Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Finding of No Significant Impact (FONSI) for Punchbowl Street Improvements Vineyard Boulevard to H-1 Freeway Underpass

Dear Ms. Salmonson:

The City and County of Honolulu Department of Design and Construction has reviewed the comments received during the 30-day public comment period which began on September 23, 1999. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the November 23, 1999 OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the final EA. Should you have any questions, please contact Gregory Hee at 527-6977.

Sincerely,

[Signature]
Director

enclosure
Final Environmental Assessment
for
Punchbowl Street Improvements:
Vineyard Boulevard to
H-1 Freeway Underpass

Prepared for:
Department of Design & Construction
City and County of Honolulu
Honolulu, Hawaii

Prepared by:
Parsons Brinckerhoff Quade & Douglas, Inc.
1001 Bishop Street
Pacific Tower, Suite 3000
Honolulu, Hawaii 96813

November 1999
Final Environmental Assessment

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November 1999
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Appendix B  Limited Phase I Environmental Assessment Report
Appendix C  Air Quality Impact Assessment
Appendix D  Environmental Noise Assessment Study
Appendix E  Historic Inventory Survey
CHAPTER 1
PROPOSED PROJECT

1.1 PROJECT DESCRIPTION AND LOCATION

The City and County of Honolulu, Department of Design and Construction (DDC) is proposing to provide an additional north (mauka-bound) lane on Punchbowl Street from Vineyard Boulevard to the H-1 Freeway, a distance of approximately 700 feet. This segment of Punchbowl Street currently has three lanes, two lanes south (makai-bound) and one lane north (mauka) bound. After construction, this segment would have two south (makai-bound) lanes and two north (mauka-bound) lanes.

The proposed project is located in the City and County of Honolulu, Hawaii (see Figure 1-1). Punchbowl Street is a principal north-south (mauka-makai) arterial roadway, and is one of the major access roads between the Interstate H-1 Freeway and downtown Honolulu. The Capital District, the Civic Center, Queen’s Medical Center, the Prince Kuhio Federal Building, and other employment and public facilities (see Figure 1-1). The northern (mauka) terminus of Punchbowl Street is the on-ramp to the H-1 Freeway and Pali Highway; and the southern (makai) terminus is Ala Moana Boulevard (see Figure 1-1).

1.2 PURPOSE AND NEED

The purpose of this project is to increase mauka-bound roadway capacity on Punchbowl Street from Vineyard Street to the Ewa-bound H-1 on-ramp. By increasing this roadway capacity, vehicle queuing and congestion will be greatly relieved at the Punchbowl Street/Vineyard Boulevard intersection, expediting travel time for those travelling from Downtown to points Ewa via the Punchbowl on-ramp and the H-1 Freeway:

These proposed improvements would allow the Vineyard Boulevard / Punchbowl Street intersection to process traffic more efficiently. This would help reduce the length of the traffic queues on Punchbowl Street by allowing both mauka-bound lanes of Punchbowl Street between South Beretania Street and Vineyard Boulevard to be fully utilized as through lanes. As an associated benefit, the proposed project would allow the provision of double left-turn lanes on Vineyard Boulevard for Koko Head-bound to mauka-bound left-turning traffic. This would help reduce the queues for this traffic movement as well. The overall benefit would be reduced delay for travelers and less disruption of access by vehicle queues.

The segment of Punchbowl Street mauka of South Beretania Street provides access to the H-1 Freeway and to Pali Highway from the Civic Center area. There is an existing traffic bottleneck at the Vineyard Boulevard/Punchbowl Street intersection. Because there is only one mauka-bound lane on Punchbowl Street mauka of Vineyard Boulevard, only one through traffic lane is provided on the mauka-bound approach of Punchbowl Street south makai of Vineyard Boulevard. The inner mauka-bound lane becomes a left-turn only lane at Vineyard Boulevard and does little to help convey traffic destined for H-1 Freeway. In the afternoon peak
Analyzed Intersections
PUNCHBOWL STREET IMPROVEMENTS,
VINEYARD BOULEVARD TO H-1 FREEWAY
Final Environmental Assessment
FIGURE 1-3
Traffic conditions along Punchbowl Street and adjacent streets were analyzed using observation, methodologies contained in the 1994 Highway Capacity Manual (HCM), and microscopic evaluation tools. These evaluations concluded that operations at the intersections were very constrained during peak traffic hours. The analyzed intersections are shown on Figure 1-3.

Table 1-1 displays existing Levels of Service (LOS) resulting from the HCM analyses at the intersections shown on Figure 1-3. LOS is a qualitative measure which ranges from A to F. LOS A represents free-flow operating conditions, while LOS F represents congested conditions. Appendix A contains detailed definitions of intersection LOS.

<table>
<thead>
<tr>
<th>Intersection/Movement</th>
<th>A.M. Peak Hour</th>
<th>P.M. Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>Delay (second/vehicle)</td>
</tr>
<tr>
<td>Punchbowl St. / Vineyard Blvd.</td>
<td>F</td>
<td>60.0+</td>
</tr>
<tr>
<td>KKHD-bound Vineyard Blvd.</td>
<td>D</td>
<td>42.5</td>
</tr>
<tr>
<td>Ewa-bound Vineyard Blvd.</td>
<td>D</td>
<td>29.1</td>
</tr>
<tr>
<td>Mauka-bound Punchbowl St.</td>
<td>F</td>
<td>60.0+</td>
</tr>
<tr>
<td>Makai-bound Punchbowl St.</td>
<td>E</td>
<td>52.0</td>
</tr>
<tr>
<td>(Punchbowl St. / Beretania St.)</td>
<td>B</td>
<td>14.9</td>
</tr>
<tr>
<td>Ewa-bound Beretania St.</td>
<td>B</td>
<td>8.9</td>
</tr>
<tr>
<td>Makai-bound Punchbowl St.</td>
<td>D</td>
<td>26.9</td>
</tr>
<tr>
<td>Vineyard/Bldg. / Queen Emma St.</td>
<td>D</td>
<td>28.8</td>
</tr>
<tr>
<td>KKHD-bound Vineyard Blvd.</td>
<td>C</td>
<td>22.3</td>
</tr>
<tr>
<td>Ewa-bound Vineyard Blvd.</td>
<td>C</td>
<td>21.2</td>
</tr>
<tr>
<td>Mauka-bound Queen Emma St.</td>
<td>D</td>
<td>34.0</td>
</tr>
<tr>
<td>Makai-bound Queen Emma St.</td>
<td>E</td>
<td>59.2</td>
</tr>
<tr>
<td>(Punchbowl St. / Lushana St.)</td>
<td>A</td>
<td>2.6</td>
</tr>
<tr>
<td>Makai-bound Punchbowl St. to Lushana</td>
<td>B</td>
<td>5.5</td>
</tr>
<tr>
<td>Ewa-bound right-turn from Lushana St.</td>
<td>B</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Note: KKHD-Koko Head

- The Punchbowl Street / Vineyard Boulevard Intersection operates at LOS F in both A.M. and P.M. peak hours. Mauka-bound Punchbowl Street traffic experiences extremely long delays during the P.M. peak hour because travel demand substantially exceeds the capacity of the single through lane, given the duration of traffic signal green time provided. Because travel demand on Koko Head-bound Vineyard Boulevard is also substantial, re-
timing the traffic signal to provide more green time for mauka-bound Punchbowl Street would transfer the problem to Vineyard Boulevard.

- The Punchbowl / Beretania Street intersection operates well during the A.M. peak, but at LOS F during the P.M. peak hour. Field observations revealed that vehicle queuing from the Punchbowl Street / Vineyard Boulevard intersection extended through this intersection onto Beretania Street during the P.M. peak hour.

- The Vineyard Boulevard / Queen Emma Street intersection also experiences congestion in both A.M. and P.M. peak periods. During the A.M. peak hour, left turns from makai-bound Queen Emma Street experience delays, primarily due to the lack of a protected signal phase. During the P.M. peak, the heavy right-turn demand on mauka-bound Queen Emma Street results in long queues, partially caused by traffic to H-1 Freeway in both the Koko Head and Ewa-bound directions. This indicates that Queen Emma Street is not a viable alternate route for vehicles utilizing Punchbowl Street.

- The Punchbowl/Lusitana Street intersection was observed to have very low turning movement demand. In the P.M. peak, vehicles turning right from Lusitana Street Punchbowl Street have to wait for a break in the mauka-bound Punchbowl Street traffic, resulting in LOS C.

To address the vehicular queuing on mauka-bound Punchbowl Street at Vineyard Boulevard, prior studies by the City and County of Honolulu identified the need to widen Punchbowl Street mauka of Vineyard Boulevard to provide two mauka-bound lanes, and the Primary Urban Center Development Plan Public Facilities Map (PUC 150) identifies such a widening. This plan was reinforced by a recent study entitled, Punchbowl Street Roadway Corridor Modification, Operational Analysis Report, April 1999, by Parsons Brinckerhoff Quade & Douglas, Inc. Providing two mauka-bound lanes between Vineyard Boulevard and the H-1 Freeway would allow widening of mauka-bound Punchbowl Street between the existing Miller Street and Vineyard Boulevard to provide two mauka-bound through lanes and a designated left-turn storage lane. In addition to the proposed widening, the study also proposed the following actions to enhance mobility and convenience within the Civic Center Area:

- Converting Punchbowl Street to two-way operations between Beretania Street and Ala Moana Boulevard

- Spot intersection and pedestrian crossing improvements

Addressing the current traffic bottleneck at the Punchbowl Street / Vineyard Boulevard intersection through selective widening of Punchbowl Street, through this project, and through improvements to be implemented by Queen's Medical Center, would deliver benefits on its own.

Although mauka-bound Punchbowl Street would have two full through lanes mauka of South Beretania Street, these lanes are only fed by one right-turn lane on South Beretania Street. Only one lane on Alapai Street feeds directly into the right-turn lane on South Beretania Street, and only one lane on South Street feeds directly into the lane on Alapai Street that is destined for the right-turn lane on South Beretania Street. This is part of the reason why both South and
Alapai Streets are not fully utilized during peak demand. A large proportion of the traffic on these streets heads toward mauka-bound Punchbowl Street. To do so, traffic has to be in certain lanes which become congested as traffic is concentrated into these lanes.

Converting Punchbowl Street to two-way operation makai of South Beretania Street provides two paths to Punchbowl Street mauka of South Beretania Street, distributing traffic among different streets, thereby making more efficient use of the street system. This plan would not be possible without the proposed widening of Punchbowl Street.

The project described in this document represents the most "downstream" roadway segment that these other projects would feed, and in this sense, these other projects need the project described herein to be effective. However, were these future projects not to proceed, the project addressed in this document would still deliver the transportation improvements described above, and therefore this project has a separate purpose and goal apart from possible future improvements to the downtown roadway network that would be accomplished elsewhere. In addition, this project does not represent a governmental commitment to larger actions, or obligate any government agency to the completion of these other projects in order to achieve transportation benefits, since transportation benefits would ensue from this project alone. This final EA does not address the possible environmental impacts of these potential future projects because this project delivers separate transportation benefit, apart from the benefits that could be delivered by future additional roadway modifications in the Downtown area.

1.3 PLANNING PROCESS

1.3.1 Hawaii Revised Statutes, Chapter 343

The proposed project is currently undergoing environmental review in accordance with Hawaii Revised Statutes (HRS) Chapter 343 (the State Environmental Impact Statement (EIS) Law) because City and County of Honolulu funds would be used, and the project is not on the list of DDC projects and programs that are "exempted" from Chapter 343 review.

Based on Significance Criteria specified in Hawaii Administrative Rules (HAR) Chapter 200, DDC anticipates issuing a Finding of No Significant Impact (FONSI) for the proposed project (see Chapter 4). Therefore, this Final Environmental Assessment (EA) was prepared and is being announced in the State Environmental Notice in accordance with HRS Chapter 343 and HAR Chapter 200.

During the preparation of the Draft EA, scoping activities were conducted, and the results were used to complete the Final EA (see Chapter 3).

Following the 30-day Draft EA comment period, DDC reviewed and considered all agency and public comments, and determined that a FONSI determination is appropriate. DDC then prepared the Final EA, and is announcing its availability in the State Environmental Notice. The approving agency for the Final EA is the Director of DDC.
1.3.2 Environmental Assessment

This EA identifies and assesses the environmental and social impacts that could result from the construction of the proposed project. The improvements would be designed for anticipated traffic volumes in the year 2005. The proposed project’s construction-phase impacts are also assessed in Section 2.5.

1.4 DESCRIPTION OF THE PROPOSED PROJECT

1.4.1 Existing Punchbowl Street, H-1 Freeway to Vineyard Boulevard

The proposed project would improve the section of Punchbowl Street from the H-1 Freeway to Vineyard Boulevard (see Figure 1-4). The entire length of Punchbowl Street is from the H-1 Freeway to Ala Moana Boulevard. It is classified as a principal north-south arterial, and provides direct access between the Freeway, downtown Honolulu, the Capitol District, the Civic Center, and Kakaako.

The mauka terminus of Punchbowl Street is Koko Head-bound off-ramp and Ewa-bound on-ramp to the H-1 Freeway. Both ramps also connect with Pali Highway. Two makai-bound lanes from the H-1 Freeway and Pali Highway off-ramps feed directly to Punchbowl Street. The H-1 Freeway and Pali Highway on-ramps are fed by one mauka-bound lane from Punchbowl Street as it emerges from a one-lane tunnel under the H-1 Freeway.

Between the H-1 Freeway and Vineyard Boulevard, Punchbowl Street consists of two lanes makai-bound, one lane mauka-bound, and sidewalks along both sides of the roadway. Punchbowl Street’s intersection with Lusitana Street is not signalized, but its intersection with Vineyard Boulevard is signalized.

1.4.2 No Build Condition

The No Build alternative is defined as the future transportation condition without the proposed project. It is based on the Oahu Regional Transportation Plan (ORTP) (November 1995) roadway network for the year 2005, and includes the to two-way operation conversion of Punchbowl Street to two-way operation between Beretania Street and Ala Moana Boulevard. Improvements to Punchbowl Street by Queen’s Medical Center are not included in the No Build condition because Queen’s project would not function without the proposed project.

1.4.3 TSM Alternative

A Transportation System Management (TSM) alternative was developed that would avoid the acquisition of additional right-of-way (see Figure 1-5). TSM is the application of construction, operational and institutional actions to make the most productive use of existing transportation facilities and services (Judycki and Berman, 1992). During the P.M. peak period, the inside makai-bound lane would be contra-flowed to the mauka-bound direction. City and County of Honolulu Department of Transportation Services maintenance personnel would come off this
Existing Punchbowl Street from the H-1 Freeway to Vineyard Boulevard

PARSONS
BRINCKERHOFF
QUADE &
DOUGLAS, INC.

PUNCHBOWL STREET IMPROVEMENTS;
VINEYARD BOULEVARD TO H-1 FREeway
Final Environmental Assessment
FIGURE 1-4
lanes from the other makai-bound lane. This would provide an additional mauka bound lane without the acquisition of right-of-way.

Providing the additional mauka-bound lane during the P.M. peak period would require either merging the two makai-bound lanes prior to Lusitana Street, or closing the H-1 Punchbowl Street off-ramp. Both methods would adversely affect the safety and traffic operations of the H-1 Punchbowl Street off-ramp and the H-1 Koko Head-bound traffic lanes. Therefore, the TSM Alternative was eliminated from further study.

1.4.4 Build Alternative

The proposed project will provide an additional mauka-bound lane from Vineyard Boulevard to the H-1 Freeway underpass (see Figure 1-6). To accommodate the additional lane, the existing right-of-way will be widened along the Diamond Head side of the roadway from Vineyard Boulevard to Lusitana Street. The existing sidewalk and driveways will be reconstructed along this length.

Mauka of Lusitana Street, the mauka-bound curb lane will be merged with the mauka-bound inside lane prior to the H-1 Freeway underpass. This merge configuration was modeled and simulated to determine the effectiveness of the proposed merge condition. Analyses determined that the merge configuration will accommodate the necessary future traffic projections without impacting the Vineyard Boulevard/Punchbowl Street intersection.

The signal timing for the Vineyard Boulevard/Punchbowl Street intersection traffic signal will be adjusted, as necessary, to control the queuing on the H-1 on-ramp. In addition, should the State Department of Transportation decide at a later date to implement ramp metering at this location, the construction contract will include the necessary provisions for the infrastructure (conduits and pullboxes) of a ramp metering signal at the Punchbowl Street/Lusitana Street intersection. The existing one lane configuration for the underpass provides a stopping sight distance of 200 feet, which accommodates a design speed of 30 MPH. The posted advisory speed prior to the entrance of the underpass is 25 MPH. The proposed merge will be designed to meet the existing one lane configuration prior to the underpass.

To minimize cumulative impacts of other roadway projects, the project will be coordinated with future improvements at the Vineyard Boulevard/Punchbowl Street intersection by Queen's Medical Center (see Figure 1-6).

The potential to widen Punchbowl Street on the Ewa side from Vineyard Boulevard to Lusitana Street was not an option due to the following:

- The PUC Development Plan Public Facilities Map identified the need for additional right-of-way on the Diamond Head side since 1981 (Ordinance 81-79, PUC 150).

- State of Hawaii Department of Accounting and General Services will not permit any additional widening to its property on the makai/Ewa corner of the Vineyard Boulevard/Punchbowl Street intersection. Widening into this property would be necessary to accommodate the required transition for the makai-bound traffic lanes.
1.5 PROJECT SCHEDULE AND COSTS

The present project schedule is shown on Table 1-2. Environmental review under HRS Chapter 343 is anticipated to be completed by late 1999. With construction anticipated to begin in early 2000, the proposed project is expected to be completed in early 2001.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Period</th>
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<tbody>
<tr>
<td>HRS Chapter 343 Environmental Review</td>
<td>Mid 1999 to Late 1999</td>
</tr>
<tr>
<td>Design and Right-of-Way Acquisition</td>
<td>Mid 1999 to Early 2000</td>
</tr>
<tr>
<td>Construction</td>
<td>Early 2000 to Early 2001</td>
</tr>
</tbody>
</table>

*Source:* City and County of Honolulu, Department of Design and Construction, 1999.

The estimated cost of the project is $1.65 million in 1999 dollars. These estimates include roadway construction, utility relocations, landscaping, and right-of-way acquisition. This estimate is based on conceptual design. A more accurate cost estimate will be developed during final design.
CHAPTER 2
ENVIRONMENTAL SETTING, IMPACTS, AND PROPOSED MITIGATION

This chapter describes the existing environmental conditions of the project area. It also describes the short-term construction impacts and long-term impacts of the No Build Alternative and the Widening Alternative (proposed project). Where a short- or long-term impact is considered adverse, proposed mitigation measures are provided.

2.1 PHYSICAL ENVIRONMENT

2.1.1 Topography, Geologic Conditions and Soils

2.1.1.1 Existing Condition

The island of Oahu was formed by two shield volcanoes: the Waianae volcano and the Koolau volcano. The end of the Koolau volcanic activity brought a long erosion period of at least two million years. Volcanic activity then returned on the southeastern end of the Koolau range and more than 30 different eruptions formed lava flows, cinder cones, and tuff cones. These eruptions, scattered over a period of hundreds of thousands of years, are called the Honolulu Volcanic Series and include famous Oahu landmarks such as Punchbowl, Tantalus, Salt Lake, Diamond Head, and Koko Head.

The project site (see Figure 1-1) is located along the makai base of Punchbowl crater, a cinder cone formed during the Honolulu Volcanic Series. This area has elevation ranging from approximately 30 feet to 80 feet. The topography of the project site has a general grade of approximately 3 percent rising north (mauka). There is a rapid rise in elevation beyond the north (mauka) end of the project site (north of Interstate Route H-1), up to elevations of 500 feet at the top of Punchbowl Crater, and 2,000 feet further mauka along Pacific Heights on the Koolau.

The project is located in an area with soil type Tantalus Silty Clay Loam (TCC). These soils are generally fine-grained, highly organic and well drained. This soil type is associated with slow runoff and slight erosion potential. However, these soils are apt to erode severely if protective measures are not taken. In most places the soils are more than 20 inches deep and are found on slopes of 8 to 15 percent, but can be found on slopes of up to 70 percent. Permeability in these soils is moderately rapid.

2.1.1.2 Hazardous Materials

A limited Phase I Environmental Site Assessment Report (Appendix B) was prepared for the identification of hazardous material sites within the study area (Dawson Environmental
Services, 1999). Federal, State and local records were reviewed for the presence of underground storage tanks (USTs) in the vicinity of the project site. The Jiffy Lube site within the project limits on Punchbowl Street was found on the UST and Leaking Underground Storage Tank (LUST) lists. This site is listed as having three USTs permanently out of service, associated with site clean-up that was completed in 1998. According to the State Department of Health (SDOH), there are no concerns of record presently associated with this site. In addition, a site visit confirmed that the USTs formerly present are no longer on the site, and no new USTs have been installed since the removal of the original ones.

2.1.1.3 Potential Impact

There are no adverse impacts expected in terms of USTs from the proposed project or the No Build Alternative. The Jiffy Lube facility poses no threat of obstruction to the right-of-way expansion of Punchbowl Street from USTs.

2.1.2 Water Resources

2.1.2.1 Existing Condition

The project site is located approximately 1.25 miles from the coastline, and away from any other water body. As a result, there is no surface water body in the project area.

Underlying all of southern Oahu is an extensive basal aquifer called the Southern Oahu Basal Aquifer (SOBA), which contains large supplies of fresh ground water. The SOBA was designated a sole or principal source aquifer by the U.S. Environmental Protection Agency (EPA) in November 1987. The project site lies within the Honolulu District of the SOBA.

According to the Flood Insurance Rate Map (FIRM), the proposed project site is not within a 50-, 100- or 500-year floodplain.

Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. The project site does not have wetlands.

2.1.2.2 Potential Impact

After construction, since there are no surface water resources in the area, there are no adverse impacts on surface water resources expected from either the proposed project or the No Build Alternative. The project would have no effect on potable water supplied by the Southern Oahu Basal Aquifer. The project limits are not within the aquifer’s recharge area and subsurface work associated with the project would not affect the aquifer. See Section 2.6.6 Site Runoff for discussion of construction activity related impacts and mitigation measures.
2.1.3 Biological Conditions

2.1.3.1 Existing Condition

The grounds of the privately owned Pacific Club on the Ewa side of the project contain landscaped plantings and trees. The Diamond Head side of the roadway contains a grassy strip along the sidewalk and some trees, most of which are within private lots. There are no known exceptional trees in the project site.

The proposed action is within a highly urbanized area of Honolulu. Terrestrial faunal habitats are modified and populated with introduced species.

2.1.3.2 Potential Impact

The landscaping at the Pacific Club will not be affected by the proposed project. Street trees will be required within the new roadway shoulder, in accordance with the new street planting standards of the City and County of Honolulu.

The No Build Alternative would maintain the existing landscaping.

2.1.4 Air Quality

2.1.4.1 Ambient Air Quality Standards

Air quality standards have been established by both federal and State governments which limit ambient concentrations of particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. In addition, a State standard has been established for hydrogen sulfide. The Hawaii air quality standards (particularly the carbon monoxide standards) are more stringent than the comparable national limits except for the standards for sulfur dioxide, particulate matter and lead, which are set at the same levels. The Hawaii air quality standards for carbon monoxide are set at 10 milligrams per cubic meter for a 1-hour average and 5 milligrams per cubic meter for an 8-hour average, whereas the federal 1-hour and 8-hour standards are set at 40 and 10 milligrams per cubic meter, respectively.

2.1.4.2 Existing Air Quality Conditions

Air quality in the vicinity of the proposed project is currently affected mostly by emissions from motor vehicle traffic on nearby roadways. The Hawaii Department of Health operates a network of air quality monitoring stations located at various sites around the State, including a downtown Honolulu monitoring station located very near the project area. Data that are available from the downtown Honolulu monitoring station and other nearby locations suggest that both State and national ambient air quality standards are currently being met in the project area, except possibly for the State standard for ozone. It should be noted, however, that carbon monoxide concentrations along sidewalks near traffic-congested intersections may be higher than concentrations measured at the Department of Health monitoring stations.
Estimates based on computer modeling of existing worst-case carbon monoxide concentrations along sidewalks in the project area are discussed below in conjunction with an assessment of the potential impacts of the project. See Appendix C for Air Quality Assessment by B. D. Neal and Associates in its entirety.

### 2.1.4.3 Air Quality Impacts of Project

The potential air quality impacts of the project near the intersection of Punchbowl Street and Vineyard Boulevard were evaluated using U.S. EPA-approved computerized emission and atmospheric dispersion models. Estimates of worst-case concentrations of carbon monoxide were made for present and future (2005) scenarios, with and without the project. The "future without project" scenario assumed that traffic volumes would remain substantially unchanged from the present, and that the intersection of Punchbowl Street and Vineyard Boulevard would remain as it is today. The results of this evaluation are summarized below in Table 2-1.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Worst-Case 1-Hour Carbon Monoxide Concentration (mg/m³)</th>
<th>Worst-Case 8-Hour Carbon Monoxide Concentration (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.M.</td>
<td>P.M.</td>
</tr>
<tr>
<td>1999 Existing</td>
<td>18.7</td>
<td>16.1</td>
</tr>
<tr>
<td>2005 Without Project</td>
<td>16.2</td>
<td>14.3</td>
</tr>
<tr>
<td>2005 With Project</td>
<td>15.2</td>
<td>14.5</td>
</tr>
<tr>
<td>Hawaii Standard</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>National Standard</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>


In all three scenarios, the highest concentrations were predicted to occur during the morning peak-traffic period. As indicated in the table above, it is estimated that the worst-case existing carbon monoxide concentrations along sidewalks near the Punchbowl Street intersection with Vineyard Boulevard are below national standards, but exceed State standards by a large margin. In the year 2005 without the project, it is predicted that the highest worst-case concentrations would decrease by about 13 percent compared to the existing values. This is primarily due to the replacement of older, more polluting motor vehicles with new, less polluting vehicles over time. With the project, the highest (morning) worst-case concentrations in the year 2005 would likely decrease by about 6 percent compared to the "without project" scenario, and by about 19 percent compared to the existing situation. However, even with the improvement in air quality afforded by the project, worst-case concentrations of carbon monoxide would continue to potentially exceed State standards. The decrease in the projected highest (morning) worst-case concentrations with the project is attributable to the
substantially improved traffic operations at the intersection, which would reduce vehicle delay times, idling, traffic queuing and excess air pollution emissions associating with idling. These factors overpower the widening of the intersection, which will allow higher traffic volumes than at present.

Worst-case concentrations mid-block along Punchbowl Street mauka of Vineyard Boulevard were also evaluated based on estimated average travel speeds. The results of this evaluation are summarized in Table 2-2.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Worst-Case 1-Hour Carbon Monoxide Concentration (mg/m³)</th>
<th>Worst-Case 8-Hour Carbon Monoxide Concentration (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.M.</td>
<td>P.M.</td>
</tr>
<tr>
<td>1999 Existing</td>
<td>11.4</td>
<td>5.3</td>
</tr>
<tr>
<td>2005 Without Project</td>
<td>8.8</td>
<td>7.5</td>
</tr>
<tr>
<td>2005 With Project</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Hawaii Standard
National Standard

Source: B.D. Neal and Associates

Carbon monoxide concentrations would be substantially lower mid-block compared to the intersection of Punchbowl Street and Vineyard Boulevard. Worst-case concentrations at this location would be well within the national standards for all scenarios, but the projected worst-case concentrations would exceed the State standards for the existing case. As at the near-intersection locations, the highest mid-block concentrations for all scenarios were predicted to occur during the morning. Without the project in the year 2005, it was estimated that the morning worst-case concentrations would decrease by about 14 percent and would meet the State standards by a small margin. With the project in the year 2005, the estimated morning worst-case concentrations decreased by 23 percent compared to the existing values, providing a larger margin of compliance with the State standards. Although the highest worst-case concentrations, which occur during the morning, were predicted to decrease somewhat with the project, afternoon worst-case concentrations with the project were estimated to increase by about 50 percent compared to the "without project" case.

In summary, worst-case carbon monoxide concentrations along sidewalks in the project area may currently exceed State standards, but comply with national limits. The proposed roadway improvements would result in a slight improvement in air quality near the intersection of Punchbowl Street and Vineyard Boulevard, and at mid-block areas mauka of this intersection, during the morning peak-traffic period when concentrations are highest. During the afternoon,
carbon monoxide concentrations with the project will likely increase but remain below the worst-case morning values. With or without the project, worst-case concentrations will likely continue to exceed the State standards at locations near this intersection. Predicted exceedances of the very stringent State standards for carbon monoxide are not unique to this area.

2.1.5 Noise

2.1.5.1 Existing Condition

A noise assessment study (Appendix D) was performed to analyze the proposed project (D.L. Adams Associates, Ltd., 1999). Noise measurements were taken at eight locations within the study area. Figure 2-1 shows the noise measurement locations. The dominant noise source at these locations was traffic from Punchbowl Street and other roadways. Existing ambient noise levels at these locations range from 59 to 70 dBA. This range is typical for urban areas near busy roadways. Table 2-3 shows existing noise levels at the measurement sites.

<table>
<thead>
<tr>
<th>Measurement Location</th>
<th>Existing Noise Levels (Leq) in (dBA)</th>
<th>Duration of Measurement</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59.0 dBA</td>
<td>10 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street and Vineyard Boulevard. Voices from pool and dining areas also audible.</td>
</tr>
<tr>
<td>2</td>
<td>59.8</td>
<td>15 min.</td>
<td>Same as for Location 1.</td>
</tr>
<tr>
<td>3</td>
<td>67.8</td>
<td>10 min.</td>
<td>Traffic on Punchbowl Street and grinding noise from Pacific Club.</td>
</tr>
<tr>
<td>4</td>
<td>68.0</td>
<td>5 min.</td>
<td>Same as for Location 3.</td>
</tr>
<tr>
<td>5</td>
<td>63.4</td>
<td>10 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street. Voices at playground also audible.</td>
</tr>
<tr>
<td>6</td>
<td>69.6</td>
<td>10 min.</td>
<td>Same as for Location 5.</td>
</tr>
<tr>
<td>7</td>
<td>63.6</td>
<td>6 min.</td>
<td>Traffic on Punchbowl Street and occasional distant emergency vehicle sirens.</td>
</tr>
<tr>
<td>8</td>
<td>66.9</td>
<td>5 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street and H-1 Freeway.</td>
</tr>
</tbody>
</table>


Note: Leq is the equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured over a specific time period.
2.1.5.2 Potential Impact

Table 2-4 displays predicted future traffic noise levels for the morning and afternoon peak traffic hours with and without the proposed project. Traffic noise level increases due in part to the project’s increased traffic would be equal to or less than 3.3 dBA at all but one location. Location 9 had a predicted noise level increase of 5.0 dBA. One reason for a larger increase at this location is the removal of the one-story tile building when the project is built. Under the No Build Alternative, this obstruction provided partial shielding and attenuated noise from the roadway to the receptor.

<table>
<thead>
<tr>
<th>Location</th>
<th>Existing Noise Levels</th>
<th>Future No Build (Leq) in dBA</th>
<th>Future Build (Leq) in dBA</th>
<th>Increase Due to Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59.0</td>
<td>57.2</td>
<td>54.8</td>
<td>57.8</td>
</tr>
<tr>
<td>2</td>
<td>59.8</td>
<td>60.1</td>
<td>57.8</td>
<td>60.8</td>
</tr>
<tr>
<td>3</td>
<td>67.8</td>
<td>67.3</td>
<td>66.1</td>
<td>70.2</td>
</tr>
<tr>
<td>4</td>
<td>68.9</td>
<td>67.9</td>
<td>65.9</td>
<td>70.0</td>
</tr>
<tr>
<td>5</td>
<td>63.4</td>
<td>64.7</td>
<td>63.2</td>
<td>65.5</td>
</tr>
<tr>
<td>6</td>
<td>69.8</td>
<td>69.2</td>
<td>67.2</td>
<td>69.6</td>
</tr>
<tr>
<td>7</td>
<td>63.6</td>
<td>66.0</td>
<td>65.1</td>
<td>67.1</td>
</tr>
<tr>
<td>8</td>
<td>66.9</td>
<td>66.5</td>
<td>66.5</td>
<td>67.2</td>
</tr>
<tr>
<td>9</td>
<td>N/A</td>
<td>66.5</td>
<td>65.3</td>
<td>70.9</td>
</tr>
<tr>
<td>10</td>
<td>N/A</td>
<td>66.5</td>
<td>67.6</td>
<td>71.0</td>
</tr>
</tbody>
</table>


Note: Leq is the equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured over a specific time period.

2.1.5.3 Mitigation Measures

Although FHWA and SDOT policies are not required to be met since no federal funds are involved, traffic noise mitigation has been considered. DDC has determined that with the proposed property improvements, additional noise abatement measures will not be required.

2.2 SOCIAL ENVIRONMENT

2.2.1 Land Use

2.2.1.1 Existing Condition

The proposed project is located in an urban area of Honolulu. Land uses immediately adjacent to the project site are mostly residences. Other land uses include Royal Elementary
Note: Sites 9 and 10 were used for modeling only; no noise levels were measured at these locations.
Not to Scale

PARSONS
BRINCKERHOFF
GUARDE &
DOUGLAS, INC.

Noise Measurement Locations
PUNCEBOWL STREET IMPROVEMENTS:
VINELAND BOULEVARD TO H-1 FREEWAY
Final Environmental Assessment
FIGURE 2-1
School and the Pacific Club, a private club on the Ewa side of the roadway, and Jiffy Lube, an automobile lubricating service shop, on the Diamond Head side of the roadway. The residences adjacent to the roadway include three single-family units, and three walk-up apartment buildings. Figure 2-2 displays the existing land uses immediately adjacent to the project site.

Land uses in the general vicinity of the project site are shown on Figure 2-3.

To the Ewa, Diamond Head and mauka of the project site, single-family and multi-family residences dominate. A majority of these units are two- and three-story walk-up apartments, but there is also a large number of single-family houses, as well as a few high-rise apartment buildings. Areas mauka of the project site, including the National Cemetery of the Pacific in Punchbowl Crater, are physically separated by the H-1 Freeway. The area Ewa of Punchbowl Street contains a variety of land uses, such as parks, a YMCA, a shopping center, and Foster Botanical Garden.

Land uses to the south (makai) of the project site include Queen’s Medical Center, the State Capitol, Honolulu Hale, several State and City and County office buildings, and downtown Honolulu. The area makai of the project site also contains several visitor attractions, such as Iolani Palace, the War Memorial, Washington Place, King Kamehameha Statue and Kawaiahao Church.

2.2.1.2 Potential Impact

Since the area surrounding the project site is already fully developed, there will be no new development resulting from the proposed project or the No Build Alternative.

Although the land use in the project area will not change, there will be changes to several of the driveways along Punchbowl Street. To provide for the wider right-of-way, the City and County will acquire frontages of private properties on the Diamond Head side of Punchbowl Street in accordance with HRS Chapter 101. The right-of-way acquisition will range from approximately 9 to 14 feet from properties on the Diamond Head side of the road. Table 2-5 describes the estimated right-of-way acquisition for each property.

A total of about 9 parking spaces at 1475 and 1487 Punchbowl Street will be removed as a result of this project. In addition, one garage structure at 1475 Punchbowl Street will be demolished. A one-story tile storage building at 1459 Punchbowl Street will be demolished and reconstructed within the same parcel.

The City is currently evaluating roadway alignment alternatives that may require an easement from the State for the use of a vacant portion of the parcel on the makai/Ewa corner of the Punchbowl Street and Vineyard Boulevard intersection (approximately 1,200 square feet).
Table 2.6  
Right-of-Way Impacts

<table>
<thead>
<tr>
<th>Property Address</th>
<th>Area of Right-of-Way Acquisition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1449 Punchbowl Street (TMK 2-1-22:11)</td>
<td>390 ft²</td>
<td>Multi-family residential; reconstruct trash enclosure and driveway.</td>
</tr>
<tr>
<td>1459 Punchbowl Street (TMK 2-1-22:12)</td>
<td>1,405 ft²</td>
<td>Single-family dwelling; demolish white concrete rectangular storage building; reconstruct driveway and storage building</td>
</tr>
<tr>
<td>1475 Punchbowl Street (TMK 2-1-22:13)</td>
<td>670 ft²</td>
<td>2 single-family dwellings; demolish garage, remove 4 parking spaces; replacement parking to be provided at 1481 Punchbowl</td>
</tr>
<tr>
<td>1481 Punchbowl Street (TMK 2-1-22:14)</td>
<td>None</td>
<td>Property being acquired by City; 2 single-family dwellings; reconstruct driveway, demolish buildings to provide replacement parking for 1475 and 1487 Punchbowl Street</td>
</tr>
<tr>
<td>1487 Punchbowl Street (TMK 2-1-22:15)</td>
<td>165 ft²</td>
<td>Multi-family residential; reconstruct driveway, remove 4 parking stalls; replacement parking to be provided at 1481 Punchbowl</td>
</tr>
<tr>
<td>1489 Punchbowl Street (TMK 2-1-22:1)</td>
<td>None</td>
<td>Jiffy Lube; reconstruct driveway</td>
</tr>
</tbody>
</table>

Source: City and County of Honolulu, Department of Design and Construction, 1999.

2.2.1.3 Mitigation Measures

The driveways disturbed by the construction will be reconstructed as part of the project. Each affected owner will be reimbursed at fair market value for the loss of property in accordance with HRS Chapter 111, Assistance to Displaced Persons.

The City and County is purchasing the property for sale at 1481 Punchbowl Street as it will use this property to replace the parking spaces that would be lost at 1475 and 1487 Punchbowl Street due to the right-of-way expansion. Additional mitigation measures are:

- Reconstruction of trash enclosure at 1449 Punchbowl Street
- Reconstruction of storage building at 1459 Punchbowl Street
2.2.2 Social and Economic Activities

2.2.2.1 Existing Condition

The project is located in Census tract 41. Census tract 42 is the neighboring tract but will not be affected by the proposed action. Table 2-7 displays demographic information for these two census tracts. This table also contains figures for the State of Hawaii and the County of Honolulu. According to the U.S. Census Bureau, these two census tracts had a population of 7,352 in 1990.

The proportions of females in each of these census tracts were higher than the proportions of females in the State and County. Whites made up more than 31 percent of the population and residents of Japanese descent accounted for over 21 percent of the population in each of these census tracts. Census tracts 41 and 42 had higher proportions of Chinese and Korean residents than the State and the County. There were lower proportions of Filipino and Hawaiian residents in these census tracts than in the State and the County.

2.2.2.2 Housing

Housing information for the project area is shown in Table 2-8. There was a total of 3,737 housing units in census tracts 41 and 42. The majority of these units are in multifamily structures. Census tract 42 had no single-family homes, and 92 percent of the housing units are in structures with 50 or more units. Only 6 percent of the homes in census tract 41 were single family residences, and 78 percent of the units are in structures with 10 or more units. Homeownership in these census tracts was low, with 70 percent of the housing units in each tract being rented. In fact, the renter/owner ratios in these census tracts were almost three times higher than the ratios for the State and County. In 1990, the median age of the housing units in these tracts was 19 years, slightly lower than the State and County medians.

2.2.2.3 Income

Median household income in census tracts 41 and 42 was generally lower than the State and County medians (See Table 2-9). Census tract 41 had a median household income of $26,908. Median income in Census tract 42 was slightly higher at $32,095. In comparison, Oahu’s median household income was $40,581, and the statewide median income was $35,829.

Poverty rates in the project study area were slightly higher than the State and County rates. Approximately 650 people in Census tracts 41 and 42 had incomes below the poverty level in 1990, making up approximately 10 percent of the population in these tracts. For the State and County, poverty rates were 8 and 7 percent respectively.
### Table 2-7
Demographic Information for Hawaii, County of Honolulu, and Census Tracts 41 & 42

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>County</th>
<th>Census Tract 41</th>
<th>Census Tract 42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>1,108,229</td>
<td>-</td>
<td>836,231</td>
<td>-</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>564,336</td>
<td>51%</td>
<td>426,606</td>
<td>51%</td>
</tr>
<tr>
<td>Females</td>
<td>543,893</td>
<td>49%</td>
<td>409,625</td>
<td>49%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>370,276</td>
<td>33%</td>
<td>284,787</td>
<td>32%</td>
</tr>
<tr>
<td>Black</td>
<td>26,665</td>
<td>2%</td>
<td>25,711</td>
<td>3%</td>
</tr>
<tr>
<td>Chinese</td>
<td>68,769</td>
<td>6%</td>
<td>63,364</td>
<td>8%</td>
</tr>
<tr>
<td>Filipino</td>
<td>168,232</td>
<td>15%</td>
<td>119,053</td>
<td>14%</td>
</tr>
<tr>
<td>Japanese</td>
<td>252,291</td>
<td>23%</td>
<td>198,732</td>
<td>24%</td>
</tr>
<tr>
<td>Korean</td>
<td>24,361</td>
<td>2%</td>
<td>22,684</td>
<td>3%</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>5,557</td>
<td>1%</td>
<td>5,283</td>
<td>1%</td>
</tr>
<tr>
<td>Other Asian</td>
<td>7,935</td>
<td>1%</td>
<td>7,028</td>
<td>1%</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>135,263</td>
<td>12%</td>
<td>90,174</td>
<td>11%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>23,583</td>
<td>2%</td>
<td>21,122</td>
<td>3%</td>
</tr>
<tr>
<td>Other Race</td>
<td>24,899</td>
<td>2%</td>
<td>16,343</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Households</strong></td>
<td>328,580</td>
<td>29%</td>
<td>252,555</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Families</strong></td>
<td>266,436</td>
<td>-</td>
<td>199,597</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 1990.

#### 2.2.2.4 Economic Activity

The major employment centers on Oahu are downtown Honolulu and Waikiki. The project site is located downtown, approximately one mile from the central core of the downtown area. The major employer near the site is Queens Medical Center. The State Capitol and State office buildings are also major employment centers in the immediate area.

#### 2.2.2.5 Potential Impact

The residential area on the Diamond Head side of the project site would be affected through right-of-way acquisition, and, in addition, two single-family homes will be demolished. The project could cause some inconvenience to residents in getting out of their driveways. However, affected property owners will be financially compensated by the City and County for property acquisition. Overall, the project's anticipated adverse impacts on the social and economic conditions of Punchbowl between Vineyard Blvd. and Lusitana Street will not be significant. The community benefit of improving mauka-bound roadway capacity to the H-1 on-ramp will be greater.
The No Build Alternative would not result in any of these impacts to residential properties. On the other hand, the community benefit of improved access on Punchbowl Street to the H-1 on-ramp would not be realized under the No Build Alternative. The project would not lead to gentrification in the area or increases in residential property values. There would be no changes to zoning or land use, so the project would be compatible with the Primary Urban Center development plan.

Table 2-8
Housing Information for Hawaii, County of Honolulu, and Census Tracts 41 & 42

<table>
<thead>
<tr>
<th>Number of Units in Structure</th>
<th>State</th>
<th>County</th>
<th>Census Tract 41</th>
<th>Census Tract 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 detached</td>
<td>203,193</td>
<td>52%</td>
<td>126,350</td>
<td>45%</td>
</tr>
<tr>
<td>1 attached</td>
<td>34,009</td>
<td>9%</td>
<td>28,359</td>
<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>8,589</td>
<td>2%</td>
<td>6,382</td>
<td>2%</td>
</tr>
<tr>
<td>3-4</td>
<td>15,480</td>
<td>4%</td>
<td>12,983</td>
<td>5%</td>
</tr>
<tr>
<td>5-9</td>
<td>22,423</td>
<td>6%</td>
<td>18,541</td>
<td>7%</td>
</tr>
<tr>
<td>10-19</td>
<td>21,538</td>
<td>6%</td>
<td>16,844</td>
<td>6%</td>
</tr>
<tr>
<td>20-49</td>
<td>22,173</td>
<td>6%</td>
<td>17,685</td>
<td>6%</td>
</tr>
<tr>
<td>50 or more</td>
<td>56,624</td>
<td>15%</td>
<td>49,961</td>
<td>16%</td>
</tr>
<tr>
<td>Other</td>
<td>5,581</td>
<td>1%</td>
<td>3,885</td>
<td>1%</td>
</tr>
<tr>
<td>Total Housing Units</td>
<td>389,510</td>
<td>100%</td>
<td>297,883</td>
<td>100%</td>
</tr>
</tbody>
</table>

Home Ownership

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>County</th>
<th>Census Tract 41</th>
<th>Census Tract 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner Occupied</td>
<td>191,894</td>
<td>49%</td>
<td>137,893</td>
<td>49%</td>
</tr>
<tr>
<td>Renter Occupied</td>
<td>164,373</td>
<td>42%</td>
<td>127,411</td>
<td>45%</td>
</tr>
<tr>
<td>Rent/OwOwn Ratio</td>
<td>0.96</td>
<td>0.92</td>
<td>2.76</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Median Age of Structure 1980-1989

Source: U.S. Census Bureau, 1990.

Short-term employment would increase with the proposed project as a result of construction activities. However, no changes in long-term employment opportunities are anticipated since the proposed project is not a precondition of continuing development in the area. The project could affect long-term property values of affected lots because lot sizes will be reduced.

2.2.3 Recreational Activities

2.2.3.1 Existing Condition

The recreational facilities in this area include a privately owned club, parks, and visitor attractions.
The Pacific Club, a privately owned club;
- Kamamalu Neighborhood Park;
- Foster Botanical Garden;
- Beretania Park;
- Dole Community Park;
- Thomas Square;
- Neal Blaisdell Center;
- Punchbowl Crater which houses the National Memorial Cemetery of the Pacific;
- Iolani Palace;
- King Kamehameha Statue;
- Kawaiahao Church; and
- Mission Houses Museum.

The locations of these recreational facilities are shown in Figure 2-4.

<table>
<thead>
<tr>
<th>Household Income Level</th>
<th>State Number</th>
<th>County Number</th>
<th>Census Tract 41 Number</th>
<th>Census Tract 42 Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Above Poverty</td>
<td>282,944 19%</td>
<td>433,111 25%</td>
<td>215,396 9%</td>
<td>237,529 29%</td>
</tr>
<tr>
<td>0-17 years</td>
<td>243,574 23%</td>
<td>180,280 22%</td>
<td>508 15%</td>
<td>203 8%</td>
</tr>
<tr>
<td>18-34 years</td>
<td>270,716 25%</td>
<td>213,554 27%</td>
<td>1,430 34%</td>
<td>547 21%</td>
</tr>
<tr>
<td>35-59 years</td>
<td>311,440 29%</td>
<td>233,100 29%</td>
<td>1,250 30%</td>
<td>901 34%</td>
</tr>
<tr>
<td>60 years &amp; over</td>
<td>157,214 15%</td>
<td>116,197 14%</td>
<td>434 10%</td>
<td>774 29%</td>
</tr>
<tr>
<td>Total Below Poverty</td>
<td>88,405 9%</td>
<td>50,093 7%</td>
<td>494 10%</td>
<td>235 6%</td>
</tr>
<tr>
<td>0-17 years</td>
<td>31,944 3%</td>
<td>21,064 3%</td>
<td>23 1%</td>
<td>23 1%</td>
</tr>
<tr>
<td>18-34 years</td>
<td>23,307 2%</td>
<td>18,080 2%</td>
<td>111 3%</td>
<td>79 3%</td>
</tr>
<tr>
<td>35-59 years</td>
<td>18,836 2%</td>
<td>12,287 2%</td>
<td>127 3%</td>
<td>74 3%</td>
</tr>
<tr>
<td>60 years &amp; over</td>
<td>12,321 1%</td>
<td>8,662 1%</td>
<td>163 4%</td>
<td>59 2%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 1990.

2.2.3.2 Potential Impact

There are no adverse impacts on recreational facilities anticipated from either the proposed project or the No Build Alternative.
2.2.4 Historic Sites

2.2.4.1 Existing Condition

There are several older structures abutting the project site. The ages of homes along Punchbowl Street in the vicinity of the project site range from 29 years to 89 years. The average age of these structures is 53 years.

A Historic Inventory Survey (September 1991, Mason Architects) was conducted on the residential properties at 1475 Punchbowl Street (TMK 2-1-22:13) and 1481 Punchbowl Street (TMK 2-1-22:14) which will be affected by the street widening project. A complete report of this survey can be found in Appendix E. Field checks, file and literature research at the State Historic Preservation Division (SHPD), and historic photo and map searches were done at the State Archives, State of Hawaii Library, Bureau of Conveyances, and the City and County Property Tax Office. No original construction drawings were found for any of the buildings.

The residences included in this study meet the National Register of Historic Places “Criterion A” for their association with the “broad patterns of our history,” as remnants of a once thriving Portuguese residential neighborhood on the northwest flank and foot of Punchbowl Crater (Mason Architects, August 1999). The majority of the lots in this subdivision were purchased by Portuguese immigrants. Street names in this area reflect the dominance of Portuguese culture. Lusitana Street was named for the Portuguese Welfare Society, whose members were largely immigrants from the Azores who arrived in Hawaii in 1883.

The buildings also meet the National Register of Historic Places “Criterion C” since they “embody the distinctive characteristics of a type, period, or method of construction.” The Craftsman-Style architectural elements, such as decorative bracketing and rafters, ornamental windows, and lava rock piers and wood columns, make these homes more distinctive than many other structures of the period.

The residential structure at 1459 Punchbowl Street (TMK 2-1-22:12) also meets the age criterion for the National Register of Historic Places. However, because the structure would not be affected by the project, it was not included in the survey.

2.2.4.2 Potential Impact

Other than the loss of the garage building, demolition of the garage structure at 1475 Punchbowl Street, structure constructed circa 1921, and the relocation of the sidewalk and street closer to the buildings (in the current parking area), the project will not adversely affect the structures at 1475 Punchbowl Street. However, the demolition of the garage structure at 1475 Punchbowl Street and the structures at 1481 Punchbowl Street will contribute further to the loss of setting and association with historic events.
Recreational and Public Facilities in Vicinity of Project Site

PUNCHBOWL STREET IMPROVEMENTS;
VINEYARD BOULEVARD TO H-1 FREEWAY
Final Environmental Assessment

FIGURE 2-4
2.2.4.3 Mitigation Measures

To mitigate the proposed demolition of the single car garage at 1475 Punchbowl Street and the two homes at 1481 Punchbowl Street, the structures on both parcels will be documented prior to their demolition. The appropriate level of documentation will be recommended by SHPD and agreed to by the City and County of Honolulu. In a letter dated October 29, 1999, SHPD concurred with recommendations regarding mitigation measures for adverse effect the project will have on historic sites. (D. Hibbard, LC: 24250). Chapter 6E coordination activities between the SHPD and the City and County will continue through completion of documentation of the historic structures.

2.2.5 Visual and Aesthetic Resources

2.2.5.1 Existing Condition

The project area is located in an urban setting. The landscaping within the Pacific Club grounds provides one scenic view that is close to the project site. However, this view is limited due to the high rock wall encircling the grounds of the club. While traveling towards the mountains (mauka) on Punchbowl Street, there is a scenic vista of the slopes of Punchbowl Crater, an inactive volcano. In fact, this view of Punchbowl Crater from Punchbowl Street is designated by the City and County of Honolulu as a viewing site in the Punchbowl Special District (See Section 2.5.2.4 and Figure 2-9). With this special designation, preservation of special viewsheds is ensured. Further south (makai) of the project site, Punchbowl Street is tree-lined. This landscaping provides another scenic view from the project site.

2.2.5.2 Potential Impact

There are no visual impacts anticipated from the proposed project or the No Build Alternative. The Punchbowl Special District view plane will not be affected.

2.3 INFRASTRUCTURE

2.3.1 Transportation

2.3.1.1 Existing Roadway System

Generally, the dominant highways on Oahu parallel the coastline and carry west-east or outbound-inbound traffic. Major Diamond Head - Ewa highways and arterial streets in the vicinity of the proposed project are the Interstate H-1 Freeway, Vineyard Boulevard, Beretania Street, South King Street, and Ala Moana Boulevard. Major mauka-makai highways and arterial streets in the vicinity of the proposed project include Punchbowl Street, Queen Emma Street, Alakea Street, Pali Highway, Bishop Street, Alapai Street and South Street. In addition,
there are numerous Diamond Head-Ewa and mauka-makai minor or collector roadways in the vicinity. Figure 1-3 shows the roadway system in the vicinity of the project.

Freeways and Major Highways
H-1 Freeway is part of Oahu's interstate system that forms the backbone of Oahu's roadway network. H-1 is a Diamond Head - Ewa freeway and is approximately 26 miles long. Its limits are from Ewa on the west side of the island to Kahala on the east side of Honolulu. Other freeways of the interstate system are H-2, which connects H-1 to central Oahu, and H-3, which connects H-1 in Halawa with Kaneohe Marine Base on the windward side of the island. H-1 carries more traffic than any other roadway on Oahu. The posted speed limit on H-1 in Honolulu is 50 mph.

Pali Highway is one of the three major arterial trans-Koolau roadways connecting the leeward and windward sides of the island. The highway has four lanes, with two lanes in each direction. Its makai-bound to Koko Head-bound off-ramp to the H-1 Freeway also provides access to Punchbowl Street. The posted speed limit on Pali Highway in Honolulu is 35 mph.

Punchbowl Street
Punchbowl Street is a principal north-south arterial roadway that provides direct access between the H-1 Freeway, and downtown Honolulu, the Capital District, the Civic Center, and Kakaako. These areas are some of Oahu's largest employment and public service centers. The mauka terminus of Punchbowl Street is an Koko Head-bound off-ramp and an Ewa-bound on-ramp to the H-1 Freeway. Both ramps also connect with Pali Highway. The makai terminus of Punchbowl Street is Ala Moana Boulevard. On-street parking is permitted on both sides of Punchbowl Street between Beretania Street and Pohukaina Street. There is no parking allowed on Punchbowl Street within the project limits. The posted speed limit on Punchbowl Street is 25 mph.

The section of Punchbowl Street (mauka) of Lusitana Street includes a one-lane tunnel under the H-1 Freeway. This tunnel provides access to the Ewa-bound freeway on-ramp for mauka-bound travelers on Punchbowl Street.

Punchbowl Street consists of four main segments of different lane configurations (see Figure 2-5). Segment 1 between Lusitana Street and Vineyard Boulevard is three lanes wide with two lanes makai-bound and one lane mauka-bound. Segment 2 between Vineyard Boulevard and Beretania Street is four lanes wide with two lanes in each direction. As described in Section 1.2, Queen's Medical Center is planning to widen the section of Punchbowl Street from Vineyard Boulevard to Miller Street. Segment 3, between Beretania Street and South King Street, is four lanes wide with three lanes -makai-bound and one lane mauka-bound. Segment 4 between South King Street and Ala Moana Boulevard is one-way makai-bound with the number of lanes varying from three to five. The City and County is planning to convert this section of Punchbowl Street to two-way operation, with three lanes makai-bound and one lane mauka-bound. All intersections on Punchbowl Street are signalized except for Lusitana Street, Miller Street and Pohukaina Street.

Major Arterial Roadways
Vineyard Boulevard is a principal arterial providing east-west circulation through the Palama, Liliha, Nuuanu, and downtown areas. It is a six-lane divided roadway with left turn lanes at
major intersections. In the vicinity of Punchbowl Street, parking is not permitted. The posted speed limit on Vineyard Boulevard is 30 mph.

Beretania Street is a one-way principal arterial providing east to west circulation from Moiliili to Iwilei. Near Punchbowl Street, the number of lanes on Beretania Street varies from five to six, and parking is not permitted. The posted speed limit on Beretania Street is 30 mph.

King Street is a principal arterial providing east-west circulation from Kalihi to Kaimuki. The roadway is called North King Street from Kalihi to Nuuanu Avenue, and South King Street from Nuuanu Avenue to Kaimuki. It is a one-way Koko Head-bound roadway from Iwilei to Kaimuki. Near Punchbowl Street, the number of lanes on King Street varies from five to six, and parking is permitted on the mauka side. The posted speed limit on King Street is 30 mph.

Queen Emma Street, Alakea Street, and Bishop Street are the principal mauka-makai arterials providing circulation in the downtown Honolulu area. At Kukui Street, Queen Emma Street changes to Alakea Street. Alakea Street is one-way mauka-bound, and Bishop Street is one-way makai-bound. These streets form a one-way couplet.

South and Alapai Streets are arterials providing north-south circulation through Kakaako. South Street between Ala Moana Boulevard and Pohukaina Street is a four-lane two-way roadway. North of Pohukaina Street, the road transitions to one-way with four to five lanes. South Street changes to Alapai Street, a four- to five-lane one-way roadway, at Kapiolani Boulevard. Parking is permitted on both sides of South Street between Pohukaina Street and Kapiolani Boulevard. There is no parking on Alapai Street. The posted speed limit on both roads is 25 mph.

Minor Roadways
Lunalilo Street is a two-lane local road providing east-west circulation in the residential neighborhood between Vineyard Boulevard and H-1 Freeway. Parking is permitted on both sides of the road. Its posted speed limit is 25 mph.

Miller Street is a two-lane local road providing east-west circulation between Vineyard Boulevard and Punchbowl Street. Only Queen's Medical Center accesses Miller Street in this segment. Parking is permitted on the mauka side of the road. The posted speed limit is 25 mph.

2.3.1.2 Existing Traffic Volumes
Traffic turning movement counts were conducted at selected intersections during the week of September 21, 1998. The A.M. and P.M. peak hours were found to occur from 7:15 to 8:15 A.M. and from 4:00 to 5:00 P.M., respectively. Figures 2-6 and 2-7 show the existing A.M. and P.M. peak hour traffic volumes for each turning movement at the selected intersections.
Punchbowl Street Segments
PUNCHBOWL STREET IMPROVEMENTS;
VINEYARD BOULEVARD TO H-1 FREEWAY
Final Environmental Assessment
FIGURE 2-5
2.3.1.3 Parking

There is no parking allowed on Punchbowl Street within the project limits. Currently, residents park in private driveways along Punchbowl Street. The right-of-way expansion will result in a loss of private parking for the homes along the east side of Punchbowl Street (see Section 2.2.1.3).

2.3.1.4 Potential Impact on Traffic Operations

The proposed project will widen Punchbowl Street between Vineyard Boulevard and the H-1 Freeway underpass by one lane in the mauka-bound direction, thus relieving the major traffic bottleneck in this area. The proposed project most benefits P.M. peak hour operations. During the morning peak, congestion on Punchbowl Street is not related to the mauka-bound vehicles on Punchbowl Street, mauka of Beretania Street. The proposed improvements will work in conjunction to the roadway improvements that will be completed by Queen's Medical Center on Punchbowl Street between Miller Street and Vineyard Boulevard.

A secondary impact could be inducing more traffic into the Punchbowl Street corridor as flow is improved. The Civic Center area is not projected to grow significantly in the future, and, therefore, traffic growth is not likely. However, to account for this potential, a 50 percent increase in traffic volume at the Vineyard/Punchbowl intersection was tested and it was found that this added demand could be handled by the build alternative, because of the additional laneage. The improved traffic throughput gained by widening Punchbowl Street between Vineyard Boulevard and Lusitana Street will allow approximately 50 percent more vehicles to move through the Vineyard Boulevard/Punchbowl Street intersection. Table 2-10 compares the existing and proposed project Levels of Service (LOS) for the Punchbowl Street/Vineyard Boulevard and the Punchbowl Street/Beretania Street intersections.

<table>
<thead>
<tr>
<th>Intersection/Movement</th>
<th>Existing Condition</th>
<th>Future/Build</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.M. Peak Hour</td>
<td>P.M. Peak Hour</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>Delay</td>
</tr>
<tr>
<td>Punchbowl/Vineyard</td>
<td>F</td>
<td>60.0+</td>
</tr>
<tr>
<td>Koko-Head-Bound</td>
<td>D</td>
<td>42.5</td>
</tr>
<tr>
<td>Ewa-Bound</td>
<td>D</td>
<td>29.1</td>
</tr>
<tr>
<td>Mauka-Bound</td>
<td>F</td>
<td>60.0+</td>
</tr>
<tr>
<td>Makai-Bound</td>
<td>E</td>
<td>52.0</td>
</tr>
<tr>
<td>Punchbowl/Beretania</td>
<td>B</td>
<td>14.9</td>
</tr>
<tr>
<td>Ewa-Bound</td>
<td>B</td>
<td>8.9</td>
</tr>
<tr>
<td>Mauka-Bound</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Makai-Bound</td>
<td>D</td>
<td>26.9</td>
</tr>
</tbody>
</table>

With the increased throughput of traffic from the Vineyard Boulevard/Punchbowl Street intersection, an associated potential impact is the effect on the operations of the H-1 on-ramp.
Although this section of the H-1 Freeway is extremely congested during the peak hours, the H-1 on-ramp processes the existing traffic from the Vineyard Boulevard/Punchbowl Street intersection.

The No Build Alternative will not improve traffic conditions and the traffic queues will remain.

2.3.1.5 Mitigation Measures

Parking
The City and County of Honolulu will purchase the property located at 1481 Punchbowl Street. The buildings on this lot will be demolished. The lot will be developed as replacement parking for those spaces lost due to the right-of-way expansion.

H-1 On-Ramp
The signal timing for the Vineyard Boulevard/Punchbowl Street intersection traffic signal will be adjusted, as necessary, to control the queuing on the H-1 on-ramp. In addition, should the State Department of Transportation decide at a later date to implement ramp metering at this location, the construction contract will include the necessary provisions for the infrastructure (conducts and pullboxes) of a ramp metering signal at the Punchbowl Street/Lusitana Street intersection.

2.4.1 Utilities

2.4.1.1 Existing Condition

Water lines within the project limits run underneath Punchbowl Street. An eight-inch main runs underneath Punchbowl Street. A sanitary sewer main connecting to Sand Island Wastewater Treatment Plant runs underneath Punchbowl Street. The storm drains under the sidewalks along Punchbowl Street collect storm water runoff, which is ultimately discharged into Honolulu Harbor.

Street lighting is provided along Punchbowl Street within the project limits. The lights are located primarily on the Ewa side of the roadway. Electric and telephone lines along Punchbowl Street are aerial lines.

2.4.1.2 Potential Impact

Construction of the proposed project will require relocation of the traffic signal, street lighting, aerial electric and telephone lines, and water service laterals. In addition, there will be new storm drainage improvements associated with the right-of-way expansion. Punchbowl Special District policies state that utilities will be placed underground. The design of the proposed project will be coordinated with the Department of Planning and Permitting to comply with the requirements of the Punchbowl Special District.
An improvement to the visual quality of the project area will be created by undergrounding utilities.

### 2.5 CONSISTENCY WITH GOVERNMENTAL PLANS AND POLICIES

#### 2.5.1 State of Hawaii

**2.5.1.1 Hawaii State Plan**

The Hawaii State Plan (June, 1991) consists of comprehensive goals, objectives, policies and priorities in all areas of government functions. It also mandates the preparation of 12 "Functional Plans" which provide details for implementing the State Plan. While the State Plan establishes long-term objectives for Hawaii, the State Functional Plans focus on short-term implementation.

**2.5.1.2 Hawaii State Land Use Controls**

Lands in the State are divided into four classifications: Urban, Agriculture, Rural and Conservation. The location of the proposed action is within an Urban District. Land uses within Urban districts are administered by the four counties (Hawaii County, Maui County, City and County of Honolulu, and Kauai County), except in cases where the State has a compelling interest in the development of an area, such as the Kakaako Development District. Therefore, the City and County of Honolulu has exclusive administrative authority in all matters relevant to zoning in the vicinity of the project.

#### 2.5.2 City and County of Honolulu

**2.5.2.1 General Plan**

The General Plan (revised 1992) provides broad statements on the objectives and policies of the City and County of Honolulu with regard to overall physical and economic development of the island, as well as the health and safety of the island’s residents.

**2.5.2.2 Primary Urban Center Development Plan**

According to the Primary Urban Center (PUC) Development Plan (Revised Ordinances of Honolulu, 1990, Chapter 24, Article 2), the PUC shall efficiently accommodate relatively intensive commercial, governmental, residential, and recreational functions in a manner that safeguards and adds to the existing amenities of the City's urban environment. The PUC Development Plan is in the process of being revised. A public draft (July, 1999) is currently in circulation for public and agency review and comment.
According to the PUC Development Plan Land Use Map, most of the area in the general vicinity of the proposed project is designated for Medium Density Apartment (MDA) or Public Facility (PF). Ordinance 81-79 (PUC 150) identified the need for additional right-of-way for road widening on this portion of Punchbowl Street, and has been reflected on the Development Plan Public Facilities Map since 1981. Existing land uses are consistent with the Development Plan Land Use designations.

2.5.2.3 Zoning

The City and County of Honolulu Zoning Code is required to be in conformance with Development Plan designations. Zoning is administered by the Department of Planning and Permitting (DPP).

Figure 2-8 displays the zoning in the vicinity of the proposed action. Most of this area is zoned medium density apartment (A-2).

2.5.2.4 Punchbowl Special District

The City and County of Honolulu has established special districts for the purpose of preserving, protecting, or enhancing significant physical and visual aspects of parts of the island. The project is located in the Punchbowl Special District. This special district was established to enhance Punchbowl Crater and, more specifically, the National Memorial of the Pacific. Objectives of the Punchbowl District include:

- preserve and enhance Punchbowl's form and character as a significant landmark;
- preserve and enhance the park-like character of the slopes of Punchbowl;
- preserve and enhance significant views to and from Punchbowl;
- provide landscaping and open space which will enhance views; and
- preserve, enhance, and restore the serene and scenic qualities within the national cemetery.

The Punchbowl Special District and its prominent vistas are displayed in Figure 2-9. Under Punchbowl Special District policies, roadway widening is considered a minor project for which a Special District Permit is required (See Permits in Section 2.6). A Punchbowl Special District Permit will be sought for this project. Existing overhead utilities will be required by the Department of Planning and Permitting to be placed underground.
2.6 CONSTRUCTION PERIOD IMPACTS AND MITIGATION MEASURES

2.6.1 Traffic

Construction will cause motorists traveling on Punchbowl Street and adjacent roadways to experience delay and inconvenience for approximately 12 months, the estimated duration of construction.

To minimize traffic and access inconvenience on Punchbowl Street and adjacent roadways, a traffic and pedestrian control plan will be prepared and implemented. This plan will include the following provisions:

- At least one lane in each direction will be kept open, and access to residences along the roadway will be maintained during all phases of the construction work;
- The construction contract will contain necessary provisions for adequate public information prior to the start of construction;
- Other measures, including construction rescheduling will be considered in order to minimize congestion;
- Pedestrian movements will also be maintained, but may be limited to one side of the roadway at any given time;
- Construction activities that would close moving lanes will be restricted to off-peak hours whenever feasible;
- Lane closures during non-peak periods may occur during clearing and grubbing, cold-planing, pavement overlaying, restriping, and when traffic control devices are being secured; and
- All State and County regulations will be followed.

2.6.2 Air Quality

As discussed in Section 2.1.4, carbon monoxide (CO) is the principal pollutant of concern in localized (microscale) areas. Since emissions of CO from motor vehicles increase with decreasing vehicle speed, the disruption of traffic during construction could result in short-term elevated concentrations of CO. To minimize CO concentrations, efforts will be made during construction to limit disruptions to traffic, especially during peak travel periods.

The City and County will closely coordinate other construction projects in the vicinity to minimize traffic congestion. These include roadway improvement projects proposed by the State Department of Transportation (resurfacing of H-1), and Punchbowl Street widening by Queen's Hospital.
2.6.3 Noise

Short-term noise impacts will be experienced by residences and businesses during construction. The actual noise levels produced will be a function of the methods employed during each stage of the construction process. Table 2-9 presents the typical range of sound levels for mobile construction equipment and compressors measured at a distance of 50 feet. Since construction activities will take place within 50 feet of noise sensitive receptors, the values in Table 2-9 are representative of the noise levels to be expected along Punchbowl Street during various stages of construction. The Pacific Club, Royal Elementary School, and residences along the road would experience similar noise levels for short periods of time.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>L(Aeq, 50 ft) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backhoes</td>
<td>72-84</td>
</tr>
<tr>
<td>Front Loaders</td>
<td>72-85</td>
</tr>
<tr>
<td>Pavers</td>
<td>85-89</td>
</tr>
<tr>
<td>Scrapers/Graders</td>
<td>79-84</td>
</tr>
<tr>
<td>Compactors (Rollers)</td>
<td>72-75</td>
</tr>
<tr>
<td>Concrete Mixers</td>
<td>75-88</td>
</tr>
<tr>
<td>Trucks</td>
<td>83-93</td>
</tr>
<tr>
<td>Tractors</td>
<td>78-87</td>
</tr>
<tr>
<td>Generators</td>
<td>72-82</td>
</tr>
<tr>
<td>Compressors</td>
<td>75-85</td>
</tr>
</tbody>
</table>

Noise: Based on limited available data samples.

Specifications for allowable noise levels will be formulated and implemented to minimize adverse impacts to the surrounding community. Since SDOH promulgates community noise control standards (HAR 11-46) that apply to construction noise, these specifications will be submitted to SDOH for their review. In cases where construction noise may exceed the SDOH standards, a permit will be required.

To minimize noise impacts from construction, the following mitigation measures will be followed:

- Design Considerations: during the early stages of construction plan development, placement of shielding to attenuate construction noise will be considered;
- Sequence of Operations: noisy operations will be scheduled concurrently; and
- Source Control: techniques that control noise emissions at the source, such as muffler systems that lower exhaust noise by at least 10 dBA, will be employed.

These mitigation measures will be incorporated into the construction plan, and noise level criteria will be adhered to during construction.
2.6.4 Solid and Hazardous Waste and Materials

Widening Punchbowl Street will require clearing land. Excavated asphalt, concrete, soil, vegetation, and other materials will be transported to approved disposal sites or recycled. A Grubbing, Grading, and Stockpiling Permit will be obtained from the City and County of Honolulu Department of Planning and Permitting.

As described in Section 2.1.1.2, it is unlikely that contaminated soil will be encountered during construction. Should contaminated soil be encountered, the material will require special handling procedures per SDOH requirements. Treatment of contaminated materials is dependent on the character of the contamination, the volume of contaminated material, the character of the native materials, and project scheduling.

2.6.5 Utilities

Substantial planning will be needed so that interruptions in utility service do not occur or are minimized. During the design and construction phases, coordination will occur with utility providers. If necessary, disruptions to utility service will be short-term and localized. Careful scheduling of these disruptions, and prior notification of properties that will be affected by temporary service cut-offs, will mitigate some of the utility relocation impacts.

2.6.6 Site Runoff

Accelerated erosion and sedimentation resulting from exposure, stockpiling and transportation of excavated material have the potential to impair water quality during construction. Sediment loading of storm water could occur when unstabilized, exposed soil at excavation or stockpile areas experience heavy rains. Because of the small size of the construction site and excavated areas, impacts from storm water runoff would be minimal. The project will not require a National Pollutant Discharge Elimination System permit because the construction area is less than five acres. However, the construction contract will require the preparation and employment of Best Management Practices (BMPs) to minimize potential impacts on water quality in accordance with the Department of Planning and Permitting Rules Relating to Soil Erosion Standards and Guidelines, effective date April 6, 1999.

The City and County of Honolulu will closely coordinate other construction projects in the vicinity to minimize potential stormwater runoff and turbidity impacts. These projects include the Queen’s Hospital Punchbowl Street improvements and State Department of Transportation’s H-1 resurfacing project.

2.7 REQUIRED PERMITS AND APPROVALS

This project will require the following permits. Other permits may be identified as design proceeds.
City and County of Honolulu
- Grubbing, Grading, and Stockpiling Permit (Department of Planning and Permitting)
- Special District Permit for a Minor Project in Punchbowl Special District (Department of Planning and Permitting)
- Conditional Use Permit for off-site parking (Department of Planning & Permitting)

State of Hawaii
- State Historic Preservation Law, Chapter 6E, HRS
- Noise Permit, if construction noise is expected to exceed allowable levels (State Department of Health)
- Work in State Right-of-Way
CHAPTER 3
CONSULTATION AND SCOPING

This chapter summarizes scoping and consultation activities conducted by the City and County of Honolulu, Department of Design and Construction (DDC) that occurred before the preparation of this Environmental Assessment (EA); and written comments that were received from initial consultation. Announcement of the Draft EA was published in the September 23, 1999 Environmental Notice.

3.1 CONSULTATION AND SCOPING ACTIVITIES

Several agencies were consulted and invited to comment on the project. The agencies that were consulted and invited to comment are shown on Table 3-1.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Invited to Comment</th>
<th>Provided Written Comments</th>
</tr>
</thead>
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<tr>
<td>Department of Business, Economic Development &amp; Tourism</td>
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<td>Office of Planning, DBED&amp;T</td>
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<tr>
<td>Department of Education</td>
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<td></td>
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<tr>
<td>Department of Health</td>
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<td></td>
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<tr>
<td>Department of Land and Natural Resources</td>
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<td>State Historic Preservation Division, DLNR</td>
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<td>Department of Transportation</td>
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<tr>
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<td>Councillor Jon Yoshimura</td>
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<td>Nuuanu/Punchbowl Neighborhood Board No. 12</td>
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<tr>
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</table>
3.2 AGENCY AND PUBLIC COMMENTS

Those who provided comments on the project were provided copies of the Draft EA. Thirty-five agencies and organizations were sent copies and 14 responded. Of the responding parties, four had no comments. Table 3-2 contains a summary of the parties sent copies of the Draft EA and of the respondents. The City and County Department of Design and Construction responded in writing to each of the comments. The EA was revised appropriately to reflect responses to comments received.
<table>
<thead>
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<td>Representative Ken Hiraki</td>
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<td>Councilmember Mufi Hannemann</td>
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<td><strong>Other</strong></td>
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<tr>
<td>Mrs. Patricia S. Martin</td>
<td>✓</td>
<td></td>
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<td>Mr. &amp; Mrs. Ming K. Wong</td>
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<td>Mr. &amp; Mrs. Edwin N. Matsuzaka</td>
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<tr>
<td>Mrs. Yvonne Hussey</td>
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<tr>
<td>Mr. Myles Tsukamoto</td>
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<td>GTE Hawaiian Tel</td>
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<td>Oceanic Cable</td>
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</tbody>
</table>
September 30, 1999

Mr. Fujiki,

Subject: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

We have reviewed the referenced documents to provide an additional northbound lane on Punchbowl Street from Vineyard Boulevard to the H-1 Freeway, a distance of about 700 feet. Currently there are two lanes going south and one lane going north.

After the project is constructed, there will be two northbound lanes on Punchbowl. This action will alleviate traffic congestion on Punchbowl Street in the H-1 Freeway. We assume that the additional right-of-way for the northbound lane can be acquired.

We have no further comments at this time. If you have any questions, please contact Leonard Higa of our staff at 387-3888.

Sincerely,

David W. Blake
Director
Office of Planning

cc: Karen Hayashida, DOT

MEMORANDUM
TO: RENAISSANCE, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: RENAISSANCE, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL SERVICES

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) PUNCHBOWL STREET IMPROVEMENTS VINEYARD BOULEvard TO H-1 FREETWAY UNDERPASS

We have reviewed the subject DEA and have no comments to offer at this time. Should you have any questions, please contact Alex Ho at extension 4150.
Mr. Randall Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujiki,

Subject: Draft EA for Punchbowl Street Improvements

The Department of Education has no comment on the subject draft environmental assessment.

Thank you for the opportunity to respond.

Very truly yours,

[Signature]

Fax: (808) 488-6052
Superintendent of Education

cc: A. Sega, ODS

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

TO: RANDALL K. FUJIKI, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: PUNCHBOWL STREET IMPROVEMENTS


WE ARE PREPARED TO DEFEND THE PROPOSED DEVELOPMENT IN QUESTION AND PROVIDE ADDITIONAL UNDERPASS INFORMATION.

WE ARE AVAILABLE TO PROVIDE ADDITIONAL INFORMATION OR TO DISCUSS THE MATTERS AT HAND.

[Signature]

ATTILIO K. LEONARDI
Fire Chief

AKIACjf
October 20, 1999

Mr. Randall Fujiki, Director  
Department of Design & Construction  
City & County of Honolulu  
650 South King Street, 2nd Floor  
Honolulu, Hawaii 96813

LOG NO: 24550  
DOE NO: 9910CO13  
Archaeology

Dear Mr. Fujiki:

SUBJECT: Punchbowl Street Improvements  
Vineyard Boulevard to H-1 Freeway Underpass  
Draft Environmental Assessment

Thank you for the opportunity to review the Draft Environmental Assessment for Punchbowl Street Improvements: Vineyard Boulevard to H-1 Freeway Underpass. We concur with the recommendations regarding mitigation measures for adverse effect the project will have on historic sites. Thank you for the opportunity to comment, should you or your staff have any questions please call Tonia Hoy or Carol Ogata at 692-4015.

Aloha,

DON HUBBARD, Administrator  
State Historic Preservation Division

---

October 25, 1999

Mr. Randall K. Fujiki, Director  
Department of Design & Construction  
City and County of Honolulu  
650 South King Street, 2nd Floor  
Honolulu, Hawaii 96813

LOG NO: 24550  
DOE NO: 9910CO13  
Archaeology

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment (DEA)  
Punchbowl Street Improvements  
Vineyard Boulevard to H-1 Freeway Underpass  
Honolulu, Hawaii

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time.

Sincerely,

GARY GILL  
Deputy Director for  
Environmental Health

c: OEQC
October 27, 1999

Mr. Randall K. Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Punchbowl Street Improvements
          Vineyard Boulevard to H-1 Freeway Underpass
          Draft Environmental Assessment

Thank you for the opportunity to review and comment on the subject document. Our comments are as follows:

GTE Hawaiian Tel's existing facilities will be affected in the subject area. Our cable is strung to the pole line located along the north (Ewa) side of Punchbowl Street. There are also aerial drop lines crossing Punchbowl Street in the individual residential properties and apartment buildings. Service poles located on the east (Diamond Head) side of Punchbowl Street support these aerial crossings. As a result of this project, our overhead facilities will need to be relocated.

Should you have further questions, please call Mr. Grant Torigoe at 840-2970.

Sincerely,

Jay Furukawa
Section Manager - Metro
Access Design & Construction

cc: Iku
     J. Lee
     G. Torigoe

A part of GTE Corporation

November 4, 1999

Mr. Jay Furukawa
Section Manager - Metro
Access Design & Construction
GTE Hawaiian Telephone Company, Inc.
P.O. Box 2300
Honolulu, Hawaii 96840

Subject: Punchbowl Street Improvements
          Vineyard Boulevard to H-1 Freeway Underpass
          Draft Environmental Assessment

Dear Mr. Furukawa:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway Underpass.

During the final design, the project engineers will coordinate with GTE Hawaiian Tel (GTE) on the relocation of affected existing GTE facilities.

Should you have any questions, please contact Gregory Hsu at 327-6977.

Sincerely,

Randall K. Fujiki
Director
October 22, 1999

Mr. Rozell K. Fujii, Director
Department of Design and Construction
City and County of Honolulu
250 S. King Street, 3rd Floor
Honolulu, HI 96813

Re: Draft Environmental Assessment for Punchbowl Street Improvements:
Vineyard Boulevard to H-1 Freeway Underpass

Dear Mr. Fujii:

At the October 7, 1999 meeting, the Downtown Neighborhood Board #13 rejected the
Draft Environmental Assessment (EA) as being an inaccurate assessment of projects,
and/or determination beneficial to the residents of the community.

There was also concern raised that:

1. the EA does not address the impacts of the upcoming H-1 re-tunneling project
   on the Punchbowl Street Improvements and its anticipated traffic and

2. there are no plans to widen the tunnel and on-ramp to the H-1, in essence
   moving the traffic jam, not alleviating it.

Thank you for the opportunity to comment.

Sincerely,

Lynda Matsumoto, Chair

Ma. Lynne Matsumoto, Chair
Downtown Neighborhood Board No. 13
city Neighborhood Commission
City Hall, Room 400
Honolulu, Hawaii 96813

SUBJECT: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

Dear Ms. Matsumoto:

Thank you for your comments on the Draft Environmental Assessment (DEA) for
the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway
Underpass.

Please note the following responses to your comment:

Quality of Life / Environment. The assessment of project impacts is documented
in accordance with the 13 significance criteria specified in HARP Section 1.1000-12.
These criteria are delineated in Chapter 4 of the Draft EA, wherein project impacts are
summarized in response to each of the 13 criteria which are focused on the protection
of quality of life and the environment. Protecting the quality of life and the environment
are important goals and objectives expressed through City and County and State plans
and policies. The proposed Punchbowl Street Improvement project’s impacts, adverse
and beneficial, as well as appropriate mitigation measures, are consistent with these
public plans, policies, goals and objectives.

H-1 Resurfacing Project. The City and the State Department of Transportation
(DOT) have coordinated the construction schedules and activities of the two projects.
Since the subject Punchbowl Street Improvement project is scheduled to begin
construction first, DOT will change order its construction contract as necessary to
accommodate the City’s improvements. A discussion of the coordinative effort and
October 21, 1999

RANDALL K. FUJIKI, DIRECTOR
Page 2
October 21, 1999

6. The traffic control plans, which will be used during
   construction, should be site specific for the type of work
   being performed. A program to inform motorists and residents
   of the pending construction work should also be prepared and
   should include advance notifications on the affected roadways
   and in the news media.

   Please contact Jeff Lee of our staff at extension 6274 if you have
   any questions.

   [Signature]

   Director of Planning and Permitting
November 5, 1999

MEMORANDUM

TO:      JAN H. SULLIVAN, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM:    RONALD R. FURST
DIRECTOR

SUBJECT: PUNCHBOWL STREET IMPROVEMENTS
VINEYARD BOULEVARD TO H-1 FREEWAY UNDERPASS
DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway Underpass. Please note the following responses to your comments:

Minor Punchbowl Special District Parcels. A permit application will be prepared for the project.

Utilities. Except for private service connections, all affected utilities will be relocated underground. A waiver has been requested to the Department of Planning and Permitting to leave private service connections overhead. The project engineers will coordinate with the appropriate utility companies for the relocation of these existing facilities.

Street Trees. Street trees will be provided with the project.

Replacement Parking on Separate Parcel. A conditional use permit application will be prepared for the proposed off-site parking.

Jurisdictional Limiting. The existing right-of-way between the City and State Department of Transportation will remain at its present location on the Makai side of the Leinani Street intersection. All design plans submitted for City and State approval will show this right-of-way line with the appropriate jurisdictional limits.

Traffic Control Plan. A site specific traffic control plan will be prepared as part of the construction contract. Also, the construction contract will contain the necessary provisions for adequate public information prior to the start of construction.

Should you have further questions, please contact Gregory Haas at 527-6877.
Randall K. Fujiwara, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, HI 96813

Dear Mr. Fujiwara,

Subject: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

The FHWA Hawaii Division has completed its review of the draft environmental assessment (EA) for the subject project. Since the project is not federally funded, the FHWA’s review is limited to potential impacts to the H-1 Freeway.

The following comments are listed below for your consideration:

1. The draft EA focuses analyses on Punchbowl and Beretania Streets but not on impacts at the proposed merge and the H-1 on-ramp. The draft EA should expand its discussion on the potential impacts to the operations of the H-1 on-ramp.

In general, this section of the H-1 Freeway is extremely congested during peak hours. The location of the H-1 on-ramp and the School Street exit are closely spaced, resulting in merging and weaving maneuvers. The draft EA should include discussions on the rate at which traffic volumes impacts merging and weaving capacity.

Without this analysis in the draft EA, it is difficult to determine if these modifications will impact safety and traffic operations to the H-1 Freeway and the H-1 on-ramp.

2. Geometric and sight distance should be evaluated at the merge. Backup of traffic on the on-ramp could create a sight distance problem at the underpass.

Based on our comments, the FHWA recommends the draft EA be revised to address FHWA’s concerns for the subject project. Since there is a potential traffic backup on the H-1 on-ramp, the FHWA also recommends that ramp metering technique be investigated to address the potential backup. If the City and County of Honolulu is not able to adequately address the FHWA’s safety...

Sincerely yours,

Pat P. Pahapil, P.E.
Transportation Engineer

cc: Mr. Lea Kau, DDC (fax 521-6666)
Mr. Priscilla Macario, SDOT (fax 547-2130)
Mr. Paul Hanzawa, SDOT, (fax 692-7690)
Mr. Darin Shinoda, Parsons Brinckerhoff (fax 328-2288)
November 8, 1999

Mr. Pat V. Phung
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, Hawaii 96813

SUBJECT: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

Dear Mr. Phung,

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway Underpass.

Please note the following responses to your comments:

Potential Impact to H-1 On-Ramp. The signal timing for the Vineyard Boulevard / Punchbowl Street intersection traffic signal will be adjusted to address the queuing concern for the H-1 on-ramp. In addition, should the State Department of Transportation decide at a later date to implement ramp metering at this location, we would coordinate access and construction with Department of Transportation to facilitate the future installations.

Geometrics and Sight Distance. The existing one lane configuration for the underpass provides a stopping sight distance of 200 feet, which accommodates a design speed of 30 MPH. The posted advisory speed prior to the entrance of the underpass is 25 MPH. The proposed merge will be designed to meet the existing one lane configuration prior to the underpass.

Mr. Pat V. Phung

U.S. Department of Transportation
November 8, 1999
Page 2 of 2

Should you have any questions, please contact Gregory Hee at 527-4977.
October 28, 1999

TO:    RANDALL K. FUJII, DIRECTOR
       DEPARTMENT OF DESIGN AND CONSTRUCTION
       CITY AND COUNTY OF HONOLULU

FROM:  LEE D. DONHOUE, CHIEF OF POLICE
       HONOLULU POLICE DEPARTMENT

SUBJECT: PUNCEHOG, STREET IMPROVEMENTS
         VINEYARD BOULEVARD TO H-1 FREEWAY UNDERPASS
         DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for the opportunity to review the subject document. We are concerned about the traffic flow in and around this well-traveled area during the construction phase. Since the proposed project will have a definite impact on police service, we are recommending the following:

1. Inform the public (i.e., radio and television) of the project before construction begins to allow motorists to plan their travel routes and adjust their schedules to compensate for any delays.

2. End construction work at 3 p.m. instead of 5 p.m. as a possible means of minimizing congestion.

If there are any questions, please call me at 526-3255 or Major Henry Lau of District 1 at 526-3386.

LEE D. DONHOUE
Chief of Police

By:  EUGENE M. UMEMURA
Assistant Chief
Support Services Bureau

November 4, 1999

MEMORANDUM

TO:  LEE D. DONHOUE, CHIEF OF POLICE
      HONOLULU POLICE DEPARTMENT

FROM:  RANDALL K. FUJII, DIRECTOR
        CITY AND COUNTY OF HONOLULU

SUBJECT: PUNCEHOG, STREET IMPROVEMENTS
         VINEYARD BOULEVARD TO H-1 FREEWAY UNDERPASS
         DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchehog Street Improvements from Vinyard Boulevard to the H-1 Freeway Underpass.

The construction contract will contain the necessary provisions for adequate public information prior to the start of construction. Further, appropriate operational measures, including adjusted construction scheduling will be considered in order to alleviate congestion.

If you have further questions, please contact Gregory Rea at 527-6977.
Mr. Randall K. Fujiki, Director
Department of Design and Construction
City & County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813

Subject: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

Dear Mr. Fujiki,

Thank you for the opportunity to review the above referenced draft.

At this time the Office of Hawaiian Affairs has no projects that would be impacted by this proposed construction. We would like to minimize the concerns brought up by Dan Hibbard of the State Historic Preservation Division regarding the three houses over 50 years that may be impacted by the project.

The Office of Hawaiian Affairs would also like to point out that this proposed construction will ease unnecessary delays and frustration to the community if the tunnel itself is not widened. Otherwise, all of this project would do is move the existing bottleneck up another 700 feet.

We ask that these issues be addressed in writing before any action is taken on this project.

If you have any questions please contact Ken R. Selves, Policy Analyst at 594-1617.

Sincerely,

Colin Kippin
Deputy Administrator
cc: Board of Trustees

E. Bethune Anderson
Division Director

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 2ND FLOOR
HONOLULU, HAWAII 96813

November 8, 1999

Mr. Colin Kippin
Deputy Administrator
Office of Hawaiian Affairs
711 Kepelani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

Dear Mr. Kippin:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway Underpass.

Please note the following has responses to your comments:

Historic Property Impact. We concur with your concern about the possible effect of the project on the three houses. A Historic Inventory Survey was conducted on the properties, and the findings, mitigation measures and continued coordination with State Historic Preservation Division (SHPD) have been documented in the Draft EA. A copy of the report prepared by Mason Architects can be found as Appendix E in the Draft EA. Please also note a letter from SHPD dated October 29, 1899 in the Final EA Appendices, in which the SHPD concons with proposed mitigation measures that were discussed in the Draft EA.

Traffic Impact. As stated in section 2.3.1.4 Potential Impact, on page 2-25 of the DEA, the improved traffic throughput gained by the proposed widening would allow approximately 50 percent more vehicles per signal phase to process through the Vineyard Boulevard / Punchbowl Street intersection. Based on conservative estimates and documented reports of similar merge conditions on Honolulu roadways, the design
Randall Fujiki, Director
Department of Design & Construction
650 South King Street
Honolulu, Hawaii 96813

Attention: Gregory Hea

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment (EA) for Punchbowl Street Widening

We have the following comments to offer:

1. **Two-sided pages**: In order to reduce bulk and conserve paper, we recommend printing on both sides of the pages in the final document.

2. **Regeneration**: The draft EA notes planned improvements all the way to the mid- to end of Punchbowl Street at Ala Moana Boulevard. The Environmental Impact Statement law prohibits segmentation of larger projects and requires that full disclosure of impacts be made on projects in their entirety. Provide a full analysis and discussion of this and all related portions of this project.

3. **Cumulative Impacts**: Consideration of time limitations to Miller Street and to Queen's Medical Center are needed projects. The Environmental Impact Statement law requires that full disclosure of cumulative impacts be made on geographically-related projects. Provide a full analysis and discussion of these and any other projects in the area. The analysis should include cumulative impacts regarding storm runoff, traffic and safety impacts for both the construction (short-term) and operational (long-term) phases. Particularly essential is a thorough discussion of impacts to traffic during construction periods.

4. **Project design**: It appears that the planned improvements (increasing road width and redesigning turn lanes) will simply move the traffic bottleneck to the entrance of the H-1 on-ramp. How will this project serve to increase traffic flow once the additional traffic reaches the tunnel?

If you have any questions, please call Nancy Hainich at 808-4185.

Sincerely,

[Signature]

GENEVIEVE SALMONSON
Director

c: Darin Chinen
Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Attention: Ms. Nancy Heilicher

SUBJECT: Punchbowl Street Improvements
Vineyard Boulevard to H-1 Freeway Underpass
Draft Environmental Assessment

Dear Ms. Salmonson:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the Punchbowl Street Improvements from Vineyard Boulevard to the H-1 Freeway Underpass.

Please note the following responses to your comments:

Two-Sided Pages. Printing of the Final EA will be done on both sides of the pages.

Segmentation. We are aware that the Environmental Impact Statement law prohibits segmentation of larger projects. However, the Punchbowl Street Vineyard Boulevard to H-1 Freeway Underpass project has independent functional utility in that it serves a purpose and need that is different from the other projects either completed or planned for major portions of Punchbowl Street. The widening between Vineyard Boulevard and Beretania Street is intended to facilitate access to the H-1 on-ramp by relieving traffic congestion on Punchbowl Street at Vineyard Boulevard, while the two-way improvements between Beretania Street and Ala Moana Boulevard are intended to address other issues, such as relieving traffic congestion on Beretania Street, Airport Street, and South Street.

Further, the subject project (Vineyard to Lunalilo) will involve right-of-way take, while the two-way connection will work within the existing curbs lines without affecting right-of-way. Thus, the subject project requires a Chapter 343, HRS environmental review while the other projects are exempted.

This discussion will be detailed in the Final EA.

Cumulative Impacts. The Final EA will include discussion, as appropriate, regarding potential cumulative impacts on geographically related projects.

Project Design. As stated in section 2.3.1.4 Potential Impact, on page 2-28 of the DEA, the improved traffic throughput gained by the proposed widening would allow approximately 50 percent more vehicles per signal phase to process through the Vineyard Boulevard/Punchbowl Street intersection. Based on conservative estimates and documented reports of similar merge conditions on Honolulu roadways, the design as presented will improve traffic flow to the H-1 on-ramp.

Should you have any questions, please contact Gregory Hsieh at 527-4977.

Sincerely,

[Signature]

Nani Kanekoa, PE
Director
Mr. Randall K. Fujii, Director  
Department of Design and Construction  
City and County of Honolulu  
650 South King Street, 2nd Floor  
Honolulu, HI 96813

Dear Mr. Fujii,

Subject: Punchbowl Street Improvements

Thank you for the opportunity to comment on your September 1999 Draft EA for the Punchbowl Street Improvements. We have reviewed the subject document and would like to point out areas that are going to be included in our comments. We believe that the project should be reviewed at the same time that the draft EA is reviewed. However, we believe that the project should be reviewed at the same time as the draft EA is reviewed.

The project is part of a larger plan to improve traffic flow in the area. We suggest that you consider the following:

1. The project should include a traffic signal at the intersection of Punchbowl Street and South King Street.
2. The project should include a pedestrian crossing at the intersection.
3. The project should include a bike lane on both sides of the street.

We look forward to your comments on these issues.

Sincerely,

[Signature]  

cc: OEDC  
F. Huskamp, ELD  
R. Wong, M. Doo

November 4, 1999

Mr. Scott V. S. Seu, Manager  
Environmental Department  
Hawaiian Electric Company, Inc.  
P.O. Box 2792  
Honolulu, Hawaii 96810

Subject: Punchbowl Street Improvements  
Vineyard Boulevard to H-1 Freeway Underpass  
Draft Environmental Assessment

Dear Mr. Seu:

Thank you for your comments on the draft Environmental Assessment (DEA) for the Punchbowl Street improvements from Vineyard Boulevard to the H-1 Freeway Underpass.

The project engineers will coordinate with the Hawaiian Electric Company (HECO) on the underground relocations for the secondary power lines and the private property connections. As requested, the project engineers will also coordinate with HECO on the relocation of any affected existing facilities from the HECO to the H-1 Freeway.

Should you have any questions, please contact Gregory Hsu at 527-6977.

Sincerely,

[Signature]  
for Randall K. Fujii  
Director
CHAPTER 4
ANTICIPATED FINDING OF NO SIGNIFICANT IMPACT

In accordance with the Hawaii Revised Statutes, Chapter 343 and the Hawaii Administrative Rules (HAR), Sections 11-200-9 and 11-200-11.2, the City and County of Honolulu, Department of Design and Construction, as the accepting authority, has reviewed the FEA and determined that a Finding of No Significant Impact (FONSI) for the proposed action is appropriate. A FONSI determination is based on an assessment of project impacts, as described in Chapter 2, in relation to the Significance Criteria specified in HAR 11-200-12(b). A final assessment of the project’s extent of impacts has been prepared following receipt of comments. The following is an analysis of the proposed project in terms of the significance criteria specified in HAR Section 11-200-12.

Involve an irrevocable commitment to loss or destruction of any natural or cultural resource - The proposed project will not cause the loss or destruction of any natural or cultural resource. Three historic structures will be demolished as a result of this project. Two are residential structures and one is a garage. Mitigation measures will include photo documentation of those prior to demolition. The SHPD has, and will continue to be consulted with on these actions. Coordination between the DDC and SHPD is ongoing in accordance with Chapter 6E, HRS. SHPD has concurred with DDC's proposed recommendations regarding mitigation measures (see letter from Don Hibbard to Randall Fujiki dated October 29, 1999).

Curtails the beneficial uses of the environment - The proposed project will not curtail the beneficial use of the environment. The proposed project will serve motorists and pedestrians, and represents a beneficial use of roadway right-of-way. The proposed project is consistent with official State and County land use plans for the affected area.

Conflicts with the State’s long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders - The proposed action is consistent with the environmental goals and objectives of the State of Hawaii.

Substantially affects the economic or social welfare of the community or State - The proposed action will affect residents on the Diamond Head side of Punchbowl Street. However, they will be reimbursed for property losses at fair market value. Driveways and specified structures will be reconstructed by the City and County. The general public will benefit from improved transportation service. The regional benefits outweigh the localized impact.
Substantially affects public health- The proposed action will not adversely affect public health. Increased noise levels due to construction activities will be mitigated through strict adherence to City and State rules, regulations and ordinances.

Involves substantial secondary impacts- The proposed project will not cause secondary impacts in light of the existing land uses and zoning designations along the roadway.

Involves substantial degradation of environmental quality- The project will result in some degradation of environmental quality by adding more impervious surface to the area. However, benefits including undergrounding utilities, better air quality, better traffic flow, and new landscaping will result in environmental betterment.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions- The proposed action will not cause commitments for other actions. Other roadway projects in the area will be closely coordinated by the City and County to minimize the potential for cumulative impacts.

Substantially affects a rare, threatened or endangered species, or its habitat- There are no rare, threatened or endangered plant or animal species in the area directly affected by the proposed action.

Detrimentally affects air or water quality or ambient noise levels- Since there are no water resources near the project site, there will be no impacts on water quality. Although the project overlies the Southern Oahu Basal Aquifer (SOBA), the aquifer will not be affected. Air quality is expected to improve with the proposed project because there will be less queuing of vehicles and lower CO emissions. Noise levels are expected to increase by less than 3.3 dBA at all but one site. At this site, an increase of 5 dBA is expected. Traffic noise mitigation is being studied by the DDC. Increased noise levels during construction activities will be mitigated through strict adherence to State and City rules and regulations.

Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters- The section of Punchbowl Street which will be affected by the proposed action is not located in an environmentally sensitive area. It is not located in a 50-, 100- or 500- year floodplain, tsunami zone, or near any water resource. While the Southern Oahu Basal Aquifer (SOBA) underlies the project site, the aquifer will not be affected by the proposed action.

Substantially affects scenic vistas and viewplanes identified in County or State plans or studies- The proposed action will not affect scenic vistas or viewplanes. The special viewing site associated with the Punchbowl Special District will not be affected.
Requires substantial energy consumption. The proposed action will not require substantial energy consumption. The proposed project will reduce regional energy consumption in comparison to the No Build Alternative because of improved traffic flow on Punchbowl Street. Traffic congestion is a major source of energy waste.
CHAPTER 5
REFERENCES

City and County of Honolulu, General Plan, 1992.

City and County of Honolulu, Primary Urban Center Development Plan, 1990.


Mason Architects, Inc., Historical Architectural Consultants, Punchbowl Street Improvements Vineyard Boulevard to H-1 Freeway Historic Inventory Survey of 4 Houses, August 12, 1999.


Oahu Metropolitan Planning Organization, Oahu Regional Transportation Plan (ORTP), November 1995.

Appendix A

Levels of Service Definitions
Appendix A Levels of Service Definitions

The Highway Capacity Manual defines six Levels of Service (LOS), labeled A through F, from best to worst conditions. Levels of Service for signalized and unsignalized intersections are defined in terms of average user delays. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

For unsignalized intersections, the Highway Capacity Manual evaluates gaps in the major street traffic flow and calculates available gaps for left-turns across oncoming traffic and for the left and right-turns onto the major roadway from the minor street. The definitions of each level of service are as follows:

- **LEVEL-OF-SERVICE A**: Little or no delay.
- **LEVEL-OF-SERVICE B**: Short traffic delays.
- **LEVEL-OF-SERVICE C**: Average traffic delays.
- **LEVEL-OF-SERVICE D**: Long traffic delays.
- **LEVEL-OF-SERVICE E**: Very long traffic delays.
- **LEVEL-OF-SERVICE F**: Demand volume exceeds capacity, resulting in extreme delays with queuing that may cause severe congestion and affect other movements at the intersection.
1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this limited Phase I Environmental Site Assessment (ESA) is to provide a professional opinion as to the potential for the existence of regulated Petroleum underground storage tanks (USTs) on the property located at 1489 Punchbowl Street, Honolulu, HI 96826; tax map key (TMK) 2-1-22-001, and in the immediate vicinity.

This assessment was conducted in accordance with the elements addressing USTs of ASTM Standard E 1527-97, “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (ASTM, 1997). The scope of work consisted of review of the following sources:

1) Records Review
   - Federal Databases
   - State Databases
   - Local Records
   - Site History

2) Site Reconnaissance and Interviews
   - Site Reconnaissance
   - Interviews

3) Conclusions

1.2 Limitations and Exclusions

Dawson Environmental Services, Inc. (DES) reviewed record information from standard sources that were readily ascertainable. Occasionally, these records are incomplete or inaccurate. However, DES has made every reasonable effort to ensure the accuracy of the information presented. The purpose of this review was to identify, to the extent of feasible, possible UST locations that may affect the right-of-way expansion planned along Punchbowl Street.

2.0 REGULATORY AGENCY RECORDS REVIEW

The record review included a review of publicly available federal, state and local records. Federal and state environmental databases were searched to identify operations on the subject property and vicinity properties regulated by the Environmental Protection Agency (EPA) and/or the Hawaii State Department of Health (DOH).
2.1 Federal and State Records

The federal and state environmental databases search was conducted by Environmental Data Resources, Inc. (EDR) which issues a report summarizing their findings (see Appendix B). The EDR database search included the following holdings: Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites; Corrective Action Report (CORRACIS); Factify Index System (FINDS); Resource Conservation Recovery Information System (RCRIS) sites; Toxic Release Inventory System (TRI); and Leaking Underground Storage Tank (LUST) sites. For the purposes of this report, only the UST and LUST lists were pertinent.

The EDR database did identify the subject site on the UST and LUST lists. The review identified the current Jiffy Lube site as Rod's Auto Service DOH ID # S-500862. It is listed as having three USTs permanently out of service, associated with site clean-up concerning this site on March 12, 1990. According to the DOH, there are no concerns associated with the site. Based on this information, it appears that this facility does not pose a threat of underground contamination from USTs associated with right of way expansion of Punchbowl Street.

2.2 Local Records

Historic Sanborn Fire Insurance Company Maps and aerial photographs were searched for and reviewed when possible to research historic uses of the vicinity. Hawaii Real Property Assessment division records were reviewed to compile an ownership and lease history. Hawaii Tax Appeal Field Books were reviewed to determine the date of construction or renovation for site structures.

2.2.1 Historic Maps

A review was conducted of Sanborn Fire Insurance Company maps for the site; 1924 through 1927 and 1927 through 1931 maps were found. The 1914 through 1927 map shows the area bounded by Punchbowl Street, Liliania Street and the Iken Kinau Lane, now Patsy St., and immediate vicinity as a residential area. Tenements and schoolrooms exist where the Royal School existed and Punchbowl Street as it does today. Club tennis courts and several storage facilities are shown along the property line.

1409 Punchbowl Street
Hawaii Jiffy Lube
Limited Phase I Environmental Site Assessment

2.2.2 Aerial Photographs

Aerial photographs of the area for 1963, 1969, 1983 and 1997 were reviewed to determine if any activity of concern was recorded. The photographs chronicle the area's change from primarily single family to multi-family residential. The Jiffy Lube site appears as a service station for the first time on the 1963 photograph. It remains relatively unchanged throughout the years to the present day.

2.2.3 Title and Lease Records

Based on review of Sanborn Fire Insurance Maps and the available aerial photographs, only the Jiffy Lube site appeared to present a potential cause for concern. Therefore, only the targeted site chain-of-title was reviewed to identify previous owners and lessees. A search of City and County of Honolulu Department of Finance Tax Maps identified the following relevant activities on-site:

- In 1956, Union Oil Company of California acquired parcel 1 from George F. Centolo and wife et al. That same year, Union Oil conveyed the property to North American Life Insurance Company of Chicago who in turn leased the property back to Union Oil for 20 years. The station was built the same year.
- In 1973, Union Oil's lease was canceled and the property was conveyed from North American Life Insurance Company to Theodor Glitzel and wife Maria.
- In 1985, Wilium, Ltd. acquired the location after having leased it from Theodor Glitzel et al since 1984.
- In 1992, Hawaiian Jiffy, Inc. entered into a lease with Wilium, Ltd. which remains in effect today.

3.0 SITE RECONNAISSANCE AND INTERVIEW INFORMATION

3.1 Site Reconciliation

Mr. Soren Knudsen, P.E., of Dawson Environmental Services, Inc. conducted the site reconnaissance on March 12, 1999. Mr. Daryl Matsuno, operations manager of Jiffy Lube, accompanied him. The site reconnaissance included an inspection of the service bays and parking area. The visit confirmed DOH records that the USTs formerly present were no longer on site. According to the operations manager no other USTs have been installed since the removal of the original ones in 1993.
4.0 CONCLUSIONS

Dawson Environmental Services, Inc. performed a limited Phase I Environmental Site Assessment of the property located at 1489 Punchbowl Street, Honolulu, Hawaii; TMK 2-1-22-001, and its immediate vicinity, to uncover potential USTs in the area. This assessment was performed within the scope and limitations of ASTM Standard Practice E 1527-97 addressing USTs. Based on the information reviewed, this assessment did not uncover any locations with USTs in the immediate vicinity.

5.0 SOURCES OF INFORMATION

Procedures

TMK Information
- Hawaii Real Property Assessment Division.

Federal and State Records
- Environmental Data Resources, Inc., Southport, CT.

Local and Historic Records
- Hawaii Real Property Assessment Division Tax Maps Branch History Sheets and Field Appraisal Books.
- R.M. Towill Corporation, Aerial Photographs.

Department of Health
- Solid and Hazardous Waste Branch
- Hazard Evaluation and Emergency Response Branch

APPENDIX A

TMK Map
The EDR-RADIUS Map with GeoCheck®

1489 Punchbowl
Honolulu, HI 96813
Inquiry Number: 0346096.1

March 09, 1999

The Source
For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service
Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrmatl.com

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Thank you for your business.
Please call EDR at 1-800-352-0050
with any questions or comments.

Disclaimer and Other Information

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-05. Search distances are per ASTM standard or custom distances requested by the user.

The address of the subject property for which the search was intended is:

1408 PUNCHDRUML
HONOLULU, HI 96813

No mapped sites were found in EDR's search of availability ("reasonably ascertainable") government records either on the subject property or within the ASTM E 1527-05 search radius around the subject property for the following databases:

NPL: National Priority List
Deeded NPL: Deeded NPL
RCRS: RCRA Administrative Action Tracking System
CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS-AFTRAP: Comprehensive Environmental Response, Compensation, and Liability Information System
SFTR: Superfund List in the State of Hawaii
RATES: RCRA Administrative Action Tracking System
NHRIS: National Hazardous Materials Information Reporting System
FED: Federal Database System
EHS: Environmental Health System
TRESP: Toxic Substance Release Priority System
TRESC: Toxic Substance Release Comprehensive
NF: NPL List
TSCA: Toxic Substance Control Act
Mo: Material Licensing Tracking System
RO: RO

Comprehensive Environmental Response, Compensation, and Liability Information System

Unmapped (unidentifiable) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

The subject property was not identified in the following government records. For more information on this property see page 5 of the attached EDRRadius Map report.

Site Database(s) EPA ID
RO: 1408 PUNCHDRUML
TSCA LUST

EXECUTIVE SUMMARY

Surrounding Properties:

Elevations have been determined from the USGS 1-degree Digital Elevation Model and should be evaluated on a relative, not an absolute basis. Relative elevation information between sites of close proximity should be field verified. EDR's delineation of a site with an elevation equal to or greater than the subject property includes a tolerance of ±10 feet. Sites with an elevation equal to or higher than the subject property are differentiated below (only sites with an elevation lower than the subject property by more than ±10 feet). Project numbers and map identification numbers refer to the EDR Report Map report where detailed site and individual site data can be reviewed.

CONTACTS: CONTACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which currently-defined corrective action site events have occurred for every handler that has had corrective action activity.

A review of the CONTACTS list, as provided by EDR, and dated 12/01/1998 has revealed that there is 1 CONTACTS site within approximately 1 mile of the subject property.

Lower Elevation

Address
HAYASHI ELECTRIC CO HONOLULU
170-AL AHANA BLVD

Survey Site:

HNL: -1 SW 25

HNL: -1 SW 1

DX: 5 DX: -1 SW 25

DX: 5 DX: 1

DX: 1 DX: 5

DX: 5 DX: 1
EXECUTIVE SUMMARY

USTs: The Underground Storage Tank database contains reported USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health and Environment. A review of the UST list, as provided by EDR, and dated 07/01/1993 has revealed that there are 6 UST sites within approximately 0.25 miles of the subject property.

Equal Elevation

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</table>

RCRS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRA SOL list, as provided by EDR, and dated 07/01/1993 has revealed that there is 1 RCRA-SOL site within approximately 0.25 miles of the subject property.

Lower Elevation

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</table>

RCRS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRA SOL list, as provided by EDR, and dated 07/01/1993 has revealed that there are 2 RCRA-SOL sites within approximately 0.25 miles of the subject property.

Lower Elevation

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(Coal Gas) Former Manufactured gas (Coal Gas) Sites:
The evidence and location of Coal Gas sites reported are provided by EDR and the Coal Gas Association. The source of this database is the U.S. EPA.

A review of the Coal Gas list, as provided by EDR, and dated 07/01/1993 has revealed that there are 2 Coal Gas sites within approximately 0.25 miles of the subject property.

Lower Elevation

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### MAP FINDINGS SUMMARY SHOWING
ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

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**Notes:**
- TP = Target Property
- NR = Not requested at this Search Distance
- * Some may be listed in more than one database
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<th>CDR ID Number</th>
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**QUEENS MEDICAL CENTER (Continued)**

Used Oil Reader: No  

Vapor Status: No, unregulated

PMES:

Other Permit: None  

- Facility is monitored to reduce emissions to the Clean Air Act under NPMS

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**TEXACO STATION**

2100 NORTHEAST BLVD  
HONOLULU, HI 96813

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<th>UST Code</th>
<th>Facility Status</th>
<th>Facility Status Code</th>
<th>Currency In Use</th>
<th>Tank Capacity</th>
<th>Date Closed</th>
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<tbody>
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**DEPT OF HEALTH**

10019 PUNCHES FL ST  
HONOLULU, HI 96813

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**DEPT OF HEALTH (Continued)**

PMES:

Other Permit: None  

- Facility is monitored to reduce emissions to the Clean Air Act under NPMS

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**TEXACO FINEST & MARKETING INC.**

ENVIRONMENTAL SERVICES / 1000 SW FIRST AVE, SUITE 1  
PORTLAND, OR 97201

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<th>UST</th>
<th>Facility Name</th>
<th>UST Code</th>
<th>Facility Status</th>
<th>Facility Status Code</th>
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**TEXACO FINEST & MARKETING INC.**

ENVIRONMENTAL SERVICES / 1000 SW FIRST AVE, SUITE 1  
PORTLAND, OR 97201

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**SUNSET STATE DEPT OF EDUCATION**

1000 BACH ST  
HONOLULU, HI 96813

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**STATE CAPITAL - TRM 5-3-09**

105 S WAIANAEE ST  
HONOLULU, HI 96813

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**STATE DEPT OF TRANSPORTATION**

105 S WAIANAEE ST  
HONOLULU, HI 96813

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**STATE DEPT OF TRANSPORTATION (Continued)**

PMES:

Other Permit: None  

- Facility is monitored to reduce emissions to the Clean Air Act under NPMS

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**HONOLULU CAC DEPT OF TRANSPORTATION SERVICES**

**1110 KAPOLANI BLVD, SUITE 1200**

**Honolulu, HI 96813**

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**HONOLULU CAC DEPT OF TRANSPORTATION SERVICES**

**1110 KAPOLANI BLVD, SUITE 1200**

**Honolulu, HI 96813**

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**HONOLULU CAC DEPT OF TRANSPORTATION SERVICES**

**1110 KAPOLANI BLVD, SUITE 1200**

**Honolulu, HI 96813**

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**HONOLULU CAC DEPT OF TRANSPORTATION SERVICES**

**1110 KAPOLANI BLVD, SUITE 1200**

**Honolulu, HI 96813**
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**HAWAII NEWSPAPER AGENCY INC**

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<td>UST or LUST</td>
<td>UST or LUST ID</td>
<td>Facility Name</td>
<td>UST or LUST ID</td>
<td>Facility Status</td>
<td>Class</td>
<td>UST or LUST ID</td>
<td>Facility ID</td>
<td>Facility Name</td>
<td>UST or LUST ID</td>
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<td>UST</td>
<td>UST-033788</td>
<td>TAMCO FOOD MART</td>
<td>9-161512</td>
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<td>30</td>
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<td>LUST</td>
<td>LUST</td>
<td>MALACAN PACIFIC ORP</td>
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<td>TAMCO FOOD MART</td>
<td>9-161512</td>
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<td>32</td>
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<td>UST</td>
<td>UST-033788</td>
<td>TAMCO FOOD MART</td>
<td>9-161512</td>
<td></td>
<td>LUST</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
- UST: Underground Storage Tank
- LUST: Aboveground Storage Tank
- Class: A for Petroleum, B for Other
- Facility Status: Final Approval
- UST ID: Unique Identification Number for USTs
- LUST ID: Unique Identification Number for LUSTs
- Facility Name: Name of the facility
- Latitude and Longitude: Geographic coordinates of the facility
- Class: Type of storage (Petroleum or Other)
- Facility Status: Approval status (Final Approval)
- UST ID: Unique Identification Number for USTs
- LUST ID: Unique Identification Number for LUSTs
### DETAILED ORPHAN LISTING

**OAKI LUMBER & HARDWARE CO., LTD.**
NO 19 WATZ MSY
HARRISTOWN, IL 62841

<table>
<thead>
<tr>
<th>CER ID Number</th>
<th>EPA ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>80EB004480</td>
<td>UST</td>
</tr>
<tr>
<td>80EB004481</td>
<td>LUST</td>
</tr>
</tbody>
</table>

**Well ID:** 900249
**Facility ID:** 900249
**Substance:** Other
**Owner:** OAKI LUMBER & HARDWARE CO., LTD.
**Address:** HARRISTOWN, IL 62841

**LUST:**
**Facility ID:** 900249
**Substance:** Other
**Owner:** OAKI LUMBER & HARDWARE CO., LTD.
**Address:** HARRISTOWN, IL 62841

---

### GEOCHECK VERSION 2.1 ADDENDUM
**FEDERAL DATABASE WELL INFORMATION**

**Well Close to Target Property (Northern Quarter):**

**BASIC WELL DATA**

- **Site ID:** 21191110312981
- **Site Type:** Single well, other than collector or monitor well
- **Construction:**
  - **Year Constructed:** 1994
  - **Well Type:** Other
- **Status:**
  - **Date:** 26-Jan-94
  - **Depth to Water Table:** Not Reported
- **Location:**
  - **State:** Illinois
  - **Referred Date:** 12/23/1995
  - **Geologic:** Continuously Exposed Groundwater
- **Wellhead:**
  - **Type:** Other
  - **Use:** No
- **Land Use:**
  - **Type:** Other
  - **Use:** No

**WATER LEVEL VARIABLE:**

- **Date of Report:** Not Reported
- **Data Quality:** 
  - **Type:** Other
  - **Use:** No

---

**LITHOLOGIC DATA**

- **Depth to Water Table:** Not Reported
- **Location:**
  - **State:** Illinois
  - **Referred Date:** 12/23/1995
  - **Geologic:** Continuously Exposed Groundwater
- **Wellhead:**
  - **Type:** Other
  - **Use:** No
- **Land Use:**
  - **Type:** Other
  - **Use:** No

---

**ALLSTATE INDUSTRIAL AND MARSH**
335 N WATZ MSY
HARRISTOWN, IL 62841

**RIOS:**
- **Owner:** BLAINE MAU
- **Contact:** DAVID LOUDHE
- **Address:** HARRISTOWN, IL 62841

**Record Date:** 12/23/1995
**Classifications:** Continuously Exposed Groundwater
**Use Of Range:** No
**Location:**
- **State:** Illinois
- **Referred Date:** 12/23/1995
- **Geologic:** Continuously Exposed Groundwater
- **Wellhead:**
  - **Type:** Other
  - **Use:** No
- **Land Use:**
  - **Type:** Other
  - **Use:** No
GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

WELL: 2100669745821

BASIC WELL DATA
- Site ID: 2100669745821
- Site Type: Single well, other than collector or raingage type
- Year Constructed: 1962
- Well Depth: 315.00 ft
- Zone: Not Reported
- Lithology Setting: Not Reported
- Prin. Use of Well: Not Reported
- Prin. Use of Water: Not Reported
- County: Hoke
- State: NC
- Distance from TP: 0.0 - 1 Mile

WATER LEVEL VARIABILITY: Not Reported
GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PAIS: Pesticide Data Quality System
Source: EPA
Telephone: 202-566-0200
Description: PAIS is a database that tracks the quality and accuracy of pesticide data submitted to EPA. PAIS includes data from various sources, including state and federal agencies. The database allows users to search for pesticide data by various criteria, such as pesticide name, chemical structure, and testing methodology.

RASTIS: Raster Image Database System
Source: EPA
Telephone: 202-566-0200
Description: RASTIS is a database that contains digital images of various federal and state documents. The database includes images of bills, regulations, and other official documents. Users can search for images by keyword or browse by document type.

RRIS: Records On Decision
Source: NTE
Description: RRIS is a database that contains records of federal decisions made by the National Transportation Safety Board (NTSB). The database includes decisions made by the NTSB in response to transportation accidents, such as those involving airplanes and trains.

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 1-800-944-4044
Description: The Toxic Substances Control Act (TSCA) database contains information on chemicals that are used in the United States and are regulated under TSCA. The database includes information on the chemical's uses, hazards, and safety data sheets. Users can search for information on specific chemicals or browse by chemical name orCAS number.

STATE OF SOUTH CAROLINA RECORDS:

LUST: LUST Database
Source: Department of Health
Telephone: 803-588-1111
Description: LUST is a database that contains information on underground storage tanks (USTs) in South Carolina. The database includes information on the location, size, and type of UST, as well as the owner and operator of the facility. The database is updated regularly to track changes in the state's UST program.

IRP: IRP System
Source: Department of Transportation
Description: IRP is a system that tracks the movement of large commercial vehicles across state lines. The system includes information on the vehicles, drivers, and routes they take. IRP is used to ensure that commercial vehicles comply with state and federal regulations.

Historical and Other Databases:

Depending on the geographic area covered by this report, the data provided to these specialty databases may or may not be available for the report. For example, the availability of websites information data in a specific report does not mean that all websites in the area covered by the report may be available. Moreover, the absence of any specific websites information does not necessarily mean that websites do not exist in the area covered by the report.

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOGOVNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DELISTED MNL: NFL Division

Source: EPA
Telephone: 202-646-8796

The Delineated Oil and Hazardous Substances Pollution Contingency Plan (NPL) identifies the correct state entity to be involved when the NPL source involves oil spills. A state source involving oil spills should be referred to the Correct aviation entity as appropriate.

Data of Governmental Source: 10/11/96
Data Made Available at: 02/01/99
Data Available: Part 11
Date Last EDI Contact: 10/28/99

RIFAP: No Further Remedial Action Planned

Source: EPA
Telephone: 202-475-0223

As of 10/11/96, CERCLA sites designated "No Further Remedial Action Planned" (RIFAP) sites have been removed from CERCLIS. EDI/RIFAP sites may be sites where, following an investigation, no significant, no threat, or no further action was recommended. EDI/RIFAP sites are not necessary to be required Federal Emergency Action Plan (FEP) sites. EPA has located approximately 25,000 EDI/RIFAP sites to all the associated activities as the determination of these programs and activities. EPA does not necessarily report the information to the site. This policy changes the form of the EPA's Emergency Preparedness Program to help reduce, prevent, and manage site-specific programs and activities. EPA does not currently maintain copies of the reports for the public.

Data of Governmental Source: 11/15/96
Data Made Available at: 02/07/99
Data Available: Full
Date Last EDI Contact: 12/09/99

PHMS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-502-8395

Public Water System data from the Federal Reporting Data System. A Public Water System is any system which provides water service to at least 25 people for at least 60 days every year. PHMS provides public water systems with useful and accurate data. PHMS data is used to calculate the Water Quality Index (WQI) and the Water Quality Index (WQI) is a useful tool for comparing water quality in different locations.

Data of Governmental Source: 11/15/96
Data Made Available at: 02/07/99
Data Available: Full
Date Last EDI Contact: 12/09/99

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipeline/Environmental Information

The data was obtained by EDI from the USAIS in 1994. It is referred to by USAIS as Geographic Digital Line Graphs (GDLG) from 11,000,000 Scale Maps. It is used by the U.S. Bureau of Mines and other federal, state, and local agencies for a variety of applications. The information is used by the U.S. Bureau of Mines and other federal, state, and local agencies for a variety of applications. The information is used by the U.S. Bureau of Mines and other federal, state, and local agencies for a variety of applications.

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Data Made Available at: 02/07/99
Data Available: Full
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All assets of the Grantor, real & personal, tangible & intangible, of whatever nature & wherever situated in the Terr. of Haw.
The only provisions cited in this deed are the following:

To have & to hold the same unto the Trustee absolutely & forever.

The foregoing transfer is made by the Grantor as the owner of all of the shares of capital stock of the corporation & in complete liquidation of said corporation & in complete cancellation of all of the shares of the capital stock in connection with the dissolution & liquidation of the corporation, which dissolution & liquidation was approved & voted at a special meeting of the stockholders held on 9/25/42.

The Grantor hereby accepts the foregoing transfer in complete liquidation of said corporation & in complete cancellation of all of the shares of the capital stock of the corporation.

The Grantor hereby surrenders to the Grantor for cancellation all of the shares of the capital stock of the corporation, being 75 share of an aggregate per value of $7500.00.

I checked as the Treasurer's Office relative to the above dissolution.

I find that a Petition for Dissolution has been filed & that the same has been approved.

Just as soon as "Tax Clearance" papers have been filed, a Decree of Dissolution will be issued.
Portions of Gr 4636 & Gr 7227 situated at the S corner of Lusitana & Punchbowl Sts described as follows:

By a line from the S corner of Lusitana St., the coordinates of said point of by referred to Station Monument near the S corner of Lusitana & Punchbowl Sts being 14.70 ft S and 66.07 ft W, and the coordinates of said monument referred to Trig Station Punchbowl being 294.56 ft S and 1387.60 ft W and running:

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>Distance</th>
<th>North</th>
<th>East</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Along new street line on a curve to the left with a radius of 20 ft.</td>
<td>209° 28' 19.24 ft</td>
<td>19.24 ft</td>
<td>6.013</td>
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</tr>
<tr>
<td>2. 237° 20' 19.36 ft along present S side of Punchbowl St.</td>
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<tr>
<td>3. Thomp along the present street line on a curve to the right with a radius of 20 ft the chord azimuth &amp; distance being 209° 46' 17.90 ft.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Also along present W side of Lusitana St. on a curve to the left with a radius of 20 ft the chord azimuth &amp; distance being 209° 18' 26' 150.76 ft to the point of app.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Area, 247.0 - Dropped into road
<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
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<th>Value</th>
</tr>
</thead>
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<td>5</td>
<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
<tr>
<td>2</td>
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<td>6/9/54</td>
<td>2,222.20</td>
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<tr>
<td>3</td>
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<td>6/9/54</td>
<td>2,222.20</td>
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<tr>
<td>4</td>
<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
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<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
<tr>
<td>7</td>
<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
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<tr>
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<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
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<tr>
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<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
<tr>
<td>12</td>
<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
<tr>
<td>13</td>
<td>REV. 2</td>
<td>6/9/54</td>
<td>2,222.20</td>
</tr>
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<td></td>
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</tr>
</tbody>
</table>

**5.** E.B. 5625: 86, or 5/23/55

**24.** E.B. 5625: 86, or 5/23/55

**6.** Lila Norton, M.D. of California

**7.** Lila Norton, M.D. of California

**10.** Lila Norton, M.D. of California

**11.** Lila Norton, M.D. of California

**12.** Lila Norton, M.D. of California

**13.** Lila Norton, M.D. of California
**INSTR-DESC: AMENDMENT OF LEASE**

**INSTR-NUM: 93-001212**
**INSTR-DATE: 07/21/93**

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<tr>
<th>AREA: 8284 SF</th>
<th>LEASED TO: WILSON LTD</th>
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<tbody>
<tr>
<td>DESCRIPTION: HAWAIIAN JIFFY INC. CERTAIN LEASE DTD 2/1/91 SEC AS DOC NO 93-194418; WILLIAM AND HAWAIIAN JIFFY HAVE AGREED TO AMEND THE LEASE SET FORTH BELOW. NEW TERM STARTS MAY 21, 1993. PARTIES AGREE AS FOLLOWS: ETC.</td>
<td></td>
</tr>
<tr>
<td>RENT DUE: FUTURE RENT TERM</td>
<td></td>
</tr>
<tr>
<td>OWNER: HAWAIIAN JIFFY INC</td>
<td></td>
</tr>
<tr>
<td>LANDLORD: WILSON LTD</td>
<td></td>
</tr>
</tbody>
</table>

**FOR ASSESSMENT YEAR 1999**
- **PITF: 202 AREA:** 8284 SF |
  - **BLDQ: 500 CODE:** 252 YR: 1970 |
  - **VALUE:** $44,900 EXEMPT |
  - **BLDQ TOTALS:** $43,200 EXEMPT |
  - **SITE ADDRESS:** 1449 PENCHONG ST |
  - **APN:** |

**FOR ASSESSMENT YEAR 1999**
- **PITF: 300 AREA:** 8284 SF |
  - **BLDQ: 600 CODE:** 252 YR: 1970 |
  - **VALUE:** $43,200 EXEMPT |
  - **BLDQ TOTALS:** $41,100 EXEMPT |

**FOR ASSESSMENT YEAR 1999**
- **PITF: 202 AREA:** 8284 SF |
  - **BLDQ: 500 CODE:** 252 YR: 1970 |
  - **VALUE:** 55,900 EXEMPT |
  - **BLDQ TOTALS:** 43,100 EXEMPT |

**FOR ASSESSMENT YEAR 1997**
- **PITF: 300 AREA:** 8284 SF |
  - **BLDQ: 600 CODE:** 252 YR: 1970 |
  - **VALUE:** 60,000 EXEMPT |
  - **BLDQ TOTALS:** 40,000 EXEMPT |

**FOR ASSESSMENT YEAR 1996**
- **PITF: 202 AREA:** 8284 SF |
  - **BLDQ: 500 CODE:** 252 YR: 1970 |
  - **VALUE:** 60,000 EXEMPT |
  - **BLDQ TOTALS:** 41,200 EXEMPT |
  - **SITE ADDRESS:** 1449 PENCHONG ST |
  - **APN:** |
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S) IMMEDIATELY FOLLOWING
SOREN KNUDSEN, P. E., MBA, RME

Education:
Master of Business Administration
Baylor University, Texas - 1993
Bachelor of Science in Civil Engineering
University of Texas, Texas – 1983

Specialized Training:
OSHA 8-hour Hazwoper annual refresher course
Hazardous Material Management
Environmental Site Assessments
Inspecting Buildings for Asbestos Containing Materials
Managing Asbestos in Buildings
NPDES for Storm Water Discharge
Underground/Aboveground Storage Tank Installation and Removal

Languages:
Portuguese, Spanish, French, Danish, Norwegian, Swedish and German

Registration:
Hawaii General Contractor License #BC 21831
Professional Engineer – Civil Branch
Texas 1992 # 71954
Hawaii 1989 In Progress
California 1999 In Progress

Affiliation:
American Society of Civil Engineers
National Society of Professional Engineers
Water Environment Federation

Professional Experience:
Project Manager, Senior Engineer

Mr. Knudsen is currently involved in the project management and business development areas at Dawson Environmental Services (DES). As marketing manager he identifies, targets, and pursues opportunities aimed at increasing market penetration for services offered by the firm. He is active in building strategic alliances and teaming arrangements designed to strengthen DES’ position as a provider of engineering and environmental services. The services include planning, managing, and consulting concerning work in the commercial, institutional, and federal arena. As senior engineer he manages both environmental and civil projects. Public utility and major petroleum companies are among the representative client base he services. Projects vary in scope and size to include construction management of public infrastructure projects and soil
and groundwater environmental remediation design and implementation.

He has 14 years of civil engineering, construction management, and environmental remediation experience. He has controlled all phases of design-build work ranging from commercial subdivision development to industrial environmental systems. He has performed site assessments, developed site plans, contract specifications, and represented client interests to property acquisition to completion of site improvements. He initiated a facilities management program to handle maintenance and upgrading needs of a $135 million fixed capital asset base. He managed quality control and quality assurance programs for large US Navy award-winning fast-track construction projects. He has represented federally insured loan entities performing quality control inspection for single and multi-family residential housing developments.

Mr. Keeszen devised and implemented environmental strategies for the largest transportation company in the Southwest to manage and mitigate the corporation’s liability. His program was awarded the Environmental Protection Agency’s Environmental Excellence Award. He represented the corporation’s interests with the regulatory agencies, clients, and citizens. He managed complex environmental remediation projects engaging multipurpose consultants and sub-contractors. In Texas, he pioneered the use of innovative time-saving remediation strategies, such as on-site thermal-oxidation, groundwater air-sparging and vapor extraction.

UST Closure, Site Characterization, and Assessment

Central Freight Lines, Inc. Corporate Headquarters, Waco, TX

Developed a long-range financially sound removal and retrofit program designed to bring the corporation’s 48 fueling sites into federal regulatory compliance. Prepared engineering estimates, plans and specifications for UST removals. Coordinated and managed all consultants and sub-contractors. Determined and implemented appropriate remedial action for each site based on state driven regulatory requirements. Prepared and submitted applications for successful collection of payments from the State Remediation Reimbursement Fund.

Construction Related Services

Central Austin Business Park, Leona Land Company, Austin, TX

Designed initial subdivision land use layout including lot sizes, right-of-way and utility location, roadway geometric design and drainage and commencement of on-site construction, finalized all cost estimates, engineering calculations and proposed designs associated with land acquisition, joint venture agreements, and water and wastewater approach mals. Acted as on-site project engineer during the construction phase of capital improvement infrastructure, managing all subcontractors and consultants.

New Freight Transfer Terminal Facility, Central Freight Lines, Inc.

Bay City, TX

Acted as Project Engineer and Owner’s Representative from property acquisition through the site work phase. Performed all building and pavement structural design. Supervised plan and estimate finalization. Developed bid documentation and managed subcontractor selection process. Completed project quality control phase prior to turning building over to owner.

Operation and Maintenance Systems

Unocal Corporation, Former Station 4402, Honolulu, Hawaii

Managing operation and maintenance program for an on-site vapor extraction and air sparging system designed and installed by DES crew. Compliance air and groundwater monitoring designed to verify equipment effectiveness and remedial results. Equipment maintenance aimed at optimizing remedial effect and minimizing financial impact.

Property Transfer Services

Property Transfer Assessment McDonald’s Restaurants of Hawaii

Conducting Phase I ASTM Standard Practice Environmental Site Assessment for property transaction purposes. Perform all pertinent due diligence evaluation of past or present potential sources of impacts that may affect the subject property.
Appendix C
Air Quality
September 10, 1999

Ms. Colette Sakoda
Parsons Brinckerhoff
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

Subject: Punchbowl Street Widening Project
Air Quality Impact Assessment

Dear Ms. Sakoda:

In response to your request, the potential air quality impacts from carbon monoxide emissions associated with motor vehicle traffic related to the proposed widening of Punchbowl Street in the vicinity of Vineyard Boulevard have been examined. The results of this examination along with background information related to this issue are summarized below.

Project Description

The purpose of the proposed project is to reduce the long north-bound traffic queue on Punchbowl Street that currently forms south of Vineyard Boulevard during the afternoon peak traffic period. The proposed project consists of providing an additional north (mauka) bound lane on Punchbowl Street from Vineyard Boulevard to the H-1 Freeway underpass, a distance of approximately 700 feet. This segment of Punchbowl Street currently has three lanes, two south (makai) bound lanes and one lane north (mauka) bound. After construction of the proposed project, this segment will have two south (makai) bound lanes and two north (mauka) bound lanes. A second left-turn lane on the eastbound approach of the intersection of Punchbowl Street and Vineyard Boulevard may also be added.

Ambient Air Quality Standards

At the present time, air quality standards have been established by both federal and state governments which limit ambient concentrations of particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. In addition, a state standard has been established for hydrogen sulfide. The Hawaii air quality standards (particularly the carbon monoxide standards) are more stringent than the comparable national limits except for the standards for sulfur dioxide, particulate matter and lead, which are set at the same levels. The Hawaii air quality standards for carbon monoxide are set at 10 milligrams per cubic meter for a 1-hour average and 8 milligrams per cubic meter for an 8-hour average, whereas the federal 1-hour and 8-hour standards are set at 40 and 10 milligrams per cubic meter, respectively.

B. D. NEAL & ASSOCIATES
Applied Meteorology • Air Quality • Computer Science

P.O. BOX 6239, OCEAN VIEW, HAWAII 96737-6239 • TELEPHONE (808) 939-9317 • FAX (808) 939-7299
Regional and Local Climatology

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the downtown Honolulu area is very much affected by its leeward and near coastal situation. Winds are predominantly trade winds from the east-northeast and provide good ventilation much of the time. Wind speeds typically vary between about 5 and 15 miles per hour. Temperatures in the area are generally very moderate with average daily minimum and maximum temperatures ranging from about 70°F to 85°F. Average annual rainfall amounts to about 22 inches with summer months being the driest.

Existing Air Quality Conditions

Air quality in the vicinity of the proposed project is currently affected mostly by emissions from motor vehicle traffic on nearby roadways. The Hawaii Department of Health operates a network of air quality monitoring stations located at various sites around the state, including a downtown Honolulu monitoring station located very near the project area. Data that are available from the downtown Honolulu monitoring station and other nearby locations suggest that both state and national ambient air quality standards are currently being met in the project area except possibly for the state standard for ozone. It should be noted, however, that carbon monoxide concentrations along sidewalks near traffic-congested intersections may be higher than concentrations measured at the Department of Health monitoring stations. Estimates of existing worst-case carbon monoxide concentrations along sidewalks in the project area based on computer modeling are discussed below in conjunction with an assessment of the potential impacts of the project.

Air Quality Impacts of Project

The potential air quality impacts of the project near the intersection of Punchbowl Street and Vineyard Boulevard were evaluated using U.S. EPA-approved computerized emission and atmospheric dispersion models. Estimates of worst-case concentrations of carbon monoxide were made for the existing case and for future (2005) project scenarios both with and without the project. The future without project scenario assumed that traffic volumes would remain substantially unchanged from the existing case and that the intersection of Punchbowl Street and Vineyard Boulevard would remain as it is today. The results of this evaluation are summarized below:
Near-Intersection Concentrations

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Worst-Case 1-Hour Carbon Monoxide Concentration (mg/m³)</th>
<th>Worst-Case 8-Hour Carbon Monoxide Concentration (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>1999 Existing</td>
<td>18.7</td>
<td>16.1</td>
</tr>
<tr>
<td>2005 Without Project</td>
<td>16.2</td>
<td>14.3</td>
</tr>
<tr>
<td>2005 With Project</td>
<td>15.2</td>
<td>14.5</td>
</tr>
<tr>
<td>Hawaii Standard</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>National Standard</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

In all three scenarios, the highest concentrations were predicted to occur during the morning peak-traffic period. As indicated in the above table, it is estimated that the worst-case existing carbon monoxide concentrations along sidewalks near the Punchbowl Street intersection with Vineyard Boulevard are within the national standards but exceed the state standards by a large margin. In the year 2005 without the project, it is predicted that the highest worst-case concentrations would decrease by about 13 percent compared to the existing values. This is primarily due to the attrition of older, more-polluting motor vehicles over time. With the project, the highest (morning) worst-case concentrations in the year 2005 would likely decrease by about 6 percent compared to the without project scenario and by about 19 percent compared to the existing situation. However, even with the improvement in air quality afforded by the project, worst-case concentrations of carbon monoxide would continue to potentially exceed the state standards. The decrease in the projected highest (morning) worst-case concentrations with the project is attributable to the substantially improved traffic level-of-service at the intersection, which reduces motor vehicle delay times, traffic queuing and excess air pollution emissions. This more than compensates for the widening of the intersection which will tend to concentrate more traffic into a smaller area.

In addition to estimating worst-case concentrations near the intersection of Punchbowl Street and Vineyard Boulevard, worst-case concentrations near mid-block along Punchbowl Street mauka of Vineyard Boulevard were evaluated based on the estimated average travel speeds provided by the project traffic engineer. The results of this evaluation are summarized below:
Mid-Block Concentrations

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Worst-Case 1-Hour Carbon Monoxide Concentration (mg/m³)</th>
<th>Worst-Case 8-Hour Carbon Monoxide Concentration (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>1999 Existing</td>
<td>11.4</td>
<td>5.3</td>
</tr>
<tr>
<td>2005 Without Project</td>
<td>9.8</td>
<td>4.9</td>
</tr>
<tr>
<td>2005 With Project</td>
<td>8.8</td>
<td>7.5</td>
</tr>
<tr>
<td>Hawaii Standard</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>National Standard</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

As indicated above, carbon monoxide concentrations were found to be substantially lower at mid-block compared to the area near the intersection of Punchbowl Street and Vineyard Boulevard. Worst-case concentrations at this location were found to be well within the national standards for all scenarios, but the projected worst-case concentrations exceeded the state standards for the existing case. As at the near-intersection locations, the highest mid-block concentrations for all scenarios were predicted to occur during the morning. Without the project in the year 2005, it was estimated that the morning worst-case concentrations would decrease by about 14 percent and would meet the state standards by a small margin. With the project in the year 2005, the estimated morning worst-case concentrations decreased by 23 percent compared to the existing values, providing a larger margin of compliance with the state standards. As indicated in the above table, although the highest worst-case concentrations, which occur during the morning, were predicted to decrease somewhat with the project, afternoon worst-case concentrations with the project were estimated to increase by about 50 percent compared to the without project case.

In summary, it appears likely that worst-case carbon monoxide concentrations along sidewalks in the project area currently exceed the state standards but comply with the national limits. The proposed roadway improvements should result in a slight improvement in air quality near the intersection of Punchbowl Street and Vineyard Boulevard and at mid-block areas mauka of this intersection during the morning peak-traffic period when concentrations are highest. During the afternoon, carbon monoxide concentrations with the project will likely increase but remain below the worst-case morning values. Without the project, worst-case concentrations will likely continue to exceed the state standards at locations near this intersection. Predicted exceedances of the very stringent state standards for carbon monoxide are not unique to this area.
Please call me if you have any questions concerning the information presented herein or if you wish to discuss this matter further.

Very truly yours,

Barry D. Neal
Certified Consulting
Meteorologist
Appendix D
Environmental Noise Assessment
Study
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1  FIFWA's Noise Abatement Criteria  7
2  Noise Measurement Results  8
3  Future (2005) Traffic Noise Prediction Results  9

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1A & 1B  Project Site and Vicinity
2A  Noise Measurement Locations 1 through 4
2B  Noise Measurement Locations 5 through 8
3A  Noise Assessment Locations 1 through 4, 9 and 10
3B  Noise Assessment Locations 5 through 8
4  Typical Sound Pressure Levels from Construction Equipment
5  Maximum Permissible Sound Levels for Various Zoning Districts
1.0 SUMMARY

1.2 The proposed Punchbowl Street Improvements Phase III project involves the widening of Punchbowl Street right-of-way between Vineyard Boulevard and Livonia Street to provide two marks-bound traffic through lanes.

1.3 Existing properties along Punchbowl Street currently experience daytime ambient noise levels ranging from 59 to 70 dBA, which is typical for urban areas near busy roadways.

1.4 Noise from project construction activities should be relatively short-term, occur during daytime hours, and must comply with State Department of Health noise regulations.

2.0 PROJECT DESCRIPTION

The proposed project involves the widening of the Punchbowl Street right-of-way from Vineyard Boulevard to Livonia Street. The widening will occur on the diamond harp side of Punchbowl Street to provide an additional marks-bound through lane to HI-1 Freeway on ramp, as shown in Figures 1A and 1B. Completion of the project is expected to allow efficient precasting of HI-1 and Pali Highway-bound traffic through the intersection of Punchbowl Street and Vineyard Boulevard.

Existing land uses which could be impacted by the project include Royal Elementary School, Pacific Club and noise sensitive homes along Punchbowl Street.

3.0 NOISE STANDARDS AND GUIDELINES

Various federal and local agencies have established standards and guidelines for assessing traffic noise impacts and setting noise level limits as a function of land use. A brief description of common acoustics terminology used in these standards and guidelines is presented in Appendix A.

3.1 U.S. Federal Highway Administration (FHWA) - The current FHWA procedures for highway traffic noise analysis and abatement are contained in 23 CFR 772 (Reference 1). These procedures specify the requirements that State highway agencies must meet when using Federal-aid funds for highway projects. FHWA noise abatement criteria, as a function of land use activity categories, are given in these procedures. The maximum hourly equivalent sound levels, Lon, which must be met, are presented in Table 1.

3.2 State of Hawaii Department of Transportation, Highways Division (DOT) - In June 1997, the DOTH adopted FHWA’s noise abatement criteria (Table 1) in its noise analysis and abatement policy (Reference 2). DOTH further defines in its policy that a traffic noise impact occurs when the predicted traffic noise levels “approach” or exceed FHWA’s noise abatement criteria or when the predicted traffic noise levels “substantially exceed the existing noise levels.” The policy states that “approach” means at least 1 dB less than FHWA’s noise abatement criteria and “substantially exceed the existing noise levels” means an increase of at least 15 dB.

3.3 U.S. Department of Housing and Urban Development (HUD) - HUD’s environmental noise criteria and standards in 24 CFR 51 (Reference 3) were established for determining housing project site acceptability. These standards are based on day-night equivalent sound levels, Ldn, and are not limited to traffic noise exposure. However, for project sites in the vicinity of highways, the Ldn may be estimated to be equal to the design hour Ldn provided “heavy trucks (vehicles with three or more axles) do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10:00 p.m. and 7:00 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours.”

HUD site acceptability criteria rank sites as Acceptable, Normally Unacceptable, or Unacceptable. “Acceptable” sites are those where existing noise levels do not exceed an Ldn of 65 dB, “Normally Unacceptable” sites are those where the Ldn is above 65 dB, but does not exceed 75 dB. “Unacceptable” sites are those where the Ldn is 75 dB or higher. The term “unacceptable” does not necessarily mean that housing cannot be built on these sites. It means that more sophisticated sound attenuation will likely be needed.

3.4 U.S. Environmental Protection Agency (EPA) - The EPA has identified a range of yearly day-night equivalent sound levels, Ldn, sufficient to protect public health and welfare from the effects of environmental noise (Reference 4). The EPA has established a goal to reduce exterior environmental noise (including, but not limited to, traffic noise) to an Ldn not exceeding 65 dB and a future goal to reduce exterior environmental noise to an Ldn not exceeding 55 dB. Additionally, the EPA states that to protect against hearing damage, one’s 24-hour equivalent sound level, Ldn, exposure at that ear should not exceed 70 dB. The EPA also emphasizes that these goals are not intended as regulations, since the EPA has no authority to regulate noise levels. Rather these goals are intended to be viewed as levels below which the general population will not be at risk.
EXISTING ACOUSTICAL ENVIRONMENT

On the mornings of February 22 and March 2, 1999, continuous five to fifteen-minute noise level measurements were obtained at eight locations in the vicinity of the project site. The measurements were obtained using a Larson Davis Model 700 sound level meter. The results are presented in Table 2 and the measurement locations are shown in Figures 2A and 2B. The dominant noise source at these measurement locations was traffic from Punchbowl Street and connected roadways. Other identifiable noise sources which were audible during the measurements are noted in Table 2.

During the measurements at Royal Elementary School (Locations 6 and 7) vehicle counts and classification, i.e., number of automobiles, vehicles with two axles and six wheels (medium trucks) and vehicles with three or more axles (heavy trucks), were made. This information was then used to calibrate the traffic noise prediction model.

5.0 POTENTIAL NOISE IMPACT DUE TO THE PROJECT

5.1 Project Generated Traffic Noise - FHWA's most current traffic noise prediction model, TRAI Version 1.0, and the traffic data provided by others [Reference 5] were used to calculate the future (2005) "no-build" and "build" traffic noise levels during morning and afternoon peak-traffic hours. The noise levels were calculated at ten locations along Punchbowl Street as shown in Figures 3A and 3B. The noise receptor at each of these locations was calculated at 6 feet above ground, except at Location 9, which was 6.3 feet above ground. For both the "no build" and "build" scenarios, average vehicle speed was assumed to be the posted speed limit of 25 mph. A 2% medium and 1% heavy truck mix was assumed for the morning peak-traffic hour and a 2% truck mix without heavy trucks was used for afternoon peak-traffic hour. The predicted noise levels are presented in Table 3. From these results, future traffic noise level changes due to the widening were determined and are also presented in Table 3.

As shown in Table 3, the noise level increases due to the project at all of the assessment locations were less than or equal to 3.5 dBA, except at Location 9. At this location, a maximum increase of 5.0 dBA was calculated. One reason for a higher increase in this location is the removal of the one-story tile building and garage where the project is built, as indicated in Figure 1A. Under the "no build" condition, these two obstructions provided partial shielding and attenuated noise from the roadway to the receptors. According to Reference 6, a sound level increase of 3 dBA is considered "barely perceptible" by most people with normal hearing. In addition, an increase of 5 dBA is considered "readily perceptible." Furthermore, a "substantial" increase is an increase of at least 10 dBA. Based on these criteria, future traffic noise level increases as a result of the improvement are not considered to be significant. However, in accordance with the Hawaii DOT/HT’s traffic noise and abatement policy (Section 2.2), "traffic noise impacts" occurred at Locations 3 through 10 since the predicted future traffic noise levels at these locations were within 1 dBA or exceeded the FHWA’s exterior noise limit of 65 dBA. Even though the requirements set by the FHWA and DOTHT’s noise policies are not required to be met since the project does not involve Federal funds, consideration in providing traffic noise abatement for the "impaired" locations is recommended.

Possible noise abatement measures, if warranted, include:

1. Constructing roadside noise barrier walls;
2. Acquiring real property; and
3. Providing air-conditioning.

5.2 Project Construction Noise - The construction of the proposed project will involve excavation and grading. The various construction phases of the project may generate significant amounts of noise, which may impact nearby noise sensitive land uses. The actual noise levels produced will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 4. Earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction.

In cases where construction noise exceeds, or is expected to exceed the Hawaii State Department of Health’s (DOH) "maximum permissible" property line noise levels as shown in Figure 5 (Reference 7), a permit must be obtained from the DOH to allow the operation of vehicles, construction equipment, power tools, etc., which emit noise levels in excess of "maximum permissible" levels. Specific permit restrictions for construction activities are:

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels…before 7:00 am and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels…before 9:00 am and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

In addition, construction equipment and on-site vehicles or devices whose
operations involve the exhausting of gas or air, excluding pile hammers and pneumatic hand tools weighing less than 15 pounds, must be equipped with mufflers, and construction vehicles using traffic way must satisfy the DOI's vehicular noise requirements [Reference 8].

6.0 REFERENCES


5. Facsimile Transmittals from Parsons Brinckerhoff, June 1, and June 16, 1999, and Telephone Conversation between Mike Miyamoto of Parsons Brinckerhoff and Thao Nguyen of D.L. Adams Associates, Ltd., June 30 and July 1, 1999.


TABLE 1 - FIWA NOISE ABATEMENT CRITERIA

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>$L_{Aeq}$ <em>(in dBa)</em></th>
<th>Description of Activity Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57</td>
<td>Lands on which amenity and quiet are of extraordinary significance and serve an important public need and where the preservation of these qualities is essential if the area is to continue to serve its intended purpose.</td>
</tr>
<tr>
<td>B</td>
<td>67</td>
<td>Parks, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.</td>
</tr>
<tr>
<td>C</td>
<td>72</td>
<td>Developed lands, properties, or activities not included in Categories A or B above.</td>
</tr>
<tr>
<td>D</td>
<td>-</td>
<td>Undeveloped lands.</td>
</tr>
<tr>
<td>E</td>
<td>52 (Interior)</td>
<td>Residents, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.</td>
</tr>
</tbody>
</table>

*$L_{Aeq}$ is the hourly equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured during the one-hour period.

TABLE 2 - NOISE MEASUREMENT RESULTS

<table>
<thead>
<tr>
<th>Measurement Location*</th>
<th>Measured $L_{Aeq}$ ** <em>(in dBa)</em></th>
<th>Duration of Measurement</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59.0</td>
<td>10 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street and Vineyard Boulevard. People voices at Pool and Dining Area also audible.</td>
</tr>
<tr>
<td>2</td>
<td>59.8</td>
<td>15 min.</td>
<td>Same as for Location 1.</td>
</tr>
<tr>
<td>3</td>
<td>67.8</td>
<td>10 min.</td>
<td>Traffic on Punchbowl Street and gridding noise from Pacific Club.</td>
</tr>
<tr>
<td>4</td>
<td>68.0</td>
<td>5 min.</td>
<td>Same as Location 3.</td>
</tr>
<tr>
<td>5</td>
<td>63.4</td>
<td>10 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street. Children voices at playground also audible.</td>
</tr>
<tr>
<td>6</td>
<td>69.8</td>
<td>10 min.</td>
<td>Same as for Location 5.</td>
</tr>
<tr>
<td>7</td>
<td>63.6</td>
<td>6 min.</td>
<td>Traffic on Punchbowl Street and occasional distant emergency vehicle sirens.</td>
</tr>
<tr>
<td>8</td>
<td>66.9</td>
<td>5 min.</td>
<td>Dominant noise due to traffic on Punchbowl Street and H-1 Freeway.</td>
</tr>
</tbody>
</table>

* See Figures 2A and 2B.

** $L_{Aeq}$ is the equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured over a specific time period.
<table>
<thead>
<tr>
<th>Equipment (Stationary)</th>
<th>Noise Level (dB) at 50 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Compactors (rollers)</td>
<td></td>
</tr>
<tr>
<td>Front loaders</td>
<td></td>
</tr>
<tr>
<td>Backhoes</td>
<td></td>
</tr>
<tr>
<td>Tractors</td>
<td></td>
</tr>
<tr>
<td>Scrapers, graders</td>
<td></td>
</tr>
<tr>
<td>Pavers</td>
<td></td>
</tr>
<tr>
<td>Trucks</td>
<td></td>
</tr>
<tr>
<td>1 Concrete mixers</td>
<td></td>
</tr>
<tr>
<td>Concrete pumps</td>
<td></td>
</tr>
<tr>
<td>Cranes (rigid)</td>
<td></td>
</tr>
<tr>
<td>Cranes (articulated)</td>
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</tr>
<tr>
<td>Pumps</td>
<td></td>
</tr>
<tr>
<td>Generators</td>
<td></td>
</tr>
<tr>
<td>Compressors</td>
<td></td>
</tr>
<tr>
<td>Jackhammers and rock drills</td>
<td></td>
</tr>
<tr>
<td>Pile drivers (pneumatic)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Violators</td>
<td></td>
</tr>
<tr>
<td>Tanks</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Based on limited available data samples

**FIGURE 4 - TYPICAL SOUND PRESSURE LEVELS FROM CONSTRUCTION EQUIPMENT**

---

**FIGURE 5 - MAXIMUM PERMISSIBLE SOUND LEVELS FOR VARIOUS ZONING DISTRICTS**

- **Class A Zoning Districts:**
  - Residential, Conservation, Preservation, Public Space, Open Space
  - Daytime: 7:00 A.M. to 10:00 P.M., 10:00 P.M. to 7:00 A.M.

- **Class B Zoning Districts:**
  - Business, Commercial, Hotel, Resort
  - Daytime: 7:00 A.M. to 10:00 P.M., 10:00 P.M. to 7:00 A.M.

- **Class C Zoning Districts:**
  - Agriculture, Country, Industrial
  - Daytime: 7:00 A.M. to 10:00 P.M., 10:00 P.M. to 7:00 A.M.

**NOTE:** Sound levels designated by zoning districts are the *maximum permissible* sound levels due to exterior noise sources. Both stationary and mobile equipment and equipment used in trenches or basements shall not exceed these limits. The chart represents an outline of permitted sound levels during specified time periods.
APPENDIX A

ACOUSTICAL TERMINOLOGY

Sound Pressure Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. It is measured in terms of decibels (dB) using precision instruments known as sound level meters. Noise is defined as “unwanted” sound.

Technically, sound pressure level (SPL) is defined as:

$$\text{SPL} = 20 \log (P/P_{ref}) \text{ dB}$$

where $P$ is the sound pressure fluctuation (above or below atmospheric pressure) and $P_{ref}$ is the reference pressure, 20 micropascals, which is approximately the lowest sound pressure that can be detected by the human ear. For example, if $P$ is 20 micropascals, then SPL = 0 dB, or if $P$ is 200 micropascals, then SPL = 20 dB. The relation between sound pressure in micropascals and sound pressure level in decibels (dB) is shown in Figure A-1.

The sound pressure level that results from a combination of noise sources is not a simple arithmetic sum of the individual sound levels, but rather a logarithmic sum. For example, two sound levels of 50 dB produce a combined level of 55 dB, not 100 dB; two sound levels of 40 and 30 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of a sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 5 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-weighted Sound Level

The human ear is more sensitive to sound in the frequency range of 250 Hertz (Hz) and higher, than in frequencies below 250 Hz. Due to this type of frequency response, a frequency weighting system, was developed to emulate the frequency response of the human ear. This system expresses sound levels in units of A-weighted decibels (dB(A)). A-weighted sound levels de-emphasize the low frequency portion of the spectrum of a signal. The A-weighted level of a sound is a good measure of the loudness of that sound. Different sounds having the same A-weighted sound level are perceived as being about equally loud. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

Appendix A

Acoustical Terminology (Continued)

Statistical Sound Levels

The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, $L_e$. The Exceedence Level, $L_e$, represents the sound level which is exceeded for a percentage of the measurement time period. For example, $L_{10} = 60 \text{ dBA}$ indicates that for the duration at the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include $L_1$, $L_{10}$, $L_{50}$, and $L_{90}$, which are widely used to assess community and environmental noise. Figure A-2 illustrates the relationship between selected statistical noise levels.

Equivalent Sound Level

The Equivalent Sound Level, $L_{eq}$, represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. $L_{eq}$ is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA and is illustrated in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, $L_{dn}$, is the Equivalent Sound Level, $L_{eq}$, measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The $L_{dn}$ is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations. Qualitative descriptions, as well as local examples of $L_{dn}$, are shown in Figure A-3.
FIGURE A-1
THE RELATION BETWEEN SOUND PRESSURE, P, AND SOUND PRESSURE LEVEL, SPL.
ALSO SHOWN ARE TYPICAL VALUES OF A-WEIGHTED SOUND LEVELS OF VARIOUS NOISE SOURCES.

FIGURE A-2
COMPARISON OF AN INSTANTANEOUS SOUND LEVEL AND THE CORRESPONDING STATISTICAL SOUND LEVELS.
Appendix E

Historic Inventory Survey
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<td>Potential Historic Properties</td>
</tr>
<tr>
<td>Expanses Impacts</td>
</tr>
<tr>
<td>HISTORIC RESOURCES INVENTORY</td>
</tr>
<tr>
<td>PROPERTY A - 1475 PUNCHBOWL STREET (TMK 2-1-22:13)</td>
</tr>
<tr>
<td>Identification</td>
</tr>
<tr>
<td>Historic Context</td>
</tr>
<tr>
<td>Description - 1475-A Punchbowl Street (Front House)</td>
</tr>
<tr>
<td>Interior</td>
</tr>
<tr>
<td>Exterior</td>
</tr>
<tr>
<td>PROPERTY B - 1481 PUNCHBOWL STREET (TMK 2-1-22:14)</td>
</tr>
<tr>
<td>Identification</td>
</tr>
<tr>
<td>Historic Context</td>
</tr>
<tr>
<td>Description - 1481 Punchbowl Street (Front House)</td>
</tr>
<tr>
<td>Interior</td>
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<tr>
<td>Exterior</td>
</tr>
<tr>
<td>PROPERTY C - 1481 A &amp; B Punchbowl Street (Rear House)</td>
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<tr>
<td>Exterior</td>
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<tr>
<td>ASSESSMENT OF SIGNIFICANCE</td>
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<td>SUMMARY FINDINGS AND RECOMMENDATIONS</td>
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INTRODUCTION/SCOPE OF WORK

Panaña Brinkhoff retained Mason Architects to prepare an historic inventory survey report for two properties at 1475 Punchbowl Street (THK 2-1-22-13) and 1481 Punchbowl Street (THK 2-1-22-14). All the information required in the State Historic Preservation Division's (SHPD) mandated "Historic Resource Inventory Form" is included in this report, along with black and white photographs of each building. Recommendations as to whether the affected houses may be eligible for the Hawaii or National Register of Historic Places are also included in this report.

Field work was completed by Barbara Stoltehr, AIA of Mason Architects in August 1999. Ms. Stoltehr is trained in architectural history and historic preservation, and is a licensed architect in the State of Hawaii. She has a Bachelor's Degree in Architecture and a Graduate Certificate in Historic Preservation, both from the University of Hawaii at Manoa. She has had work experience in the field. Ms. Stoltehr meets the professional qualification standards under Historic Architecture and Architectural History outlined in 36 CFR 61, Appendix A.

METHODOLOGY

The field checks included a visual survey of the affected buildings, as well as adjacent properties. Field photographs were taken with 35mm color film. The survey included the collection of data on both properties and the development of the Vinyard Street neighborhood. The files of the Hawaii's Register of Historic Places or had been declared eligible for the Register. The Hawaii's Register of Historic Places and the State of Hawaii's Library were searched for historic houses, maps and other documentary materials. The files at the Bureau of Conveyances and the City and County Property Tax Office were also checked for pertinent historical information, including maps. No original construction drawings were found for any of the buildings.

DESCRIPTION OF THE PROJECT

The City and County of Honolulu, Department of Design and Construction is proposing to provide an additional south (main) bound lane on Punchbowl Street from Vinyard Boulevard to the H-1 Freeway. This segment of Punchbowl Street currently has three lanes -- two lanes north (main) bound and one lane north (main) bound. After construction, this segment will have two south (main) bound lanes and two north (main) bound lanes.

Potential Historic Properties

The following have been identified by Panaña Brinkhoff, in consultation with the SHPD, as the only 50 plus year old buildings affected by the project:

- Two house at 1475-A Punchbowl Street and 1475-B Punchbowl Street (THK 2-1-22-13) -- the front house was built ca. 1913 (Figure 3) and the rear house ca. 1928 (Figure 2).
- Two house at 1481 Punchbowl Street and 1481-A&B Punchbowl Street (THK 2-1-22-14) -- the front house was built ca. 1910 (Figure 3) and a duplex in the rear built in 1944 (Figure 4).
**Expected Impacts**

The project would require approximately ten feet of additional right-of-way on Punchbowl Street (Diamond Head) side of the road. At 1475 Punchbowl Street, the existing wooden fence would be demolished and the existing sidewalk would be relocated ten feet closer to the house. At 1481 access impacts to other properties. This would require the demolition of both houses on this site.

**HISTORIC RESOURCES INVENTORY**

**PROPERTY A – 1475 PUNCHBOWL STREET (TMK 2-1-22-13)**

**Identification**

Common Name: None

Historic Name (if known): Lot 10, Punchbowl Street

Street Address: 1475 A&B Punchbowl Street, Honolulu, Hawaii (originally 1461 Punchbowl Street – the street numbers changed after Vineyard Boulevard was removed during the construction of the H-1 Freeway).

Lot Area: 6,692 square feet.

Original Owners: Antone F. and Annie Santos (see below for subsequent owners).

Original and Present Use: Residence

**Historic Context**

1902 The tract of land referred to as “Awaiaina” was granted to David Kawakamoku and John Kukio by the Territory of Hawaii in 1902 (Land Grant Patent 46361). The royal princes Kawakamoku and Kekaulike were cousins of King Liliuokalani. They held the land until Kawakamoku’s death.

1908 The property is sub-divided (reference is made in conveyance documents to a map by M.D. Mauzy, dated April 20, 1908 – however the map has not been found) and various individual parcels are conveyed to Elia A.C. Long (Liber 302/446, Liber 302/213).

1910 Long transfers Parcel 10 (TMK 2-1-22-13) to Edward J. Lopes for $663.20 (Liber 302/267).

1914-27 The Statewide Fire Insurance Map for these years show the footprint of a structure that is identical to the building presently occupying the lot (Figure 3).

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**Punchbowl Street Improvement Project**

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**Historic Inventory Survey**

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**1924**

E. J. Lopes and wife, Maria G. Lopes, bath of Almad, California, convey Parcel 10 to Pedro Lopes Teixeira for $475.00. The deed states that the transfer includes buildings (Liber 720/33).

**1924**

Pedro Lopes Teixeira and wife, Mary Lopes Teixeira, convey the property to Annie Ferreira Santos for $4,475.00 (Liber 720/281). She is the wife of Antone (Antonio) Santos.

**1924**

It is uncertain whether the Santos family resided on the property. The outline matches the plan of the existing structure behind the front house. The small garage structure also shown on the map at this time (Figure 6).

**1936**

The Santos’ deed the lot to George E. Miodonski for $1.00 (Liber 130/41, 42). No further mention is made of Miodonski in any of the Bureau of Conveyance or Department of Taxation documents.

**1940**

Antone Santos dies on January 20.

**1944**

Antone Santos dies on December 23. The Antone Santos Estate is established after his death. The property is left to seven successor trustees (Manuel P. Santos, John F. Santos, Rose S. Ameli, Mary S. Ringwob, Helen S. Hall, Gilberma G. Santos).

**1946**

Successor trustees convey the property to Mary, Peter and Chung Oh for $10.00 (Liber 757/114-116).

**1958**

Chung Oh conveys 1/3 shares to Mary and Esther Oh for $1,00 and Lavo (Liber 3551/530).

**Present**

The property is held by Mary M. J. Oh, etal. She resides at 1310 Hauula Street and, presumably, owns the property to an unknown party (or parties).

**Description – 1475-A Punchbowl Street (Front House)**

Architectural Style: Craftsman/ Vernacular

**Condition of Building: Good**

Builder, contractor, supplier: Unknown

Original plans and construction: None

Major alterations and additions: Repairs to dwelling in 1938, (Building Permit No. 11841), 1947 (Building Permit No. 64317), and 1956 (Building Permit No. 123965).

Exterior:

Overall dimensions: 58 feet x 48 feet; 1,553 square feet, excluding the enclosed porch.
Foundation: Wood post and beam on concrete footings. A diagonal lath skirt conceals the crawlspace at the front of the structure; the skirt at the rear flanks the side of the building.

Exterior Siding and Structural System: Vertical tongue-and-groove board single-wall construction with an interior sill. A flat apron, without a sill, runs along the perimeter of the base of the building.

Roof and Roofing: Hip roof with a gambrel roof over the front bay, roofed with asphalt shingles. The overhanging roof eaves are exposed and feature decorative bracketing. A metal canopy extends over the entry stair; this appears to be a later addition.

Porch and Steps: Sides at the front and rear entrances have lava rock sidewalks topped with concrete; the steps are constructed of reinforced concrete. The front porch, located on the right side of the facade, has been enclosed with plywood. The paneled handrail and decorative columns are still visible at the exterior.

Doors and Door: The entry consists of a five-panel glazed door with glazed sidelights. The side door is a flush panel; this appears to be a replacement.

Windows: Many of the original two-over-two double-hung windows remain. The window frame boxes project outward from the face of the exterior wall boards, making them flush with the interior wall surface. Several of the windows have been replaced with double-hung units or are infilled with solid plywood panels.

Interior: The following information was obtained from the Department of Taxation, Residential Appraisal Card prepared in 1947. The interior of the building was not accessible at the time of our survey.

Floor Plan: The building is roughly rectangular in plan with a projecting bay on the front elevation, and an inset wrap-around front porch. The interior of the house consists of two bedrooms, one bath, a kitchen, a dining room, and a living room.

Finishing: Wood (plank) slats flooring.

Wall and Ceiling Finish: Wood (plank) tongue and groove boards.

Interior Doories and Doors: Wood panel doors.

Mechanical Equipment:

HVAC: Window air conditioners are installed in several rooms.

Lighting: Unknown.

Plumbing: One bathroom. The materials and their condition were not assessed at the time of our survey.

Punchbowl Street Improvement Project
Historic Inventory Survey

Description – 1475 B Punchbowl Street (Rear House)

Architectural Style: Cottonwoods/Veranda

Date of Construction: ca. 1928/1947. The Department of Taxation Residential, Appraisal Card indicates that Dwelling 3 (the rear structure) was constructed ca. 1928, and received an addition in 1947. The Simonds Fire Insurance Map for 1927 shows an outline floor plan matching the one shown on the current Department of Taxation documents.

Condition of Building: Good

Builder, contractor, supplier: Unknown

Original plans and construction: None.

Major alterations and additions: Addition in 1947 (Building Permit No. 64433).

Exterior:

Overall dimensions: 24 feet x 36 feet with a 12 foot x 14 foot addition; 915 square feet.

Foundation: Wood post and beam on concrete footings. A diagonal lath skirt conceals the crawlspace beneath the structure.

Exterior Siding and Structural System: Vertical tongue-and-groove board single-wall construction with an interior sill. A flat apron with a single drip cap runs along the perimeter of the base of the building.

Roof and Roofing: Hip roof with a low-slope roof over the front porch; both are roofed with asphalt shingles. The overhanging roof eaves are exposed; the porch roof has decorative rafter tails.

Porch and Steps: The front porch is located on the right side of the facade. The stairs at the front entry have lava rock sidewalks topped with concrete; the steps are constructed of concrete.

Doors and Doors: The entry consists of a five-panel glazed door with glazed sidelights. The side door is a flush panel; this appears to be a later addition.

Windows: Many of the original two-over-two double-hung windows remain. The window frame boxes project outward from the face of the single wall material, making them flush with the interior wall surface.

Interior: The following information was obtained from the Department of Taxation, Residential Appraisal Card prepared in 1968. The interior of the building was not accessible at the time of our survey.

Punchbowl Street Improvement Project
Historic Inventory Survey
Floor Plan: The building is rectangular in plan with an inset front porch. The interior of the house consisted of two bedrooms, one bath, a kitchen, and a living room.

Flooring: Wood (pines) strip flooring.

Wall and Ceiling Finishes: Wood (pines) tongue and groove boards.

Interior Doorways and Doors: Wood panel doors.

Mechanical Equipment:

HVAC: Window air conditioners are installed in several rooms.

Lighting: Unknown.

Plumbing: One bathroom. The materials and their condition were not assessed at the time of our survey.

PROPERTY B: 1481 PUNCHBOWL STREET (FMK 2-1-22:14)

Identification

Common Name: None

Historic Name: Lot 9, Punchbowl Street

Street Address: 1481 Punchbowl Street (originally 1471 Punchbowl) – the street numbers changed after Vineyard Boulevard was renamed during the construction of the H-1 Freeway) and 1481 A&B Punchbowl Street, Honolulu, Hawaii.

Lot Area: 6,652 square feet.

Original Owners: Evelina and Bernardo Camara (see below for subsequent owners).

Original and Present Use: Residence

Historic Context

ca. 1895 A map at the State Survey office indicates a roughly triangular parcel of land located between Punchbowl, Vineyard and Luniaaina Streets containing approximately twenty structures. The lots are owned by various people, including Queen Liliuokalani.

1902 The tract of land referred to as "Awiahitu" was granted to David Kawananakoa and Joseph Kohala Kalanianaole by the Territory of Hawaii in 1902 (Land Grant Patent 4552). The royal Prince Kawananakoa and Kalanianaole were brothers, cousins of King Kalakaua and Queen Liliuokalani. They held the land until Kawananakoa's death in 1908.

1908 The property is subdivided (reference is made in conveyance documents to a map by M.D. Meinara, dated April 20, 1908 - however the map has not been found) and various individual parcels are conveyed to Elia A. C. Long (Libor 302465, Liber 2471:21-27).


1910 Silva conveys Parcel 9 to Mrs. Evelina Camara for $350.00 in "gold coin" (Libor 326245). She obtains an additional mortgage from Mrs. J. N. Oliveira for $450.00 (Libor 325928-281). She and her husband Bernardo Camara, a tailorman for L.C. & Co. (H.I. Photos, Inc.), build the main house.

1910-19 The Camaras and their children live in the property at 1471 Punchbowl Street.

1914-27 The State Fire Insurance Map for this year shows the footprint of a structure that is identical to the building presently occupying the lot (Figure 5).

1927 The State Fire Insurance Map for this year shows the bath house at the rear of the property gone; the small garage structure on the south side of the house also shows up on the map at this time (Figure 5).

1933 The Camaras obtain an additional mortgage from the Union Trust Company for $1700.00 (Libor 122013:03:03).

ca. 1939 Evelina Camara Estate is established after her death. The property is left to six successor trustees (Evelina Camara, Hilda Camara Banyai, Agnes Camara Mihlick, Raymond Sema, Olympia Sema Coffey, and Vance G Serra).

1940 Successor trustees convey the property to Bong Kwan Chung and wife, Chi Bok Chung for $250.00 (Libor 128424).

1941-42 A second structure, a duplex, is built at the rear of the property.

1951 The State Fire Insurance Map for this year indicates the second dwelling to the rear of the existing home (Figure 7).

1951 Bong Kwan Chung and Chi Bok Chung convey the property to Dr. Yee Nih Chung (widow) and Moses Chung (executor, power by her son) for $100.00 and the payment of the outstanding mortgage of $9974.94 (Libor 129061:07).

1967-68 Dr. Yee Nih Chung dies, and Moses Chung and wife, Anna Youn Shuen Chung become "successes in the entirety" holding the property jointly (Libor 618571).

1971 Moses and Anne Chung sell an aggregate of six of the property with William L. Pak, Charles Y. C. Pak, Grace Y. B. P. See, You Pyung Pak, and We Chun Kim Pak for $72,000.00 (Libor 746514).

1976 Moses and Anne Chung sell the property to You Pyung Pak and We Chun Kim Pak, husband and wife (Libor 1168413).

1978 You Pyung Pak and We Chun Kim Pak convey the property, for the sum of $1,000, to Charles Y.C. Pak and wife, Jane Ritchers Pak (presumably their son and daughter-in-law) (Libor 1399012).

1993 Charles Ying Chul Pak and Jane Ritchers Pak, Laura Kim Pak, Gregory Pyung Won Pak, and Majestic Pak create the PakFan Family Trust, Ltd. which currently holds the property (Instrument Nos. 04 0040695).

Description – 1481 Punchbowl Street (Front House)

Architectural Style: Craftsman/Bungalow

Date of Construction: ca. 1910

Condition of Building: Extremely poor

Punchbowl Street Improvement Project

Historic Inventory Survey
Architect: Unknown
Builder, contractor, suppliers: Unknown (possibly Lewers and Cooks).
Original plan and construction: No drawings were found for this work.

Major alterations and additions: Front porch enclosed at unknown date. Repairs to dwelling in 1965 (Building Permit No. 19229)

Exterior:
Overall dimensions: 59 feet x 26 feet; 1,391 square feet with a 608 square foot basement.

Foundation: Wood post and beam on concrete footings. Lava rock piers frame the corners of the front elevation. A vertical wood slab skirt conceals the crawl space beneath the front and sides of the structure. A partially sunken basement, with a concrete slab-to-grade, is located at the rear of the building.

Exterior Siding and Structural System: Horizontal wood drop siding on wood stud framing. A waferable and lath skin run along the perimeter of the base of the building.

Roof and Roofing: Hip roof with two gabled attic dormers; roofed with asphalt shingles. The roof eaves are typically soffited. A short pent roof with exposed rafters extends over the nautical side walkway; this appears to be a later addition.

Porch and Steps: Stairs at the front and rear eaves have louver shutters; sidewalks topped with concrete; the steps are constructed of concrete. The stair at the nautical side is wood framed, with a 2 x 4 wood handrail. The front porch, located on the right side of the facade, has been enclosed with aluminum frame windows and plywood trim material. The handrail is still visible at the exterior.

Doorways and Doors: The entry doors are not visible due to the front porch enclosure.

Windows: Many of the original two-over-two double-hung windows remain.

Interior: The following information was obtained from the Department of Taxation, Residential Appraisal Card prepared in 1955. The interior of the building was not accessible at the time of our survey.

Floor Plan: The building is roughly rectangular in plan with a shallow bay on the nautical side and a slightly projecting front porch. The interior of the house consisted of three bedroons, two bathrooms, a kitchen and a living room.

Flooring: Wood (pine) strip flooring.

Wall and Ceiling Finishes: Wood (pine) tongue and groove boards.

Interior Doorways and Doors: Wood panel doors.

Mechanical Equipment:
HVAC: Window air conditioners are installed in several rooms.
Lighting: Unknown.

Plumbing: Two bathrooms which were not assessed at the time of our survey.

Description - 1481 A & B Punchbowl Street (Rear House)
Architectural Style: Plateranian/Venetian duplex structure.
Date of Construction: 1941-42
Condition of Building: Poor.
Architect: Unknown
Builder, contractor, suppliers: Unknown (possibly Lewers and Cooks).

Original plan and construction: No drawings were found for this work.

Major alterations and additions: None.

Exterior:
Overall dimensions: 26 x 43 feet; 1,114 square feet.

Foundation: Concrete perimeter foundation; wood post and beam on concrete footings at interior.

Exterior Siding and Structural System: Single-wall construction consisting of vertical tongue and groove boards and an exterior girt.

Roof and Roofing: Hip roof with asphalt roll roofing over asphalt shingles. The overhanging roof eaves have exposed rafters.

Porch and Steps: Concrete steps and landings with metal handrails.

Doorways and Doors: The original entry doors have been replaced with newer flush wood doors.

Windows: The structure retains many of its original double-hung windows and wood screens. The window frame boxes project outward from the exterior face of the single wall material, making them flush with the interior wall surface.
Interior: The following information was obtained from the Department of Taxation, Residential Appraisal Card prepared in 1965. The interior of the building was not accessible at the time of our survey.

Floor Plan: The building is rectangular in plan and contains two living units (one in the front and one to the rear). Each unit consists of two bedrooms, a bath, a kitchen and a living room.

Flooring: Wood (pine) strip floors.

Wall and Ceiling Finish: Wood (pine) tongue and groove boards.

Interior Doorways and Doors: Wood panel doors.

Mechanical Equipment:

HVAC: Window air conditioners are installed in several rooms.

Lighting: Unknown.

Plumbing: Two bathrooms which were not assessed at the time of our survey.

Assessment of Significance

The National Register of Historic Places Criteria (NRHP), in title 36, part 60 of the Code of Federal Regulations (referred to as 36 CFR 60), defines the criteria for legally evaluating the significance of cultural resources as "the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association", and:

A) that are associated with events that have made a significant contribution to the broad patterns of our history; or

B) that are associated with the lives of persons significant in our past; or

C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) that have yielded, or may be likely to yield, information important in prehistory or history (U.S. Dept. of Interior; 1991: p. 37).

The National Register also includes a section called "Criteria Considerations" which explains that ordinarily properties that are less than fifty years old will not be considered eligible for the National Register unless they are "of exceptional importance." The Hawaii State Register of Historic Places utilizes the same criteria as the National Register. Properties listed on the Hawaii Register are afforded the same protection as those listed on the National Register.

Integrity Criteria

The National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation defines integrity as "the ability of a property to convey its significance." (U.S. Dept. of Int., 44).

To be listed in the National Register of Historic Places, a property must not only be shown to be significant under the National Register criteria, but it also must retain its historic integrity. There are seven qualities or aspects of integrity mentioned in the National Register criteria: location, design, setting, materials, craftsmanship, feeling, and association.

A determination of these aspects is most important to a particular property requires knowing why, where, and when the property is significant. The following sections define the seven aspects and explain how they combine to produce integrity.

Historic properties either retain integrity (that is, convey their significance) or they do not. To retain historic integrity a property will always preserve several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant. The following sections define the seven aspects and explain how they combine to produce integrity.

Location is the place where the historic property was constructed or the place where the historic events occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property, complemented by its setting, its particularly important in recognizing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic association is judged if the property is moved.

Design is the combination of elements that create the form, plan, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportions, scale, technology, ornamentation, and materials.

A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamentation; and arrangement and type of plantings in a designed landscape.

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space.

Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences.
The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as topographic features (a gully or the crest of a hill), simple manmade features (posts or fences), and relationships between buildings and other features or open space.

These features and their relationships should be examined not only within the exar boundaries of the property, but also between the property and its surroundings. This is particularly important for districts.

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and availability of particular types of materials and technologies, Indigenous materials are often the focus of regional building traditions and thereby define the area's sense of time and place.

A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been fabricated to look historic. Likewise, a property whose historic features and materials have been lost and then reconstructed is usually not eligible.

Workmanship is the physical evidence of the crafts of a particular culture or people during any or all of a building, structure, object, or site. Workmanship can apply to the property as a whole, to its finishes or in highly specialized forms. Examples can be found in workmanship in historic buildings include stonework, carving, painting, staining, and joinery.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic setting and setting will retain the feeling of agricultural life in the 18th century. A grouping of periodistic structures on a local and national scale to support eligibility of a property for the National Register.

SUMMARY FINDINGS AND RECOMMENDATIONS

Architectural Survey Results

The field checks confirmed that the buildings were most likely built between 1910 and 1941. The changes were described in an earlier section of this report. The adjacent properties were also briefly examined and evaluated in the National Register of Historic Places criteria. Other than the two structures appear to meet the 50-year age criterion of the NRHP and do not appear to possess "exceptional importance" required for properties less than 50 years of age.

Statement of Significance

The buildings also meet the National Register of Historic Places "Criteria C" since they embody the distinctive characteristics of a type, period, or method of construction. The Craftsman-style rock piers and wood columns, the electrical lighting, ornamental windows, and form of the period. Furthermore, three of the four structures are significant as good examples of single-wall construction, a distinctive building type in Hawaii.

Assessment of Integrity

Location: The buildings at 1475 and 1481 Punchbowl Street retain their integrity of location, since there is no evidence that the buildings have been moved. Although the original drawings have not been found, the Survey Map for 1916-17 indicates two structures with identical footprints to the buildings presently located on the site.

Design: The structures retain their integrity of design, since the "structural system; meaning; arrangement of spars; pattern of transom; and color of surface materials; and type, amount, and style of ornamentation" remain evident. The color of the exterior, the use of asphalt roll roofing, and the addition of window air conditioning units, are reversible and therefore do not detract from the integrity of design criteria.

Setting: Due to rapid urbanization and the development of the 11 Freeway in the 1960s, the building's setting has changed drastically. Once located in a
primarily residential neighborhood, the three houses at 1459, 1475, and 1481 Punchbowl Street are now surrounded by low-rise apartment buildings and commercial enterprises, and are bordered by a very busy freeway on/off ramp.

Materials: Generally, the buildings retain their key exterior materials dating from the period of significance (1910 to 1941). These significant materials include the exterior siding and trim, double-hung windows, and ornamental bracketing/ornaments. Although the main house at 1481 Punchbowl is in serious deterioration condition, it nonetheless retains enough of its original fabric to meet the integrity of materials criterion.

Workmanship: The structures retain their integrity of workmanship, since the methods of construction and level of ornamental detailing remain apparent. The houses at 1475 and 1481 Punchbowl Streets feature Craftsman-style architectural elements, such as decorative brackets and railings, ornamental windows, and lava rock piers and wood columns, which make these homes more distinctive than many other structures of the period.

Feeling: Despite the drastic changes to their setting, the three homes remaining on this section of Punchbowl Street somewhat manage to convey the feeling of an older residential neighborhood. One senses that this was once a respectable middle-class neighborhood with homes of charm and distinction.

Association: The structures' association with the Portuguese community are diminished due to the urbanization of this neighborhood. The Portuguese church is no longer extant, and there is little evidence of Portuguese culture in the area.

Recommendations

The following are the opinions of the architectural historian who surveyed the architectural resources on the project site, and who are familiar with the history and context of the buildings. The consultation between the C&K of Honolulu and the SHPO, if they agree, will ultimately determine the effect of the undertaking on the historic properties, if any, in the project area.

As discussed in an earlier section, the homes at 1475 and 1481 Punchbowl Street meet the National Register of Historic Places Criteria A and C. With the exception of integrity of setting and association, the buildings appear to retain sufficient integrity to convey their historic significance. Thus, the properties appear to be eligible for the National and/or Hawaii Register of Historic Places.

Other than the loss of the garage building, a minor ancillary structure constructed ca. 1921, and the relocation of the sidewalk and street ten feet closer to the buildings (in the current parking area), the project will not adversely affect the homes at 1475 Punchbowl Street. However, the demolition of the structures at 1481 Punchbowl Street will contribute further to the loss of setting and association with historic events.

To mitigate the proposed demolition of the garage building at 1475 Punchbowl Street and the two homes at 1481 Punchbowl Street, we recommend that all the structures on these two parcels be documented prior to their demolitions. The appropriate level of documentation should be determined by the SHPO.
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Honolulu, City and County, Department of Taxation. Residential Appraisal Forms, various dates.

Pulau-Hosted Directory for Honolulu, various dates.


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