123]

In conclusion, the ESA described the following recognized environmental conditions[124] ("RECs") and potential environmental concerns on the G&R property:

> *This assessment has revealed the following evidence of RECs associated with the site, which include the presence or likely presence of hazardous substances or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of a release into structures on the property or into the ground, groundwater, or surface water of the property:*
>
> 1. *Small areas of stained soil were observed on the west side the two 863,656-gallon capacity tanks and along the west end of the maintenance shop.*
>
> 2. *Lead-based paint (LBP) was reportedly used in the construction of the structures. A 55-gallon drum filled with LBP chips was removed from this site by the former tenant in 1999, indicating that LBP was present. The source of the paint chips is not known; however, it is assumed that the paint was removed from the ASTs[125] and associated structures at the site. It is possible that soil surrounding the structures at the site has been negatively impacted by the use of LBP.*
>
> 3. *Solid waste, including abandoned equipment, scrap metal, parts, what appears to be new sandblast grit, and other miscellaneous debris were observed at the site, mainly along the west side of the property, where there is heavy vegetative growth, adjacent to the maintenance shop, and inside the shed. Similar, if not the same materials were also observed in a Phase I ESA conducted by EarthTech, Inc. (EarthTech) in 2001. It is possible that long-term outside storage of equipment, parts, and scrap metal at the subject property may have negatively impacted the subject property. Additionally, hazardous/regulated materials may be present within the debris (i.e., gasoline and other petroleum-related materials in old equipment, etc.).*
>
> 4. *The utility sink in the maintenance shop [that] drains directly to the ground may have negatively impacted the subject property.*

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[123] ESA Section 4, "*Records Review*".

[124] "American Society for Testing and Materials (ASTM) guidance defines *recognized environmental conditions* as the 'presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property' (ASTM, 2005). RECs do not include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies (ASTM, 2005)." ESA section 1.2, "*Purpose*"

[125] "AST" means Above-ground Storage Tank.

5. *In February 1993, Kaua'i Petroleum and DOT-HAR received a complaint from Lihue Plantation -AMFAC (former tenant and owner of Kaua'i Sugar Storage - the subject property) regarding their western neighbor, Kaua'i Petroleum. Kaua'i Petroleum personnel were observed pumping liquid from the interior of the bermed fuel tank farm onto the subject property. In 1983, diesel fuel was observed puddled on the ground in the tank farm, so it is possible that the material that was pumped onto the subject property was contaminated. Kaua'i Sugar Storage considered this an environmental risk, and requested that corrective action be taken so that the practice did not continue.*

6. *Adjacent properties to the west (Equilon/Shell) and east (Kaua'i Petroleum Company, Ltd.) and nearby property to the north (Hale Kaua'i) are listed on environmental data bases and have a long history of bulk petroleum storage and/or hazardous materials activities. All three facilities have had confirmed releases and/or violations associated with fuel/hazardous materials handling. It is likely that the subject property has been impacted by activities at the adjacent sites.*

7. *Some of the drains on the west side of the subject property discharge storm water to the stream/drainage channel located on the west side of the property. Storm drains on the road-side of the site likely discharge storm water directly to the harbor. It is not known if the sediment in the drains and/or in the stream/drainage channel has been negatively impacted by storm water runoff from the site.*

8. *In December 1999, Brewer Environmental Industries, LLC reportedly excavated, transported, and stockpiled stained soil between the stream/drainage channel and the maintenance shed and the former location of the mobile oil tank on the subject property, indicating a release had occurred on the subject property.*

The following, while not RECs, are considered to be potential environmental concerns:

1. *The concrete floor around several of the hazardous/regulated and/or unidentified substance containers and equipment inside the maintenance shop are stained; however, the stains are considered to be de minimis.*

2. *The subject property has been in industrial use since the 1930s. Equipment fabrication, servicing, and repair work were conducted in the workshop at a time prior to the development of proper hazardous materials and hazardous waste handling and disposal practices. It is possible that past activities associated with equipment maintenance and repair has negatively impacted the area.*

3. *The subject property and associated stream/drainage channel receive storm water runoff from an adjacent property to the west (former bulk sugar storage facility)*

and properties located upstream, including a former Voluntary Response Program (VRP) site [Hale Kaua'i]) prior to flowing through the subject property. It is not known if contamination is migrating on/off-site via storm water discharge to/from the site and from upstream impacts on the stream/drainage channel.

4. *Some of the structures on the site are known to have been constructed with ACM*[126].

5. *Electrical equipment, mainly consisting of dry motors, breakers, and switches, is located throughout the structures on the property. It is not likely that PCB-contaminated oil is present in the old electrical equipment.*

6. *Fluorescent light fixtures are present in the maintenance shop and the office structure. It is possible that the ballasts contain PCB-contaminated oil. Ballasts manufactured through 1979 may contain PCBs. Ballasts manufactured between 1979 and 1998 that do not contain PCBs should be labeled "No PCBs." If a ballast is not labeled "No PCBs," it is best to assume it contains PCBs and properly dispose of the ballasts.*

7. *It is possible that the soil/foundations beneath and in the vicinity of the structures at the site were/are treated for termites and that residual levels of pesticides are present in the soil.*[127]

Noteworthy is that all physical improvements and structures described in the quoted provisions above were removed as part of the required demolition and clearing of the G&R property, when G&R vacated the G&R Property.

DOT-HAR required G&R to take no further environmental remediation measures on the G&R Property in response to the recognized environmental concerns and potential environmental concerns described above.

This ESA is available from the State of Hawaii, DOT-HAR. (The ESA did not include tax map key parcel (4) 3-002-004:023, portions or all of which parcel TGC's proposed project may also include.)

Contemporaneous with the (Phase I) ESA, G&R commissioned a Phase II Environmental Site Assessment dated March 2013 encompassing the same land area as the initial ESA (the "Phase II ESA").

The purpose of this Phase II ESA was to evaluate the presence/absence and nature of contamination (if any) at the Sugar/Molasses Storage and Loading

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[126] "ACM" means Asbestos-Containing Material.

[127] ESA Section 8, "*Conclusions*"

Facility located in Lihue, Kauai, Hawaii, that may have resulted from activities conducted by Gay & Robinson, Inc. (G&R) since October 2001.[128]

The Phase II ESA:

> *...was conducted in two phases. The first phase included soil sampling activities prior to demolition activities at the site, and the second phase included soil sampling activities upon completion of demolition activities at the site. The "phased" project design allowed for site characterization both pre-and post-demolition. The purpose of conducting pre- demolition sampling was to evaluate the presence/absence and nature of contamination (if any) in areas of concern identified during the Phase I ESA (E2, 2012a). The purpose of conducting post-demolition sampling was to evaluate areas of the site unavailable during pre-demolition (e.g. beneath the concrete foundation of the maintenance shop and other structures at the site, in the vicinity of the solid waste / equipment storage area) and to verify the removal of demolition-related (potentially lead-impacted) material. At the request of HDOT-HAR, additional post-demolition soil sampling was conducted site-wide at a depth of three (3) feet* ***below ground surface (bgs)*** *(E2, 2013).*[129]

(emphasis added).

For purposes of the Phase II ESA:

> *....only the RECs and one of the two potential environmental concerns (identified during the Phase I ESA) with the potential to have impacted the soil and/or groundwater at the site were evaluated. Although Section 26, Special Terms and Conditions of the Revocable Permit requires that the site be "decontaminated, making the soil free and clear of all contaminants and hazardous materials...," the Phase II ESA did not include an evaluation of the presence/absence of contamination at the site resultant from activities which were not attributable to G&R.*[130]

Further:

> *As required by State of Hawaii Department of Health (HDOH), analytical results for soil were compared to both of the following criteria:*

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[128] Section 1.2, *Phase II Environmental Site Assessment; Sugar/Molasses Storage and Loading Facility; Lihue , Kauai, Hawaii, TMK: (4) 3-2-4: Parcels 21, 41, 52, and 63 (portion).* 2 Element Environmental LLC (March 2013) (the "Phase II ESA").

[129] Section 1.2, Phase II ESA. Further, "[p]ost-demolition soil sampling activities included the excavation of 150 sample trenches (with dimensions of approximately 2 feet wide by 4 feet long by 2.5 to 4 feet deep)." Section 2.2.2, Phase II ESA

[130] Sections 3.1 and 3.1.1, Phase II ESA

- *HDOH Tier 1 Environmental Action Levels (EAL) for Unrestricted Land Use for sites where groundwater is a current or potential source of drinking water and the site is less than 150 meters to a surface water body (HDOH, 2012a). Use of this screening criterion allows regulators / property owners to compare the environmental condition of a site to the most stringent standards developed for residential use of property.*
- *HDOH Tier 1 EALs for Commercial / Industrial Land Use for sites where groundwater is not a current or potential source of drinking water and the site is less than 150 meters from a surface water body (HDOH, 2012a).* ***Because the site has 1) historically been in industrial use since the 1930s, 2) will remain in industrial use in the future, and3) is located in an industrial area of Lihue, Kauai, Hawaii, this criterion is the project specific screening criteria used in this Phase II ESA to evaluate the environmental condition of the property.***[131]

(emphasis added).

The following conclusions were made based on observations made in the field and soil sample analytical results:[132]

1. *TPH-DRO*[133]*; SVOCs*[134] including benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene; and total lead were detected in sample DU 11 and replicate samples DU17 and DU18 (storm drain samples) at concentrations exceeding their respective HDOH Tier 1 EALs for Unrestricted Land Use. The PCB[135] aroclor-1260 was detected at concentrations exceeding the HDOH Tier 1 EAL for Commercial/Industrial Land Use in all three of the samples. No other analytes were detected above HDOH Tier 1 EALs for Unrestricted or Commercial/Industrial Land Use.

   Based on the soil sample results, the soil was removed from the storm drains and the concrete storm drain structures were removed from the ground. On January 16, 2013, a total of 13.54 tons of soil and concrete was transported to Kekaha Landfill for disposal (Waste Management Profile #341161HI).

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[131] Section 3.2, Phase II ESA. Generally, Tier 1 EAL (Environmental Action Levels) were developed to allow unrestricted current and future land use of a property. This includes consideration of direct exposure action levels suitable for use of a site as residences, hospitals, schools, day-care centers, and other sensitive purposes. *Evaluation of Environmental Hazards at Sites with Contaminated Soils and Groundwater, Volume 1: User's Guide, Hawa'i Edition*, Hawai'i Department of Health, Environmental Management Division (Summer 2008).

[132] Section 8, Phase II ESA. "DU" means decision units- locations where soil sampling occurred.

[133] "TPH" means Total Petroleum Hydrocarbons. "DRO" means Diesel Range Organics.

[134] "SVOC" means semi-volatile organic compounds.

[135] "PCB" means Polychlorinated Biphenyls.

2. Benzo(a)pyrene was detected in DU6 at a concentration that slightly exceeded the HDOH Tier 1 EAL for Unrestricted Land Use; however, the project specific screening criteria (for Commercial / Industrial Land Use) were not exceeded.

3. With the exception of the benzo(a)pyrene found in DU6, none of the tested analytes were detected in any of the 15 DUs at concentrations that exceeded HDOH Tier 1 EALs for Unrestricted and/or Commercial/Industrial Land Use.

4. A total of 150 sample trenches were excavated to depths of 2.5 to 4 feet bgs site-wide. Contaminated soil (in the smear zone only) and groundwater were observed in three of 30 soil sample trenches excavated in DU21. The three impacted trenches were located in the far northeast corner. Soils located above the smear zone were unstained and did not have a petroleum odor. Based on observations made during soil sampling activities and soil sample results, it is likely that impacted groundwater has migrated onto the site from the adjacent Kauai Petroleum Co., Ltd. site.[136]

"DU" means decision units- locations where soil sampling occurred. The following figure[137] graphically depicts where sampling occurred:

Remainder of this page intentionally left blank

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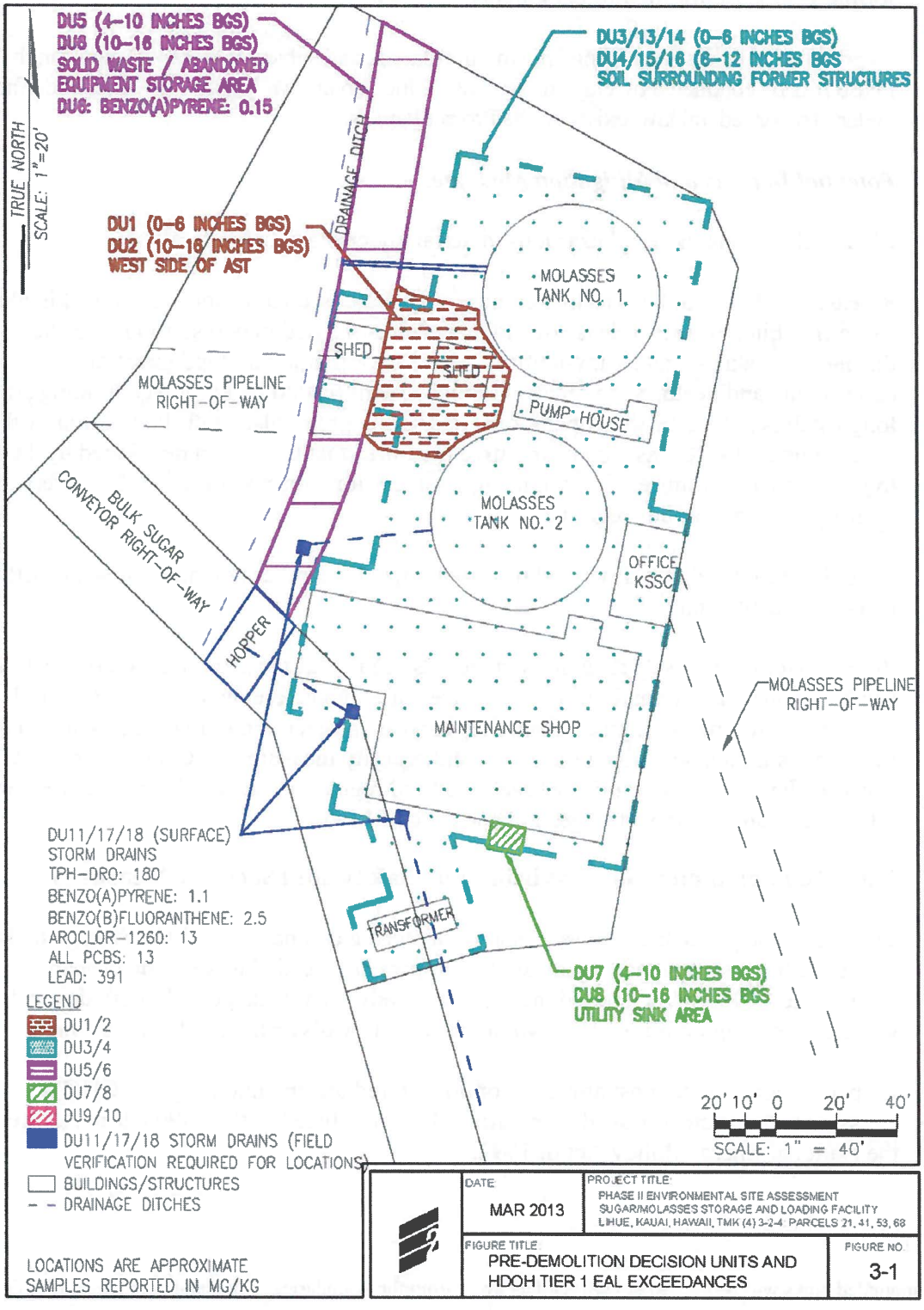
[136] Section 8, Phase II ESA

[137] *See* Figure no. 3-1, from Phase II ESA

Figure 16: Soil Sampling Locations - former G&R Molasses Tanks area



TGC may conduct further environmental assessments and/or studies of the Project Parcels area in conjunction with the State Board of Land & Natural Resources' issuance of a formal land lease for the Project Parcels.

At present and based on existing known information, and subject to the conclusions in the Phase II ESA conducted by Gay and Robinson, Inc., no known hazardous waste, as defined under State or federal law, exists on the Project Parcels.

Potential Impacts and Mitigation Measures

LPG itself is considered a hazardous material under State and federal law.

Release of LPG liquid or gas that comes into contact with a person's eyes or skin may cause frostbite. Further, release of LPG gas that is inhaled may result in headache, dizziness, weakness, nausea, vomiting, loss of coordination and judgment and, in extreme cases, coma and death. Such releases though, are mitigated by employee training and long-established established operational and safety protocols, controlled burning-off of excess released LPG gas, and affirmative measures that have been developed by TGC. (*See* section 7.3 of this environmental assessment for a discussion of TGC's safety and security measures in this regard.)

In addition to the above-described potential impacts, another potential impact of LPG gas is its combustible nature.

Propane storage industry regulatory standards require all areas within ten (10) feet of LPG containers and transfer piping to be free of combustible materials.[138] Potential adverse environmental impacts from the proposed project, including the possible risk of fire, are not anticipated given the safety and security measures TGC adheres to, and because Hawai'i Gas complies with all required regulatory standards and requirements relating to transmission, storage, and handling of LPG.

7.3 Liquefied Petroleum Gas, Environment, Safety, and Security Measures

TGC has a long, reliable, and safe history of storing and handing LPG. Storage tanks are single walled, but designed to sustain the air pressure needed to keep the propane in a liquid state.[139] However, should there be any inadvertent leakage of liquefied petroleum gas, any escaping liquid propane would immediately dissipate into the air as vapor.

Propane is among the most attractive options to reduce greenhouse gas ("GHG") emissions, and is an approved, alternative clean fuel listed in the 1990 Clean Air Act and the National Energy Policy Act of 1992.

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[138] All mounded tanks will be located at least ten feet away from the boundaries of the land area leased by TGC.

[139] LPG is kept in a liquefied state through air pressurization.

Potential Impacts and Mitigation Measures

All storage tanks are designed to hold approximately double the needed pressure to safely store its propane and are also equipped with pressure relief valves as an added safety measure. The mounded storage tanks will be set back at least 10 feet from the edges of the proposed lease area. Further, all County fire, U.S. Coast Guard, federal, and State regulatory requirements relating to safety will be complied with.

The proposed storage tank facility area will be surrounded by an eight-foot high chain link fence topped with barbed wire, and vehicular access will be through an electronic gate. For security purposes, access by non-authorized personnel will not be permitted.

SECTION 8.0 ALTERNATIVES TO THE PROPOSED ACTION

8.1 "No Action" Alternative

If no action is taken concerning the proposed project, the amount of LPG available to existing and future TGC customers on Kaua'i may be reduced, especially as demand for LPG continues to grow as anticipated. Supply interruptions may occur, especially as to future TGC customers. Reliability of supply may be adversely impacted. Having less available LPG than planned may also adversely impact pricing, as containerized supplies of LPG may need to be shipped to Kaua'i more frequently. Less available supply may also result in more frequent shipments of LPG by tanker ships and barges to Kaua'i to keep pace with demand for LPG. TGC's current LPG production source on Oahu, Chevron Hawaii Refinery, only produces LPG in limited amounts. Because of the reduced amount of LPG available in Hawai'i, the construction of additional LPG storage facilities on Kaua'i is needed to ensure an adequate and uninterrupted supply of LPG is available at all times to TGC's customers on Kaua'i.

8.2 Preferred Alternative

The preferred alternative is to install up to 22 mounded LPG storage tanks and related ancillary improvements on the Project Parcels since this alternative would allow TGC to maximize the number of LPG storage tanks on the Project Parcels given setback requirements for mounded tanks versus above-ground tanks.[140] Further, since more mounded tanks than above-ground tanks can be located in the Project Parcels area, the potential exists for TGC to commission less shipments of LPG to Kauai given the increased LPG storage capacity that would be available if mounded tanks are constructed.

The preferred alternative includes, but is not limited to, the construction of LPG transmission pipelines and related ancillary improvements from TGC's existing Pier 3 storage facility to TGC's proposed Pier 2 storage facility.

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[140] As mentioned, mounded tanks are required to be at least ten feet away, while above-ground tanks are required to be at least 50 feet away, from the boundaries of the leased premises.

TGC has searched for some time but been unable to locate other available properties close enough to its existing Pier 3 facility and large enough to accommodate its LPG storage facility requirements. Of considerable note is that the preferred alternative is also supported by and consistent with the State's *Kaua'i Commercial Harbors 2025 Master Plan. See* section 2.1 of this environmental assessment in this regard. As described in section 1.2 of this environmental assessment, for decades TGC has shipped LPG to Kaua'i using its LPG storage facility at Nawiliwili Harbor, Pier 3, as the base for its propane supply (the "Nawiliwili Fuel Tank Farm & Operating Yard").

Further, TGC has a long, reliable, and safe history of storing and handling LPG statewide. Currently on all islands TGC manages approximately 10 million gallons of LPG storage at any given time, which includes 545,000 gallons on Kaua'i.

SECTION 9.0 DETERMINATION OF SIGNIFICANT IMPACT

The impacts of the proposed action have been assessed. The proposed project is not anticipated to cause significant negative impacts to the environment. Therefore, a Finding of No Significant Impact (FONSI) is proposed. The proposed determination of a FONSI is based on the following:

1. ***The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources;***

   No significant natural or cultural resources have been identified within the proposed project; as such, the project will involve no loss or destruction of such resources.

2. ***The proposed action will not curtail the range of beneficial uses of the environment;***

   The Project Parcels area is currently not in use. The proposed action is consistent with the surrounding general industrial area and will not curtail the range of beneficial uses of the environment.

3. ***The proposed action does not conflict with the State's long-term goals or guidelines as expressed in Chapter 344, H.R.S., State Environmental Policy;***

   The project is consistent with the State's long-term goals as expressed in State law and will not have any significant adverse effects on the environment.

4. ***The proposed action does not substantially affect the economic or social welfare of the community or state;***

   The community and island will be positively improved by expansion of the TGC's Nawiliwili Fuel Tank Farm & Operating Yard. Economic impacts on the community and Kaua'i will not be negative, and some short-term economic benefits will occur during the project's construction phase.

The proposed action will have positive impacts on the community and will not substantially affect the social welfare of the community or State.

5. ***The proposed action does not substantially affect public health;***

The proposed project will not negatively affect public health; however, there may be short-term temporary impacts arising from noise, dust, and construction traffic during the construction phase of the project.

6. ***The proposed action does not involve substantial secondary effects;***

With the exception of the short-term, temporary construction impacts and except for the relatively small secondary impacts noted below, no substantial secondary impacts are anticipated to arise from the proposed project.

With regard to secondary impacts, as mentioned in section 4.1 of this environmental assessment, the State Department of Transportation, Highways Division, could require certain intersection improvements to be made at a future time at the intersection of Nawiliwili Road and Kanoa Road to address traffic impacts arising from potential additional tanker truck traffic generated by TGC's new storage facility, *if* such additional tanker truck traffic is generated by the proposed project from additional tanker trucks or tanker truck trips.

Another secondary (although insubstantial) impact could be several additional TGC employees hired at some future time to handle increased demand for LPG on Kauai should such increased demand warrant such hiring.

7. ***The proposed action does not involve substantial degradation of environmental quality;***

Best management practices will be used during all the construction phases of this proposed project. The proposed project will not involve substantial degradation of environmental quality; however, it is again noted that temporary noise and dust may arise while the project is under construction.

8. ***The proposed action does not cumulatively have a considerable effect on the environment or involve a commitment to larger actions;***

The proposed project will not have a cumulative impact on the environment as the project takes place within the current General Industrial (zoning) District and consolidates the proposed Pier 2 storage tank facility within the same zoning district as TGC's existing Pier 3 facility, amongst existing industrial uses in the Nawiliwili Harbor area. The proposed Pier 2 facility is situated about a quarter of a mile away from the TGC's existing Pier 3 storage facility. The proposed project will not involve a commitment to larger actions.

Further, other than TGC's proposed project, the following future major capital improvement projects in the immediate Nawiliwili Bay area of TGC's proposed project are known to TGC.

- Kauai Petroleum Company, Ltd. ("KP") operates a petroleum fuel terminal on tax map key parcel (4) 3-2-004-016 directly adjacent to TGC's proposed Pier 2 LPG storage tank facility. The terminal's primary function is to store and distribute gasoline, jet fuel, and diesel fuel. Ethanol is also stored at this terminal.[141]

  In a January 2016 final EA that stated a Finding of No Significant Impact, KP described its intention to construct two additional above-ground, approximately 168,000 gallon storage tanks: one will be used to store jet fuel, and the other to store diesel fuel or naptha.[142] In response to a recent inquiry by TGC regarding the status of this project, KP indicated it is seeking to revise its January 2016 final EA to describe the construction of one of the two proposed storage tanks at a larger size- 336,000 gallons instead of 168,000 gallons.

- The State Department of Transportation, Harbors Division, Kauai District Commercial Harbors, Kauai District Manager indicated that DOT Harbors plans to construct the following improvements sometime in the near future:
  - A new pedestrian sidewalk from Pier 2 to Pier 3; and
  - Drainage, waterline, and access improvements at Nawiliwili Harbor's Pier 2 and Pier 3.[143]

(Also, TGC plans to replace an existing fuel connection point it operates at Nawiliwili Harbor's Pier 3, but this project more accurately constitutes a replacement or reconstruction of an existing structure or facility where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.[144])

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[141] Executive Summary, *Final Environmental Assessment, Kauai Petroleum Fuel Terminal, 3185 Wa'apa Road, Nawiliwili, Kauai, TMK No. (4) 3-2-004-016* (January 22, 2016)

[142] *Id.*

[143] These improvements are intended to improve drainage, address storm water runoff and erosion, and enhance passenger safety arising from existing unpaved and uneven surface terrains, and flooding of the road at high tide. A new waterline will replace an existing waterline via a new route.

[144] H.A.R. §11-200-8. Specifically, the soil is settling at Nawiliwili Harbor's Pier 3. To avoid sheer stresses on the LPG pipe lines as the soil settles adjacent to the pier pile, the fuel connection point (i.e. the valve box) will be moved before the pile face. The valve box holds a 6 inch LPG liquid line ball valve and a 4 inch vapor line ball valve. These two lines are connected to an 8" liquid and 4" vapor underground pipe line that travels back to TGC's Pier 3 storage tank facility. The box serves as the main fuel connection point for refueling of barges that ship LPG to Kauai. The existing valve box will be abandoned in place and turned over to DOT Harbors. All accessible piping under the pier will be removed. Piping that is buried under the pier will be abandoned, flushed out, grouted, and

As previously explained, even taking into consideration the foregoing described future major capital improvements, TGC's proposed project will not have a cumulative impact on the environment since:

- TGC's project takes place within the current General Industrial (zoning) District;
- TGC's project consolidates the proposed Pier 2 storage tank facility within the same zoning district as TGC's existing Pier 3 facility
- TGC's project would be located amongst other existing industrial uses in the Nawiliwili Harbor area. (Again, the proposed Pier 2 facility is situated only about ¼ mile away from the TGC's existing Pier 3 storage facility);
- The Project Parcels were specifically evaluated for storage of liquid bulk materials by DOT Harbors in DOT Harbors' *Kaua'i Commercial Harbors 2025 Master Plan (September, 2001)*[145], and DOT Harbors ***specifically suggested the use of the Project Parcels for storage of LPG*** in the foregoing 2025 Master Plan.[146]
- By and large, inadvertent emissions of LPG from the proposed Pier 2 storage tank facility will vaporize upon exposure to air, and any intentional controlled emissions will be reduced (burned off) by a flare to be installed as part of the project improvements.

9. ***The proposed action does not affect a rare, threatened, or endangered species or its habitat;***

   No rare, threatened, endangered species have been found in the project area; therefore, no negative impacts to such species or their habitats are anticipated.

10. ***The proposed action does not detrimentally affect air or water quality or ambient noise levels;***

    Aside from temporary minimal adverse impacts (noise, dust, increased traffic, etc.) during the construction phase of the project, permanent adverse air and noise impacts will be minimal. No detrimental water quality impacts are anticipated.

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capped. A new valve box will be constructed for the ultra-heavy traffic rating of the pier. The existing ball valves will be reused and reconnected to the main LPG lines. The new valve box will be offset and the work will be phased to prevent disruption to TGC's normal refueling schedule. Purging of the line, cathodic protection, and special inspections will be provided by Hawaii Gas. Normal construction work days will be limited to three days a week to avoid interference to normal pier operations.

[145] *See* page VI-5 of *Kaua'i Commercial Harbors 2025 Master Plan.*

[146] *See* section 2.1 of this environmental assessment.

11. The proposed action does not affect an environmentally sensitive area;

The Project Parcels and Pipeline Parcels area is not considered to be an environmentally sensitive area. There are no rare, threatened, or endangered native species specifically within these areas.

12. The proposed action does not substantially affect scenic vistas and view planes; and

The scenic vistas and view planes will not be substantially affected as the project area is within the General Industrial District and Nawiliwili Harbor area, which currently houses a significant number of industrial uses in the surrounding area.

13. The proposed action does not require substantial energy consumption.

The proposed action of the proposal will not require substantial energy consumption.

SECTION 10.0 COMMUNITY AND AGENCY PRE-CONSULTATION

Two meetings with the community intended to solicit comments from and provide information concerning the proposed project were held:

- On November 10, 2015, a community meeting was held to provide an overview of the project to and answer questions from area residents, property owners, and businesses about the Hawai'i Gas proposed project. The meeting was held at the Kaua'i County's Niumalu Beach Park, which is located about a half mile away from the Project Parcels area. Attached **Appendix B** is the letter which invited ≈121 area property owners to this meeting, and **Appendix C** is the list of property owners this invitation letter was sent to. Attached **Appendix A** includes a summary of this meeting, including a list of those who attended.
    - A further letter updating the same ≈121 area property owners as to the two possible design alternatives TGC is considering (i.e., *either* above-ground, pedestal mounted tanks *or* mounded tanks) was mailed on July 1, 2016. This letter is attached to this environmental assessment as **Appendix B-1**.

- On November 19, 2015, staff and supporting consultants from Hawai'i Gas attended a Lihue Business Association ("LBA") meeting to provide an overview of and answer questions regarding the proposed project. (The proposed project is located on the outskirts of Lihue town on Kaua'i.) A summary of this meeting, including how many attended the meeting, efforts made to publicize the meeting, and questions posed about the project and TGC's operations, along with answers provided in response thereto, may be found in attached **Appendix A**.
    - On July 1, 2016 the LBA was updated via a mailed letter as to the two possible design alternatives TGC is considering (i.e., *either* above-ground, pedestal mounted tanks *or* mounded tanks). This letter is attached to this environmental assessment as **Appendix A-1**. No response or comments from the LBA were received by TGC in response to TGC's foregoing July 1, 2016 letter.

As of October 18, 2016, no independent general inquiries or comments from the public or area community have been received by TGC concerning the proposed project.

Further:

- **Kaua'i County Department of Water**. On or about July 31, 2013, April 4, 2016, and July 6, 2016 representatives of TGC consulted with senior engineering staff of the Kaua'i County Department of Water ("DOW") to seek a preliminary evaluation of requirements (including those relating to sufficient fire flow because of the project's impacts) DOW may impose in conjunction with the project. *See* section 4.4 of this environmental assessment in this regard.

- **Kaua'i County Fire Department**. On or about August 2, 2013, April 6, 2016, and July 5, 2016 representatives of TGC consulted with representatives of the Kaua'i County Fire Department ("KFD") to seek a preliminary evaluation of requirements the KFD may impose in conjunction with the project. *See* section 4.2 of this environmental assessment in this regard.

- **Kaua'i County Planning Department**. On or about July 22, 2013 and June 30, 2015, representatives of TGC met with senior staff planners of the Kaua'i County Planning Department to determine the applicable County land use permits that may be applicable to the proposed project. In this regard, see section 3.24, *et seq.* of this environmental assessment for County land use permits required for the proposed project.

- **Hawaii State Department of Transportation, Highways Division, Kaua'i District** ("HDOT"). On March 2, 2016 and July 7, 2016, representatives of TGC met with the HDOT's Kaua'i District Engineer and, as necessary, staff to seek HDOT's preliminary impressions and comments regarding the proposed project. *See* section 4.1 of this environmental assessment in this regard.

- **State Historic Preservation Division ("SHPD")**. On March 7, 2016, representatives of TGC met at the Project Parcels area with the Kaua'i Lead Archeologist for SHPD to seek SHPD's preliminary impressions and comments concerning the project's potential impacts on historical resources which may exist within areas of the proposed project. *See* section 5.2 of this environmental assessment in this regard.[147]

- **State Department of Health, Wastewater Branch ("DOH")**. On March 1, 2016 and July 6, 2016, representatives of TGC met with representatives of the DOH to seek DOH's preliminary impressions and comments regarding wastewater and other impacts the project may generate. *See* section 4.3 of this environmental assessment in this regard.

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[147] **Figure 3** of this environmental assessment (conceptual site plan showing mounded tanks design) and a conceptual site plan for an alternate above-ground tank design were also provided to Kauai's SHPD representative on July 5, 2016 to update SHPD of TGC's ongoing development plans concerning TGC's Pier 2 project.

- **University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources ("CTAHR")**. On March 30, 2016 representatives of TGC met with an agent of U.H. Manoa's CTAHR specializing in invasive pests and plant pathology, to seek information regarding applicable State regulatory requirements and/or guidance concerning potential introduction of invasive species from TGC's foreign ships. The agent is located in offices of the State Department of Agriculture. *See* section 6.2 of this environmental assessment in this regard.

- **Kaua'i District Manager, Kaua'i District Commercial Harbors, Harbors Division, Department of Transportation, State of Hawaii**. Nawiliwili Harbor, and the immediate surrounding area under the jurisdiction and authority of the Harbors Division of the State of Hawaii, is managed by the Kaua'i District Manager, Kaua'i District Commercial Harbors, Harbors Division, Department of Transportation, State of Hawaii (the "Harbormaster"). TGC has consulted with the Harbormaster on an ongoing basis since 2013 regarding TGC's proposed project, and has briefed the Harbormaster concerning the project (including the possible development of either above-ground or mounded tanks on the Project Parcels) through various phone conversations and meetings since that time. The Harbormaster has expressed his ongoing general support of the project, and any concerns the Harbormaster has raised (for example, that TGC's new underground transmission lines between Pier 3 and the project area be located within State Harbors property, versus the adjacent Wa'apa Road right of way) have been addressed, and will continue to be addressed as such concerns arise. Of note is that the Harbormaster was present at the November 10, 2015 Niumalu Beach Park meeting to which area residents were invited.

- **Kaua'i Petroleum Company, Ltd. ("KP")**. KP occupies a parcel adjacent to the Project Parcels under a State lease, license, or other instrument. On April 14, 2016, a representative of TGC spoke with the General Manager ("GM")of Senter Petroleum/Par Petroleum (the successor of KP) to inform him of TGC's proposed project and seek comments or concerns about TGC's project.[148] The GM expressed no comments or concerns, noting the Project Parcels area is designated for storage of liquids such as LPG; however, the GM did request an opportunity to informally review TGC's draft environmental assessment ("DEA") for the proposed project when the DEA is published. KP was invited in writing to the November 10, 2015 Niumalu Beach Park meeting to which area residents were invited, but did not attend this meeting.

- **Aloha Petroleum LLC ("AP")**. AP occupies a parcel nearby the Project Parcels area under a State lease, license, or other instrument. In response to

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[148] KP was informed by letter and phone of the two possible design alternatives being considered by TGC (above-ground tanks or mounded tanks) on July 1, 2016. In the letter, **Figure 3** of this environmental assessment (conceptual site plan showing mounded tanks design) and a conceptual site plan for an alternate above-ground tank design were provided.

communications from a representative of TGC informing AP about TGC's proposed project and seeking comments or concerns about TGC's project, on May 18, 2016 a representative of AP responded that given TGC's assurances that TGC's proposed project will not interfere with AP's operations, AP had no comments or concerns regarding TGC's project.[149] Further, AP was invited in writing to the November 10, 2015 Niumalu Beach Park meeting to which area residents were invited, but did not attend this meeting.

- **Island Self Storage, LLC ("ISS")**. ISS owns a parcel directly adjacent to and above the Project Parcels. On or about April 18, 2016 a representative of TGC spoke with an agent of the parcel owner to inform him of TGC's proposed project and seek comments or concerns about TGC's project.[150] The agent expressed no comments or concerns about TGC's proposed project, but did ask if they could, at a future time, arrange access with TGC to the small stream/drainage canal in the rear of the Project Parcels area to allow the parcel owner to inspect, revise, and/or repair the stream/canal. (As noted in section 6.9 of this environmental assessment, the stream/drainage canal will *not* be part of the Project Parcels area.) ISS was invited in writing to the November 10, 2015 Niumalu Beach Park meeting to which area residents were invited, but did not attend this meeting.

- **Hale Kaua'i, Ltd./Honsador Lumber LLC**. Hale Kaua'i and Honsador Lumber, according to County real property tax records, own or lease a parcel adjacent to the Project Parcels. On or about April 15, 2016 a representative of TGC spoke with representatives of both entities to inform them of TGC's proposed project and seek comments or concerns about TGC's project.[151] Both entities' representatives expressed no comments or concerns about TGC's proposed project. One owner commented that TGC may wish to be concerned about rising sea levels with regard to TGC's development plans for Project Parcels; the owner was assured TGC is further researching this matter as concerns TGC's development plans for the Project Parcels. Both entities were invited in writing to the November 10, 2015 Niumalu Beach Park meeting to which area residents were invited, but did not attend this meeting.

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[149] AP was informed by e-mail of the two possible design alternatives being considered by TGC (above-ground tanks or mounded tanks) on or about July 1, 2016. **Figure 3** of this environmental assessment (conceptual site plan showing mounded tanks design) and a conceptual site plan for an alternate above-ground tank design were provided.

[150] ISS was informed by letter and phone of the two possible design alternatives being considered by TGC (above-ground tanks or mounded tanks) on or about July 1 and 6, 2016. In the letter, **Figure 3** of this environmental assessment (conceptual site plan showing mounded tanks design) and a conceptual site plan for an alternate above-ground tank design were provided.

[151] Hale Kaua'i/Honsador Lumber were informed by letter of the two possible design alternatives being considered by TGC (above-ground tanks or mounded tanks) on or about July 1, 2016. In the letter, **Figure 3** of this environmental assessment (conceptual site plan showing mounded tanks design) and a conceptual site plan for an alternate above-ground tank design were provided.

SECTION 11.0 CONSULTED PARTIES

State of Hawai'i

State of Hawai'i, Department of Transportation, Harbors Division
State of Hawai'i, Department of Transportation, Highways Division, Kaua'i
State of Hawai'i, Department of Business, Economic Development and Tourism
State of Hawai'i, Department of Health:

- Environmental Planning Office
- Clean Water Branch
- Hazard Evaluation and Emergency Response

State of Hawai'i, Department of Land and Natural Resources:

- State Historic Preservation Division
- Division of Forestry and Wildlife
- Land Division

University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources ("CTAHR")

County of Kaua'i

County of Kaua'i, Fire Department
County of Kaua'i, Department of Planning
County of Kaua'i, Department of Public Works, Building Division
County of Kaua'i, Department of Water

Lihue Public Library

Others

Kaua'i Petroleum Co., Ltd.
Hale Kaua'i, Ltd.
Aloha Petroleum LLC
Island Self Storage, LLC
Matson, Inc.
Young Brothers, Ltd.
Norwegian Cruise Line
Cruise Lines International Association – North West & Canada

SECTION 12.0 REFERENCES

Armstrong, R. Warwick, *Atlas of Hawai'i*, Department of Geography, University of Hawai'i, Honolulu. 1983.

Cook, Chris, The Garden Island newspaper, "A Brief History of Lihue", June 16, 2002.

County of Kaua'i, Kaua'i County Codes. Available at: http://qcode.us/codes/Kaua'icounty/.

County of Kaua'i, "Kaua'i General Plan". November 2000.

County of Kaua'i, "Kaua'i General Plan Update: Socioeconomic Analysis and Forecasts". February 2014.

County of Kaua'i, "Lihue Community Plan", June 2015. Available online at: http://lihuecp.com/. Accessed 02-25-16.

County of Kaua'i, Draft Environmental Assessment, "Nawiliwili-Ahukini shared-Use Path", July 2008. Includes "Archaeological Literature Review and Field Inspection Report for the Nawiliwili-Ahukini Bike Path Project" by Cultural Surveys Hawai'i, Inc. (July 2008). Available online at: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kaua'i/2000s/2008-08-08-DEA-Nawiliwili-Ahukini-Shared-Use-Path.pdf. Accessed 3-6-16.

Element Environmental, "Phase I Environmental Site Assessment: Sugar/Molasses Storage and Loading Facility". April 2012.

Gay and Robinson, Inc. "Phase I Environmental Site Assessment Sugar/Molasses Storage and Loading Facility, Lihue, Kauai, TMK: (4) 3-2-4: Parcels 21, 41, 53, and 63 (portion)" by Element Environmental. April 2012.

Hawaii National Flood Insurance Program, Flood Hazard Assessment Tool. Available at: http://gis.hawaiinfip.org/FHAT/ Accessed 1-19-15.

Joesting, Edward. *Kaua'i, The Separate Kingdom*, University of Hawai'i Press and Kaua'i Museum Association, Limited, 1984.

Kaua'i Petroleum Fuel Terminal, 3185 Wa'apa Road, Nawiliwili, Kaua'i, TMK No. (4) 3-2-004-016. Final Environmental Assessment (January 22, 2016).

NOAA, National Weather Service Forecast Office. Lihue Annual weather. Available at: http://www.prh.noaa.gov/hnl/climate/phli_clim.php Accessed 1-19-15.

Pacific Region Headquarters, National Oceanic and Atmospheric Administration. Available at: http://www.prh.noaa.gov/hnl/hydro/pages/dec13sum.php and. http://www.prh.noaa.gov/hnl/hydro/pages/Kaua'i_ytd_12.gif Accessed 6-1-15.

Soboleski, Hank, "Nawiliwili History". Available at: http://www.kalapakibeach.org/about/nawiliwili. Accessed 3-11-16.

State of Hawai'i, Department of Education, History of Nawiliwili Harbor, Áinakumuwai: Ahupua'a of Nawiliwili Bay". Available online at: http://www.hawaii.edu/environment/ainakumuwai/html/harbor.htm. Accessed 3-11-16.

State of Hawai'i Department of Health, 2013, Fugitive dust Fact Sheet. Prepared August 19, 2013 by Clean Air Branch. Accessed ad at: http://health.hawaii.gov/cab/ Accessed 6-1-15.

State of Hawai'i, Department of Health, Hawai'i Environmental Justice Initiative Report. Prepared January 2008. Available at http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc_Documents/2008_Hawaii_Environmental_Justice_Report.pdf. Accessed 4-28-16.

State of Hawaii, Department of Health, Environmental Health. Available at: http://health.hawaii.gov/epo/ej/. Accessed 3-13-16.

State of Hawai'i, Department of Health, Air Quality. Available at: http://emdweb.doh.hawaii.gov/air-quality/ Accessed 6-7-15

State of Hawai'i, Department of Land and Natural Resources, Division of Aquatic Resources. "Atlas of Hawaiian Watersheds & Their Aquatic Resources", April 2008.

State of Hawai'i, Department of Transportation, Harbors Division. Final Environmental Assessment for the Segmented Pier 3 Improvements at Nawiliwili Harbor. Includes: "Historical and Cultural Assessment for the Proposed Improvement Project" (April 2004) by Cultural Surveys Hawai'i, Inc. Available online at: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kaua'i/2000s/2005-04-08-KA-FEA-SEGMENTED-PIER-3-IMPROVEMENTS-NAWILIWILI-HARBOR.pdf. Accessed 3-6-16.

State of Hawaii, Department of Transportation, Harbors Division. "Kaua'i Commercial Harbors 2025 Master Plan". Available at: http://hidot.hawaii.gov/harbors/files/2013/01/Kaua'i-Commercial-Harbors-2025-Master-Plan.pdf Accessed 1-14-15.

State of Hawai'i, Department of Land and Natural Resources, Nawiliwili Coral Fill Industrial Subdivision, Revised Environmental Impact Statement, February 21, 1978. Available at: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Kaua'i/1970s/1978-02-KA-REIS-Nawiliwili-Coral-Fill-Industrial-Subd.pdf. Accessed 1-19-15.

State of Hawai'i, Department of Transportation, Port Hawai'i Handbook. Available at: http://hawaii.gov/dot/harbors/library/port-hawaii-handbook. Accessed 1-19-15.

State of Hawai'i, Department of Transportation, Harbors Division. "Statewide Fuel Facilities Development Plan", March 2009. Available at: http://hidot.hawaii.gov/harbors/files/2013/01/Statewide-Fuel-Facilities-Development-Plan-Part-1.pdf and http://hidot.hawaii.gov/harbors/files/2013/01/Statewide-Fuel-Facilities-Development-Plan-Part-2.pdf Accessed 1-14-15.

State of Hawai'i, State Historic Preservation Division. List of National Register of Historic Places. Available at: http://dlnr.hawaii.gov/shpd/state-register/national/. Accessed 1-19-15.

University of Hawai'i Sea Grant College Program, Kaua'i's General Plan Update Technical Study, "Kaua'i Climate Change and Coastal Hazards Assessment". June 2014.

University of Hawai'i Sea Grant College Program, "Climate Change Impacts in Hawai'i: A summary of climate change and its impacts to Hawai'i's ecosystems and communities". 2014. Available at: http://seagrant.soest.hawaii.edu/sites/default/files/publications/smfinal-hawaiiclimatechange.pdf . Accessed 2-24-16

University of Hawai'i Sea Grant College Program, *Sea Level Rise Hawai'i*, Available at: http://www.soest.hawaii.edu/coasts/sealevel/index.html. Accessed 2-24-16.

U.S. Army Corps of Engineers Honolulu District, "Final Environmental Assessment for Proposed Dredging of Nawiliwili Harbor". December 2015.

SECTION 13.0 EXHIBITS

A. Project Parcels: Parcel Tax Map Keys

B. Project Parcels: State of Hawai'i, Land Use District Map

C. Project Parcels: County of Kaua'i, General Plan Map

D. Project Parcels: County of Kaua'i, Zoning Map

E. Project Parcels: County of Kaua'i, Special Management Area Map

F. Project Parcels: Flood Zone Map

G. Project Parcels: Tsunami Evacuation Map

H. Pipeline Parcels: TMKs affected by new Transmission lines

I. Pipeline Parcels: State of Hawai'i, Land Use District Map

J. Pipeline Parcels: County of Kaua'i, General Plan Map

K. Pipeline Parcels: County of Kaua'i, Zoning Map

L. Pipeline Parcels: County of Kaua'i, Special Management Area Map

M. Pipeline Parcels: Flood Zone Map

N. Available Current & Historic Pipeline Details of Nawiliwili Harbor Pier 2 area (including Hawai'i Gas Proposed Project area)

O. Construction Plan View (including section view) of Typical Mounded LPG Storage Tank

P. Typical 4" Pipe Bollard Detail for Project Parcels

Q. Typical Trench Detail for Pipeline and Project Parcels

R. U.S. Environmental Protection Agency, EJ Screen Report of Project Area

S. Hawai'i Gas Current Site Plan for Storage Tank Facility and Base Yard at Nawiliwili Harbor (Pier 3)

SECTION 14.0 APPENDICES

A. Summary of Community Meetings
   A-1: July 5, 2016 letter to Lihue Business Association ("LBA") updating LBA as to project's status and providing two conceptual design alternatives under consideration at the time (above-ground, pedestal mounted storage tanks or mounded storage tanks).

B. Letter of Invitation sent by TGC in early November 2015 ("Invitation Letters") to property owners adjacent to the Project Parcels area or in the surrounding area who may be interested in proposed project, inviting them to a community/public meeting to learn about and answer questions concerning TGC's proposed Pier 2 project.
   B-1: July 1, 2016 letter to property owners listed in **Appendix C** updating such owners as to project's status and providing two conceptual design alternatives under consideration at the time (above-ground, pedestal mounted storage tanks or mounded storage tanks).

C. Table of property owners to whom Invitation Letters were sent, with tax map keys identifying the property of each owner.

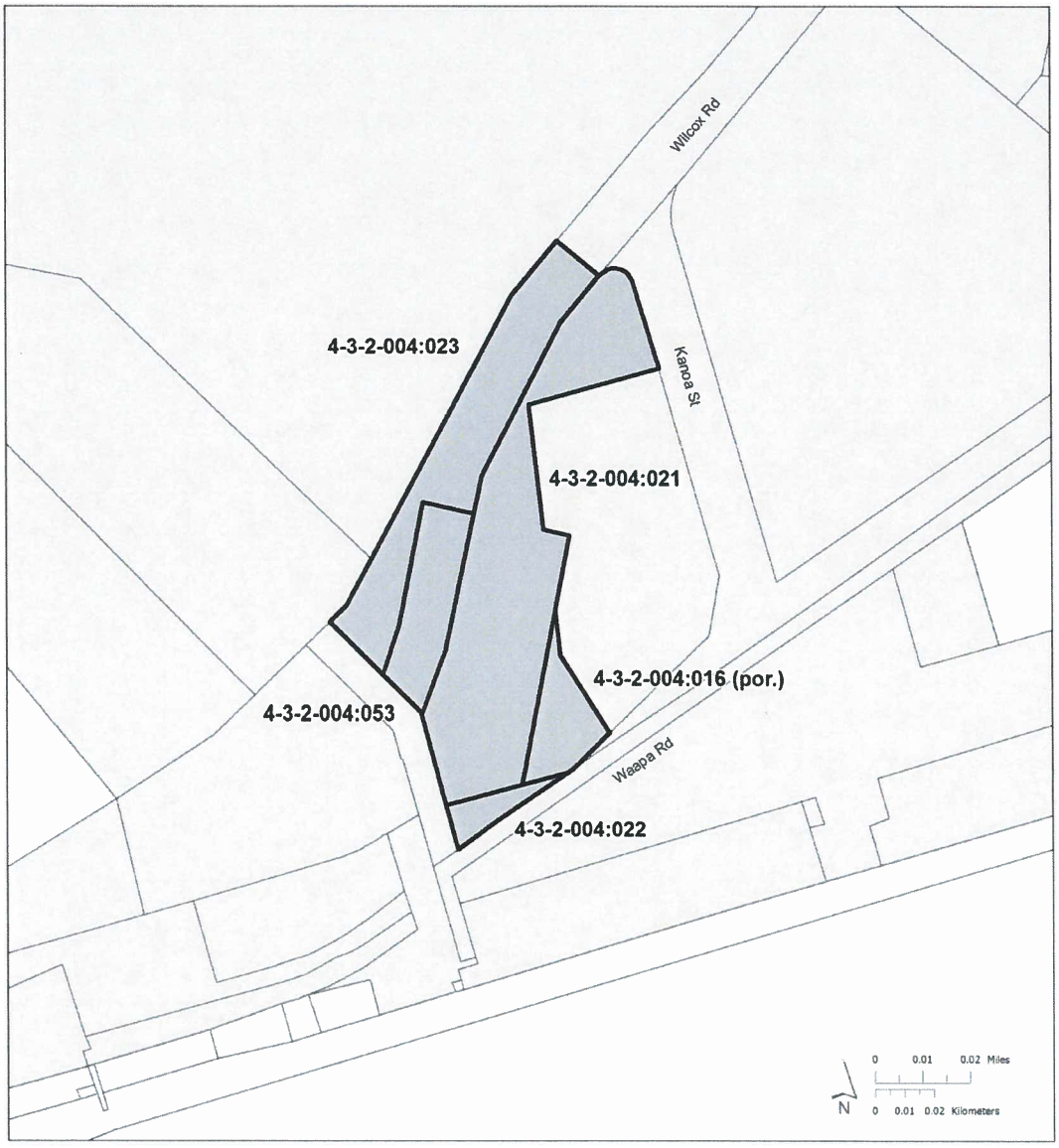
D. History of Nawiliwili Harbor (photos and brief history included), located online at http://wwwhawaii.edu/environment/ainakumuwai/html/harbor.htm

E. Letter from *State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division* (April 5, 2016).

F. State of Hawai'i, Department of Land and Natural Resources, Division of Aquatic Resources 2008, Atlas of Hawaiian Watersheds & Their Aquatic Resources, Island of Kaua'i (Nawiliwili, Kaua'i portion of report).

G. Kaua'i Climate Change and Coastal Hazard Assessment: maps of three potential Sea Level Rise Scenarios at Nawiliwili, Kaua'i.

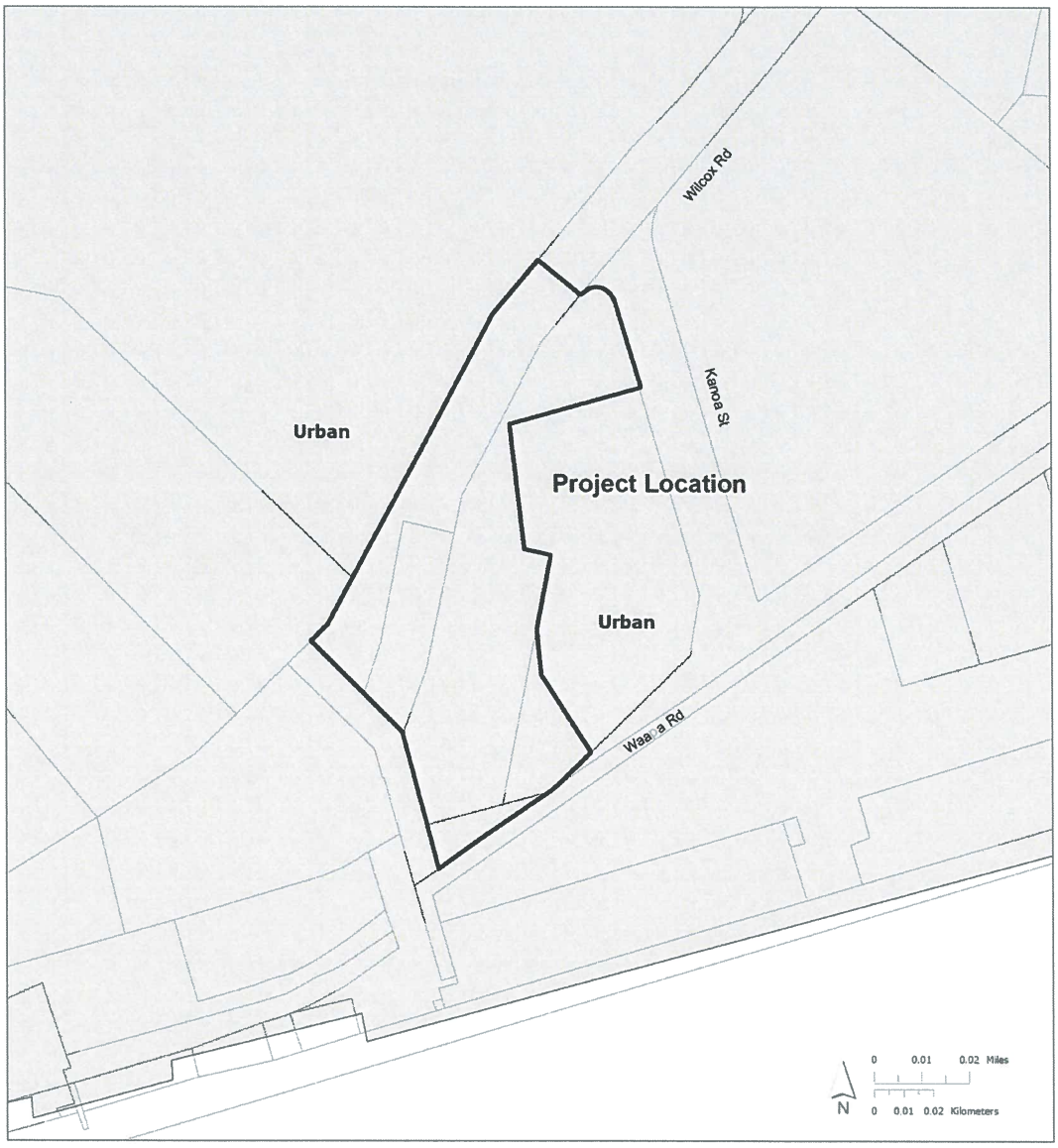
EXHIBITS A – S



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT A:

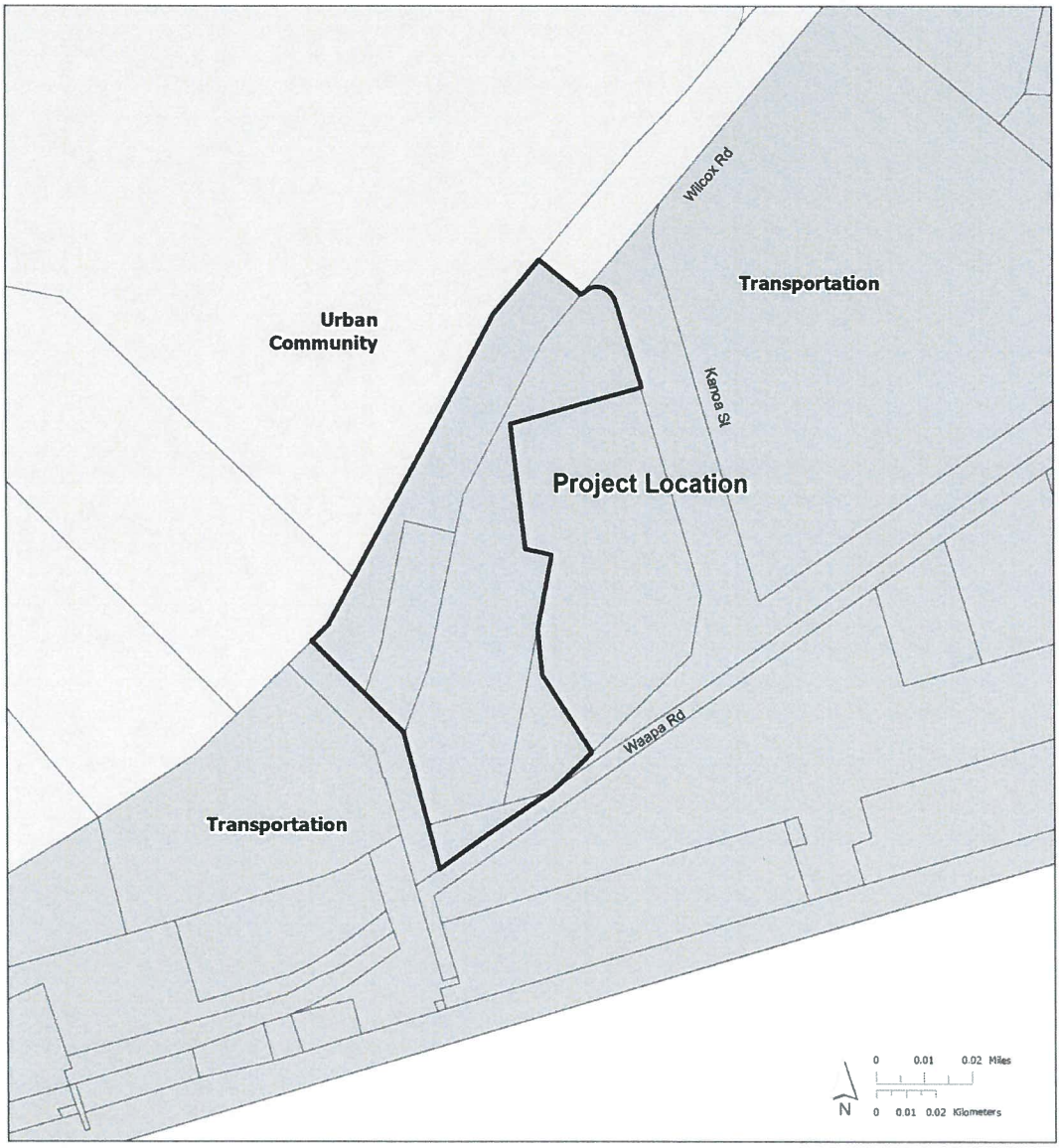
Project Parcels:
Parcel Tax Map Keys



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT B:

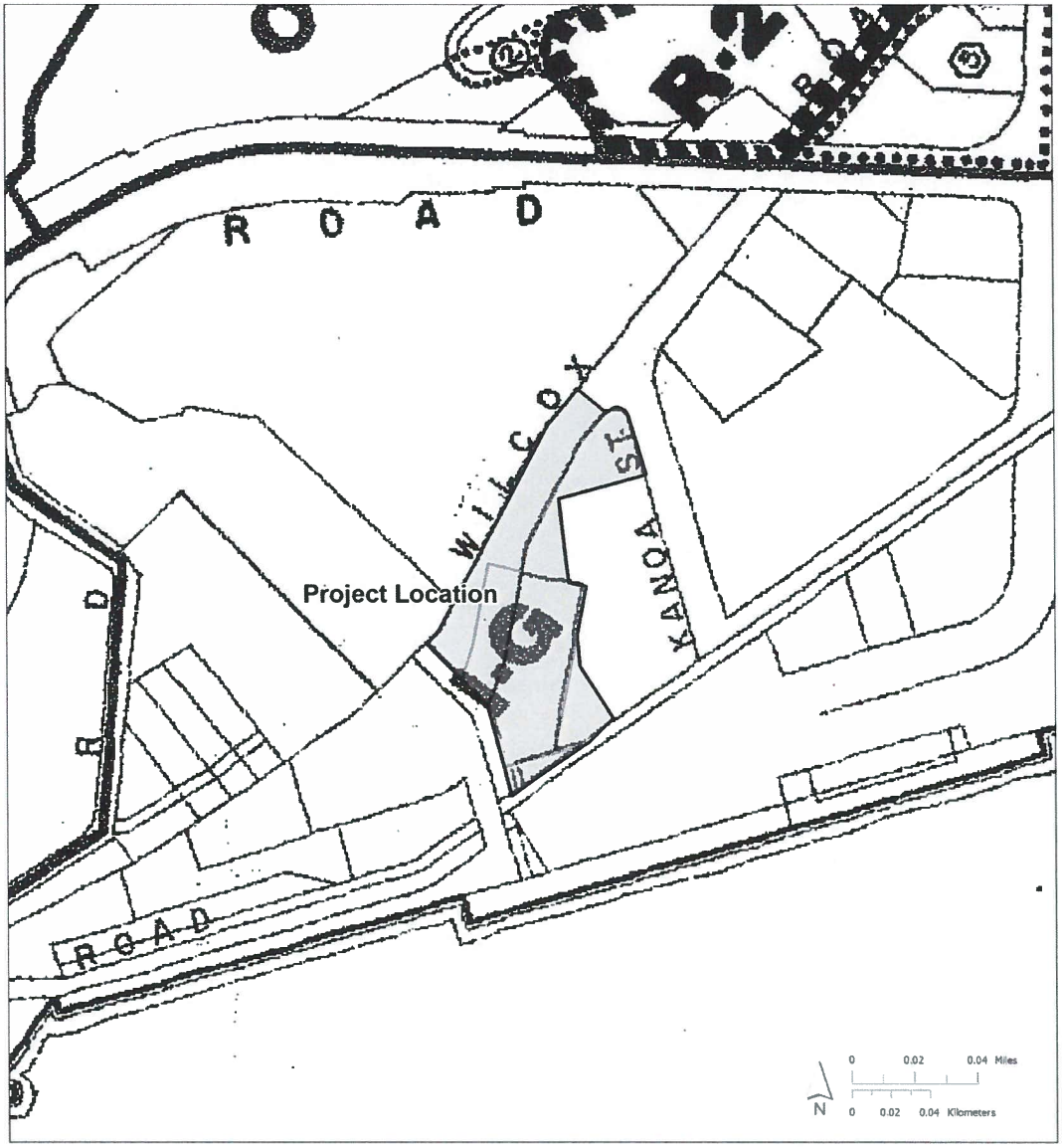
Project Parcels:
State of Hawai'i, Land Use District Map



HAWAI'IGAS
THE CLEAN ENERGY COMPANY

EXHIBIT C:

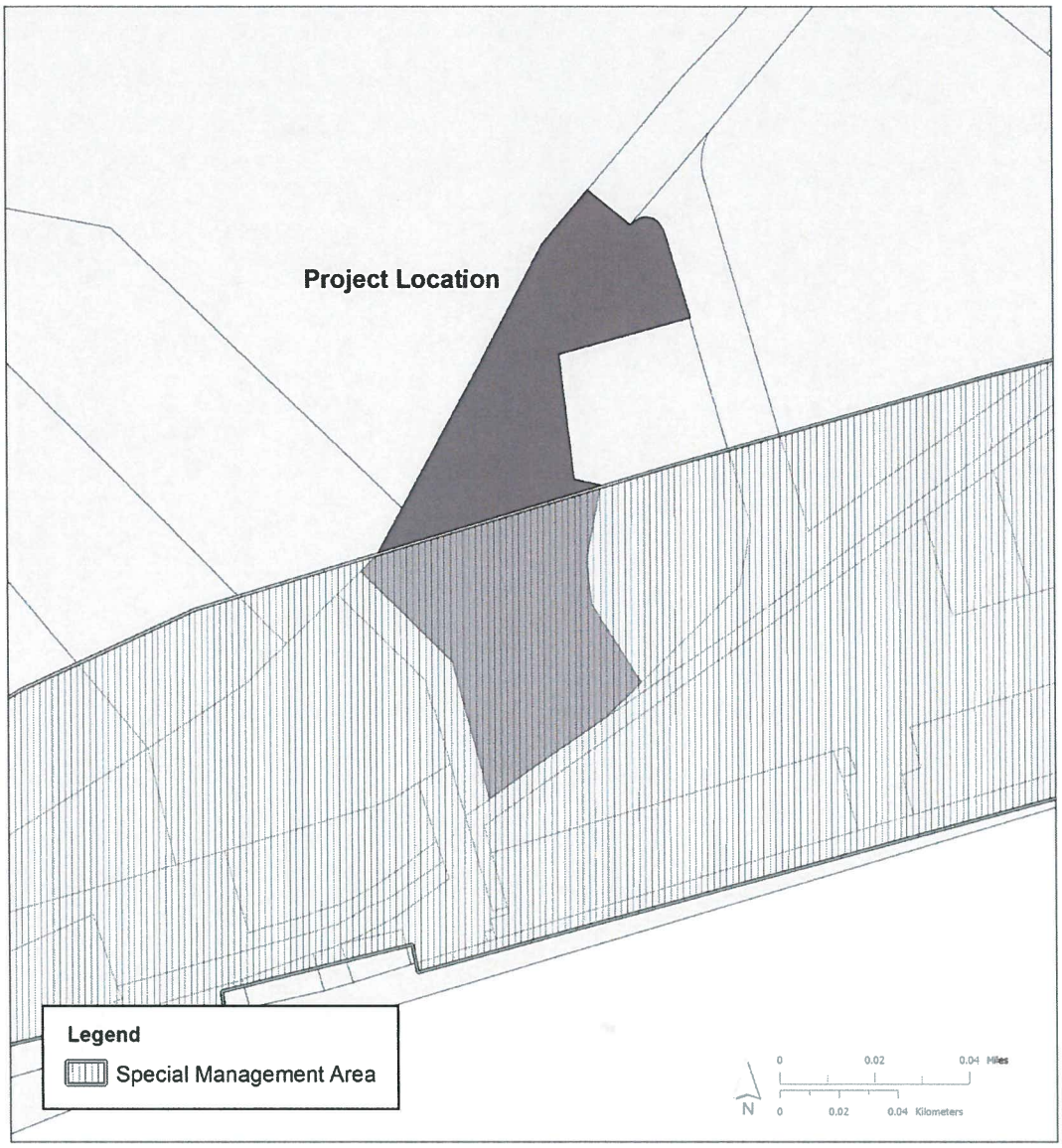
Project Parcels:
County of Kaua'i, General Plan Map



HAWAI'I GAS
THE CLEAN ENERGY COMPANY

EXHIBIT D:

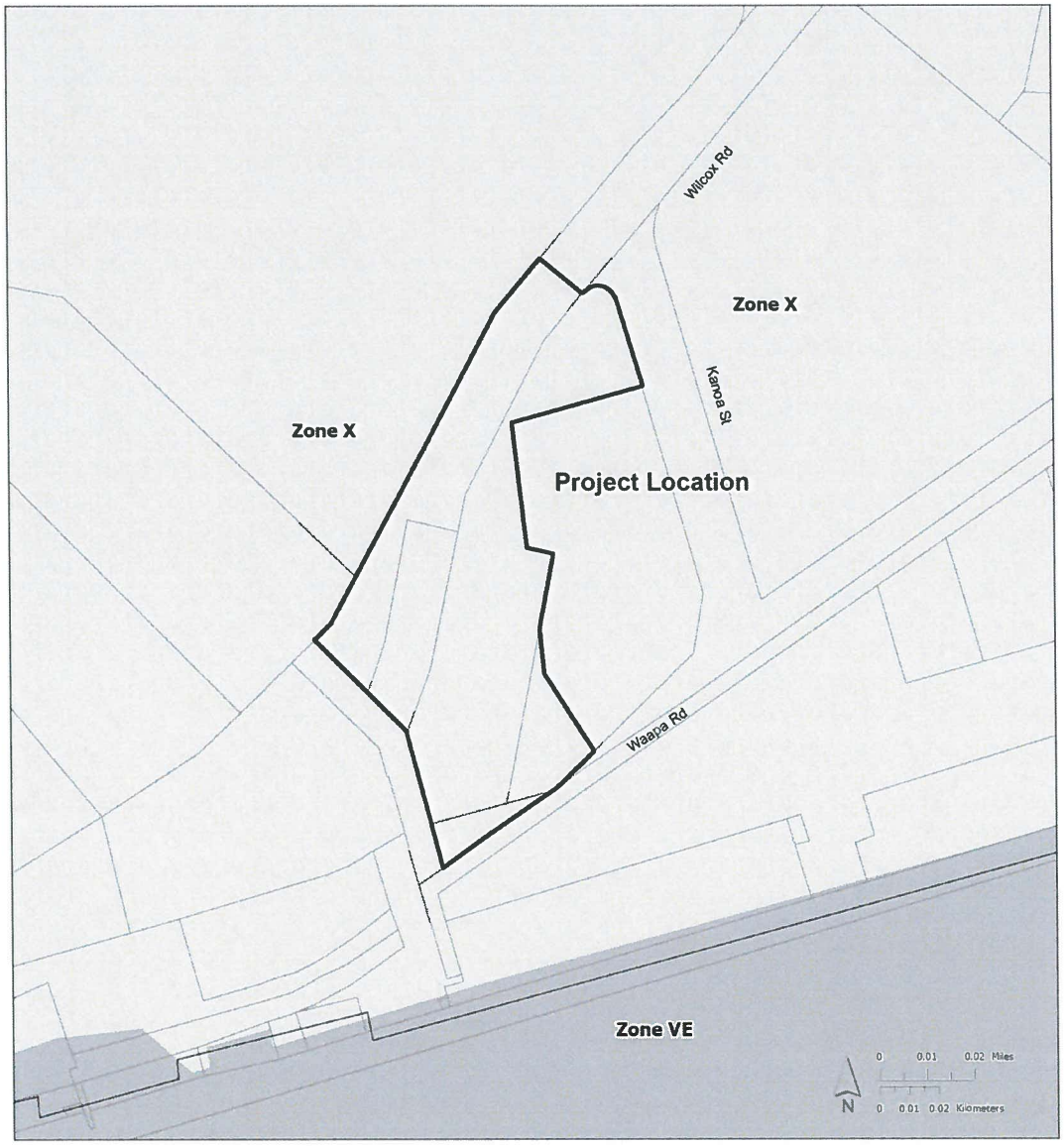
Project Parcels:
County of Kaua'i, Zoning Map



HAWAI'IGAS
THE CLEAN ENERGY COMPANY

EXHIBIT E:

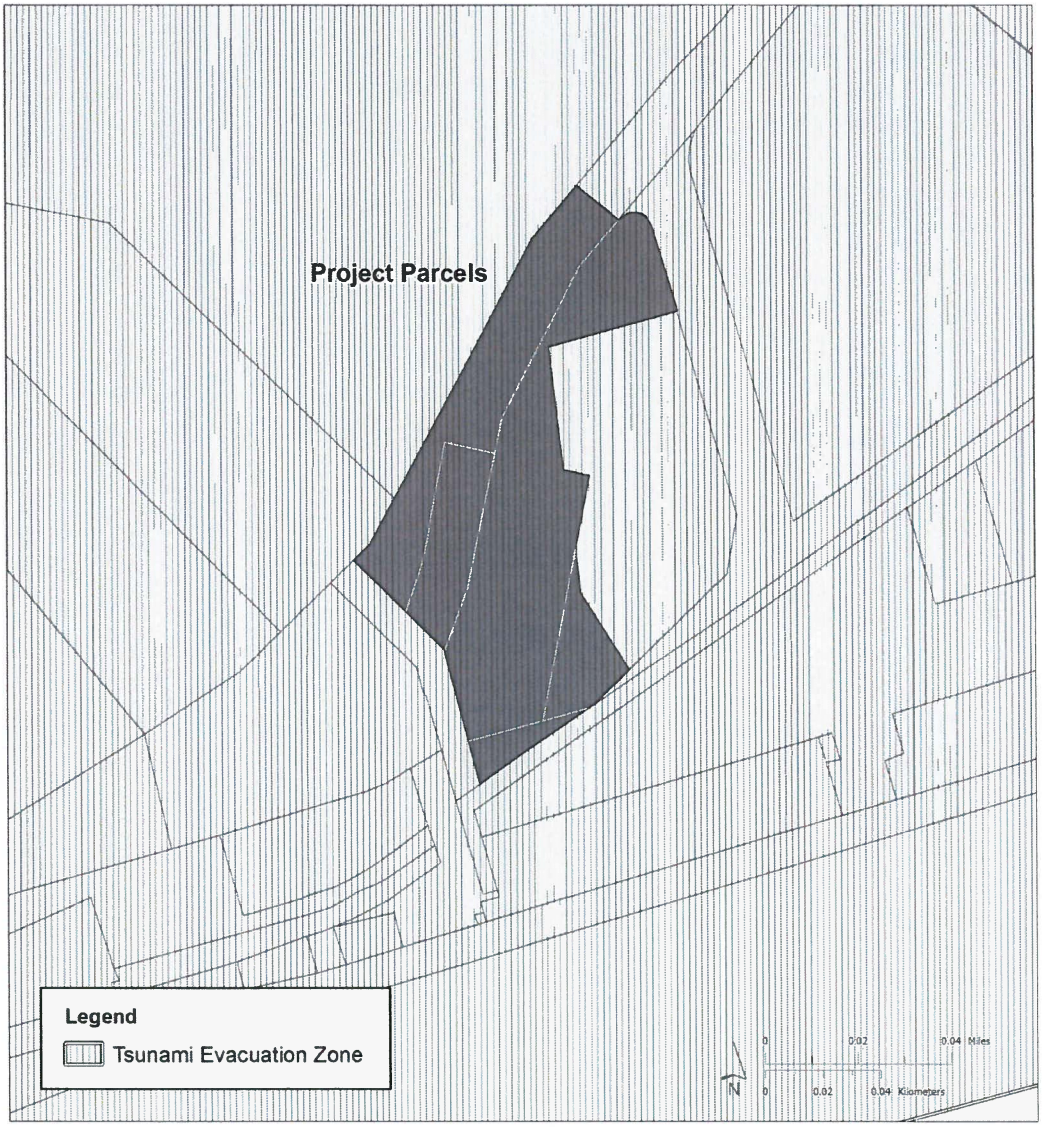
Project Parcels:
County of Kaua'i, Special Management Area Map



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT F:

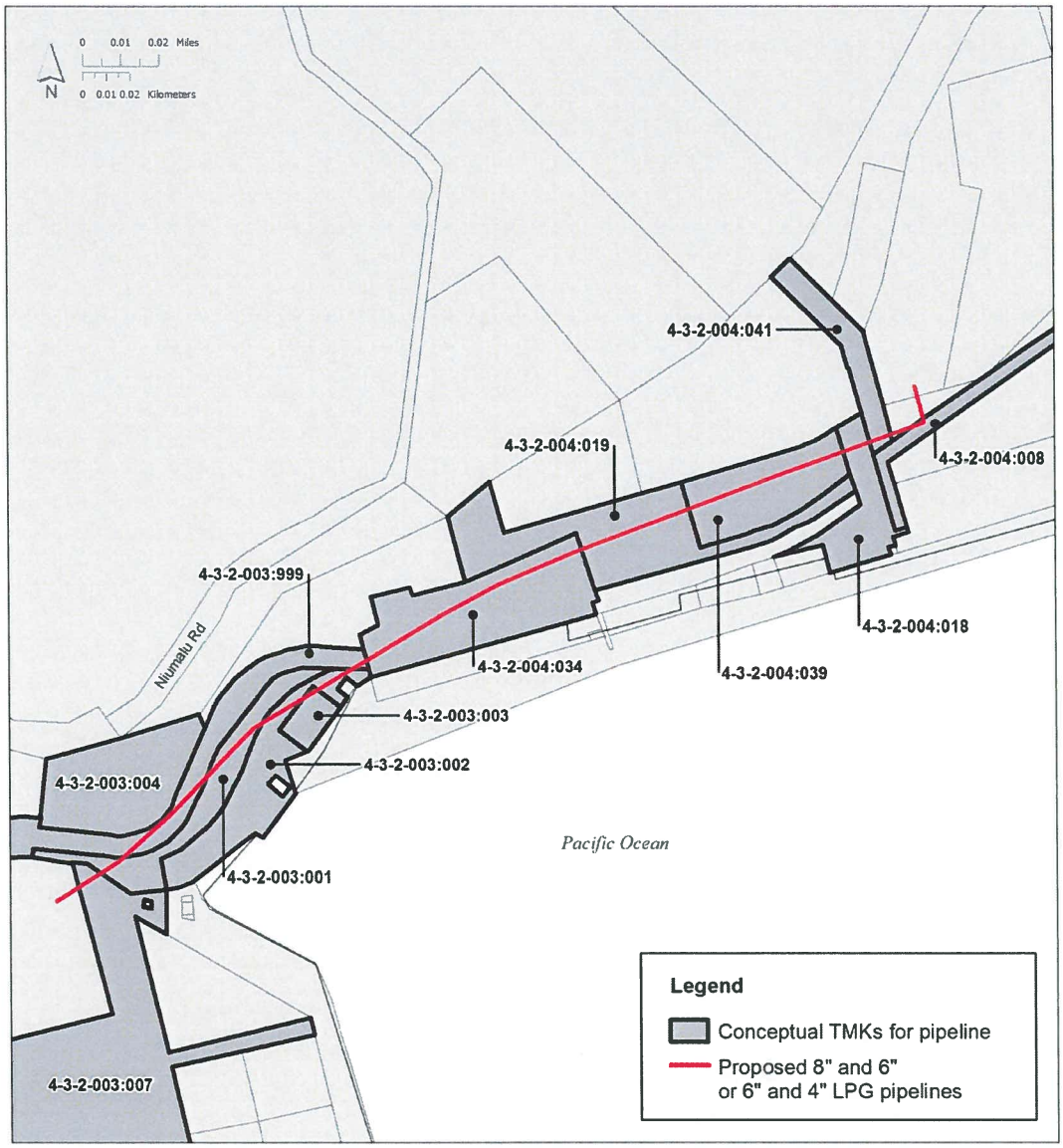
Project Parcels:
Flood Zone Map



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT G:

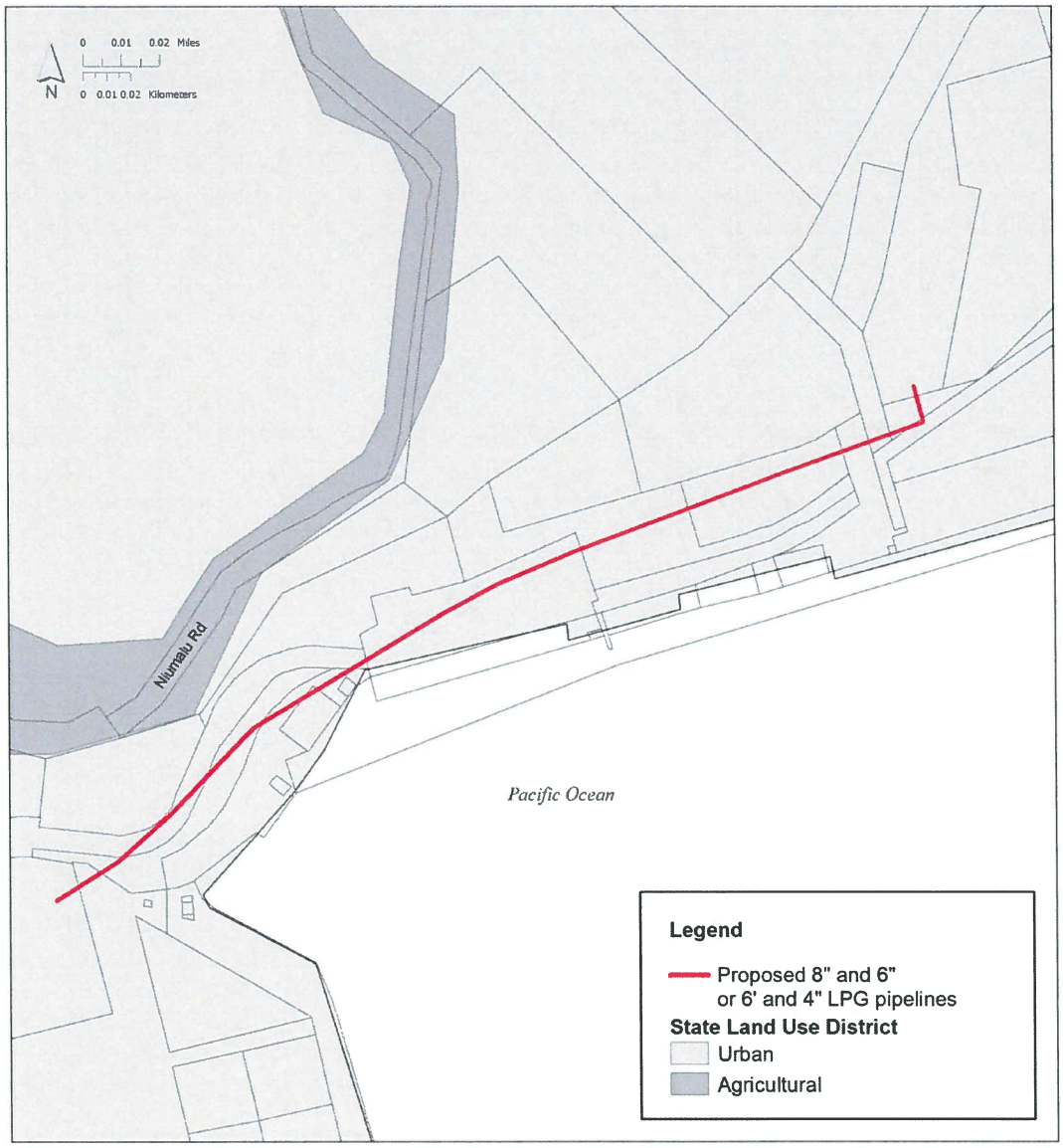
Project Parcels:
Tsunami Evacuation Map



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT H:

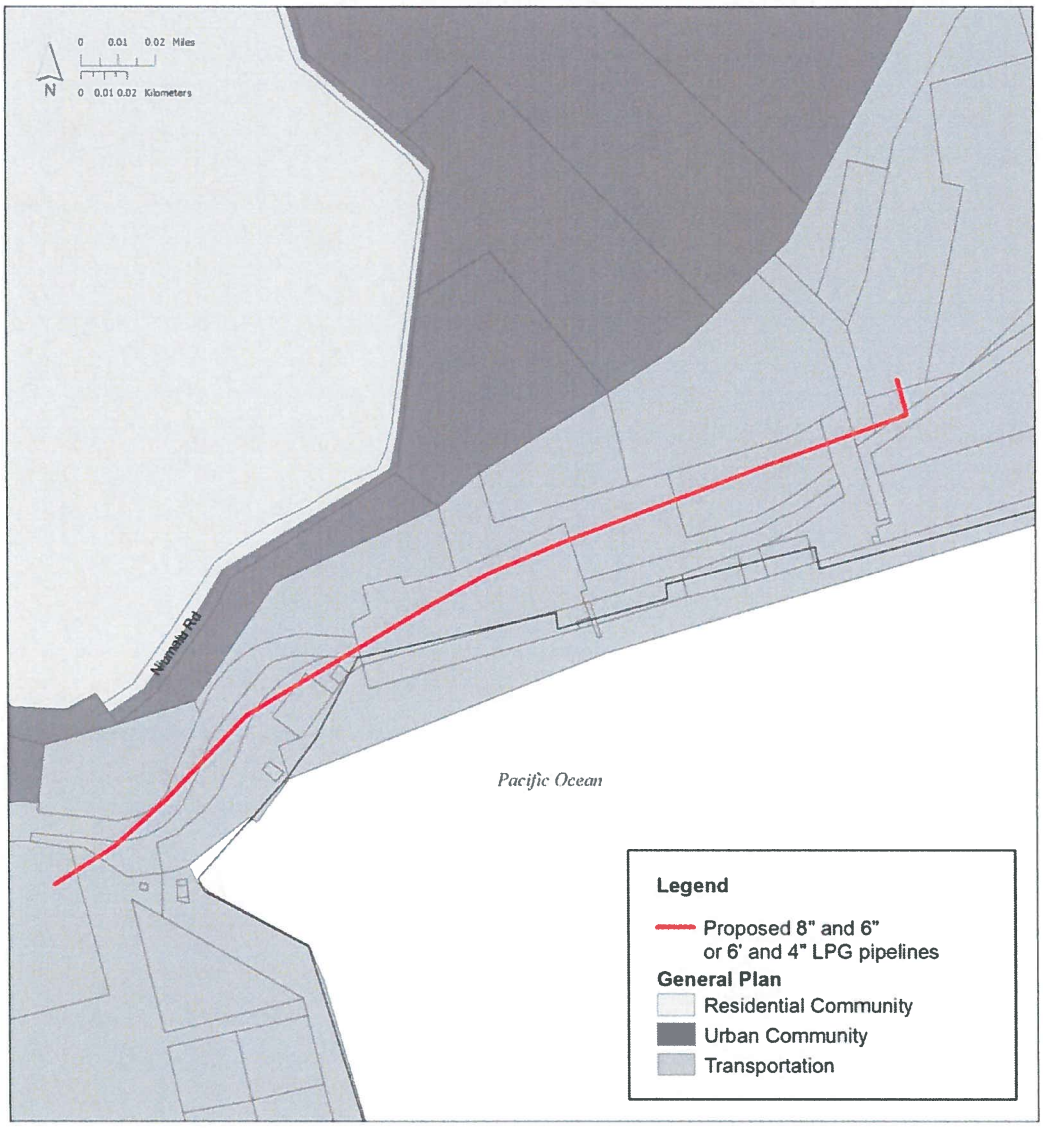
Pipeline Parcels:
TMKs affected by new Transmission lines



HAWAI'I GAS
THE CLEAN ENERGY COMPANY

EXHIBIT I:

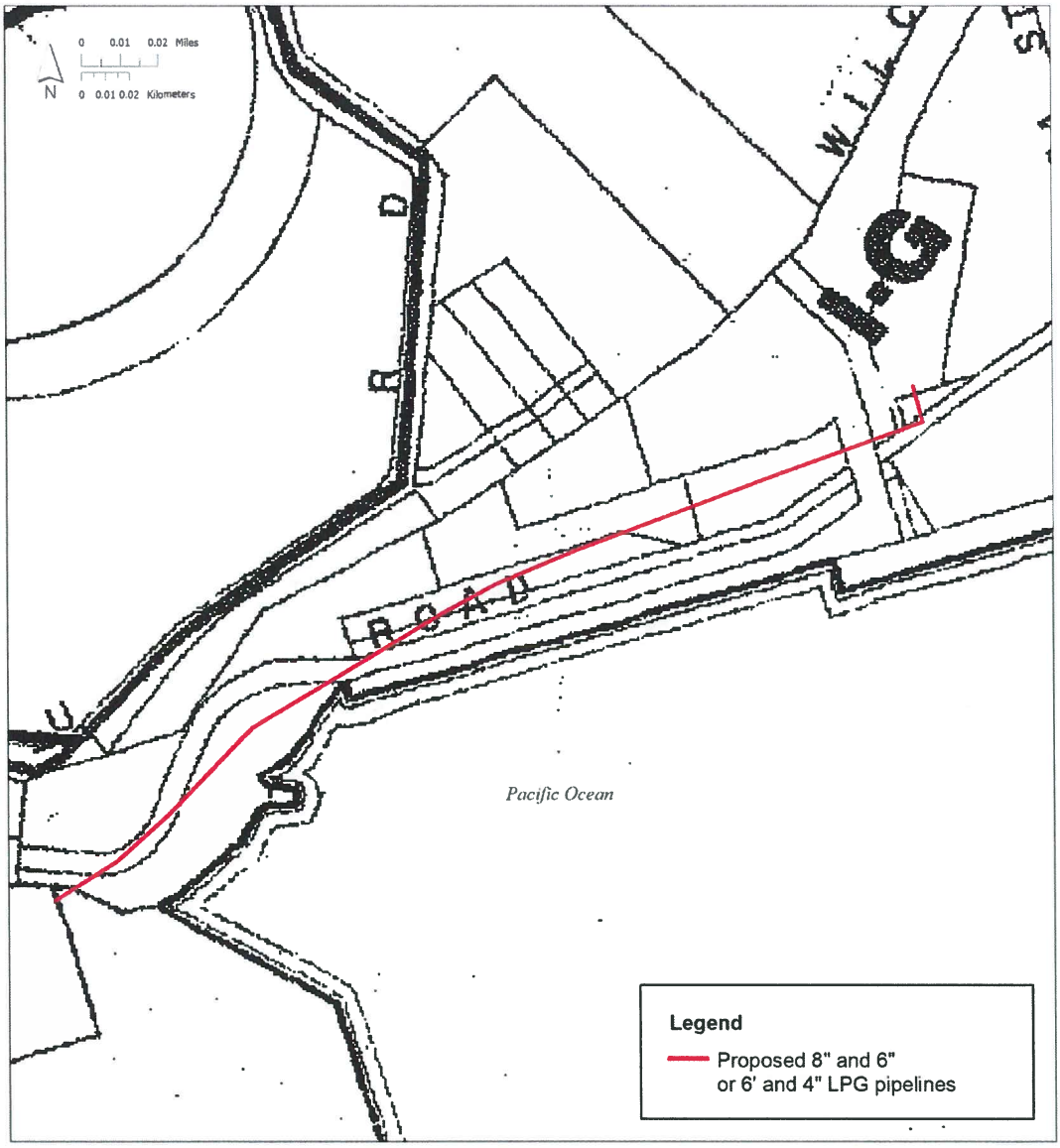
Pipeline Parcels:
State of Hawai'i, Land Use District Map



HAWAI'I GAS
THE CLEAN ENERGY COMPANY

EXHIBIT J:

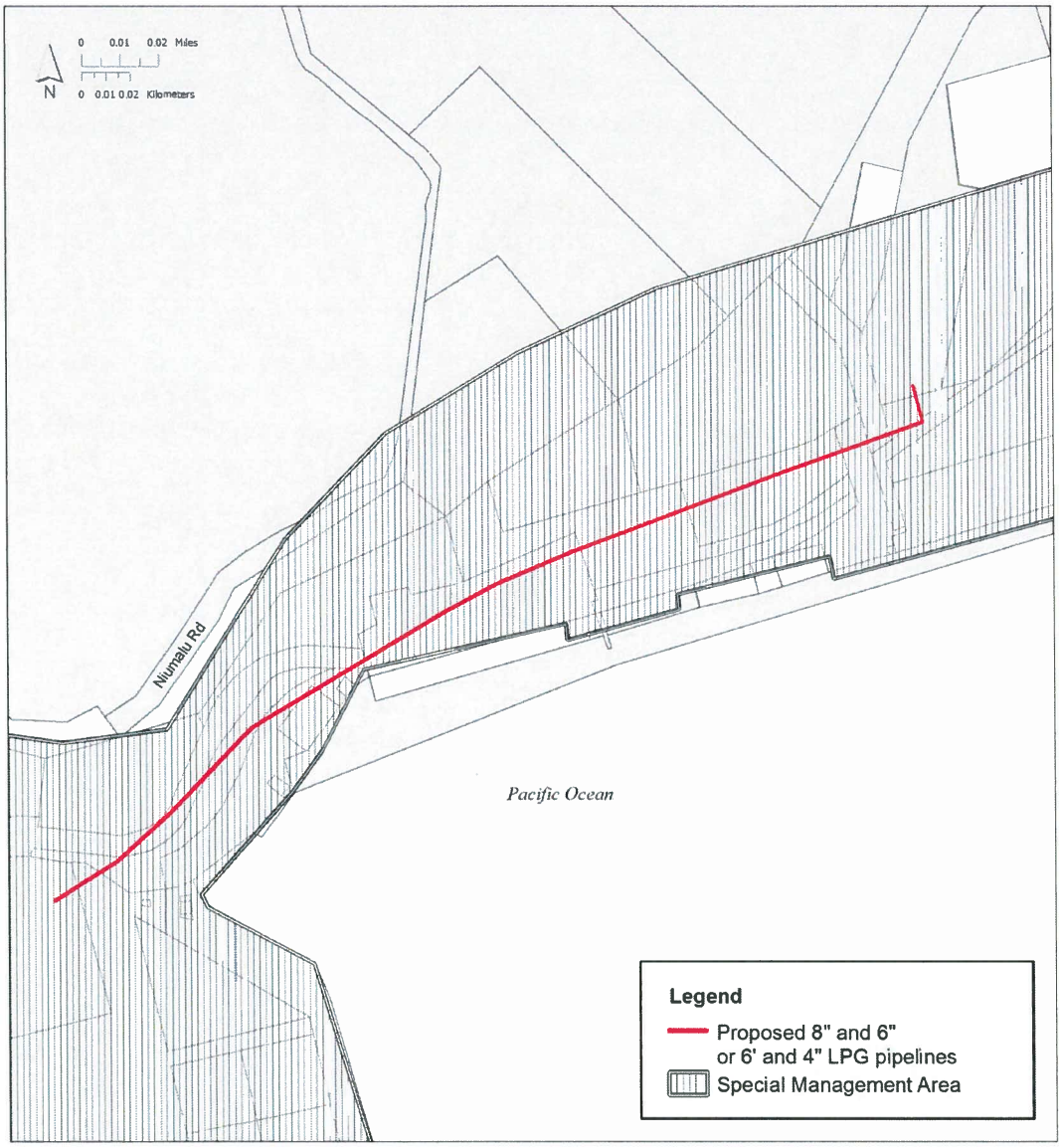
Pipeline Parcels: County of Kaua'i, General Plan Map



HAWAI'IGAS
THE CLEAN ENERGY COMPANY

EXHIBIT K:

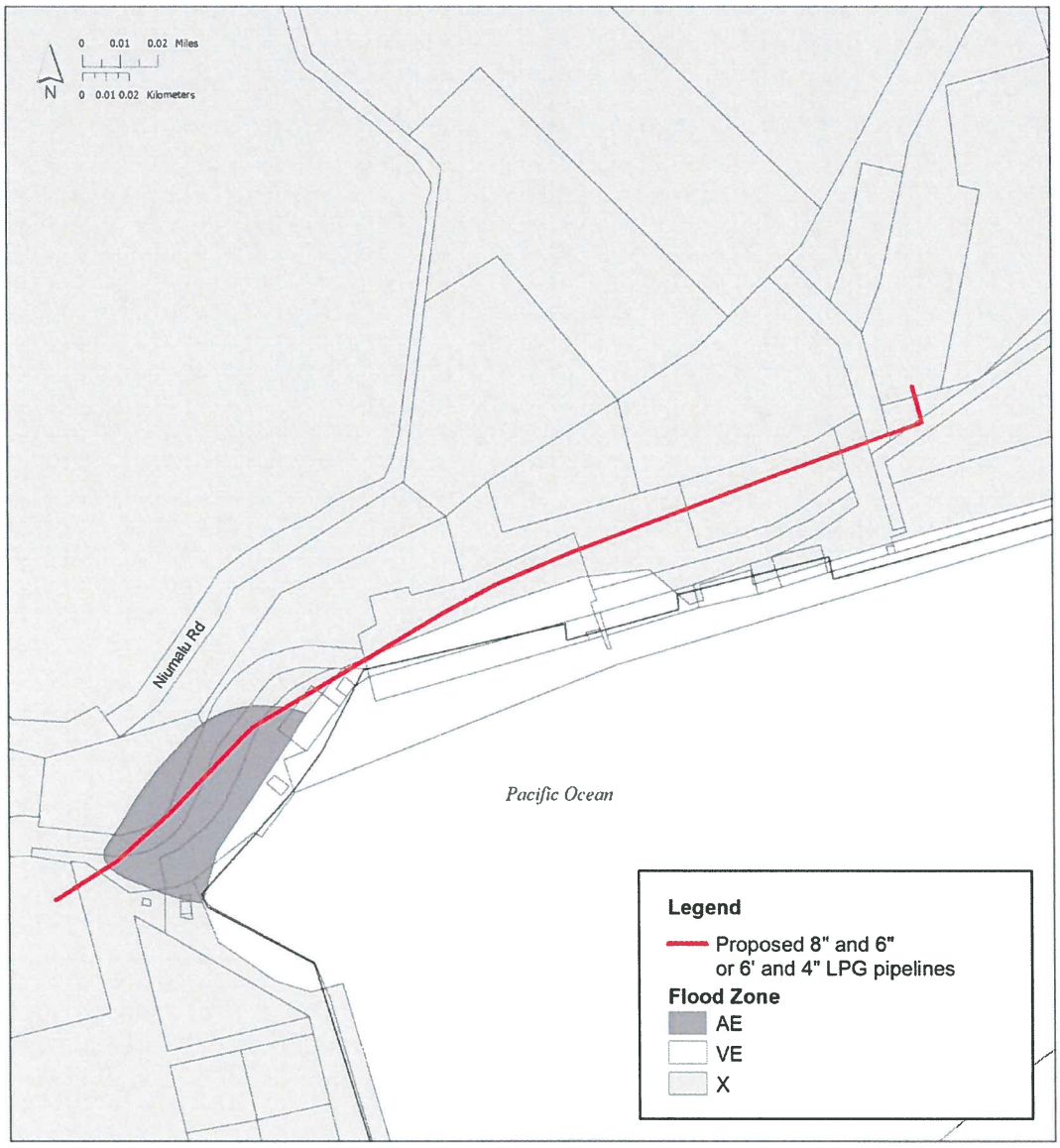
Pipeline Parcels:
County of Kaua'i, Zoning Map



HAWAIIGAS
THE CLEAN ENERGY COMPANY

EXHIBIT L:

Pipeline Parcels:
County of Kaua'i, Special Management Area Map



HAWAI'IGA
THE CLEAN ENERGY COMPA

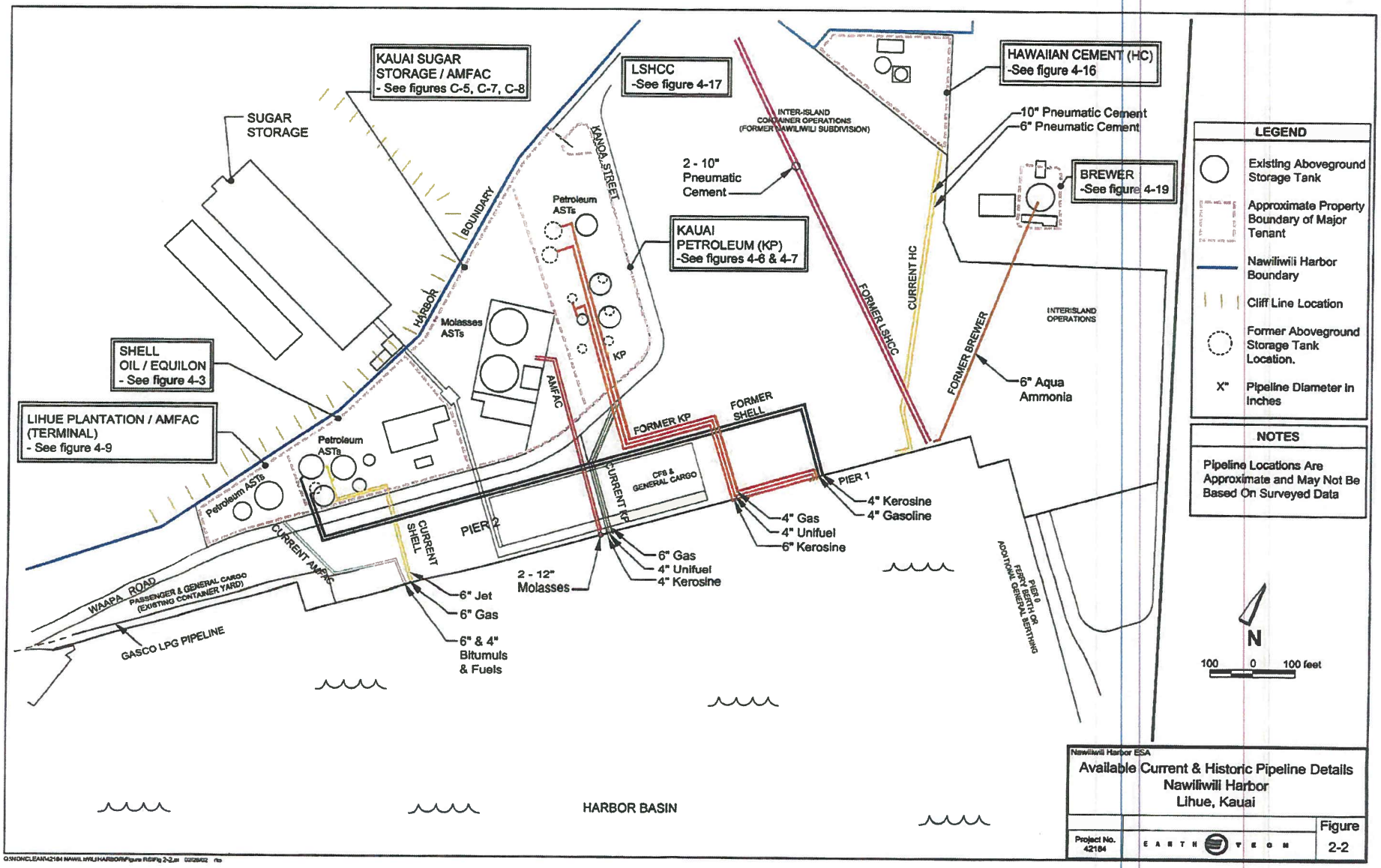
EXHIBIT M:

Pipeline Parcels:
Flood Zone Map

EXHIBIT N:

Available Current & Historic Pipeline Details of Nawiliwili Harbor Pier 2 area, (including Hawai'i Gas Proposed Project area)[1]

[1] Figure 2-2, Earth Tech (2001) [from *Phase I Environmental Site Assessment, Sugar/Molasses Storage and Loading Facility, Lihue, Kauai, Hawaii, TMK: (4) 3-2-4: Parcels 21, 41, 53, and 63 (portion)* (April 2012)]



Nawiliwili Harbor ESA

Available Current & Historic Pipeline Details
Nawiliwili Harbor
Lihue, Kauai

Project No. 42184

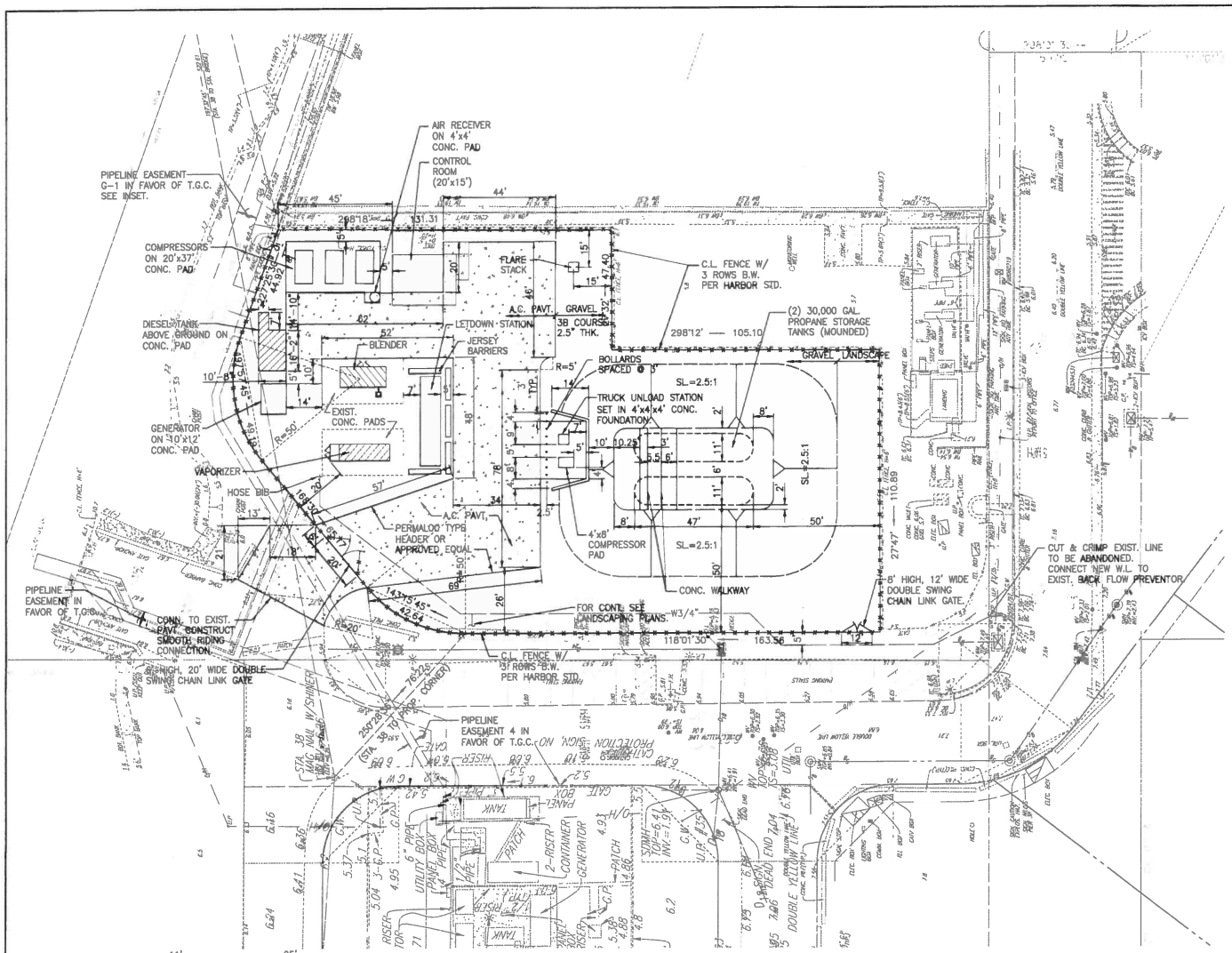
EARTH TECH

Figure 2-2

G:\NONCLEAN\42184 NAWILIWILI HARBOR\Figure Rdsfig 2-2.ai 02/25/02 rbs

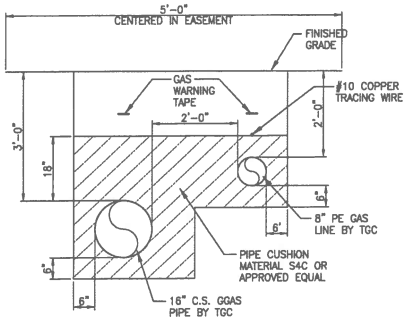
EXHIBIT O:

Construction Plan View (including section view) of Typical Mounded LPG Storage Tank



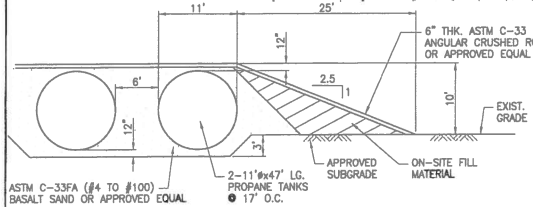
INSET FOR EASEMENT G-1

SCALE: 1"=500'



16" & 8" GAS LINE
TRENCH DETAIL FOR EASEMENT G-1

SCALE: 3/4"=1'-0"



TANK SECTION

SCALE: 1/8"=1'-0"

SITE PLAN

SCALE: 1"=20'

NORTH

(T.M.K.: 1-5-34: 03, 1-5-42: 06)

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

DATE:	12/8/06
SCALE:	AS NOTED
DESIGN BY:	J.K.
DRAWN BY:	R.K.
CHECKED BY:	J.K.

JASON Y. KAGE — LICENSED PROFESSIONAL ENGINEER — No. 9930-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

04/30/08

EXPIRATION DATE OF THE LICENSE

Sato & Associates, Inc.

Consulting Engineers • Civil & Structural

Honolulu, Oahu, Hawaii • Wailuku, Maui, Hawaii

NEW PROPANE AIR FACILITY- PIER 38

HONOLULU, HAWAII

SITE PLAN & DETAILS

APPROVED:	DATE	APPROVED:	DATE
	DATE		DATE

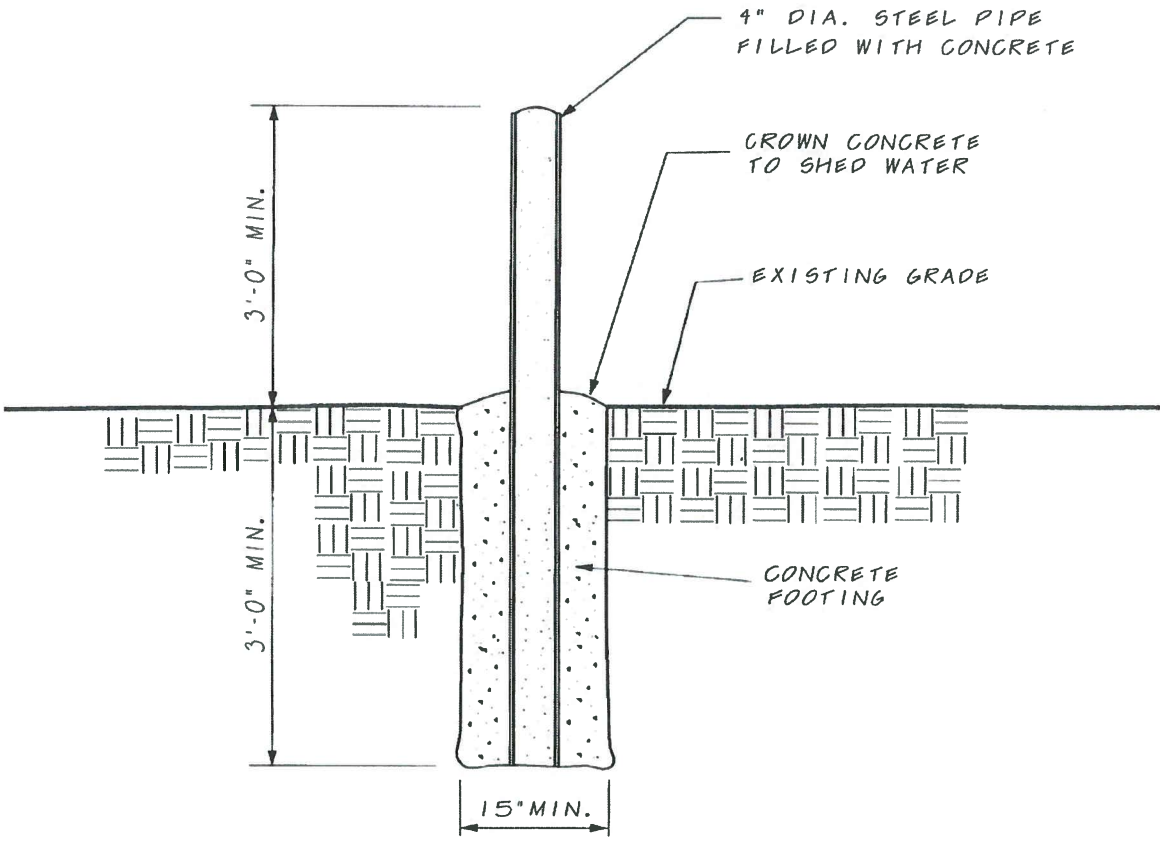
SHEET C-7 OF 26 SHEETS

Proj. No. 05047.00 6/21/07 R:\gasco-pier38\dwgs\SitePlan.dwg

EXHIBIT P:

Typical 4" Pipe Bollard Detail for Project Parcels

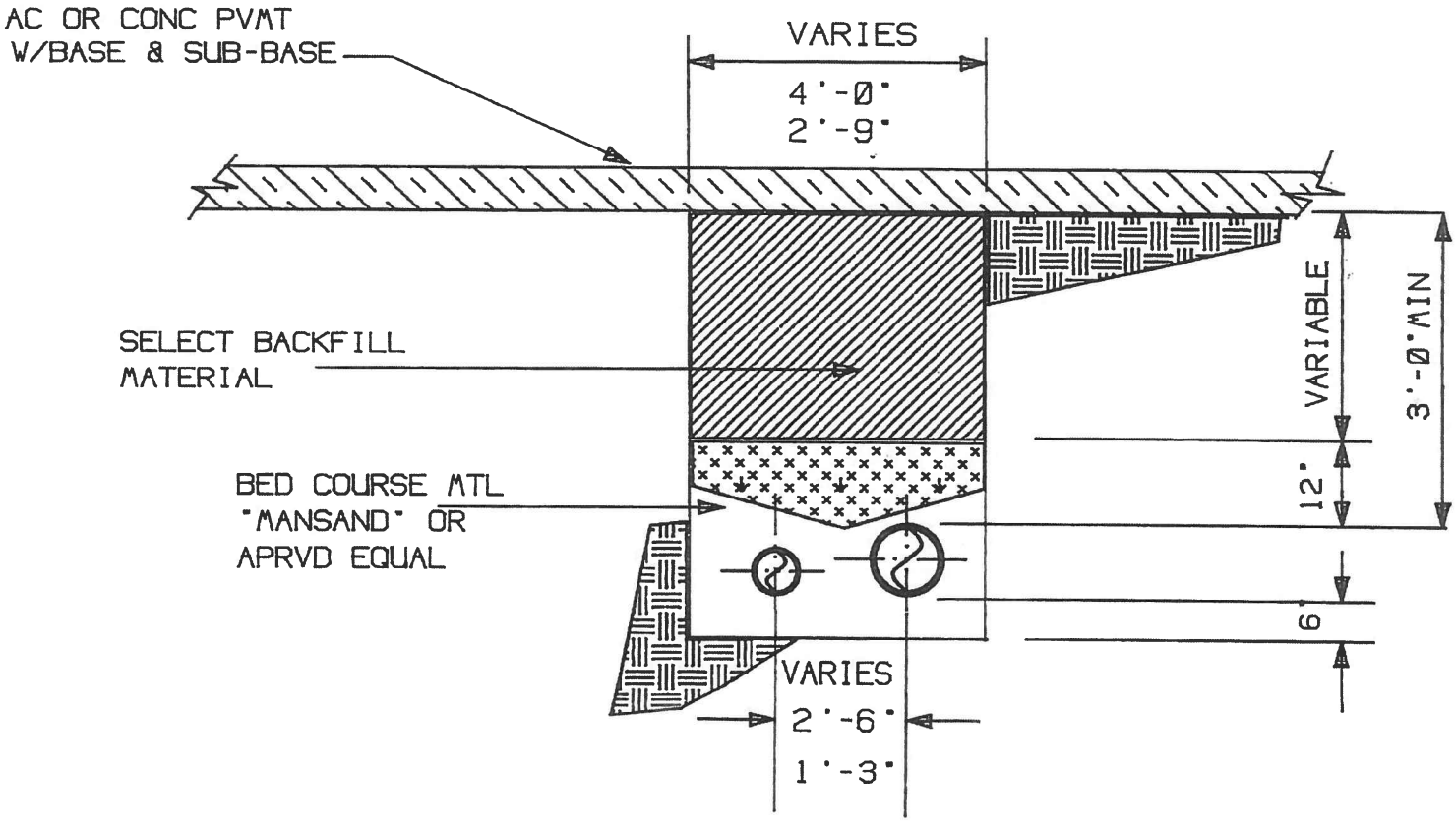
HAWAIIGAS THE CLEAN ENERGY COMPANY	STANDARD **TYPICAL 4" PIPE BOLLARD DETAIL**	Document	E-9100
		Issue Date	**05/03/03**
		Revision	
		Page	Page 1 of 2
Prepared By:	C. Calvet	Date:	
Approved By:	C. Calvet	Date:	



BOLLARD DETAIL

EXHIBIT Q:

Typical Trench Detail
for Pipeline and Project Parcels



A / P1 TYP. TRENCH DETAIL

NO SCALE

EXHIBIT R:

U.S. Environmental Protection Agency, EJ Screen Report of Project Area[2]

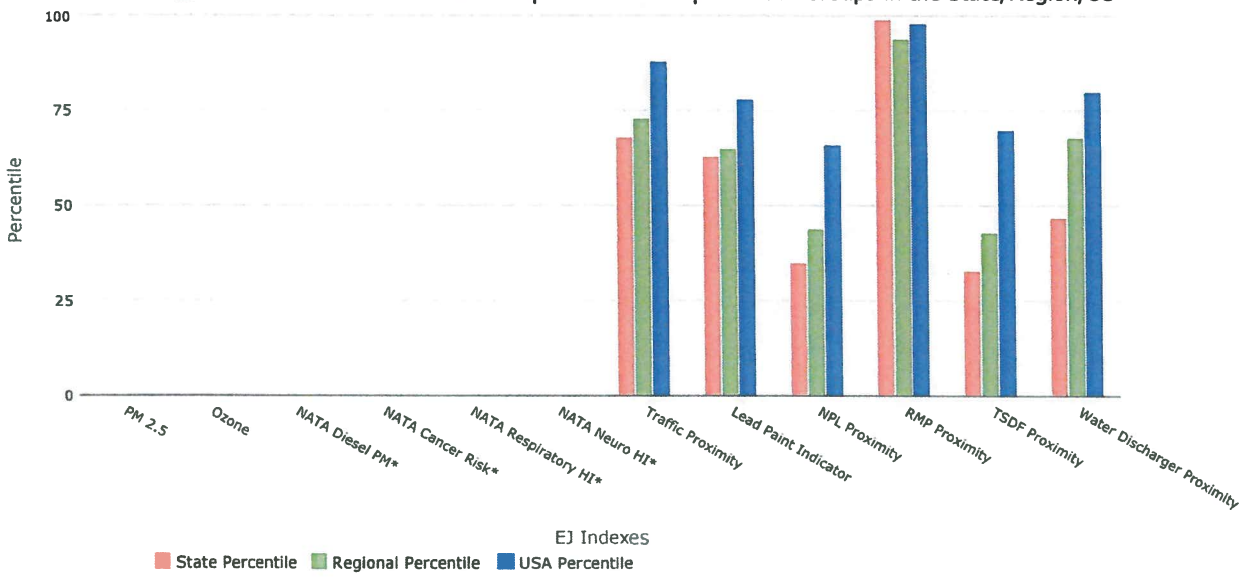
[2] April 8, 2016

Save as PDF

1 mile Ring Centered at 21.955447,-159.356294
HAWAII, EPA Region 9
Approximate Population: 3113

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	68	73	88
EJ Index for Lead Paint Indicator	63	65	78
EJ Index for NPL Proximity	35	44	66
EJ Index for RMP Proximity	99	94	98
EJ Index for TSDF Proximity	33	43	70
EJ Index for Water Discharger Proximity	47	68	80

EJ Index for the Selected Area Compared to All People's Block Groups in the State/Region/US



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	98	280	56	190	55	110	74
Lead Paint Indicator (% pre-1960s housing)	0.1	0.17	48	0.25	44	0.3	35
NPL Proximity (site count/km distance)	0.0064	0.092	28	0.11	6	0.096	2
RMP Proximity (facility count/km distance)	1.8	0.18	99	0.41	95	0.31	97
TSDF Proximity (facility count/km distance)	0.0062	0.092	27	0.12	2	0.054	14
Water Discharger Proximity (count/km)	0.11	0.33	22	0.19	45	0.25	41
Demographic Indicators							
Demographic Index	56%	51%	63	46%	65	35%	79
Minority Population	82%	77%	50	57%	73	36%	86
Low Income Population	29%	25%	65	35%	46	34%	47
Linguistically Isolated Population	1%	6%	26	9%	21	5%	47
Population with Less Than High School Education	13%	10%	73	18%	49	14%	57
Population under Age 5	16%	6%	97	7%	97	7%	97
Population over Age 64	13%	14%	48	12%	67	13%	58

*The National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

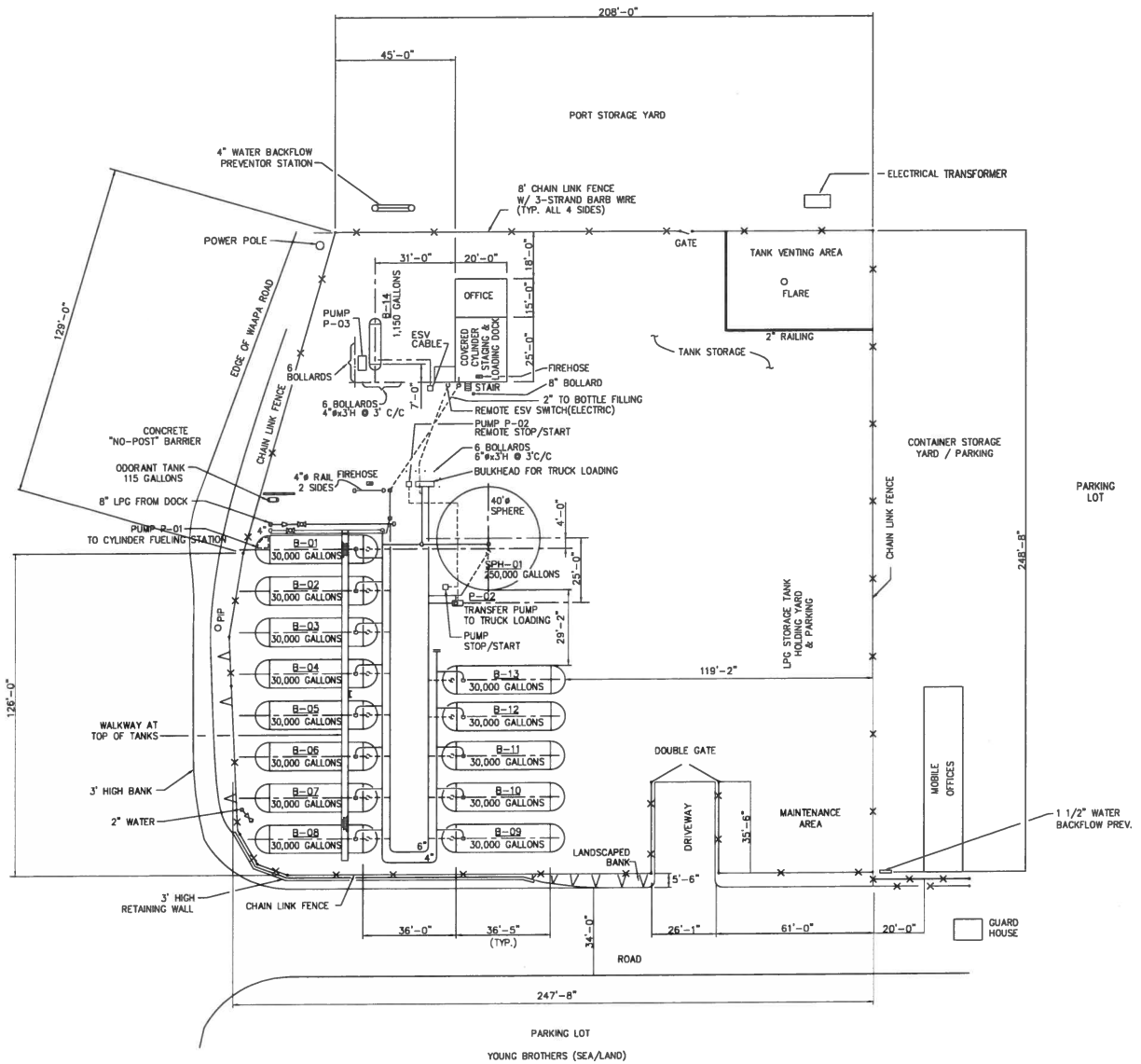
EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not

provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

EXHIBIT S:

Hawai'i Gas Current Site Plan for Storage Tank Facility and Base Yard at Nawiliwili Harbor (Pier 3)[3]

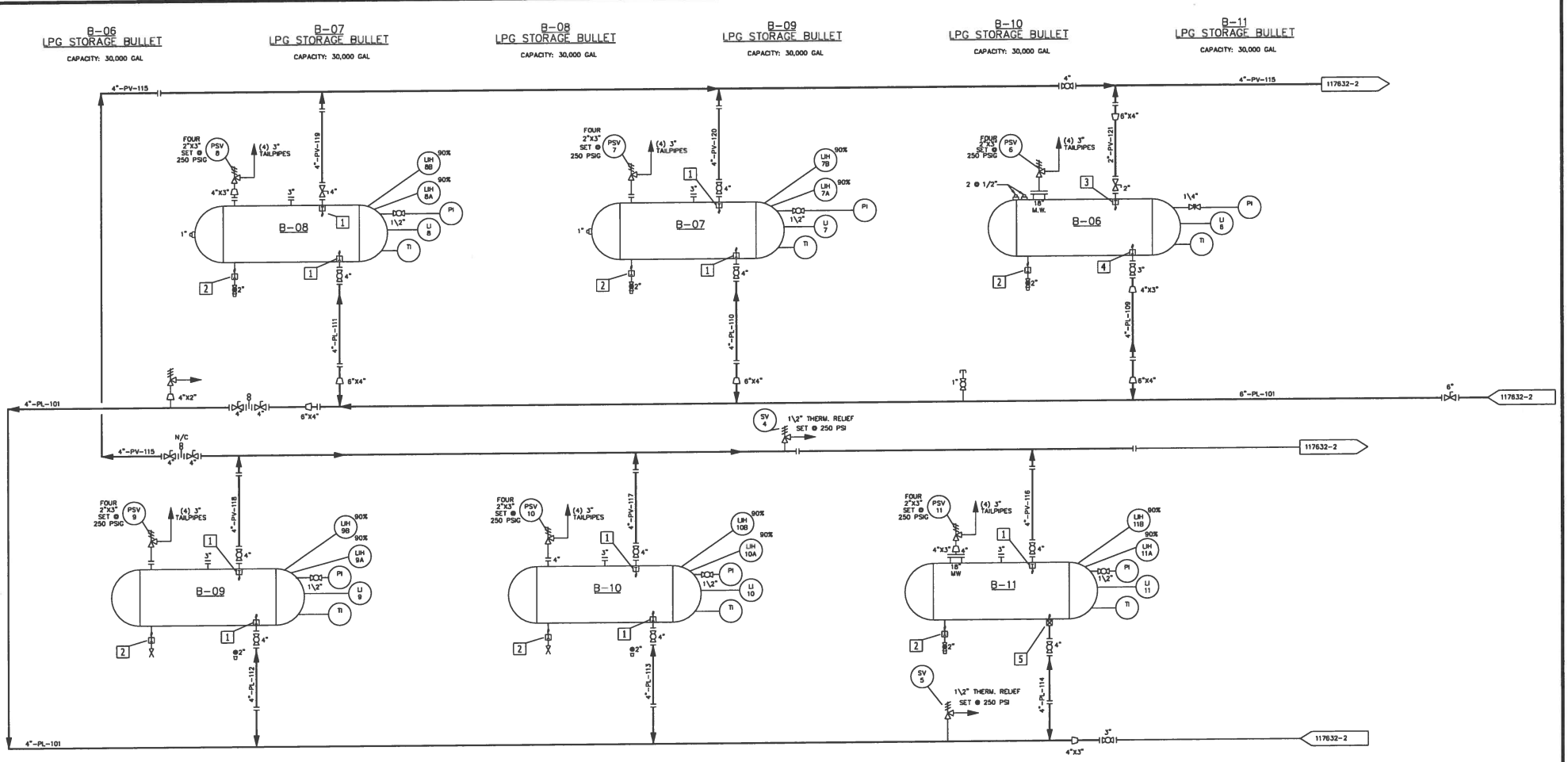
[3] Includes details of pipelines within site



THE GAS COMPANY

BASE YARD NAWILIWILI
ADDITIONAL TANK INSTALLATION
LIHUE, KAUAI, HAWAII

DATE	DESIGN BY	DRAWN BY	CHECKED BY	SCALE
1/25/16	CC	JP	CC	1" = 20'-0"



SP#	DESCRIPTION	MODEL
1	Excess Flow Valve - 4" Internal	Rego A4500Y8
2	Excess Flow Valve - 2"	Rego A3292B
3	Excess Flow Valve - 2" Internal	Rego A3500X4
4	Excess Flow Valve - 3" Internal	Rego A3500V6
5	Emergency Shutoff with Remote Cable Operator - 4"	???
6	Double Check Filler Valve - 1-3/4" ACME x 1-1/4" MNPT	Rego 7579C
7	Vapor Eliminator	Liquid Controls
8	Internal Shut-off Valve - 4"	Fisher C404A32-60

SP#	DESCRIPTION	MODEL
9	Emergency Shutoff Valve - 2"	Fisher N550-16
10	Backflow Check Valve - 3"	Fisher G201-24
11	Vapor Swivel Coupling - 1" with 2" x 1" Reducer	???
12	LP Gas Hose MH6737 - 1"	Dayco 7132
13	Vapor Swivel Coupling - 2"	???
14	Gas Hose - 2"	Gates 20B-HB
15	Internal Flow Valve - 2"	Fisher C427-16

SP#	DESCRIPTION	MODEL
16	Propane Control Valve - 1/2" FNPT with 1/8" F. Hydraulic Connection	Rego 7177
17	Master Cylinder with Actuator Lever	Rego 7188
18	Single Check Vapor Equalizing Valve - 1-1/4" ACME x 3/4" MNPT	Rego 3170
19	Internal Flow Valve - 1-1/4"	Fisher 407-10
20	Bypass Valve - 3/4"	Corken B166
21	Excess Flow Valve - 3/4"	Rego 3272G
22	Adaptor Hose Coupling - 3/4" NPT x 1-3/4" ACME	Rego A7575

THE GAS COMPANY

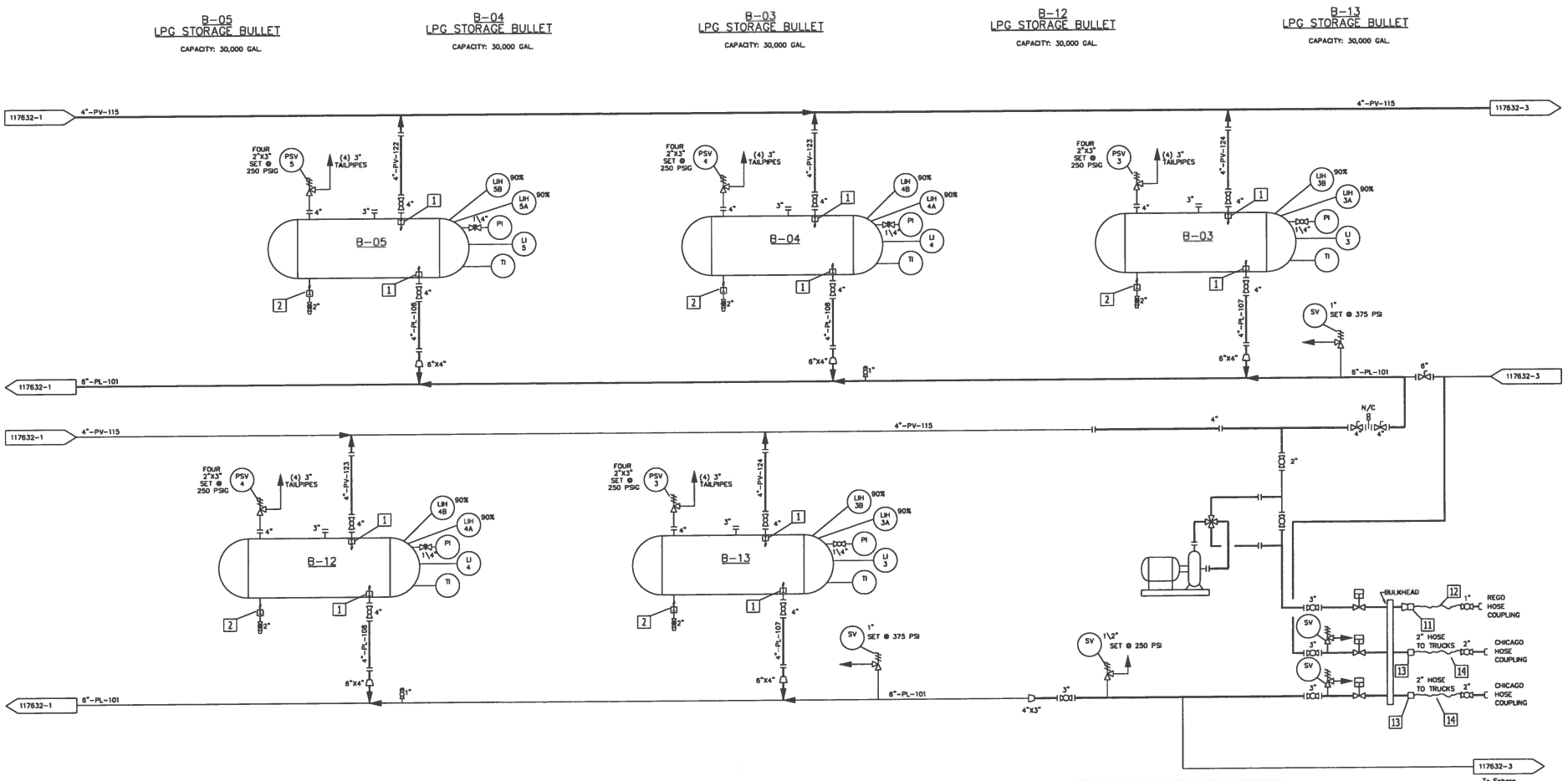
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

REV.	DATE	BY	DESCRIPTION	ENGR.	OPER.	APPRV.
3	6/02	ZW	REVISED ATTRIBUTES			
2	5/00	SCB/AJB	AS-BUILT MAY 2000			
1	3/99	PCW/GLF	AS-BUILT 11/98			
0	3/7/95	SMT	AS-BUILT FOR PSM PROJECT			
5	5/2007	GRL	LOGO CHANGED			
4	02/2006	STN	PUMP AND PIPE REDESIGN			

ACCOUNT/NAME
LIHUE BASE YARD
SERVICE/ADDRESS
Kauai, Hawaii

DESIGN	
DATE	
CHECKED	
OPERATIONS	
APPROVED	

SCALE	PROJECT NO.		
NONE	VECO-598013		
ISLAND	ACCT. #	DWG. TYPE	REV.
KAUAI	117632-1	P&ID	6



SP#	DESCRIPTION	MODEL
1	Excess Flow Valve - 4" Internal	Rego A4500Y8
2	Excess Flow Valve - 2"	Rego A3292B
3	Excess Flow Valve - 2" Internal	Rego A3500X4
4	Excess Flow Valve - 3" Internal	Rego A3500V6
5	Emergency Shutoff with Remote Cable Operator - 4"	???
6	Double Check Filler Valve - 1-3/4" ACME x 1-1/4" MNPT	Rego 7579C
7	Vapor Eliminator	Liquid Controls
8	Internal Shut-off Valve - 4"	Fisher C404A32-60

SP#	DESCRIPTION	MODEL
9	Emergency Shutoff Valve - 2"	Fisher N550-16
10	Backflow Check Valve - 3"	Fisher G201-24
11	Vapor Swivel Coupling - 1" with 2" x 1" Reducer	???
12	LP Gas Hose MH6737 - 1"	Davco 7132
13	Vapor Swivel Coupling - 2"	???
14	Gas Hose - 2"	Gates 208-HB
15	Internal Flow Valve - 2"	Fisher C427-16

SP#	DESCRIPTION	MODEL
16	Propane Control Valve - 1/2" FNPT with 1/8" F. Hydraulic Connection	Rego 7177
17	Master Cylinder with Actuator Lever	Rego 7188
18	Single Check Vapor Equalizing Valve - 1-1/4" ACME x 3/4" MNPT	Rego 3170
19	Internal Flow Valve - 1-1/4"	Fisher 407-10
20	Bypass Valve - 3/4"	Corken B166
21	Excess Flow Valve - 3/4"	Rego 3272G
22	Adaptor Hose Coupling - 3/4" NPT x 1-3/4" ACME	Rego A7575

Jacobs Engineering Group Inc.
Central Region — Houston, Texas
JEG PROJECT NO. 58-K327-30

THE GAS COMPANY
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

REV.	DATE	BY	DESCRIPTION	ENGR.	OPER.	APPRV.
3	10/02	DL	AS-BUILT 10/02			
2	5/00	AJB	AS-BUILT 5/00			
1	3/99	PCW/CLF	AS-BUILT 11/98			
0	3/7/95	SMT	AS-BUILT FOR PSM PROJECT			
5	5/2007	GRL	LOGO CHANGED			
4	02/2006	STN	PUMP AND PIPE REDESIGN			

ACCOUNT/NAME
LIHUE BASE YARD
SERVICE/ADDRESS
Waapa Rd/Entrance Rd, Nawiliwili, Kauai, HI

DESIGN
DATE
CHECKED
OPERATIONS
APPROVED

SCALE: NONE
PROJECT NO.: VECO-598013

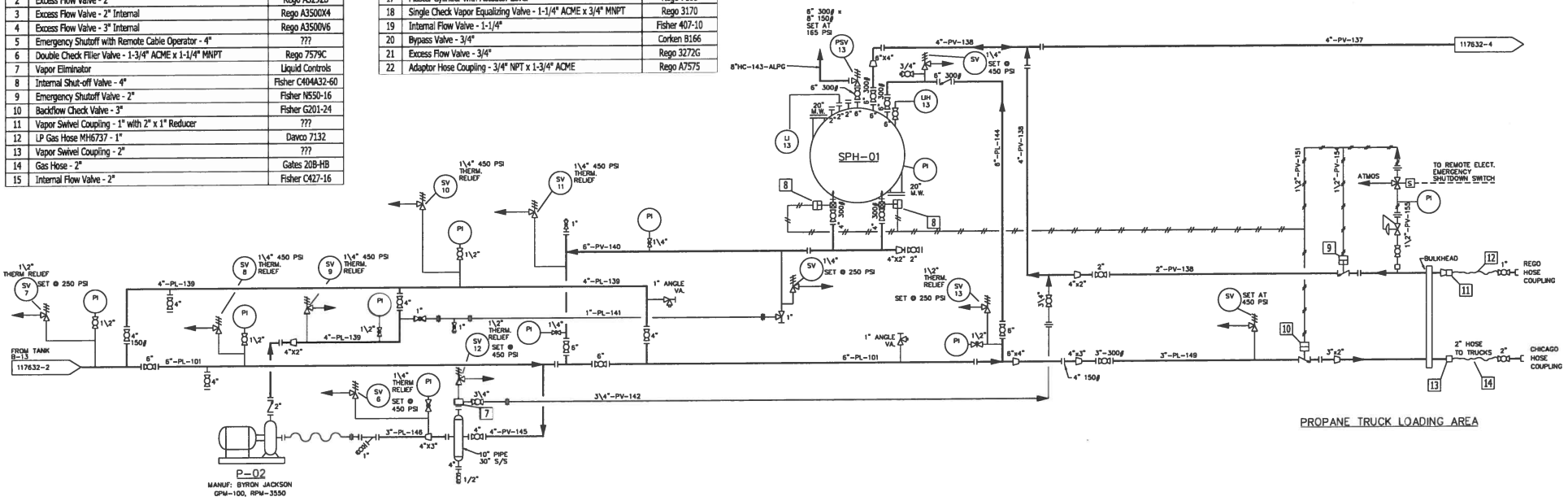
ISLAND	ACCT. #	DWG. TYPE	REV.
KAUAI	117632-2	P&ID	6

SPH-01
LPG STORAGE SPHERE

CAPACITY: 250,000 GAL.

SP#	DESCRIPTION	MODEL
1	Excess Flow Valve - 4" Internal	Rego A4500Y8
2	Excess Flow Valve - 2"	Rego A3292B
3	Excess Flow Valve - 2" Internal	Rego A3500X4
4	Excess Flow Valve - 3" Internal	Rego A3500V6
5	Emergency Shutoff with Remote Cable Operator - 4"	???
6	Double Check Filler Valve - 1-3/4" ACME x 1-1/4" MNPT	Rego 7579C
7	Vapor Eliminator	Liquid Controls
8	Internal Shut-off Valve - 4"	Fisher C404A32-60
9	Emergency Shutoff Valve - 2"	Fisher N550-16
10	Backflow Check Valve - 3"	Fisher G201-24
11	Vapor Swivel Coupling - 1" with 2" x 1" Reducer	???
12	LP Gas Hose MH6737 - 1"	Davco 7132
13	Vapor Swivel Coupling - 2"	???
14	Gas Hose - 2"	Gates 20B-HB
15	Internal Flow Valve - 2"	Fisher C427-16

SP#	DESCRIPTION	MODEL
16	Propane Control Valve - 1/2" FNPT with 1/8" F. Hydraulic Connection	Rego 7177
17	Master Cylinder with Actuator Lever	Rego 7188
18	Single Check Vapor Equalizing Valve - 1-1/4" ACME x 3/4" MNPT	Rego 3170
19	Internal Flow Valve - 1-1/4"	Fisher 407-10
20	Bypass Valve - 3/4"	Corken B166
21	Excess Flow Valve - 3/4"	Rego 3272G
22	Adaptor Hose Coupling - 3/4" NPT x 1-3/4" ACME	Rego A7575



Jacobs Engineering Group Inc.
Central Region — Houston, Texas
JEG PROJECT NO. 58-K327-30

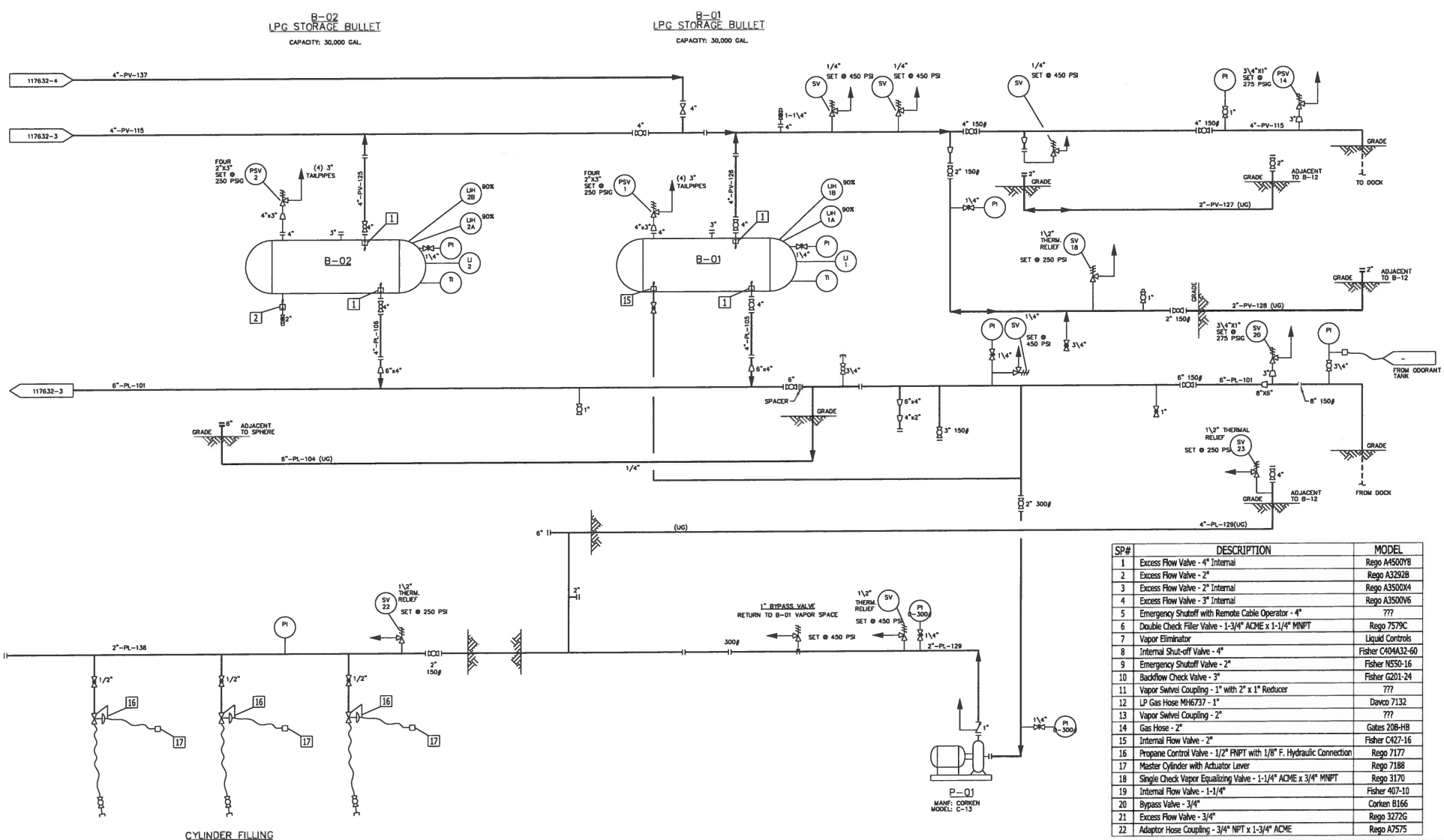
THE GAS COMPANY
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

REV.	DATE	BY	DESCRIPTION	ENGR.	OPER.	APPRV.
3	10/02	DL	AS-BUILT 10/02			
2	5/00	AJB	AS-BUILT 5/00			
1	3/99	PCW/GLF	AS-BUILT 11/98			
0	3/7/95	SMT	AS-BUILT FOR PSM PROJECT			
5	5/2007	GRL	LOGO CHANGED			
4	02/2006	STN	PUMP AND PIPE REDESIGN			

ACCOUNT/NAME: LIHUE BASE YARD
SERVICE/ADDRESS: Waapa Rd/Entrance Rd, Nawiliwili, Kauai, HI

DESIGN
DATE
CHECKED
OPERATIONS
APPROVED

SCALE	PROJECT NO.		
NONE	VECO-598013		
ISLAND	ACCT. #	DWG. TYPE	REV.
KAUAI	117632-3	P&ID	6



SP#	DESCRIPTION	MODEL
1	Excess Flow Valve - 4" Internal	Rego A4500Y8
2	Excess Flow Valve - 2"	Rego A3292B
3	Excess Flow Valve - 2" Internal	Rego A3500X4
4	Excess Flow Valve - 3" Internal	Rego A3500V6
5	Emergency Shutoff with Remote Cable Operator - 4"	???
6	Double Check Filler Valve - 1-3/4" ACME x 1-1/4" MNPT	Rego 7579C
7	Vapor Eliminator	Liquid Controls
8	Internal Shut-off Valve - 4"	Fisher C404A32-60
9	Emergency Shutoff Valve - 2"	Fisher N550-16
10	Backflow Check Valve - 3"	Fisher G201-24
11	Vapor Swivel Coupling - 1" with 2" x 1" Reducer	???
12	LP Gas Hose MH6737 - 1"	Davco 7132
13	Vapor Swivel Coupling - 2"	???
14	Gas Hose - 2"	Gates 20B-HB
15	Internal Flow Valve - 2"	Fisher C427-16
16	Propane Control Valve - 1/2" FNPT with 1/8" F. Hydraulic Connection	Rego 7177
17	Master Cylinder with Actuator Lever	Rego 7188
18	Single Check Vapor Equalizing Valve - 1-1/4" ACME x 3/4" MNPT	Rego 3170
19	Internal Flow Valve - 1-1/4"	Fisher 407-10
20	Bypass Valve - 3/4"	Corken B166
21	Excess Flow Valve - 3/4"	Rego 3272G
22	Adaptor Hose Coupling - 3/4" NPT x 1-3/4" ACME	Rego A7575

Jacobs Engineering Group Inc.
Central Region Houston, Texas
JEG PROJECT NO. 58-K327-30

THE GAS COMPANY
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

REV.	DATE	BY	DESCRIPTION	ENGR.	OPER.	APPRV.
3	6/02	ZW	REVISED ATTRIBUTES			
2	5/00	SCB/ALB	AS-BUILT, MAY 2000			
1	3/99	PCW/GLF	AS-BUILT 11/98			
0	3/8/95	SMT	AS-BUILT FOR PSM PROJECT			
5	5/2007	GRL	LOGO CHANGED			
4	02/2006	STN	PUMP AND PIPE REDESIGN			

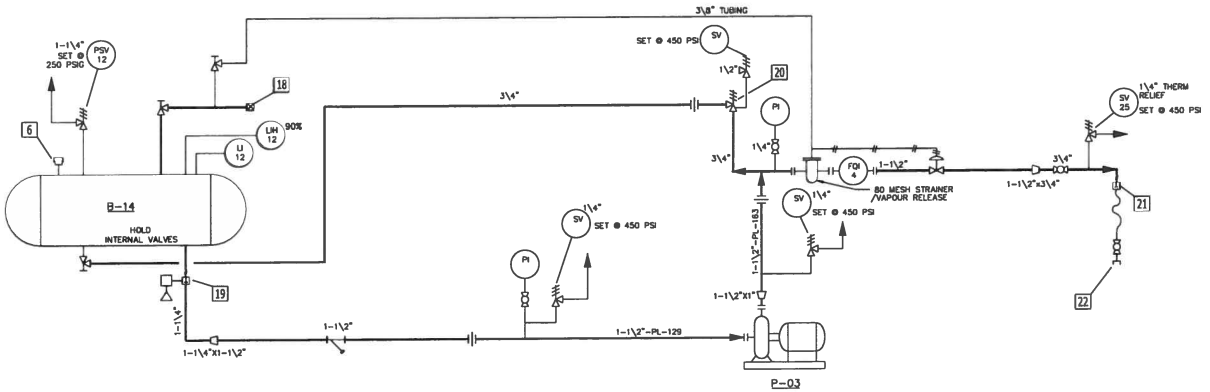
ACCOUNT/NAME
BASE YARD NAWILIWILI
SERVICE/ADDRESS
Lihue, Kauai, Hawaii

DESIGN
DATE
CHECKED
OPERATIONS
APPROVED

SCALE: NONE
PROJECT NO.: VECO-598013
ISLAND: KAUAI
ACCT. #: 117632-4
DWG. TYPE: P&ID
REV.: 6

B-14
LPG STORAGE BULLET

CAPACITY: 1,150 GALLONS



P-03
MANF: CORKEN
MODEL: CORO-FLOW
POWER: 1HP

SP#	DESCRIPTION	MODEL
1	Excess Flow Valve - 4" Internal	Rego A4500Y8
2	Excess Flow Valve - 2"	Rego A3292B
3	Excess Flow Valve - 2" Internal	Rego A3500X4
4	Excess Flow Valve - 3" Internal	Rego A3500V6
5	Emergency Shutoff with Remote Cable Operator - 4"	???
6	Double Check Filler Valve - 1-3/4" ACME x 1-1/4" MNPT	Rego 7579C
7	Vapor Eliminator	Liquid Controls
8	Internal Shut-off Valve - 4"	Fisher C404A32-60

SP#	DESCRIPTION	MODEL
9	Emergency Shutoff Valve - 2"	Fisher N550-16
10	Backflow Check Valve - 3"	Fisher G201-24
11	Vapor Swivel Coupling - 1" with 2" x 1" Reducer	???
12	LP Gas Hose MH6737 - 1"	Davco 7132
13	Vapor Swivel Coupling - 2"	???
14	Gas Hose - 2"	Gates 20B-HB
15	Internal Flow Valve - 2"	Fisher C427-16

SP#	DESCRIPTION	MODEL
16	Propane Control Valve - 1/2" FNPT with 1/8" F. Hydraulic Connection	Rego 7177
17	Master Cylinder with Actuator Lever	Rego 7188
18	Single Check Vapor Equalizing Valve - 1-1/4" ACME x 3/4" MNPT	Rego 3170
19	Internal Flow Valve - 1-1/4"	Fisher 407-10
20	Bypass Valve - 3/4"	Corken B166
21	Excess Flow Valve - 3/4"	Rego 3272G
22	Adaptor Hose Coupling - 3/4" NPT x 1-3/4" ACME	Rego A7575

Jacobs Engineering Group Inc.
Central Region Houston, Texas
JEG PROJECT NO. 58-K327-30

THE GAS COMPANY
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

REV.	DATE	BY	DESCRIPTION	ENGR.	OPER.	APPRV.
3	6/02	ZW	REVISED ATTRIBUTES			
2	5/00	SCB/AJB	AS-BUILT MAY 2000			
1	3/99	PCW/CLF	AS-BUILT 11/98			
0	3/8/95	SMT	AS-BUILT FOR PSM PROJECT			
5	5/2007	GRL	LOGO CHANGED			
4	02/2006	STN	PUMP AND PIPE REDESIGN			

ACCOUNT/NAME: LIHUE BASE YARD
SERVICE/ADDRESS: Kauai, Hawaii

DESIGN	
DATE	
CHECKED	
OPERATIONS	
APPROVED	

SCALE	PROJECT NO.		
NONE	VECO-598013		
ISLAND	ACCT. #	DWG. TYPE	REV.
KAUAI	117632-5	P&ID	6

APPENDICES A – G

Appendix: A

The Gas Company, LLC, dba Hawai'i Gas ("TGC")
Summary of Community Meetings

Tuesday, November 10, 2015

The first community meeting to inform and solicit comments from area residents, property owners, and businesses about Hawai'i Gas' proposed project[1] was held at 5:00 PM on the above date at the pavilion in Kauai County's Niumalu Beach Park. Posters describing the proposed project were displayed within the meeting area.

Invitations to attend this meeting were mailed to approximately 100 residents and businesses in the vicinity of the proposed project. A total of seven people attended the meeting: Robert Crowell, Kauai District Manager of the Kauai District Commercial Harbors, Harbors Division, Hawaii State Department of Transportation, Glen Takenouchi (Kaua'i General Manager, TGC), Russell Winkelman (staff TGC), Lawton Sugihara (staff, TGC), Mari Yokoi (staff TGC), Galen Nakamura (project consultant - Shiramizu, Loo & Nakamura, LLLP), and Barbara Robeson (project consultant). Mr. Crowell had several general questions about the proposed project, which were answered by Mr. Takenouchi.

The meeting finished at 5:30pm.

Thursday, November 19, 2015

The second community meeting was held at 7:30 a.m. on the above date, in conjunction with a Lihue Business Association ("LBA") meeting at Duke's Canoe Club in Kalapaki, Kaua'i. The purpose of this meeting was to inform and solicit comments from LBA members and guests in attendance about the history, products and customer base of Hawai'i Gas, and Hawai'i Gas' plans for its proposed propane storage project across from Nawiliwili Harbor's Pier 2.

Prior to this meeting, LBA Chair Pat Griffin sent program announcements to LBA members, posted it in the Garden Island newspaper and announced it on the local radio station KQNG with the information above concerning Hawai'i Gas and its planned project, and approximately 35 people attended, in part to learn more about Hawai'i Gas' proposed project.

Hawai'i Gas General Manager Glen Takenouchi introduced three Hawai'i Gas staff who also attended this meeting: Russell Winkelman, Jesse Akagi and Lawton Sugihara Galen Nakamura (project consultant- Shiramizu, Loo & Nakamura, LLLP), and Barbara Robeson (project consultant) also attended the meeting. Mr. Takenouchi provided history and current information about Hawaii Gas and its operations both within the State of Hawai'i and the County of Kaua'i. He also described the proposed project and

[1] As explained in the draft Environmental Assessment, Hawai'i Gas proposes to construct an additional liquefied petroleum gas storage facility near Nawiliwili Harbor's Pier 2.

the Environmental Assessment process, and then opened the meeting for questions from LBA members and others in attendance. A summary of the questions posed and responses by Mr. Takenouchi (in *italics*) follow:

- How often is propane now shipped to Kauai? *About once a month.* *Will there be more shipments with the new project?* *There will be fewer, although larger, shipments to Nawiliwili since a larger quantity of propane would be able to be stored.*
- How much supply of propane does Hawai'i Gas currently have? *There is about a one-month supply on hand.*
- Where does the propane come from? *Chevron's refinery on Oahu and other international locations.*
- How will the propane get from Pier 3 to the new proposed project area? *A new transmission pipeline will be constructed along Waa' pa Road; the pipeline will need to be constructed to serve the project.*
- What safety measures are needed for the new project? *All storage tanks will be set back 50 feet from the boundaries of the proposed lease area, and all County fire, U.S. Coast Guard, federal, and state regulatory safety requirements will be complied with.*
- Are the propane storage tanks double walled? *No the tanks are single walled, but are designed to sustain the pressure needed to keep propane in a liquid state. All tanks are designed to hold approximately double the needed pressure to safely store the propane and are also equipped with pressure relief valves as an added safety measure.*
- Why is Hawai'i Gas doing this project? *To meet growing demand, improve reliability of supply, and help stabilize its propane prices since larger shipments can be brought in.*
- In the event of an electrical outage, would you have or need a backup? *Yes – Hawai'i Gas has coordinated with Kauai Civil Defense to have a generator it can use if there is no electrical power.* How much of the LPG (liquefied petroleum Gas, a.k.a. propane) that comes to Kauai goes to Hawai'i Gas versus other companies? *Hawai'i Gas serves about 98% of all propane users on Kaua'i.*
- Will the proposed project interfere with cruise ships at Nawiliwili Harbor? *No, since we will use Pier 3 to berth TGC's barge or foreign ship.*
- On Kaua'i, is all the gas used now propane or LNG (liquefied natural gas)? *It is all propane now.*
- How is propane brought to Kauai; with Hawai'i Gas' own or foreign ships? *Hawai'i Gas leases barges or works through its shipping agent to arrange for foreign shipments carrying propane that come directly to Kaua'i.*
- Could the proposed propane facility be expanded to include LNG? *Planned facility is not presently designed to store LNG, which is a totally different product from propane. Planned facility would need to be redesigned to store bulk LNG.*
- Can you provide examples of other uses of propane besides cooking? *Drying clothes, heating of water and serving co-generation units.*
- Could Hawai'i Gas retrofit its planned facility to LNG at a later time? *Not that Mr. Takenouchi is aware of; again, the planned facility would need to be redesigned in such an instance to store bulk LNG shipments.*

- Are Kaua'i firefighters trained to deal with emergencies at Hawai'i Gas' existing storage facility near Pier 3? (***Kaua'i County Fire Chief Robert Westerman*** *addressed this question responding, in summary, that the County's firefighters are trained to establish safe requirements for such facilities in the area, and that they do the best they can.)*
- If the tanks get old, are they recycled? *Yes; they are recycled at the County's on-island metal recycling center.*
- Is sale of propane regulated? *About a thousand of Hawai'i Gas customers are served via pipeline, which is regulated; the balance are served with tanks and cylinders, which is part of the unregulated portion of TGC's business.*

Following the questions and discussion, the meeting was adjourned at approximately 8:30.

Submitted by Barbara Robeson

Appendix: A-1

(July 5, 2016 letter from TGC to Lihue Business Association)

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

July 5, 2016

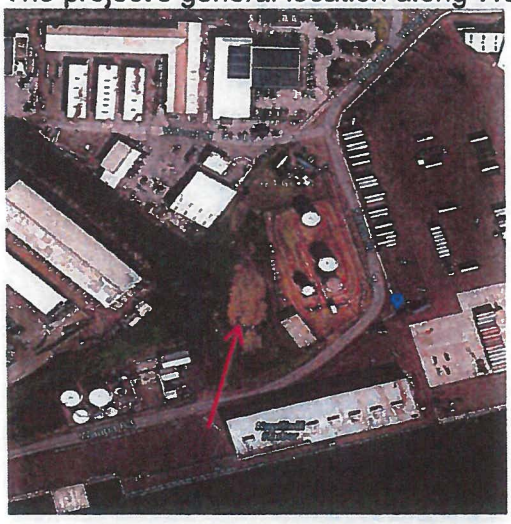
Ms. Pat Griffin, President
Lihu'e Business Association
P.O. Box 291
Lihu'e, Hawaii 96766

Dear Ms. Griffin:

On November 19, 2015, I and supporting staff and consultants from The Gas Company, LLC, doing business as Hawai'i Gas ("TGC") attended a Lihu'e Business Association ("LBA") meeting to give LBA members an overview of TGC's forthcoming project to install a number of new liquid propane gas ("LPG") storage tanks in the general area that used to be leased by Gay & Robinson ("G&R") for G&R's molasses tank operations along Wa'apa road, across from the present cruise ship terminal (Pier 2) in Nawiliwili Harbor.

At this meeting, we explained that TGC is securing a long-term lease from the State of Hawaii, Department of Transportation, Harbors Division of the proposed project area, which is currently anticipated to be about 1.68 acres in size. As further mentioned, the project is being developed to maximize TGC's ability to provide its island customers with an adequate and uninterrupted supply of LPG. In continuing to develop and refine its plans for this proposed LPG storage facility, TGC is now pursuing two possible design alternatives for the project area: the first would construct up to 14 above-ground LPG storage tanks in the subject area; the second would construct up to 22 mounded LPG storage tanks in the subject area. (Mounded tanks are propane storage tanks installed at or below ground level, which are then covered with sand, then gravel.) Each LPG storage tank under either alternative would hold about 25,500 gallons of liquid propane.

The project's general location along Wa'apa Road is shown below:



For the LBA's reference, attached are two alternate conceptual site plans (i.e., design alternatives) depicting the construction of up to either 14 above-ground LPG storage tanks or 22 mounded LPG storage tanks within the project's general location.

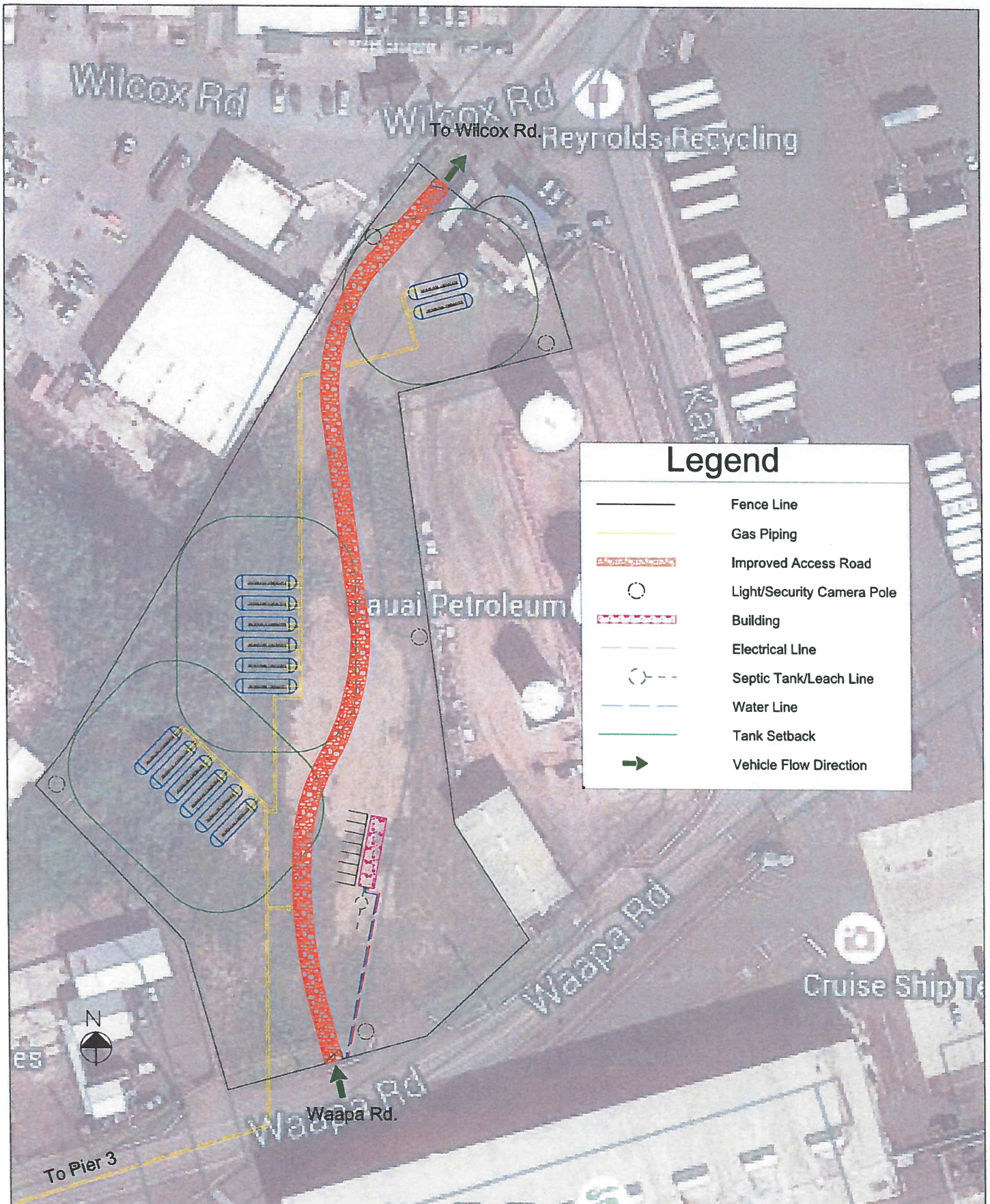
Should LBA members have any comments or questions regarding TGC's project, please contact me at 245-7957 or email at gtakenou@hawaiigas.com.

LBA members (and the general public) will have a further opportunity to comment on TGC's project when the draft Environmental Assessment ("DEA") for TGC's project is published in the State of Hawaii publication *The Environmental Notice*. TGC's DEA is anticipated to be published on August 8, 2016 or soon thereafter, and can be found at the following website: http://health.hawaii.gov/oeqc/ (Click on the quick link to either the Current Environmental Notice or Previous Environmental Notices at the right side of this web page to find TGC's DEA.) Once published, LBA and the public will have 30 days to comment on TGC's DEA.

Thank you.

Very truly yours,

Glen Takenouchi
Hawaii Gas
General Manager - Kauai



HAWAIIGAS THE CLEAN ENERGY COMPANY
515 KAMAKEE STREET
HONOLULU, HAWAII 96814

PROJECT/NAME: Conceptual Pier 2 Project	DESIGN: KT	SCALE: NONE	PROJECT NO.: xxxx-xx-xx-xxxx		
SERVICE/ADDRESS: -----	DATE: 5/17/16				
	CHECKED: GT				
	OPERATIONS: XX	ISLAND: KAUAI	ACCT. NO.: -----	DWG. TYPE: Site Plan	REV.: R6
	APPROVED: XX				

HAWAIIGAS THE CLEAN ENERGY COMPANY 515 KAMAKEE STREET HONOLULU, HAWAII 96814	PROJECT/NAME Conceptual Pier 2 Project --- Mounded Tanks	DESIGN: KT DATE: 6/29/16 CHECKED: KY OPERATIONS: XX APPROVED: XX	SCALE NONE	PROJECT NO. xxxx-xx-xx-xxxx	
			ISLAND KAUAI	ACCT. NO. -----	DWG. TYPE Site Plan
					REV. R8

Appendix: B

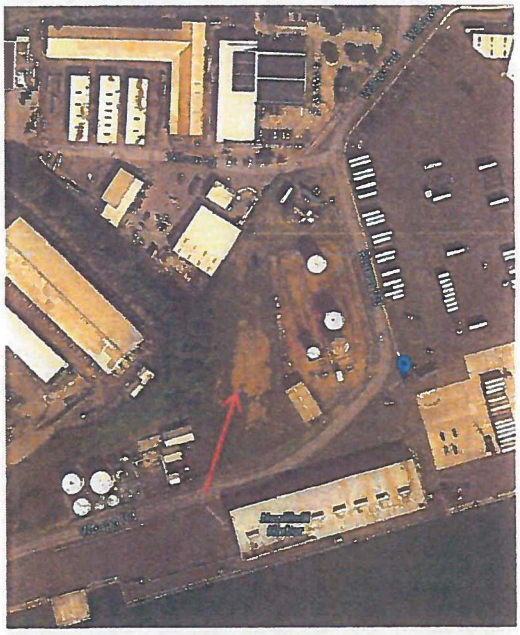
HAWAI'I GAS
THE CLEAN ENERGY COMPANY

Aloha!

The Gas Company, LLC, doing business as Hawai'i Gas ("TGC") is in the process of securing a long-term lease from the State of Hawaii, Department of Transportation, Harbors Division of the general area that used to be leased by Gay & Robinson ("G&R") for G&R's molasses tank operations along Wa'apa road, across from the present cruise ship terminal (Pier 2) in Nawiliwili Harbor.

TGC intends to lease about 1.07 acres to install ten (10) new liquid propane gas ("LPG") storage tanks. Each storage tank would hold about 25,000 gallons of liquid propane. The project is being developed to maximize TGC's ability to provide its island customers with an adequate and uninterrupted supply of LPG.

The project's general location is shown below:



TGC is holding an informational meeting on November 10, 2015 at 5:00 p.m. at the County's Niumalu Beach Park Pavilion to provide an overview of its project and answer questions that area residents and businesses may have about the project. Interested persons are encouraged and invited to attend. Should you have any questions, please contact Mr. Glen Takenouchi, TGC's General Manager on Kauai, at 245-7957. Thank you!

Appendix: B-1

(July 1, 2016 update letter from TGC to Niumalu and Nawiliwili Area Property Owners)

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

July 6, 2016

Aloha!

In Fall 2015, The Gas Company, LLC, doing business as Hawai'i Gas ("TGC") informed you by letter that it is securing a long-term lease from the State of Hawaii, Department of Transportation, Harbors Division of the general area that used to be leased by Gay & Robinson ("G&R") for G&R's molasses tank operations along Wa'apa road, across from the present cruise ship terminal (Pier 2) in Nawiliwili Harbor.

In that letter, TGC explained it is pursuing this lease to install a number of new liquid propane gas ("LPG") storage tanks within the proposed project area, which is anticipated to be about 1.68 acres in size. The project is being developed to maximize TGC's ability to provide its island customers with an adequate and uninterrupted supply of LPG. In continuing to develop and refine its plans for this proposed LPG storage facility, TGC is now pursuing two possible design alternatives for the project area: the first would construct up to 14 above-ground LPG storage tanks in the subject area; the second would construct up to 22 mounded LPG storage tanks in the subject area. (Mounded tanks are propane storage tanks installed at or below ground level, which are then covered with sand, then gravel.) Each LPG storage tank under either alternative would hold about 25,500 gallons of liquid propane.

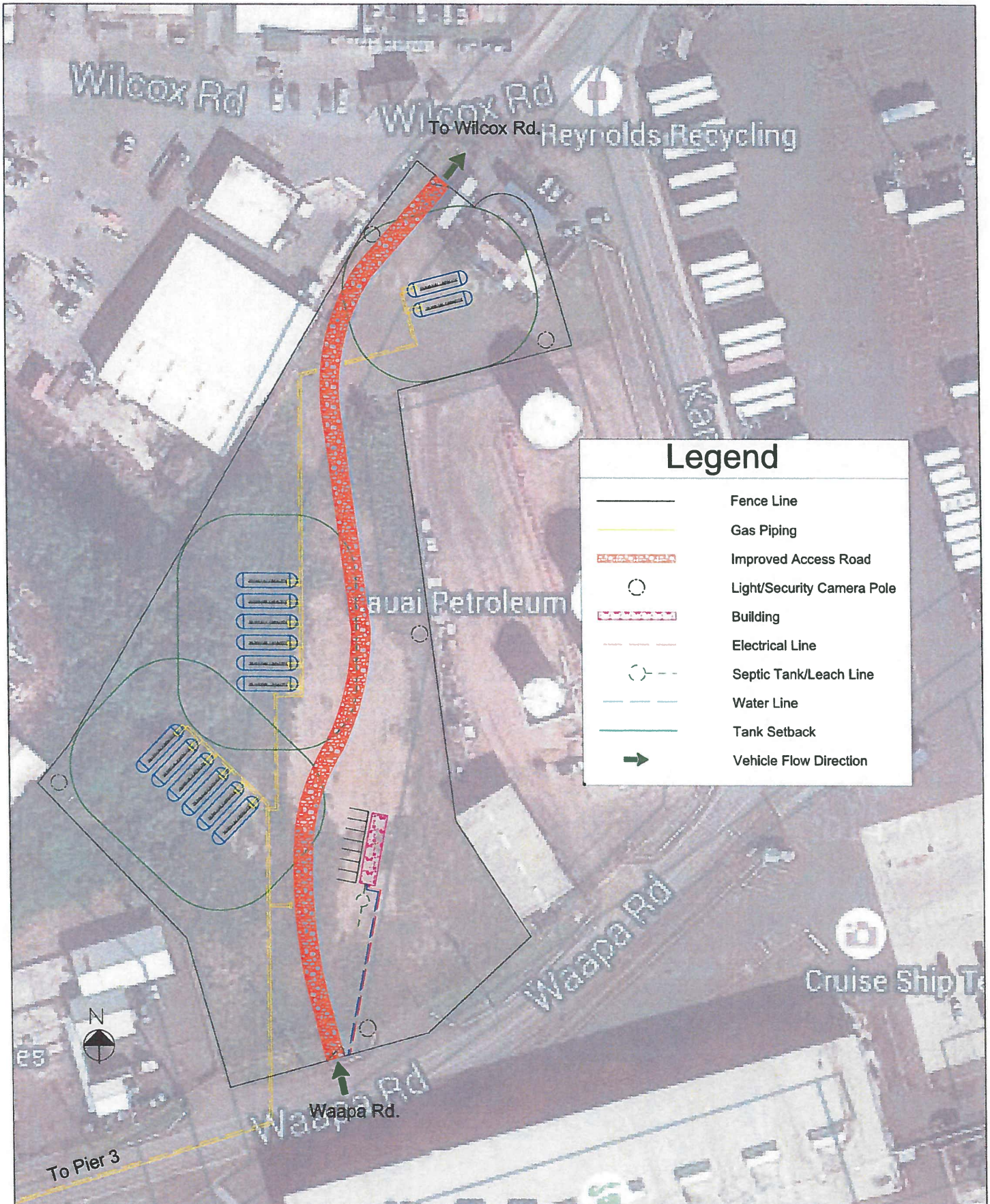
The project's general location along Wa'apa Road is shown below:

For your reference, attached are two alternate conceptual site plans (i.e., design alternatives) depicting the construction of up to either 14 above-ground LPG storage tanks or 22 mounded LPG storage tanks within the project's general location.

Should you have any comments or questions regarding TGC's project, please contact Mr. Glen Takenouchi, TGC's General Manager on Kauai, at 245-7957 or by email at gtakenou@hawaiigas.com by July 20, 2016.

You (and the general public) will have a further opportunity to comment on TGC's project when the draft Environmental Assessment ("DEA") for TGC's project is published in the State of Hawaii publication *The Environmental Notice*. TGC's DEA is anticipated to be published on August 8, 2016 or soon thereafter, and can be found at the following website: http://health.hawaii.gov/oeqc/ (Click on the quick link to either the Current Environmental Notice or Previous Environmental Notices at the right side of this web page to find TGC's DEA.) Once published, you and the public will have 30 days to comment on TGC's DEA.

Thank you!



HAWAIIGAS
THE CLEAN ENERGY COMPANY

515 KAMAKEE STREET
HONOLULU, HAWAII 96814

PROJECT/NAME: Conceptual Pier 2 Project	DESIGN: KT	SCALE: NONE	PROJECT NO.: xxxx-xx-xx-xxxx		
SERVICE/ADDRESS: -----	DATE: 5/17/16				
	CHECKED: GT				
	OPERATIONS: XX	ISLAND: KAUAI	ACCT. NO.: -----	DWG. TYPE: Site Plan	REV.: R6
	APPROVED: XX				

HAWAIIGAS
THE CLEAN ENERGY COMPANY

515 KAMAKEE STREET
HONOLULU, HAWAII 96814

PROJECT/NAME: Conceptual Pier 2 Project — Mounded Tanks	DESIGN: KT DATE: 6/29/16 CHECKED: KY OPERATIONS: XX APPROVED: XX	SCALE: NONE	PROJECT NO.: xxxx-xx-xx-xxxx		
		ISLAND: KAUAI	ACCT. NO.: -----	DWG. TYPE: Site Plan	REV.: R8

Appendix: C

(Addresses to whom Appendix B and B-1 letters were sent.)

MAP #1

Carolyn A Nii Trust PO Box 1125 Lihue HI 96766 320020050000	Carolyn A Nii Trust PO Box 1125 Lihue HI 96766 320020370000	Carolyn D Nii PO Box 1125 Lihue HI 96766 320020090000
Graham Condominium PO Box 382 Lihue HI 96766 320020260000	Eric & Emmy Frampton 1448 Norman Ave San Jose CA 95125 320020290001	John A & Vistoria Holt 6805 Route 9 Suite 30 Rhinebeck NY 12572 320020290002
Read Family Trust PO Box 3096 Lihue Hi 96766 320020040001	Suzanne Summers 1369 Bobolink Pl Los Angeles CA 90069 320020040002	Richard & Doris Ouye Family 147 Kalepa Pl Kahului HI 96732 320020280000
Ken S & Saedene K Ota 2261 Aupuni St #102 Wailuku HI 96793 320020120000	Therease Goodridge 3-3227 Kuhio Hwy Lihue HI 96766 320020130000	Giuseppe Avocadi 2345 Niumalu Rd Lihue HI 96766 320020150000
Bruce A Raymond Trust Dianna S Trust PO Box 3584 Lihue HI 96766 320020140000	Walter & Sandra TR Toerge 2353 Niumalu Rd Lihue HI 96766 320020020000	*State of Hawaii Niumalu Rd Lihue HI 96766 320020100000
*County of Kauai Niumalu Park 2430 Niumalu Rd 96766 320020010000	Jame W McGee & Diep TN Nguyen-McGee 2110 Kaneka St Unit 120 Lihue HI 96766 320020310000	Scott A & Cynthia M Libert Trust 2371 E Niumalu Rd Lihue HI 96766 320020310002
Robert B & Alida T White PO Box 10 Koloa HI 96756 320020310003	Robert B & Alida T White PO Box 10 Koloa HI 96756 320020310004	Beverly A Manner Trust 880 Southern Creek Dr Saint James FL 32259 320020070000
Caroline MM Asing Trust & Caroline M Mitchell PO Box 3065 Lihue HI 96766 320020080000	Robert K & Kathleen S Crawford PO Box 1612 Truckee, CA 96160 320020300000	David M & Pakaratt Krasnor Family Trust 18 Fallen Leaf Way Movato CA 94949 320020250000
Kauai Inn Thomas A & Jami L McKnight 6079 Lokomaikai Pl Kapaa HI 96746 320020160000	*County of Kauai Niumalu Rd Lihue HI 96766 320020110000	Freitas Family Trust 1021 Hulakui Dr Honolulu HI 96818 320020240000
Mark B Marshall Trust 2400 Hulemalu Rd Apt B Lihue HI 96766 320020230000	Daniel Kurshner & Julie C Hayward 2364C Hulemalu Rd Lihue HI 96766 320020340001	Rodney GDC Corpuz & Meagan C Corpuz 2364 Hulemalu Rd Apt D Lihue HI 96766 320020340002

Jack M & Tammilyn K Nishimoto 2364 Hulemalu Rd Lihue HI 96766 320020330000	Gary Craft 2340 Hulemalu Rd Lihue HI 96766 320020350000	Robert B & Christopher A White PO Box 10 Koloa HI 96756 320020360000
Douglas J & Donna C Inouye 2396 Hulemalu Rd Lihue HI 96766 320020220000	Kent K Tanigawa 2390 Hulemalu Rd Lihue HI 96766 320020210000	Bryson H & Jamielyn TA Toyofuku 4636 Hoomana Rd Lihue HI 96766 320020200000
Galins Coffman 2380 Hulemalu Rd Lihue Hi 96766 320020190000	Patricia E Lake PO Box 548 Lihue HI 96766 320020180000	Mark K & Joann Tanaka 2970 Kress St Lihue HI 96766 320020170000
Murayama Family Trust 2342 Hulemalu Rd Lihue HI 96766 320020320001	Murayama Family Trust 2342 Hulemalu Rd Lihue HI 96766 320020320002	Robert T & Christy A Nii 3390 Unahe St Lihue HI 96766 320020060000
Okada Trucking Co Ltd 818 Moowaa St Honolulu HI 96817 320010010000	Ralph S Kouchi & Arleen E Miyake 5062 Paka Dr Lihue HI 96766 320010020001	Stanley Kouchi & Ralph S Kouchi Trust 5062 Paka Dr Lihue HI 96766 320010020002
Mark O Haroldsen 2313 Hulemalu Rd Lihue HI 320010040001	Preston S & Adoracion T Myers PO Box 1941 Lihue HI 96766 320010040002	Lorne B & Joyce E Ogmundson Trust 2311C Hulemalu Rd Lihue HI 96766 320010050001
Lawrence J Bartell Trust 461 S Ellyn Ave Glen Ellyn IL 60137 320010050002	Jared & Donna Murayama 1997 Trust 5320 Arezzo Dr San Jose CA 95138 320010050003	Marty F Paisley Michelle R Ardaiz-Paisley PO Box 1202 Zephyr Cove NV 89448 320010050004
William, Healani,Laiki,Kapipo,Kaipo,Linekona,Patsy Asing & Maile-Lei B Koyanagi 4113 Palaumahu St Lihue HI 96766 320010060000	Marlene F, David K & Patrick K Greer PO Box 583 Lihue HI 96766 320030290000	Marlene F, David K & Patrick K Greer PO Box 583 Lihue HI 96766 320030270000
Malia L Olivas Trust 3261 Hoanoho Pl Honolulu HI 96816 320030620001	Edward VK, Barbara J Brandon C Vallejos 2425 Hulemalu Rd Lihue HI 96766 320030610000	Malia L Olivas 2417 Hulemalu Rd Lihue HI 96766 320030210000

Edward VK, Barbara J Vallejos 2425 Hulemalu Rd Lihue HI 96766 320030350000	Keith T Fujimura 91-1002 Makahou St Kapolei HI 96707 320030280000	Ronald K Mizutani Trust PO Box 22489 Honolulu HI 96823 320030090000
Ah You Dec'd & Margaret J M Chow 2431 Hulemalu Rd Lihue HI 96766 320030200000	George K H & HelenT Trust 2508 Gardner Ave Santa Rosa CA 95407 320030180000	Ah Oi Chow 2431 Hulemalu Rd Lihue HI 96766 320030190000
Surendra Rao 6501 Kahuna Rd Kapaa HI 96746 320010070001	Steven J & Wayne K Nishimura PO Box 202 Kalaheo HI 96741 320010070002	Marty F Paisley Michelle R Ardaiz-Paisley PO Box 1202 Zephyr Cove NV 89448 320010090001
Clifford L & Gloria L Nakea 5684 Ohelo Rd Kapaa HI 96746 320010090002	Marty F Paisley Michelle R Ardaiz-Paisley PO Box 1202 Zephyr Cove NV 89448 320010090003	Clifford L & Gloria L Nakea 5684 Ohelo Rd Kapaa HI 96746 320010090004
Charles K & Arlene K Kawakami 2281A Hulemalu Rd Lihue HI 96766 320010080001	Jasper Family Trust 2281 Hulemalu Rd Lihue HI 96766 320010080002	Donald E Heacock Trust Angela D Skagerberd & Larry G Skagerberg PO Box 1323 Lihue HI 96766 320030170000
Katherine B Valier PO Box 1213 Hanalei HI 96714 320030260000	Michael K K Gates 905 Kalanianaole Hwy Kailua HI 96734 320030150000	Arleen E Miyake Trust & Claude H Kouchi 2315 Halemalu Rd Lihue HI 96766 320030130000
International Monetary Investment Corp 4570 Kalepa Cir Apt 9 Lihue HI 96766 320030120000	Steven Nishimura 2970 Kress St Lihue HI 96766 320010100000	Leatrice T Mirikitani Trust KK Associates LLC PO Box 441 Honolulu HI 96809 320030110000
Thomas A & Jami L McKnight Niumalu Gardens 6079 Lokomaikai Pl Kapaa HI 96746 320030080000	Denji, Masako & Robin R K Murayama 2342 Hulemalu Rd Lihue HI 96766 320030580001	Leon C Miranda PO Box 739 Makawao HI 96768 320030580002
Leon C Miranda PO Box 739 Makawao HI 96768 320030580003	Niumalu-Nawiliwili CPP Inc 2435 Waipuna Rd Lihue HI 96766 320030580004	Gerald J I & Amy A I Blackstad PO Box 306 Lawai HI 96765 32000580005

Niumalu-Nawiliwili CPP Inc 2435 Waipuna Rd Lihue HI 96766 320030580006	John K Lake III PO Box 1000 Koloa HI 96756 320030580007	Edelle G, Joshua A & Noah T Sher 3800 Kamemeha Rd #6 Princeville HI 96722 320030580008
Darren Eisenhour, Robin J P Danner & Scott K Danner PO Box 315 Anahola HI 96703 320030580009	Darren Eisenhour, Robin J P Danner & Scott K Danner PO Box 315 Anahola HI 96703 320030580010	Lloyd A Chow 3374 Kahumoko Rd Lihue HI 96766 3200305800011
Judith L Webb 2435 Waipuna Rd Lihue HI 96766 320030580012	Owen T Maeda PO Box 456 Lawai HI 96765 320030580013	

Map #2

State of Hawaii – Harbors Division Waapa Rd Lihue HI 96766 320030070000	Anheuser-Busch Sales of HI 99-877 Iwaena St Aiea HI 96701 320030060000	Grove Farm Properties Inc 3-1850 Kaumualii Hwy Lihue HI 96766 330030410000
Grove Farm Co Inc 3-1850 Kaumualii Hwy Lihue HI 96766 320050150000	KSM Inc Garden Isle Disposal, Inc. 2666 Niumalu Rd Lihue HI 96766 320050070000 & 320050270000	Island Self Storage, LLC. 1481 Haleukana St Lihue HI 96766 320050090000
Hale Kauai Ltd Honsador Lumber LLC 737 Bishop St #2000 Honolulu HI 96813 320050120000	Aloha Petroleum Ltd PO Box 500 Honolulu HI 96809 320040170000	Mccabe Hamilton & Renny Co PO Box 210 Honolulu HI 96810 320040290002

Map 3

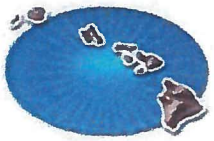
Banyan Harbor Associates Lyle Otsuka Gen Mgr 3411 Wilcox Rd Lihue HI 96766 320050080000	Kauai Petroleum PO Box 1120 Lihue HI 96766 320040160000	Hawaiian Cement 99-1300 Halawa Valley St Aiea HI 96701 320040120000
Hiroshi & Patsy Azeka Dec'd Aspire Furniture 3337 Nawiliwili Rd Lihue HI 96766 320040140000	T & Y LLC Kauai Food Bank 364 Likeke Pl Kapaa HI 96746 320040110000	

MAP 4

Dawn M Murata Trust 4218 Puu Pinao Pl Koloa HI 96756 320050030000	Cynthia S K McKnight,Richard T Kaeo Jr,Debra S Robertson, Joseph L Trust, Linda N Trust 5903 Ahakea St Kapaa HI 96746 320050020000	Steven E Layne Trust 3445 Wilcox Rd Lihue HI 96766 320050020000
Steven E Layne Trust 3445 Wilcox Rd Lihue HI 96766 320050010000	BSD LLC PO Box 662003 Lihue HI 96766 32005021000	Karin Panui & Mailelani L M Cox 3470 Lala Pl Lihue HI 96766 320050260000
Eric Kato Trust 2965 Pua Loke St Lihue HI 96766 320050250000	Kauai Baptist Temple Inc PO Box 3285 Lihue HI 96766 320050240000	State of Hawaii Kauai High & Inter School 3577 Lala Rd Lihue HI 96766 320050100000

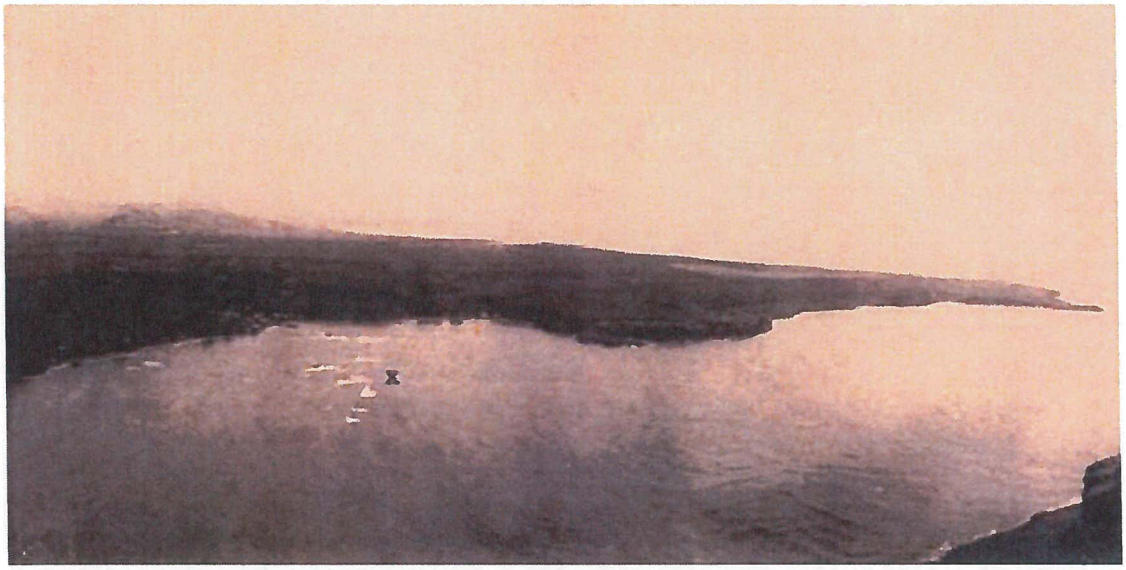
Appendix: D

History of Nawiliwili Harbor
http://www.hawaii.edu/environment/ainakumuwai/html/harbor.htm



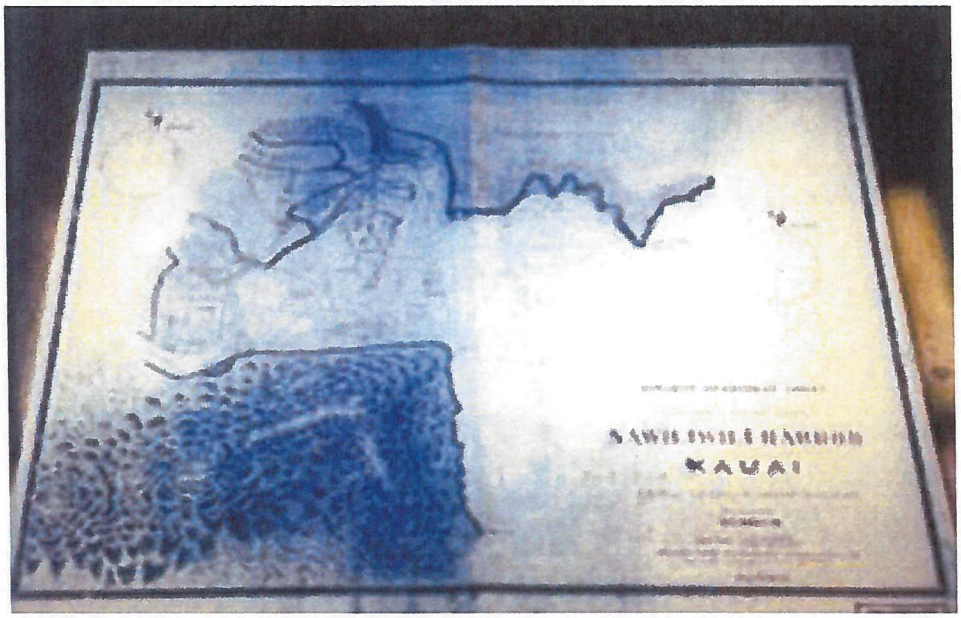
Plantation: Harbor

The redesign of Nawiliwili Bay as a harbor was completed in 1930. In this section, we follow the amazing process of turning Nawiliwili Bay into a harbor.



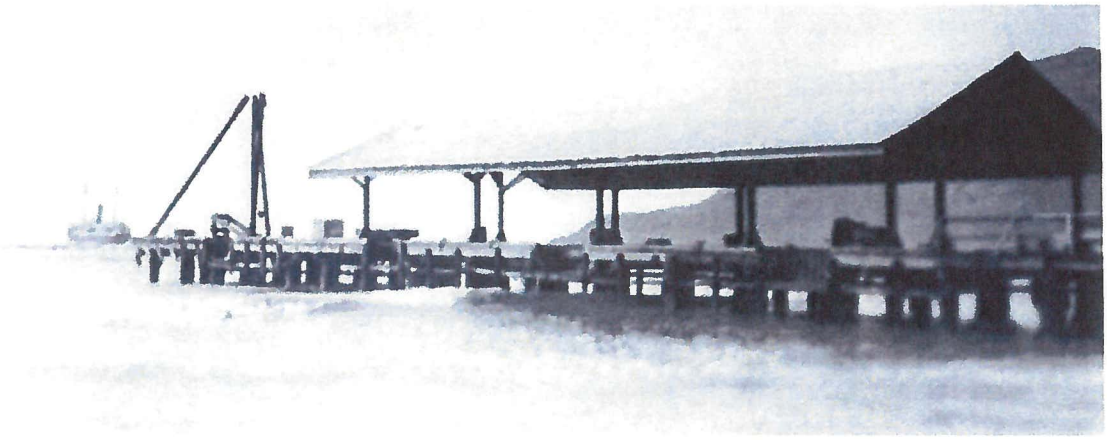
Nawiliwili Bay in 1905. X marks the surf spot "ammonias". It was a long left - before the jetty was built. The shape of the two bays side by side gave Kalapaki (double yoked egg) its name.

Photo courtesy of the Kaua'i Historical Society

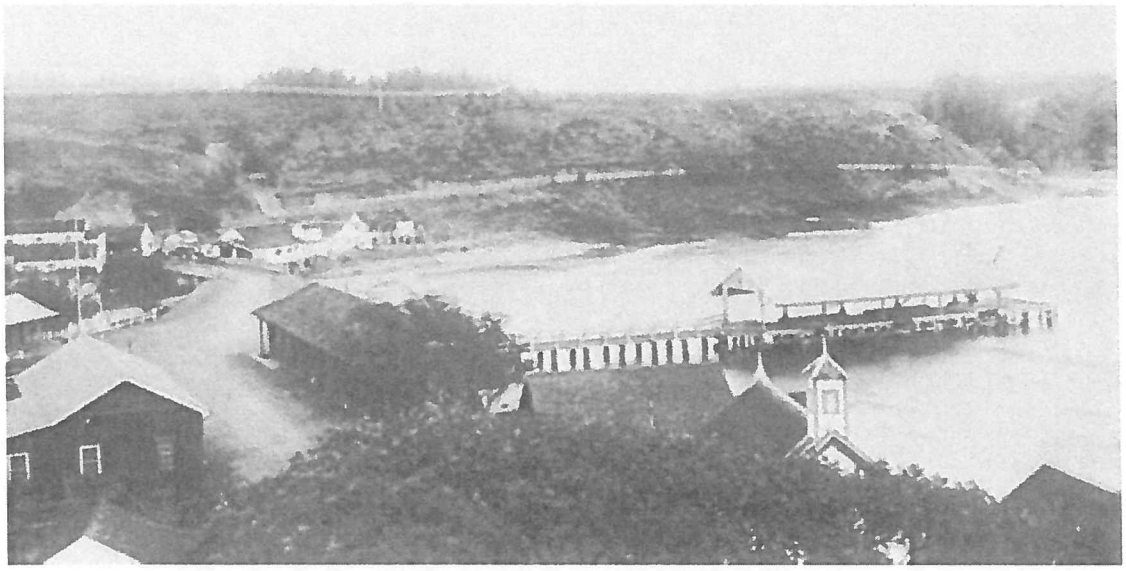


Map of Nawiliwili Harbor made in 1881. Courtesy Kaua'i Historical Society

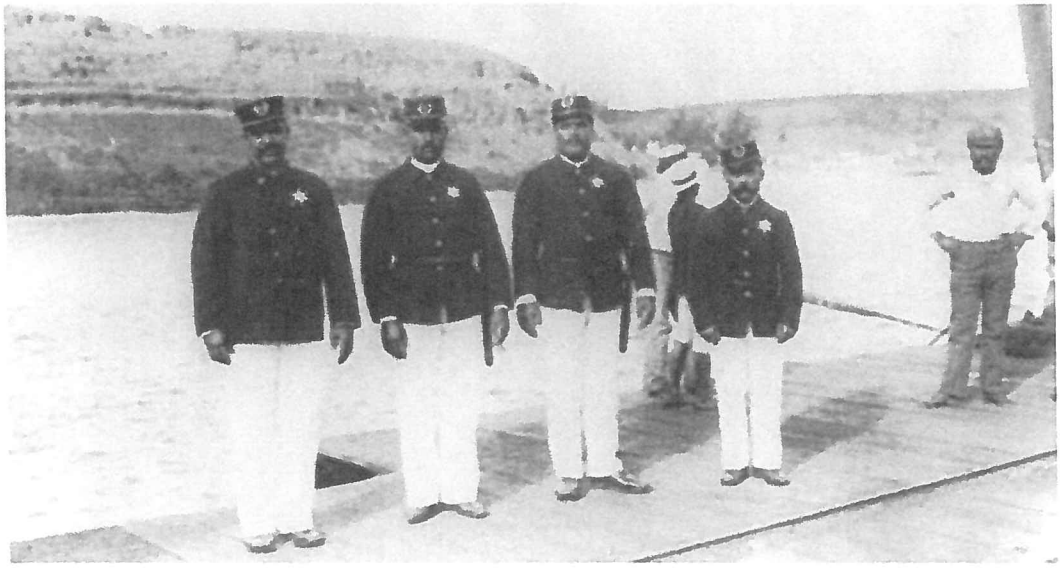
Close up of Kalapaki Bay, with the twin reefs.
Courtesy Kaua'i Historical Society.



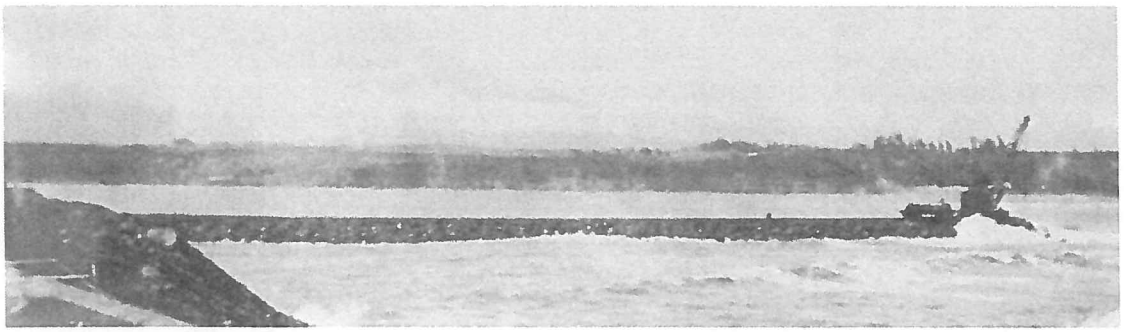
Before the harbor was built, this was the landing at Nawiliwili. Ships would anchor outside and the cargo would be offloaded onto smaller boats. It was located in front of today's Pine Tree Inn.



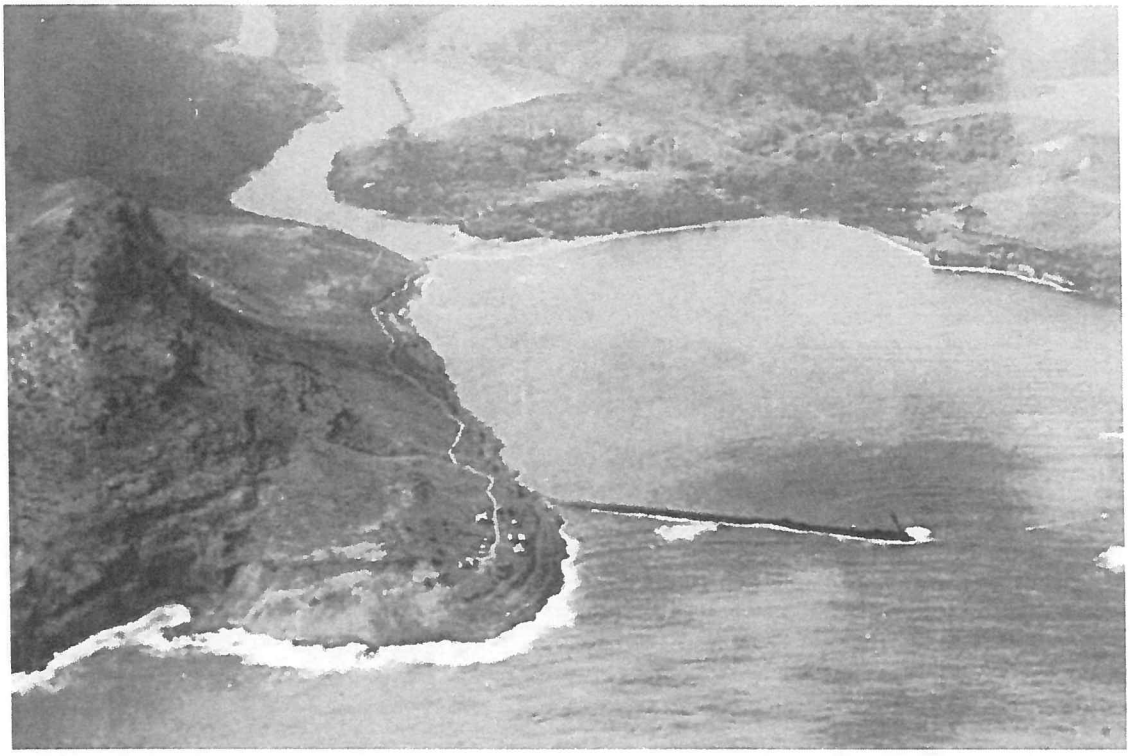
From this angle we can see Nawiliwili stream flowing under the bridge. Notice the hillside with no beach. This is where Duke's restaurant sits today.



Kaua'i's finest on the landing at Kalapaki
photo courtesy of the Kaua'i Historical Society



First they built the breakwater.



Notice the bridge connecting Niumalu to the Ha'upu side of the bay. Only machines made this breakwater possible.

Hobey speaks about the effects of the breakwater on Kalapaki Bay: "About 1928, they started building the breakwater. And when they got the breakwater out, the currents changed and started to eat away all of the beach. And so my grandfather had some rock walls built -they came in from the Ninini Point side stream and then cut all the way across almost to *Mokuweo*, just above that where the other stream came in..."

No controversy in those days about the sea walls visible in this old Kalapaki photo's background. Hobey says these walls are still there, buried by the sand.

Then they built the jetty. Notice how small the beach was at Kalapaki before the jetty was finished

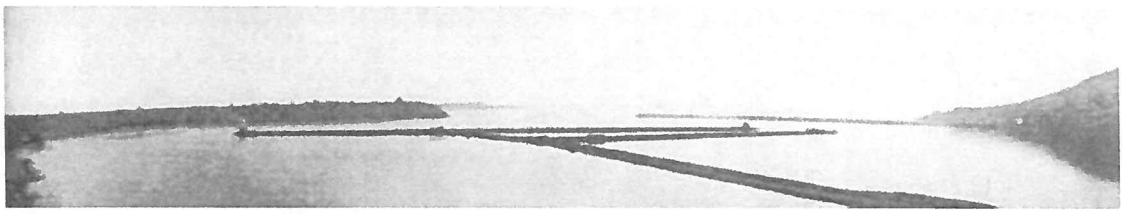
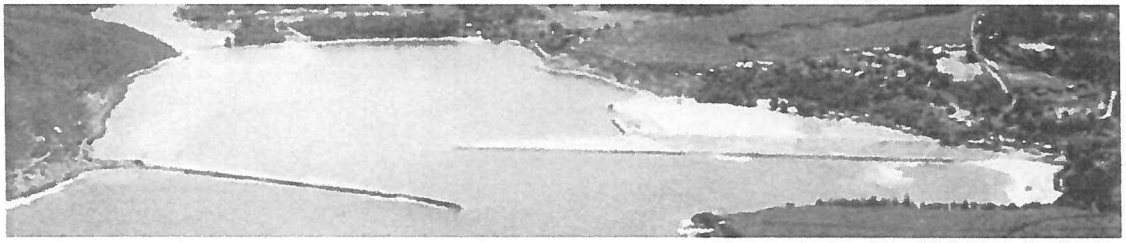


Photo courtesy of the Kaua'i Historical Society

Hobey talks about the effects of the jetty: "After they finished the breakwater, where Duke's is today was ocean. The waves were breaking there. After they finished the jetty, the beach filled up. Little by little, accretion built up, built up, built up, built up." In the photo at right, we can see the change in the size of Kalapaki's beach. When we alter a natural design, there are always effects.

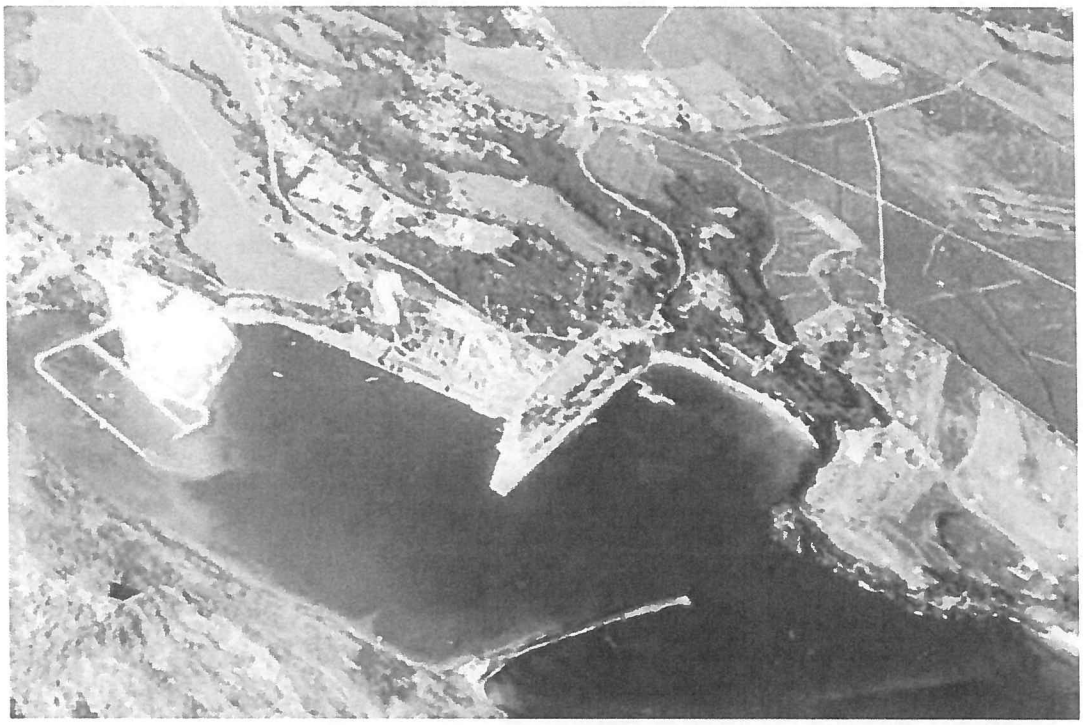
They dredged the bottom and used it as fill.
Photo courtesy of the Kaua'i Historical Society



In 1956, this coral promontory (land that sticks out into a body of water) was built with fill from the deepened harbor. Photo courtesy of the Kaua'i Historical Society.

It was new land.

Photo courtesy of the Kaua'i Historical Society



Nawiliwili had a harbor. The small boat harbor in the above picture was built in 1973, over the protests of Niumalu residents that it would affect the estuary.

Cheryl says this about the effect of the small boat harbor on Niumalu: " I get *kaumaha* (depressed) about the Menehune Fishpond cause building the small boat harbor. I was gone, then I came back. Dredging the coral pile. I look - plenty tilapia. All the earthworms came out. Terrible. That stops the flow, the good flow. That fishpond could be restored, but cause of the breakwater. The small boat harbor, you look at the white water, its very shallow - the sediment from the Hule'ia river, can walk across. Now it's really stagnant, not the kind of flow that should be going into here. Then you have the mangrove, terrible, collecting sediment."

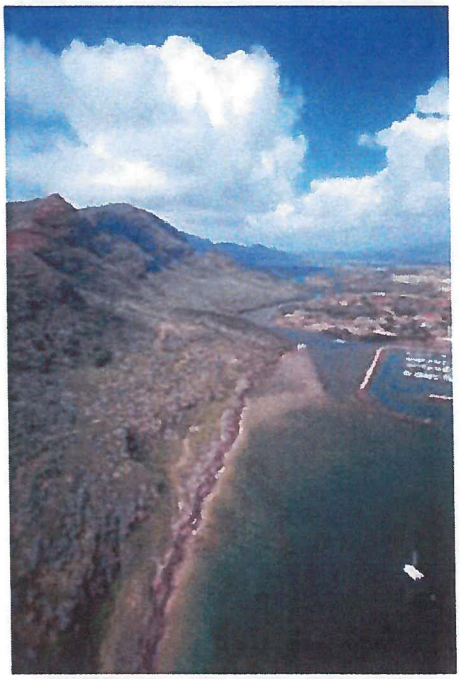


Photo by David Boynton, Casey Riemer of Jack Harter Helicopters, pilot

So, Nawiliwili had a harbor. But what about the surf? What about the fish? In - You like fish? - two of Nawiliwili's own talk about the ones they caught.

Photo by David Boynton

Appendix: E

DAVID Y. IGE
GOVERNOR OF HAWAII

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

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

April 5, 2016

Glen Takenouchi, General Manager
The Gas Company, LLC
gtakenou@hawaii.gas

LOG NO: 2016.00760
DOC NO: 1604MN06

Dear Mr. Takenouchi:

SUBJECT: **Chapter 6E-42 and HRS Chapter 343 Historic Preservation Review**
Draft EA for Additional Liquified Petroleum Gas Storage Facility-The Gas Company, LLC
Nāwiliwili Ahupua'a, Puna District, Island of Kaua'i
TMK: (4) 3-2-004:016(por), 21, 022, 023, 053 (REVISED)

Thank you for the electronic transmission of the draft environmental assessment (EA) for the additional liquefied petroleum gas storage facility at the subject TMKs located at Nāwiliwili Harbour. The landowner is the Hawaii Department of Transportation, Harbors Division, and the applicant/leasee is The Gas Company, LLC, doing business as Hawaii Gas. The EA was prepared by Shiramizu, Loo &Nakamura, LLP. The land area for the proposed project is 1.68 acres. We received the draft EA on February 25, 2016, and responded in a letter dated March 16, 2016. The determination remains the same but the TMKs were not accurate. The subject TMKs for the project include the total area.

Hawaii Gas proposes the construction of a new liquefied petroleum gas (LPG) tank storage facility the subject TMKs. The project includes the installation of ten new LPG tanks which will each accommodate approximately 25, 500 gallons of liquefied propane. The gas will be transported to and from the storage facility via an additional gas line, which will be installed underground along Wa'apa Road, from Pier 3 to the project area. The gas transmission line will link into an existing 8" and 4" gas pipeline. The dimensions of the excavation to facilitate the trenchline is 3.5 feet deep by 3 feet wide, and the depth of the excavations for the pedestals for the above ground tanks, as well as the mounded tanks, is 3 feet.

We do not have an archaeological inventory survey (AIS) of the subject TMKs. The Kaua'i Lead Archaeologist conducted a site visit of the subject property on March 7, 2016 and observed that no surface historic properties remain. A ditch runs alongside TMK: (4) 3-2-004:023, but is not within the project area. The lot was used historically to store sugar and molasses for transport from the Nāwiliwili bulk sugar facility to the ships exporting sugar and sugar-related products, and despite the industrialization of the surrounding area, we have no information indicating the lot has been previously graded. However, the Pier 3 area is composed of landfill that includes material dredge from the harbor's development in the 1920s. In addition, construction of the road likely disturbed some of the area proposed for the new pipeline. Human remains have been inadvertently discovered on adjacent property, albeit inland and considerable distance from the area of proposed ground disturbance.

The State Historic Preservation Division has made a determination of **no historic properties affected.** However, once the project commences, please conduct the Kaua'i Lead Archaeologist for a site inspection of the excavated trenches as inspection of the trenches may inform similar assessments in this area. Please contact the Kaua'i archaeologist Mary Jane Naone at Maryjane.naone@hawaii.gov or at (808) 271-4940 if you have questions regarding this letter. Mahalo for your assistance in preserving significant historic and cultural properties.

Aloha,

Mary Jane Naone

Mary Jane Naone
Kaua'i Lead Archaeologist

cc. Galen Nakamura
Shiramizu, Loo & Nakamura, LLC
Galen.nakamura@hawaiiantel.net

Barbara Robeson
Robesonb001@hawaiirr.com

Appendix: F

Atlas of Hawaiian Watersheds & Their Aquatic Resources

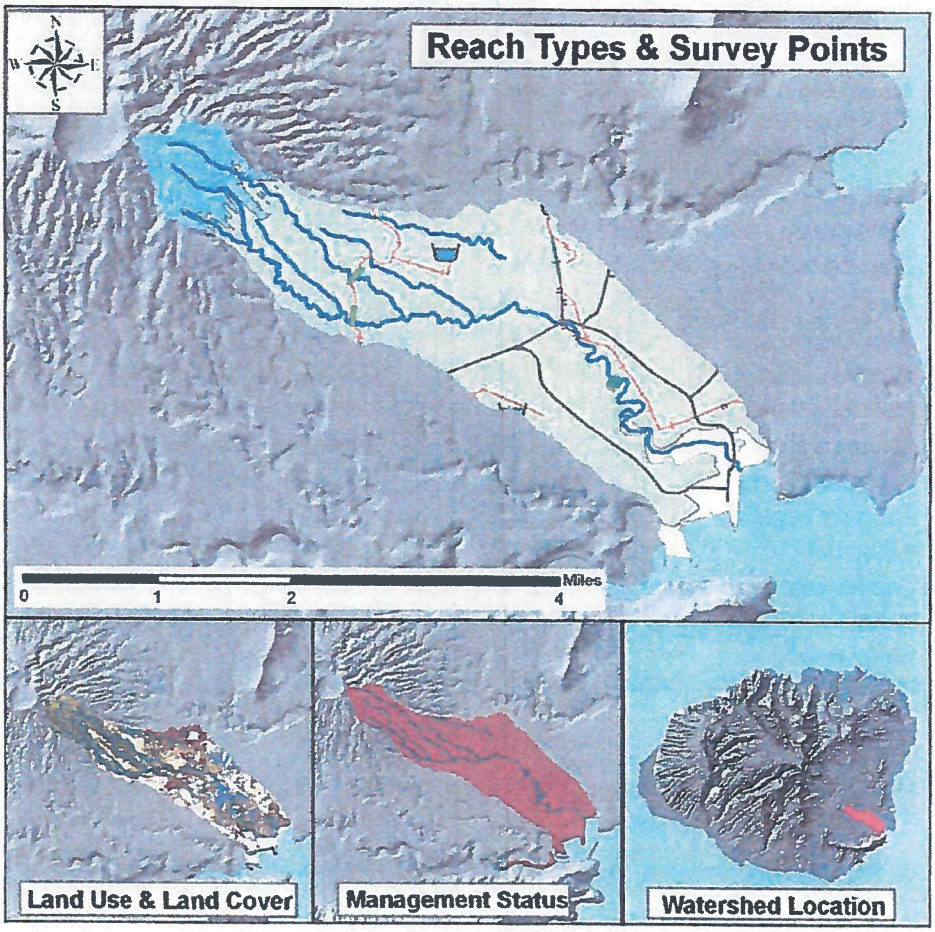
Island of Kaua'i

JE Parham, GR Higashi, EK Lapp, DGK Kuamo'o, RT Nishimoto, S Hau, JM Fitzsimons, DA Polhemus, & WS Devick

Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawai'i

DAR Watershed Code: 22013

Nāwiliwili, Kaua'i



WATERSHED FEATURES

Nāwiliwili watershed occurs on the island of Kaua'i. The Hawaiian meaning of the name is "the wiliwili trees". The area of the watershed is 5.2 square mi (13.4 square km), with maximum elevation of 1043 ft (318 m). The watershed's DAR cluster code is not yet determined. The percent of the watershed in the different land use districts is as follows: 56% agricultural, 0% conservation, 0% rural, and 44% urban.

Land Stewardship: Percentage of the land in the watershed managed or controlled by the corresponding agency or entity. Note that this is not necessarily ownership.

Military	Federal	State	OHA	County	Nature Conservancy	Other Private
0.0	0.0	0.0	0.0	0.1	0.0	99.9

Land Management Status: Percentage of the watershed in the categories of biodiversity protection and management created by the Hawaii GAP program.

Permanent Biodiversity Protection	Managed for Multiple Uses	Protected but Unmanaged	Unprotected
0.0	0.0	0.0	100.0

Land Use: Areas of the various categories of land use. These data are based on NOAA C-CAP remote sensing project.

	Percent	Square mi	Square km
High Intensity Developed	7.8	0.40	1.04
Low Intensity Developed	16.9	0.87	2.26
Cultivated	6.8	0.35	0.91
Grassland	17.3	0.90	2.32
Scrub/Shrub	18.7	0.97	2.51
Evergreen Forest	30.3	1.57	4.06
Palustrine Forested	0.1	0.00	0.01
Palustrine Scrub/Shrub	0.5	0.03	0.07
Palustrine Emergent	0.0	0.00	0.00
Estuarine Forested	0.0	0.00	0.00
Bare Land	0.8	0.04	0.10
Unconsolidated Shoreline	0.0	0.00	0.00
Water	0.8	0.04	0.11
Unclassified	0.0	0.00	0.00

STREAM FEATURES

Nāwiliwili is a perennial stream. Total stream length is 14.7 mi (23.7 km). The terminal stream order is 2.

Reach Type Percentages: The percentage of the stream's channel length in each of the reach type categories.

Estuary	Lower	Middle	Upper	Headwaters
0.0	9.7	84.3	6.0	0.0

The following stream(s) occur in the watershed:
Nāwiliwili

BIOTIC SAMPLING EFFORT

Biotic samples were gathered in the following year(s):
2001 2003

Distribution of Biotic Sampling: The number of survey locations that were sampled in the various reach types.

Survey type	Estuary	Lower	Middle	Upper	Headwaters
Published Report	0	0	1	0	0
USGS Surveys	0	0	1	0	0

BIOTA INFORMATION

Species List

Native Species

Crustaceans	Amphipod sp.
	Ostracod sp.
Snails	*Ferrissia sharpi*
Worms	*Namalycastis sp.*
	Oligochaete sp.

Native Species

Insects	Empidid sp.
	Ischnura odonata
	Limonia sp.
	Orthocladius sp.

Introduced Species

Crustaceans	Isopod sp.
	Macrobrachium lar
	Procambarus clarkii
Fish	*Clarias fuscus*
	Gambusia affinis
	Poecilia reticulata
	Xiphophorus helleri
Snails	*Melanoides tuberculata*
	Physid sp.
	Tarebia granifera
	Thiarid sp.

Introduced Species

Insects	*Cheumatopsyche analis*
	Chironomid larvae
	Trichoptera larvae

Species Distributions: Presence (P) of species in different stream reaches.

Scientific Name	Status	Estuary	Lower	Middle	Upper	Headwaters
Orthocladius sp.	Endemic			P		
Ferrissia sharpi	Endemic			P		
Amphipod sp.	Indigenous			P		
Limonia sp.	Indigenous			P		
Namalycastis sp.	Indigenous			P		
Isopod sp.	Introduced			P		
Macrobrachium lar	Introduced			P		
Procambarus clarkii	Introduced			P		
Clarias fuscus	Introduced			P		
Gambusia affinis	Introduced			P		
Poecilia reticulata	Introduced			P		
Xiphophorus helleri	Introduced			P		
Cheumatopsyche analis	Introduced			P		
Chironomid larvae	Introduced			P		
Trichoptera larvae	Introduced			P		
Melanoides tuberculata	Introduced			P		
Physid sp.	Introduced			P		
Tarebia granifera	Introduced			P		
Thiarid sp.	Introduced			P		

Ostracod sp.	Undetermined	P
Empidid sp.	Undetermined	P
Ischnura odonata	Undetermined	P
Oligochaete sp.	Undetermined	P

HISTORIC RANKINGS

Historic Rankings: These are rankings of streams from historical studies. "Yes" means the stream was considered worthy of protection by that method. Some methods include non-biotic data in their determination. See Atlas Key for details.

Multi-Attribute Prioritization of Streams - Potential Heritage Streams (1998): No

Hawaii Stream Assessment Rank (1990): not ranked

U.S. Fish and Wildlife Service High Quality Stream (1988): No

The Nature Conservancy- Priority Aquatic Sites (1985): No

National Park Service - Nationwide Rivers Inventory (1982): No

Current DAR Decision Rule Status: The following criteria are used by DAR to consider the biotic importance of streams. "Yes" means that watershed has that quality.

Native Insect Diversity > 19 spp.	Native Macrofauna Diversity > 5 spp.	Absence of Priority 1 Introduced
No	No	No
Abundance of Any Native Species	Presence of Candidate Endangered Species	Endangered Newcomb's Snail Habitat
No	No	No

CURRENT WATERSHED AND STREAM RATINGS

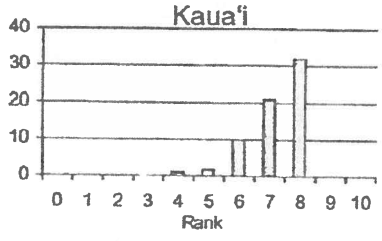
The current watershed and stream ratings are based on the data contained in the DAR Aquatic Surveys Database. The ratings provide the score for the individual watershed or stream, the distribution of ratings for that island, and the distribution of ratings statewide. This allows a better understanding of the meaning of a particular ranking and how it compares to other streams. The ratings are standardized to range from 0 to 10 (0 is lowest and 10 is highest rating) for each variable and the totals are also standardized so that the rating is not the average of each component rating. These ratings are subject to change as more data are entered into the DAR Aquatic Surveys Database and can be automatically recalculated as the data improve. In addition to the ratings, we have also provided an estimate of the confidence level of the ratings. This is called rating strength. The higher the rating strength the more likely the data and rankings represent the actual condition of the watershed, stream, and aquatic biota.

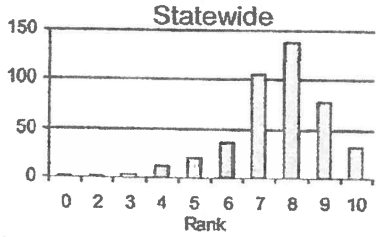
WATERSHED RATING: Nāwiliwili, Kaua'i

Land Cover Rating: Rating is based on a scoring sytem where in general forested lands score positively and developed lands score negatively.

Watershed Rating

6

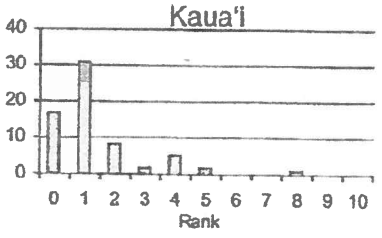


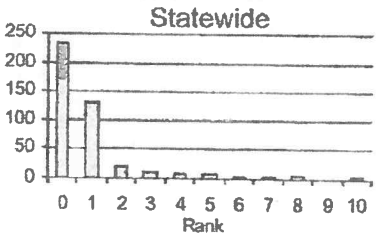


Shallow Waters Rating: Rating is based on a combination of the extent of estuarine and shallow marine areas associated with the watershed and stream.

Watershed Rating

2

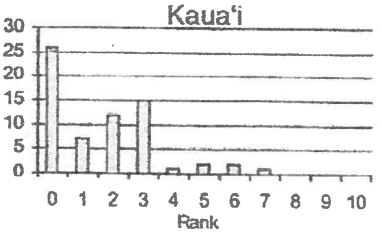


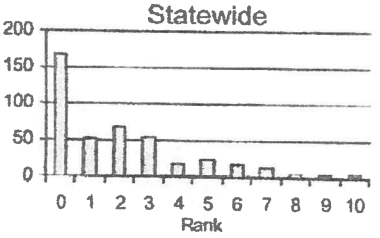


Stewardship Rating: Rating is based on a scoring system where higher levels of land and biodiversity protection within the watershed score positively.

Watershed Rating

0

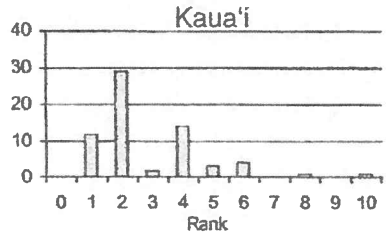


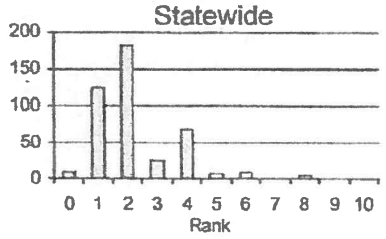


WATERSHED RATING (Cont): Nāwiliwili, Kaua'i

Size Rating: Rating is based on the watershed area and total stream length. Larger watersheds and streams score more positively.

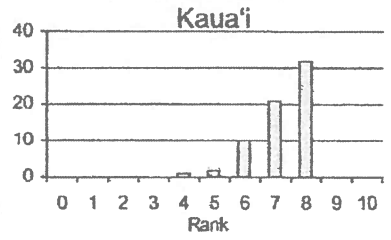
Watershed Rating 2

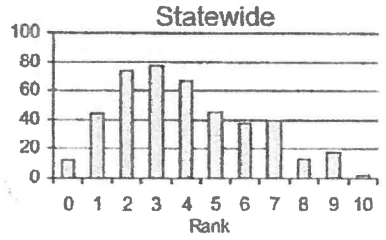




Wetness Rating: Rating is based on the average annual rainfall within the watershed. Higher rainfall totals score more positively.

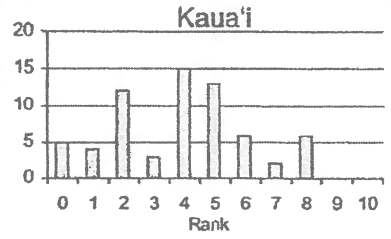
Watershed Rating 2

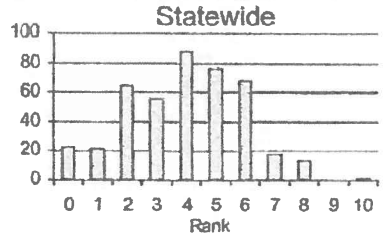




Reach Diversity Rating: Rating is based on the types and amounts of different stream reaches available in the watershed. More area in different reach types score more positively.

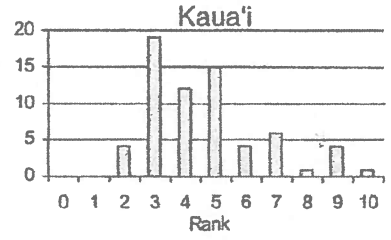
Watershed Rating 5

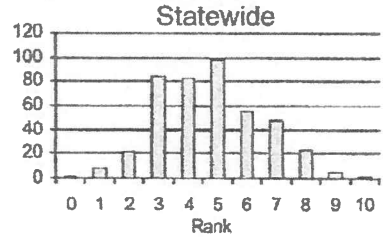




Total Watershed Rating: Rating is based on combination of Land Cover Rating, Shallow Waters Rating, Stewardship Rating, Size Rating, Wetness Rating, and Reach Diversity Rating.

Watershed Rating 4



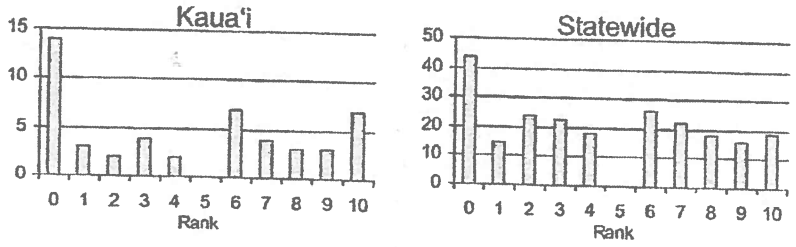


BIOLOGICAL RATING: Nāwiliwili, Kaua'i

Native Species Rating: Rating is based on the number of native species observed in the watershed.

Stream Rating

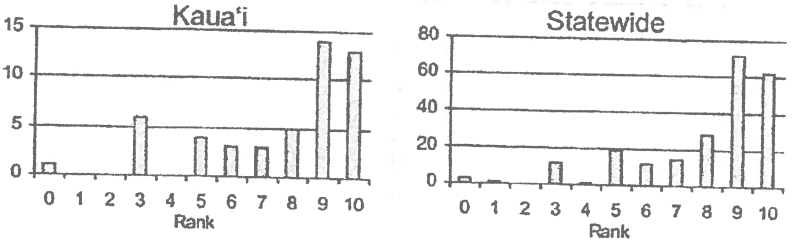
0



Introduced Genera Rating: Rating is based on the number of introduced genera observed in the watershed.

Stream Rating

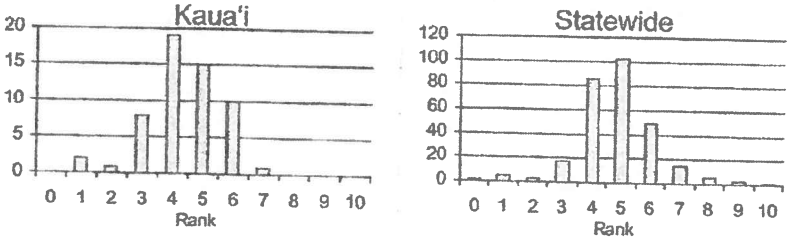
6



All Species' Score Rating: Rating is based on the Hawaii Stream Assessment scoring system where native species score positively and introduced species score negatively.

Stream Rating

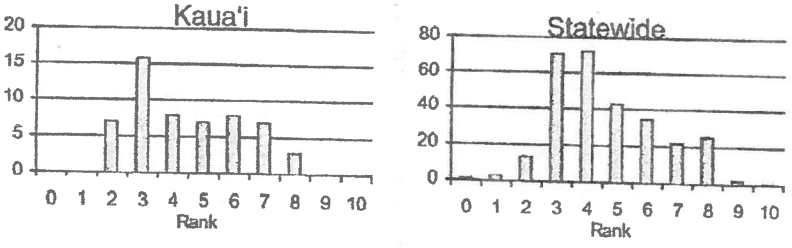
3



Total Biological Rating: Rating is the combination of the Native Species Rating, Introduced Genera Rating, and the All Species' Score Rating.

Stream Rating

2

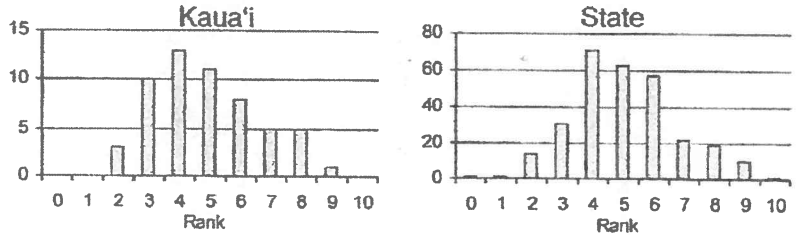


OVERALL RATING: Nāwiliwili, Kaua'i

Overall Rating: Rating is a combination of the Total Watershed Rating and the Total Biological Rating.

Watershed Rating

3

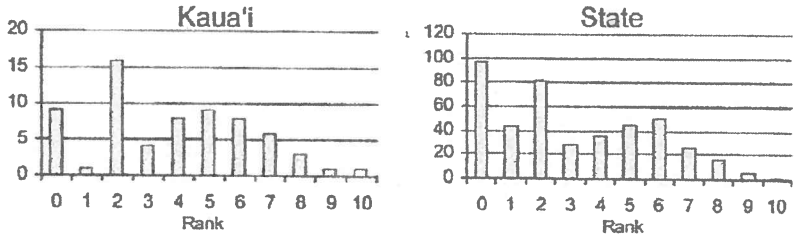


RATING STRENGTH: Nāwiliwili, Kaua'i

Rating Strength: Represents an estimate of the overall study effort in the stream and is a combination of the number of studies, number of different reaches surveyed, and the number of different survey types.

Information Rating

4

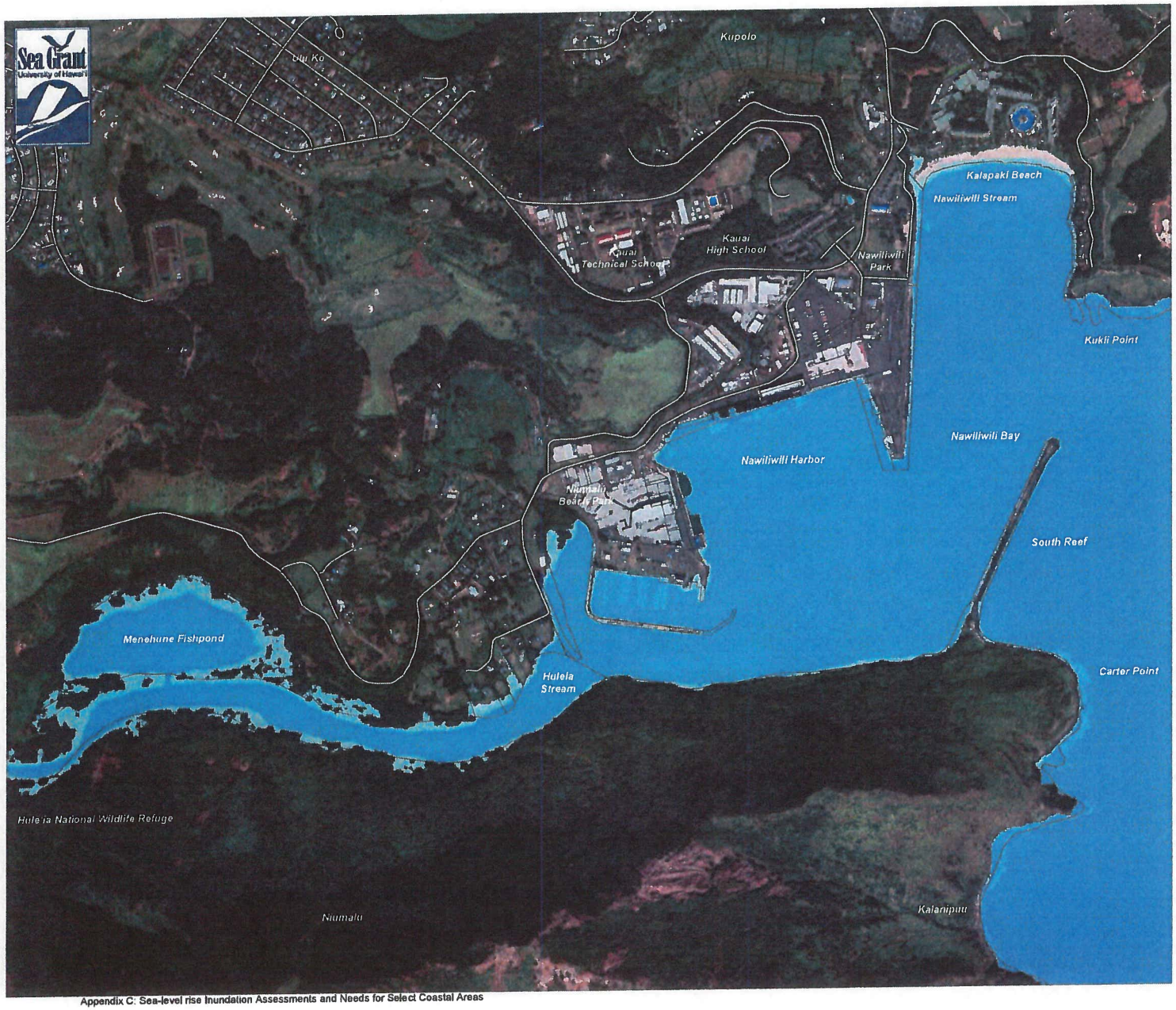


REFERENCES

2005. USGS. Stream Quality Indicators of Hawaii.

2006. Brasher, A.M.D., Lunton, C.D., Goodbred, S.L. and R.H. Wolff. Invasion Patterns Along Elevation and Urbanization Gradients in Hawaiian Streams. Transactions of the American Fisheries Society. 135. 1109-1129.

Appendix: G
(3 maps)



KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario

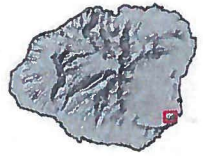
Nāwiliwili, Kaua'i

MAP CONTENTS

Water Depth

- Deeper
- Shallower

- Low Lying Areas
- TMK Boundaries
- Roads



MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically "unconnected" areas that may flood. They are determined solely by how well the elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the Island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not accurately depict vulnerability to future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA), Ocean Services, Coastal Services Center (November 2013)
http://csc.noaa.gov/slr/beta/viewer/

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Feet

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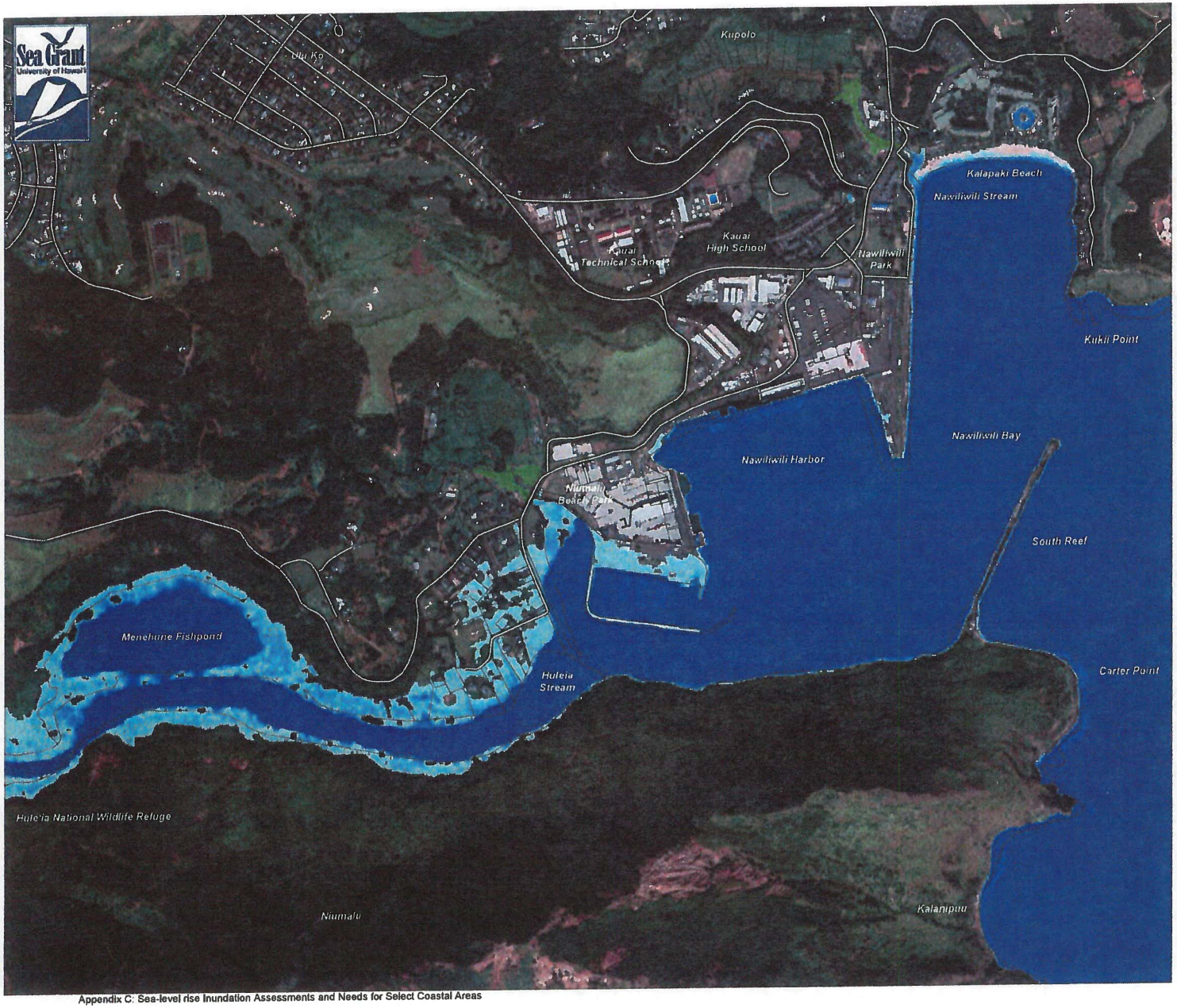
March 2014



KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario

Nāwiliwili, Kaua'i

MAP CONTENTS

Water Depth

Deeper

Shallower

Low Lying Areas

TMK Boundaries

Roads

MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically "unconnected" areas that may flood. They are determined solely by how well the elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not accurately depict vulnerability to future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA), Ocean Services, Coastal Services Center (November 2013)
http://csc.noaa.gov/slr/beta/viewer/

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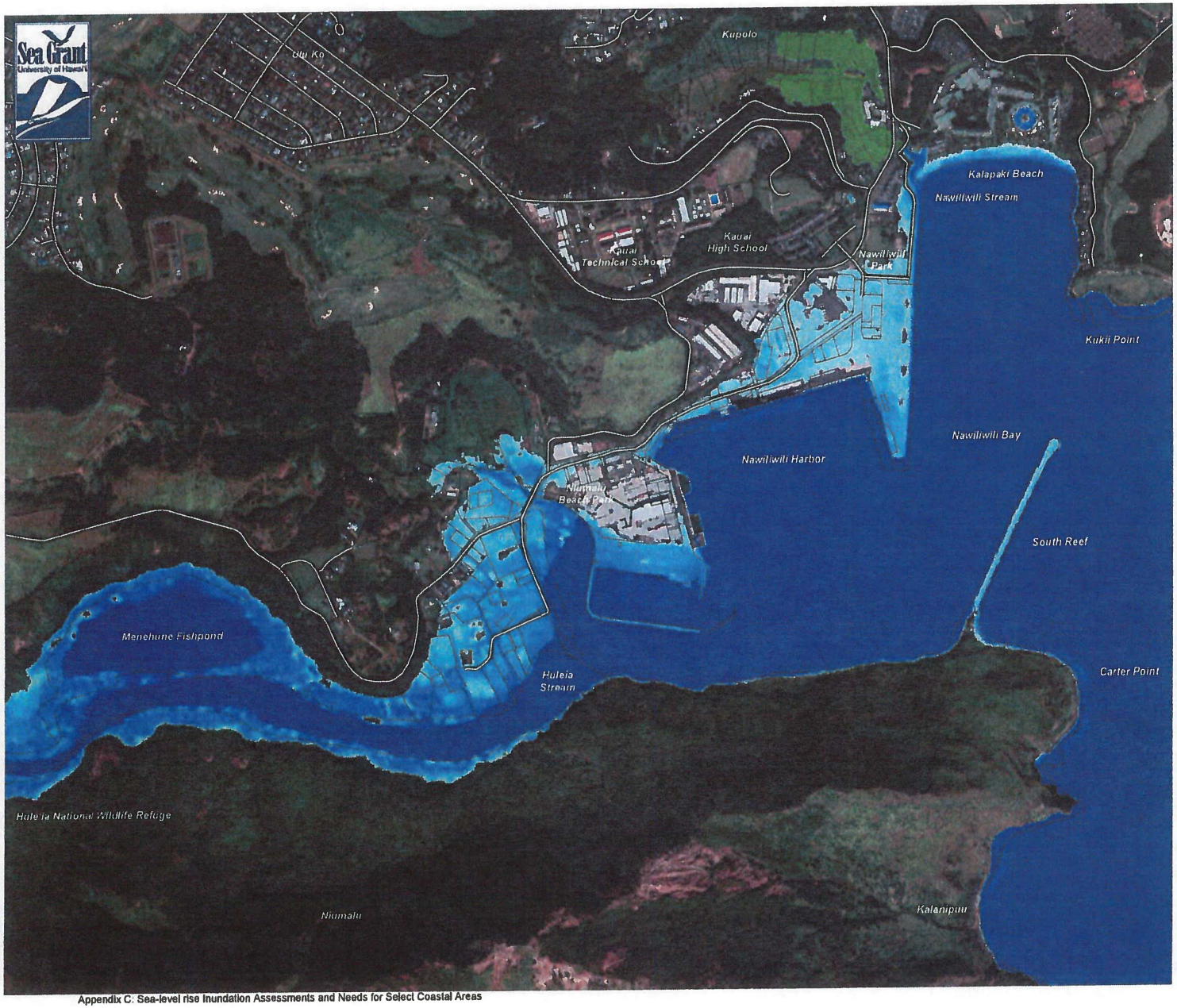
March 2014



KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

6 Foot Potential Sea Level Rise Scenario

Nāwiliwili, Kaua'i

MAP CONTENTS

Water Depth

- Deeper
- Shallower

- Low Lying Areas
- TMK Boundaries
- Roads

MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically "unconnected" areas that may flood. They are determined solely by how well the elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not accurately depict vulnerability to future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA), Ocean Services, Coastal Services Center (November 2013)
http://csc.noaa.gov/slr/beta/viewer/

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March 2014