MASTER PLAN
EXECUTIVE SUMMARY

OCTOBER 1992
Department of Housing and Community Development
City and County of Honolulu
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EWA VILLAGES MASTER PLAN

OCTOBER, 1992

PREPARED FOR:

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

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1.1 OVERVIEW

The growing gap between the level of income available to families desiring to acquire a home and the price of currently marketed homes is a continuing concern of the City and County of Honolulu. The existing housing shortfall on Oahu has been estimated to be between 20,000 to 40,000 units by the year 2000. Of this total, approximately 14,000 units will be required to meet the needs of the low moderate, moderate and gap group income families. In addition to the shortfall in housing units, the rental vacancy rate on Oahu has been less than 1 percent, far below the 5 percent level considered necessary to reflect a healthy housing market.

In the Spring of 1990, the Department of Housing and Community Development in concert with the City Council embarked on a challenging housing project to provide homeownership opportunities for the tenants that reside in the plantation villages of Renton, Tenney and Varona. This endeavor has been referred to as the "Ewa Villages Project".

The impetus for the Ewa Villages project is the potential closing of the plantation due to the expiration of the land lease between the Estate of James Campbell and Oahu Sugar Company in 1995. In light of this uncertainty, the City and County, through the Department of Housing and Community Development, began exploring alternate means of ensuring continued tenancy for the current residents of the three plantation villages. A program was developed which provided for the acquisition of the land by the City and County, rehabilitation of existing structures, and the subsequent offer for purchase of each house and lot to the current residents.

1.2 PROJECT LOCATION AND LAND OWNERSHIP

The Ewa Villages are located in the Ewa Plains on Oahu (See Figure 1). The Villages are bounded by the railroad right-of-way to the south, Fernandez Village and Fort Weaver Road on the east, and the sugar cane fields of Oahu Sugar to the north and west. It is made up of several small parcels (TMK 9-1-17: 2,4,36-39,46-49,51) and includes a portion of a larger parcel (TMK: 9-1-16: 25). The total land area within the project area is approximately 630 acres.

The principal land owner is the Estate of James Campbell who has leased all of the land to Oahu Sugar Company (OSCo) for sugarcane cultivation and other plantation related uses. This lease agreement will expire in 1995. The Campbell Estate land holding in this area includes a significant amount of the Ewa Plain as well as Central Oahu lands north of H-1 Freeway and west of Kūnia Road.
1.3 BACKGROUND

The Ewa area has been maintained in sugar production and operation for over 110 years. During those years, numerous events and key individuals contributed to the character of the sugar plantation. In 1877, James Campbell, a Scots immigrant, bought 41,000 acres of what was then considered dry ranch land in Ewa from landowner, John Coney, for the sum of $95,000. A veteran of the sugar business, Campbell recognized the need for a readily available source of water for sugar to reach full economic potential. Two years later in 1879, Campbell hired James Ashley to drill for water at Ewa. Ashley's attempts were successful and the first technical problem of the sugar industry was solved, as Ewa’s first artesian well flowed for the next 60 years.

The existing residences and other structures within Renton, Tenney and Varona villages were constructed between 1907 and 1957 by the Ewa Plantation Company. Structures in Renton Village, named in honor of George Renton (mill manager between 1899-1920), were constructed between 1907 and 1938. Homes in Tenney Village, named in honor of mill manager E.D. Tenney, were constructed between 1923 and the late 1930's. A portion of Varona Village, formerly called "B" Village, was constructed in 1939. It was further expanded to its present day size in 1957. Ewa Plantation Company operated a successful sugar plantation providing housing, community facilities, and a way of life for its employees.

Ewa Plantation Office Building (c. 1950)
The villages were largely isolated and self-contained. The focal points of the community were the mill recreation center and community buildings such as the post office, general stores, butcher shop, soda water and ice manufacturing plant, ranch, dairy, and bank. Residents would often congregate to discuss daily news, or hold community events. It was a town where everyone knew each other, and help was always near when a person or family was in need. Conflicts did arise out of ethnic strife or other disagreements, but generally, these incidents were the exception more than the rule.

Census data for the population of the Ewa Villages available for the years 1928, 1929, and 1932, show population figures of 4,967, 4,477, and 4,100 respectively. It is estimated that Ewa’s population was the largest in 1928. A multi-cultural population comprised of Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, and European people have characterized most of the history of the plantation. Residents of Japanese ancestry once comprised the largest group, but their numbers have since declined rapidly (from 34 percent in 1970 to 16 percent in 1979), while the number of residents of Filipino ancestry have grown.

With the closing of the Ewa Sugar Mill in 1971, and the merger between Ewa Plantation Company and Oahu Sugar Company (OSCo.), all the plantation’s sugar assets were placed under the control of OSCo. The houses are currently owned and maintained by OSCo. and rented to the Company’s employees, pensioners, and surviving widows as provided in their agreement with the International Longshoremen’s and Warehousemen’s Union (ILWU). The infrastructure is also owned and maintained by OSCo. The tenants are charged a nominal amount for rent and water charges.
2.1 EXISTING LAND USES

Existing land uses within and surrounding the project site are shown on Figure 2. Land uses within the project area are primarily sugarcane fields and residential dwellings. Public facilities within the villages include: Ewa Elementary School; Ewa Post Office; Ewa Mahiko Park; Sotohushi Mission; Lanakila Baptist School; Ewa Community Church; Ewa Hongwanji; Friendship Bible Church and Bike Shop; and Ewa Immaculate Conception Church.

Neighboring developments include: Fernandez Village; Hoakea Housing; Ewa By Gentry; and Ewa Elderly Housing project along Renton Road.

2.1.1 Village Conditions

The Ewa Villages were built largely by the Ewa Plantation Company to house its employees from about the turn of this century through the late 1950's. According to available records over a period of about 60 years, the plantation built more than 1200 residential units for its workers. Construction peaked in the first 10 years of the 1900's, as follows: 72 dwellings were constructed in the 1890's; 536 in the first decade of this century; 132 from 1911 to 1919; 285 in the 1920's; 168 in the 1930's; and 35 in the 1940's. At one time, the Ewa Villages consisted of eight separate villages located in close proximity to the sugar mill and each other. These villages were: Tenney, Renton, Varona, Fernandez, "C", Mill, Middle, and Lower. The latter four villages have since been razed, while the four other villages of Tenney, Renton, Varona, and Fernandez (redeveloped from the late 1970's through early 1980's) still remain relatively intact. Each village was built separately and had its own unique sense of history, culture, and social composition.

Renton Village was built during the period 1907 through 1938, while a portion of Tenney Village was constructed from 1923 through 1926. Tenney Village underwent an expansion in the late 1930's, at the same time Tenney Center was built. This was once a thriving community center with a large field house, ball field, recreation building and swimming pool. Today, all that remains of the center is the Ewa Memorial Hall (formerly the recreation building), a small part of which houses a barber shop and beauty salon. All other structures have been razed. Varona Village was initially erected in 1939, and underwent expansion in 1957. Fernandez Village was added in 1956 in response to a demand for more housing.

Since the late 1950's, there has been no major construction of new villages, with the exception of Fernandez Village, which was redeveloped in the late 1970's. Repairs and replacement of the structures in the villages were handled by Ewa Plantation
Company as part of an on-going maintenance program. Based on a 1990 survey of existing structures in the villages, there are presently 279 residential structures, of which 265 are currently occupied. Based on a study of a sample of the existing dwellings a significant number of the homes are in need of repair. Likewise, the current road and utility systems within the villages do not meet the minimum City standards and requirements.

Nearly all of the homes are of post and pier construction. The dwellings are wood-framed, single-walled, and have either sliding, hung or casement windows. Within the villages, there are several roof styles, constructed from either wood shake, rolled asphalt, or corrugated metal, depending on when the homes were constructed. Most of the homes contain two- or three-bedrooms, with the average size ranging from 1000 to 1,350 square feet. The largest homes, which average about 1,700 square feet are in Renton Village, and homes averaging about 700 to 1,000 square feet are found in Tenney and Varona Villages.

Homes for employees in positions of authority in the sugar company were identified by their size and location. Renton Village was designated as the location for plantation management. At the center of the villages was the plantation manager's home which is a two-story dwelling (the only one in the villages) and sits atop a broad lawn.
In terms of design, the house is distinct from other village residences, due to its New England character. The former houses of the Office Manager, the Irrigation Superintendent, and the Assistant Manager, all built in 1923, are situated alongside the Manager’s home. These three houses are typical of the plantation architecture as they are elevated above the ground by posts positioned on concrete supports. The staff of Lanakila Baptist School presently rent and occupy these four prominent buildings.

Tenney Village, which is larger in size than Renton and Varona Villages, was originally intended as housing for the workers. At one time, the village accommodated a substantial Japanese population, as evidenced by the large Japanese community center, called the Ewa "J" Club, fronting Renton Road. Development of the village was based on a large-scale grid plan with major streets intersecting Renton Road. Footpaths flanked with gardens file between houses and connect one road to another.

Varona Village is isolated from the other villages by cane fields and Kaloi Ditch. Many of the house types found in the village are similar to those found in Tenney Village. The heart of the village was formerly a spacious green with a large board-and-batten community hall, constructed in 1934, for the Filipino community association. The community hall has since been razed and the open space has been left untended.

Significant non-residential buildings in the villages include the following:

- Ewa Community Church (1926)
- Ewa Immaculate Conception Catholic Church (1926)
- Ewa Hongwanji Mission (1962)
- Ewa "J" Club (1935)
- Ewa Sotoshuji and Ewa Sotoshuji Social Hall (1949)
- Plantation Administration Building (1935)
- Former Shopping Basket (1935)
- Oil House (1924)

2.2 LAND USE AND ZONING

2.2.1 State Land Use District Boundaries
The entire project area, with the exception of a portion of land adjacent to Varona Village, is within the State’s Urban District boundary. The agriculturally designated lands will be redesignated to Urban to accommodate future development.

2.2.2 City and County Development Plan
The project site falls within the City and County of Honolulu, Ewa Development Plan area. Land use designations in the project vicinity include: Residential, Agriculture, Park, Low Density Apartment, Commercial, and Public Facility. (See Figure 3).
Section 2  EXISTING CONDITIONS

2.2.3 City and County Zoning
Approximately 50% of the project site is zoned Restricted Agricultural (AG-1), as indicated by Figure 4. Other zoning designations within the site include Residential (R-5), Neighborhood Business (B-1), and Apartment (A-1).

2.2.4 Surrounding Uses
The Ewa Villages are bordered by existing residential developments on the east and south sides. These developments include: West Loch Fairways, Fernandez Villages, Ewa By Gentry, and the Naval Air Station Barbers Point. To the west and north, the villages are bordered by sugar cane being cultivated by Oahu Sugar Company.

2.3 INFRASTRUCTURE

2.3.1 Roadway Network
The project site is well-served by local and regional roadway networks. Fort Weaver Road links the project site to Farrington Highway and Kunia Road. The H-1 Freeway is also quickly and easily accessible via Fort Weaver Road and Kunia Road.

The major road servicing the villages is Renton Road, which extends from Fort Weaver Road through Varona Village. The initial 4,500 feet of this roadway, which extends from Fort Weaver Road to the Ewa Post Office is owned by the City (4,000 feet) and the State (500 feet). The remaining 2,800 feet, which stretches from the Post Office to Varona Village, is privately owned, and will be acquired by the City. The first 900 feet is an 70-foot right-of-way (ROW), 2-lane road, whereas, the remainder is a 55-foot ROW, 2-lane road with a tree-lined median. There are sections within Renton Village, that have asphalt sidewalks, and a short section of concrete sidewalk fronting the former Administration building.

The system of interior asphalt roads are generally 20-25 feet wide, without curbs, gutters, or sidewalks, with the exception of Orrick Street in Tenney Village, which has a 4-foot wide sidewalk along one side.

Mango Tree Road, which parallels Renton Road on the mauka side of the villages, is used exclusively as a cane haul road.

2.3.2 Railroad Right-of-Way
The State of Hawaii maintains a 40-foot railroad right-of-way along the makai portions of the project site. The right-of-way is part of the former Oahu Railway and Land Company’s rail network. In addition to the 40-foot right-of-way, there is a 40-foot setback requirement.
2.3.3 Energy Corridor
Chevron U.S.A. currently maintains two fuel oil lines within the railroad right-of-way. The fuel lines convey fuel from Campbell Industrial Park to Iwilei.

2.4 UTILITIES

2.4.1 Water System
Located less than one mile away in Hono'uliuli, six wells provide the source of potable water for the villages. Four million gallons per day (mgd) are pumped continuously from these wells for domestic use, in addition to 10 mgd for irrigation purposes. The existing water system does not meet the minimum standards of the Board of Water Supply (BWS) with regard to water quality. The BWS maintains a 16-inch water main along Fort Weaver Road and a booster station near Renton Road. Fire hydrants with suitable water pressures are dispersed throughout the villages. OSCo currently maintains the well, distribution mains, and the fire hydrants.

2.4.2 Drainage System
The existing drainage facilities in the villages are not sufficient to prevent occasional area flooding. Flooding of the area results from the inability of existing drainage facilities to intercept and transport storm water away from and out of the villages. The drainage facilities in the villages include Kaloi Ditch, intake pipes located across Renton Road, lined and earthen irrigation ditches, and an earth ditch behind the former sugar mill. Flooding due to the inadequacy of the existing drainage system is further aggravated by the existence of areas that are lower than the existing roadways. This condition prevents rain water runoff from being conveyed away from the lots.

The Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), indicates that portions of the project area are subject to flooding during storms that occur on the average of once every 100 years. Figure 5 depicts the most recent 100-year flood boundary in relation to the project limits.

2.4.3 Wastewater System
The existing sewerage system is inadequate to support additional demand and does not meet City and County of Honolulu standards with regard to capacity and size of fixtures. Until very recently, sewage from Tenney and Renton Villages was collected, then transported to a pump station located behind the Shopping Basket. The raw sewage was then pumped into an adjacent irrigation ditch for dilution with irrigation water, then used to irrigate the cane fields located makai of the villages. Since the construction of the Hono'uliuli Wastewater Treatment Plant in the late 1970's, the villages no longer use this method of sewage disposal. Now sewage is conveyed via sewer lines into the Gentry system which runs to Geiger Road and onto the Hono'uliuli treatment facility.
Figure 5

Flood Hazard Map
2.4.4 Electrical System
Existing utility facilities and corridors border the project site on three sides. To the north, OSCo's 12KV overhead lines are routed overhead from the Waipahu Mill, along Mango Tree Road to the former Ewa Mill site and then onto the railroad right-of-way to serve loads beyond this project. To the east, Hawaiian Electric Company Hawaiian (HECo), Hawaiian Telephone Company (HTCo) and Oceanic Cable overhead lines that run to Ewa Beach along Fort Weaver Road, enter the project site at Renton Road. And to the south, HTCo, trunking cables and OSCo 12KV pole lines leaving the project site parallel Oceanic Cable and HECo 12KV and 46KV overhead lines along the railroad right-of-way. In addition, underground Joint Trunking System cables cross the Fort Weaver Road frontage of the development. These electric and communication lines and structures are within public rights-of-way or easements granted to Hawaiian Electric Company, Hawaiian Telephone Company, Oceanic Cable and Oahu Sugar Company.

Substandard HECo facilities, comprised mostly of former OSCo pole lines, extend existing distribution feeders from Fort Weaver Road and the railroad right-of-way to serve the existing villages.

HTCo trunking facilities enter the project from the telephone pole line along the railroad right-of-way and are routed overhead to the on-site Ewa Central Office (C.O.). From the Ewa C.O., overhead distribution lines serve the existing villages and on-going mill activities. Overhead distribution lines also extend beyond this project to support surrounding service requirements.
3.1 OVERVIEW

There are several key issues that influenced the development concept for the Ewa Villages. These issues affected how the plan and its various components were shaped. These issues are highlighted below.

3.2 HISTORIC PRESERVATION

The Ewa Villages represent a model of a unique "company town" community life-style that was prevalent in the early development history of Hawaii. The center of community life was the "company" and all activities revolved around it. Central to the Ewa Villages community was the sugar mill and the surrounding fields. The community had its own retail and service facilities, school, churches, recreational and social facilities. At present, there are as many as 370 lots in Renton, Tenney and Varona Villages. Of this total, 279 lots contain single family residences that represent the remaining vestiges of what was once a vibrant community.

Because the villages represent a significant part of Hawaii's history, the preservation of its heritage is an important aspect to be considered in the redevelopment of the area.

**Issues and Concerns:**

- What will become of the existing community when the sugar operations cease?
- Is restoration of all of the existing structures economically feasible?
- Are there mechanisms or vehicles such as laws and ordinances, both local and/or national, that could be used to "save" the villages?

![Vacant Varona Village House](image_url)
3.3 **HOUSING AFFORDABILITY**

A major objective of the City and County of Honolulu is the development of affordable housing for the people of Oahu. The City was able to demonstrate its capacity to provide homeownership opportunities to the people of the Ewa Villages when it embarked on its plan for redevelopment of Fernandez Village. Upon acquiring the land from the Estate of James Campbell, the City was able to offer the tenants of Fernandez Village an opportunity to purchase their lots for what was then considered an affordable price. The houses were sold to the residents for a dollar by Oahu Sugar Company.

Affordability is a relative term. As such, the City and State have adopted guidelines for their affordable projects based on income limits. The homes/lots for purchase in the Ewa Villages have typically been targeted for those families in the income group that is between 80 percent to 120 percent of the County's median income which currently is set at $46,000 for a family of four. The purchasing power of the family, once qualified, is further adjusted according to the size of the family.

**Issues and Concerns:**

- Can the land be made available to the residents at a price they can afford?
- If there are residents who cannot afford to purchase, will rental opportunities be afforded this group?
- Will a variety of financing programs be made available for residents wishing to rehabilitate their houses?

3.4 **CREATING VALUE**

The West Loch Estates project is the City's most recent venture in providing affordable housing to the residents on Oahu. Here, the City took an innovative approach to providing affordable housing. Forty percent of the total units built were sold on the open market. This gave the City the opportunity to recover the funds it had expended for land acquisition, planning and design, and infrastructure development. The "profits" were then used to lower the price of the affordable units.

This ability to create value has been an integral factor in the feasibility of projects that attempt to provide affordable housing and is of particular significance to the Ewa Villages project. As in the West Loch Estate project, the development of a golf course would create value to the overall development in two ways: It would add property value to the housing units fronting and in close proximity to the golf course, and it would add value to the community as a major open space/recreation facility.
Issues and Concerns:

- How will the golf course affect the existing villagers' way of life?
- Will the golf course add enough value to make the "affordable" housing units affordable?

3.5 SOLVING DRAINAGE PROBLEMS

Substantial portions of the Renton, Tenney, and Varona Villages are now subject to flooding. The villages are within an area that will be inundated by a 100-year storm as indicated by the Federal Emergency Management Agency (FEMA) studies. This FEMA designation makes it difficult for homeowners to obtain flood insurance without making substantial improvements to their homes. In addition to having the threat of the 100-year storm, the villages are subject to local flooding during times of heavy rains.

Several factors contribute to the flooding conditions of the Ewa Villages. First, the residences are located in a generally low area with very little topographic relief.
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DEVELOPMENT ISSUES

Secondly, there are no drainage facilities that can adequately transport the flood waters away from the villages. Finally, unrestrained flood waters enter the villages from the sugar cane fields located mauka of the residences. Drainage solutions for the villages will mitigate these factors that exacerbate the flooding as well as provide for drainage of the villages from local collection of storm waters.

Issues and Concerns:

► Can the flood water be diverted away from the villages?
► Are there means to manage and mitigate the effects of the 100-year flood?
► How can local drainage be managed?

3.6 DISPLACEMENT OF RESIDENTS

The expiration of the lease between Oahu Sugar Company and the Estate of James Campbell in 1995 is of concern to the current residents. Since the lease provides for the reversion of all improvements made by Oahu Sugar back to Campbell Estate there is uncertainty as to what will become of the tenant’s employee housing “arrangements” that currently exist between Oahu Sugar Company and the Union (ILWU, Local 142).

This uncertainty raises a number of issues that cannot be fully resolved within the context of this master plan. However, with the planned acquisition of the Ewa Villages by the City and County of Honolulu, a number of fears can be alleviated.

Issues and Concerns:

► Will there be an opportunity for residents to acquire their homes?
► Will families be displaced?
► Will there be an opportunity for families to continue renting?
► Will provisions be made to accommodate the elderly and pensioners?
4.1 PROJECT OVERVIEW

The Ewa Villages Master Plan is a revitalization project with the goal of providing homeownership opportunities to the tenants that reside in the plantation villages of Renton, Tenney and Varona. The objectives of the Plan are to:

- Establish a rehabilitation, rental, and homeownership program for the residents of Renton Village, Tenney Village and Varona Village;
- Develop new housing units to meet a portion of the affordable housing demand on Oahu;
- Preserve the historic character of the villages;
- Develop a drainage program to alleviate flooding within Renton, Tenney and Varona Villages, as well as provide recreation/open space via an integrated golf course design; and
- Develop economic opportunities for residents in the area.

The Plan promotes preservation of the plantation community through the rehabilitation of existing structures within the villages. It also proposes development of new housing units to accommodate a wide range of family income groups and a golf course to mitigate flooding of the villages.

4.2 MASTER PLAN COMPONENTS

The theme of the Master Plan is the revitalization of the Ewa Villages community. As such, the Plan includes several land use components that are important to sustaining a viable community. These components include residential, community, recreational and commercial activities. Key features of the Plan include affordable and market-priced single family and multifamily residential units, an elementary school, a district park, a golf course, a commercial/retail center, and churches (see Figure 6). Table 1 reflects the different land uses that comprise the Master Plan, associated land areas and housing unit counts and densities. Each of the various components of the Plan are discussed in detail in the following paragraphs.

4.2.1 Residential Units

A total of 1,325 residential units (292 multifamily and 1,033 single family) are planned for the Ewa Villages. Of the total units, 279 units are existing and are located as follows: Renton = 27; Tenney = 182; and Varona = 70. One thousand forty-six (1046) new units will be constructed.
The preservation of the historic character of the community is a major objective of the Master Plan. This will be achieved by providing a mix of rehabilitated and new housing in four areas of the residential component of the Plan. Each of these is discussed below.

A. Renton Village

There are 32 existing structures in Renton Village which are proposed for rehabilitation. Twenty-seven of the 32 structures are residential units. Renton Village will be subdivided and the land and rehabilitated houses will be offered for sale to current tenants. The key elements of the Renton Village revitalization effort are as follows:

1) All existing structures, to the extent possible, within Renton Village are to be rehabilitated in a manner that will not change its exterior appearance.

2) The residences mauka (north) of Renton Road, except the bachelor's quarters, are to be offered for sale after rehabilitation to current tenants with the condition that they agree to maintain the structures and grounds. Should the tenant of record (TOR) decline or is unable to purchase or comply with the maintenance requirements, the tenant will be given an opportunity to relocate or purchase another residence within the project area, or rent one of the multi-family units. New or vacant units will be sold according to the schedule in Section 4.4.2.
3) The Shopping Basket, Plantation Administration building, the manager’s home, and the three residences on the makai (south) side of Renton Road will be managed by the City’s Department of Parks and Recreation (DPR). These buildings will be available for community use and for DPR administrative and program uses. The Lanakila Baptist School, the current tenant of these buildings, will be allowed to remain on a month-to-month basis.

4) The fourteen (14) existing vacant lots will be in-filled with new structures designed to complement existing structures and sold with requirements for compliance with preservation design guidelines. The three vacant lots along Renton Road will require the construction of new houses that are identical to the other residences within the palm-lined quadrangle.

5) The existing trees along Renton Road shall be preserved, and where trees have been removed, appropriate replacement trees shall be provided. Landscaping within the Renton Villages will be enhanced by adding additional trees as appropriate.
6) The existing road pattern and road widths within Renton Village will be maintained (e.g. 20-foot pavements, no sidewalks, or curbs). A six-foot utility easement (measured from the edge of the pavement) will be required as part of the front yard requirement. Rolled curbs will be installed to facilitate drainage. All of the existing utilities will be upgraded. Electrical, cable television, and telephone lines will remain overhead.

7) Minimum lot sizes to be provided within Renton Village will be 5,500 square feet. Minimum front yards shall be 15 feet. Side and rear yards shall be a minimum of five (5) feet. Renton Village will be subdivided to provide nearly equal sized house lots. Residences will be limited to a single story.

8) Non-conforming structures shall be allowed to remain provided they meet minimum standards for health and safety. The non-conforming structure shall not be enlarged, and if destroyed, shall be rebuilt according to design guidelines.

B. **Tenney Village**

Maintaining the character of Tenney Village is a goal of the revitalization effort which encompasses rehabilitation of all existing improvements, in-filling of vacant lots and redevelopment of areas immediately surrounding the village. A total of 186 new homes will be added through in-fill (50) and redevelopment (136). Proposed rehabilitation actions are as follows:

1) As feasible, the 182 existing residential structures within Tenney Village are to be rehabilitated to match its original condition. Improvements to existing structures will be evaluated on a case-by-case basis.

2) The rehabilitated residences are to be offered for sale to current tenants of record (TOR) with the proviso that the exterior appearance of structures be maintained.

3) Residents who cannot or are not interested in acquiring their homes may be given the opportunity to rent a multi-family unit.

4) The existing vacant lots (approximately 50) are to be in-filled with new structures that complement the exterior design of adjacent homes. These new units will first be offered for sale in accordance with the schedule for priorities for purchase in Section 4.4.2.

5) The landscaping of the area shall be preserved, and where trees have been removed, appropriate replacement trees shall be provided.
6) The current grid road pattern will be maintained in both existing and new areas. Road pavements will remain about 20 feet wide with no sidewalks. (See Figure 7). A six-foot utility easement (measured from the edge of the pavement) will be required as part of the front yard requirement. Rolled curbs will be installed to facilitate drainage. The intent of this road design standard is two-fold: (1) to visually maintain the rural character of the village and (2) to minimize impacts on existing yards and structures. All of the existing utilities will be upgraded and placed underground.

7) Minimum lot sizes within Tenney Village will typically be 3,500 square feet for two bedroom houses, and 5,000 square feet for three bedroom houses. Minimum front yards (including the utility easement) shall be 15 feet (measured from the edge of the pavement). Side and rear yards shall be a minimum of five (5) feet. Tenney Village will be subdivided to provide nearly equal sized house lots. Residences will be limited to a single story.

8) Non-conforming structures shall be allowed to remain provided they meet minimum standards for health and safety. The non-conforming structure shall not be enlarged, and if destroyed, shall be rebuilt to complement the appearance of existing units in the village.

View Along Tenney Street in Tenney Village
C. Varona Village

The existing 70 residential units in Varona Village will be offered for sale after rehabilitation to residents of the Ewa Villages. A redevelopment master plan for the areas surrounding Varona Village will commence after the redevelopment of Tenney and Renton Villages. A supplemental EIS will be prepared for this project.

1) The existing residential structures within Varona Village, where determined to be feasible, will be rehabilitated to complement similar structures in the Village. Improvements to existing structures will be evaluated on a case-by-case basis.

2) The existing residences are to be offered for sale after rehabilitation to current tenants with the proviso that the exterior appearance of structures be maintained. Residences not purchased by the tenant of record (TOR) will be offered for sale according the schedule in Section 4.4.2.

3) Residents who cannot or are not interested in acquiring their home may be given the opportunity to rent a multi-family unit.
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4) The existing vacant lots are to be in-filled with new structures that complement the exterior design of adjacent homes. These new units will first be offered for sale to qualified current residents. Following this initial offering, the remaining homes will be offered for sale to qualified buyers according to the schedule in Section 4.4.2.

5) The landscaping of the area shall be preserved, and where trees have been removed, appropriate replacement trees shall be provided.

6) Road pavements will remain about 20 feet wide with no sidewalks. (See Figure 7). A six-foot utility easement (measured from the edge of the pavement) will be required as part of the front yard requirements. Rolled curbs will be installed to facilitate drainage. All of the existing utilities will be upgraded and placed underground.

7) Minimum lot sizes within Varona Village will be 5,000 square feet. Variations in the lot sizes will be made according to its location relative to the flight paths emanating from the Naval Air Station at Barbers Point. Minimum front yards (including the utility easement) shall be 15 feet (measured from the edge of the pavement). Side and rear yards shall be a minimum of five (5) feet. The existing area will be subdivided to provide nearly equal sized house lots. Buildings will be limited to a single story.

D. New Village Areas

New single family and multifamily units are being planned for areas surrounding the existing villages. These new "villages" will be physically separated from the existing units in Tenney, Renton and Varona. The new housing areas will be designed to complement the design and appearance of the existing villages and will be developed to accommodate a range of purchasers for affordable and market-priced homes. These units will be made available for purchase to both current residents of the villages and the general public. The need for market priced units is essential to the overall feasibility of the Ewa Villages project. These units will have amenities which justify the higher pricing, such as golf course frontage, large lot sizes and homes. The revenues from the sale of the market units will be used to offset a portion of the costs for the affordable units in the project. This will enable homeownership to be a viable option for some of the current tenants of the villages, who may not be able to afford to purchase a home at an unsubsidized price. Development guidelines for these units are outlined in Appendix B.

Some of the key features of the new villages are as follows:
1) Both new affordable and market-priced housing will be developed in six (6) new villages within the project boundaries.

2) Roadway rights-of-way will be 44 feet wide with pavement widths of 24 feet and adjacent utilities corridors and landscaping strips on both sides of the roadway. Narrow streets and no sidewalks will be the standard to carry through the rural character of the existing villages. All of the utilities will be placed underground.

3) The design of the structures in the existing villages will form the basis for the architectural theme of the new residences. The majority of lots will be approximately 5,000-6,000 square feet. Minimum front yards shall be 10 feet (measured from the edge of the right-of-way). Side and rear yards shall be a minimum of five (5) feet.

4) Lots on or near the golf course will be aligned to take advantage of the views.

4.2.2 Community Facilities
Existing facilities that will continue to be an important part of the community are the Ewa Elementary School, Ewa Community Church, Ewa Immaculate Conception Church, and Post Office. Ewa Elementary School has plans for expansion to accommodate the larger village community.

The congregations of the Ewa Hongwanji, Friendship Bible Church, and Sotoshuji Mission will be given an opportunity to continue to lease the land and buildings they use. The Bicycle Shop will be relocated from its current location to an alternate site.

The Lanakila Baptist School will be allowed to remain at its present location on a month-to-month basis. It is recommended that the Lanakila Baptist School seek other accommodations to meet its long-term goals. Because of the historic significance of the buildings used by the school, it is recommended that these buildings remain under the ownership of the City. The Department of Parks and Recreation will assume responsibility of the area once the School vacates the site. Design guidelines for public and quasi-public facilities are outlined in Appendix D.

4.2.3 Recreational and Community Facilities
The major recreational and community facilities that are proposed in the Master Plan are: the expanded Ewa Mahiko District Park, the Ewa Villages Golf Course, Town Square, and a mill museum. The features of each of these facilities are discussed below.
Section 4

EWA VILLAGES MASTER PLAN

View of 'J' Club Building (top left), Post Office (top right), Ewa Immaculate Church (bottom left) and Oil Storage Building (bottom right)

a mill museum. The features of each of these facilities are discussed below.

A. District Park
Ewa Mahiko Park is being proposed for expansion from its current five acres to approximately 33 acres. Expansion of the park is being proposed to fulfill the Park Dedication requirements of the Ewa Villages project and the Ewa by Gentry project. Planned facilities include a gymnasium; a recreation center complex with swimming pool; open field areas to accommodate baseball, softball, soccer or football; tennis, basketball and volleyball courts; a tot lot; and a park maintenance facility. The facilities currently being used by the Lanakila Baptist School will become part of the park complex for community, administrative, or program uses. Consideration will be given to the development of a child care facility within the park grounds.
B. **Golf Course**
An 18-hole public golf course is being proposed to provide flood control and public recreation as well as serve as an open space amenity that will add beauty and value to the project. The golf course facility will include a club house, lighted driving range, putting green and maintenance complex. The western portion of the course will contain flood waters that emanate from Kaloa Ditch and channel the flows away from existing and future housing areas. Portions of Kaloa Ditch will be routed through the golf course and be used to create water features. The golf course will also be used to receive storm drainage flows from portions of the adjacent residential areas. In addition, the majority of the housing areas will be buffered by the golf course from incompatible sugar cane burning and hauling activities that occur next to the project site. Finally, it will serve to separate new housing development from the existing villages.

C. **Town Square**
A central landscaped open space resource will be developed between Renton Village and Tenney Village. The open space will be developed as a passive recreation park that includes walkways and picnic and shaded areas. This space was the location of a former park before being developed by the sugar company as a marshalling yard for the mill.

D. **Plantation Mill Museum**
The mill museum is proposed to be housed in either the old administration building, the former "Shopping Basket", or the mill manager's home. The proposed mill museum will primarily be a visitor attraction. It is envisioned to display old sugar mill equipment and artifacts as well as other items of historical interest. The museum is proposed to be managed by a non-profit community organization or the Department of Parks and Recreation.

4.2.4 **Commercial and Retail Facilities (Old Mill Marketplace)**
The old sugar mill site is proposed to be redeveloped into a commercial and retail complex which would serve both residents as well as visitors to the villages. The complex will also provide employment opportunities for the local community. When rehabilitation and revitalization is completed, Ewa Villages will become a point of interest for visitors. Activities within the marketplace could include a neighborhood convenience center and a marketplace. An important element of the facility will be its layout and design. Buildings within the marketplace will follow a design theme that is compatible with the neighboring historic structures. Each of the major marketplace activities are further elaborated upon below. Guidelines for the development of the commercial area are found in Appendix C.

A. **Neighborhood Convenience Center**
The primary function of the convenience center will be to serve the community. It is envisioned that it will be approximately 10,000-20,000 square feet in size and
include such services as a grocery store, convenience store, barber shop, beauty salon, etc. The proposed location of the facility is along Renton Road to provide convenient access to residents of the community.

B. **Marketplace**

The marketplace will have approximately 20,000-30,000 square feet of retail space spread out in several low-profile buildings. It will include a variety of retail shops, services and food and beverage establishments geared to serve visitors as well as residents of the community. Landscaped pedestrian plazas and walkways will interconnect the various buildings with one another as well as with other activities in the marketplace.

A part of the marketplace will be set aside for small businesses. This area will contain approximately 30,000-50,000 square feet of office space. The area will contain a variety of service oriented activities such as doctor, dental and realty offices, financial services, repair shops, etc. The business area will provide employment opportunities for residents of the villages and the surrounding communities. As with the marketplace, the structures will be designed so as to be compatible with the architectural styling of the existing village buildings and be limited to structures no greater than two-stories high.
4.3 INFRASTRUCTURE IMPROVEMENTS

4.3.1 Roadways
Figure 7 illustrates typical roadway sections being proposed for the Ewa Villages project. The roadways within the project can be categorized into two groups: neighborhood residential streets and collector roads. In addition to these planned road improvements, there are other off-site roadway improvements that will be implemented as part of the overall project. These include: relocation of Mango Tree Road, construction of a segment of the North-South arterial between Farrington Highway and Ewa by Gentry, and the upgrade of the intersection at Renton Road and Fort Weaver Road. Proposed roadway improvements are discussed below:

A. **Main Collector Roads**
The two main collector roads that will serve the community are Renton Road and the reconstructed Park Row leading to the golf course clubhouse. In addition to providing vehicular access to the residential areas and major activity centers in the community, these corridors will be important for pedestrian traffic.

1) Renton Road will be a four-lane divided roadway with an 80-foot right-of-way. Roadway pavement in each direction will be 20 feet wide to accommodate the travel lanes. Walkways will be 6 feet wide to better handle pedestrian traffic. The 14-foot wide median will be used for landscaping that will enhance the streetscape. Renton Road will not require the taking of additional land.

2) The golf course clubhouse road (Park Row) extending from Renton Road to the golf course will be a two-lane road with a 60-foot right-of-way. The 36-foot wide pavement will accommodate two travel lanes and bike lanes. Wide six-foot walkways will be provided to accommodate the pedestrian traffic along this corridor. No parking will be allowed on Park Row.

B. **Neighborhood Residential Streets**
To maintain the historic character of the existing Ewa Villages community, residential streets will be kept narrow with no sidewalks. However, rolled curbs will be included as part of the improvements to facilitate on-site drainage on streets. For existing and redeveloped residential roads in Renton, Tenney, and Varona a 32-foot right-of-way standard has been established. This is to minimize the impact on existing development by limiting relocation of landscaping and structures presently located close to the roadways. This standard includes 20-foot wide roadway pavements and 6-foot wide utilities easements on each side. New areas will have a slightly wider road pavement (24 ft.) to create a 36-foot wide right-of-way. Because these roadway specifications do not meet City subdivision standards, an exemption will be sought pursuant to the provisions of Chapter 201E of the Hawaii Revised Statutes.
RENTON ROAD

EAST-WEST
GOLF COURSE ACCESS ROAD

NEW RESIDENTIAL STREET

EXISTING UPGRADED
RESIDENTIAL STREET

City & County of Honolulu
Department of Housing
& Community Development

Figure 7
Roadway Sections.
C. **Mango Tree Road**
A critical element to the implementation of the Master Plan is the relocation of Mango Tree Road outside (north) of the existing State Urban District boundary. The new alignment will entail siting the cane haul road on a berm which will act as a barrier to flood waters that currently flow onto the project area from adjacent cane fields during heavy rainstorms. It will channel these waters to the planned golf course around existing and future developed areas.

D. **Future North-South Arterial**
The North-South Arterial, as planned, will emanate from the future Ewa Marina, traverse the Ewa Villages and terminate at the H-1 Freeway. The North-South Road through the villages will be developed in three increments. The portion from the railroad right-of-way to the relocated Mango Tree Road will be developed first as a graded cane haul road. The second increment includes the paving of the North-South Road from the railroad a little way past Renton Road and will provide an alternative means of accessing the Villages. The final increment entails the development of the arterial to Farrington Highway.

E. **Fort Weaver Road Intersection**
The intersection of Renton Road and Fort Weaver Road will be improved to provide a right turn storage lane.

4.3.2 **Landscaping**
Landscaping improvements to the Ewa Villages will be limited to the maintenance of the existing stands of mature mango, banyan, and monkeypod trees. In areas where trees have been removed, a replacement tree will be sought. Street trees in newly developed areas will be incorporated according to a tree planting program which will include fruit or flowering trees to complement the existing planting plan.

4.3.3 **Utilities**
The water, drainage, and wastewater utilities systems in their present state do not meet the minimum requirements set by the City. The plan proposes upgrading the existing systems and/or installing new pipelines and ducts in accordance with utility standards.

4.4 **HOUSING PROGRAM**
The provision of continued housing to current tenants of the Ewa Villages is a goal of the proposed Master Plan. Presently, a number of options are available to the tenants regarding future living arrangements. These include the following:

- buying their existing home,
- buying a new home being built as part of the project,
- renting a new multifamily home, and
- relocating to a different area.
A 1990 survey of Ewa Villages residents indicates that the majority of people would choose homeownership if given the choice. However, some may not have the financial resources that would allow them to purchase a house. For these families, assistance in obtaining financing will be made available. Rental options will also be made available to those who cannot or choose not to buy. A relocation plan will be prepared in accordance with State guidelines for all qualified residents.

4.4.1 Rehabilitation Program
Every effort will be made to provide for the rehabilitation of the existing housing stock. Should the rehabilitation cost equal or exceed its replacement cost, the houses will be evaluated on a case-by-case basis to determine if rehabilitation should proceed. The rehabilitation program will be assigned to a non-profit housing organization that will undertake the rehabilitation of the houses and in-filling of vacant lots in the villages. Appendix A outlines guidelines for housing rehabilitation.

Upon completion of the rehabilitation, the home will be sold to the current tenant, if they qualify. The non-profit organization will assist the residents in securing low interest home mortgages under various federal and state programs. Families that do not qualify for these loans will need to secure conventional financing.

4.4.2 Homeownership Program
Homes in Renton, Tenney, and Varona Villages are expected to be offered in the affordable price range ($87,000 - $120,000); however, some homeowners, particularly in Renton Village, that will benefit from newly created amenities or have large land areas could be offered at a slightly higher mid-market range ($120,000 - $180,000). Eligible families may be able to take advantage of low interest loans from the Farmers Home Administration. The maximum loan amount that is authorized locally is $95,000 with interest rates as low as 1 percent. All homes in the newly created villages, primarily with the golf course, will be sold at current market prices by the developer.

Each tenant of record of the Ewa Villages will be given the first opportunity to acquire the home they currently occupy. All other family members will be given an option to purchase in accordance with the priorities below once all tenants of record have been accommodated. Non-village families will be afforded an opportunity to purchase any remaining affordably priced homes on a lottery basis. All purchasers must meet City eligibility requirements.

The proposed priorities for acquiring an affordable home in the existing villages is as follows: (in descending order)

1. Tenant of Record (TOR) as of December 28, 1990 in Ewa Villages buying their own home and lot. TOR includes surviving spouse. Only the TOR will be allowed to own interest in residential property, and only when buying their
own home. All other priorities are not eligible to purchase a home if they own 51% or more interest in real property.

1a. TOR by seniority who wants to buy a vacant home, or a new home.

2. Remaining Occupant (RO) pursuant to the following:
   a. RO must be son or daughter of the TOR.
   b. RO must have been residing with TOR as of December 28, 1990, as verified by Oahu Sugar Company records.
   c. RO must be at least 18 years of age at time of application.
   d. RO must meet all other eligibility requirements of purchasing a subsidized unit.
   e. Only one RO will be eligible for priority per household.

3. Resident of Ewa Villages as of December 28, 1990 who is not a TOR or RO and is a displacee as verified by a certificate of displacement.

4. All others, qualified and eligible to purchase on a lottery basis.

In order to prevent speculation, a homeowner must first offer the property for sale to the City within 10 years of the date of acquisition. After the 10-year period, the owner can then sell his property on the open market with the proviso that net proceeds may be shared with the City according to a shared appreciation formula.

In addition, special provisions to control the use and disposition of property within the Villages will be imposed as conditions of purchase. At a minimum, these provisions will include the Community Association rules, deed restrictions, and design guidelines which govern the rehabilitation of existing buildings.

4.4.3 Rental Opportunities
Current residents who are unable or unwilling to purchase homes in the villages will be afforded the option to rent will be assisted in finding housing outside of the project area. Designated multi-family units in the project will be made available for rental. For those current tenants who are retirees or pensioners, new rental housing in the Ewa Elderly or the proposed West Loch Elderly project is available.

4.5 DEVELOPMENT CONTROLS AND GUIDELINES
Development controls and guidelines will guide continuing rehabilitation efforts, new construction, and the long term maintenance of the historic character of the area.
4.5.1 **Community Association**
An association of homeowners will be created to manage and direct the affairs of the community. A set of Covenants, Conditions and Restrictions (CC&R's) shall be established to direct the specific actions of the association and individual homeowners. These CC&R's shall include design guidelines which specify such items as: erection of fences, color schemes, replacement of worn or damaged architectural elements, landscaping requirements, general maintenance, additions and alterations. The guidelines are applicable to repair or alteration work conducted after purchase of the homes.

When a homeowner desires to make an addition or alteration to his home, he shall be required to seek the approval of the Community Association in accordance with design guidelines in the CC&R's. If a Building Permit is required, the homeowner will need approval of the Community Association before the permit can be issued.

4.5.2 **Rehabilitation Guidelines**
The U.S. Secretary of the Interior's Standards for Rehabilitation and the 1986 Uniform Code for Building Conservation will be used as references. See Appendix E. The applicable guidelines will be established prior to initiating any work on the existing dwelling units.

4.6 **COST ESTIMATE AND RELOCATION PROGRAM**

4.6.1 **Development Cost Estimate**
The estimated project cost for this project in 1991 dollars is $89.7 million. The allocation of costs are presented in Table 2 as follows:

<table>
<thead>
<tr>
<th>Project Development Cost Estimate</th>
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</thead>
<tbody>
<tr>
<td>Land Acquisition</td>
</tr>
<tr>
<td>On/Off Site Improvements</td>
</tr>
<tr>
<td>Indirect Costs</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Planning and Engineering</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

Based on a total of 1,325 dwelling units to be sold, the average development cost for an improved lot is estimated at $67,700 per unit for the land and infrastructure upgrades. Development cost for the golf course is estimated at $36.8 million and will be funded separately.

The cost of rehabilitation of all of the existing residential units is estimated at $11.6 million or $45,000 per unit. The cost of rehabilitation will be initially funded through a special revolving fund which will be repaid as permanent financing is obtained by the residents.
4.6.2 Relocation Program
The 265 existing households in Tenney, Varona and Renton Villages may be temporarily relocated at various stages of the project as a result of utility construction or rehabilitation of homes. A relocation program prepared in compliance with State regulations will minimize the potential for inconvenience or other adverse impacts by providing close management and facilitating efficient relocation procedures. The program will be prepared by DHCD prior to the start of construction and will include, but not be limited to, the following points:

a. Phasing of development to minimize the extent of disruption to current residents and utility services;
b. Placing a priority on in-filling vacant lots to minimize relocation and to provide rentals;
c. Providing relocation services, compensation, and financial aid to qualified households to minimize the degree of financial and emotional impact.

4.7 IMPLEMENTATION PROGRAM

4.7.1 Development Schedule
Approximately five years will be needed to complete the rehabilitation, new construction and infrastructure work within the existing villages and new housing areas. The work will be phased to minimize disruption to residents. The major phases of the project have been divided into development packages as follows: (See Figure 8)

<table>
<thead>
<tr>
<th>Package</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Renton Road improvements, Ft. Weaver Road to Catholic church</td>
</tr>
<tr>
<td>1A</td>
<td>Renton Road, Park Row, and backbone utilities. Construction of new single-family homes along Renton Road next to Ewa Elderly</td>
</tr>
<tr>
<td>2</td>
<td>Golf course and Mango Tree Road relocation</td>
</tr>
<tr>
<td>3</td>
<td>Tenney and Renton Village rehabilitation and infrastructure upgrade</td>
</tr>
<tr>
<td>4</td>
<td>New villages (finished lots)</td>
</tr>
<tr>
<td>5</td>
<td>North-South Road extension</td>
</tr>
<tr>
<td>6</td>
<td>District Park</td>
</tr>
<tr>
<td>7</td>
<td>Multi-family housing and commercial area</td>
</tr>
<tr>
<td>8</td>
<td>Varona Village</td>
</tr>
</tbody>
</table>
The infrastructure design is schedule to begin during the first quarter of 1992. Construction on the first development package will commence in the second quarter of 1992. It is estimated that this first development package will take approximately 12 months. Other development packages of the project will be scheduled accordingly. It is estimated that each construction phase will take up to a year to complete.

The new housing areas will be developed jointly with the City and a qualified developer who will be responsible for the sales of the market units.
APPENDIX A
EXISTING VILLAGES REHABILITATION GUIDELINES

1. Roofs

From both a functional and visual point of view, sound, weather-tight roofing is an important element of any house. Maintaining the roof as the "cover" is a top priority for every repair project. A good roof is the first line of defense against the largest problem with every old house: water infiltration.

Sawn wooden shingles and painted corrugated metal panels are the typical roofing materials found on these residential dwellings which help to define the overall look of the house. Repairs generally will include replacement of shingles or deteriorated corrugated metal panels and repairs to rafter tails and other roof framing members. Repairs or alterations should not alter the roof pitch or reduce the extent of overhang of the roof eaves.

If it is necessary to completely re-roof the house, use the same roofing material as the original to maintain the same look of the neighborhood character. The roofing should be replaced with material to match original wood cedar shingles in Tenney and Renton Villages and corrugated metal in Varona Village.

In Tenney and Renton Villages the original roof consisted of 1"x6" nailers on 2"x4" rafters covered by wood shingles. At some point in time the plantation decided to cover the wood shingles with rolled roofing material as a solution to roof leakage. When this occurred it provided waterproofing for the roof but also trapped moisture into the existing roof structure, battens and original wood shingles. Around the periphery of the buildings, in particular at the eave overhangs, many of the rafter tails are deteriorated because of this condition.

The roofing should be repaired as follows:

1. The existing cap sheathing should be removed from the roof.

2. The existing shingle should be removed and replaced with new wood shingles directly on the nailers.

3. Wooden sawn shingles can be made to retard the growth of mold and algae by painting the shingles with diesel truck fuel or commercial shingle oil.

Generally the roof rafters, ceiling joists, bracing, ridge and hips or gables appear to be in good repair in most of the buildings. The primary problem appears to be with the rafter tails where water inundation has taken its toll.

1. If the rafter tails have deteriorated beyond the point of repair then they should be replaced by cantilevering new members from the existing internal portion of the rafter.

2. Battens should either be repaired or replaced, as required, prior to installing new shingles.

In Varona Village corrugated metal roofs were used. Most of these metal roofs appear to be in good repair. However, the eave areas have deteriorated rafter tails and rusted corrugated iron roofs. This small section of the roof can easily be replaced or repaired. It is possible to make temporary repairs to "tin roofs," especially to rusted-out lapping areas, by installing another piece of the same corrugated metal. Pull the nails, install the new piece of corrugated metal above the existing and re-nail. An asphalt wet patch can also be used on rusted metal and nail holes. If the
metal roof continues to leak, it will need to be replaced.

Caulk all loose roof flashing and clean roof gutters and downspouts often, at least annually. Gutters protect the wood siding, doors, windows and stairs by keeping rain from directly coming in contact with these areas.

Sawn wooden shingles and painted new corrugated metal roofs have a life of at least 20 years.

2. Electrical and Plumbing Systems

In setting priorities for repairs to a house, it is necessary to understand that required electrical and plumbing repair or replacement work should be first choices. Electrical repairs involve life safety, and plumbing repairs will reduce moisture problems with the house.

When making necessary electrical and plumbing repairs, install the systems in areas that will require the least possible alteration to the house. Continue to use the traditional exposed bulb lighting system on lanais, carpports and garages. Avoid placing electric meters and other equipment like television antennas, where they can be seen from the street.

A new electrical system may be required to insure that the new electrical panel provides enough circuits for all the necessary electrical requirements.

The entire electrical service should be replaced with larger circuit panels with additional circuits, and including new wiring, outlets, switching and light fixtures. The majority of the buildings have inadequate electric service as the buildings were constructed when fewer electrical appliances were used.

Plumbing usually requires replacement of plumbing fixtures, fittings and piping and repair of deteriorated floor and wall areas where leaking has occurred.

(1) All plumbing fixtures and piping for kitchens and bathrooms within and around the house should be replaced.

(2) Utility sinks and showers in some utility areas need to be replaced. These are primarily on concrete slabs so the floors may be in good shape but the walls where pipe penetrations occur may need to be repaired or replaced.

(3) As galvanized piping was used for supply and water distribution at the time the buildings were constructed, it is mostly deteriorated and should all be replaced with copper.

(4) The waste lines may also have to be replaced in some buildings.

(5) All plumbing fixtures such as sinks, waterclosers, showers, tubs and plumbing fittings, would require replacement.

(6) Repair existing ceramic tile shower where necessary, especially of furo-style tiled tub showers.

3. Termites

All buildings should be termite treated/tented and checked for ground and dry termites. Thereafter, the recommended schedule is every five years.

4. Painting

All buildings will need exterior painting and interior painting where required.

Siding, lanais, handrails, doors, window trim and “tin roofs” should be repainted or stained
in a color as close to the original color as possible. Any other color used should be in character and compatible with other colors found on similar buildings in the neighborhood. When using stains, use oil based penetrating stain and not solid body stains.

Corrugated metal roofing should always be kept painted. Flaking paint can be removed with a wire brush then primed and repainted. An inexpensive treatment for damaged but functional wall siding boards is to treat them with a mixture of boiled linseed oil and turpentine two or three times, a few days apart, so the oil will penetrate the wood. Repaint the wood siding a month later.

The house should be painted at least once every ten years.

Other general areas requiring repair or replacement are:

5. Doors and Windows

Doors and windows are an important part of the weatherproofing and ventilation of the house. The type and location of doors and windows are also elements that help give the house its special distinctiveness.

Doors and windows in most older houses become especially vulnerable to deterioration from sun and rain. Try to retain and repair the original doors, windows and hardware. Replacement of existing porcelain knobs should be replaced with the same type of knob. Locks can also be repaired.

Windows

Retain all original windows, and wherever possible, repair the window frame, window sill, double-hung sash and glass. Do not install "stock" modern windows of another size and avoid using jalousie windows to replace sash.

If dry rot and deterioration is found at sash corner joints, new pieces can be made to replace a few bottom rails of the sash.

A. Original windows include a combination of styles: sliding, double hung, awning and some fixed glazing. All windows have wood frames and wood sash except for replacement jalousies or sliding aluminum windows.

B. The majority of the windows are in good operating condition with the glazing in place. In many areas windows require repair of heads, jambs, sills, sash and new hardware.

C. In some buildings, particularly the abandoned houses, the glazing is broken and in a few cases, the window sash is missing.

D. All broken window glass should be replaced. Double hung windows may require additional hardware to make them operate correctly and sliding windows may need their tracks repaired or replaced.

E. Sash may require some areas to be repaired or totally replaced depending on the amount of damage to the individual sash members, jambs, heads and sills.

Doors

If a replacement door is required, choose one that most closely matches the design of the original door. Avoid reducing or enlarging the original door opening to install "stock" size doors. Do not change the location of the door or cut new entrances in the walls. Doors should swing freely. If the doors and hinges become too tight, there may be a variety of causes.

Check underneath the house for possible remedies: jack up the joist or sill, add shims
under the foundation posts or add a new longer foundation post. Avoid cutting the door.

A. Exterior entry doors are wood frame, with glass in many cases, often entries also include screen doors. Screen doors are also included in utility areas. Many of the entry doors and screens need to be replaced.

B. Interior doors are wood panel doors, generally in good repair. The doors are generally in need of minor repair, painting and, in some areas, new hardware.

C. All doors will require repair or replacement of broken wood panels, rails or glass, replacement of broken hardware, such as door knobs, butts, etc.

D. Repair all jambs, heads and sills to insure proper operation and weather tight installation.

6. Flooring

Floorboards which are deteriorated must be repaired or replaced.

A. Generally the floors are 1"x4" or 1"x6" T&G douglas fir and in many areas are in very good condition. Most deterioration in floors and walls occurs where there is plumbing penetration such as in kitchens and bathrooms. In some areas sections of the flooring and floor structure may need to be replaced. The particular areas of the floors that need repair or replacement are around plumbing fixtures and piping and in entry areas.

B. Sections of the flooring can be removed and replaced with contemporary 1"x4" or 1"x6" T&G materials. In some floor areas where termite damage has occurred masonite has been used to cover the damage. The masonite should be removed and the wood flooring replaced.

7. Lanais and Porches

Lanais and porches should not be enclosed as additional interior space nor removed. Railings, posts, steps and other lanai and porch details should be retained and kept in good repair. A fresh coat of paint on lanai floors and wooden steps is normally needed every three to five years.

Tongue and groove flooring usually deteriorates on the exposed end of a board. It is economically and structurally sound to cut the board off, usually at the second joist, keeping the rest of the board in place. To replace a tongue and groove board, split it up the middle with a circular saw, and lift the pieces out. To install new tongue and groove, slide the new board in from the end, leaving some extra length on the end to be cut flush with the other floorboards.

8. Ceilings

Ceilings, in particular where water leakage has occurred, need to be repaired.

9. Foundations

Repairs may be needed to foundations, girders, floor joists, plates and framing. If wooden floor joists have deteriorated because of moisture or termites, it is necessary to determine how much load the support walls can carry before reinforcing old joists with new wood or foundation posts.

A. The footings are generally in good repair, however, settlement or other movement has occurred in some instances.

B. Wood foundation posts which have been exposed to a great deal of moisture are deteriorated and show termite infestation and dry rot conditions, in particular on the northeast sides of some of the
buildings. In some instances these posts have to be replaced. Wood foundation posts should be shimmed and braced to stabilize the floor structure. This constitutes a minor number of posts in most structures. With foundation posts, allow a minimum of at least 18 inches between the ground and the bottom of floor joists for ventilation and access. Keep the area underneath the house dry.

C. Foundation girders, floor joints and diagonal bracing are generally in sound structural condition. The original members were all full size dimensions which cannot be readily replaced. However, members of nominal size can be substituted for repair purposes where required. Most areas of deterioration occur around plumbing areas (bathrooms and kitchens).

D. Generally foundations consist of concrete pads or, in older buildings, rock pads or sometimes a combination of both. Concrete or stone foundation pads may need repair or replacement where the pad has cracked or is depressed into the soil.

E. In some areas soil has built up under and around the foundations allowing the soil to touch the wood foundation posts; this soil must be removed within 4 inches of wood.

F. In most buildings wood skirting was built around the foundation. This needs repair and replacement in some buildings and the soil moved 4 inches from the wood.

G. Concrete slabs were provided under some showers and in utility areas which has helped to minimize deterioration in these normally wet areas.

The following is a more detailed description of areas which require repair, replacement or renovation in the residences.

10. Kitchens

A. The primary problem areas are below the sink and at the backsplash of the sink counter. Water leakage in these areas has attracted termites and wood rot which has compounded the rotting of the floors under the sink as well as in the walls where the penetration of the pipes occur.

B. Most kitchen sink countertops are 1-1/2 inches thick laminated wood members, a wooden splash and a porcelain sink located below. Many of these sink counters are in very good condition or need only minor repair and refinishing, caulking and water sealing in particular at the backsplash.

C. In some areas the kitchen counters have been changed or covered with plastic laminate. This has caused water retention inside the leaking areas resulting in problems with dry rot. Countertops should be replaced to match existing material.

D. Kitchen cabinets are a combination of open shelves and enclosed cabinets with a variety of cabinet faces: glass with wood frames and solid wood. In many areas the hinges and hardware have deteriorated, however, the wood frames and cabinet doors or drawers are generally in good condition and only need to be refinished.

11. Bathrooms

Bathrooms consist of a water closet, lavatory basin and either a tub or shower. All plumbing fixtures, fittings and piping should be replaced unless there has been substantial recent plumbing repairs.
12. Single Wall Construction

The wood siding on a house is its "skin." Most older houses were built of single wall construction, and the most common types of wall siding were 1"x12" vertical board and batten or 1"x6" vertical tongue and groove boards.

Damaged wall siding should be repaired rather than replaced, and surface damage to wallboard can be repaired with water putty as a filler.

If the exterior siding has deteriorated beyond repair in parts of the house, selective replacement of exterior wall siding is required. Duplicate the original siding as closely as possible. With board and batten siding, maintain the original spacing of boards and battens to avoid covering any of the original trim such as corner boards and window and door frames.

Use of synthetic material such as aluminum, vinyl or plastic, over wooden siding, can cause long term moisture problems and should be avoided.

A. Single wall siding and trim will need repair, in particular where piping penetrations occur. Prep work and paint or stain will be required on all wood siding.

B. In most cases the single wall 1"x6" T&G siding is very much intact except for those specific areas mentioned. This includes water pipe penetrations at kitchens, utility or bathroom areas. In some cases, watertables have maintained high moisture levels in the ends of the individual siding members causing deterioration at the bottom section of the wall which should be replaced.

C. Some exterior areas have had extreme exposure to the weather. The northeast corners of the house, or areas which have been covered by plants or landscaping did not allow the walls to dry after severe rains. This has resulted in termite infestation and wood rot.

D. In almost all buildings, the exterior single wall siding is in need of caulking, preparation and painting, particularly those buildings which have not been maintained.

13. Planting and Hedges

Existing plant materials and varieties should be retained. New trees, shrubs and flowers should be compatible with older plantings. Vegetation growing too close to the structure traps moisture in foundations and siding. A two-foot buffer space should be kept between plantings and the building to insure proper air circulation around the house.

Existing hedges should be maintained. Growing hedges of hibiscus, crotons, panex, spider lilies, or ironwood are preferable to wire and wooden fences.

14. New Additions and Secondary Structures

The scale, proportion, materials and color of the existing house should guide the design, construction and finish of any expansion or addition to a house.

New construction of add-ons for living space, and the addition of secondary buildings, such as carports, garages and garden equipment buildings, should be located as inconspicuously as possible.

An addition that is built to the side or rear of the house will usually have the least impact on the existing character of the house. Avoid additions that are larger than the existing structure and do not build additions that will damage original building features and details.
APPENDIX B

NEW VILLAGE DESIGN GUIDELINES

1. General Development

Within the new villages, no building, structure or landscape element, including trees, shall be erected, installed or planted without the approval of the Association's Design Review Committee (DRC) with the exception of activities and uses that are exempt and no addition to or demolition, relocation or removal of any existing building, structure or landscape element shall be permitted except to wholly or partially repair or maintain the exterior of a structure in a manner appropriate to the new villages.

The overall appearance of the new villages should complement the existing villages. The exception is the use of contemporary materials for the construction of these new homes.

The Master Plan provisions includes all new residential construction (single and multi-family), infrastructure and utilities. In order to promote the sense of community, the new villages will be developed in a style characteristic of the historic core. Street widths will be kept to a minimum and will be landscaped. The residential streets will have sidewalks. However, rolled curbs will be installed to facilitate on-site drainage on streets.

Once installed, the maintenance of trees within the road rights-of-ways shall be the responsibility of the City and County of Honolulu. Further, all roads, water, sewer and drainage improvements shall be dedicated to the City and County of Honolulu.

Interpretation of these Master Plan provisions shall rest with the Department of Housing and Community Development, City and County of Honolulu.

2. Minimum Lot Size, Required Yards, Heights and Setbacks

The minimum lot size for residential uses shall be 5,000 square feet. The required yards are as follows: front = 10 feet; side and rear = 5 feet. Single family homes shall be limited to one story.

3. Architectural Appearance and Character

The architectural form, scale, and character for new structures shall be similar to those building forms found in the historic core.

3. Private Areas: Design Guidelines

a) All required yards and open spaces shall be landscaped with the exception of sidewalks and driveways. The yards and open spaces shall be planted and maintained to preserve and enhance the open appearance of the villages. Landscaping shall include; ground cover, vegetable or flower gardens, or paving material (e.g. grass block or stepping stones). The front yard shall not be paved with concrete or asphaltic concrete.

b) The planting of trees shall be encouraged. Acceptable new or replacement trees shall be from an approved species list maintained by the DRC.

c) Hedges and Fences. The use of plant material as fencing shall be encouraged. Fences used for the enclosure of the property shall be limited as follows: 1) Side and rear yards -- fences shall be limited in height to six
(6) feet and may be constructed of the following material: chainlink, wood; or plant material. 2) Front yard fences shall be limited to a height of four (4) feet and shall be constructed of the following material: wood or plant material. Wooden front yard fences shall be painted white. Rock or concrete walls shall not be allowed.

d) House Colors. The color of houses within the new villages shall be limited to a single body color and a single trim color. Changes to original house colors are to be reviewed by the DRC.

e) Each dwelling unit shall be entitled to one garage or carport detached from or attached to the main structure.

f) No permanent exterior free-standing electric lighting of any sort shall be installed or maintained which cast illumination outside of the lot.

g) Garbage/trash receptacles shall be concealed from view from the roadways.

h) All solar panels and related equipment shall follow design guidelines.

i) Exterior lanais, porches, carports, and garages visible from the adjoining street shall not be enclosed.

j) Mail boxes shall be set back a minimum of three (3) feet from the edge of the pavement and shall meet the requirements of the U.S. Postal Service.
APPENDIX C

COMMERCIAL DESIGN GUIDELINES

1. General Development: Within the historic commercial area, no building, structure or landscape element, including trees, shall be erected, installed or planted without a permit; and no addition to or demolition, relocation or removal of any existing building, structure or landscape element shall be permitted except to wholly or partially restore the exterior of a structure in a manner appropriate to the precinct.


The minimum lot size for commercial development shall be 10,000 square feet. The required yards are as follows: front = 15 feet; side and rear = 10 feet. If the commercial use adjoins a residential use, the side and rear yards shall be 15 feet. The maximum building and structure heights shall not exceed 35 feet.

3. Landscaping:

a. All required yards and open spaces shall be landscaped, planted and maintained to preserve and enhance the open appearance of the villages. Landscaping shall include: ground cover, flower gardens, or paving material (excluding asphalt concrete).

b. Front yards along all streets, except for driveways and sidewalks shall be landscaped.

c. Trees shall be provided along all street frontages according to the planting plan. The trees shall be generally large canopy type, such as monkeypod. Replacement trees shall be from an approved specie list.

d. Hedges and Fences. The use of plant material as fences shall be encouraged. See additional discussion below - Architectural Appearance.

4. Architectural Appearance and Character

a. General: The architectural form, scale, and character for new or renovated structures and modifications of existing structures shall be similar to the existing building forms (e.g. existing administration building and store). Alterations to existing building facades should be compatible if not similar to existing treatment and materials of the original design.

* Lot sizes (minimum 10,000 square feet)
* Double hung and sliding sash windows
* Single and double pitch hip roofs
* Single wall construction
* Board window shutters

On-site open space shall not be less than 30 percent of the zoning lot, excluding parking areas.

b. Private Areas, Uses and Restrictions

* Fences. Fences used for the enclosure of the property shall be limited as follows: 1) Side and rear yards - side yard fences shall be limited in height to six (6) feet and shall be constructed of the following material: chainlink, wood; or plant material. 2) Front yard fences shall be not be allowed. Fences shall be constructed of the following material: wood or plant material. Rock or concrete walls shall not be allowed.
- Trash storage areas shall be screened from public view.
- No open storage of furniture, fixtures, appliances or other goods not in active use shall be permitted within the required front yards.
- Deliveries shall be confined to the rear or side of the building unless prohibited.
- Drive through facilities shall be prohibited in the district.

c. Building Colors. The color of building within the historic commercial area shall be limited to a single body color and a single trim color subject to review.

d. Streetscape. To promote the complementary blending of new buildings with existing commercial and residential area it is proposed that the streets be kept to widths similar to those in the historic core.

Establishments fronting Renton Road shall be setback an addition 10 feet to provide for pedestrian access, landscaping, and street furniture.

Parking shall not be allowed within the front yard.

g. Off-Street Parking. Off-street parking and loading requirements shall be provided according to the provision of the Land Use Ordinance (Article 3).
APPENDIX D

PUBLIC AND QUASI-PUBLIC FACILITIES DESIGN GUIDELINES

1. General Development: Facilities included with this precinct include: parks, public open spaces, churches, schools, other public and quasi-public facilities. Within the precinct no building, structure or landscape element, including trees, shall be erected, installed or planted without a permit; and no addition to or demolition, relocation or removal of any existing building, structure or landscape element shall be permitted except to wholly or partially restore the exterior of a structure in a manner appropriate to the precinct.

2. Required Yards, Heights and Setbacks.

   The required yards are as follows: front = 15 feet. If a public structure adjoins a residential use, then the sides and rear yard shall be set according to the following ratio: 2:1 feet (horizontal to vertical).

3. Landscaping:

   a. All required yards and open spaces shall be landscaped, planted and maintained to preserve and enhance the open appearance of the villages. Acceptable landscaping include: ground cover, flower gardens, or paving material (excluding asphalt concrete).

   b. Front yards along all streets, except for driveways and sidewalks, shall be landscaped.

   c. Trees shall be provided along all street frontages according to the planting plan. Replacement trees shall be from an approved specie list.

   d. Hedges and Fences. The use of plant material as fences shall be encouraged. See additional discussion below: Architectural Appearance.

4. Architectural Appearance and Character

   a. General: The architectural form, scale, and character for new or renovated structures and modifications of existing structures shall be similar to the existing building forms (e.g. existing administration building and store). Alterations to existing building facades should be compatible if not similar to existing treatment and materials of the original design.

   b. Fences. Fences used for the enclosure of the property shall be limited as follows: 1) fences shall be limited in height to six (6) feet and shall be constructed of the following material: chainlink, wood; or plant material. 2) Rock or concrete walls shall not be allowed.

   c. Trash storage areas shall be screen from public view.

   d. Deliveries shall be confined to the rear or side of the building unless prohibited.

   e. Building Colors. The color of building within the public and quasi-public area shall be limited to a single body color and a single trim color subject to review by the Design Review Committee.
1. Every reasonable effort shall be made to provide a compatible use for a property which required minimal alteration for the building, structure, or site and its environment, or to use a property for its originally intended use.

2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.

3. All buildings, structures, and sites shall be recognized as products of their own time. Alteration that have not historic basis and which seek to create an earlier appearance shall be discouraged.

4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.

5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site shall be treated with sensitivity.

6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural feature should be based on accurate duplication of features substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.

7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.

8. Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to any project.

9. Contemporary design for alteration and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood or environment.

10. Whenever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.
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