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GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1295

RECEIVED

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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: RODNEY K. HARAGA
for DIRECTOR OF TRANSPORTATION

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT (EA) AND FINDING OF NO SIGNIFICANT IMPACT, FORT WEAVER ROAD WIDENING, EWA, ISLAND OF OAHU, HAWAII

The Department of Transportation (DOT) has reviewed the comments received during the 30-day public comment period which began on June 23, 2003, and believes the mitigation measures proposed in the Final EA adequately addresses the issues raised. Concerns regarding noise, traffic congestion, historic properties, landscaping, drainage and wetlands are addressed in the Final EA. No other significant concerns were raised during the public review period or during a public meeting held for the project.

Best Management Practices and mitigation measures described in the Final EA will ensure that no significant negative impacts to urban lands, water and air quality, flora and fauna, cultural and scenic resources, land use, or community well-being will result from the proposed project. The proposed action will further improve the transportation facilities in the area and provide enhancements to pedestrian and bicycling facilities in the area.

DOT hereby issues a finding of no significant impact. Please publish this notice in the August 23, 2003, Environmental Notice.

We have enclosed a completed OEQC Environmental Notice Publication Form and four copies of the Final EA. Please contact Glenn Kurashima, Design Branch, Highways Division and reference HWY-DD 2.1295 as noted above.

Enclosure

2003 - 09 - 23 - OA - FEA

Prepared Pursuant to National Environmental Policy Act (NEPA) and
Hawai'i Revised Statutes (HRS), Chapter 343

Final Environmental Assessment

FORT WEAVER ROAD WIDENING

Ewa, O'ahu, Hawai'i

AUGUST 2003

Prepared For:

Highways Division
Department of Transportation
State of Hawai'i

Prepared By:

KN Consulting Services, Inc.
1451 South King Street, Suite 412
Honolulu, Hawai'i 96814

R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawai'i 96817

Final Environmental Assessment

FORT WEAVER ROAD WIDENING
(Farrington Highway to Geiger Road)
Ewa, O'ahu

August 2003

Prepared For:
Highways Division
Department of Transportation
State of Hawai'i

Prepared by:
R.M. Towill Corporation
and KN Consulting Services, Inc.
1-19731-0P

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

PROJECT SUMMARY
FORT WEAVER ROAD WIDENING
Project No. STP 76AB-01-00 & 76B-01-01

Project Applicant:	Fort Weaver Road Widening State of Hawai'i, Department of Transportation, Highways Division
Accepting Authority:	State of Hawai'i, Department of Transportation
Location:	Farrington Highway to South of Geiger Road Ewa, O'ahu, State of Hawai'i
Major Impacts	Widening of existing bridges to accommodate pedestrian path Noise impacts during and after construction Traffic impacts during construction Possible right of way acquisition Construction within the Honouliuli Stream Channel Possible construction within a wetland Extension of improved railroad across the planned widening Relocation of existing utilities
TMKs:	Adjoining Plats (1) 9-1-10 and (1) 9-1-17
Agent:	KN Consulting Services, Inc. Mr. Kenneth Nagai, P.E., President and Principal Civil Engineer 1451 S. King Street, Suite 412 Honolulu, Hawai'i 96814 Phone: (808) 941-8882 Facsimile: (808) 941-8828
Existing Land Uses:	Existing Right-of-Way Surrounding land uses include residential subdivisions, golf course, commercial, retail, and medical offices, and a plant nursery.
Proposed Action:	Widen Fort Weaver Road from Farrington Highway to 1000 feet south of Geiger Road from four lanes to six lanes in both directions; construct bicycle lane, shared pedestrian path, curbs, gutters and concrete sidewalks.
Required Permits	DOH Construction Noise Permit; National Pollutant Discharge Elimination System Permit (NPDES); Section 404 Army Corps of Engineers; Section 401 Water Quality Certification; Stream Channel Alteration Permit

CHAPTER 1
PURPOSE AND NEED FOR PROPOSED PROJECT

1.1 OVERVIEW, PURPOSE, AND NEED FOR PROJECT

The State Department of Transportation, Highways Division (DOT-H), through the Federal Highway Administration (FHWA), proposes to widen a major section of the existing Fort Weaver Road located in Ewa, Oahu (Figure 1-1). The project will improve the Fort Weaver Road thoroughfare through widening of the existing four lanes to accommodate the addition of two new lanes, for a total of six lanes (Figure 1-2). The widening will start just south of Farrington Highway overpass to a location 1,000 feet south of Geiger Road, a distance of approximately 3.5 miles. Shoulder/bicycle lanes, sidewalks on the west side, an improved shared pathway on the east side, and other safety provisions are also proposed to be implemented.

The purpose of the project is to increase safety, capacity and improve the bicycle and pedestrian facilities. When completed, the increase in the number of lanes is expected to provide improved through-travel, reduce potential for bottlenecks at intersections, and provide bicycle and pedestrian access throughout the corridor.

The proposed project will require the evaluation of existing land uses and environmental conditions to determine the overall impact of construction activities to the surrounding area and community. Project activities will be assessed for compliance with Federal, State and City and County of Honolulu policies and land use plans.

1.2 PURPOSE OF ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) is prepared pursuant to the requirements of the National Environmental Policy Act (NEPA); Chapter 343, Hawaii Revised Statutes (HRS); and the State Department of Health, Hawaii Administrative Rules (HAR), Title 11-200, implementing rules. DOT, Highways Division is the accepting authority for this document under NEPA and Chapter 343, HRS. This document provides a written

evaluation to determine whether the proposed action may have a significant environmental effect. As appropriate, mitigation measures to address the potential for adverse environmental impacts are proposed.

1.3 PROJECT LOCATION

The project involves widening the Fort Weaver Road thoroughfare beginning south of Farrington Highway overpass to a location 1,000 feet south of Geiger Road, a distance of approximately 3.5 miles. Fort Weaver Road is oriented in a mauka to makai (north to south) alignment, roughly perpendicular to the Ewa coastline. It is a major urban arterial providing access to numerous residential subdivisions and commercial developments in the Ewa region including (Figure 1-1):

- St. Francis West Medical Facility
- West Loch Estates Subdivision
- West Loch Golf Course
- West Loch Fairways Subdivision
- Ewa Villages Golf Course
- Fernandez Village
- Renton Village
- Ewa By Gentry
- Ewa Beach
- Iroquois Point
- Kalaeloa
- Kapolei (via Kalaeloa)

The alignment of Fort Weaver Road provides a bridge crossing at Honouliuli Stream, and a crossing with the former OR&L Railroad right-of-way, identified as State Historic Site No. 50-80-12-9714. The site is also listed on the National Register of Historic Places, as site no. 12-1-1975.

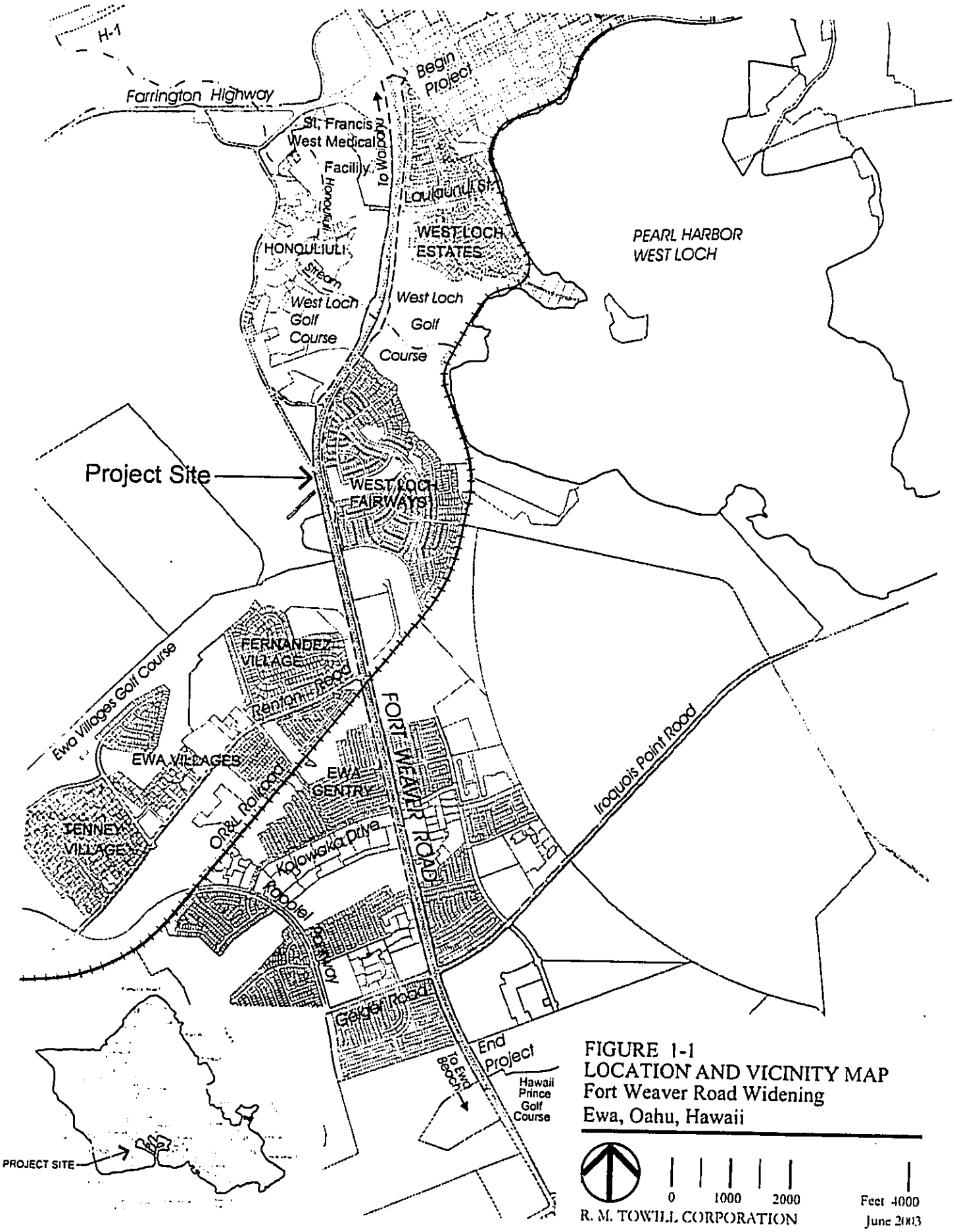
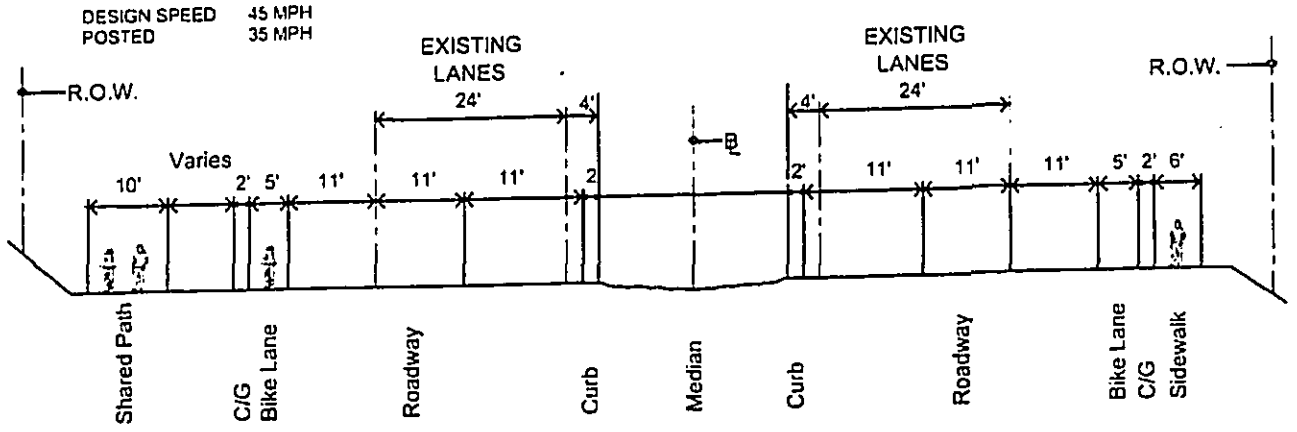


FIGURE 1-1
LOCATION AND VICINITY MAP
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

FT. WEAVER ROAD WIDENING
LAULAUNUI TO GEIGER ROAD

ROAD CLASSIFICATION:URBAN ARTERIAL

DESIGN SPEED 45 MPH
POSTED 35 MPH



TYPICAL SECTION

C/G - Curb and Gutter

FIGURE 1-2
SECTION (ROAD)
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

0 8 16 Feet 45

R. M. TOWILL CORPORATION June 2013

CHAPTER 2
PROJECT DESCRIPTION AND ALTERNATIVES CONSIDERED

2.1 PROPOSED ACTION

The proposed project involves the construction of road widening and related pedestrian and bicycling improvements along Fort Weaver Road, between the Farrington Highway overpass to a location 1,000 feet south of Geiger Road intersection, a distance of approximately 3.5 miles. The improvements will allow for the safe and efficient travel of motorists, bicyclists and pedestrians along a key arterial serving various subdivisions and facilities in the Ewa region. The following will be involved:

1. Increase the number of lanes from four to six. Each lane will be 11 feet wide to produce a consistent typical section based on limited right-of-way available along Fort Weaver Road and at existing bridge structures. The 11-foot lane width conforms to The 2001 Green Book, A Policy on Geometric Design of Highways and Streets, FHWA, and is extensively used for urban arterial design. In addition, (1) permitting the steel utility poles within the sidewalk will allow for the poles to be placed further away from traffic; (2) right-of-way conflicts due to deceleration lanes, bike lanes, and bus stops and bus shelters will be reduced; and, (3) noise may be slightly reduced in certain locations due to the roadway being located a few feet farther from adjacent homes.

   The six lanes will taper to four lanes south of Geiger Road. The existing center median and landscaping along the majority of Fort Weaver Road will be maintained; however, concrete curbs will be added on both sides of the median.

2. Intersection improvements will be made to accommodate the increase to six lanes. The intersections will include:
   - Laulaunui Street

- Old Fort Weaver Road / Aawa Drive
- Hoalauna Road
- Karayan Street
- Renton Road / Arizona Road
- Kolowaka Drive
- Geiger Road / Iroquois Point Road

A portion of the project at the Kolowaka Drive intersection will require acquisition of less than ½ acre of land to ensure sufficient space for the road widening. The land acquisition will involve land owned by the Ewa by Gentry subdivision. Also, additional rights-of-way and or easements may be required to accommodate the planned improvements at several bus stops. Acquisition of land will be subject to 49 Code of Federal Regulations (CFR), Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs.

3. Street lighting will be relocated and traffic signals upgraded to accommodate the increased number of lanes. Where utility poles cannot be relocated outside of the sidewalk, a minimum of 3 feet will be maintained for pedestrian access.

4. Shoulder / bicycle lanes will be provided on both sides of Fort Weaver Road. A continuous sidewalk will be provided on the west side. The existing shared pathway on the east side will be improved and made continuous. With the installation of curbs, the drainage system along the highway will be improved. Existing landscaping will be maintained. If additional or new landscaping is required, the plant material will match the current plantings.

5. The Fort Weaver Bridge over Honouliuli Stream will be reconfigured to provide a dedicated bike lane and pedestrian sidewalk which will be located west of the existing bridge. This improvement will increase

pedestrian and bicyclist safety. The bridge improvement will require placement of pile foundation in Honouliuli Stream. See Figure 2-1.

6. Curbs and gutters will be installed on Fort Weaver Road along the entire project length. Intersections will be finished to accommodate curb ramps to comply with Americans with Disabilities Act (ADA) regulations.

7. A portion of the project will cross the former OR&L railroad right of way. The railroad tracks will be incorporated into the design of the road widening. The current railroad crossing is uncontrolled, however, existing conduits for future crossing guards will be extended.

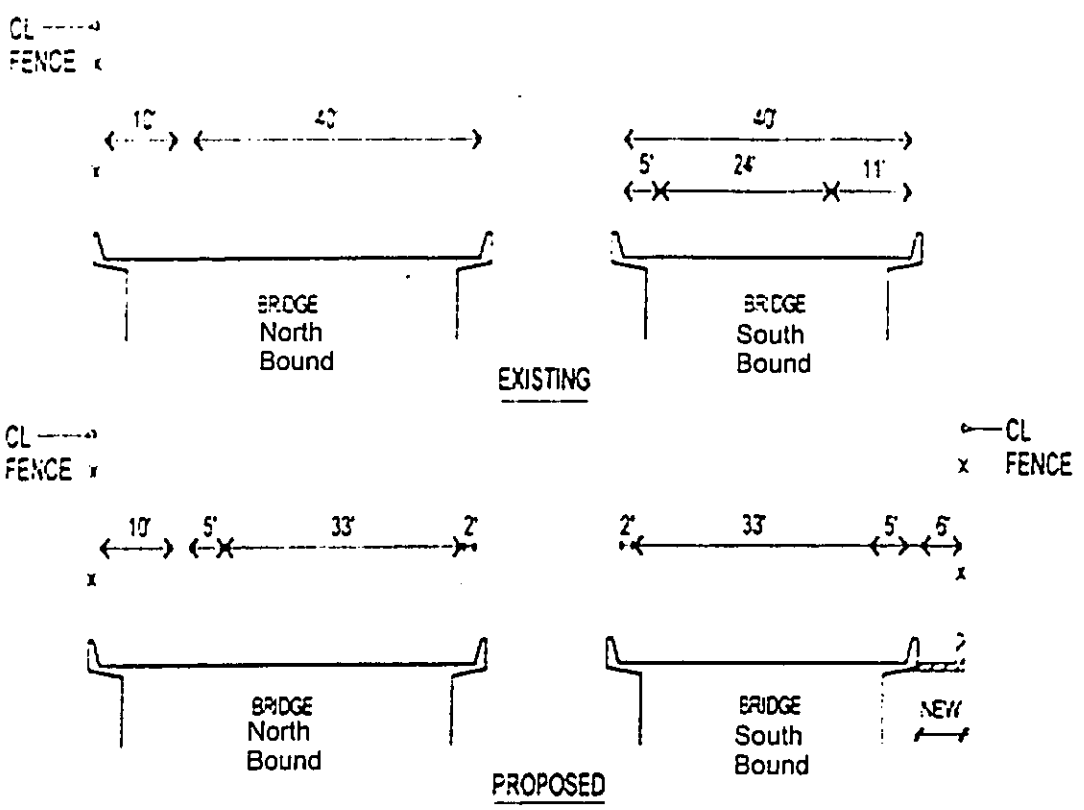
8. Phasing of the project has not been finalized. However, the first phase will include the section near Laulaunui Street. Subsequent phases will follow the Fort Weaver Road right-of-way, southward, to the limit of improvements south of Geiger Road.

2.2 ALTERNATIVES TO THE PROPOSED ACTION

2.2.1 NO ACTION ALTERNATIVE

The No Action Alternative involves no further action to widen Fort Weaver Road and install pedestrian and bicycle improvements. No further action would mean that DOT-H and FHWA would incur no further planning and development costs.

Future development of the Ewa area is expected to place increasing demand on the Fort Weaver Road arterial and connector roads providing access to the surrounding areas. The increase in future demand would eventually result in increased congestion, delay, and potential safety issues for motorists, bicyclists, and pedestrians.



SECTIONS - FORT WEAVER ROAD BRIDGE

FIGURE 2-1
SECTION (BRIDGE)
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

0 8 16 Feet 45

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Because the No Action Alternative does not address the future transportation needs of the Ewa community served by this section of roadway, it is rejected from further consideration.

2.2.2 PREFERRED ALTERNATIVE

The preferred alternative involves construction of the proposed project. Rationale supporting this determination involves the following:

1. The proposed project improves existing deficiencies and addresses future expected demand for use of Fort Weaver Road based on projected population growth of the area and region (Ewa Development Plan Area).
2. The proposed widening project will involve use of 11-foot wide lanes which is acceptable for use along an urban arterial. This is based on constrained availability of right of way and a posted speed limit of 35 miles per hour.

2.3 TENTATIVE PROJECT SCHEDULE AND ESTIMATED COST

The first phase of the proposed project is scheduled for construction in Spring 2004. Construction duration will be approximately 12 months. Estimated costs for construction are as follows:

AREA	COST
Area Near Laulaunui Street (first phase)	$4,246,000
South of Laulaunui Street to Geiger Road Intersection	$23,810,000
TOTAL PROJECT COST	$28,056,000

The project costs will be costs will be shared between the Federal government and the State of Hawai'i, 80 percent and 20 percent, respectively.

CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

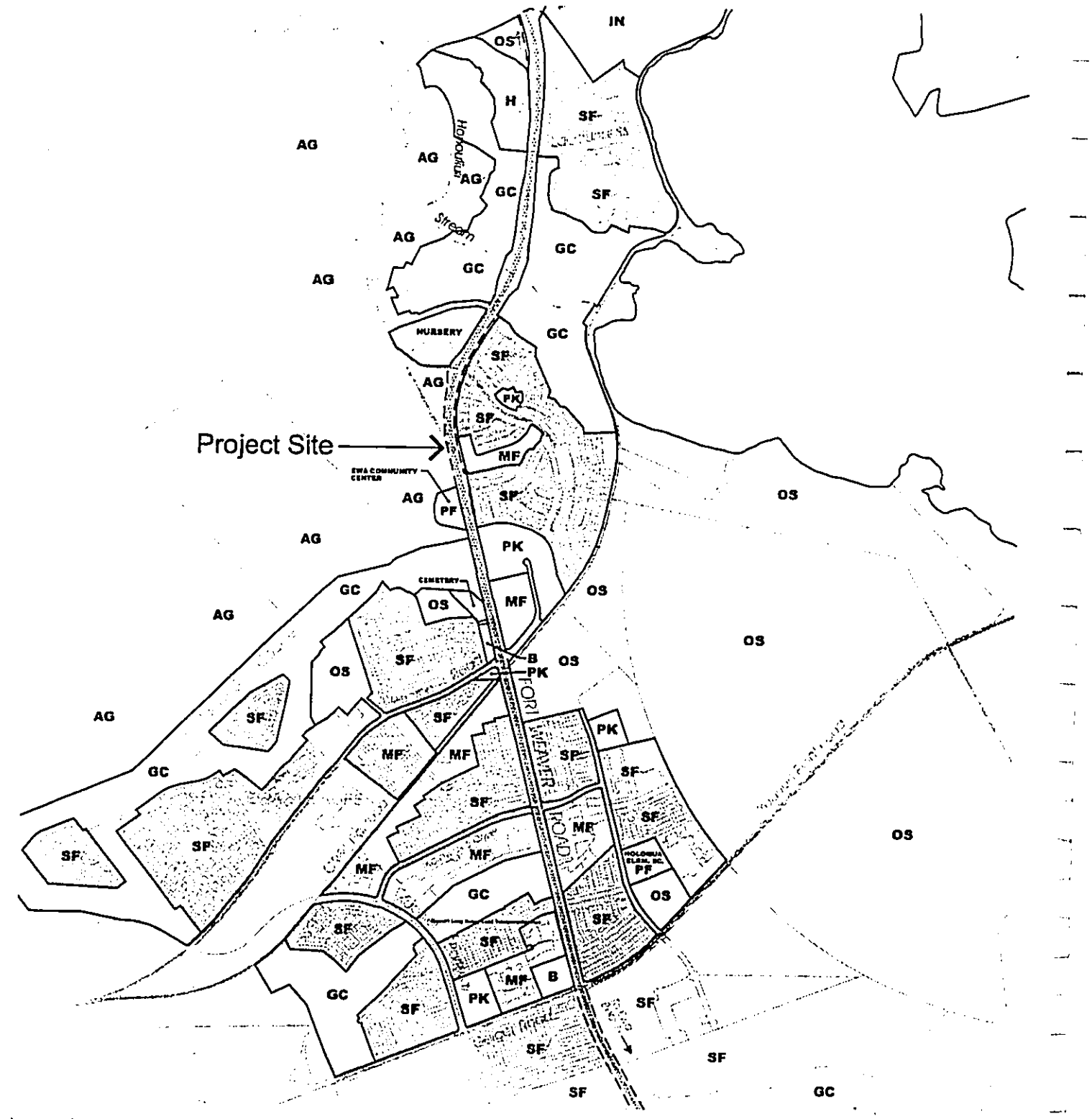
3.1 EXISTING LAND USE

Land use along the Fort Weaver Road corridor is a mix of single family homes, multifamily homes, three golf courses (West Loch, Ewa Villages, and Coral Creek), a hospital (St. Francis West), park (West Loch), nursery, commercial-retail services, social services, and open space (Figure 3-1: Existing Land Use).

Project Impact. The proposed project will not adversely impact existing land uses. A small area of land less than ½ acre will need to be acquired at the intersection of Fort Weaver Road and Kolowaka Drive. The land involved is under owned by the Ewa by Gentry subdivision and will not require displacement of residences. At certain bus stop locations, additional right-of-way and or easements will be necessary to accommodate the improvements to those bus stops

Mitigation. Property owners whose real property may be acquired by the proposed project will be eligible for compensation and relocation assistance under the terms and rules of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (The Uniform Act), and the Uniform Relocation Act Amendments of 1987. These acts provide for the fair and equitable treatment of persons whose property will be acquired or who will be displaced because of programs or projects financed with federal funds.

Policies and provisions regarding the acquisition of real property, relocation assistance advisory services, and relocation payments are published in the Federal Register of March 2, 1989, and reprinted each year in the Code of Federal Regulations, Title 49, Part 24. (USDOT 1992, 1995). Hawaii Revised Statutes,



Legend

SF	Single Family	PK	Park
MF	Multi-Family	AG	Agriculture
B	Business/Commercial	GC	Golf Course
PF	Public Facility	OS	Open Space
H	Hospital	IN	Industrial

Source: City & County of Honolulu, GIS Database Online Services Island of Oahu, Feb 2002
Aerial Photo: Air Survey Hawaii, 9/24/2002

FIGURE 3-1
EXISTING LAND USE
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

0 1000 2000 Feet 4000

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June 2003

Title 15, Chapter 264, Part 2, Federal Aid Highways, defers to federal rules and regulations regarding compensation and assistance for displaced families.

Relocation advisory services and payments will be administered by the State Department of Transportation. Any aggrieved person may file a written appeal with SDOT-H if the person believes SDOT-H has failed to properly determine his or her eligibility for relocation assistance advisory services, or the amount of the relocation payment. The person making the appeal has the right to be represented by legal counsel or other representative, but solely at their own expense. SDOT-H will reply with a written determination and explanation of the decision. If SDOT-H's position is still considered to be unsatisfactory, the aggrieved person may seek a judicial review.

Prior to construction, DOT-H will conduct negotiations with affected property owners to reach agreements on the acquisition of lands required for the expanded ROW. Property will not be acquired without just compensation that is fair and equitable to both the property owner and to the public. Just compensation will be determined through a property appraisal conducted by an independent, certified appraiser with the participation of the property owner.

3.2 CLIMATE

The average annual temperature recorded in the project area range is 77 degrees Fahrenheit (F), with an average high of 84 degrees F and a low of 73 degrees F. The range in normal temperature between the coolest month (February) and the warmest month (August) averages less than 9 degrees F. From July through September, average daily maximum temperatures are 81 degrees.

The average annual rainfall is 22 inches, and the wind speed varies from 13 to 24 miles per hour from the northeasterly direction. Trade wind showers are relatively common and although heavy rains occur at times, most of the showers are light and of short duration.

Project Impacts. The proposed project will have no effect on prevailing climatic conditions.

Mitigation Measures. No other mitigative measures are required or recommended.

3.3 GEOLOGY AND TOPOGRAPHY

The topography of the area is mostly gently sloping lowlands formed between the Waianae Mountain Range and the Koolau Mountain Range. Ground elevations vary between 14 to 70 feet above mean sea level. The higher elevations are located near the St. Francis West Hospital. The lower portions are located adjacent to the Honouliuli Stream and the West Loch Golf Course. The golf course is at sea level.

Project Impacts. The proposed action will entail site grading. However, the general contours of the area will not be significantly changed from existing conditions.

Mitigation Measures. The proposed project will involve use of an existing thoroughfare. Therefore, no mitigative measures are required or recommended.

3.4 WATER RESOURCES AND HYDROLOGY

A. Surface Water

The proposed project site is located inland from West Loch of Pearl Harbor, between approximately 14 to 70 feet above mean sea level (msl). The topography is characterized by gradual slopes of up to 7 percent. The most significant geographical features in the area are Honouliuli Stream and adjoining wetlands which the roadway traverses. Honouliuli Stream flows under the Fort Weaver Road Bridge in a naturalized stream. This perennial stream originates in the Koolau Mountains and drains into West Loch. The stream moves through the West Loch Golf Course on both the mauka and

makai sides of the roadway. The West Loch Golf Course had been designed as part of a flood control - water detention feature and is characterized by wetland vegetation and hydric soils.

Project Impact. Honouliuli Stream and its current water course will be impacted by the proposed project with the installation of new pile foundation for the pedestrian walkway to be installed on the south-bound segment. The installation of the bridge piles will entail work in the 100-year floodway.

Mitigation. No specific mitigation is proposed at this time. However, as design proceeds and access to the stream is required, three alternatives are being considered: 1) installation of temporary fill to accommodate construction equipment, 2) installation of a flexible "mat" to accommodate equipment, and 3) installation of piles and bridge decking from the existing bridge. Each of the proposed methodologies will require further study and coordination with the appropriate agencies. Permitting requirements will be coordinated with the Department of the Army and the State Commission on Water Resource Management.

B. Ground Water / Southern O'ahu Basal Aquifer

The project area is within the Pearl Harbor Ground Water Control Area as established by the Commission on Water Resource Management. The project site also lies within the Southern O'ahu Basal Aquifer (SOBA) over the approximate geologic boundary between a permeable formation of Koolau Basalt and coastal plain deposits that form impermeable caprock. The coastal caprock impedes the discharge of fresh water within the Koolau Basalt, impounding basal water in a hydraulic lens that forms a portion of the SOBA. Aquifer recharge occurs where water infiltrates through the permeable Koolau Basalt. Where caprock occurs, rainfall, surface water, and runoff discharge are prevented from percolating into the aquifer.

Project Impact. The proposed action will not impact the existing ground water resources of the area.

Mitigation. No mitigation is proposed or recommended.

3.5 SOILS

The project site contains a variety of soil types including silty clays, mottled clays, coral deposits, as well as mixed soil types (Figure 3-2: Soils). Depending on the soil type, permeability and runoff are slow, with only slight erosion hazards. Colors of the different soils include dark brown, dark reddish-brown, dark greyish-brown and very dark gray soils.

3.6 FARMLANDS

No farmlands exist within the project area. The segment of Fort Weaver Road affected by the project lies entirely within an urban corridor. The lands surrounding the roadway corridor are classified as "Prime" and "Other Important" according to the Agricultural Lands of Importance to the State of Hawai'i (ALISH) system.

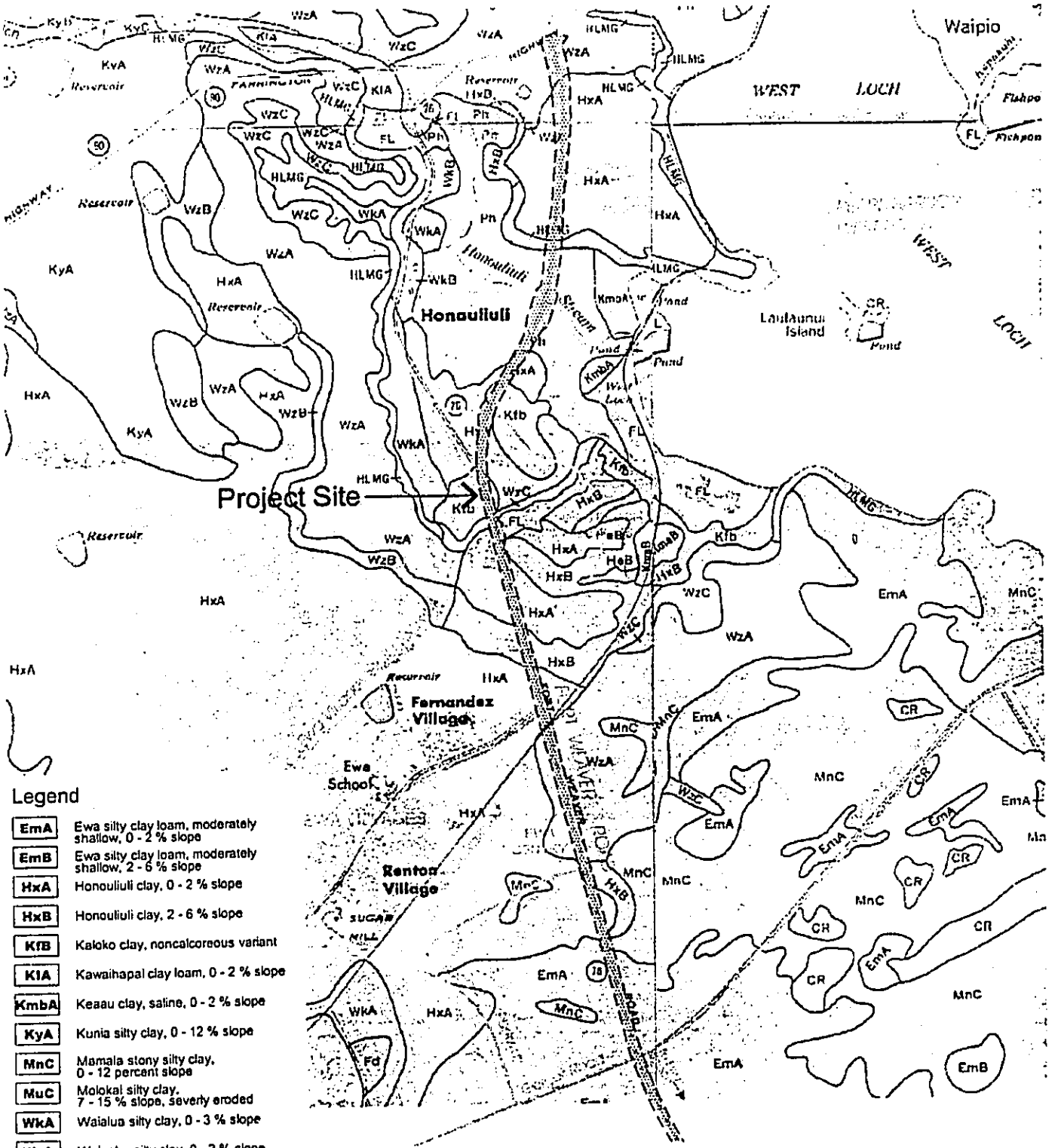
Project Impacts. No direct or indirect impacts to farmlands will occur as a result of this project.

Mitigation Measures. No mitigation measures are recommended or required.

3.7 NATURAL HAZARDS

A. Earthquake

The Uniform Building Code (UBC) provides minimum design criteria to address potential for damages due to seismic disturbances. The UBC scale is rated from Seismic Zone 1 through Zone 4, with 1 the lowest level for potential seismic induced ground movement. O'ahu has been designated within Seismic Zone 2a.



Source: United States Department of Agriculture, Soil Conservation Service, & University of Hawaii, Agricultural Experiment Station Soils Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, page. 43, 44, 53 & 54, State of Hawaii, Issued August 1972

FIGURE 3-2
SOILS MAP
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

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Project Impacts: Seismic risk at the project site is minimal. The proposed project is not likely to be affected by seismic activity.

Mitigation Measures. All structures proposed for this project will be built, at a minimum, according to equivalent standards for Seismic Zone 2a, as established by the Uniform Building Code.

B. Flood Zones

The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) of November 20, 2000, identifies the project site as generally lying within Zone D, an area in which flood hazards have not been determined. The exception is where the project crosses the Honouliuli Stream. The stream area is identified as Zone AE floodway, an area in which the base flood elevations have been determined. (National Flood Insurance Program 1995) (Figure 3-3: Flood Insurance Rate Map).

Project Impacts. The proposed project will require pile foundations in the existing stream channel. However, the widening of the bridge will not impact the base flood elevation. The new pile foundation will be aligned with the existing pile columns and the bottom of the new bridge structure will not be lower then the existing bridge.

Mitigation Measures. During the design stage, hydraulic analysis of the bridge crossing will be conducted to ensure the bridge widening does not adversely affect the base flood elevations. Site-specific BMPs will include contingency plans to respond to heavy rainfall conditions and high-water flows.

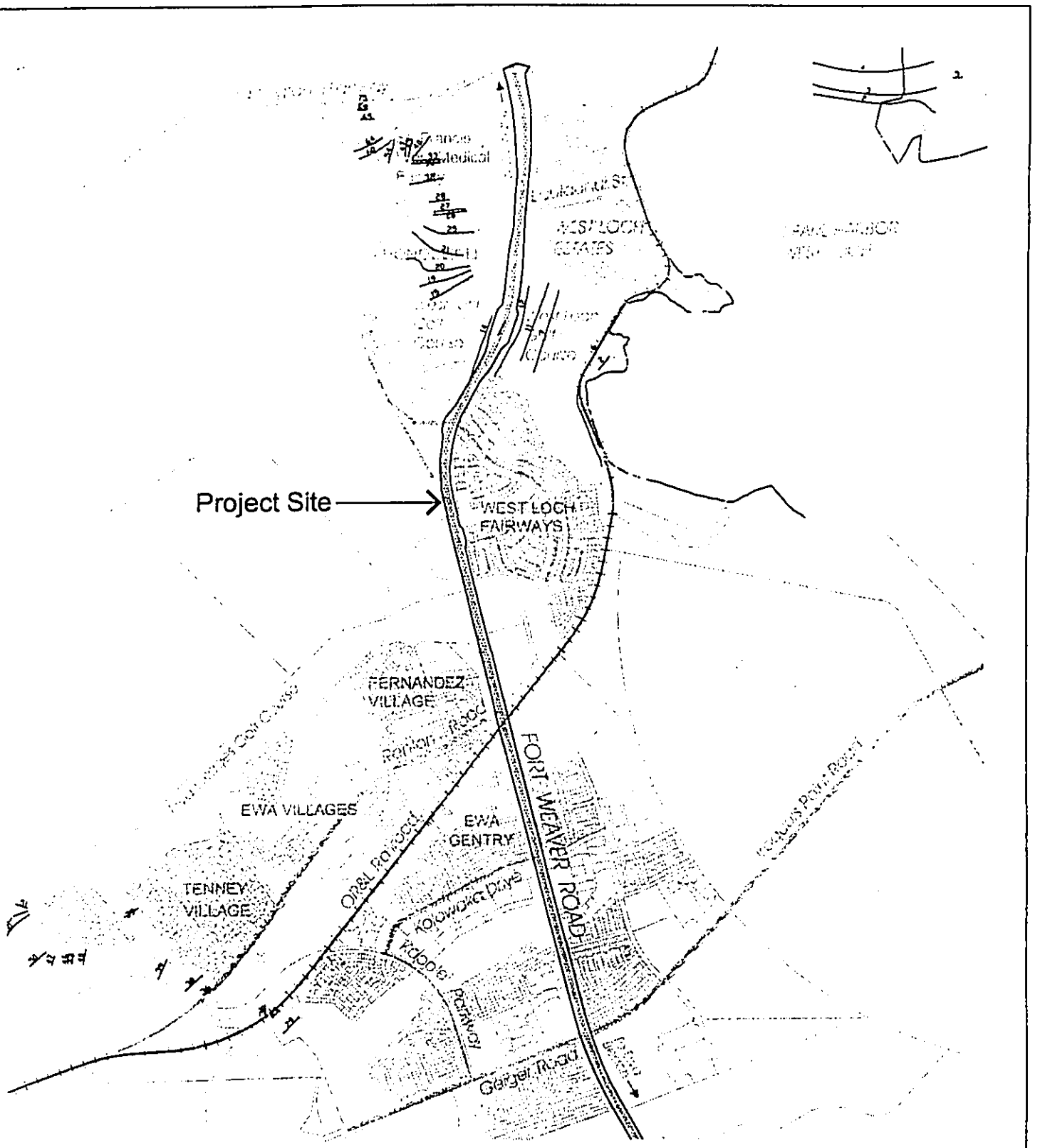

FIGURE 3-3
FLOOD INSURANCE RATE MAP
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

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June 2003

3.8 FLORA AND FAUNA

The existing roadway corridor is nearly devoid of native vegetation except for plants introduced for landscaping. In the vicinity of the West Loch Estate and West Loch Fairways, the dominant tree from Farrington Highway to Renton Road is the Monkeypod. From Renton Road to Geiger Road the landscaping is a mix of street trees (Kou, Opiuma, African Tulip, Formosan Koa, and Palms). Shrubs along the roadway include hibiscus, Spider Lily, and beach Naupaka.

During field visits, domestic dogs and cats were the only land mammals observed in the road corridor. Birds observed were limited to cattle egrets, barred doves, and the common myna.

Project Impacts. No endangered or threaten plant or animal species were observed within the project limits.

Mitigation. Existing landscaping will be maintained. No new landscaped areas will be developed.

3.9 SECTION 106 CONSULTATION (Archaeological and Cultural Resources)

The former O'ahu Railway and Land (OR&L) railroad crosses Fort Weaver Road approximately 150 feet west of Renton Road. The railroad right-of-way is under the jurisdiction of the State of Hawai'i. This section of the tracks is currently not used (Figure 1-1). The tracks were previously improved at that location when Fort Weaver Road was widened from two lanes to four lanes. The former OR&L railway is listed on both the State and National Register of Historic Places. The State site number assigned to the railroad is 50-80-12-9714.

On May 12, 2003, a site visit was conducted with representatives of the State Historic Preservation Division to evaluate the construction plans vis-à-vis the historic value of the railroad in Hawai'i's history. It was concluded that special consideration will be

given to the design of the intersection of Fort Weaver Road with the former OR&L Railway. The railway tracks in the Fort Weaver Road area are not currently being used by trains. The Hawaiian Railway Society will be consulted regarding design of the highway at the track crossing.

Other sites observed along, but outside of the highway right-of-way are an plantation era cemetary near Renton Road, and a marker denoting the location of the first artesian well dug near the intersection of Old Fort Weaver Road and Fort Weaver Road.

Consultation with the impacted communities and the public at large was initiated as part of this project to fulfill requirements of the Section 106 of the National Historic Preservation Act. Letters soliciting comments on the potential impact of the project on cultural or historic resources were sent via registered mail to 42 persons-organizations. A description of the project was included, as well as maps showing the location of the project. Thirty-six individuals acknowledged receipt of the material that was sent out. Of the 36, two agencies, the U.S. Army Corps of Engineers and the State Historic Preservation Division responded. Their comments are attached.

Project Impacts. The railway tracks will be impacted by the proposed widening. Approximately 15+ feet of improvements will be added on both sides of the road.

Mitigation. The existing tracks will be re-laid to the edge of the highway right-of-way to provide a smooth transition between the existing tracks and the new tracks. The proposed road improvements will not preclude the operational requirements of a future railroad. This work will be coordinated with the Hawaiian Railway Society and the State Division of Historic Preservation in accordance with the Section 106 consultation.

3.10 NOISE CONDITIONS

Ambient noise at and around the project site is dominated by vehicular traffic on Fort

Weaver Road, according to an acoustical study conducted by Y. Ebisu and Associates (June 2003, See Appendix C). Remote noise from aircraft, combined with naturally occurring sounds from wind and other sources, generates relatively low background noise in the project area. Noise measurements were taken at 27 locations along the project corridor. See Appendix C, Figure 2.

At present, traffic noise levels along Fort Weaver Road exceed allowable noise abatement criteria (Table 3-1) established by the U.S. Federal Highways Administration (FHWA) and Hawai'i State Department of Transportation, Highways Division at three locations at ground level (4.92 feet above grade) and at 43 locations at 14.92 feet above grade. .

The DOT-H Noise Analysis and Abatement Policy considers a noise impact to occur when the predicted traffic noise levels "approach" or "exceed" the FHWA noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels. DOT-H defines "approach" as being at least 1 dBA less than the noise abatement criteria and a substantial increase as being at least 15 dBA. Noise criteria are presented in the following table.

Table 3-1
Federal Highway Administration
Recommended Sound Level Based on Land Use

Activity Category	Leq(h)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.

D	-	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Existing and projected traffic noise levels are shown in Appendix C (Tables 6A and Table 6B).. Table 6A and 6B show the noise levels with and without the project being implemented. The following conclusions were made based on the noise analysis: (Ebisu, 2003)

- DOT-H's - greater than 15 dBA increase criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3.1 dBA as a result of growth in traffic volumes and construction of the additional lanes.
- Under the no build alternatives, future traffic noise levels at the second floors of approximately 54 two-story residences are expected to exceed the HDOT's 66 Leq(h) criteria for Activity Category B. These dwellings units are located on both sides of Fort Weaver Road within the limits of project construction.
- The HDOT's 71 Leq(h) noise abatement criteria for Activity Category C will not be exceeded at the existing commercial buildings near the Renton and Geiger Road intersections.
- The HDOT's 66 Leq(h) noise abatement criteria for Activity Category B will be exceeded at one of the two parks within the limits of project construction. The neighborhood park west of Fort Weaver Road at the Kolowaka Drive intersection is a candidate for sound attenuation measures, such as the construction of a 6-foot high wall. The large park/playground west of Fort Weaver Road and north of Renton Road intersection does not require additional sound attenuation measures.
- Noise levels at the three buildings of the Child and Family Service, Ewa Family Center which front Fort Weaver Road will continue to exceed the 66 Leq(h) criteria for Activity Category B. However, the use of central air conditioning for these three buildings is an adequate noise abatement

measure for both buildings at current and future traffic noise levels.

Project Impacts. Construction of the proposed roadway widening will involve excavating, grading, concrete casting, and paving. The various construction phases will likely generate noise which could impact nearby areas. Noise levels of diesel-powered construction equipment typically range from 80 to 90 dBA at a 50-foot distance. The actual noise levels produced are dependent on the construction methods employed during each phase of the construction process. Earthmoving equipment, including diesel engine-powered bulldozers, trucks, backhoes, front-end loaders, graders, etc. will probably be the noisiest equipment used during construction. However, as construction will be temporary, no lasting impact from proposed construction activities is expected.

Nearby residential areas, particularly those units immediately adjacent to the project site, will likely be affected by noise levels exceeding the allowable daytime standards of 55 dBA set by Department of Health Rules, Title 11, Chapter 43. These areas include the West Loch Estates, West Loch Fairways, Fernandez Village, and Ewa By Gentry subdivisions. Adverse impacts from construction noise are not expected to pose a hazard to "public health and welfare" due to the temporary nature of the work, and due to the mitigation measures that will be employed to minimize noise impacts.

Mitigation Measures. Traffic noise and construction noise mitigation measures are discussed separately below.

Traffic Noise Mitigation Measures

Future traffic noise levels (projected to the year 2023) are predicted to continue to exceed the SDOT-H 66 Leq(h) noise abatement criteria for Activity Category B at noise sensitive structures along Fort Weaver Road with or without the proposed project. Noise mitigation measures are being considered for locations that are impacted by noise levels that approach or exceed SDOT H's noise abatement

criteria (see Table 3-1). Noise mitigation measures likely to be incorporated into the project include constructing roadside noise barrier walls.

Noise Barrier Walls

The use of noise barrier walls at the part at Kolowaka Drive was evaluated according to the criteria of "reasonable and feasible" described in SDOT-H's Noise Analysis and Abatement Policy (1997). Noise abatement measures are evaluated for reasonableness and feasibility based on cost, engineering and design considerations, number of benefited residences, visual impacts, other environmental impacts, and the amount of noise reduction they provide. According to FHWA and SDOT-H policy, noise abatement measures that cost $35,000 per benefited residence or less are deemed to be reasonable for cost.

Noise abatement measures must be designed to achieve "substantial noise reductions", defined by SDOT-H policy as a reduction of at least 5 dBA, to be considered reasonable. Visual impacts to residences are also a major consideration in determining the reasonableness of proposed noise barrier walls.

Noise barrier walls designed to achieve a reduction of 5 dBA are likely to be incorporated in the project. Areas of "frequent human use" refer to areas such as backyards, gardens, patios, community parks, and other exterior locations where people regularly spend extended periods of times. Parking lots, landscape areas, walkways, and other areas where human use is intermittent and transient are not considered areas of "frequent human use", and thus are not considered for noise mitigation.

Noise barrier walls must be continuous without see-through openings and be constructed with solid materials. Wall design will include landscaping to soften the visual impacts of the walls and to discourage the potential for graffiti. Special attention to wall color and texture will be included in project design to ensure that the appearance of the structure is thematically appropriate to surrounding areas.

Excessive noise levels generated by construction activities will require that a noise permit be filed with DOH, Noise and Radiation Branch. The provisions of the noise permit will require that contractors muffle all construction vehicles and machinery and maintain all noise attenuation equipment in good operating condition. Faulty equipment will be repaired or replaced. Additionally, trucks and other construction vehicles will be routed to avoid residential communities wherever possible.

Under current permit procedures, noisy construction activities are normally restricted to hours between 7:00 AM and 6:00 PM, Monday through Friday, and between 9:00 AM and 6:00 PM on Saturday. Construction activities and use of heavy equipment will be scheduled as much as possible during daylight hours to avoid disturbing area residents during the evening. If work during the nighttime hours is required to minimize traffic congestion during the normal daytime period, noise impacts will occur at existing residences located along the freeway Right-of-Way. A variance from the existing state noise regulations will be requested from DOH, Noise and Radiation and Indoor Air Quality Branch, to perform nighttime work on this project. Construction activities will be suspended on Sundays and during Holidays, unless a variance is requested.

3.11 AIR QUALITY

Air quality on O'ahu is excellent overall due to prevailing northeast trade winds. The project site also benefits from these trade winds and enjoys generally good air quality. The State of Hawai'i, Department of Health (SDOH); Clean Air Branch monitors ambient air quality on O'ahu through nine monitoring stations located throughout the island. The stations vary in the type of pollutant measured, covering a variety of parameters.

At present, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. In most cases, the State of Hawai'i's air quality standards are more stringent than the comparable

national limits.

There are no monitoring stations that measure carbon monoxide (CO) in the vicinity of the proposed project. The State operates four CO monitoring stations; one each in downtown Honolulu, Waikiki, Kapolei (Campbell Industrial Park), and West Beach (Ko'Olina). In 1996, (the last year of official data), the highest measured CO concentration in the State was recorded in Waikiki, at an average annual level of 1,235 ug/m3. The highest maximum 1-hour concentration in Waikiki was 5,216 ug/m3. These concentrations fall far short of the Hawai'i State 1-hour standard of 10,000 ug/m3, and Federal standard of 40,000 ug/m3.

In comparison to Waikiki, the proposed project site is situated in a relatively uncongested area with better exposure to prevailing northeast trade winds that disperse traffic emissions. Waikiki's CO measurement also registers a localized vehicle mix with a disproportionately greater share of buses, vans, and delivery trucks, and traffic flow characterized by stop-and-go driving and curbside idling. These factors contribute to higher CO concentrations than would be generated by freeway traffic conditions. Based on the comparison between proposed project site characteristics, and conditions at the Waikiki CO monitoring site, CO levels in the project area are anticipated to be well within State and Federal air quality standards.

In the Pearl City area, approximately 2 miles east of the proposed project site, a APM-10" air monitoring station measures particulate matter that is 10 microns or less in aerodynamic diameter. The most recent annual summary of 24-hour PM-10 data shows particulate levels at an annual hourly mean of 14 micrograms per cubic meter (ug/m3), well below State and Federal standards of 50 ug/m3. (SDOH 1996).

The nearest monitoring station measuring ozone is located approximately 7 miles to the southeast of the proposed project site. At a measured annual 1-hour mean of 27 ug/m3, ozone levels in O'ahu also fall well below state and federal standards of 100 ug/m3 and 235 ug/m3 respectively. There are no monitoring stations in the vicinity of the proposed project to measure ozone (O3), hydrocarbons (HC), or nitrogen oxide (NOx).

Project Impacts - Short-Term Impacts. If the proposed project is given the necessary approvals to proceed, it is inevitable that some short- and long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Construction activities and the operation of vehicles and heavy equipment at the project site will generate some fugitive dust and pollution emissions. Residential areas will be temporarily affected during the period of construction by dust and pollution. However, these impacts will be temporary and will cease when construction is completed.

Long-Term Impacts. Long-term impacts to air quality will result from the continued use of Fort Weaver Road. Projected traffic increases related to population growth are expected to result in increased automobile emissions that will impact air quality. As long as automobile use increases, and until new, cleaner burning automobile engine technologies are introduced, impacts from automobile exhaust can be expected to increase. Emission concentrations and, correspondingly, the level of impact to air quality, are also related to traffic flow rates. Automobile engines operate less efficiently, burn more fuel, and emit more exhaust when operated under stop-and-go or idle conditions. Areas of greater congestion, therefore, will generally produce higher emission concentrations.

Improvements to traffic flow will have the effect of reducing emission concentrations in improved areas. One of the main objectives of the proposed project is to eliminate a potential bottleneck caused by the lane-drop at Laulaunui Street. The forced merge at this point on the highway, if left uncorrected, will result in increased congestion, longer travel times, and delays for eastbound and westbound automobile traffic. It will also result in increased automobile emissions in the vicinity of the Ewa by Gentry due to the increased traffic congestion. The addition of the proposed lanes would eliminate the bottleneck, improve traffic flow, and provide the indirect benefit of relieving the area of congestion that would contribute to higher emission levels.
Normal operations on the roadway following construction will also contribute to

the continued generation of fugitive dust and particulate matter released from automobile traffic; a condition which will continue with or without the proposed project. While most of this material is dispersed by the tradewinds at levels that are imperceptible to the casual observer, over time some of the traffic-generated dust accumulates in areas immediately adjacent to the roadway, settling on homes, cars, and other property and creating a nuisance.

Mitigation Measures. Both Federal and State standards have been established to maintain ambient air quality at healthy levels. With proposed mitigation measures, the proposed project is not expected to directly or indirectly generate air quality impacts in excess of State and Federal standards.

State air pollution control regulations require that there be no visible fugitive dust emissions at the construction site boundary. Therefore, an effective dust control plan will be implemented by the project contractor to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering open-bodied trucks. Dust control measures will include, but not be limited to, the following:

- Planning phases of construction to minimize the amount of dust-generating activities;
- Minimizing the use of dust generating materials and centralizing material transfer points and on-site vehicle travel ways;
- Locating dusty equipment in areas of least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping bare areas, including slopes, starting from the initial grading phase; and,
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction.

Construction-related exhaust emissions will be mitigated by ensuring that project contractors properly maintain their internal combustion engines and comply with DOH Rules Title 11, Chapter 59 and 60, regarding Air Pollution Control.

3.12 VISUAL RESOURCES

The State and County have identified no view planes or scenic vistas in the project vicinity. The project site is located on plains west of Pearl Harbor. Views of the Waianae Mountain range and the Koolau Mountain range are available along the entire length of Fort Weaver Road.

Project Impacts. Visual impacts related to construction activities are temporary in nature and will cease when project activities are complete. No open space resources will be adversely affected by the proposed project.

Mitigation Measures. The existing view will not be impacted by the road improvements. Therefore no mitigation is required.

3.13 SOCIO-ECONOMIC ENVIRONMENT AND DEMOGRAPHICS

O'ahu continues to remain the center of Hawai'i's economic and population base with 72% of the statewide population. The Ewa Development Plan area is a major location for new development. An average of approximately 975 new homes have been constructed annually in the period from 1990 to 2001. Approximately half of these homes are in Kapolei with the remainder spread throughout the Ewa Development Plan region. Ewa communities are characterized by young families with above-average incomes. New as well as on-going development is expected for the area as the State Department of Hawaiian Home Lands and a private developer are proposing to use remnant lands at Barbers Point Naval Air Station for the construction of new housing (Socioeconomic Impact Assessment for the Waimanalo Gulch Sanitary Landfill Expansion, SMS Research, 2002).

The proposed widening of Fort Weaver Road in the Ewa Development Plan area crosses the Ewa Census County Division (CCD), Census Tracts: 86.05, 84.04, 84.01, and 84.03. According to the U.S. Census Bureau, the Ewa CCD had the following characteristics (Table 3-2):

Table 3-2

Selected Economic Characteristics

Honolulu County - Census County Divisions, 2000

Census County Division (CCD)	Total Population	Number Households	Average Household (HH) Size	Mean Average Annual HH Income
Ewa	272,328	80,117	3.30	$ 62,033
Honolulu	372,279	140,523	2.57	$ 45,109
Koolauloa	18,899	5,172	3.51	$ 46,610
Koolaupoko	117,994	35,441	3.17	$ 66,189
Wahiawa	38,370	10,259	3.29	$ 37,811
Waialua	14,027	4,403	3.10	$ 41,860
Waianae	42,259	10,535	3.97	$ 42,451
TOTAL	876,156	286,450		

Source: U.S. Census Bureau, Census 2000 Profile of Selected Economic Characteristics, Honolulu County, CCD Data.

A summary of Table 3-2, indicates the following:

- Ewa, with a total resident population of 272,328, has the second highest CCD population on O'ahu. Only the Honolulu CCD is higher at 372,279.
- Ewa, with 80,117 households, also has the second highest CCD household population on O'ahu.

- The average household size in Ewa is within the midrange for O'ahu, at 3.3 persons per household.
- The Ewa Mean Average Annual Household Income is relatively high, at $62,033, and is only moderately lower than Honolulu, at $66,189.

The ethnic make-up of the population in the project area generally mirrors the overall State profile (Table 3-3). The most pronounced differences involve a slightly smaller White and Native Hawaiian/Pacific Islander population, and a slightly larger Asian population.

Table 3-3
Ethnicity for Selected Census Tracts
2000 Ewa Census County Division, O'ahu, Hawai'i

%	White	Black	Native American	Asian	Native Hawaiian/Pacific Islander	Some Other Race	Two or More Races
State Avg	24.3	1.8	0.3	41.6	9.4	1.3	21.4
Project Area	11.1	1.9	0.2	58.2	5.0	1.0	22.5

Source: U.S. Census Bureau, Census 2000 Redistricting Data (Public Law 94-171), Matrices PL1 through PL4.
Note: Project Area figures averaged from census tracts 84.01, 84.03, 84.04, 86.05.

Project Impacts - The proposed project will require temporary construction employees. This work may include job opportunities for area residents. However, existing and future population and employment in the vicinity will be unaffected by the project. Although the proposed project will not impact overall housing supply or development patterns, it is expected to require the acquisition of a small area of land of less than approximately ½ acre in the Fort Weaver Road and Kolowaka Drive intersection. The proposed land acquisition is not expected to result in the displacement or need for relocation of area residents because of the location of the intersection.

Mitigation Measures - No further mitigation measures are recommended beyond those proposed to address potential noise, traffic, and construction related impacts. When completed, the proposed project will enhance the existing Fort Weaver Road thoroughfare with the addition of two new lanes and improved pedestrian and bicyclist facilities.

3.14 ENVIRONMENTAL JUSTICE

Federal Executive Order 12898 requires that disproportionately high and adverse human health or environmental effects to minority and low-income populations, including interrelated social and economic effects, generated by federally funded projects be identified and addressed through the planning process during project development. Additionally, access to public information and meaningful opportunities for public involvement by minorities and low-income populations must be provided during project planning and development.

Based on analysis of demographic data obtained from the 2000 U.S. Census, the proposed project will not result in disproportionately high and adverse human health or environmental effects to minority or low-income populations. The ethnic profile in the area surrounding the proposed project closely reflects the average State profile. No single ethnicity is in the majority. Black, Chinese, Filipino, Hawaiian, Native American, and other ethnicities that comprise smaller portions of the overall population are not disproportionately represented compared to state averages.

Average household income levels in the project area are also comparable to the 2000 state average of $45,383. Proposed freeway construction and property that will likely need to be acquired does not occur within an area containing a disproportionately high percentage of the population living below poverty level.

Mitigation Measures. No mitigation measures are required or recommended.

3.15 SECTION 4(f) LANDS

The purpose of Section 4(f) of the Department of Transportation Act (49 U.S.C. 303 and 23 U.S.C. 138) is to preserve parkland, recreation areas, wildlife refuges, and historic sites by limiting the circumstances under which such land can be used for transportation programs or projects. Section 4(f) permits the use of land for a transportation project from a significant publicly owned park, recreation lands, wildlife or waterfowl refuge, or any significant historic site only when FHWA and the Urban Mass Transportation Administration has determined that (1) there is no feasible and prudent alternative to such use, and (2) the project includes all possible planning to minimize harm to the property resulting from such use.

The historic former OR&L Railway crosses Fort Weaver Road and is listed on the State and National Register of Historic Places and is therefore protected under Section 4(f).

Existing facilities will not be impacted by the proposed project. However, where the highway is widened, new tracks, or re-setting of the existing tracks will planned for the approaches to the roadway. Existing conduits within the railroad right-of-way will be extended to the edge of development. Development timing of railway improvements beyond this intersection is unknown at this time.

The area adjacent to the railroad tracks has been further set aside as a pedestrian/bikeway facility. Development of this pedestrian/bike facility beyond this intersection is unknown at this time. DOT-H has a project, Leeward Bikeway, which will construct a pedestrian/bicycle facility within the former OR&L Railroad right-of-way. Design of this project is scheduled to begin later this year with construction beginning in two years.

3.16 PUBLIC FACILITIES AND SERVICES

3.16.1 TRANSPORTATION FACILITIES

A. Fort Weaver Road

Fort Weaver Road (SR 75) is classified as an "urban arterial." This facility is the primary roadway serving Ewa and Ewa Beach. Current traffic counts (average daily traffic, 2001) at three locations are as follows:

	2002	2003	2023
Ft. Weaver at Farrington Highway	61,810	74,421	75,351
Ft. Weaver at Renton Road	52,327	54,421	62,573
Ft. Weaver at Geiger Road	43,452	45,192	62,573

The 2025 Forecast of traffic volumes (Ewa Highway Master Plan, 2000) projects roadway conditions (Level of Service) as follows for selected intersections:

Location / Segment on Ft. Weaver	Capacity	AM LOS	PM LOS
Farrington WB Ramps NB	4650	C	A
Farrington WB Ramps SB	4650	A	B
Old Ft. Weaver Road - NB	4650	C	A
Renton Road - North - NB	4650	B	A
Renton Road -South - NB	1900	F	C
Kolowaka - NB	1900	F	C
Kolowaka - SB	1900	A	F
Geiger - NB	1900	D	B
Geiger - SB	1900	A	D
Source: Ewa Highway Master Plan, 2000			

B. Intersections

Intersections along Fort Weaver Road which are within the project limits include the following:

Road Segment on Ft. Weaver	Method of Traffic Control
Farrington Highway	Grade separation
Laulaunui Street	Signalized
Old Ft. Weaver/Aawa Drive	Signalized
Renton Road/Arizona Road	Signalized
Railroad Crossing	Uncontrolled
Kolowaka Drive	Signalized
Geiger Road	Signalized

C. Bus Facilities

The following bus routes serve the Ewa and Ewa Beach area:

Route 42 -Waikiki - Ewa Beach
Route 41 - Kapolei - Ewa Beach
Route 91 - Ewa Beach Express
Route 91 - Ewa Gentry Express
Route 421 - Ewa Beach Transit Center.

Project Impact. A number of bus stops / facilities along Fort Weaver Road will be impacted by the proposed widening. As construction progresses, existing bus stops will be moved and temporary facilities provided. New facilities will be constructed as part of this project.

D. Bicycle and Pedestrian Facilities

The project area is served by both pedestrian and bicycle facilities. Within the project limits, there is sufficient paved shoulder widths to accommodate bicycle traffic. Pedestrian amenities, however, varies from a separated shared pathway in the West Loch area to areas with intermittent facilities as in the area between the Hawai'i Prince Golf Course to Kolowaka Drive.

Project Impact. The proposed project will impact existing bicycle and pedestrian facilities during construction by limiting access.

Mitigation. As part of the project, bicycle lanes on both side of the road and an upgraded shared pathway on the east will be installed. During construction the following actions will be taken to minimize traffic disruptions:

- One lane will be open in each direction during all times.
- No construction will be allowed during peak commuting periods.

3.16.2 UTILITIES

Existing facilities that have been identified are: an 18-inch sewer line that crosses Fort Weaver at Renton; an 84-inch sewer crossing Fort Weaver at Geiger Road, and a 30-inch force main along Fort Weaver that starts in Ewa Beach and ends at Geiger Road.

A ground water monitoring well (well number 2101-03) is located near Kahua Nursery, approximately 5 feet away from the pavement curbing. The Commission on Water Resource Management and the U.S. Geological Survey have entered into a cooperative agreement to measure water level in this well, which has a continuous record of water level reading beginning in 1910.

Project Impact: Certain utilities may be impacted during the installation of the proposed improvements; however, major outages to those utilities are not anticipated.

Mitigation: Utility modifications, if necessary, will be coordinated with the affected utility company to minimize disruption of service.

3.17 HAZARDOUS WASTES AND MATERIALS

The proposed project will not impact a known hazardous waste site, or will be the generator of hazardous wastes.

3.18 RECREATIONAL FACILITIES

There are three golf courses that are adjacent to the Fort Weaver Road alignment - West Loch Golf Course, Ewa Villages Golf Course, and Coral Creek Golf Course. None of the other courses are directly accessed from Fort Weaver Road.

There are no parks directly accessed from Fort Weaver Road.

3.19 SOLID WASTE

The proposed action will not have long-term impacts to solid waster facilities. Short-term impacts are anticipated in the form of construction debris. The construction contractor shall be responsible for the disposal of construction debris at an approved landfill site.

CHAPTER 4
RELATIONSHIP TO STATE AND COUNTY LAND USE POLICIES AND CONTROLS

4.1 OVERVIEW

State and County policy plans and land use plans and controls are established to guide development in a manner that enhances the overall living environment of Hawai'i, and that ensures that the long-term social, economic, environmental, and land use needs of the people of Hawai'i are met.

4.2 STATE OF HAWAI'I

4.2.1 STATE PLAN

The Hawai'i State Plan, adopted in 1978, consists of three parts:

(1) An overall theme together with broad goals, objectives, and policies;
(2) A system designed to coordinate public planning to implement the goals, objectives, and policies of the Hawai'i State Plan; and
(3) Priority Guidelines which are statements of statewide interrelated problems deserving immediate attention.

Three broad goals in the areas of the economy, the physical environment, and the physical, social and economic well-being of the people express the ideal end-states of the State Plan. This roadway widening project supports the State Plan's general objectives and policies for a modern, statewide transportation system. The proposed project will be financed under the Federal Aid Highway Program with 80 percent of the funds contributed by the Federal Department of Transportation and 20 percent contributed by the State of Hawai'i. Community needs, environmental concerns and cultural resources are considered in the Environmental Assessment and design process. State Land Use designations are shown in Figure 4-1: State Land Use Map.

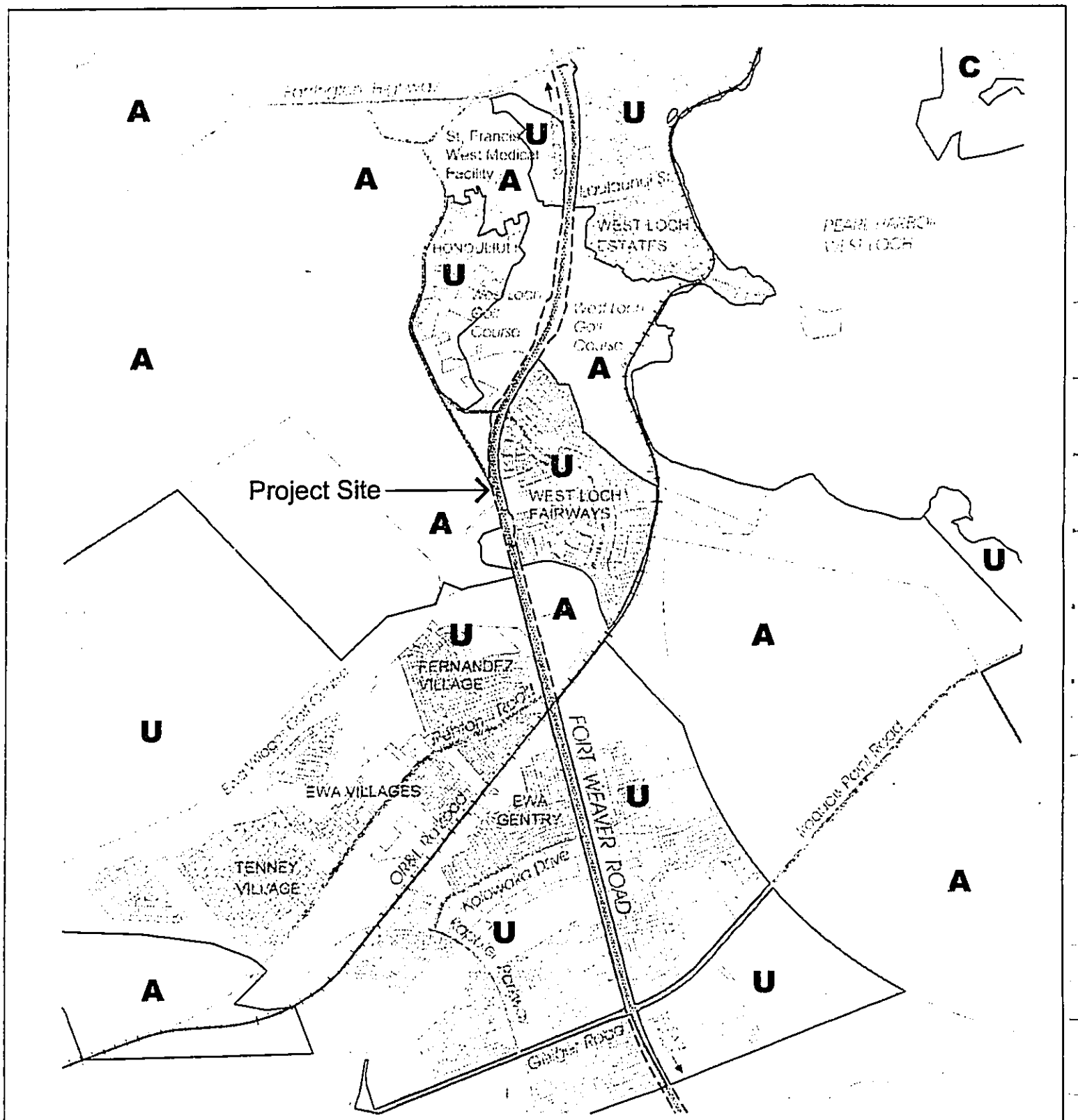


FIGURE 4-1
STATE LAND USE
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

4.2.2 STATE FUNCTIONAL PLANS

The State functional plans are intended to provide detail to the State Plan. They serve to guide State actions under specific functional topics of governance. Applicable objectives and policies from the Transportation Functional Plan are discussed below.

Transportation

Objective I.A: Widening of the transportation system.

Policy I.A.1: Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans.

The proposed widening project will enhance transportation capacity on Fort Weaver Road by adding two lanes between the area south of Geiger Road and Farrington Highway. The new lane configuration will further improve safety standards on the roadway by providing additional distance for merging and diverging movements of drivers approaching the Farrington Highway and the various intersections serving the Ewa communities. The project is being conducted in compliance with existing State and City and County of Honolulu master plans and land use ordinances.

4.2.3 STATE LAND USE COMMISSION

The State Land Use Commission classifies all lands in the State of Hawai'i into one of four land use designations: Urban, Rural, Agricultural, and Conservation. The proposed project is located within the State Urban District within the Ewa District. See Figure 4-1. According to State Law, Chapter 205, Hawai'i Revised Statutes (HRS), land use controls in the Urban District on the Island of O'ahu are under the jurisdiction of the City and County of Honolulu. No action from the State Land Use Commission is required to implement the proposed Fort Weaver widening.

4.2.4 HAWAI'I COASTAL ZONE MANAGEMENT (CZM) PROGRAM

Federal funding of a local project, such as the proposed Fort Weaver Road widening, is

considered to be a federal action under the Coastal Zone Management Act (CZMA) of 1972. The CZMA mandates that all federal actions be consistent with applicable state CZM programs. The objectives of the Hawai'i CZM program are set forth in Chapter 205A, HRS. The objectives of the program are intended to promote the protection and maintenance of valuable coastal resources. All lands in Hawai'i are classified as valuable coastal resources. The pertinent CZM objectives and the proposed project's consistency with them are discussed below.

Economic Uses
Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

The State of Hawai'i, Department of Transportation, Highways Division has programmed major highway infrastructure improvement projects in order to maintain a satisfactory level of service in anticipation of current and projected increases in traffic on the State's highway system. The proposed improvements are necessary to maintain efficient, safe, convenient, and economical transportation of people and goods along this segment of Fort Weaver Road.

Managing Development
Objective: Improve the development review process, communication and public participation in the management of coastal resources and hazards.

The proposed project conforms to all State and County land use designations.

Scenic and Open Space Resources
Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

The State and County have identified no scenic vistas or view planes in the project vicinity. Upon completion of construction, the appearance of the proposed improvements would be similar to the visual impact created by the existing roadways

and would not detract significantly from existing views. Visual impacts related to construction activities are temporary in nature and will cease when project activities are complete. No open space resources will be adversely affected by the proposed project.

Historic Resources
Objective: Protect, preserve, and where desirable, restore those natural and man made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Given the extensive urban development along all portions of the project area, there is little likelihood of finding historic, prehistoric surface or subsurface archaeological resources. A cultural resources reconnaissance assessment of the project area found no records of archaeological sites in the project area. Sites visits to the study area revealed no observable surface features of historic or archaeological significance.

4.3 CITY AND COUNTY OF HONOLULU LAND USE DESIGNATIONS AND CONTROLS

Land uses in the Urban District are controlled by the City and County of Honolulu's General Plan, Development Plan and Land Use Ordinance.

4.3.1 CITY AND COUNTY OF HONOLULU GENERAL PLAN

The General Plan for the City and County of Honolulu provides a statement of the long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of O'ahu. Using a 20-year time horizon, broad policies are also specified to facilitate attainment of the objectives of the Plan. The Fort Weaver Road widening will be consistent with the following objectives and policies of the General Plan:

Population
Objective B: To plan for future population growth.

Policy 1: Allocate efficiently the money and resources of the City and County in order to meet the needs of O'ahu's anticipated future population.

Objective C: To establish a pattern of population distribution that will allow the people of O'ahu to live and work in harmony.

Transportation and Utilities

Objective A: To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy 5: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.

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

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

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

Physical Development and Urban Design

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

4.3.2 EWA DEVELOPMENT PLAN

The Ewa Development Plan helps to implement the objectives and policies of the General Plan by providing relatively detailed development schemes for geographical regions of the island. The land use patterns depicted are also consistent with the objectives and policies of the Ewa Development Plan (Figure 4-2: Ewa Development

Plan).

The Fort Weaver Road project site is located within the Ewa Development Plan. The area includes Ewa, Ewa Beach, Kapolei, Kalaeloa, and Ko'Olina. The Ewa area is designated as the "Second City" and as a result includes large areas targeted for development. Roadway improvements are acceptable under such designation when required to meet a public need. According to the Ewa Development Plan, under "Vision":

> "This vision for Ewa has two horizons. The first is a 25 year horizon, extending from the present to the year 2020. This is the horizon that was used to project likely socio-economic change in Ewa and to assess the infrastructure and public facility needs that will have to be met over that period."

> The Vision to 2020. By 2020, the Ewa Development Plan Area shown above in Figure 4-2 will have experienced tremendous growth, and will have made significant progress toward providing a Secondary Urban Center for O'ahu. "Population will have grown from 43,000 people in 1990 to almost 125,000. Nearly 28,000 new housing units will have been built in a series of master planned communities."

> "Job growth will be equally impressive, rising from 17,000 jobs to over 64,000 in 2020. O'ahu residents and visitors will be attracted to Ewa by a new university campus, the Ko Olina resort, ocean and waterfront activities at Ewa Marina, a major super regional park, and a thriving City of Kapolei which has retail and commercial establishments and private and government offices."

> "Beyond 2020. In the course of the Development Plan revision, it became clear that there was value in looking beyond 2020 to identify what Ewa should look like when "fully" developed."

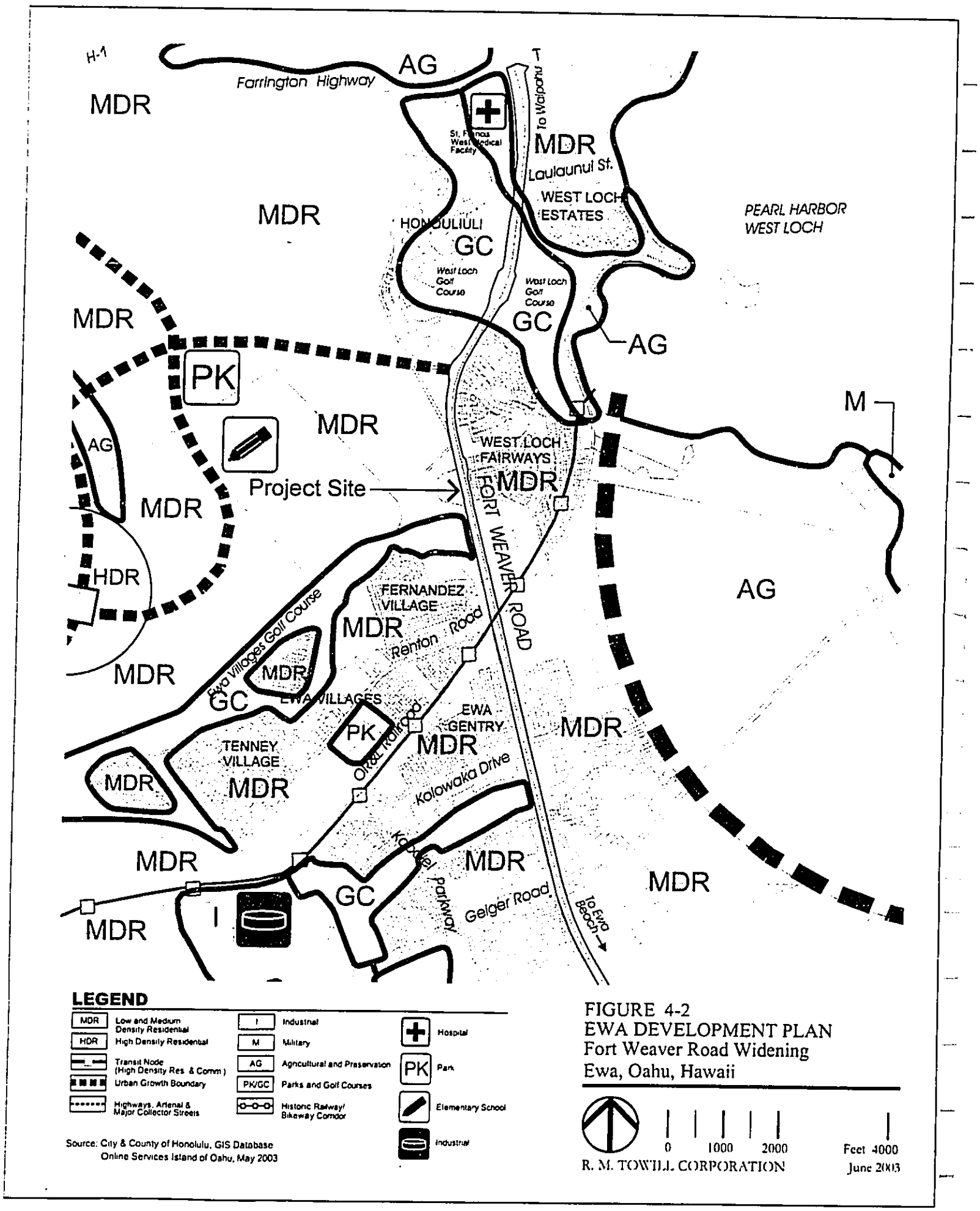


FIGURE 4-2
EWA DEVELOPMENT PLAN
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

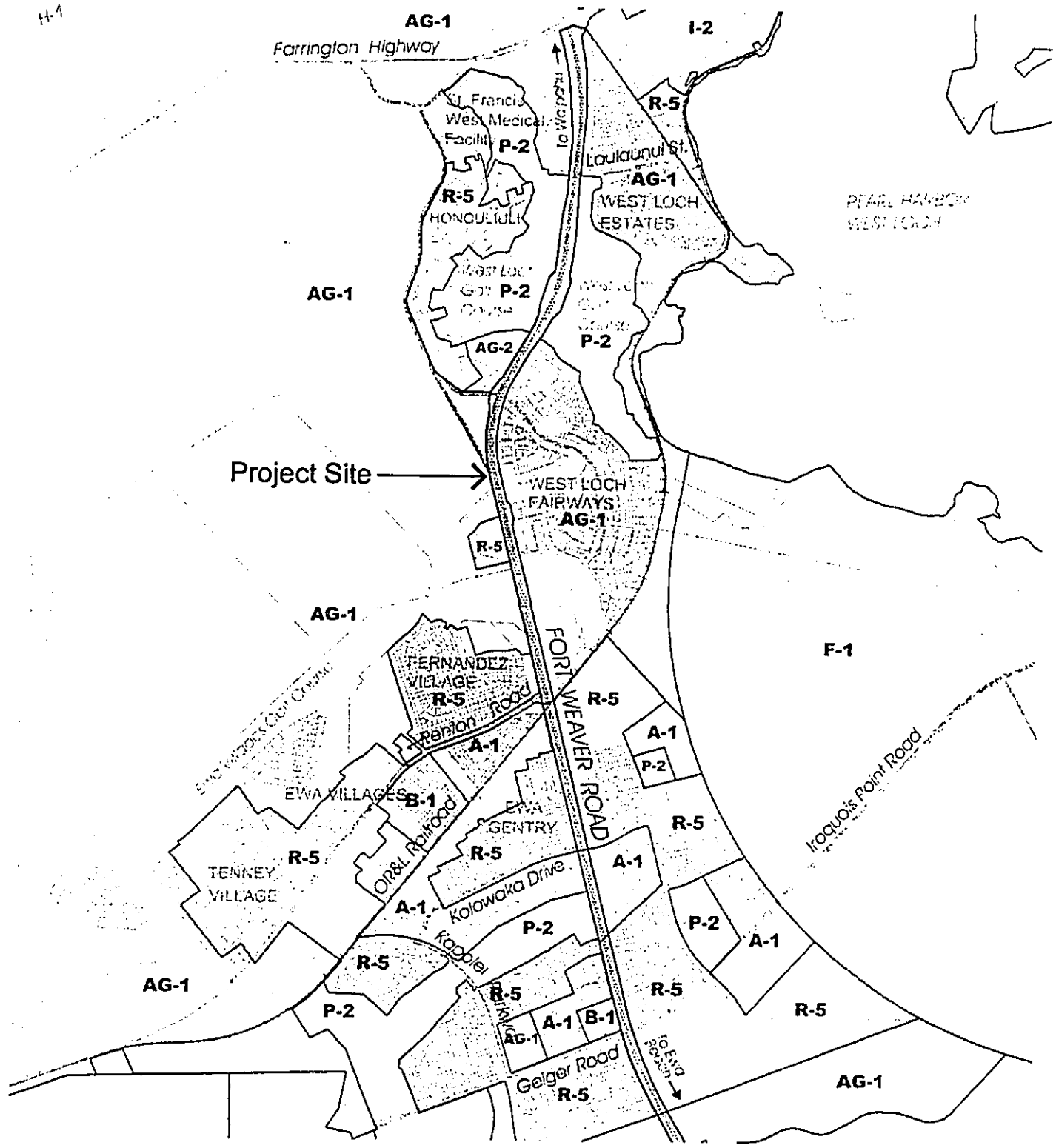
Creation of An Open Space Network

"A network of greenways will link the communities together, with landscaping along major roads such as Kapolei Parkway, North-South Road, and Fort Weaver Road, and pedestrian and bike paths along grassed drainageways and utility corridors."

The Ewa Development Plan Public Facilities Map identifies public and private proposals for improvements and additions to the street and highway system. It is utilized by the City to plan for future public expenditures and capital improvements. The project is located outside of the City and County of Honolulu delineated Special Management Area.

4.3.3 CITY AND COUNTY OF HONOLULU LAND USE ORDINANCE

The City and County of Honolulu Land Use Ordinance (LUO) regulates land use in accordance with adopted land use policies, including the O'ahu General Plan and City and County of Honolulu Sustainable Communities Plans. See Figure 4-3: Zoning



Legend

Ag-1	Agriculture (Restricted)	I-2	Industrial
R-5	Residential	F-1	Military
A-1	Apartment	P-2	Preservation (Restricted)
B-1	Business		

Source: City & County of Honolulu, GIS Database
Online Services Island of Oahu, May 2003

FIGURE 4-3
ZONING
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

0 1000 2000 Feet 4000

R. M. TOWILL CORPORATION June 2003

CHAPTER 5
NECESSARY PERMITS AND APPROVALS

5.1 PERMITS AND CLEARANCES

The proposed action requires Federal and State permits which are in addition to the environmental disclosure requirements of NEPA and Chapter 343, HRS. These permits include:

- U.S. Army Corps of Engineers (COE) Section 404 Permit (Department of the Army Permit);
- Section 401 Water Quality Certification (WQC);
- Coastal Zone Management Federal Consistency Determination (CZM FEDCON);
- Stream Channel Alteration Permit (SCAP);
- National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) Permits; and,
- Section 106, National Historic Preservation Act Consultation.

5.2 FEDERAL PERMITS AND CLEARANCES

A. U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT (DEPARTMENT OF THE ARMY PERMIT)

The U.S. Army Corps of Engineers has jurisdiction over "dredge and fill" actions in U.S. waters and wetlands which is expected to include the bridge crossing at Honouliuli Stream, located approximately 4,200 linear feet south from the project intersection with Farrington Highway. Certain discharges specified in 33 CFR Part 330 are permitted under a "Nationwide Permit" system, while other categories require regional and individual permits.

Coordination with the Corps of Engineers has been initiated to ascertain permitting requirements for a modification to the existing bridge to

accommodate lane widening and pedestrian/bicycling access. The project is expected to be classified under the Nationwide Permits program based on criteria established for Permit No. 3 (Maintenance) and Permit No. 33 (Temporary Construction, Access and Dewatering) (1996 Federal Register, Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits, 61 FR 65874).

The appropriate Department of the Army permit will be prepared and filed pending receipt of a determination from the Corps of Engineers.

B. SECTION 106, NATIONAL HISTORIC PRESERVATION ACT

The proposed action will involve use of Federal funds for development. Regulation will therefore involve Section 106 of the National Historic Preservation Act (NHPA) and the implementing regulations of 36 CFR 800. Section 106 requires that Federal agencies take into account the effects of their undertaking on historic properties. Consultation with affected parties and the State Historic Preservation Officer (SHPO) is used to facilitate the identification and provide an assessment of historic properties potentially affected by the undertaking. As appropriate, measures are proposed to avoid, minimize, or mitigate any adverse effects on historic properties.

Consultation with SHPO to complete the requirements of Section 106 was initiated by the State DOT, Highways Division. A number of parties who may have an interest in the project were identified: They were notified to further identify historic properties or sites and whether there will be adverse effects. The former OR&L railroad right-of-way is the only known historic site within the project corridor. As required, adverse effects will be addressed through avoidance or use of mitigation measures.

5.3 STATE PERMITS AND CLEARANCES

A. SECTION 401 WATER QUALITY CERTIFICATION

Section 401 of the U.S. Clean Water Act (33 CFR 1341), requires that a water quality certification (WQC) be obtained under certain circumstances for any applicant for a Federal license or permit which allows or permits discharges into navigable waters due to the construction or operation of certain types of facilities. The 401 WQC must be obtained from the State where specified types of discharges take place or originates. The State Department of Health, Clean Water Branch, is the authorizing agency for the Section 401 WQC in Hawai'i.

The proposed project will involve discharges of construction related materials within the Honouliuli Stream. Therefore, based on the possible requirement for a Department of the Army Permit, a Section 401 WQC may be required.

B. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY DETERMINATION

Section 307(c)(1) of the Coastal Zone Management Act (CZMA) requires a consistency determination of the proposed action by the U.S. Army Corps of Engineers in relation to the federally approved State CZM permit. The State Coastal Zone Management Office must agree with the determination that the proposed action is consistent with the State of Hawai'i's CZM law and/or provide specific conditions on the proposed action to place it in consistency.

Administration of the CZM Consistency Determination is through the Office of Coastal Zone Management, within the State Department of Land and Natural Resources (DLNR).

C. STREAM CHANNEL ALTERATION PERMIT (SCAP)

Chapter 174C, HRS, authorizes the regulation and permitting of activities that propose to alter stream channels and flow characteristics in the State of Hawai'i. The State Commission on Water Resource Management (CWRM) regulates actions that propose to alter stream channels and flows under Title 13, Chapter 169-50, Hawai'i

Administrative Rules (HAR) of the State Commission on Water Resource Management for SCAP permits. The regulations state that channel alterations that would adversely affect the quantity and quality of the stream water or the stream ecology should be minimized or not allowed. Where instream flow standards have been established, no permit shall be granted for any channel alteration that diminishes the quantity or quality of the stream water below the minimum standards.

The portion of the project involving alteration of the stream will be the bridge pile foundations within Honouliuli Stream supporting the new pedestrian/bicycle path.

D. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), NOTICE OF INTENT (NOI) FOR DISCHARGES OF STORMWATER AND NON-STORMWATER

Section 402 of the Federal Clean Water Act regulates discharges of certain storm- and non-storm water into waters of the U.S. from development or environmental clean-up activities. Regulation of NPDES related discharges in the State of Hawai'i are delegated by the Environmental Protection Agency (EPA) to the State Department of Health, Clean Water Branch. State regulations governing NPDES rules are in Title 11, Chapter 55, HAR, Water Pollution Control.

The proposed project will involve a construction area which will exceed the 1-acre or greater rule which is the criteria for the filing of the NPDES NOI Form C permit. The NPDES permit will require that project Best Management Practices (BMPs) be used to reduce and minimize potential impacts associated with stormwater during construction.

NPDES permits which are expected based on proposed construction activities include:

NPDES, NOI Form C for Discharges of Stormwater Associated with Construction Activity. The proposed activity will involve use of a construction

area which will exceed the 1-acre or smaller criteria governed by this permit. Waters of Honouliuli Stream, Pearl Harbor West Loch, and Kaloi Gulch drainage may be subject to construction activity related stormwater discharges in the form of increased, but temporary, siltation and turbidity. The NPDES NOI Form C permit will require that project Best Management Practices (BMPs) be prepared to reduce and minimize potential for stormwater related impacts.

NPDES, NOI Form G for Construction Activity Dewatering - Construction of the bridge widening foundation within Honouliuli Stream may require dewatering. The discharge of dewatering effluent into Honouliuli Stream (waters of the state) will require sufficient treatment of the effluent to maintain state water quality standards. BMPs will also need to be specified as a means of minimizing the potential for dewatering associated impacts.

CHAPTER 6
FINDINGS AND REASONS SUPPORTING PRELIMINARY DETERMINATION OF FINDING OF NO SIGNIFICANT IMPACT

6.1 OVERVIEW

In accordance with the provisions set forth in Chapter 343, Hawai'i Revised Statutes, and in Section 11-200-12 of Title 11, Chapter 200, Hawai'i Administrative Rules (HAR), the proposed project has been assessed for short-term and long-term and cumulative effects on the environment.

6.2 SIGNIFICANCE CRITERIA

Significance criteria set forth in Section 11-200-12 of Title 11, Chapter 200 HAR, were used to evaluate the potential impacts of the proposed project on the environment. The thirteen criteria are listed below and discussed:

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

An assessment of flora and fauna, and historic and archaeological sites at and near the project area found no presence of natural or cultural resources that would be jeopardized by the proposed roadway widening. Under consultation with DLNR, Historic Preservation Division, it has been determined that the proposed project design will have no effect on any historic or cultural resources.

Criterion 2 - Curtails the range of beneficial uses of the environment;

The proposed project site is located primarily within an existing transportation corridor. The project will require the acquisition of an area of less than 1/2-acre at the intersection of Fort Weaver Road and Kolowaka Drive. The purpose of the land acquisition is to provide for adequate improvements at the intersection to support the

additional lane and a shared pathway. Additional rights-of-way may also be necessary at several bus stop locations to accommodate improvements to those bus stops. These improvements will not significantly alter the function or existing use of the environment.

Criterion 3 - Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS;

The proposed action has been prepared according to State and County guidelines, plans, and policies and has been found to be in compliance with all relevant provisions.

Criterion 4 - Substantially affects the economic or social welfare of the community or State;

The proposed project is expected to have little effect on the social and economic environment. In general, the widening will serve to meet level-of-service needs and safety standards for transportation infrastructure required by area residents, businesses, and visitors.

Criterion 5 - Substantially affects the public health;

Factors affecting public health, including air quality, water quality, and noise levels are anticipated to be only minimally affected or unaffected by the construction and use of the proposed improvements. Appropriate mitigation measures for short-term impacts to water quality will be addressed by appropriate Section 401, 402, and 404, Clean Water Act related permits. Best Management Practices (BMPs) associated with the preparation of environmental permits will be followed by the project contractor to ensure against potential for adverse impacts. Where noise impacts exceed the regulatory limits, site specific mitigation is proposed, e.g. noise walls at the park at Kolowaka Street.

Criterion 6 - Involves substantial secondary impacts, such as population changes or

effects on public facilities;

The proposed project will not, by itself, stimulate unexpected changes in population. It will, however, accommodate current and future vehicle use associated with economic and social activities in the area.

Criterion 7 - Involves a substantial degradation of environmental quality;

Impacts to air and water quality, natural resources, and land use associated with the construction are anticipated to be short-term and can be mitigated. Impacts resulting from increased traffic levels are anticipated and mitigation measures are being studied. Mitigation measures will be employed as practicable to further minimize potentially detrimental effects to the environment resulting from project activities. The proposed project does not involve substantial degradation to environmental quality. Noise levels currently exceed established action limits, however, the increase is below levels where action is required.

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

The proposed project represents the State's commitment to maintaining a safe and efficient transportation infrastructure. The roadway widening is a part of the ongoing effort to upgrade and expand the capacity of the transportation system to meet existing and projected service demands. The project will not, by itself, involve a commitment for larger actions. However, the remaining portions of Fort Weaver Road may be widened in the future to ensure consistency of service.

The project will not result in changes in land use or traffic patterns. The project will require no land use zoning changes and is not expected to be a stimulus to unplanned growth. The project will help to prevent congestion, but will not alter regional transportation routes. Project related impacts from construction activities and the use of the improved roadway following construction include noise, construction dust, and

traffic. These impacts are individually limited and will be mitigated through measures outlined in this document.

Criterion 9 - Substantially affects a rare, threatened, or endangered species, or its habitat;

A review of flora and fauna in the project vicinity found no species that are listed as rare, threatened, or endangered by the State or Federal government. Urban development and intensive modifications in the project vicinity have long since replaced native habitat.

Criterion 10 - Detrimentally affects air or water quality or ambient noise levels;

No adverse impacts to water quality are anticipated from the proposed project. While some activities will require work in Honouliuli Stream, sufficient mitigation measures will be employed to reduce or ameliorate the potential for impacts. Consistent trade winds in the area help maintain good air quality. Noise mitigation measures will be considered for locations that are impacted by noise levels that approach or exceed the Federal Highway Administration (FHWA) noise abatement criteria, or where noise levels are substantially increased because of project activities. Construction noise impacts associated with the proposed project are expected to be temporary.

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

The project site is located inland from any coastal waters and is within an area in which flood hazards have been determined by the Federal Emergency Management Agency. Based on area topography, the project site is unlikely to be affected by flooding. All structures proposed for this project will be built, at a minimum, according to equivalent standards for Seismic Zone 2a, as established by the Uniform Building Code. The project is not located in an environmentally sensitive area and is unlikely to affect or

suffer damage from natural forces.

Criterion 12 - Substantially affects scenic vistas and view planes identified in County or State plans or studies;

The project site is not located within any scenic vista or view plane identified in County or State Plans. The proposed project will result in long-term visual impacts in the form of a widened roadway. The new lanes and shoulders will be noticeable, but will not intrude upon any existing view planes. In general, the appearance of the widened roadway will be similar to the visual impact created by the existing roadway and will not detract from existing views. Visual impacts associated with construction activities will be temporary.

Criterion 13 - Requires substantial energy consumption.

Construction activities will require high, short-term energy use which is not recoverable. However, the proposed improvements will promote safety for both motorists and pedestrians and will constitute a long term benefit.

CHAPTER 7
CONSULTED AGENCIES AND PARTICIPANTS: ORGANIZATIONS AND AGENCIES CONSULTED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

7.1 FEDERAL AGENCIES

U.S. Army Corps of Engineers

U.S. Department of the Interior - Fish and Wildlife Service

U.S. Environmental Protection Agency

7.2 STATE AGENCIES

Department of Health

- Clean Water Branch
- Noise and Radiation Branch
- Architectural Access Committee

Department of Land and Natural Resources

- State Historic Preservation Division
- Land Division

Department of Agriculture

Department of Business and Economic Development

7.3 CITY AND COUNTY OF HONOLULU

City Council

Department of Planning and Permitting

Department of Transportation Services

Department of Design and Construction

Board of Water Supply

Department of Facilities Management

Department of Parks and Recreation

Department of Transportation Services

Department of Enterprise Services

Fire Department
Police Department

7.4 OTHER ORGANIZATIONS AND ELECTED OFFICIALS

Ewa Neighborhood Board
Hawaiian Electric Company
Oceanic Cable
Gentry Homes (Ewa By Gentry)
Ewa Villages Community Association
Hawaiian Railway Society
Chevron USA
West Loch Fairways Community Association
West Loch Estates Community Association

CHAPTER 8
REFERENCES

- Kaku and Associates, Study to Develop the Ewa Highway Master Plan, May 2000.
- Kaku and Associates, O'ahu Regional Transportation Plan, November 1995.
- O'ahu Metropolitan Planning Organization, Transportation for O'ahu Plan, TOP 2025, April 6, 2001.
- Ewa Development Plan, Department of Planning and Permitting.
- Ewa Villages Master Plan and EIS, City and County of Honolulu.
- West Loch Estate Master Plan and EIS, City and County of Honolulu.
- West Loch Shoreline Park Master Plan and EIS, City and County of Honolulu.
- Environmental Justice Monitoring Plan, O'ahu Metropolitan Planning Organization, 2000.
- The 2001 Green Book, A Policy on Geometric Design of Highways and Streets, Federal Highway Administration, 2001.
- SMS Research, Socioeconomic Impact Assessment for the Waimanalo Gulch Sanitary Landfill Expansion, City and County of Honolulu, 2002.
- AASHTO LRFD Bridge Design Specification, 2nd Edition 1998, with 1999 thru 2002 interim revisions and all subsequent interim revisions.
- State of Hawai'i, Department of Transportation Memorandum HWY-DB 2.7490 dated 8/13/02.
- AASHTO Guide Specifications for Design of Pedestrian Bridges.

APPENDIX A
SECTION 106 COMMENT LETTERS

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DD 2.0511

JUN 2 0 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

See Attached List

Dear_____:

Subject: Section 106 Consultation Notification, National Historic Preservation Act of 1966 (NHPA), Fort Weaver Road Improvements, Farrington Highway to Geiger Road, State of Hawaii, Department of Transportation

The State of Hawaii, Department of Transportation, Highways Division, proposes to widen Fort Weaver Road (SR 76) from four lanes to six lanes with a center median, plus bicycle lanes, curbs and gutters, and sidewalks. The project is located in the Ewa District of Oahu, on Fort Weaver Road from Farrington Highway to Geiger Road/Iroquois Point Road. See Figure 1, Location Map and Figure 2, Typical Road Section, and Figure 3, Bridge Section.

Use of funds from the Federal Highways Administration (FHWA) requires National Historic Preservation Act (NHPA) Section 106 Consultation to solicit comment on the potential effect to historic properties resulting from construction. We request your comments on the proposed work and identify historic or cultural resources that may be impacted. It is our preliminary determination that this project will have no adverse impacts on archaeological or historic resources. Please submit any written comments to us within 30 days from the date of receipt of this letter .

The purpose of the project is increase capacity on Fort Weaver Road, reduce traffic congestion, increase pedestrian amenities, and improve intersections. There are two bridges within the project area that will be improved to provide pedestrian access.

Recent consultation with the State Historic Preservation Division archaeologists indicated a low probability of encountering archaeological sites or human remains in the project area. The entire site area has been disturbed first by extended cultivation of sugar cane, highway improvements, and more recently by urban development.

Fort Weaver Road crosses an unused portion of the OR&L Railway tracks near Renton Road. On May 12, 2003, a site visit was conducted with representatives of the State Historic Preservation Division to evaluate the construction plans vis-à-vis the historic value of the railroad in Hawaii's history. It was concluded that special consideration will be given to the design of the intersection of Fort Weaver Road with the OR&L Railway, which is listed on the National Register of Historic Places. The railway tracks in the Fort Weaver Road area are not currently used by trains. The Hawaiian Railway Society will be consulted regarding design of the highway at the track crossing.

Construction is anticipated to start in March 2004, with completion by September 2006.

We appreciate your review of the subject materials. If there are any questions, please contact Glenn Kurashima, Project Manager, at 692-7578, Design Section, Design Branch, Highways Division. In response to this letter, please reply to the attention of Glenn Kurashima and reference HWY-DD 2.0511 as noted above.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

Enclosure

MO:rva
bc: HWY-DD(GK)
KN Consulting Services, Inc.
R. M. Towill Corporation
c: FHWA (K. Kraut)
OHA
SHPD
Historic Hawaii Foundation

LETTER NO. HWY-DD 2.0511 WAS ALSO SENT TO THE FOLLOWING:

Ms. Mary Ann Hutchinson
Pelekikena (President)
Ahahui Kaahumanu Society
Chapter I – Honolulu
P. O. Box 2809
Honolulu, HI 96803

President
E Ola Mau
1329 Lusitana Street, Ste. 704
Honolulu, HI 96813

Mr. David Scott
Executive Director
Historic Hawaii Foundation
P. O. Box 1658
Honolulu, HI 96806

Ms. Gladys Shiroma
Pelekikena (President)
King Kamehameha Hwn. Civic Club
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Ms. Danielle Ululani Beirne
Pelekikena (President)
Native Hawaiian Protocol
and Consultant Service
P. O. Box 653
Kaneohe, HI 96744

Ms. Betty K. Jenkins
Pelekikena (President)
Royal Order of Kamehameha I
Women's Auxiliary Chapter I
P. O. Box 758
Waialua, HI 96741

Mr. Daniel S. Quinn, Administrator
Dept. of Land and Natural Resources
Division of State Parks
P. O. Box 621
Honolulu, HI 96809

Mr. Kai Markell, Director
Dept. of Land and Natural Resources
History and Culture Branch
601 Kamokila Blvd., Room 555
Kapolei, HI 96707

Ms. Davianna McGregor
Dept. of Land and Natural Resources
History and Culture Branch
33 South King Street, 6th Floor
Honolulu, HI 96813

The Hon. Tulsi Gabbard Tamayo
42nd Representative District
State Capitol, Room 313
415 South Beretania Street
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Mr. Charlie Rose
Pelekikena (President)
Association of Hawaiian Civic Clubs
P. O. Box 1135
Honolulu, HI 96807

Mr. Hailana Farden
Iku Hai/Ahahui Poo
Hale O Na Alii O Hawaii
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Honolulu, HI 96817

Mr. Kunani Nihipali, Poo
Hui Malama I Na Kupuna O Hawaii Nei
P. O. Box 190
Haleiwa, HI 96712-0190

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Executive Director
Native Hwn. Advisory Council
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Kailua, HI 96734

Mr. A. Van Horn Diamond, Chair
Oahu Island Burial Council
c/o State Historic Preservation Div.
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Kapolei, HI 96707

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State Council on Hawaiian Heritage
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Honolulu, HI 96825

Ms. Deirdre S. Mamiya
Administrator
Dept. of Land & Natural Resources
Land Division, Oahu District
Land Office
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Honolulu, HI 96813

Mr. Nathan Napoka, Branch Ch
Dept. of Land & Natural Resources
History and Culture Branch
33 South King Street, 6th Floor
Honolulu, HI 96813

Mr. Ben Schlapak
President
Hawaiian Railway Society
P. O. Box 60369, Ewa Station
Ewa, HI 96706

The Hon. Romy M. Mindo
43rd Representative District
State Capitol, Room 303
415 South Beretania Street
Honolulu, HI 96813

Ms. Sandi L. Halualani
Office Manager
Bernice Pauahi Bishop Museum
Native Hawaiian Culture
and Arts Program
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Ms. Barbara E. Dunn
Administrative Director
Hawaiian Historical Society
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Mr. Joe I. K. Kamalu, Founder
Hui O Aikane
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Honolulu, HI 96719

Ms. Mahealani Kamauu
Executive Director
Native Hwn. Legal Corporation
1164 Bishop Street, Suite 1205
Honolulu, HI 96813

LETTER NO. HWY-DD 2.0511 WAS ALSO SENT TO THE FOLLOWING:

Mr. Wally Lau
Kuauhau Nui
Royal Order of Kamehameha I
P. O. Box 30681
Honolulu, HI 96820

Mr. Micah A. Kane, Chairman
Dept. of Hawaiian Home Lands
Hawaiian Homes Commission
P. O. Box 1879
Honolulu, HI 96805

Ms. P. Holly McEldowney
Acting Administrator
Dept. of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, HI 96707

Mr. Ernest Kimoto
Acting Director
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, HI 96813

ATTN: Dr. Pua Aiu

The Hon. Mark S. Moses
40th Representative District
State Capitol, Room 310
415 South Beretania Street
Honolulu, HI 96813

The Hon. Alex M. Sonson
35th Representative District
State Capitol, Room 323
415 South Beretania Street
Honolulu, HI 96813

The Hon. Guy P. Ontai
37th Representative District
State Capitol, Room 326
415 South Beretania Street
Honolulu, HI 96813

Mr. C.O. "Andy" Anderson, Chair
Waipahu Neighborhood Board No. 22
c/o Neighborhood Commission Office
City Hall, Room 400
Honolulu, HI 96813

The Hon. Mike Gabbard
Councilmember, District 1
City and County of Honolulu
530 South King Street, Room 202
Honolulu, HI 96813

Ms. Susan York, President
Ewa by Gentry Community Assoc.
91-1795A Keaunui Drive
Ewa Beach, HI 96706

The Hon. Willie C. Espero
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Mr. Jeff R. Alexander, Chair
Ewa Neighborhood Board No. 23
c/o Neighborhood Commission Office
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Honolulu, HI 96813

The Hon. Nestor R. Garcia
Councilmember, District 9
City and County of Honolulu
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Honolulu, HI 96813

West Loch Estates Homeowners Association
c/o Certified Management
3179 Koapaka Street
Honolulu, HI 96819

The Hon. Brian Kanno
19th Senatorial District
State Capitol, Room 202
415 South Beretania Street
Honolulu, HI 96813

The Hon. Colleen Hanabusa
21st Senatorial District
State Capitol, Room 214
415 South Beretania Street
Honolulu, HI 96813

President
Ewa Villages Owners Assoc.
91-1250 Renton Road
Ewa Beach, HI 96706

West Loch Fairways Community Association
c/o Certified Management
3179 Koapaka Street
Honolulu, HI 96819

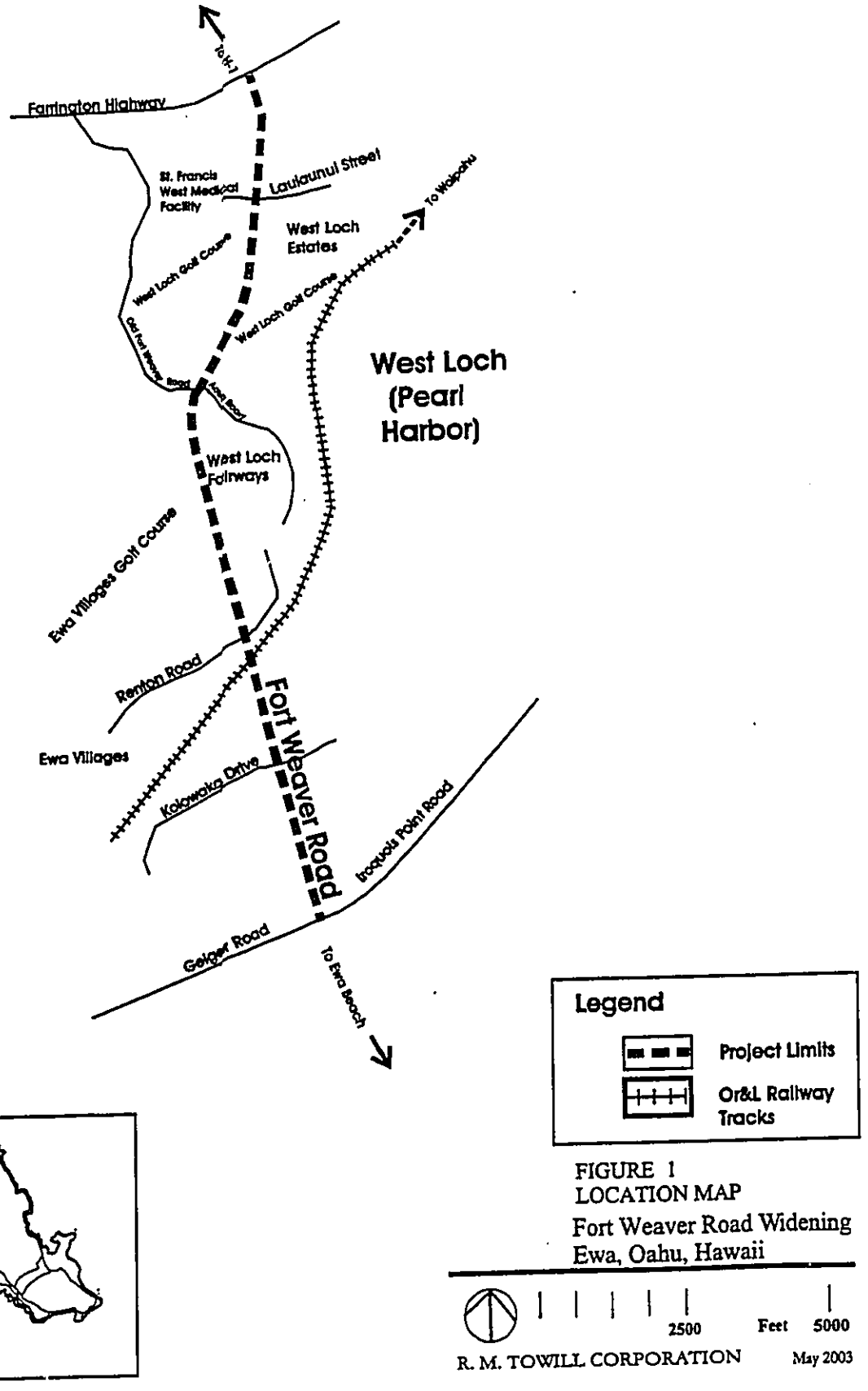


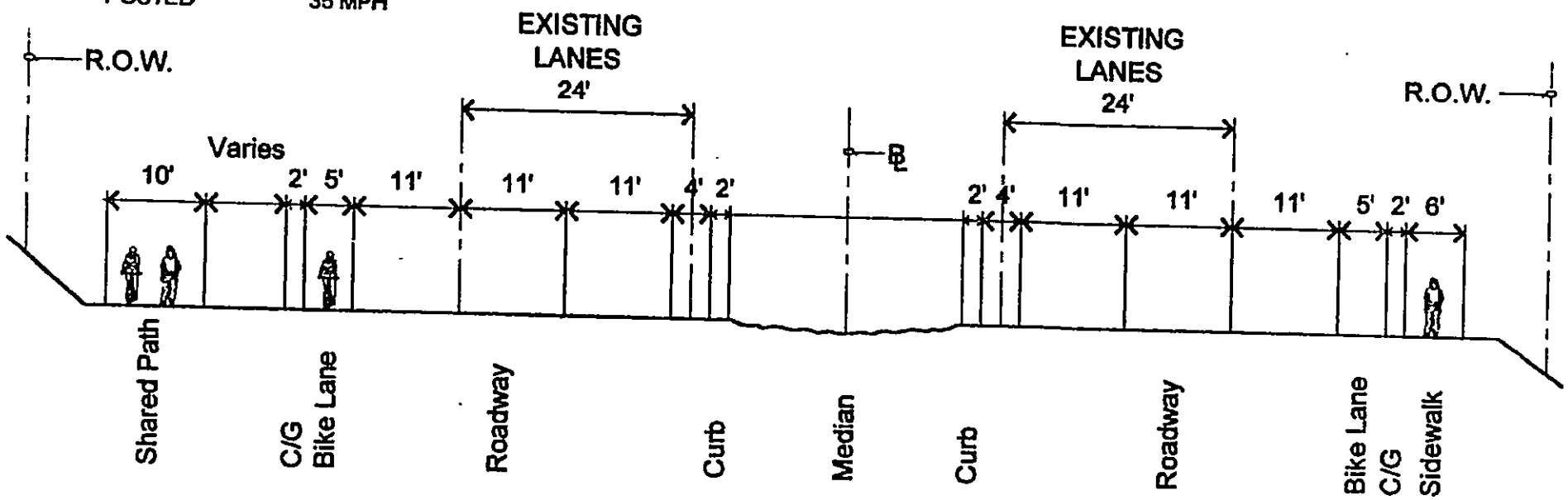
FIGURE 1
LOCATION MAP
Fort Weaver Road Widening
Ewa, Oahu, Hawaii

R. M. TOWILL CORPORATION May 2003

FT. WEAVER ROAD WIDENING
LAULAUNUI TO GEIGER ROAD

ROAD CLASSIFICATION:URBAN ARTERIAL

DESIGN SPEED 45 MPH
POSTED 35 MPH

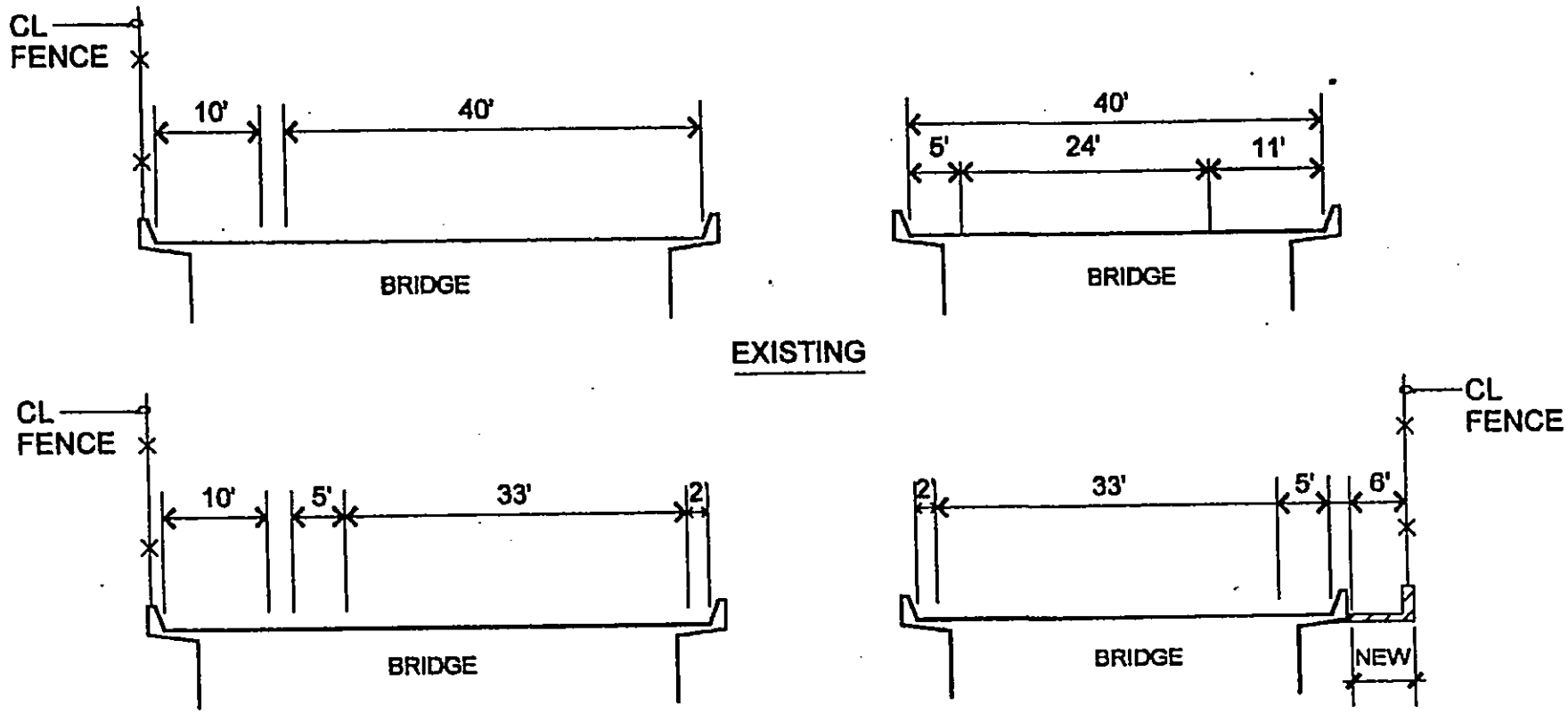


TYPICAL SECTION

FIGURE
SECTION (ROAD)
Fort Weaver Road Improvements
Ewa, Oahu, Hawaii

0 8 16 Feet 45

R. M. TOWILL CORPORATION May 2003

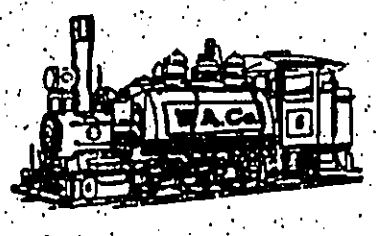


SECTIONS - HONOULIULI BRIDGE

FIGURE
SECTION (BRIDGE)
Fort Weaver Road Improvements
Ewa, Oahu, Hawaii

0 8 16 Feet 45

R. M. TOWILL CORPORATION May 2003



Hawaiian Railway

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION

2003 JUL 15 P 2:10

RECEIVED
JUL 21 2003
GK/MO
DEPARTMENT OF TRANSPORTATION
HIGHWAY-DD

RECEIVED
'03 JUL 18 A10:47
DESIGN SECTION
HIGHWAYS DIVISION
DEPT. OF TRANSPORTATION

July 14, 2003

Mr. Rodney K. Haraga
Director of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Sir:

We have reviewed your Draft Environmental Assessment for Fort Weaver Road Improvements, dated June 2003. In reply to your June 20, 2003 letter, HWY-DD2.0511, we concur with the finding of no significant impact on historic resources. We have the following comments:

1. We assume that the widening of the railroad crossing at Fort Weaver Road near Renton road would be a continuation of the pre-cast concrete sections which were built in the early 1980s. It is our understanding that there were also conduits imbedded for future crossing guards. We recommend that the conduits be extended to the edge of the new roadway or bike lane.

2. We note that the railroad crossing is to be uncontrolled. This type of crossing is fine for the near future but if the Pearl Harbor Historic Trail or a restoration of the OR&L track to the Waipahu Plantation Village do come about, we recommend that automated crossing guards be considered at Fort Weaver Road.

Any questions on our comments may be directed to Ben Schlapak at 422-6807. I can be reached at 256-7606.

Sincerely yours,

Robert Yatchmenoff
President

Cc: SHPO, Nathan Napoka
R.M. Towill Corporation, Chester Koga

RECEIVED
JUL 15 3 45 PM '03
DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN RAILWAY SOCIETY
A Chapter of the National Railway Historical Society
P. O. Box 60369 • Ewa Station, Ewa Beach, Hawaii 96706 • Ph: (808) 681-5461 • Fax: (808) 681-4860

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

JUL -9 2003

Rodney K. Haraga
Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

LOG NO: 2003.1005
DOC NO: 0306st30
Architecture

Dear Mr. Haraga:

SUBJECT: **Section 106 (NHPA) Review**
Fort Weaver Road Improvements which includes
Honouliuli and Cane Haul Road Bridges, and
Oahu Railway & Land (OR & L) Company Right-of-Way
Farrington Highway to Geiger Road/Iroquois Point Road
HWY-DD 2.0511
Ewa, Oahu, Hawaii
TMK: (1) 9-1-010 and (1) 9-1-017

Thank you for your submittal dated June 23, 2003, proposing to widen Fort Weaver Road (SR 76) in the Ewa District from Farrington Highway to Geiger Road/Iroquois Point Road. The proposal is for widening the Fort Weaver Road from four lanes to six lanes with a center median, plus bicycle lanes, curbs and gutters, and sidewalks.. The proposal will widen two bridges, the Honouliuli and the Cane Haul Road Bridges, and will cross an unused portion of the Oahu Railway & Land (OR & L) Company Right-of-Way tracks near Renton Road.

Architectural Concerns

Being less than 50 years of age, the Honouliuli and the Cane Haul Road Bridges are not listed in the "State of Hawaii, Historic Bridge Inventory and Evaluation" prepared for the State of Hawaii Department of Transportation, Highways Division (May 1996). Therefore, we believe that the determination for the architectural concerns of the project is "no historic properties affected." However, although special consideration will be given to the design of the intersection of Fort Weaver Road and the OR & L Railway tracks, and the Hawaiian Railway Society will be consulted regarding design of the highway at the track crossing, we also request to be further consulted on the designs.

Archaeological Concerns
The project is located in an area that was commercially cultivated for many years and therefore has a low probability for archaeological deposits to be found. We believe that no historic properties will be affected by the road widening.

Thank you for the opportunity to comment. Should you have any questions regarding architecture please contact Susan Tasaki at 692-8032. Should you have any questions regarding archaeology please contact Elaine Jourdane at 692-8027.

Sincerely,

Peter T. Young, Chairperson and
State Historic Preservation Officer

ST:jk

APPENDIX B
COMMENTS RECEIVED ON THE DRAFT EA

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

AUG 12 2003

Ms. Susan York, President
Ewa By Gentry Community Association
91-1795A Keaunui Drive, Unit 19A
Ewa Beach, Hawaii 96706

Dear Ms. York:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 25, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have provided. In response to your comments, we offer the following:

1. Traffic Congestion. In order to minimize traffic congestion, particularly during peak commuting periods, construction will not be allowed during the morning and afternoon travel periods. During all other periods, a minimum of two lanes (one in each direction) will be open for travel to and from Ewa Beach.
2. Informational Meetings. The Department will be scheduling an informational meeting to advise the community of the forthcoming project. We will also utilize the print and broadcast media to announce when construction will start.
3. Land Acquisition. Land acquisition requirements are still being studied. When we are certain of our needs, we will contact your Association.
4. Pedestrian Access. We will consider reasonable proposals for non-vehicular ingress and egress from the neighborhoods adjoining the roadway. If you can provide maps showing where these access points are to be located, we will certainly consider them. Our primary concern is for pedestrian safety and therefore all proposals will be evaluated in that light.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

LINDA LINGLE
GOVERNOR

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

AUG 12 2003

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: for RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, FORT WEAVER ROAD IMPROVEMENTS, PROJECT NO. 76AB-01-00 AND 76B-01-01
HONOULIULI, OAHU, HAWAII

Thank you for your comments of July 23, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered. In response to your comments, we offer the following:

1. Cultural Impact Assessment. As part of this project, we have contacted a number of individuals and organizations to ascertain if there are activities, sites or features that would be impacted by this project. This action has been concurrent to public notice provided by the Draft Environmental Assessment (EA). The Historic Preservation Division has also been consulted to determine if there will be impact to historic resources. We will report our findings in the Final EA.
2. Indirect Cumulative Impact. The focus of the environmental analysis for the subject EA was limited to the direct impact of improving Fort Weaver Road. The improvements proposed is in response to land use actions (direct and indirect) that are outside of the jurisdiction of the Department and therefore have not been analyzed other than through a projection of traffic demand.
3. Landscaping. The existing landscaping will continue and will be replaced in-kind, if required. We will consider the use of native vegetation as part of the landscaping where new planting is required.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

LINDA LINGLE
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

July 23, 2003

Mr. Glenn Kurashima
Highways Division, Department of Transportation
State of Hawai'i
601 Kamokila Boulevard
Kapolei, Hawai'i 96760

Mr. Chester Koga
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawai'i 96817

Dear Messrs. Kurashima, and Koga:

Having reviewed the June 2003, draft environmental assessment submitted in support of a Fort Weaver Road Improvements (Farrington Highway to Geiger Road) in the 'ahupua'a of Honouliuli, district of 'Ewa, the Office of Environmental Quality Control (OEQC) submits the following comments for your consideration and response.

1. CULTURAL IMPACT ASSESSMENT UNDER CHAPTER 343, HAWAI'I REVISED STATUTES, AS AMENDED: We note that Section 3.9 of the document makes mention of the O'ahu Railway and Land Company Railroad, the plantation graveyard near Renton Road, the first artesian well dug near the intersection of Old Fort Weaver Road and Fort Weaver Road, intended to satisfy the requirements of Chapter 6E Hawai'i Revised Statutes, the National Environmental Policy Act and the National Historic Preservation Act. Act 50, Session Laws of Hawai'i 2000, modified Chapter 343, Hawai'i Revised Statutes to require the disclosure of the cultural environment (resources and practices) and any direct, indirect and cumulative impacts to the cultural environment. Although the environmental council has not yet proposed administrative rules implementing Act 50, SLH 2000, the environmental council has composed recommended guidance (Attached) in the assessment of cultural impacts. While a piece of property such as that being proposed for a conservation district use application may have no other apparently visible cultural resources, we would like to call to your attention the idea that cultural resources and practices need not necessarily be on the property for an action to have cultural impacts under Chapter 343, Hawai'i Revised Statutes. Examples of such resources or practices include but are not limited to: building of structures which would obscure traditional navigation landmarks; or, enclosed fencing around property which would prevent access to traditional gathering or recreational activities both mauka or makai of the property in this present day and time. Please visit our Internet web site at http://www.state.hi.us/health/oeqc/index.html and click on guidance and download the Cultural Impact Assessment Guidelines" adopted by the Environmental Council in 1997 for your use in meeting this requirement prior to submission of a final environmental assessment. This would include contacting resource agencies (such as the Historic Preservation Division of the Department of Land and Natural Resources, the Office of Hawaiian Affairs, the 'Ewa Neighborhood Board), neighbors, community members in the 'Ewa area to ascertain what cultural practices (if any) are occurring in the region encompassing the project and what impacts (if any) the proposed project may have on these cultural

practices or resources. A directory of cultural impact assessment providers (self-listed and not endorsed by any agency, including OEQC) can also be found at our website above. To meaningfully complete the assessment of significance of the proposed action, we strongly recommend that the requirements for historic preservation (under Chapter 6E, HRS) and for cultural impact assessment (under Chapter 343, HRS, as amended), be completed prior to the issuance of the notice of determination and final environmental assessment.

2. INDIRECT AND CUMULATIVE IMPACTS: Please discuss other projects (which have, or have not undergone Chapter 343, HRS, and/or NEPA review) in the area, and discuss indirect and cumulative impacts of these projects on the environment when considered in light of the present project.

3. LANDSCAPING USING NATIVE XEROPHAGIC VEGETATION: Please consider the use of native xerophagic vegetation in landscaping the project. More information is available at our Internet Website above.

Again we thank you for the opportunity to comment. If there are any questions, please call me or Leslie Segundo at (808) 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMD / CWB

07079PKP.03

July 21, 2003

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

WES		NTS	
R-F	VRE	NVM	
RTT		BRT	
REC'D JUL 23 2003 RMTC			
CTR			

Dear Mr. Koga:

Subject: Draft Environmental Assessment
Fort Weaver Road Improvements
Project No. 051-1(20)
Honouliuli, Oahu, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB) has reviewed the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

   a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

   b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**

   c. Discharge of treated effluent from leaking underground storage tank remedial activities.

d. Discharge of once through cooling water less than one (1) million gallons per day.

e. Discharge of hydrotesting water.

f. Discharge of construction dewatering effluent.

g. Discharge of treated effluent from petroleum bulk stations and terminals.

h. Discharge of treated effluent from well drilling activities.

i. Discharges of treated effluent from recycled water distribution systems.

j. Discharges of storm water from a small municipal separate storm sewer system.

k. *Discharge of circulation water from decorative ponds or tanks.*

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.state.hi.us/doh/eh/cwb/forms/genl-index.html.

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. discharges into Class 1 or Class AA waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.state.hi.us/doh/eh/cwb/forms/indiv-index.html.

4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD) or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:ndp

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

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

AUG 12 2003

TO: DR. CHIYOME L. FUKINO
DIRECTOR OF HEALTH

ATTN: DENIS R. LAU, CHIEF
CLEAN WATER BRANCH
ENVIRONMENTAL MANAGEMENT DIVISION

FROM: for RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, FORT WEAVER ROAD IMPROVEMENTS, PROJECT NO. 76AB-01-00 AND 76B-01-01, HONOULIULI, OAHU, HAWAII

Thank you for your comments of July 12, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered as follows:

1. We are in contact with the U.S. Army Corps of Engineers to ascertain if a permit will be required from that agency. If the work requires a Department of the Army permit, then we will contact your office regarding provisions of Section 401 of the Clean Water Act.
2. We acknowledge that a National Pollutant Discharge Elimination System (NPDES) permit may be required for the project. We will further consult with your staff to determine what type of permit will be required.
3. We have ascertained that the discharges from the project will enter into Pearl Harbor, which is neither rated Class 1 or Class AA waters.
4. Copies of the required NPDES application(s) will be forwarded to the Department of Land and Natural Resources, Historic Preservation Division, for their review and comment.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 24, 2003

FTWEAVERROAD.RCM
HWY-DD 2.0511

LD-NAV

Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

SUBJECT: Draft Environmental Assessment (DEA) Fort Weaver Road Improvements - Project No. 051-1(2), Honouliuli, Oahu

Thank you for the opportunity to review and comment on the subject matter. A copy of the DEA covering the subject matter was distributed or made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry & Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Conservation and Coastal Lands
- Land Division Oahu District Land Office

Attached herewith is a copy of the Commission on Water Resource Management comment.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: ODLO

LINDA LINGLE
GOVERNOR OF HAWAII

COMMISSION ON WATER

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 27, 2003

M E M O R A N D U M

To: Dierdre S. Mamiya, Administrator
Land Division

From: Steve Lau
Land Agent

Subject: Section 106 Consultation Notification , National Historic Preservation Act of 1966 NHPA), Fort Weaver Road Improvements, Farrington Highway to Geiger Road, State of Hawaii , Department of Transportation, Tax Map Key:1-9-01:10 and 17.

Thank you for allowing us the opportunity to review and comment on the above subject property.

We have no objections to the above proposed work. However, we would like to recommend that the applicant check with DLNR Forestry & Wildlife Division for any possible endangered wildlife plants which maybe growing in or near the area.

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

July 8, 2003

LD/NAV
Ref.: FTWEAVERROAD.CMT

Suspense Date: 7/18/03

MEMORANDUM:

TO:
Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Conservation and Coastal Lands
XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA) Fort Weaver Road Improvements - Project No. 051-1(2), Honouliuli, Oahu
Applicant: Department of Transportation SOH

Please review the DEA pertaining to the subject matter and submit your comment on Division letterhead signed and dated by the suspense date.

NOTE: One (1) copy of the DEA is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there is no comment. Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

(X) We have no comment.

( ) Comment attached.

Division_____

Signed: _____

Date: JUL 11

Name: **MICHAEL G. BUCK, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
DIVISION OF
STATE PARKS
JUL 10 4 16 PM '03

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

...RCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

July 8, 2003

LD/NAV
Ref.: FTWEAVERROAD.CMT

Suspense Date: 7/18/03

TO:
___ADMINISTRATOR
___ASST ADMIN
___DEV BR
___PLAN BR
___RES MGT BR
___CLERICAL
___ADMIN ASST
___INTERP BR

OR:
___CIRC/POST/STAFF RM
___COMMENTS & REC
___DRAFT REPLY
___FILE
___FOLLOW UP
___INFO
___RUN COPIES_____
___RUSH DUE_____
___SEE ME
___FAX/SEND COPY TO___

MEMORANDUM:

TO: Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Conservation and Coastal Lands
XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA) Fort Weaver Road Improvements - Project No. 051-1(2), Honouliuli, Oahu
Applicant: Department of Transportation SOH

Please review the DEA pertaining to the subject matter and submit your comment on Division letterhead signed and dated by the suspense date.

NOTE: One (1) copy of the DEA is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there is no comment. Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

(✓) We have no comment.

( ) Comment attached.

Division State Parks

Signed:

Date: 7/24/03

Name: Daniel S. Quinn

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
STEPHANIE A. WHALEN

ERNEST Y.W. LAU
DEPUTY DIRECTOR

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

July 17, 2003

Ref:fort weaver road dea.dr

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment for Fort Weaver Road Improvements
Project No. 051-1(2), Honouliuli, Oahu

FILE NO.: FTWEAVERROAD.cmt

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[ ] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[X] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[X] OTHER:

There is a ground-water monitoring well (Well No. 2101-03) located near Kahua Nursery, approximately 5 feet away from the pavement curbing. The coordinates of the well are 21° 21' 54" latitude, 155° 01'52" longitude (Old Hawaiian Datum). The Commission and U.S. Geological Survey have entered into a cooperative agreement to measure water levels in this well, which has a continuous record of water level readings beginning in 1910. We are concerned that the proposed widening project will negatively impact the ability to continue water level readings at this site, or at worst, destroy the well. Destruction of the well, without first properly sealing the well, will result in a possible conduit for ground water contamination and a waste of valuable ground water. We recommend that a discussion of this issue take place prior to any disturbance of the well site.

If there are any questions, please contact Lenore Y. Nakama at 587-0218.

LINDA LINGLE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
AUG 12 2003

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

TO: PETER T. YOUNG, CHAIRPERSON
DEPARTMENT OF LAND AND NATURAL RESOURCES

ATTN: DEIRDRE S. MAMIYA, ADMINISTRATOR
LAND DIVISION, OAHU DISTRICT LAND OFFICE

FROM: for RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, FORT WEAVER ROAD IMPROVEMENTS, PROJECT NO. 76AB-01-00 AND 76B-01-01, HONOULIULI, OAHU, HAWAII

Thank you for your comments of July 24, 2003, on the subject project. We will finalize the environmental assessment incorporating comments and concerns expressed by the Commission on Water Resource Management (CRWM).

We have duly noted the location of the groundwater monitoring well (Well No. 2101-03) located near Kahua Nursery. We will consult with the CWRM staff to explore methods of protecting the well, or make provision for sealing and capping the well.

We further note that the Land Division, Division of Forestry and Wildlife, and the Division of State Parks did not have comments. Comments from the Division of Historic Preservation was received separately.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
File:

July 2, 2003

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Ste 411
Honolulu, HI 96817

Dear Mr. Koga:

SUBJECT: **Comments to the Fort Weaver Road Improvements**
Draft Environmental Assessment
Project No. 051-1(20), Honouliuli, Oahu, Hawaii

Our comments should be printed as follows:

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

- Chapter 11-46 Community Noise Control.

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

Sincerely,

Russell S. Takata
Program Manager
Noise, Radiation & IAQ Branch

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

AUG 12 2003

TO: DR. CHIYOME L. FUKINO
DIRECTOR OF HEALTH

ATTN: RUSSELL S. TAKATA
ENVIRONMENTAL HEALTH PROGRAM MANAGER
NOISE, RADIATION AND INDOOR AIR QUALITY BRANCH

FROM: for RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, FORT WEAVER ROAD IMPROVEMENTS, PROJECT NO. 76AB-01-00 AND 76B-01-01, HONOULIULI, OAHU, HAWAII

Thank you for your comments of July 2, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered to regarding compliance with provision of Chapter 11-46, Community Noise Control.

Should our contractor not be able to totally comply with Chapter 11-46, we will seek appropriate variances.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

2003/ELOG-2276 (TH)

July 25, 2003

WES		ATS	
R-F		NM	
RTT		BRT	

REC'D JUL 28 2003 RMTC

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waikamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Draft Environmental Assessment (DEA)
Fort Weaver Road Improvements,
Project No. 051-1(20), Honouliuli, Oahu, Hawaii

In response to your letter of June 24, 2003, we have reviewed the subject DEA and offer the following comments.

1. The proposed project is consistent with the objectives and policies of the City's General Plan. The final EA should briefly explain how the proposed project meets the objectives and policies of the General Plan cited in Section 4.3.1.

2. The proposed project is consistent with vision and general transportation policies of the Ewa Development Plan (DP). Widening Fort Weaver Road from 4 to 6 lanes is listed as one of several-planned roadway improvements cited in Table 4.1 of the Ewa DP.

   We note that Section 4.3.2 of the draft EA refers to the "Ewa Sustainable Communities Plan." This reference should be changed to "Ewa Development Plan" in the final EA. Ewa is designated as a "Development Plan" area because the city encourages development within the secondary urban center in Kapolei and the urban fringe areas in Ewa to relieve development pressures in rural areas and to meet housing needs not readily available in the primary urban center.

3. The applicant may need a Grading Permit depending on the quantity of grading work involved. Section 2.1 of the final EA should state governmental jurisdiction of each street where intersection improvements will be done. A Trenching Permit will be required if work is done in the city's right-of-way.

4. The City has existing sewer lines running across and parallel to Fort Weaver Road in the area to be improved. The contractor needs to submit construction plans to the DPP's Wastewater Branch for review and approval.

5. The contractor should submit construction plans to DPP for review and approval for all work within or affecting City roadways. During construction, traffic control plans for the temporary detour of vehicular, bicycle and pedestrian traffic on City roadways should also be submitted to DPP for review and approval. Plans to modify the traffic signal system and rerouting of City buses should be submitted to DPP for review and approval; and coordinated with the Department of Transportation Services' (DTS) Traffic Signal and Technology Division and Public Transit Division.

   During construction, work should be scheduled and coordinated such that it is sensitive to the normal commuting hours of traffic. Every effort should be made to allow safe and adequate access to and from local side streets, which are under City jurisdiction.

Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely yours,

ERIC G. CRISPIN, AIA
Director of Planning & Permitting

EGC:js

cc: Office of Environmental Quality Control
State Department of Transportation, Highways Division

p:/DivFunction/ca-cis/2003/clog2276

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

AUG 12 2003

Mr. Eric G. Crispin, AIA, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Crispin:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 25, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered as follows:

1. Change Ewa Sustainable Communities Plan to Ewa Development Plan.
2. Grading and Trenching Permits will be obtained by the project contractor if required and the final EA will be updated to address jurisdiction of the intersection that are impacted by the project.
3. Construction plans will be submitted to DPP for review.
4. Construction on the roadway will be scheduled to minimize congestion during peak travel periods and will be coordinated with the City to minimize disruptions to adjoining streets, bus movements, and pedestrian access.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 FAX: (808) 523-4567
WEB SITE ADDRESS: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

CDP 03-0171

July 28, 2003

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Subject: Draft Environmental Assessment (DEA)
Fort Weaver Road Improvements
Project No. 051-1(20), Honouliuli, Oahu, Hawaii
TMK: 9-1-10 and 17

We have reviewed the DEA and have the following comments:

Civil Division:

Page 3, Figure 1-1, Location and Vicinity Map

Show location of bridge over Honouliuli Stream at West Loch Golf Course.

Page 7, 2.1, 4. and Last Paragraph

Change reference to "Honouliuli Stream Bridge" and "Honouliuli Bridge" to "Fort Weaver Road Bridge over Honouliuli Stream."

Page 8, Figure 2-1, Bridge Section

Change reference to "Honouliuli Bridge" to "Fort Weaver Road Bridge over Honouliuli Stream." Indicate map (Figure 1-1) in which the bridge location is shown.

Page 39, 5.3, D, NPDES, NOI Form G

Delete the word "at" in the first sentence.

If there are questions, please contact Mr. Gregory Sue at 527-6304.

Facility Division:

We have no comments to the substance of the report. There appears to be no significant adverse impacts anticipated on City parks and recreational facilities, although modifications or adjustments may be needed at some City bus stops.

If there are any questions, please contact Terry Hildebrand at 523-4696.

Mechanical/Electrical Division:

Existing City street lights may need to be relocated at the City intersections with Fort Weaver Road. We assume that this relocation work will be covered under 3.16.2 Utilities, page 28. It should be noted that City street light relocation, if necessary, will be at no cost to the City.

If there are any questions, please contact Allyn Lee at 523-4106.

Wastewater Division:

General engineering comments are annotated on the attached copy of the DEA.

If there are any questions, please contact Richard Leong of our Planning Branch at 527-5863.

Very truly yours,

Eugene C. Lee

for TIMOTHY E. STEINBERGER, P.E.
Director

GS:dk
Attach.

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

AUG 12 2003

IN REPLY REFER TO:

HWY-DD 2.1280

Mr. Timothy E. Steinberger, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Steinberger:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 28, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered. In response to your comments, we offer the following:

1. Location of Bridge over Honouliuli Stream. We will revise our drawings to show the bridge at Honouliuli Stream.
2. Change in Reference: We will revise the text to indicate, "Fort Weaver Road Bridge over Honouliuli Stream," rather than Honouliuli Stream Bridge.
3. Relocation of Street Light. Relocation of street lights will be accommodated as part of this project. The work to be done will be coordinated with your Mechanical-Electrical Division.
4. Comments from your Wastewater Division are acknowledged and will be incorporated in the Final EA.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

LINDA LINGLE
GOVERNOR

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

AUG 12 2003

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

Mr. Clifford S. Jamile
Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 8, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered regarding coordination of work to minimize impacts to the community and water system. When construction drawings are completed, we will submit copies to your department for review.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

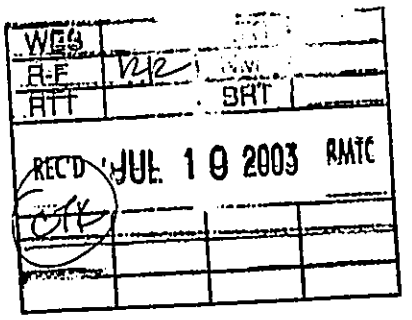
Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

BOARD OF WATER SUPPLY

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

July 8, 2003



Mr. Chester Koga
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Subject: Your Letter of June 24, 2003 on the Draft Environmental Assessment for Fort Weaver Road Improvements

Thank you for the opportunity to comment on the subject document.

The construction schedule for all projects in the area should be coordinated to minimize impacts to the community and our water system. In conjunction with the project scheduling, the construction drawings for the proposed improvements should be submitted for our review.

If you have any questions, please contact Joseph Kaakua at 748-5440.

Very truly yours,

K. Shida

for CLIFFORD S. JAMILE
Manager and Chief Engineer

DEPARTMENT OF PARKS AND RECREATION

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
PHONE: (808) 692-5561 • FAX: 692-5131 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

EDWARD T. "SKIPPA" DIAZ
DEPUTY DIRECTOR

July 14, 2003

Mr. Chester Koga, AICP
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Subject: Draft Environmental Assessment
Fort Weaver Road Improvements
Project No. 051-1(20), Honouliuli, Oahu, Hawaii

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the Fort Weaver Road Improvements.

The Department of Parks and Recreation has no comments on this project.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,

W. D. Balfour, Jr.

WILLIAM D. BALFOUR, JR.
Director

WDB:cu
(28227)

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5054 FAX: (808) 692-5857

JEREMY HARRIS
MAYOR

LARRY J. LEOPARDI, P.E.
DIRECTOR AND CHIEF ENGINEER

ALVIN K. C. AU
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM03-522

July 16, 2003

Mr. Chester Koga
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

Dear Mr. Koga:

Subject: **Draft Environmental Assessment**
Fort Weaver Road Improvements
Project No. 051-1(20), Honouliuli, Oahu, Hawaii

We have reviewed the subject Environmental Assessment and offer no comments.

Should you have any questions, please contact Hugh Liu of the Division of Road Maintenance, at 527-5337.

Very truly yours,

for LARRY J. LEOPARDI, P.E.
Director and Chief Engineer

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425 • HONOLULU, HAWAII 96819-1869
TELEPHONE: (808) 831-7761 • FAX: (808) 831-7750 • INTERNET: www.honolulufire.org

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

July 8, 2003

Mr. Chester Koga, AICP
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Subject: Draft Environmental Assessment
Fort Weaver Road Improvements
Project No. 051-1(20)
Honouliuli, Oahu, Hawaii

We received your letter dated June 24, 2003, requesting our comments on the above-mentioned project.

The Honolulu Fire Department requires that the following be complied with:

1. Maintain fire apparatus access throughout the construction site for the duration of the project.

2. Notify the Fire Communication Center at 523-4411 of any interruption in the existing fire hydrant system during the project.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 831-7778.

Sincerely,

ALVIN K. TOMITA
Acting Fire Chief

AKT/SD:bh

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

AUG 12 2003

Chief Alvin Tomita
Acting Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819

Dear Chief Tomita:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 10, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered as follows:

1. We will ensure that our construction contractor coordinate his activities with your Department to ensure that fire apparatus is provided with unobstructed access.
2. We will further note that interruptions to the existing fire hydrant system be communicated to the Fire Communications Center.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE CS-DK

July 10, 2003

Mr. Chester Koga, AICP
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Fort Weaver Road Improvements project, number 051-1(20).

The short-tem traffic problems that will be caused by the construction phase of this project will highly impact the services provided by the Honolulu Police Department. Please coordinate lane closures and other matters concerning anticipated traffic-related problems with Captain George Yamamoto of District 8 (Kapolei) at 692-4253.

Safety measures, especially those relative to pedestrians crossing the roadway, should be addressed and resolved. However, we believe that over the long term, this proposal will be beneficial to the community. Additionally, we look forward to seeing its positive impact on police response and services.

If there are any questions, please call Captain Yamamoto at the number listed above or Ms. Carol Sodetani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

By
KARL GODSEY
Assistant Chief of Police
Support Services Bureau

Serving and Protecting with Aloha

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

AUG 12 2003

IN REPLY REFER TO:

HWY-DD 2.1280

Chief Lee D. Donohue
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Dear Chief Donohue:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

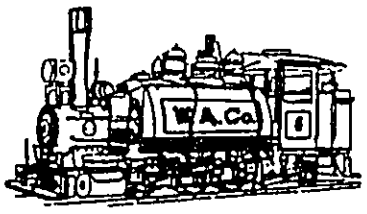
Thank you for your comments of July 10, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered as follows:

1. We will ensure that our construction contractor coordinate his activities with your Department to ensure that traffic congestion is minimized, and that pedestrian safety is ensured.
2. We will further note that traffic related problems will be coordinated with Captain George Yamamoto of District 8, Kapolei.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation



Hawaiian Railway

July 14, 2003

Mr. Rodney K. Haraga
Director of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Sir:

We have reviewed your Draft Environmental Assessment for Fort Weaver Road Improvements, dated June 2003. In reply to your June 20, 2003 letter, HWY-DD2.0511, we concur with the finding of no significant impact on historic resources. We have the following comments:

1. We assume that the widening of the railroad crossing at Fort Weaver Road near Renton road would be a continuation of the pre-cast concrete sections which were built in the early 1980s. It is our understanding that there were also conduits imbedded for future crossing guards. We recommend that the conduits be extended to the edge of the new roadway or bike lane.

2. We note that the railroad crossing is to be uncontrolled. This type of crossing is fine for the near future but if the Pearl Harbor Historic Trail or a restoration of the OR&L track to the Waipahu Plantation Village do come about, we recommend that automated crossing guards be considered at Fort Weaver Road.

Any questions on our comments may be directed to Ben Schlapak at 422-6807. I can be reached at 256-7606.

Sincerely yours,

Robert Yatchmenoff
President

Cc: SHPO, Nathan Napoka
R.M. Towill Corporation, Chester Koga

HAWAIIAN RAILWAY SOCIETY
A Chapter of the National Railway Historical Society
P. O. Box 60369 • Ewa Station, Ewa Beach, Hawaii 96706 • Ph: (808) 681-5461 • Fax: (808) 681-4860

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-DD 2.1280

AUG 12 2003

Mr. Robert Yatchmenoff
Hawaiian Railway Society
P. O. Box 60369, Ewa Station
Ewa Beach, Hawaii 96706

Dear Mr. Yatchmenoff:

Subject: Draft Environmental Assessment, Fort Weaver Road Improvements
Project No. 76AB-01-00 and 76B-01-01, Honouliuli, Oahu, Hawaii

Thank you for your comments of July 12, 2003, on the subject project. We will finalize the environmental assessment incorporating comments you have offered as follows:

1. Design consideration will be given to extending the pre-cast concrete section where the railroad tracks cross Fort Weaver near Renton Road. We will further direct our designers to extend the conduits for future crossing guards.
2. We acknowledge that the current plan is to have the railroad crossing uncontrolled at this time. Upgrades will be addressed when it is appropriate.

If you have any questions, please contact Glenn Kurashima, Highways Division, Highway Design Branch, at 692-7578 and reference HWY-DD 2.1280 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

Ewa by Gentry

July 25, 2003

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, HI 96817-4941

RE: Draft Environmental Assessment for Fort Weaver Road Improvements
Project No. 051-1(20), Honouliuli, Oahu, Hawaii

Dear Mr. Koga:

Thank you for the opportunity to provide comments on behalf of the Ewa by Gentry Community Association. We have reviewed the subject document and have the following comments to offer.

1) We are pleased that Fort Weaver Road will be widened to six lanes. However, based on our experience during the most recent Fort Weaver Road improvement project, traffic congestion could become unbearable during construction. We ask that mitigation measures be taken to minimize the back-up of traffic, particularly during rush hours. Opening up additional detour roads and keeping the public informed on a daily basis about the construction work should help alleviate congestion to some extent. Providing a DOT hot line to apprise the community of construction activities, establishing and constantly updating a website on the project, and setting up automated signs along Fort Weaver Road are some additional ideas worth considering.
2) If informational meetings are held with community members and adjoining landowners regarding the widening project, we ask that a minimum of 3-4 weeks' notice be given so that people can plan their schedules accordingly.
3) Page 6, last paragraph and page 10, 2nd paragraph – It is stated that a small portion of the project at the Kolowaka Drive and Fort Weaver Road intersection will require acquisition of less than ½ acre of land to ensure sufficient space for the road widening. The land acquisition will be on land owned by the Ewa by Gentry subdivision. We would like to get more information about the land that needs to be acquired from the Ewa by Gentry Community Association since the document does not describe which corner or corners of the Kolowaka/Fort Weaver intersection will be affected.
4) We are very happy that a continuous sidewalk is planned for the west side of Fort Weaver Road. This will make our community more pedestrian-friendly, and will serve as a link between the various residential communities and commercial areas along the Fort Weaver corridor. We would like to suggest

Ewa By Gentry Community Association
91-1795 A Keaunui Drive • Ewa Beach, Hawaii 96706 • Tel: (808) 685-0111 • Fax: (808) 685-0114

that DOT permit non-vehicular ingress and egress to Fort Weaver Road from our Ewa by Gentry communities in order to further promote pedestrian-friendly neighborhoods.

Again, thank you for allowing us to provide comments.

Sincerely,

Susan York, President

APPENDIX C

ACOUSTIC STUDY FOR THE FORT WEAVER ROAD WIDENING PROJECT (June 2003)

ACOUSTIC STUDY FOR THE FORT WEAVER ROAD WIDENING PROJECT VICINITY OF AAWA DRIVE TO GEIGER ROAD EWA, OAHU

Prepared for:

KN CONSULTING SERVICES, INC.

Prepared by:

Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96816

JUNE 2003

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I. SUMMARY

The existing and future traffic noise levels in the environs of the proposed Fort Weaver Road Widening Project between Geiger Road and the vicinity of Aawa Drive on the island of Oahu were studied to evaluate potential noise impacts associated with the proposed improvements, hereinafter referred to as the Build Alternative. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

Existing traffic noise levels in the project area currently exceed the U.S. Federal Highway Administration (FHWA) and Hawaii State Department of Transportation, Highways Division (HDOT) noise abatement criteria along the roadway Rights-of-Way. Future (CY 2023) traffic noise levels with or without the proposed roadway improvement project are also expected to exceed the HDOT 66 Leq noise abatement criteria for Activity Category B along the Rights-of-Way. However, the existing walls along the east and west Rights-of-Way, the use of air conditioning at some noise sensitive structures, and the large setbacks of other residential lots provide adequate sound attenuation measures for mitigating the high noise levels at all single story dwelling units. Two-story residences on both sides of Ft. Weaver Road are not shielded by the existing walls, and existing traffic noise levels at the upper floors of the two story units currently exceed and will continue to exceed the HDOT 66 Leq noise abatement criteria.

Existing traffic noise levels also exceed the HDOT's 68 Leq noise abatement criteria at the Child and Family Service, Ewa Family Center on the west side of the project corridor. However this facility is presently air conditioned, which conforms to the HDOT's noise mitigation requirements. Existing traffic noise levels do not exceed the HDOT's 71 Leq noise abatement criteria for Activity Category C at the commercial establishments which are located west of Fort Weaver Road at the Renton and Geiger Road intersections.

Traffic noise mitigation measures in the form of noise barrier construction have been applied along the east and west Rights-of-Way, so that traffic noise levels are expected to be less than 66 Leq(h) at essentially all of the single-story residences east and west of Fort Weaver Road and with or without the project. The ground floor residential units are adequately shielded by the existing berms and/or wall barriers, but the second floor spaces of approximately 54 dwelling units are not shielded by the existing noise barriers. Because excessive wall heights (14 to 15 feet above the existing lot grades) are required to shield the upper floors of these dwellings, the use of sound barriers is not normally recommended as a noise abatement measure for these second floor units. Noise abatement measures can be implemented if they achieve "substantial" noise reductions, which is defined by HDOT policy as a reduction of at least 5 dB. Noise abatement measures must also be "reasonable and feasible" as set forth in HDOT's Noise Analysis and Abatement Policy (Reference 9).

The following general conclusions can be made in respect to the number of impacted structures and lands which can be expected by CY 2023 under the Build Alternative. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

- HDOT's "greater than 15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3.1 dB as a result of growth in traffic volumes and construction of additional traffic lanes.

- Under the No Build or Build Alternatives, future traffic noise levels at the second floors of approximately 54 two-story residences are expected to exceed the HDOT's 66 Leq(h) criteria for Activity Category B. These dwelling units are located on both sides of Fort Weaver Road within the limits of project construction.

- The HDOT's 71 Leq(h) noise abatement criteria for Activity Category C will not be exceeded at the existing commercial buildings near the Renton and Geiger Road intersections.

- The HDOT's 66 Leq(h) noise abatement criteria for Activity Category B will be exceeded at one of the two parks which are within the limits of project construction. The neighborhood park west of Fort Weaver Road at the Kolowaka Drive intersection is a candidate for sound attenuation measures, such as the construction of a 6 foot high wall. The large park/playground east of Fort Weaver Road and north of the Renton Road intersection does not require additional sound attenuation measures.

- Noise levels at the three buildings of the Child and Family Service, Ewa Family Center which front Fort Weaver Road will continue to exceed the 66 Leq(h) criteria for Activity Category B. However, the present use of central air conditioning for these three buildings is an adequate noise abatement measure for both existing and future traffic noise levels.

Potential short term construction noise impacts are possible during the project construction period. Minimizing these types of noise impacts is possible using standard curfew periods, properly muffled equipment, administrative controls, and construction barriers as required. If work during the nighttime hours is required to minimize traffic congestion during the normal daytime period, noise impacts are possible at existing residences located along the roadway Rights-of-Way. A variance from the existing State Department of Health noise regulations will be required to perform nighttime work on this project.

CHAPTER II. GENERAL STUDY METHODOLOGY

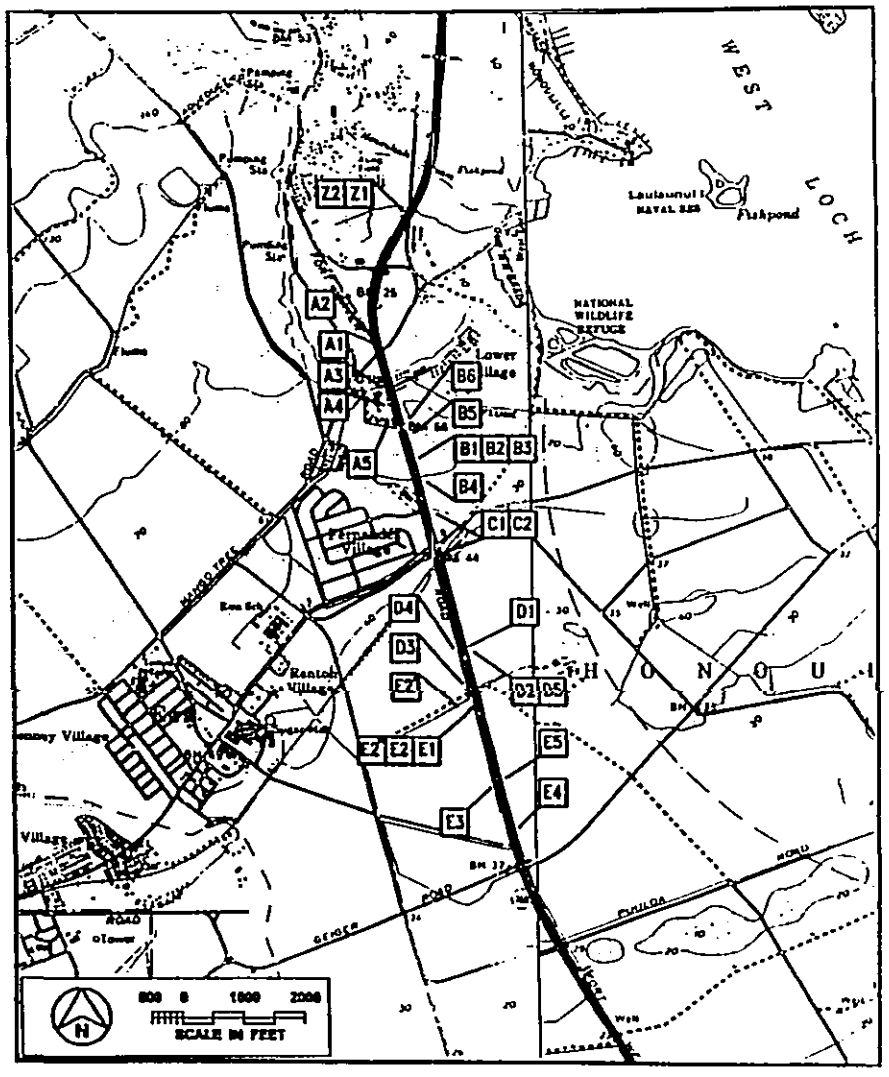
Noise Measurements. Existing traffic and background ambient noise levels were measured at 27 locations in the project area in August 2002. The traffic noise measurements were used to validate the traffic noise model which was used to calculate the Base Year (CY 2003) and future (CY 2023) traffic noise levels under the No Build and Build Alternatives. The background ambient noise measurements were used to define existing noise levels at noise sensitive receptors which may be affected by the project. Also, the measurements were used in conjunction with forecast traffic noise levels to determine if future traffic noise levels are predicted to "substantially exceed" existing background ambient noise levels at these noise sensitive receptors, and therefore exceed FHWA and HDOT noise standards and criteria.

The 27 noise measurement locations are shown in Figure 1. The results of the traffic noise measurements are summarized in Tables 1 and 2. In the tables, Leq represents the average (or equivalent), A-Weighted, Sound Level. A list and description of the acoustical terminology used are contained in APPENDIX B.

Traffic Noise Predictions. The Federal Highway Administration (FHWA) Traffic Noise Model, Version 2.1 (or TNM, see Reference 1) was used as the primary method of calculating Base Year and future traffic noise levels, with model parameters adjusted to reflect terrain, ground cover, and local shielding conditions. At the locations shown in Table 1, where spot traffic counts were obtained during the noise measurement periods, the measured noise levels were compared with model predictions to insure that measured and calculated noise levels for the existing conditions were consistent and in general agreement. The average vehicle speeds entered into the TNM were adjusted to 31 miles per hour to achieve agreement between measured noise levels and those calculated by the TNM. With this input speed adjustment, the agreement between measured and predicted traffic noise levels was considered to be good and sufficiently accurate to formulate the Base Year and future year traffic noise levels.

Base Year traffic noise levels were then calculated along the project corridor using Base Year (2003) traffic volume data for the AM and PM peak hours from Reference 2. Traffic mix by vehicle types and average vehicle speeds along Fort Weaver Road were derived from observations during the noise monitoring periods and from References 3 and 4. Determinations of the periods of highest hourly traffic volumes along the project corridor were made after reviewing the AM and PM peak hour traffic volumes from References 5 and 6 and the information contained in Reference 2.

From the Base Year traffic volumes contained in Reference 2, it was concluded that total two-way traffic volumes were highest at 4,082 vehicles per hour during the AM peak hour along Fort Weaver Road north of Renton Road. During the Base Year, total two-way traffic volumes were highest at 3,163 vehicles per hour during the PM peak



LOCATIONS OF NOISE MEASUREMENT SITES

FIGURE 1

TABLE 1
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
Z1	95 FT from centerline of Ft. Weaver Road (8/19/02)	1019 TO 1119	31	2,462	58	38	64.5	65.9
Z2	135 FT from centerline of Ft. Weaver Road (8/19/02)	1019 TO 1119	31	2,462	58	38	62.2	63.8
A1	80 FT from centerline of Ft. Weaver Road (8/19/02)	1139 TO 1239	31	2,365	43	30	68.1	67.1
A2	138 FT from centerline of Ft. Weaver Road (8/19/02)	1139 TO 1239	31	2,365	43	30	62.9	63.4
A3	115 FT from centerline of Ft. Weaver Road (8/19/02)	1611 TO 1711	31	4,055	35	19	66.8	67.2
A4	155 FT from centerline of Ft. Weaver Road (8/19/02)	1611 TO 1711	31	4,055	35	19	64.7	65.2

TABLE 1 (CONTINUED)
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
A5	165 FT from centerline of Ft. Weaver Road (8/19/02)	1611 TO 1711	31	4,055	35	19	64.1	65.1
B1	115 FT from centerline of Ft. Weaver Road (8/19/02)	1411 TO 1511	31	3,282	42	35	64.2	65.8
B2	175 FT from centerline of Ft. Weaver Road (8/19/02)	1411 TO 1511	31	3,282	42	35	55.5	56.1
E1	95 FT from centerline of Ft. Weaver Road (8/20/02)	1307 TO 1407	31	1,741	41	28	64.4	65.2
E2	135 FT from centerline of Ft. Weaver Road (8/20/02)	1307 TO 1407	31	1,741	41	28	62.9	62.6
E1	95 FT from centerline of Ft. Weaver Road (8/20/02)	1413 TO 1513	N/A	N/A	N/A	N/A	65.6	N/A

TABLE 1 (CONTINUED)
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume — AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
E1	95 FT from centerline of Ft. Weaver Road (8/20/02)	1539 TO 1639	31	2,606	32	18	66.3	66.2
E2	135 FT from centerline of Ft. Weaver Road (8/20/02)	1539 TO 1639	31	2,606	32	18	64.6	63.4
E1	95 FT from centerline of Ft. Weaver Road (8/20/02)	1642 TO 1725	31	2,692	23	21	66.7	66.3
E2	135 FT from centerline of Ft. Weaver Road (8/20/02)	1642 TO 1725	31	2,692	23	21	64.9	63.5
C1	115 FT from centerline of Ft. Weaver Road (8/21/02)	0634 TO 0734	31	2,682	12	9	65.1	66.8
C2	175 FT from centerline of Ft. Weaver Road (8/21/02)	0634 TO 0734	31	2,682	12	9	58.8	60.3

TABLE 1 (CONTINUED)
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume — AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
B1	115 FT from centerline of Ft. Weaver Road (8/21/02)	0846 TO 0946	31	2,280	61	35	64.4	65.1
B6	145 FT from centerline of Ft. Weaver Road (8/21/02)	0846 TO 0946	31	2,280	61	35	57.3	60.8
D1	105 FT from centerline of Ft. Weaver Road (8/22/02)	0631 TO 0731	31	3,685	47	50	65.9	67.6
D2	109 FT from centerline of Ft. Weaver Road (8/22/02)	0631 TO 0731	31	3,685	47	50	60.2	61.1

TABLE 2

SPOT TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Anchor / SPL at Anchor Leq (dB) (a)	Measured at Loc. Leq (dB) (b)	Difference Leq (dB) (c) = (b)-(a)
A5 165 FT from the centerline of Ft Weaver Rd (8/19/02)	1616 TO 1631	A4 64.3	62.2	-2.1
A5 165 FT from the centerline of Ft Weaver Rd (8/19/02)	1632 TO 1647	A4 64.0	64.5	0.5
A5 165 FT from the centerline of Ft Weaver Rd (8/19/02)	1649 TO 1704	A4 64.8	65.0	0.2
B3 125 FT from the centerline of Ft Weaver Rd (8/19/02)	1414 TO 1429	B2 56.0	54.7	-1.3
B4 150 FT from the centerline of Ft Weaver Rd (8/19/02)	1433 TO 1448	B2 55.0	56.7	1.7
B5 175 FT from the centerline of Ft Weaver Rd (8/19/02)	1517 TO 1547	B1 65.0	53.7	-11.3
E3 147 FT from the centerline of Ft Weaver Rd (8/20/02)	1308 TO 1323	E1 64.1	59.3	-4.8
E4 115 FT from the centerline of Ft Weaver Rd (8/20/02)	1324 TO 1349	E1 64.2	57.4	-6.8
E5 115 FT from the centerline of Ft Weaver Rd (8/20/02)	1354 TO 1409	E1 63.8	54.7	-9.1
E2' 335 FT from the centerline of Ft Weaver Rd (8/20/02)	1425 TO 1440	E1 65.3	60.0	-5.3
E2' 335 FT from the centerline of Ft Weaver Rd (8/20/02)	1441 TO 1456	E1 65.1	60.0	-5.1

TABLE 2 (CONTINUED)

SPOT TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Anchor / SPL at Anchor Leq (dB) (a)	Measured at Loc. Leq (dB) (b)	Difference Leq (dB) (c) = (b)-(a)
E2' 335 FT from the centerline of Ft Weaver Rd (8/20/02)	1441 TO 1456	E1 65.1	60.0	-5.1
E2' 175 FT from the centerline of Ft Weaver Rd (8/20/02)	1540 TO 1555	E1 66.5	62.6	-3.9
D3 130 FT from the centerline of Ft. Weaver Rd. (8/20/02)	1610 TO 1625	E1 66.1	59.3	-6.8
D4 130 FT from the centerline of Ft Weaver Rd. (8/20/02)	1632 TO 1640	E1 66.2	58.0	-8.2
D4 130 FT from the centerline of Ft Weaver Rd (8/20/02)	1640 TO 1655	E1 66.6	60.3	-6.3

hour along Fort Weaver Road south of Renton Road. For noise modeling purposes, the traffic noise levels for the AM and PM peak hours were calculated for both the Base Year (2003) and 2023.

The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and CY 2023 traffic noise levels as required by Reference 7. Topographic maps and project plans of the area were used to determine highway lane geometry, terrain, ground cover, and local shielding effects from terrain features, which were entered into the noise prediction model.

Future year (2023) traffic noise levels were then developed for the No Build and Build (roadway improvement) Alternatives using the future traffic forecast of Reference 8, the topographic and existing development features described previously, and the new roadway lane geometry and striping under the Build Alternative. Forecast traffic volumes, mixes, and speeds for Year 2023 were assumed to be similar for the No Build and Build Alternatives. For CY 2023, the PM peak hour volumes were highest along the entire project corridor, and were used to model CY 2023 traffic noise levels. These PM peak hour volumes which were used to model CY 2023 traffic noise levels along Fort Weaver Road were 6,900 and 4,700 vehicles per hour for sections north and south of Kolowaka Drive, respectively.

The CY 2023 traffic assignments for the No Build and Build Alternatives were assumed to be identical. Future traffic conditions under the No Build Alternative may worsen, with average vehicle speeds possibly declining as a result of increased congestion. Nevertheless, under both the No Build and Build Alternatives, average vehicle speeds were assumed to remain the same as current values.

Impact Assessments and Mitigation. Following the calculation of the future traffic noise levels, evaluations of the future traffic noise levels and impacts at noise sensitive receptor locations along Fort Weaver Road were made. Comparisons of predicted future traffic noise levels with FHWA and HDOT noise abatement criteria (see Table 3) were made to determine specific locations where the noise abatement criteria are expected to be exceeded. In addition, HDOT's criteria of "greater than 15 dB increase above existing background noise levels" was also used as a noise abatement threshold for this project (from Reference 9). Along the project corridor, the locations of the 66 and 71 Leq(h) traffic noise contours, without the benefit of shielding from natural terrain or man-made sound barriers, were provided for siting future land uses along the project corridor, and for defining the adequate buffer space between the roadway sections and these land uses. HDOT's 66 Leq(h) and the "greater than 15 dB increase" criteria were both applied to residential and park properties east and west of the project corridor and to the Child and Family Service, Ewa Family Center, since, by Reference 9, HDOT has replaced the FHWA 67 Leq(h) criteria with their 66 Leq(h) criteria. At the commercial buildings at the Renton and Geiger Road intersections, HDOT's 71 Leq(h) noise abatement criteria for Activity Category C and the "greater than 15 dB increase" criteria were applied. Where noise mitigation measures were indicated for this project, the

TABLE 3

FHWA & DOTH NOISE ABATEMENT CRITERIA
[Hourly A–Weighted Sound Level––Decibels (dBA)]

ACTIVITY CATEGORY	LEQ (h)*	DESCRIPTION OF ACTIVITY CATEGORY
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the areas are to continue to serve their intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, activity sports areas, parks, residences, motels, hotels, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-------	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

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* The Hawaii State Department of Transportation, Highways Division, utilizes Leq criteria levels which are 1 Leq unit less than the FHWA values shown.

effectiveness of sound attenuating barriers and other possible noise mitigation measures were evaluated. The ability to meet HDOT's criteria of 5 dBA noise reduction was also examined for various noise barrier heights at the typical units of the 54 two-story homes where the 66 Leq(h) criteria is and will continue to be exceeded.

CHAPTER III. EXISTING ACOUSTICAL ENVIRONMENT

For the purposes of this study, 2003 was used as the Base Year for calculating changes in traffic noise levels associated with the No Build and Build Alternatives in CY 2023. The Base Year noise environment along the project corridor was described by calculating the Hourly Equivalent Sound Levels [Leq(h)] along the existing roadway during the AM and PM peak traffic hours for the 2003 time period. The hourly sound levels, expressed in decibels, represent the average levels of traffic noise along Fort Weaver Road during the AM and PM peak hours of the study's Base Year.

The traffic volume, speed, and mix assumptions used to calculate the Base Year noise levels during the AM and PM peak hours along Fort Weaver Road are shown in Table 4. The calculated Leq's at 100, 200, and 350 feet from the centerline of Fort Weaver Road are also shown in Table 4. The estimated distances to the 66 Leq and 71 Leq noise contours under unobstructed, line-of-sight conditions during the AM and PM peak hours are shown in Table 5. The actual distances to the 66 Leq contour line will generally be less than the values shown in Table 5 when intervening structures, walls, or terrain obstructions exist between the roadway and a receptor. This reduction (or shrinkage) of the traffic noise contour distances from the roadway's centerline is the result of noise shielding (or attenuation) effects caused by the intervening structures, walls, or natural terrain features.

Base Year traffic noise levels were calculated at noise sensitive receptors in the project area using current traffic noise measurement data (shown in Tables 1 and 2), project plans of existing features east and west of the project corridor, and calculations of Base Year traffic noise levels using the FHWA TNM. Tabulations of the existing traffic noise levels at locations east and west of the Fort Weaver Road during the AM or PM peak hour (whichever had the highest traffic volume) are shown in Tables 6A and 6B for single story and two story receptor heights, respectively. The receptor locations where calculations of existing traffic noise levels were made are shown in Figure 2. The Fort Weaver Road Segments "Z" through "F" are identified in Appendix C.

From the results of Table 6A, it was concluded that the HDOT 66 Leq(h) noise abatement criteria was not exceeded at single story residences along the east and west Rights-of-Way and within the limits of project construction. Adequate setbacks from the centerline of Fort Weaver Road currently exist for essentially all residences which front the roadway and are shielded by sound attenuating walls. Because of sound attenuation benefits of the existing walls which front these residences, existing single-story residences on both sides of Fort Weaver Road were not exposed to traffic noise levels greater than 66 Leq during the Base Year. However, at the upper floors of approximately 54 two-story homes which front Fort Weaver Road within the limits of project construction, existing traffic noise levels currently exceed 66 Leq. These two-story residences are identified in Table 6B.

Existing traffic noise levels currently exceed the HDOT's 66 Leq noise abatement criteria for Activity Category B at the Child and Family Service, Ewa Family Center on

4

TABLE 4

EXISTING (CY 2003) TRAFFIC VOLUMES AND NOISE LEVELS ALONG VARIOUS ROADWAY SECTIONS (AM AND PM PEAK HOURS)

LOCATION	SPEED (MPH)	TOTAL VPH	********** VOLUMES (VPH) ********** AUTOS	M.TRUCKS	H.TRUCKS	100' Leq	200' Leq	350' Leq
AM Peak Hour:								
Fort Weaver Rd. (North of Aawa Drive)	31	4,082	3,976	45	61	67.3	64.0	61.6
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	31	4,082	3,976	45	61	67.7	63.8	61.7
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	31	4,082	3,976	45	61	67.9	63.9	61.2
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	31	4,082	3,976	45	61	68.0	64.0	61.1
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	31	2,712	2,604	54	54	66.7	62.5	60.3
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	31	2,712	2,604	54	54	66.8	62.7	60.4
Ft. Weaver Rd. (South of Geiger Road)	31	2,712	2,604	54	54	66.5	62.6	60.2
PM Peak Hour:								
Fort Weaver Rd. (North of Aawa Drive)	31	3,809	3,725	38	46	66.7	63.5	61.0
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	31	3,809	3,725	38	46	67.2	63.3	61.2
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	31	3,809	3,725	38	46	67.4	63.3	60.7
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	31	3,809	3,725	38	46	67.4	63.5	60.6
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	31	3,183	3,036	63	63	67.4	63.2	60.9
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	31	3,183	3,036	63	63	67.4	63.4	61.0
Ft. Weaver Rd. (South of Geiger Road)	31	3,183	3,036	63	63	67.1	63.3	60.9

TABLE 5

YEAR 2003 AND 2023 DISTANCES TO 66 AND 71 LEQ CONTOURS (AM AND PM PEAK HOURS)

STREET SECTION	66 Leq SETBACK (FT) CY 2003	66 Leq SETBACK (FT) CY 2023	71 Leq SETBACK (FT) CY 2003	71 Leq SETBACK (FT) CY 2023
AM Peak Hour:				
Fort Weaver Rd. (North of Aawa Drive)	131	180	46	63
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	135	179	56	72
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	139	180	58	76
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	141	183	59	77
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	112	178	49	78
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	114	152	49	64
Ft. Weaver Rd. (South of Geiger Road)	109	148	45	61
PM Peak Hour:				
Fort Weaver Rd. (North of Aawa Drive)	116	204	39	69
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	124	193	51	79
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	127	197	54	83
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	126	204	53	84
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	126	194	55	85
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	127	172	54	74
Ft. Weaver Rd. (South of Geiger Road)	122	167	49	69

Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See TABLE 4 for traffic volume, speed, and mix assumptions.
(3) Setback distances are for unobstructed line-of-sight conditions.

TABLE 6A
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(4.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "Z" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-62:021	AM & PM	58.7	60.7 / 2.0	60.9 / 2.2
Receiver 9-1-62:020	AM & PM	59.1	61.1 / 2.0	61.4 / 2.3
Receiver 9-1-62:019	AM & PM	59.1	61.1 / 2.0	61.2 / 2.1
Receiver 9-1-62:018	AM & PM	59.1	61.1 / 2.0	61.4 / 2.3
Receiver 9-1-62:017	AM & PM	59.3	61.3 / 2.0	61.6 / 2.3
Receiver 9-1-62:016	AM & PM	59.2	61.2 / 2.0	61.6 / 2.4
Receiver 9-1-62:015	AM & PM	59.2	61.2 / 2.0	61.5 / 2.3
Receiver 9-1-62:014	AM & PM	59.2	61.2 / 2.0	61.4 / 2.2
Receiver 9-1-62:013	AM & PM	59.2	61.2 / 2.0	61.2 / 2.0
Receiver 9-1-62:012	AM & PM	58.5	60.4 / 1.9	60.6 / 2.1
Receiver 9-1-62:011	AM & PM	58.1	60.1 / 2.0	60.4 / 2.3
Receiver 9-1-62:010	AM & PM	59.3	61.3 / 2.0	61.6 / 2.3
Receiver 9-1-62:009	AM & PM	59.3	61.3 / 2.0	61.6 / 2.3
Receiver 9-1-62:008	AM & PM	58.7	60.7 / 2.0	60.9 / 2.2
Receiver 9-1-62:173	AM & PM	58.4	60.4 / 2.0	60.6 / 2.2
Receiver 9-1-62:172	AM & PM	57.5	59.5 / 2.0	59.6 / 2.1
Receiver 9-1-62:171	AM & PM	56.7	58.7 / 2.0	58.8 / 2.1
SEGMENT "A" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-17:058a	AM & PM	69.0 *	70.9 / 1.9 *	71.1 / 2.1 *
Receiver 9-1-17:058b	AM & PM	66.2 *	68.2 / 2.0 *	68.5 / 2.3 *
Receiver 9-1-17:058c	AM & PM	65.7	67.7 / 2.0 *	67.9 / 2.2 *
Receiver 9-1-67:083	AM & PM	58.2	60.2 / 2.0	60.6 / 2.4
Receiver 9-1-67:082	AM & PM	59.9	61.8 / 1.9	62.1 / 2.2
Receiver 9-1-67:077	AM & PM	59.3	61.3 / 2.0	61.6 / 2.3
Receiver 9-1-67:076	AM & PM	58.1	60.1 / 2.0	60.5 / 2.4
Receiver 9-1-67:064	AM & PM	58.4	60.4 / 2.0	60.9 / 2.5
Receiver 9-1-67:063	AM & PM	59.4	61.4 / 2.0	61.7 / 2.3
Receiver 9-1-67:044	AM & PM	58.2	60.2 / 2.0	60.5 / 2.3
Receiver 9-1-67:043	AM & PM	59.8	61.8 / 2.0	62.1 / 2.3
Receiver 9-1-66.072a	AM & PM	58.8	60.8 / 2.0	61.0 / 2.2
Receiver 9-1-66.072b	AM & PM	57.4	59.3 / 1.9	59.6 / 2.2
Receiver 9-1-66.072c	AM & PM	56.9	58.8 / 1.9	59.1 / 2.2
Receiver 9-1-66.072d	AM & PM	55.4	57.4 / 2.0	57.8 / 2.4
Receiver 9-1-66.002	AM & PM	58.3	60.3 / 2.0	60.4 / 2.1
Receiver 9-1-66.001	AM & PM	58.1	60.0 / 1.9	60.1 / 2.0
Receiver 9-1-65.057	AM & PM	57.6	59.6 / 2.0	59.7 / 2.1

TABLE 6A (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(4.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "A" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-65:056	AM & PM	59.0	61.0 / 2.0	61.1 / 2.1
Receiver 9-1-65:055	AM & PM	58.7	60.6 / 1.9	60.6 / 1.9
Receiver 9-1-65:054	AM & PM	59.3	61.3 / 2.0	61.3 / 2.0
Receiver 9-1-65:053	AM & PM	59.4	61.3 / 1.9	61.4 / 2.0
SEGMENT "B" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-65:052	AM & PM	58.5	60.4 / 1.9	60.3 / 1.8
Receiver 9-1-65:051	AM & PM	59.2	61.2 / 2.0	61.3 / 2.1
Receiver 9-1-65:050	AM & PM	59.8	61.7 / 1.9	61.9 / 2.1
Receiver 9-1-65:049	AM & PM	60.7	62.6 / 1.9	62.6 / 1.9
Receiver 9-1-65:048	AM & PM	62.2	64.2 / 2.0	64.4 / 2.2
Receiver 9-1-65:047	AM & PM	62.0	64.0 / 2.0	64.0 / 2.0
Receiver 9-1-65:046	AM & PM	61.4	63.3 / 1.9	63.9 / 2.5
Receiver 9-1-65:045	AM & PM	61.2	63.2 / 2.0	63.5 / 2.3
Receiver 9-1-17:066	AM & PM	58.3	59.7 / 1.4	59.9 / 1.6
Receiver 9-1-17:007a	AM & PM	56.9	58.7 / 1.8	58.9 / 2.0
Receiver 9-1-17:007b	AM & PM	55.9	57.8 / 1.9	58.0 / 2.1
Receiver 9-1-17:007c	AM & PM	60.5	62.5 / 2.0	62.6 / 2.1
SEGMENT "B" WEST OF FORT WEAVER ROAD:				
Receiver 9-1-43:158	AM & PM	61.8	63.9 / 2.1	64.1 / 2.3
SEGMENT "C" WEST OF FORT WEAVER ROAD:				
Receiver 9-1-43:134	AM & PM	62.5	64.5 / 2.0	64.8 / 2.3
Receiver 9-1-43:135	AM & PM	58.3	60.4 / 2.1	60.9 / 2.6
Receiver 9-1-43:136	AM & PM	56.6	58.7 / 2.1	59.0 / 2.4
Receiver 9-1-43:137	AM & PM	55.5	57.6 / 2.1	57.9 / 2.4
Receiver 9-1-43:138	AM & PM	55.1	57.2 / 2.1	57.6 / 2.5
Receiver 9-1-43:139	AM & PM	54.9	57.1 / 2.2	57.5 / 2.6
Receiver 9-1-43:140	AM & PM	55.3	57.5 / 2.2	58.0 / 2.7
Receiver 9-1-43:141	AM & PM	57.3	59.7 / 2.4	60.2 / 2.9
Receiver 9-1-43:160	AM & PM	67.1	69.3 / 2.2	69.6 / 2.5
SEGMENT "D" WEST OF FORT WEAVER ROAD:				
Receiver 9-1-47.069	PM	60.2	62.6 / 2.4	62.8 / 2.6
Receiver 9-1-50.091a	PM	57.1	59.6 / 2.5	60.0 / 2.9
Receiver 9-1-50.091b	PM	58.7	61.2 / 2.5	61.6 / 2.9
Receiver 9-1-50.091c	PM	58.0	60.5 / 2.5	60.8 / 2.8

TABLE 6A (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(4.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "D" WEST OF FORT WEAVER ROAD (CONTINUED) :				
Receiver 9-1-50:091d	PM	56.9	59.4 / 2.5	59.7 / 2.8
Receiver 9-1-50:072	PM	58.5	61.0 / 2.5	61.3 / 2.8
Receiver 9-1-50:073	PM	58.1	60.7 / 2.6	60.9 / 2.8
Receiver 9-1-50:074	PM	57.9	60.4 / 2.5	60.8 / 2.9
Receiver 9-1-50:075	PM	57.6	60.1 / 2.5	60.6 / 3.0
Receiver 9-1-50:076	PM	56.8	59.4 / 2.6	59.7 / 2.9
Receiver 9-1-50:077	PM	56.8	59.3 / 2.5	59.7 / 2.9
Receiver 9-1-50:078	PM	57.0	59.5 / 2.5	59.8 / 2.8
Receiver 9-1-50:079	PM	56.7	59.2 / 2.5	59.7 / 3.0
Receiver 9-1-50:080	PM	57.1	59.6 / 2.5	60.1 / 3.0
Receiver 9-1-50:081	PM	57.3	59.8 / 2.5	60.3 / 3.0
Receiver 9-1-50:082	PM	57.3	59.8 / 2.5	60.2 / 2.9
Receiver 9-1-50:083	PM	57.1	59.6 / 2.5	60.0 / 2.9
Receiver 9-1-50:084	PM	57.2	59.7 / 2.5	60.1 / 2.9
Receiver 9-1-50:085	PM	57.5	60.0 / 2.5	60.4 / 2.9
Receiver 9-1-50:086	PM	57.7	60.2 / 2.5	60.7 / 3.0
Receiver 9-1-50:087	PM	58.1	60.6 / 2.5	60.9 / 2.8
Receiver 9-1-49.050	PM	57.6	60.2 / 2.6	60.6 / 3.0
Receiver 9-1-49:051	PM	56.5	59.0 / 2.5	59.5 / 3.0
Receiver 9-1-49.079	PM	56.9	59.3 / 2.4	59.8 / 2.9
Receiver 9-1-49.080	PM	57.1	59.6 / 2.5	59.9 / 2.8
Receiver 9-1-49.042	PM	57.0	59.5 / 2.5	59.8 / 2.8
Receiver 9-1-49.014	PM	58.6	61.1 / 2.5	61.6 / 3.0
Receiver 9-1-49:100	PM	59.0	61.4 / 2.4	61.7 / 2.7
Receiver 9-1-49:101	PM	62.1	64.4 / 2.3	64.6 / 2.5
SEGMENT "D" EAST OF FORT WEAVER ROAD :				
Receiver 9-1-107:049	PM	59.1	61.6 / 2.5	61.9 / 2.8
Receiver 9-1-107:047	PM	59.2	61.7 / 2.5	62.0 / 2.8
Receiver 9-1-107.046	PM	59.2	61.8 / 2.6	61.8 / 2.6
Receiver 9-1-107:045	PM	58.0	60.6 / 2.6	60.7 / 2.7
Receiver 9-1-107:043	PM	58.0	60.5 / 2.5	60.7 / 2.7
Receiver 9-1-107:042	PM	58.2	60.7 / 2.5	60.8 / 2.6
Receiver 9-1-107.041	PM	57.9	60.4 / 2.5	60.7 / 2.8
Receiver 9-1-107.039	PM	57.7	60.1 / 2.4	60.4 / 2.7
Receiver 9-1-107:038	PM	55.1	57.5 / 2.4	57.8 / 2.7

TABLE 6A (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(4.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "E" EAST OF FORT WEAVER ROAD :				
Receiver 9-1-102:044a	PM	56.5	58.5 / 2.0	58.7 / 2.2
Receiver 9-1-102.044b	PM	55.8	57.7 / 1.9	58.0 / 2.2
Receiver 9-1-102.054a	PM	57.8	59.7 / 1.9	59.8 / 2.0
Receiver 9-1-102:054b	PM	57.8	59.7 / 1.9	59.8 / 2.0
Receiver 9-1-102:053a	PM	56.0	57.8 / 1.8	58.1 / 2.1
Receiver 9-1-102:053b	PM	56.7	58.5 / 1.8	58.7 / 2.0
Receiver 9-1-102:052a	PM	57.4	59.3 / 1.9	59.4 / 2.0
Receiver 9-1-102:052b	PM	57.4	59.2 / 1.8	59.4 / 2.0
Receiver 9-1-102.051a	PM	57.0	58.9 / 1.9	59.1 / 2.1
Receiver 9-1-102:051b	PM	57.0	58.8 / 1.8	59.0 / 2.0
Receiver 9-1-102:008a	PM	57.3	59.1 / 1.8	59.3 / 2.0
Receiver 9-1-102:008b	PM	57.5	59.3 / 1.8	59.4 / 1.9
Receiver 9-1-102:035	PM	56.1	57.9 / 1.8	58.2 / 2.1
Receiver 9-1-102:034a	PM	60.0	61.8 / 1.8	62.0 / 2.0
Receiver 9-1-102:034b	PM	60.8	62.6 / 1.8	62.8 / 2.0
Receiver 9-1-102:034c	PM	57.3	59.2 / 1.9	59.3 / 2.0
Receiver 9-1-102:034d	PM	56.9	58.8 / 1.9	59.1 / 2.2
Receiver 9-1-102:034e	PM	57.6	59.5 / 1.9	59.7 / 2.1
Receiver 9-1-102:034f	PM	57.6	59.5 / 1.9	59.7 / 2.1
Receiver 9-1-102:034g	PM	57.7	59.5 / 1.8	59.7 / 2.0
Receiver 9-1-102:034h	PM	57.8	59.6 / 1.8	59.8 / 2.0
Receiver 9-1-102:034i	PM	57.6	59.4 / 1.8	59.7 / 2.1
Receiver 9-1-102:034j	PM	57.5	59.4 / 1.9	59.7 / 2.2
Receiver 9-1-102:034k	PM	58.0	59.8 / 1.8	60.0 / 2.0
Receiver 9-1-87:164	PM	57.1	59.0 / 1.9	59.3 / 2.2
Receiver 9-1-87:165	PM	57.9	59.8 / 1.9	60.1 / 2.2
Receiver 9-1-87:079	PM	58.3	60.2 / 1.9	60.6 / 2.3
Receiver 9-1-87:080	PM	57.9	59.8 / 1.9	60.0 / 2.1
Receiver 9-1-87:081	PM	57.9	59.7 / 1.8	60.0 / 2.1
Receiver 9-1-87:082	PM	58.1	60.0 / 1.9	60.3 / 2.2
Receiver 9-1-87:083	PM	58.3	60.2 / 1.9	60.5 / 2.2
Receiver 9-1-87:084	PM	58.6	60.5 / 1.9	60.7 / 2.1
Receiver 9-1-87:085	PM	58.5	60.3 / 1.8	60.7 / 2.2
Receiver 9-1-87:086	PM	58.5	60.4 / 1.9	60.7 / 2.2
Receiver 9-1-87:087	PM	58.9	60.8 / 1.9	61.1 / 2.2
Receiver 9-1-87:088	PM	58.8	60.7 / 1.9	61.0 / 2.2
Receiver 9-1-87:089	PM	58.6	60.5 / 1.9	60.8 / 2.2
Receiver 9-1-87:092	PM	60.6	62.4 / 1.8	62.7 / 2.1

TABLE 6A (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(4.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "E" EAST OF FORT WEAVER ROAD (CONTINUED):				
Receiver 9-1-86:119	PM	60.4	62.3 / 1.9	62.6 / 2.2
Receiver 9-1-86:094	PM	59.9	61.7 / 1.8	62.0 / 2.1
Receiver 9-1-86:093	PM	59.4	61.3 / 1.9	61.7 / 2.3
Receiver 9-1-86:063	PM	59.3	61.1 / 1.8	61.3 / 2.0
Receiver 9-1-86:107	PM	56.6	58.5 / 1.9	58.7 / 2.1
SEGMENT "E" WEST OF FORT WEAVER ROAD:				
Receiver 9-1-61:001	PM	66.1 *	67.9 / 1.8 *	68.3 / 2.2 *
Receiver 9-1-61:038a	PM	57.0	59.0 / 2.0	59.1 / 2.1
Receiver 9-1-61:038b	PM	57.6	59.5 / 1.9	59.6 / 2.0
Receiver 9-1-61:038c	PM	57.5	59.4 / 1.9	59.5 / 2.0
Receiver 9-1-61:038d	PM	57.6	59.5 / 1.9	59.7 / 2.1
Receiver 9-1-61:002	PM	61.5	63.3 / 1.8	63.7 / 2.2
Receiver 9-1-76:173	PM	58.5	60.3 / 1.8	60.6 / 2.1
Receiver 9-1-76:189a	PM	64.8	66.6 / 1.8	66.7 / 1.9
Receiver 9-1-76:189b	PM	60.2	62.1 / 1.9	62.3 / 2.1
Receiver 9-1-76:189c	PM	60.0	61.9 / 1.9	62.1 / 2.1
Receiver 9-1-61:008	PM	58.7	60.4 / 1.7	60.7 / 2.0
Receiver 9-1-61:059a	PM	59.4	61.3 / 1.9	61.6 / 2.2
Receiver 9-1-61:059b	PM	59.1	60.9 / 1.8	61.1 / 2.0
Receiver 9-1-61:059c	PM	59.8	61.7 / 1.9	61.8 / 2.0
Receiver 9-1-61:060	PM	58.9	60.7 / 1.8	60.7 / 1.8

Notes:

1. All receivers were assumed to be at 4.92 feet above ground level.
2. * Denotes exceedance of HDOT "66 Leq" criteria for Activity Category B or exceedance of HDOT "71 Leq" criteria for Activity Category C.

TABLE 6B
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(14.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "Z" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-62:021	AM & PM	66.9 *	68.9 / 2.0 *	69.1 / 2.2 *
Receiver 9-1-62:020	AM & PM	67.5 *	69.6 / 2.1 *	69.7 / 2.2 *
Receiver 9-1-62:019	AM & PM	67.7 *	69.8 / 2.1 *	70.0 / 2.3 *
Receiver 9-1-62:018	AM & PM	67.8 *	69.9 / 2.1 *	70.0 / 2.2 *
Receiver 9-1-62:017	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-62:016	AM & PM	68.0 *	70.0 / 2.0 *	70.2 / 2.2 *
Receiver 9-1-62:015	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-62:014	AM & PM	67.7 *	69.8 / 2.1 *	70.0 / 2.3 *
Receiver 9-1-62:013	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-62:012	AM & PM	67.7 *	69.7 / 2.0 *	69.9 / 2.2 *
Receiver 9-1-62:011	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-62:010	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-62:009	AM & PM	67.7 *	69.7 / 2.0 *	69.9 / 2.2 *
Receiver 9-1-62:008	AM & PM	67.5 *	69.6 / 2.1 *	69.7 / 2.2 *
Receiver 9-1-62:173	AM & PM	67.4 *	69.4 / 2.0 *	69.6 / 2.2 *
Receiver 9-1-62:172	AM & PM	65.8	67.8 / 2.0 *	68.0 / 2.2 *
Receiver 9-1-62:171	AM & PM	63.3	65.3 / 2.0	65.7 / 2.4
SEGMENT "A" EAST OF FORT WEAVER ROAD:				
Receiver 9-1-17:058a	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-17:058b	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-17:058c	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:083	AM & PM	66.3 *	68.4 / 2.1 *	68.4 / 2.1 *
Receiver 9-1-67:082	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:077	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:076	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:064	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:063	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-67:044	AM & PM	67.3 *	69.3 / 2.0 *	69.5 / 2.2 *
Receiver 9-1-67:043	AM & PM	67.5 *	69.5 / 2.0 *	69.7 / 2.2 *
Receiver 9-1-66:072a	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-66:072b	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-66:072c	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-66:072d	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-66:002	AM & PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-66:001	AM & PM	66.3 *	68.3 / 2.0 *	68.4 / 2.1 *
Receiver 9-1-65:057	AM & PM	N/A	N/A / N/A	N/A / N/A

TABLE 6B (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(14.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq		-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)		BUILD / (CHANGE)	
SEGMENT "A" EAST OF FORT WEAVER ROAD:							
Receiver 9-1-65:056	AM & PM	66.3	*	68.3 / 2.0	*	68.3 / 2.0	*
Receiver 9-1-65:055	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-65:054	AM & PM	67.2	*	69.2 / 2.0	*	69.3 / 2.1	*
Receiver 9-1-65:053	AM & PM	67.4	*	69.4 / 2.0	*	69.5 / 2.1	*
SEGMENT "B" EAST OF FORT WEAVER ROAD:							
Receiver 9-1-65:052	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-65:051	AM & PM	67.1	*	69.1 / 2.0	*	69.2 / 2.1	*
Receiver 9-1-65:050	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-65:049	AM & PM	66.8	*	68.8 / 2.0	*	68.9 / 2.1	*
Receiver 9-1-65:048	AM & PM	66.7	*	68.8 / 2.1	*	68.8 / 2.1	*
Receiver 9-1-65:047	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-65:046	AM & PM	66.3	*	68.4 / 2.1	*	68.5 / 2.2	*
Receiver 9-1-65:045	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-17:066	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-17:007a	AM & PM	65.0		67.0 / 2.0	*	66.9 / 1.9	*
Receiver 9-1-17:007b	AM & PM	62.9		64.9 / 2.0		65.0 / 2.1	
Receiver 9-1-17:007c	AM & PM	64.9		67.0 / 2.1	*	67.2 / 2.3	*
SEGMENT "B" WEST OF FORT WEAVER ROAD:							
Receiver 9-1-43:158	AM & PM	N/A		N/A / N/A		N/A / N/A	
SEGMENT "C" WEST OF FORT WEAVER ROAD:							
Receiver 9-1-43:134	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:135	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:136	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:137	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:138	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:139	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:140	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:141	AM & PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-43:160	AM & PM	N/A		N/A / N/A		N/A / N/A	
SEGMENT "D" WEST OF FORT WEAVER ROAD:							
Receiver 9-1-47:069	PM	61.4		63.8 / 2.4		63.9 / 2.5	
Receiver 9-1-50:091a	PM	65.9		68.4 / 2.5	*	68.7 / 2.8	*
Receiver 9-1-50:091b	PM	65.7		68.3 / 2.6	*	68.5 / 2.8	*
Receiver 9-1-50:091c	PM	65.6		68.2 / 2.6	*	68.5 / 2.9	*

TABLE 6B (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(14.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq		-- FUTURE (CY 2023) Leq -- NO BUILD / (CHANGE)		BUILD / (CHANGE)	
SEGMENT "D" WEST OF FORT WEAVER ROAD (CONTINUED):							
Receiver 9-1-50:091d	PM	65.6		68.1 / 2.5	*	68.2 / 2.6	*
Receiver 9-1-50:072	PM	67.0	*	69.5 / 2.5	*	69.8 / 2.8	*
Receiver 9-1-50:073	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:074	PM	66.3	*	68.8 / 2.5	*	69.2 / 2.9	*
Receiver 9-1-50:075	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:076	PM	66.1	*	68.6 / 2.5	*	68.8 / 2.7	*
Receiver 9-1-50:077	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:078	PM	65.9		68.4 / 2.5	*	68.6 / 2.7	*
Receiver 9-1-50:079	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:080	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:081	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:082	PM	66.4	*	68.9 / 2.5	*	69.2 / 2.8	*
Receiver 9-1-50:083	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:084	PM	66.2	*	68.7 / 2.5	*	69.0 / 2.8	*
Receiver 9-1-50:085	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-50:086	PM	65.9		68.4 / 2.5	*	68.8 / 2.9	*
Receiver 9-1-50:087	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-49:050	PM	66.6	*	69.1 / 2.5	*	69.5 / 2.9	*
Receiver 9-1-49:051	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-49:079	PM	65.6		68.3 / 2.7	*	68.3 / 2.7	*
Receiver 9-1-49:080	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-49:042	PM	65.2		67.8 / 2.6	*	67.8 / 2.6	*
Receiver 9-1-49:014	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-49:100	PM	66.1	*	68.7 / 2.6	*	68.7 / 2.6	*
Receiver 9-1-49:101	PM	N/A		N/A / N/A		N/A / N/A	
SEGMENT "D" EAST OF FORT WEAVER ROAD:							
Receiver 9-1-107:049	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-107:047	PM	67.3	*	69.9 / 2.6	*	70.2 / 2.9	*
Receiver 9-1-107:046	PM	68.0	*	70.6 / 2.6	*	70.7 / 2.7	*
Receiver 9-1-107:045	PM	68.2	*	70.7 / 2.5	*	70.9 / 2.7	*
Receiver 9-1-107:043	PM	67.4	*	69.9 / 2.5	*	70.0 / 2.6	*
Receiver 9-1-107:042	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-107:041	PM	N/A		N/A / N/A		N/A / N/A	
Receiver 9-1-107:039	PM	67.7	*	70.2 / 2.5	*	70.3 / 2.6	*
Receiver 9-1-107:038	PM	62.3		64.5 / 2.2		64.5 / 2.2	

TABLE 6B (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(14.92 FT RECEPTOR, PEAK HOUR LEQ)

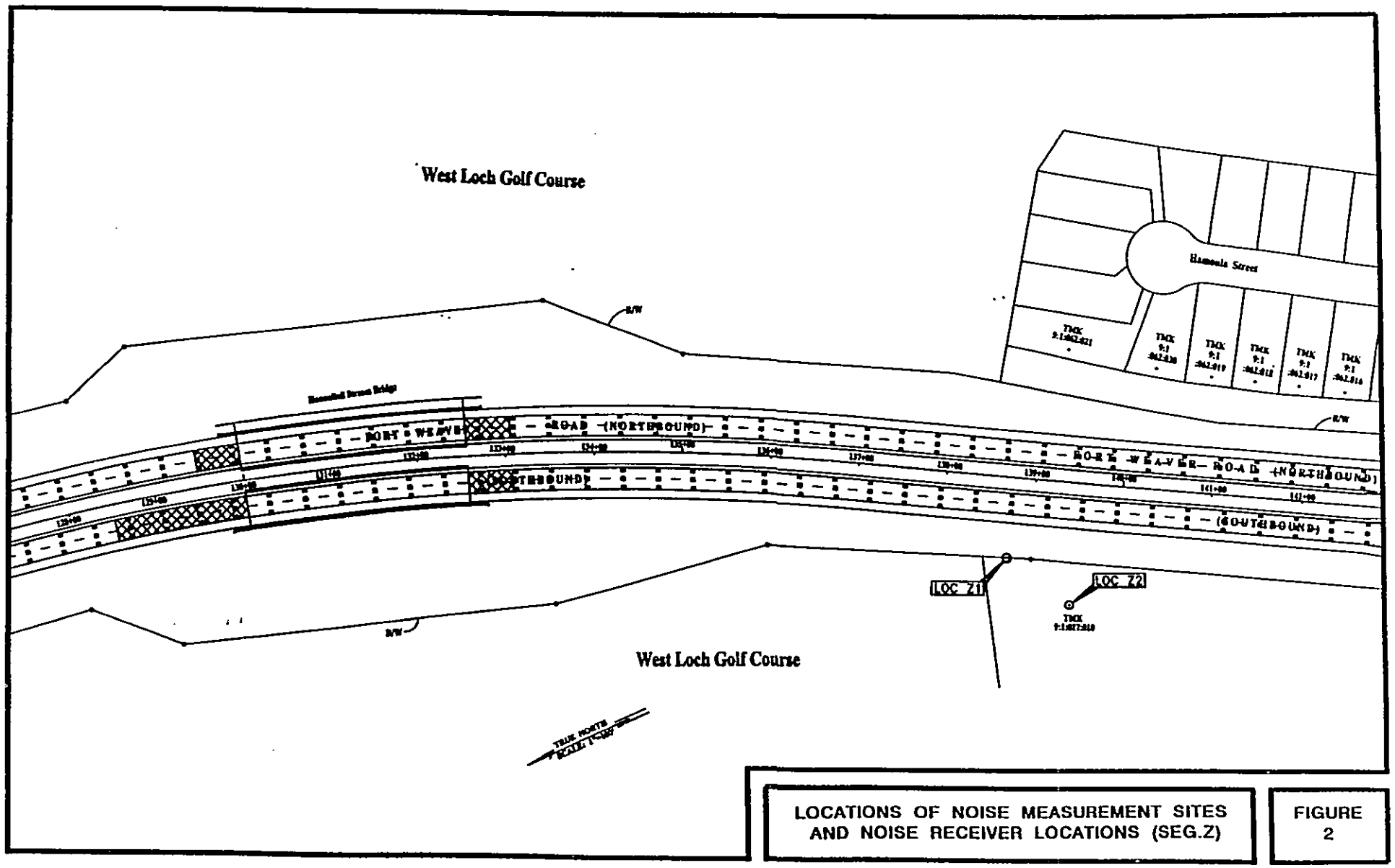
RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	– FUTURE (CY 2023) Leq – NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "E" EAST OF FORT WEAVER ROAD :				
Receiver 9-1-102:044a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:044b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:054a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:054b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:053a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:053b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:052a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:052b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:051a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:051b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:008a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:008b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:035	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034c	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034d	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034e	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034f	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034g	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034h	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034i	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034j	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-102:034k	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:164	PM	67.3 *	69.0 / 1.7 *	69.1 / 1.8 *
Receiver 9-1-87:165	PM	67.8 *	69.5 / 1.7 *	69.8 / 2.0 *
Receiver 9-1-87:079	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:080	PM	67.1 *	68.8 / 1.7 *	69.0 / 1.9 *
Receiver 9-1-87:081	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:082	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:083	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:084	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:085	PM	67.5 *	69.2 / 1.7 *	69.5 / 2.0 *
Receiver 9-1-87:086	PM	67.3 *	69.0 / 1.7 *	69.3 / 2.0 *
Receiver 9-1-87:087	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:088	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-87:089	PM	66.6 *	68.3 / 1.7 *	68.4 / 1.8 *
Receiver 9-1-87:092	PM	N/A	N/A / N/A	N/A / N/A

TABLE 6B (CONTINUED)
EXISTING AND FUTURE TRAFFIC NOISE LEVELS
AT EXISTING RECEPTOR LOCATIONS
(14.92 FT RECEPTOR, PEAK HOUR LEQ)

RECEPTOR LOCATION	PEAK HOUR	EXISTING (CY 2003) Leq	– FUTURE (CY 2023) Leq – NO BUILD / (CHANGE)	BUILD / (CHANGE)
SEGMENT "E" EAST OF FORT WEAVER ROAD (CONTINUED) :				
Receiver 9-1-86:119	PM	67.1 *	68.9 / 1.8 *	69.2 / 2.1 *
Receiver 9-1-86:094	PM	67.8 *	69.5 / 1.7 *	69.8 / 2.0 *
Receiver 9-1-86:093	PM	67.2 *	69.0 / 1.8 *	69.2 / 2.0 *
Receiver 9-1-86:063	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-86:107	PM	N/A	N/A / N/A	N/A / N/A
SEGMENT "E" WEST OF FORT WEAVER ROAD :				
Receiver 9-1-61:001	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:038a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:038b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:038c	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:038d	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:002	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-76:173	PM	66.5 *	68.2 / 1.7 *	68.4 / 1.9 *
Receiver 9-1-76:189a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-76:189b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-76:189c	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:008	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:059a	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:059b	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:059c	PM	N/A	N/A / N/A	N/A / N/A
Receiver 9-1-61:060	PM	N/A	N/A / N/A	N/A / N/A

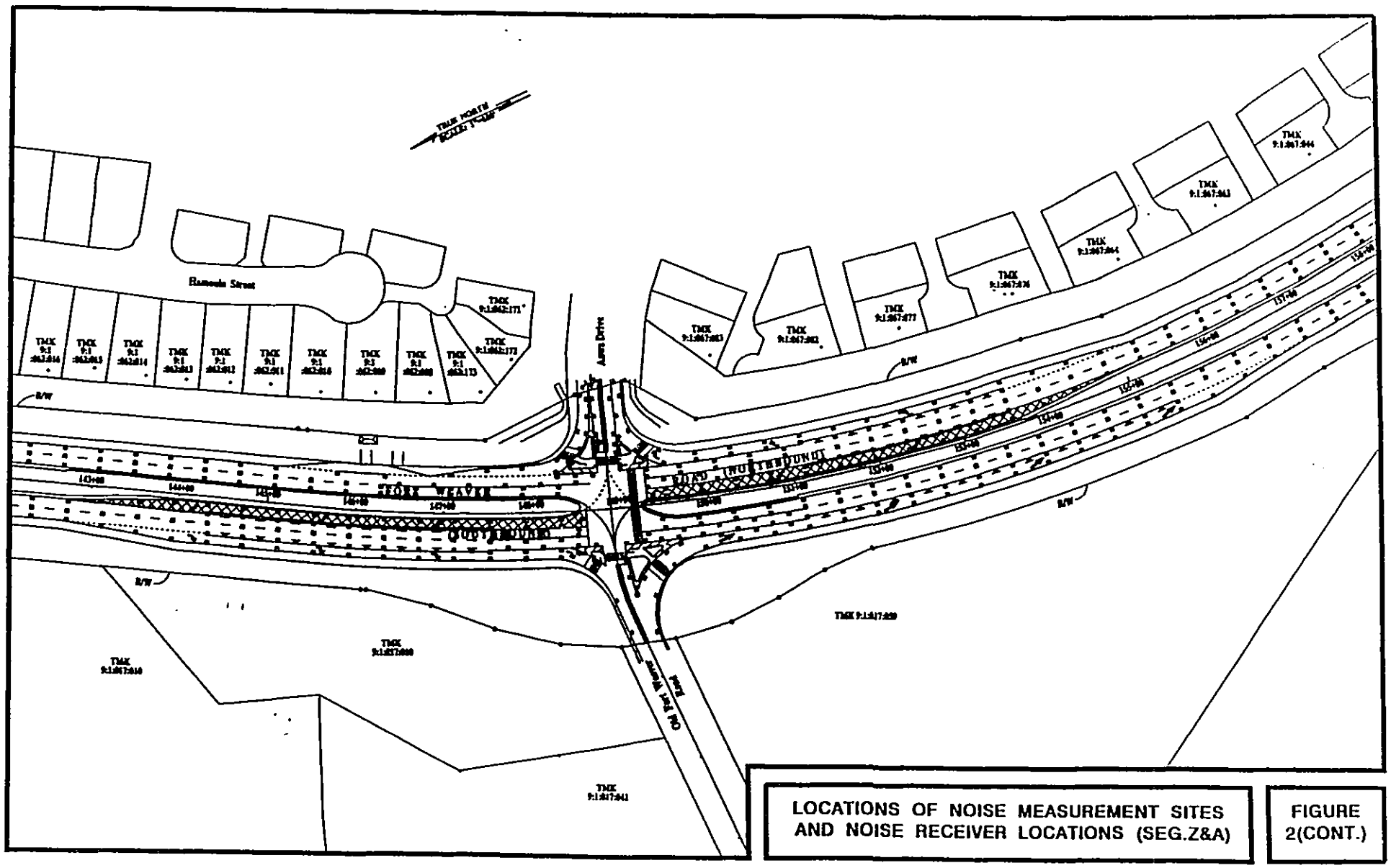
Notes:

1. All receivers were assumed to be at 14.92 feet above ground level.
2. * Denotes exceedance of HDOT "66 Leq" criteria for Activity Category B or exceedance of HDOT "71 Leq" criteria for Activity Category C.



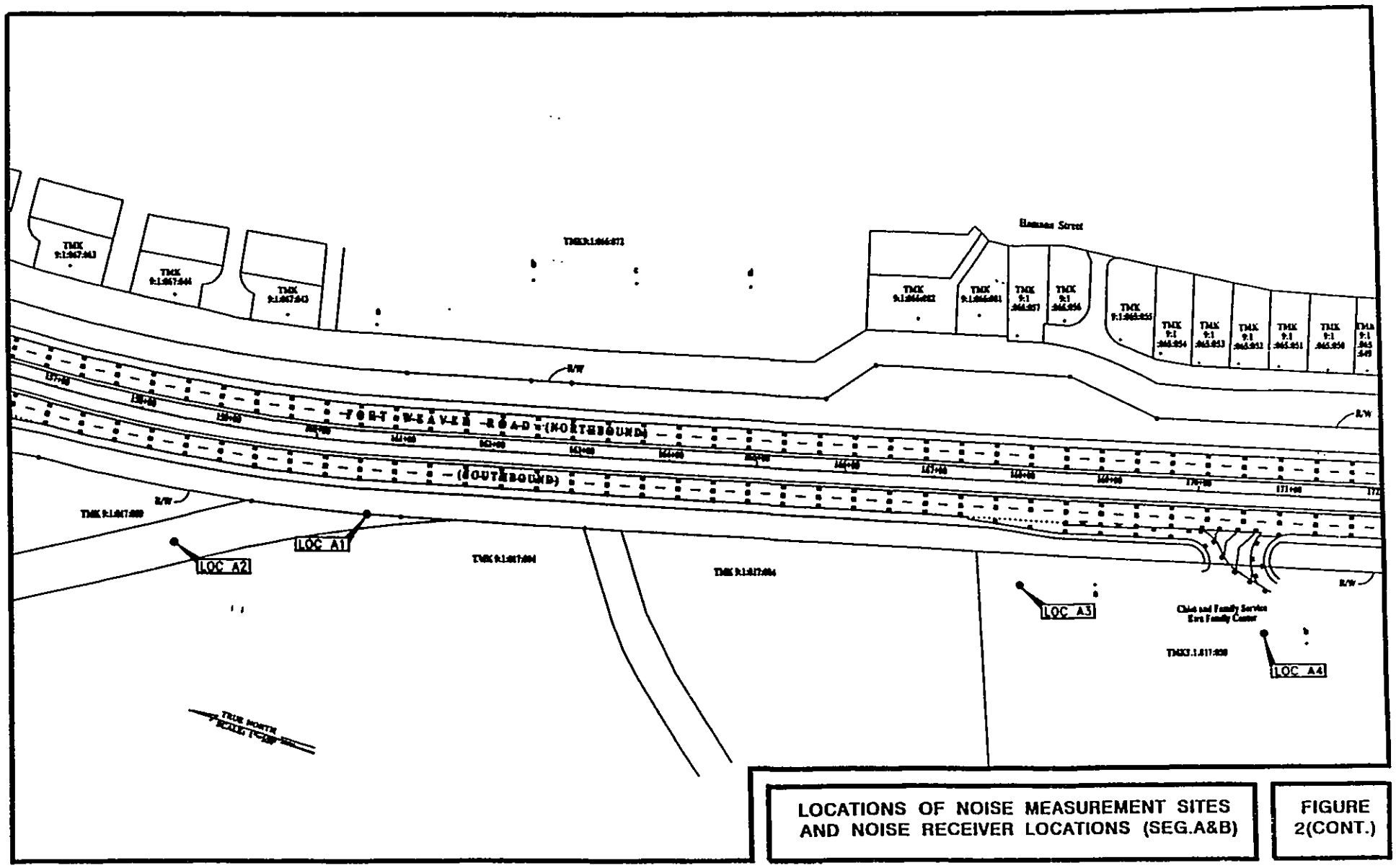
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.Z)

FIGURE 2



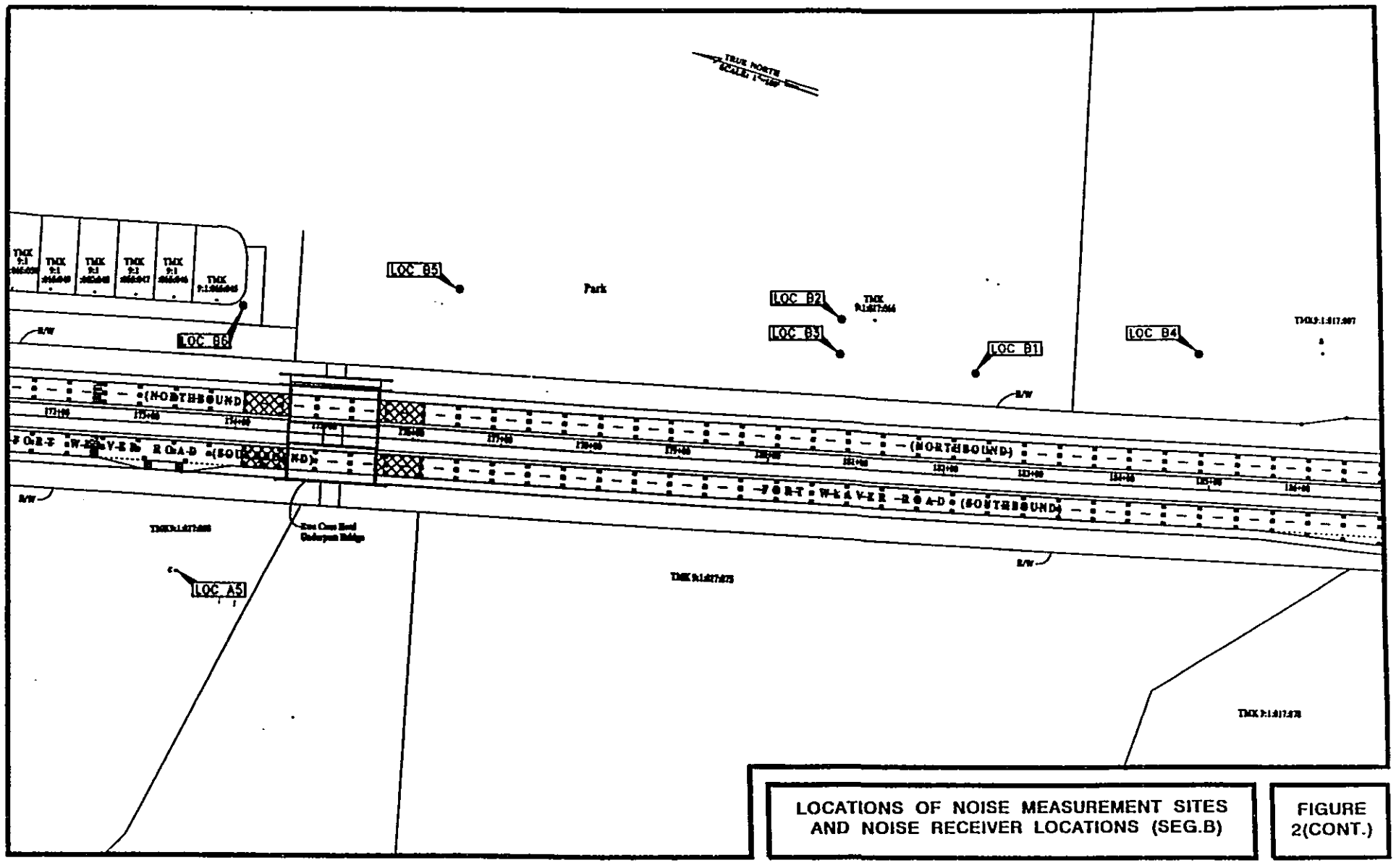
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.Z&A)

FIGURE 2(CONT.)



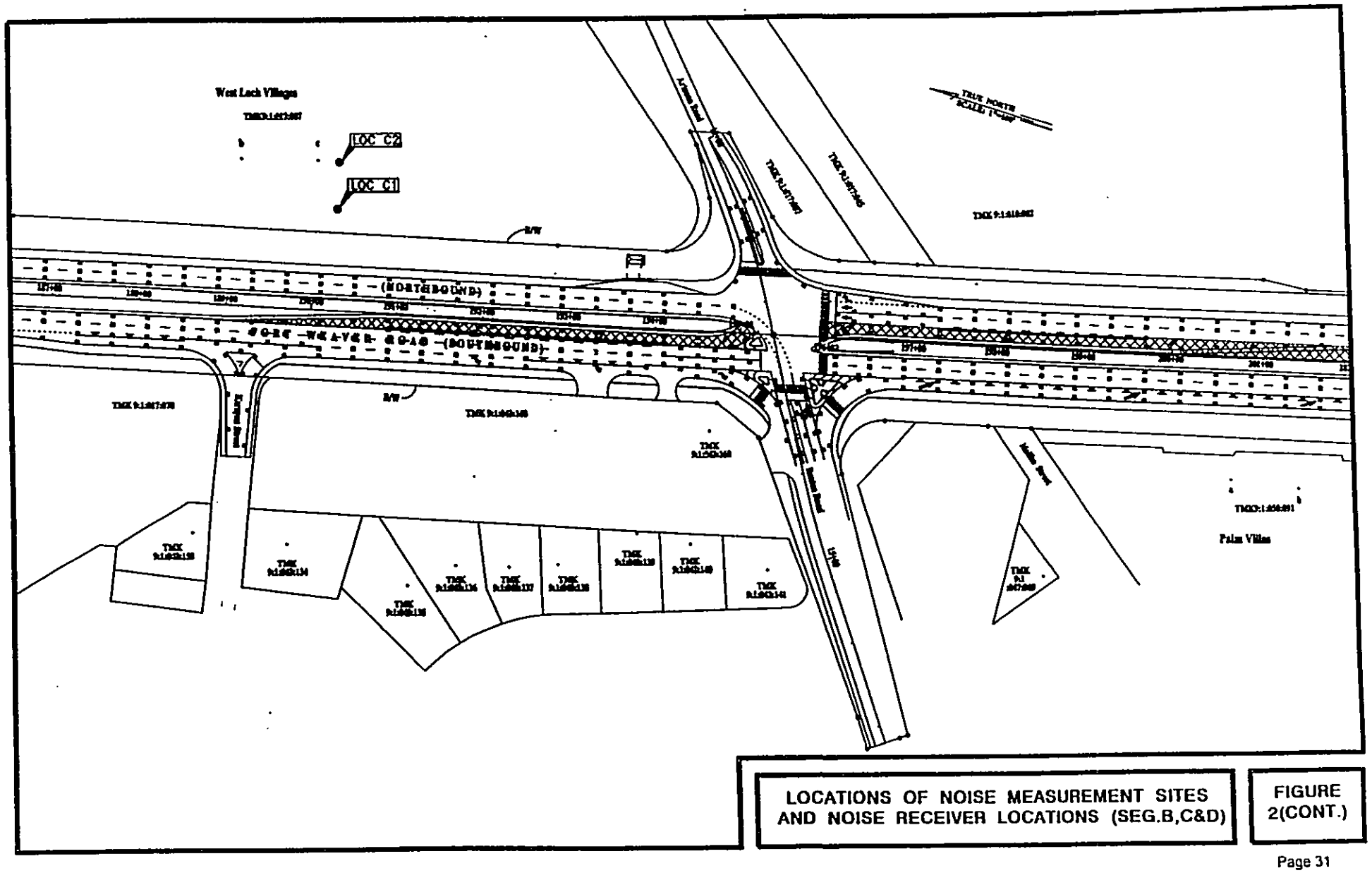
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.A&B)

FIGURE 2(CONT.)



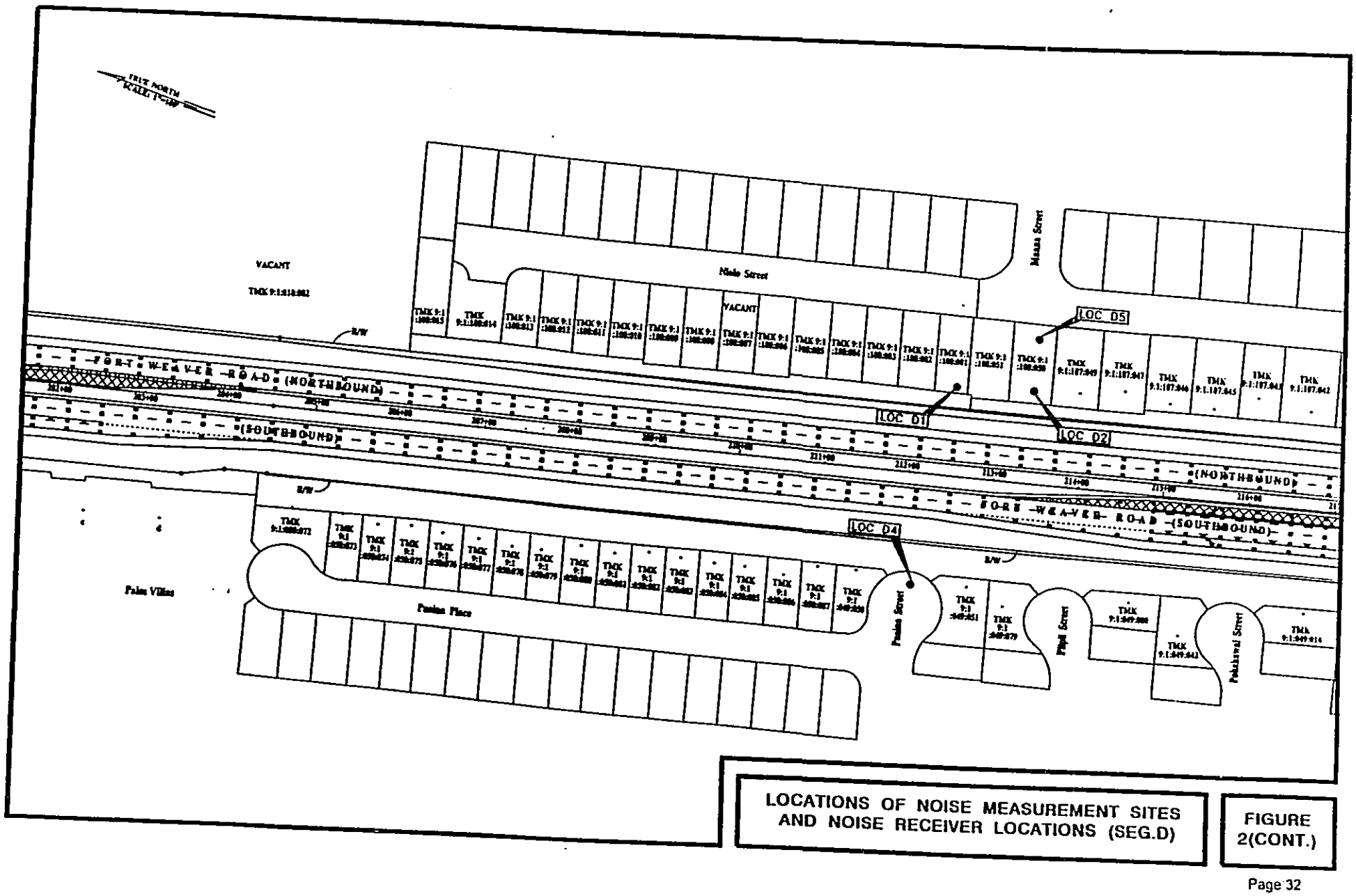
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.B)

FIGURE 2(CONT.)



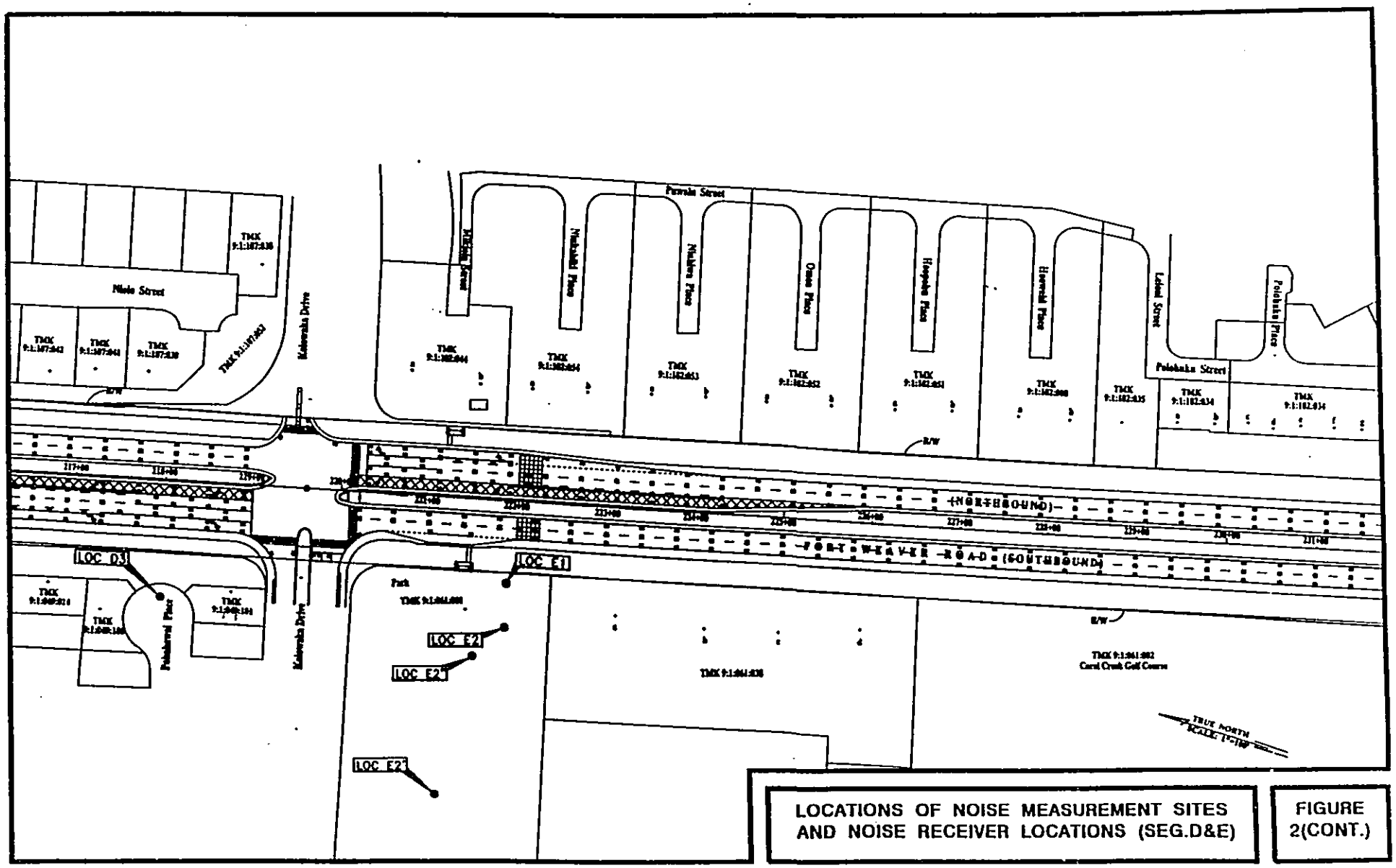
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.B,C&D)

FIGURE 2(CONT.)



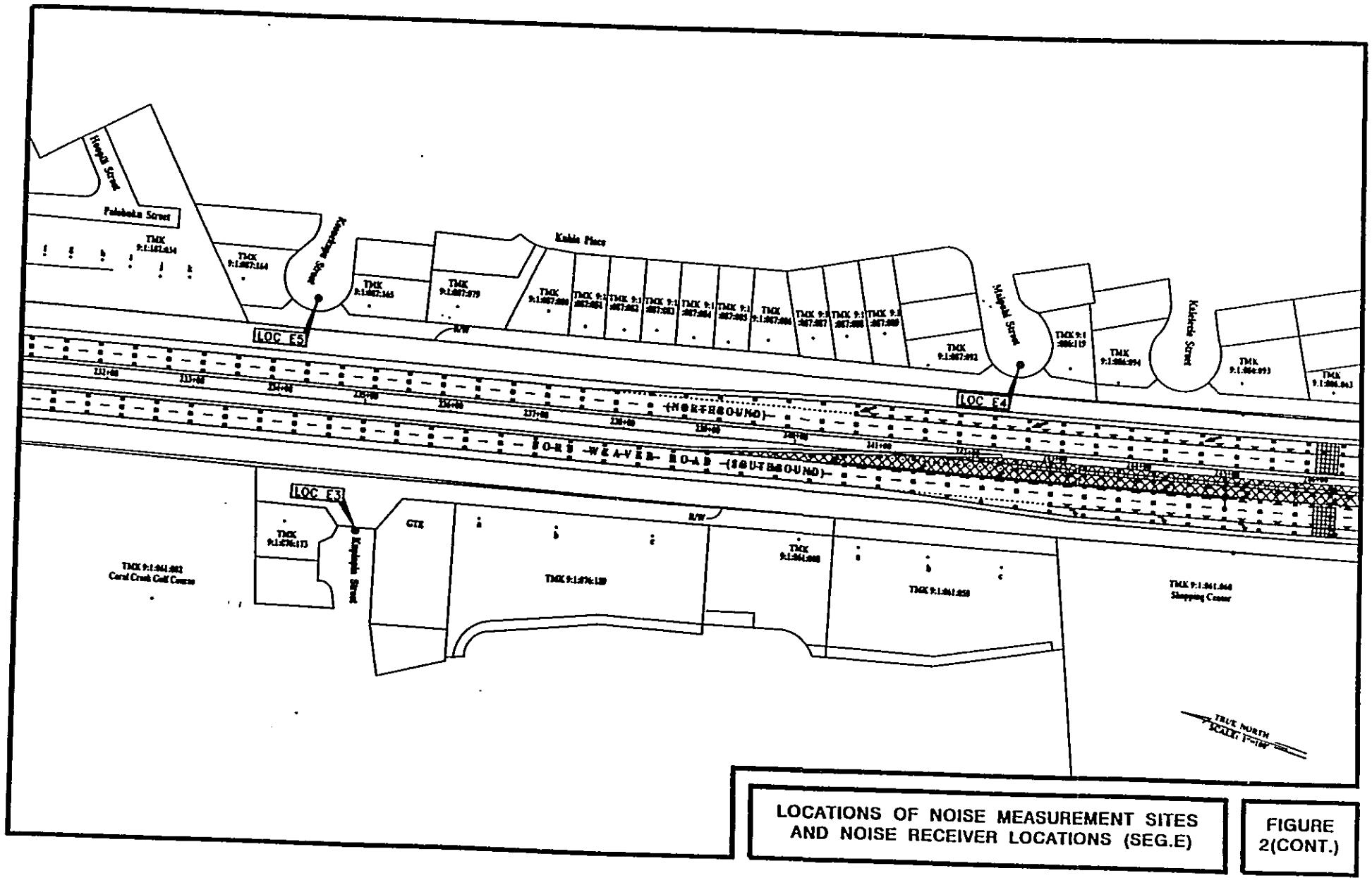
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.D)

FIGURE 2(CONT.)



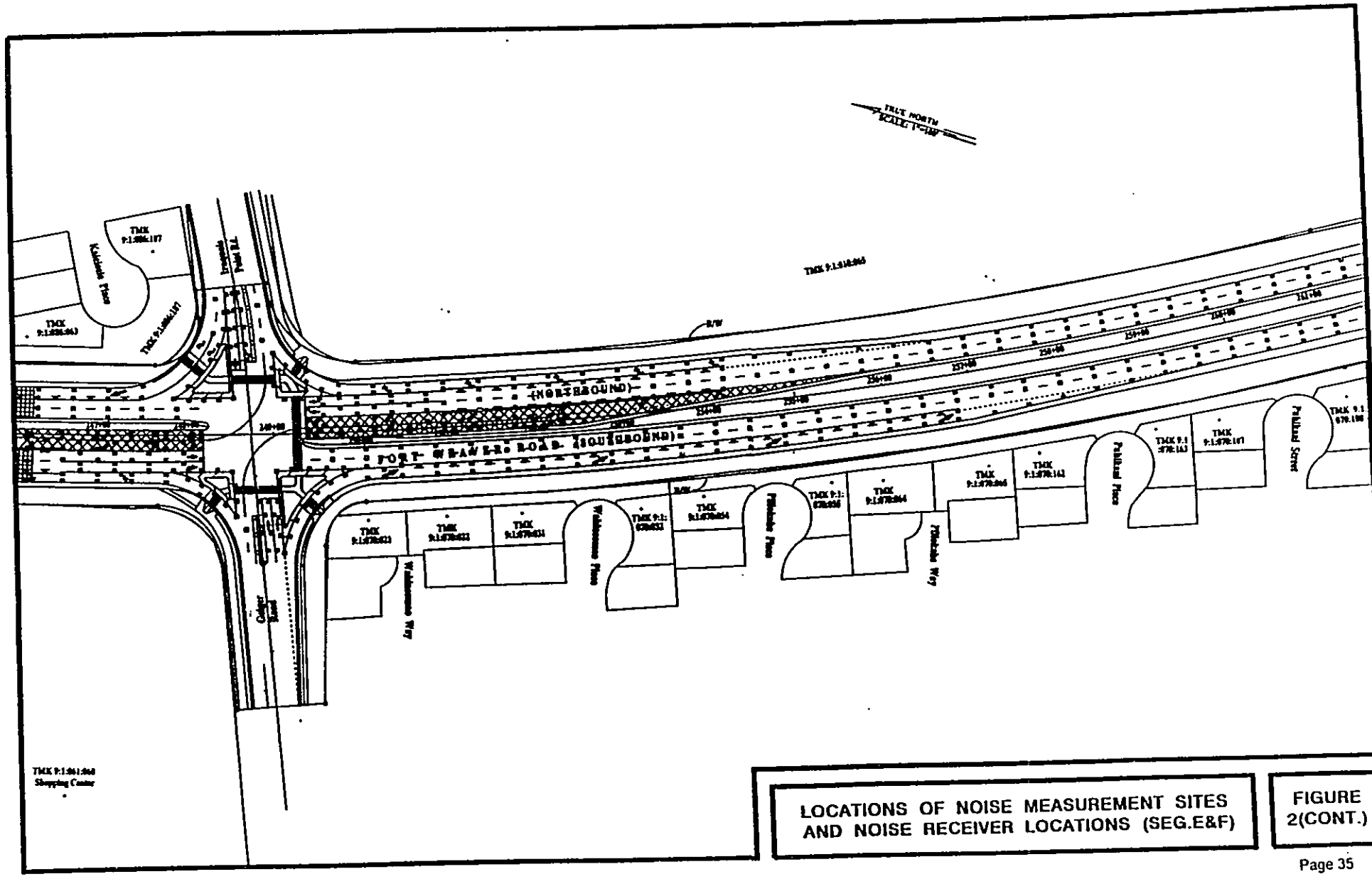
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.D&E)

FIGURE 2(CONT.)



LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.E)

FIGURE 2(CONT.)



LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE RECEIVER LOCATIONS (SEG.E&F)

FIGURE 2(CONT.)

the west side of the project corridor (TMK: 9:1:017:058). However, the buildings of the Ewa Family Center are centrally air conditioned, with adequate noise mitigation measures being provided with closure of the windows and doors of the facility's buildings.

Existing traffic noise levels at the playground/park (TMK: 9:1:017:066) on the east side of Fort Weaver Road and north of the Renton Road intersection are less than the HDOT 66 Leq criteria for Activity Category B due to the existing berm and rock wall along the Right-of-Way.

Existing traffic noise levels at the neighborhood park (TMK: 9:1:061:001) west of Fort Weaver Road at the Kolowaka Drive intersection are 66.1 Leq and slightly above the HDOT criteria for Activity Category B (see Table 6A). At the interior locations of this park (see Locations E2, E2', and E2" in Figure 2), existing traffic noise levels range from 60 to 65 Leq, and are below the HDOT 66 Leq criteria.

Existing traffic noise levels are below the HDOT's 71 Leq noise abatement criteria for Activity Category C at the commercial establishments which are located at the intersections of Renton and Geiger Roads. The setback distances of the commercial buildings from the centerline of Fort Weaver Road exceed 100 feet, which also exceed the 53 to 54 feet setback distances to the 71 Leq noise contours.

CHAPTER IV. DESCRIPTION OF FUTURE TRAFFIC NOISE LEVELS

The future traffic noise levels in the immediate vicinity of the project during CY 2023 were evaluated for the No Build and Build Alternatives. The same methodology that was used to calculate the Base Year noise levels was also used to calculate the Year 2023 noise levels. It should be noted that forecast traffic volumes used to evaluate both the No Build and Build Alternatives were identical along Fort Weaver Road within the limits of project construction. Under both the No Build and Build Alternatives, average vehicle speeds and traffic mix were assumed to be the same as the corresponding Base Year values. The primary differences in the configuration of Fort Weaver Road between the No Build and Build Alternatives are the additional (or fifth and sixth) through lanes which will be added for the northbound and the southbound directions along the project corridor. The widths of all six lanes will be 11 feet.

The traffic volume, speed, and mix assumptions used to calculate the Year 2023 noise levels during the AM and PM peak hours along Fort Weaver Road are shown in Table 7. The calculated Leq's at 100, 200, and 350 feet from the centerline of Fort Weaver Road for the Build Alternative are also shown in Table 7. The estimated distances to the 66 Leq and 71 Leq noise contours under unobstructed, line-of-sight conditions during the AM and PM peak hours in 2023 are shown in Table 5.

Under the No Build Alternative, future traffic noise levels are expected to increase by 1.4 to 2.6 dB over existing noise levels, with the typical increase in noise level being 2.0 dB (see Tables 6A and 6B). These increases result from the forecast increases in future traffic volumes between 2003 and 2023 (see Tables 4 and 7). Future traffic noise levels at the ground floors of residences along both sides of Fort Weaver Road should remain below the HDOT 66 Leq(h) noise abatement criteria under the No Build Alternative. Future traffic noise levels at the second floors of the 54 residences along both sides of Fort Weaver Road will remain above the HDOT 66 Leq(h) noise abatement criteria under the No Build Alternative. Traffic noise levels at the Ewa Family Center are expected to increase by 1.9 to 2.0 Leq, and remain above the 66 Leq criteria level.

Under the Build Alternative, the future traffic noise levels are expected to be 0 to 0.5 dB higher than under the No Build Alternative (see Tables 6A and 6B). This increase is considered to be insignificant, and will not be discernible or measurable. The expected increases of the distances to the 66 and 71 Leq contours under unobstructed line-of-sight conditions are shown in Table 5. The increase in the number of through lanes from four to six is expected to increase traffic noise levels by less than 0.6 dB at the existing noise sensitive receptor locations.

Under the No Build or Build Alternatives, the noise sensitive receptor locations where the HDOT's 66 Leq(h) noise abatement criteria is expected to be exceeded will continue to include the three buildings of the Ewa Family Center. In addition, the neighborhood park at Kolowaka Drive will experience traffic noise levels between 62

TABLE 7

FUTURE (CY 2023) TRAFFIC VOLUMES AND NOISE LEVELS ALONG VARIOUS ROADWAY SECTIONS (AM AND PM PEAK HOURS)

LOCATION	SPEED (MPH)	TOTAL VPH	********** VOLUMES (VPH) ********** AUTOS	M.TRUCKS	H.TRUCKS	100' Leq	200' Leq	350' Leq
AM Peak Hour								
Fort Weaver Rd. (North of Aawa Drive)	31	5,800	5,649	64	87	68.8	65.5	63.1
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	31	5,800	5,649	64	87	69.2	65.4	63.2
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	31	5,800	5,649	64	87	69.4	65.4	62.7
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	31	5,800	5,649	64	87	69.5	65.5	62.6
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	31	5,800	5,649	64	87	69.5	65.3	63.0
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	31	4,000	3,840	80	80	68.4	64.4	62.1
Ft. Weaver Rd. (South of Geiger Road)	31	4,000	3,840	80	80	68.2	64.3	61.9
PM Peak Hour								
Fort Weaver Rd. (North of Aawa Drive)	31	6,900	6,748	69	83	69.3	66.1	63.7
Ft. Weaver Rd. (Aawa Dr. to Ewa Family Cntr.)	31	6,900	6,748	69	83	69.7	65.8	63.7
Ft. Weaver Rd. (Ewa Family Cntr. to Karayan St.)	31	6,900	6,748	69	83	69.9	65.9	63.3
Ft. Weaver Rd. (Karayan St. to Renton Rd.)	31	6,900	6,748	69	83	70.0	66.1	63.1
Ft. Weaver Rd. (Renton Rd. to Kolowaka Dr.)	31	6,900	6,748	69	83	70.0	65.8	63.5
Ft. Weaver Rd. (Kolowaka Dr. to Geiger Rd.)	31	4,700	4,512	94	94	69.2	65.1	62.8
Ft. Weaver Rd. (South of Geiger Road)	31	4,700	4,512	94	94	68.9	65.0	62.6

and 69 Leq. Noise levels in this park will exceed the HDOT 66 Leq criteria at locations east of Location E2" (see Figure 2). Future traffic noise levels at the playground/park (TMK: 9:1:017:066) on the east side of Fort Weaver Road and north of the Renton Road intersection should remain below the HDOT 66 Leq criteria for Activity Category B due to the existing berm and rock wall along the Right-of-Way. Future traffic noise levels under the No Build or Build Alternatives at the commercial establishments at the Renton and Geiger Road intersections should remain below the HDOT 71 Leq criteria for Activity Category C.

The following general conclusions can be made in respect to the number of impacted structures and lands which can be expected by CY 2023 under the Build Alternative. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

- The HDOT's "greater than 15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3.1 dB as a result of growth in traffic volumes and the construction of the two additional through lanes.

- Under the No Build or Build Alternatives, future traffic noise levels at the second floors of approximately 54 two-story residences are expected to exceed the HDOT's 66 Leq(h) criteria for Activity Category B. These dwelling units are located on both sides of Fort Weaver Road within the limits of project construction.

- The HDOT's 71 Leq(h) noise abatement criteria for Activity Category C will not be exceeded at the existing commercial buildings near the Renton and Geiger Road intersections.

- The HDOT's 66 Leq(h) noise abatement criteria for Activity Category B will be exceeded at one of the two parks which are within the limits of project construction. The park at the Kolowaka Drive intersection is a candidate for sound attenuation measures.

- Noise levels at the three buildings of the Child and Family Service, Ewa Family Center which front Fort Weaver Road will continue to exceed the 66 Leq(h) criteria for Activity Category B. However, the present use of central air conditioning for these three buildings is an adequate noise abatement measure for both existing and future traffic noise levels.

CHAPTER V. POSSIBLE NOISE MITIGATION MEASURES

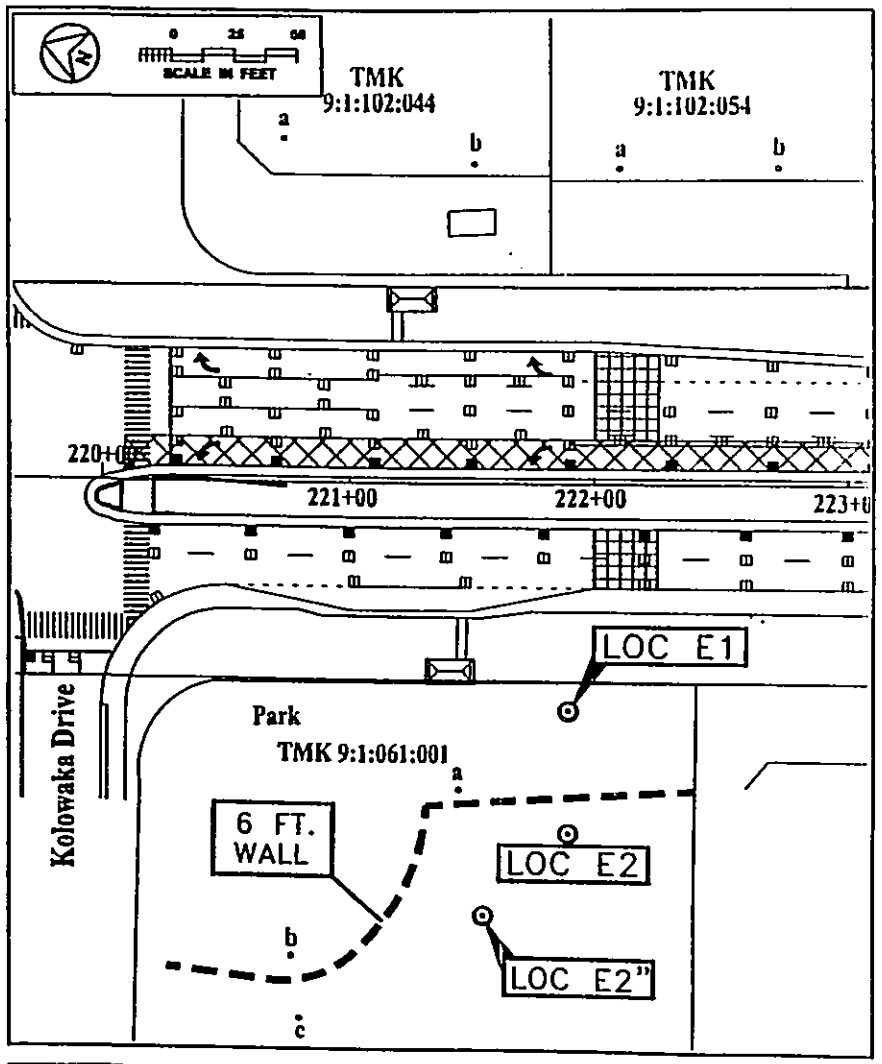
Possible noise mitigation measures considered included the following:

A. Restricting the Growth In the Number of Noisy Buses, Heavy Trucks, Motorcycles, and Automobiles with Defective Mufflers. The percentage contribution to the total traffic noise by heavy trucks, buses, and noisy vehicles is currently less than 35 percent, and elimination of these noise sources would reduce total traffic noise levels by less than 2 Leq(h) units. Restricting the growth rate of these vehicles (to growth rates below passenger automobile growth rates) could produce noise reductions in the order of 1 or 2 dB, which are not considered significant for the level of regulatory efforts required.

B. Alteration of the Horizontal Or Vertical Alignment of the Roadway. This project involves the addition of one northbound and one southbound lane to the existing Fort Weaver Road from the vicinity of Aawa Drive to the Geiger Road Intersection, and does not involve alterations to the vertical or horizontal alignments of Fort Weaver Road. Major alterations of the horizontal or vertical alignment of the existing roadway lanes were not considered appropriate due to the scope of this roadway improvement project, due to the constraints imposed by the locations of the five existing intersections and two bridges, and the locations of noise sensitive receptors on both the east and west sides of Fort Weaver Road. The noise sensitive second floor receptors where the 66 Leq criteria are exceeded are located on both the west and east sides of the Fort Weaver Road, and alteration of the horizontal alignment would not be possible without adversely affecting noise sensitive receptors on one side of the roadway.

C. Acquisition of Property Rights for Construction of Noise Barriers, and/or Construction of Noise Barriers Along the Right-of-Way. For single story, noise sensitive buildings or park lands, construction of a sound attenuating wall is normally the preferred noise mitigation measure. The 5 to 7 dB of noise attenuation achievable with a 6 FT high wall is normally sufficient for ground level receptors. Approximately 54 of the homes along Fort Weaver Road are two-story dwelling units. The upper floors of those structures will not benefit from sound attenuation walls which are 6 to 8 feet high. Wall heights in the order of 14 to 15 feet above ground level will be required to attenuate traffic noise at the upper floors of the two-story homes.

The existing 6 foot high walls along the east and west Rights-of-Way are currently adequate to shield the ground floor units of the existing residences and a playground/park along Fort Weaver Road within the limits of project construction. The construction of a new 6 foot high wall in front of the neighborhood park at the Kolowaka Drive intersection should be beneficial in reducing traffic noise levels by at least 5 dBA within that park (see Figure 3).



LOCATION OF POSSIBLE SOUND ATTENUATING WALL AT NEIGHBORHOOD PARK (KOLOWAKA DR.)

FIGURE 3

Predicted future traffic noise levels in the park should range from 58 to 61 Leq at most locations behind the sound barrier. However, the receptor locations on the earth mounds may not benefit from the noise shielding effects of a 6 foot high wall.

In order to reduce traffic noise levels by 5 dB (as required in Reference 9), approximately 8,300 lineal feet of the existing 6 foot high walls on the east and west sides of Fort Weaver Road will need to be replaced with 14 to 15 foot high walls. The lots where the two-story dwellings are located are identified in Figure 2 and Table 6B. The 14 to 15 foot high sound attenuating wall will need to be continuous (without short sections), and may be aesthetically unappealing, so concurrence from the affected homeowners should be obtained prior to construction of a 14 to 15 foot high sound barrier as a noise mitigation measure. In addition, if the cost of the 14 to 15 foot high sound barriers exceeds $35,000 per benefited residence (or $35,000 x 54 = $1,890,000), it would not meet the HDOT criteria of being a reasonable or feasible noise mitigation measure (see Reference 9).

D. Acquisition of Real Property Interests To Serve As A Noise Buffer Zone. Where tall (or multistory) structures are expected to be impacted by future traffic noise, the use of sound attenuating barriers (see para. C above) will not be practical due to the excessive heights required to shield the upper levels from traffic noise. The second floors of the existing residences on both sides of Fort Weaver Road are examples of these taller structures. In these situations, the only other noise mitigation possibilities are sound insulation of the upper floors of these structures or acquisition of the property interests. Noise buffer zones extending approximately 170 to 205 feet from the center of Fort Weaver Road and at substantial cost would be required to meet the HDOT's 66 Leq(h) criteria at the second floors of the existing residences. In general, the acquisition of property for the creation of noise buffer zones for noise mitigation has seldom been applied in Hawaii.

E. Noise Insulation of Public Use or Nonprofit Institutional Structures. The three buildings of the Child and Family Service, Ewa Family Center are presently air conditioned, and should not require additional noise insulation as a result of the proposed roadway improvements.

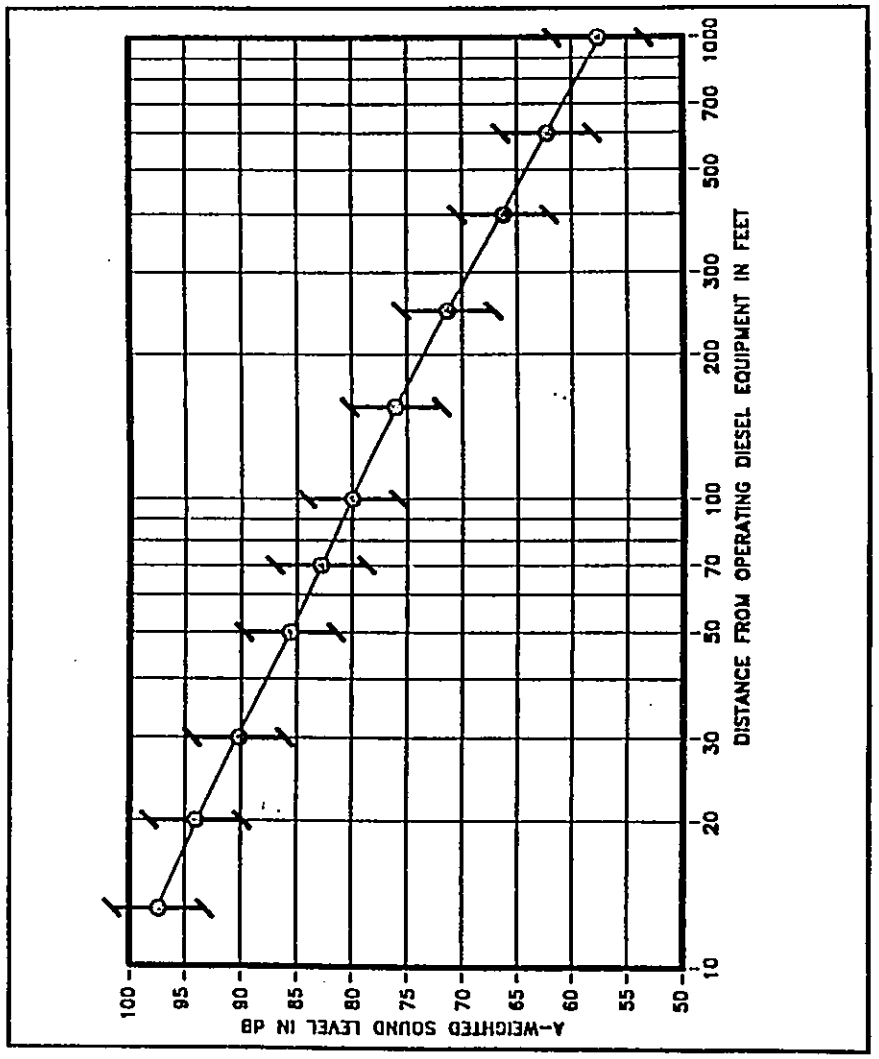
CHAPTER VI. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with construction activities along the existing roadway may occur, particularly if night work is required to minimize traffic congestion on Fort Weaver Road during the daytime construction work periods. These impacts can occur as a result of the short distances (less than 200 FT) between existing dwelling units and the anticipated edge of the construction corridor. The total duration of the construction period for the proposed project is not known, but noise exposure from construction activities at any one receptor location is not expected to be continuous during the total construction period.

Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 feet distance. Typical levels of noise from construction activity (excluding pile driving activity) are shown in Figure 4. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

Construction noise levels at existing structures can intermittently exceed 90 dB when work is being performed at close distances in front of these structures. Along the roadway improvement project, distances between the construction sites and closest receptors are expected to range between 50 to 75 feet, and construction noise levels may intermittently exceed 90 dB. The State Department of Health currently regulates noise from construction activities under a permit system (Reference 10). Under current permit procedures (see Figure 5), noisy construction activities are restricted to the hours between 7:00 AM and 6:00 PM, from Monday through Friday, and exclude certain holidays. Noisy construction activities are normally restricted to the hours of 9:00 AM to 6:00 PM on Saturdays, with construction not permitted on Sundays. These restrictions minimize construction noise impacts on noise sensitive receptors along the roadway project corridor, and have generally been successfully applied. In this way, construction noise impacts on noise sensitive receptors can be minimized.

In addition, the use of quieted portable engine generators and diesel equipment should be specified for use within 500 feet of noise sensitive properties. Heavy truck and equipment staging areas should also be located at areas which are at least 500 feet from noise sensitive properties whenever possible. The use of 12 to 15 feet high construction noise barriers may also be used where construction work close to noise sensitive structures is unavoidable.



ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 4

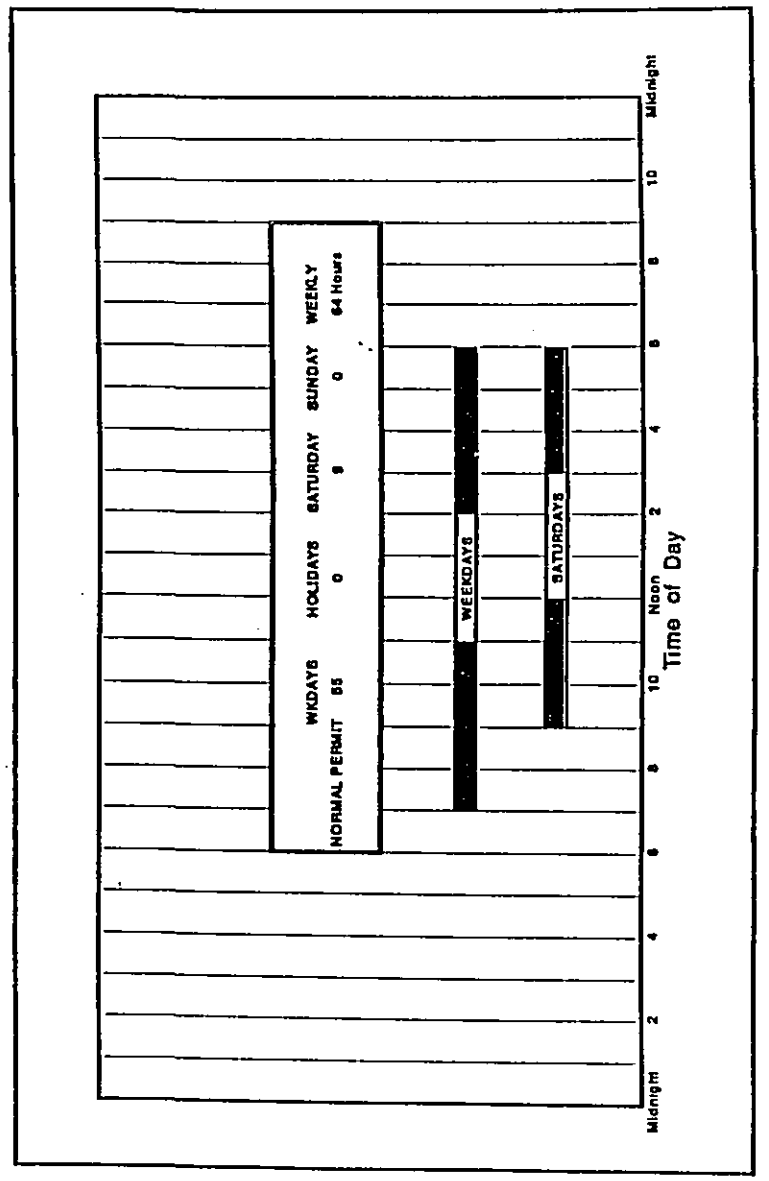


FIGURE 5

AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

APPENDIX A. REFERENCES

(1) "FHWA Highway Traffic Noise Model User's Guide;" FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; March 2003.

(2) E-mail from Kenneth O. Nagai, P.E. with CY 2003 traffic volumes along Fort Weaver Road for AM and PM peak hours; May 12, 2003.

(3) Acoustic Study for the Ewa By Gentry - Makai Development; Y. Ebisu & Associates; November 2001.

(4) Acoustic Study for the Fort Weaver Road Widening Near Laulaunui Street; Ewa, Oahu; Y. Ebisu & Associates; March 2002.

(5) 24-hour Traffic Counts for Station C-10-H, New Fort Weaver Road At Honouliuli Bridge; Hawaii State Department of Transportation; May 2, 2002.

(6) 24-hour Traffic Counts for Station 11-S, New Fort Weaver Road At Kolowaka Drive; Hawaii State Department of Transportation; April 25, 2002.

(7) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise;" 23 CFR Chapter I, Subchapter H, Part 772; April 1, 1995.

(8) FAX from Kenneth O. Nagai, P.E. with Hawaii State Department of Transportation's CY 2023 traffic volumes along Fort Weaver Road for AM and PM peak hours; May 15, 2003.

(9) "Noise Analysis and Abatement Policy;" Hawaii State Department of Transportation, Highways Division, Materials Testing and Research Branch; June 1997.

(10) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E.....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the LCdn with the LAdn.

Although not included in the tables, it is also recommended that "Lpn" and "Lepn" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, Leq, is designated the "equivalent sound level". For Ld, Ln, and Ldn, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, DBA, PNDB, and EPNdB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (Lpn was found to be 75 dB. Lpn = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of bel except for prefixes indicating its multiples or submultiples (e.g., dbcl).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighed Loss of Hearing" (PWL) shall be used consistent with CEASA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

APPENDIX B (CONTINUED)

TABLE I

A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

TERM	SYMBOL
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the Time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level over Time (T) (1)	$L_{eq(T)}$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified a $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II

RECOMMENDED DESCRIPTOR LIST

TERM	A-WEIGHTING	ALTERNATIVE[1] A-WEIGHTING	OTHER[2] WEIGHTING	UNWEIGHTED
1. Sound (Pressure)[3] Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the Time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level Over Time(T) (4)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average Value Over (Non-Time Domain) Set of Observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x Value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E,....weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is Leq(1). Time may be specified in non-quantitative terms (e.g., could be specified as Leq(WASH) to mean the washing cycle noise for a washing machine.

APPENDIX C

IDENTIFICATION OF PROJECT ROADWAY SEGMENTS ALONG FT. WEAVER ROAD

Segment Z	North of Aawa Drive
Segment A	Aawa Dr. to Ewa Family Center
Segment B	Ewa Family Center to Karayan Street
Segment C	Karayan Street to Renton Road
Segment D	Renton Road to Kolowaka Drive
Segment E	Kolowaka Drive to Geiger Road
Segment F	South of Geiger Road