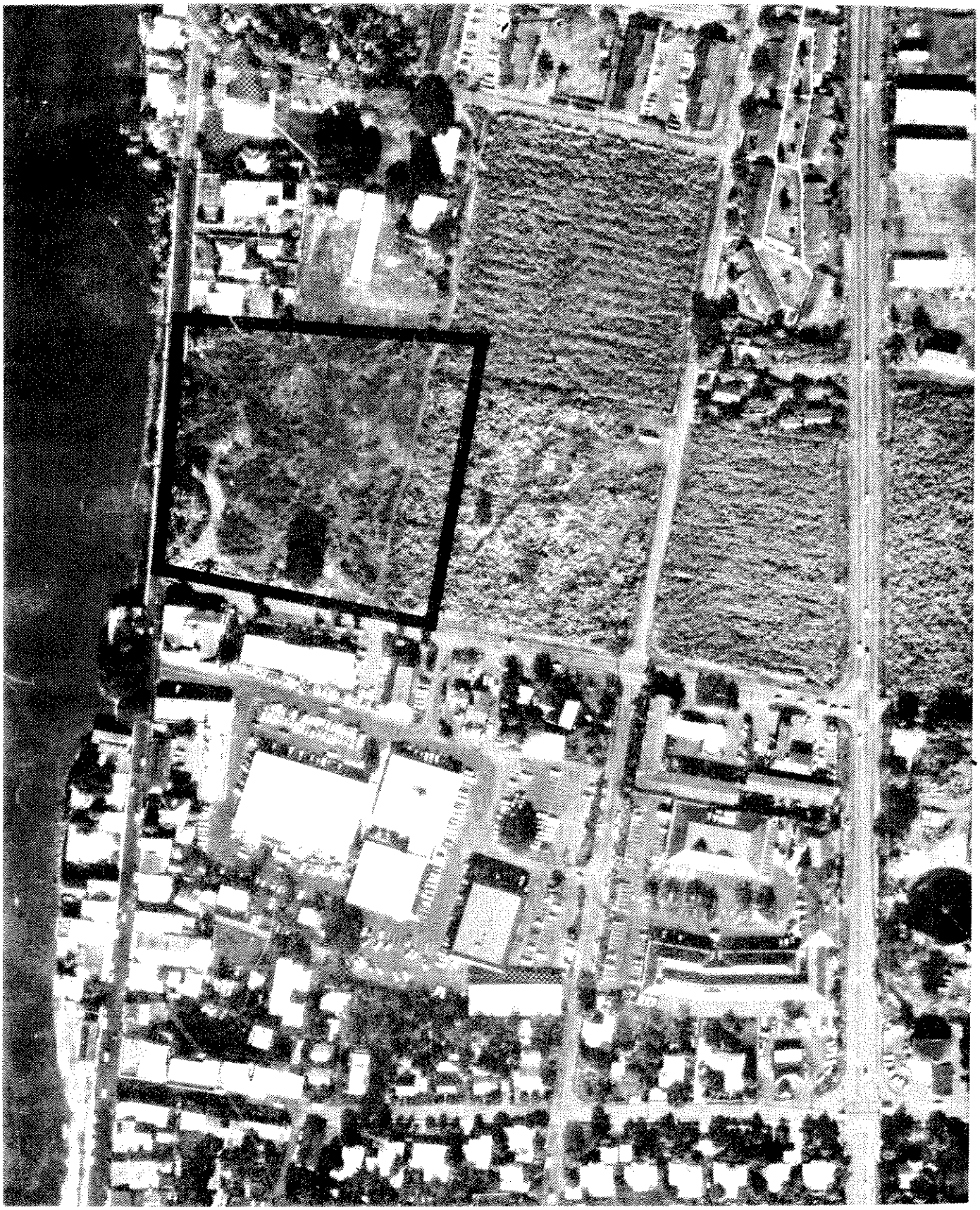

LAHAINA PLAZA · environmental impact statement

ENVIRONMENTAL IMPACT STATEMENT

FOR THE

LAHAINA PLAZA

LAHAINA, MAUI, HAWAII

OCTOBER 1975

SUBMITTED BY: [signature]
WILLIAM WILMORE
PRESIDENT
GLOBAL CONSTRUCTION
COMPANY, INC.

PREPARED BY: ENVIRONMENTAL IMPACT
STUDY CORPORATION

SPECIAL CONSULTANTS: EDAW, INC.

SUMMARY SHEET

APPLICANT: GLOBAL CONSTRUCTION COMPANY
PROPOSED PROJECT: LAHAINA PLAZA, LAHAINA, MAUI
APPROVING AGENCY: MAUI HISTORIC COMMISSION

1. PROPOSED ACTION: The proposed action consists of the development of a commercial plaza on a site located within the Lahaina Historic District 2, which consists of one and two story structures with a total building floor area of 51,708 sq. ft. The complex will be used for retail stores and eating establishments, and it is anticipated that there will be thirty ground floor tenants with a maximum of four second floor restaurant tenants.

The development will also include a parking facility on land zoned H-1, hotel, adjacent to the building site. This facility will provide community parking for approximately 262 cars and 6 buses.

2. DESCRIPTION OF THE PROPOSED SITE: The project site is a littered vacant lot overgrown with scrub vegetation. The site is bordered by Front, Papalaua, Baker and Wainee Streets and located within Historic District 2. Utilities and power lines are available.

3. RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS: The proposed project conforms with the goals and objectives of the Lahaina General Plan which governs the land use. The project building site is zoned Historic District, in which a commercial use is permitted. The parking area of the development is zoned H-1, in which parking is a permitted use. The project will architectually conform to all applicable county and Historic District requirements.

4. ANTICIPATED ENVIRONMENTAL IMPACT: The environmental impact of the proposed project on the surrounding area is anticipated to be minor, since the activities of the proposed project will be compatible with those of surrounding developments. Construction-related impacts will involve the generation of dust and noise, and will be mitigated by appropriate measures. Site clearing and grading activities will remove a part of the existing wildlife habitat, but it is anticipated that such wildlife will relocate to the remaining, undeveloped portion of the parcel.

Long-term impacts of the proposed action will involve social and economic impacts associated with urban commercial development. The project will provide employment opportunities to community residents, will widen the tax base of Lahaina, and will increase retail sales in the area. As a part of the overall development of Lahaina, the project may also contribute to population increase.

The project will require the use of public facilities and services, such as police and fire protection, sewer, storm drain, and water services. The project will alter the existing open space character of the site, converting unused space into usable shopping and parking facilities.

The provision of parking facilities is anticipated to alleviate the critical traffic and parking situation in Lahaina by diverting traffic from Front Street and increasing the parking stock of Lahaina.

5. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED: No adverse, unavoidable impacts are anticipated, except for the removal of a part of the existing wildlife habitat on the project parcel. Site clearing and grading activities will remove most of the scrub vegetation which provides a habitat for mongeese, mice, rats and birds. It is anticipated that this wildlife will relocate to undeveloped areas adjacent to the proposed project site.

6. ALTERNATIVES TO THE PROPOSED ACTION: If the proposed action is not implemented, the proposed site will continue to remain unused and vacant. Alternative designs for the proposed development are possible, but the proposed design meets all Historic District design requirements and will be in harmony with the architectural character of Lahaina. There are no alternative sites for the proposed project as the developer has no other land available for commercial development of this nature.

7. IRRVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES:

Land will be committed to project use for the duration of the amortization of the project development. Labor, fuel and materials used during the development's construction and operation will also be committed. There will be no loss or destruction of cultural or natural resources.

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INTRODUCTION

The town of Lahaina is one of Maui's most valuable cultural and historic resources, and it is becoming an increasingly important economic resource as well. Possessing charm, located in a setting of natural beauty, and rich in historical associations, the town of Lahaina is now a prime destination to the many visitors who come to Maui. The growth of the tourist industry throughout Hawaii has had its effect on Lahaina and has transformed it from a sleepy, quietly declining town, into a healthy, growing economic and cultural center for West Maui and the rest of the County.

The Lahaina community has recognized the fact that the unique atmosphere of the town, its historic associations and environment, are important both in maintaining a desirable place in which to live, and essential to its economic base, in drawing visitors to West Maui and the town itself. Thus, a series of plans for Lahaina have been prepared identifying historic sites and structures that should be preserved and protected, as well as proposing commercial development necessary to the economic viability of the community.

Each plan that was prepared recognized the importance of Front Street as the commercial spine of the town both historically and presently. These plans also realized the importance of providing expanded commercial land usage. As tourism is a major economic component of Lahaina, plans for the town core reflect the attempt to attract sufficient

tourism-related facilities and the necessary accompanying services to support both visitor and resident needs.

A General Plan for the Lahaina District was prepared in 1968. It recognized that the amenities of Lahaina's past cannot be maintained without concommitantly developing a base on which Lahaina can grow and sustain itself economically. It sought to promote quality, controlled growth that would provide the economic means with which to support desirable community projects, improvements, and services. Some of the specific goals of the plan included:

1. Create, enhance and preserve a total environment--both natural and man-made--that is of the highest quality attainable. Give the highest priority to beauty, historic traditions and the amenities that are made available first to the residents of the Lahaina District and then to its visitors.

2. Encourage landowners--both large and small--to coordinate development efforts among themselves and with the government, in order to provide the community with maximum benefits not only in terms of economic gains, but relative also to the securing of a fuller and more satisfying life.

3. Encourage and assist those developers and investors who, through their real acts, have demonstrated both a sincere interest in and a full capability for contributing to the long-term growth of the region, the island of Maui and the State.

4. Encourage the highest quality of contemporary architecture, while retaining and preserving that which is historically significant.

5. Encourage the intermingling of residents and visitors for their mutual enrichment.

The proposed Lahaina Commercial Plaza is consistent with the above-stated goals of the General Plan, and is a reflection of the expanding economic vitality of Lahaina town.

The contents of this document will endeavor to describe the Lahaina setting of the past and present, the environmental and economic impacts of the proposed project, and demonstrate that the proposed project is in keeping with the goals and objectives of the General Plan of 1968.

SECTION 1

DESCRIPTION OF LAHAINA

I. Historic Perspective and Physical Development

The town of Lahaina probably began as a fishing settlement during the days of the early Hawaiians. On lush fertile land, adjacent to calm, fish-filled waters, and blessed by a mild climate, this site was an obvious place in which to settle, farm and fish. The many natural amenities of the early settlement of Lahaina were widely recognized, and it became the seat of government for the Hawaiian kings of Maui prior to the unification of all the islands.

The recorded history of Lahaina begins with the "discovery" of the island by Captain James Cook in 1778. Lahaina, at this time, was a slow, quiet settlement ruled by hereditary kings and it remained so until it became the royal capital and home of Kamehameha I, the conquerer of all the islands. Under Kamehameha, Lahaina grew and thrived as a center for the lucrative sandlewood trade that arose between the islands and China at this time.

In 1819, Kamehameha I died, and it was also during this year that the first American whaling ships arrived. These two events signaled a new epoch that would leave its mark on Lahaina: the waning of old Hawaiian culture and religion as a predominant force, and the rise of American economic and cultural influence in the islands.

A map prepared of Lahaina at this time, shows Kamehameha's "palace," small structures scattered along the shoreline (which is now Front Street), and numerous irrigation areas where taro was planted. Lahaina in the pre-whaling era was still a village, though a "royal" one, with no apparent roadways and a lack of physical definition.

The whaling industry brought a new era of growth and prosperity to Lahaina. The American whaling ships, having "fished out" the north Atlantic, began to "round the Horn" in increasing numbers to search the Pacific. The discovery of rich whale grounds off the coast of Japan around 1820 multiplied the number of whaling ships in the Pacific, particularly during 1843-1860, the "Golden Age" of Pacific whaling.

This had a direct effect on the settlement of Lahaina since Lahaina was a convenient and palatable place from which whaling ships could stock supplies on their way to the Northwestern Pacific. Lahaina was able to provide fresh produce to the ships, and the growing demand for these supplies led to a rise of diversified agriculture in Lahaina.

In addition to provisions, Lahaina also provided a recreational ground to the sailors trapped for months at sea. Lahaina, then, acquired a reputation as a lusty, free-swinging town with all types of pleasures available, stretched out on the single main street of the town.

The missionaries arrived about the same time as the first whaling ships. They did not regard Lahaina merely as

a port-of-call, but were determined to develop Lahaina as a stable and prosperous town. Under the influence of the missionaries, who did much of the building, and the whaling trade, which provided the economic means, Lahaina made the transition from royal village to larger, urban town. Population increased and commercial developments expanded. Land was allotted to private owners under the kuleana system, and property boundaries formed the beginning of a street system that defined much of the block development existing today.

Kamehameha III, who ruled the Hawaiian Kingdom during the whaling years, also began a program of construction, erecting a royal residence and many public buildings. These were concentrated along the southern end of Front Street, in the wharf area. The reef area makai of Front Street was filled in to create new land, and Front Street itself, then known as Main Street, was emphasized as the central spine of the town, with almost all of the commercial developments occurring along it.

A small depression in the whaling industry occurred from 1846-1852, caused by the exhaustion of fishing grounds off Japan and the discovery of gold in California. The lure of gold and the need for supplies in California diverted many whaling ships from their trade, and San Francisco began its development as a port of call and the first destination of ships from the East Coast.

As disillusionment came to many gold-seekers, however, the whaling trade recovered, and ships returned in greater numbers to Lahaina. As many as 549 ships arrived in the islands in a peak year, and 100 ships in port at one time in Lahaina was not uncommon.

By 1859, kerosene began to replace whale oil, and this replacement, in addition to the Civil War, which transferred many ships from private to military use, severely hurt the whaling industry. The full development of San Francisco Port diverted the remaining whaling ships from Lahaina. The final blow to the whaling industry occurred in 1869 when the Transcontinental Railroad was completed; with the Railroad, ships no longer had to "round the Horn" to transfer whale bone and oil to the East Coast and the whaling era thus came to an end.

The decline of the whaling industry and the development of San Francisco curtailed Lahaina's boom-town prosperity, and Lahaina returned to the land for subsistence. Agriculture, primarily sugar, provided its economic base. The first sugar mill was started about 1861, and sugar and pineapple became the principle economic activity until the early 1960's.

Lahaina's development during the post-whaling years was slow and steady, for the most part, and its physical development continued along the lines set during the whaling era. A map prepared of the town in 1884 shows the linear development of the town along Front Street, with many professional "haole"

residences lining the street as well as a few Chinese shops and smaller businesses serving the workers of the Pioneer Mill.

A map prepared in 1914 follows the 1884 plan. Many of the residences along Front Street were replaced by business uses, and the residential areas moved mauka toward Wainee Street. The commercial area was concentrated between Lahainaluna and Dickenson Streets, and included theaters, hotels and numerous general stores, some of which are still standing today. The wharf area was enlarged to provide for shipping commodity transfer, and a modern water system was installed to serve the town.

Lahaina's growth with agriculture as the prime economic activity continued until 1940, and a rural, plantation town atmosphere replaced the heady, boom town ambiance of earlier days.

Agriculture, however, was not able to provide for Lahaina's continued development. Economic difficulties in the industry and the introduction of automation resulted in job cutbacks. Residents left Lahaina in large numbers, migrating to Honolulu in search of employment. Population during the 1940-1960 declined by almost half in the Lahaina District, and Lahaina seemed to be a town with no future.

II. LAHAINA TODAY

Lahaina today is the social, economic and cultural center of West Maui, and is the third most populous urban

center on the island of Maui. It is becoming increasingly important as an economic resource for the island due to the growth of the visitor industry, which began development in the early 1960's. In 1960, the visitor influx to Maui had begun and island visitors were particularly drawn to the charm and quiet of Lahaina and the region's spectacular scenery and white beaches.

The development of the Kaanapali Beach, three miles north of Lahaina, brought increasing numbers of visitors to Lahaina, and the economic outlook for the town and region began to brighten. By 1965, the island of Maui had 1383 hotel rooms, of which the Lahaina region had 88.9 percent. Estimated visitors to Maui in that year numbered over 150,000, spending an estimated 503,000 visitor-days on the island. Lahaina, because of the hotel concentration, was the center of the tourist industry, and as that industry and supporting services expanded so did the economic outlook of Lahaina town and the West Maui region.

Population Trends. The resident population in Lahaina has been steadily increasing since 1960, reflecting the revitalization of the area's economy through the growth of the visitor industry. In 1960, the resident population of the Lahaina district totaled 4,844, and in Lahaina town, 3,423. By 1970, the population had increased by 14% to 5,524 in the Lahaina District, and by 8.6% to 3,718 in Lahaina town.

Population projections for the area, based on the General Plan for the Lahaina District, estimate a resident

population of 28,500 by 1990, with a projected resort population of 13,860, based on an anticipated hotel room count of 7,700 as shown in Table 1-1.

TABLE 1-1

	Projected Resident Population	Projected Hotel Units	Projected (1) Resort Population
1975	13,200	3,150	5,670
1980	19,200	4,900	8,820
1990	28,500	7,700	13,660

(1) Based on 100% occupancy and 1.8 persons per unit.

Employment Trends. Agriculture has traditionally been the major employer of West Maui residents, and in 1965, employed an estimated 50% of the working force in the Lahaina district. The hotel and visitor industries, however, have been assuming an increasingly more dominant role in the employment market. In 1956, these industries were estimated to employ 33% of the total work force in West Maui and by 1970, 40%. Employment projections based on the General Plan estimate an eleven-fold increase in direct hotel employment by 1990 from 1965 levels, with visitor support (non-hotel) employment increasing by nearly 31 times. This is based on the assumption, however, that the

district will develop a wide range of non-hotel visitor activities. Total employment projections are anticipated to increase nearly 8 times, from 2,000 persons in 1964 to nearly 16,000 by 1990.

Employment projections, then, forecast continuing increases in the work force, with the hotel and visitor support industries becoming the major employer of West Maui residents. In addition, non-primary, or resident-oriented employment will also show large increases by 1990, and it is anticipated that this type of employment will account for approximately 30% of the work force, as opposed to approximately 18% in 1965.

Physical Growth. As population has expanded in Lahaina, so has the physical development of the town itself.

Front street today contains the majority of tourist-oriented shops and establishments, particularly from Papalaua Street to Prison Street. Commercial usage more oriented to the residents of Lahaina occurs toward the northern end of the town, particularly on the block bounded by Wainee, Lahainaluna, Front, and Papalaua Streets. The Lahaina Shopping Center, the Farmer's Market, post office and two banks all contribute to the intense activities occurring in this area. Shopping establishments more oriented to the visitor are located along Front Street, particularly toward the southerly end of the town center.

Land use patterns for Lahaina as well as land use plans for the town core reflect the attempt to attract sufficient tourism-related facilities and the necessary accompanying services to support both visitor and resident needs.

SECTION 2

DESCRIPTION OF THE PROPOSED PROJECT

I. PROJECT OBJECTIVES

The objectives of the proposed Lahaina Commercial Plaza are as follows:

1. To build, operate, and maintain a viable development in which commercial space would be leased to a wide array of shops and eating establishments in the commercial area of Lahaina town.

2. To provide the Lahaina community and visitors coming to West Maui with a quality commercial shopping plaza.

3. To architecturally maintain the charm and historic character of Lahaina through careful design, construction, and landscaping of the proposed plaza.

4. To provide sufficient parking spaces to residents and visitors using the proposed plaza, nearby commercial developments, and Lahaina town, and to increase the overall parking stock of Lahaina town.

5. To help alleviate traffic congestion on Front Street by making access to the proposed parking area available only on Papalaua Street.

6. To provide employment opportunities to the residents of the Lahaina community.

II. DESCRIPTION OF PROJECT FACILITIES

The proposed project is located in the town of Lahaina, Maui. The project site, as indicated in Figure 2-1, is located on the southeastern corner of the block bordered by Front, Wainee, Baker, and Papalaua Streets.

The proposed project consists of a commercial plaza of one and two story structures with a total building floor area of 51,708 square feet. The complex will house retail stores and eating establishments, and it is anticipated that there will be thirty ground floor tenants with a maximum of four second floor restaurant tenants. Parking will be provided for buses as well as cars, and a mini-park will be developed around a monkey pod tree existing on the site near Papalaua Street. Access to the site parking area will be from Papalaua Street only. Figures 2-2 to 2-3 present the site plan and the elevations of the development.

Buildings. The buildings will consist of heavy timber construction with a wood exterior, prefinished metal roofing and mechanical equipment concealed behind roof parapets. The plaza has been designed to evoke an "old Hawaii" type of atmosphere and to be aesthetically compatible with the architectural character of existing buildings on Front Street.

The exterior design of the structures conforms to Historic District requirements and has been received positively by the Maui Historic Commission during informal reviews.

Parking. In addition to the buildings, the project will provide parking on an area adjacent to the building site for a total of 262 cars and 6 buses. Although parking provisions are not required by the Maui Historic District Ordinance Section 8-3 for Historic District 2 in which the proposed project is located, parking will be provided to accommodate anticipated visitors to the development. Parking has been planned under the provisions of Section 8-1.16 of the Zoning Ordinance as modified by Ordinance 791 Bill #20. It is anticipated that the proposed parking development will substantially relieve the critical need for parking in Lahaina town.

Vehicular access to the plaza's parking area will be only from Papalaua Street in order to alleviate some of the traffic congestion now apparent on Front Street. Curbs and sidewalks will be provided along portions of Papalaua Street and along Front Street to make the intersection safer for pedestrians as well as vehicles.

The parking area will consist of asphaltic concrete paving. The cut and fill operation will be limited to approximately two feet.

Drainage and Utilities. One or two new catch basins will be provided in the parking area to collect surface rainwater runoff. Drain pipes will connect to the existing 30-inch storm drain line on Papalaua Street which discharges into the ocean.

Water will be provided by the installation of a 12-inch line along Honoapiilani Highway between Lahainaluna and Papalaua Streets. This installation, requested by the Board of Water Supply, will be included as part of the proposed development and all costs will be borne by the developer. The installation of the new line will increase the water capacity in the area, and is anticipated to be more than sufficient to meet project needs. In addition, a fire hydrant will be installed at the corner of Papalaua and Front Streets.

Sewer connections of the project will be to the existing 8-inch sewer line on Papalaua Street.

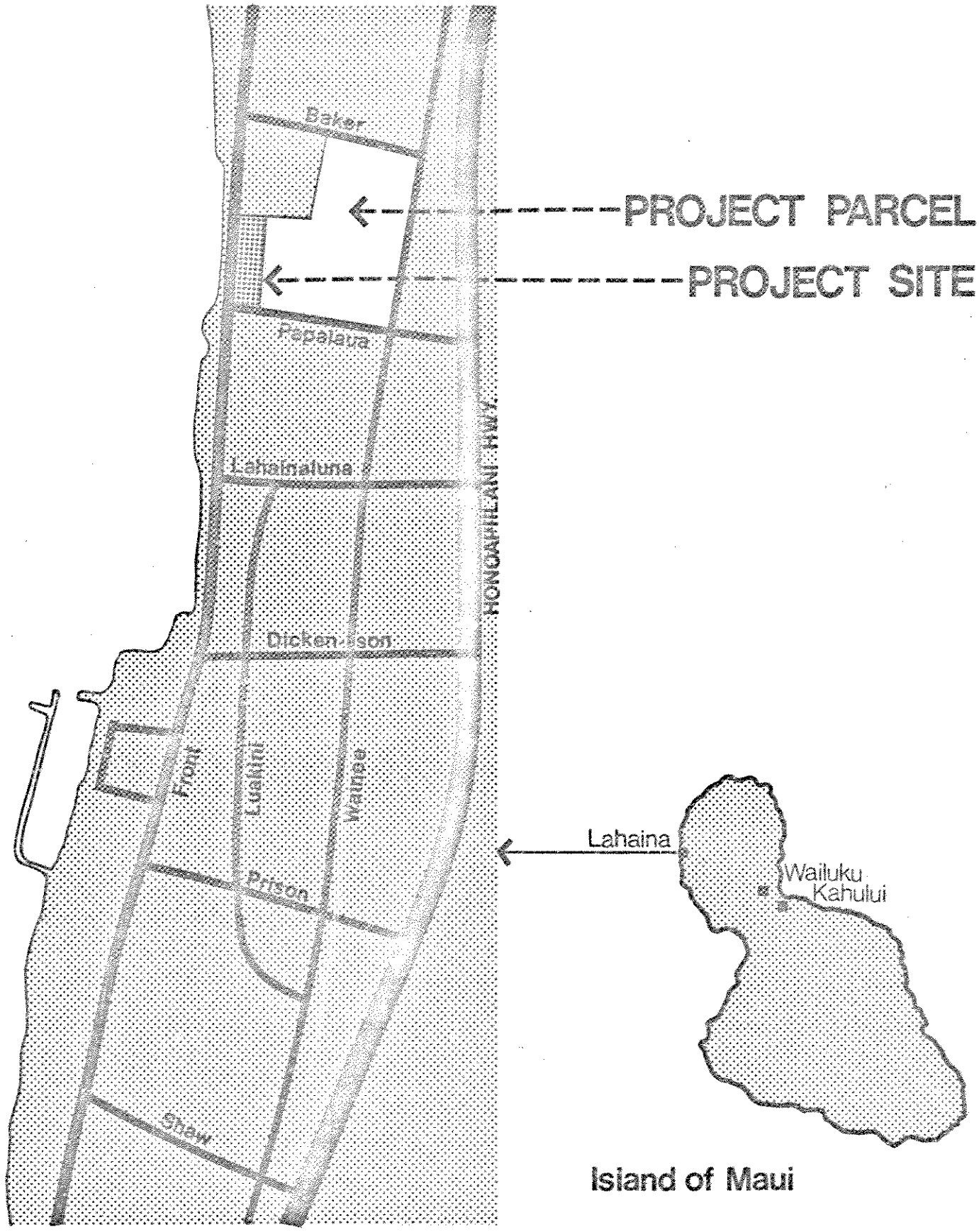
Electrical lines will be buried and connected to the existing power sources at Papalaua Street or Front Street in accordance with Maui Electric Company requirements.

III. PROJECT PHASING AND CONSTRUCTION

The proposed project will start construction three weeks after receipt of all necessary county approvals. Construction time is estimated at one year, and will consist of two phases: Phase I construction will consist of the parking area development to make parking spaces immediately available to help alleviate Lahaina's critical parking need; Phase II construction will consist of the development of the plaza buildings and site landscaping.

IV. ECONOMIC CHARACTERISTICS

Project costs are estimated at a total of $1.5 million. All project development costs and costs of related public improvements will be borne by the developer.

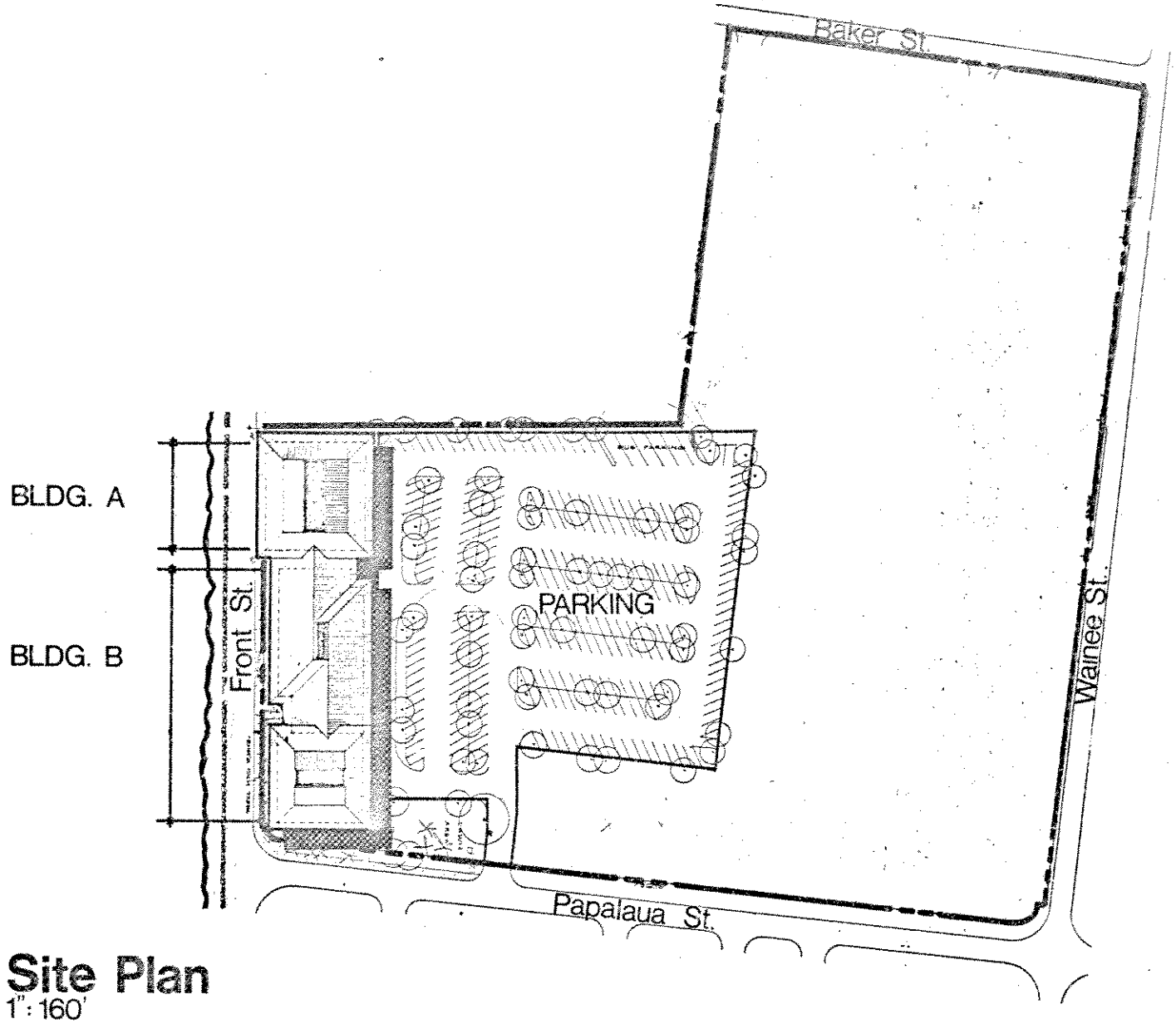


Project Location
1":700'

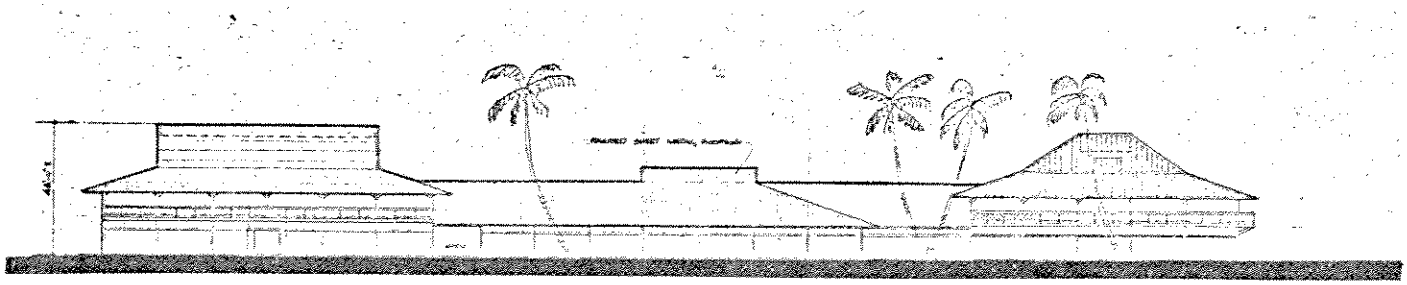
Island of Maui

figure **2·1**

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii



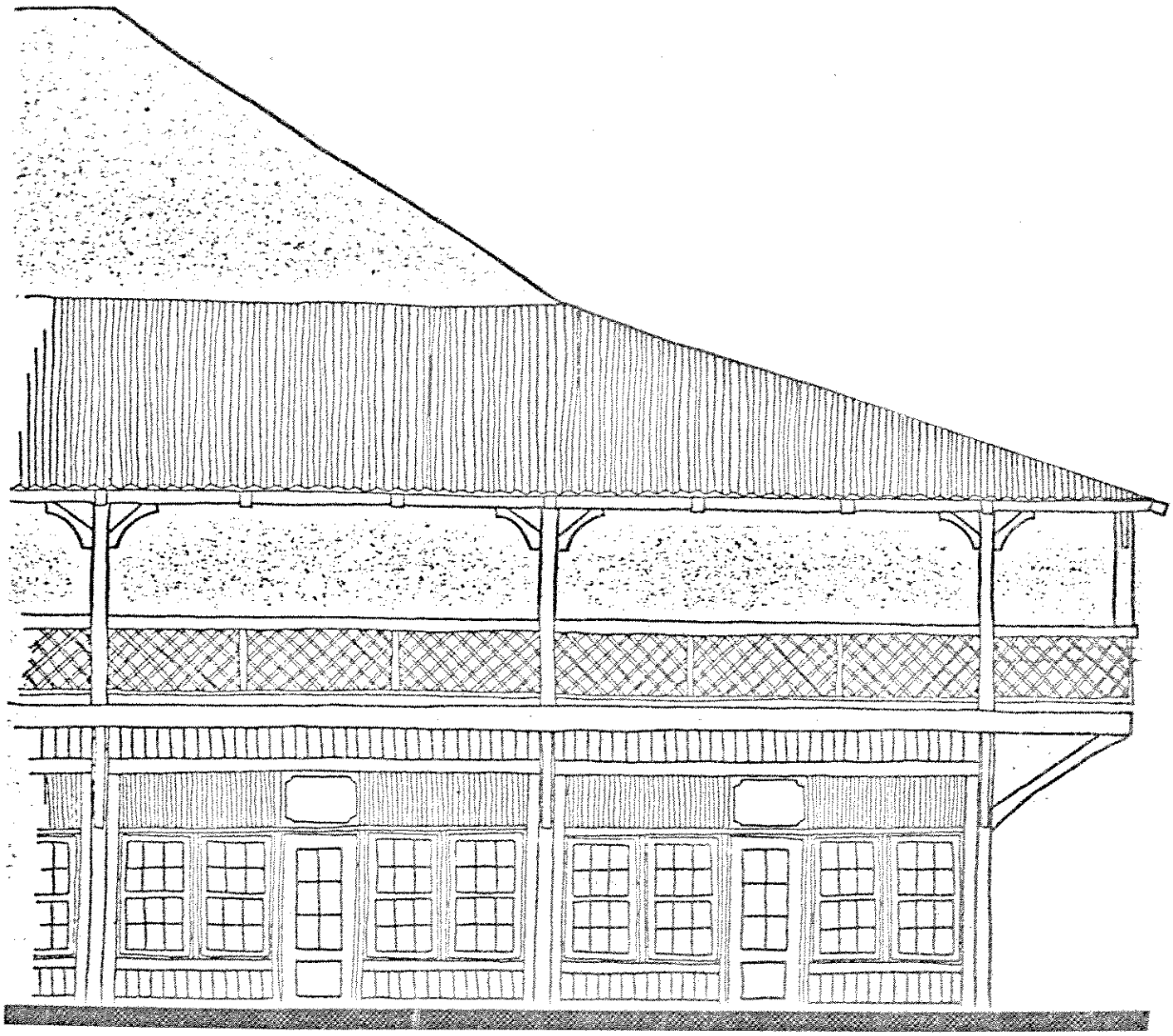
Site Plan
1": 160'



Front Street Elevation
1": 64'

figure **2-2**

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii



Partial Elevation
not to scale

figure 2-3

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii

SECTION 3

DESCRIPTION OF THE PROPOSED SITE

I. LOCATION. The proposed site is located on the southeastern corner of the block bordered by Front Street to the west, Wainee Street to the east, Baker Street to the north, and Papalaua Street to the south. The project area consists of 43,000 square feet of 11.761 acres of a larger parcel, and is shown in Figure 2-1 . The site measures 391 feet along its Front Street border and is 100 feet in depth. The site is located at the northern most extremity of Lahaina Historic District 2 and is within the National Historic Landmark District.

II. CLIMATE. The climate of the Lahaina District is mild and dry, with northeasterly trades prevailing during most of the year. Temperatures range from 52 degrees to 93 degrees with average monthly temperatures varying between 71.2 degrees for the coolest month, to 77.7 degrees for the warmest month. Lowest temperatures occur during the months of August and September. Rainfall occurs primarily during the winter months and averages 14.53 inches per year.

III. LAND USE. The proposed site is currently vacant, and is being used for unauthorized right angle parking off Papalaua Street. The block on which the proposed site is located is generally vacant except for the northwest quarter of the block which contains a

church complex and three single-family homes on the corner bordered by Baker and Front Streets.

Land uses surrounding the block of the proposed site consist of the following:

- north (Baker Street) - single-family homes and an apartment complex;
- east (Wainee Street) - an apartment complex, undeveloped land, and commercial development (under construction);
- south (Papalaua Street) - a commercial complex, including the Lahaina Shopping Center, two banks, a church, gas station, and post office;
- west (Front Street) - the sea wall and the ocean.

Proposed land uses for the area surrounding the site consist primarily of commercial developments, indicating the growth and movement of Lahaina's commercial core to the north of the town. A bank and medical center are under construction on sites on the block opposite Wainee Street, opposite the project block, and a new Post Office may be constructed on a site adjacent to the existing Post Office site. Further discussion of proposed uses on the project block itself may be found in Section 4. Figure 3-1 presents existing and proposed land uses in the project area.

IV. SOILS. The soils of the proposed site consist of the Pulehu series, Ppa, Pulehu silt loam on 0 - 3% slopes, according to the U.S. Soil Conservation Service. The series consist of well-drained soil on alluvial fans and stream terraces and basins that have developed an alluminum washed from basic igneous rock. The soils are nearly level to moderately sloping and the texture consists of silt loam.

V. DRAINAGE AND HYDROLOGY. The project site is located within the 100 year flood boundaries of the Kahoma Stream, located to the north of the project site, and within the tsunami innundation limit as defined by the Drainage Study of Maui County, conducted by R. M. Towill Corporation in 1971. Kahoma Stream, originating in the West Maui mountains, is subject to overflow conditions during periods of high rainfall. This is due in part to its inadequate capacity and the irregular alignment of the existing channel. During flows of high peak discharge, waters overflow the south bank of the stream; the existing earth levee on the north bank has also overtopped and flow through the adjacent canefields results in considerable flooding between the Honoapiilani Highway and the ocean. Considerable flood damage occurred on the Pioneer Mill property during the flood of October 1961, with losses estimated at $1.5 million.

The project site, however, has not been subject to flooding, and there is no recorded incidence of flooding on the site. The Army Corps of Engineers have completed studies of the area, and proposed stream alignment and related channel improvements will substantially mitigate the flooding problem.

VI. FLORA AND FAUNA.

Flora. On September 2, 1975, a field reconnaissance of the project site was conducted by Environmental Impact Study Corp. and EDAW. The flora observed consisted of Koa haole (Corida sebestena), Pink hibiscus (Hibiscus cameroni), one large Monkey Pod tree (Samanea saman), Breadfruit (Artocarpus incisus), Stargrass (Chloris divaricata), Scarlet-fruited Passion flower (Passiflora foetida), and approximately thirty Coconut palms (Cocos nucifera). The field team was unable to find any endangered species of plants.

Fauna. Although extensive trapping of the area was not conducted, it is believed that the area contains no endangered species, and that the area presently harbors the following mammals: House cat (Felis catus), small Indian mongoose (Herpestes aurpunctatus) and rats (Rattus norvegicus and

Rattus exulans). Avian life observed consisted of the following: Barred dove (Geopelia striata), House sparrow (Passer domesticus), Cardinal (Richmondena cardinalis), and Mynah (Acridotheres t. tristis). All of the above mentioned birds are exotic species and not endemic to Hawaii. In addition, Mourning Gecko (Lepidoctylus lugubris) were observed in tree crevices, and it is also believed that the Fox Gecko (Hemidactylus garnoti) is also present in the area.

VII. EXISTING UTILITIES.

1. Water - Water lines are located in the project site area as follows:

- 8 inch line on Baker Street;
- 8 inch line on Front Street;
- 8 inch line on Papalaua Street;
- 8 inch to 3/4 inch line along Wainee Street.

As mentioned previously, the developer will provide a 12 inch water line along Honoapiilani Highway from Lahainaluna Road to Papalaua Street to provide for increased flow to the project area. In addition, the developer will install a fire hydrant at the corner of Front and Papalaua Streets to provide for fire protection needs. With the provision of the

above improvements, sufficient water will be available to accommodate all water needs of the proposed development.

2. Power. Electrical power lines are located along Front Street as well as a 3 inch gas line that runs northerly as far as Papalaua Street. Existing power lines are thus available and can provide for the project's needs.

3. Sewer. The sewer system that serves the project area consists of an 8 inch line along Front Street, and an 8 inch line along Papalaua Street. The lines operate by gravity flow and both are considered sufficient by the Public Works Department to accommodate the sewer flows from the proposed development.

VIII. PUBLIC SERVICES.

1. Fire Protection. The proposed development will install a fire hydrant on the corner of Front and Papalaua Streets to provide for fire protection requirements. The project will also install an interior sprinkler system to reduce fire hazard, as well as an internal fire alarm system. The project area is served by the Lahaina Fire Station and response time to Lahaina town is estimated at two minutes.

2. Police Protection. The Lahaina district is served by 27 patrol officers and 4 detectives, with assistance from 9 county-wide vice squad members. Police protection is considered adequate, although 7 more patrol officers and 5 sargeants have been requested to provide greater traffic and parking regulation enforcement.

3. Refuse Collection. Lahaina town is served by a municipal refuse collection service with twice-a-week pickups. A private refuse collection company also makes pickups in the area on a contract basis.

IX. PARKING. Parking within the core area of Lahaina town may be viewed as a problem. The lack of sufficient parking also hinders the orderly movement of traffice, especially along Front Street. The exact number of parking spaces available and the future projected needs for the Lahaina area are unavailable at the present time. However, indications such as illegal parking of about 20 cars fronting the project site along Papalaua Street and the number of parking violations issued by the Maui County Police Department are indices of the need for additional parking.

For example, in 1974, January through August, 4,378 parking citations were issued in the Lahaina district. This figure rose to 5,425 citations for the same period in 1975. Comparison of the total number of citations issued in all districts of Maui County for 1975 (January through August), to that of the Lahaina district, shows that out of the total 6,810 citations, 5,425 were issued in the Lahaina district.

Current survey of existing off-street parking shows the following breakdown:

MUNICIPAL OFF-STREET PARKING

Location	Cars	Buses
Dickerson-Wainee	72	
Prison-Front Street	20	14

PRIVATE OFF-STREET PARKING

Location	Cars	Buses
Lahaina Shopping Center	260	

Future major proposed parking:

MUNICIPAL PROPOSED PARKING

Location	Cars	Buses
Luakini St., between Dickerson and Prison Sts.	Not yet determined.	
Luakini St., between Lahainaluna Rd. and Dickerson St.	Not yet determined.	

PRIVATE PROPOSED PARKING

Location	Cars	Buses
Lahaina Plaza (Papalaua St.)	262	6

As previously mentioned, no data are presently available on the total amount of street parking. However, one may assume that on-street parking is presently being fully utilized, and the existing off-street parking currently available is inadequate to meet the needs of the community. The proposed project's additional off-street parking will not in itself meet the entire needs of the community, but will greatly aid in the alleviation of the parking situation.

X. TRAFFIC. Traffic counts on streets surrounding the project area are based on a study conducted by the State Department of Transportation and is presented in Table 3-1.

TABLE 3-1

STREET	FROM	TO	1969 ADT	*1990 ADT
Wainee	Papalaua	Prison	300	1293
Front	Prison	Papalaua	300	800
Front	Papalaua	Honoapiilani Hwy.	770	1293
Papalaua	Wainee	Front	770	1293

*average daily traffic

Future improvements call for the widening of Wainee Street from the existing width of 9 feet to 12 feet. Front Street has been repaved and repaving of Papalaua Street is presently under study by the County. Traffic congestion is apparent on Front Street, and the proposed project should aid in the curtailment of additional traffic along Front Street by providing additional parking, thereby removing the necessity of driving along Front Street and also encouraging people to walk from the proposed parking lot to the shops along Front Street.

XI. ACCESS. As the project site is bordered by Front and Papalaua Streets, it is easily accessible to both pedestrian and vehicular traffic.

XII. ARCHAEOLOGICAL AND HISTORICAL SIGNIFICANCE. The project site has undergone several different uses over the years. The earliest depiction of the site appears in a map of Lahaina prepared in 1884 in which the project site contains a business located on the corner of Papalaua and Front Streets, with four haole residences to the left of the business along Front Street. The rest of the block contains three Hawaiian residences along Front Street, next to the haole homes. A structure marked "industry" and a Hawaiian residence are located in the southeastern corner of the block bordered by Papalaua and Wainee Streets. The remainder of the block is shown as vacant.

The next site depiction occurs in a map of 1914. The project site has been cleared of the business and haole residences and is now used by the Pioneer Mill Company Hospital. The rest of the block appears vacant except for a few scattered residential structures.

A land use map prepared in 1960 shows a new hospital on the project site that has replaced the old Pioneer Mill structure. An area marked "residential" surrounds the hospital site and continues along the Front Street

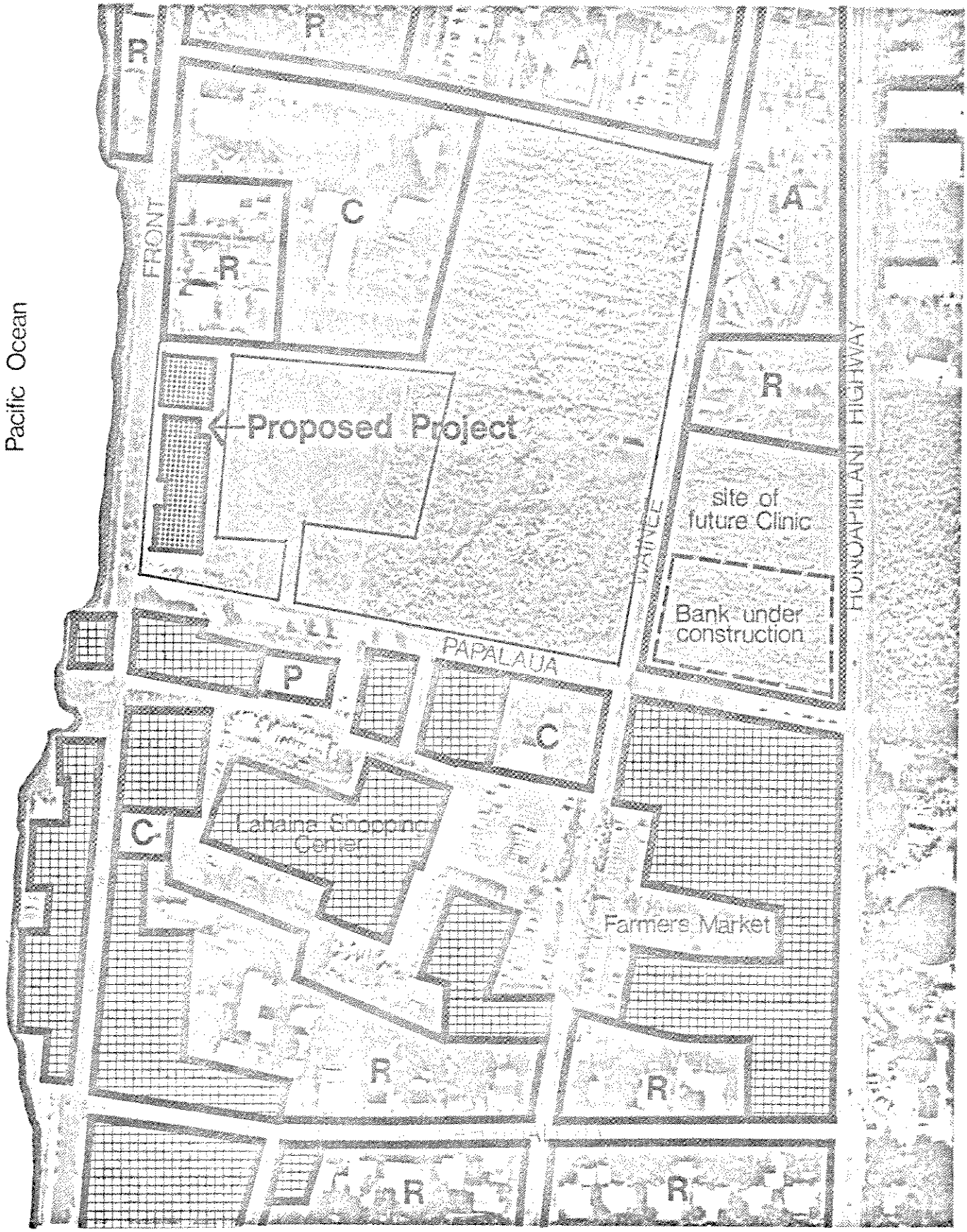
side of the block. A church is on the corner of Baker and Front Streets. The remaining top half of the block is shown as in agricultural use.

Because of the past usage of the site, as described above, it is felt that anything of archaeological significance would have been destroyed during the repeated clearing and construction states of past structures on the site.

Presently vacant, the site was not included in Historic District 1, which covers an area that contains historically significant sites and structures that are to be preserved and restored. It is included in Historic District 2, which was created to act as a buffer zone between District 1 and the rest of the town. According to these designations, therefore, the project site was not considered to contain anything of historical significance by the Plan for the Preservation and Restoration of Lahaina.

In addition, the vacant portions of the rest of the block were never intensively used and primarily remained as open space. It had been used agriculturally, however, and it is felt that during this usage, anything of archaeological significance would have been discovered or destroyed.

An evaluation of the proposed site, therefore, reveals that the proposed project will not endanger anything archaeologically or historically significant. If, however, during the course of project development, archaeological artifacts are discovered, the developer will immediately contact the State Historic Preservation Officer, who will recommend a course of action.



Existing and Proposed Development

▦ - Business **C** - Church **R** - Residential
P - Public **A** - Apartment

figure **3-1**

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii

SECTION 4

RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

The project development consists of two areas: a building site, and a parking area. In this section, the term "project site" will refer to the building site and parking area. The term "project parcel" will refer to the 11.761 acre parcel of which the "project site" is a portion.

I. APPLICABLE LAND USE CONTROLS FOR THE PROJECT DEVELOPMENT

Federal. The site lies within the boundaries of the "Lahaina National Historic Landmark" as established on September 16, 1974. This designation contains no land use controls.

State. The site is designated for urban use. As such, the proposed action is a permitted use.

County. The building area of the project site is zoned Historic District, and lies within Historic District 2, under the General Plan for the Lahaina District, as shown in Figure 4-1. The proposed action is a permitted use under this zoning classification. The parking area of the development is not included in the Historic District and is zoned H-1, low-density hotel, under which parking is a permitted use.

II. BACKGROUND OF EXISTING LAND USE PLANS

A. General Plan for the Lahaina District. This plan governs the use of the proposed site. The plan proposed the project site to be part of a hotel complex which included the entire 11.761 project parcel. This use was proposed with the intent of generating activity within the town's central area, which consists of the Front Street area, from Papalaua Street to an area between Prison and Shaw Streets.

The plan also designated the building site as a portion of Historic District 2, which was established with the intent of providing a protection zone between Historic District 1 and the rest of the town. The parking area, as well as the rest of the project parcel,lies within the boundaries of the Special Treatment District that was created to ensure that all development abutting the two Historic Districts would be compatible with, and complementary to the overall environment Lahaina was trying to achieve.

The General Plan emphasized the importance of attracting tourist and tourist-related activities to Lahaina. It therefore expanded commercial land use within the town core. It also sought to enhance the "historic" atmosphere of the town by emphasizing pedestrian, as opposed to vehicular use of Front Street, and by the use of urban design controls.

B. Lahaina Community Development Plan. The Lahaina Community Development Plan, prepared in 1973, elaborated on the land use policies established in the General Plan. The Development Plan emphasized pedestrian as opposed to vehicular usage of Front Street, and sought to alleviate Front Street traffic congesion through the provision of off-street parking facilities. It recommended that parking be located on the interiors of the town's core blocks with access from side streets. The Development Plan also incorporated Historic Districts 1 and 2, and further defined the boundaries of the Special Treatment District.

Under the Development Plan, the building site remains in Historic District 2. The parking area and the rest of the parcel are in the Special Treatment District. The Development Plan proposed an open space use for the Historic District portion of the project site. This change was intended as a complementary use to the adjacent proposed hotel development and included a bus turnaround to accomodate tour buses arriving in Lahaina for hotel drop-offs and for visitor sightseeing.

III. PROPOSED PARCEL DEVELOPMENT

The proposed development would alter the building site designation from hotel to commercial. There are no plans to change the designated use (hotel) of the remaining project parcel. The proposed project development would involve a portion of the hotel-designated acreage as a

community parking facility for both the development and surrounding establishments. This would be a permitted use within the hotel designation and its present H-1 zoning.

The remaining hotel area of the parcel could be developed under the proposed General Plan use to provide an estimated 300 to 500 hotel rooms. The parcel, if so developed, is not anticipated to strain the existing infrastructure, as utilities, roads, and access are considered adequate to meet the hotel development's needs. Such future development will provide parking as required under the H-1 zoning classification.

IV. RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS FOR THE AREA

The proposed action will fulfill the same site function intended by the General Plan under hotel usage: The generation of activity within the central part of town. In addition, the proposed action will fulfill the general goals established for the Front Street area under the General Plan: It will emphasize pedestrian activity along Front Street and maintain and enhance the historic character of Front Street through its architectural design and scale.

The proposed development will generate activity by drawing residents and visitors to both its shopping complex and to its parking facility. The provision of parking off Papalaua Street will help alleviate a critical parking need in Lahaina town. It is anticipated that visitors

and residents of Lahaina will be encouraged to leave their vehicles in the parking area and accomplish shopping errands or sightseeing along Front Street on foot.

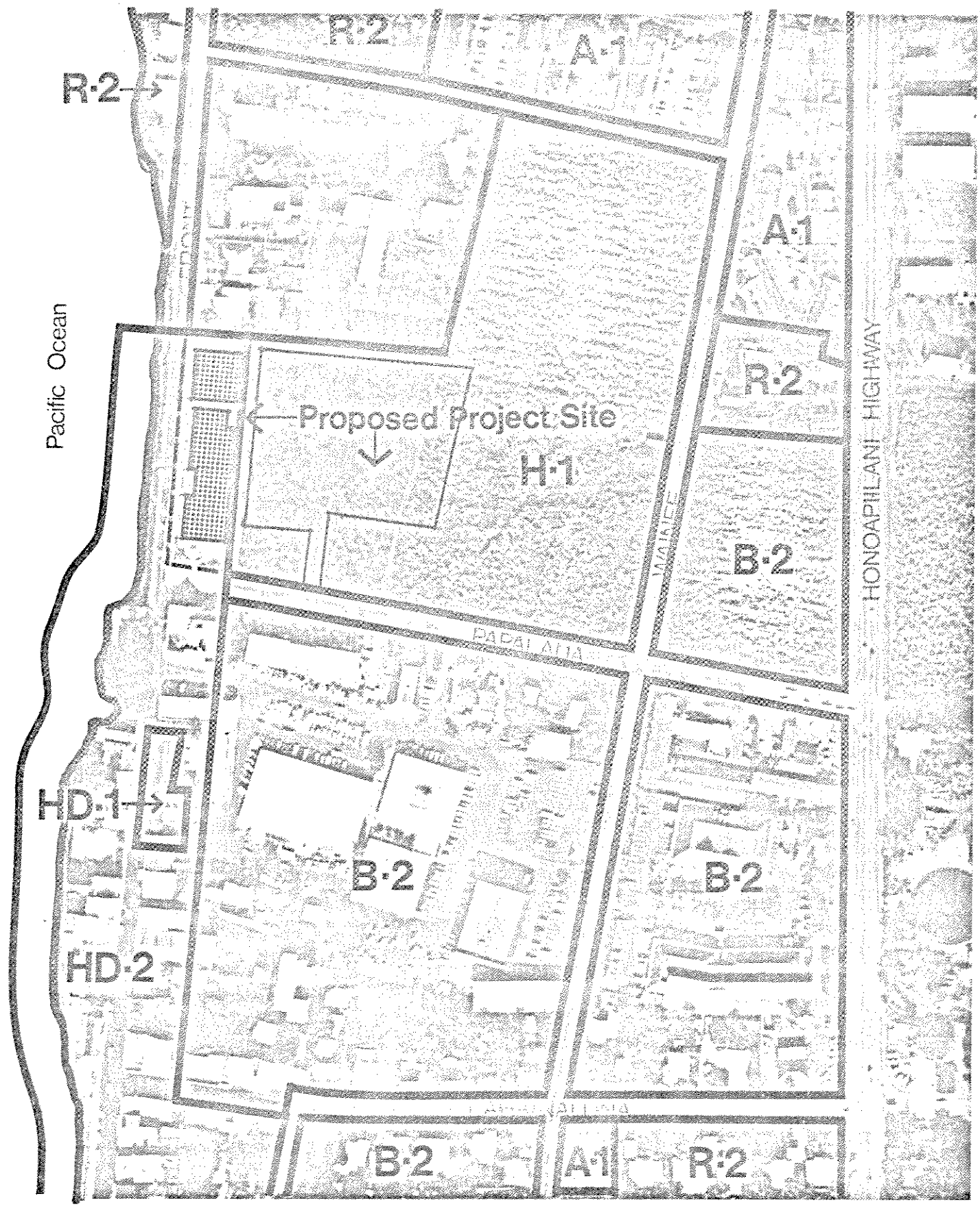
In addition, the provision of tour bus parking and loading points will also help to alleviate Front Street traffic as well as to disseminate pedestrian activity. It is anticipated that visitors disembarking from this point will visit the commercial plaza, then continue along Front Street to visit shopping establishments and places of historic interest.

The parking area will divert traffic from Front Street, making it more attractive visually and functionally, and will promote pedestrian activity within the central town area. The development will also extend the linear shopping character of Front Street both in terms of use and urban design. The design of the proposed plaza will be in architectural harmony with existing commercial structures on Front Street, and its ample, covered sidewalks will invite pedestrian use.

The proposed commercial usage of the site is in consonance with the growth and development of the commercial core of Lahaina and its movement northward. Commercial activity within the town is presently concentrated in the block opposite the project block, on Front and Papalaua Streets. This area now forms the main shopping area for residents of the Lahaina District.

The economic significance of this northerly portion of the town has been recognized in proposals to construct other commercial and service establishments in sites near the proposed project site. Thus a bank, post office, and medical complex have all been proposed for various sites opposite and around the block of the project site, as shown in Figure 3-1.

If coordinated properly, development in this section of Lahaina will increase the goods and services offered to residents and visitors to the Lahaina District, as well as enhancing the character and charm of the town itself.



Current Zoning

A - Apartment
B - Business
R - Residential
HD-1 - Historic District 1
H-1 - Hotel
HD-2 - Historic District 2

figure **4-1**

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii

SECTION 5

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATIVE MEASURES TAKEN TO MINIMIZE ADVERSE IMPACTS

I. AIR QUALITY

Short-term impacts. During project site development and construction activities, dust and emissions will be generated by construction operations and vehicles. These impacts will be temporary, limited to the duration of the construction phase which is anticipated to last 10 to 12 months.

The adverse impact of dust and emissions is not anticipated to cause a problem. Prevailing winds will disperse and dilute any emission concentration that may occur in the direction of abandoned cane fields located above the project, although emissions from construction vehicles are not anticipated to exceed safe levels at any time. The contractor will be responsible for the proper maintenance of all construction equipment, which will minimize pollutants from internal combustion engines.

Dust levels will be controlled through the use of temporary sprinkler systems and/or water wagons. The parking area, which will extend over the unpaved, dust-generating area presently used for parking off Papalaua Street, will be graded and immediately surfaced to further reduce the area which may generate dust.

Long-term impacts. The only significant source of air pollution anticipated from the project is from the cars using the parking lot. Pollutants from cars, however, should not present a problem, based on the following:

a. State and Federal Regulations regarding emissions from internal combustion engines should maintain the existing excellent ambient air quality and prevent further degradation even with the projected increase in cars in the Lahaina district.

b. Two pollutants from internal combustion engines, carbon monoxide and hydrocarbons, have been evaluated for the project area. The conclusion as seen in Table 5-1 indicates that the number of cars to be attracted to the project's parking lot over a 24 hour period will not exceed the State's ambient air standards.

II. NOISE

Short-term impacts. Noise will be generated by the operation of general construction equipment during site development and construction and by vehicular traffic necessary for construction activities. Construction noise will create a short-term nuisance that will be mitigated by limiting the hours of construction to

7:00 a.m. to 4:00 p.m., five days a week. In addition, the contractor will ensure that all mufflers on construction equipment are functional and properly maintained.

Long-term impacts. Noise generated by the commercial activities during operation is anticipated to range from 50-65 dBA. Noise levels from similar commercial centers have not caused undue hardship to surrounding areas. Refer to Appendix 1 for additional information. Noise levels from the commercial center will be minimized by:

1. Soundproofing or enclosure of any machinery that may generate excessive noise; and
2. Careful design of the structure to minimize noise from various activities.

III. VEGETATION

Short-term impacts. Existing scrub vegetation will be removed from the site during clearing and grading activities. The removal of this vegetation will remove the habitat of existing wildlife on the site. In addition, several of the coconut trees on the site will also require removal. These trees will be transplanted to other areas of the site.

Long-term impacts. The proposed project will preserve the existing monkey-pod tree and as many coconut trees as possible. It is anticipated that the

preservation of existing trees and the addition of landscaping around the plaza and parking area will enhance the aesthetic value of the area and provide a beneficial visual impact. Review and approval of the landscaping plans by the County will ensure visual quality, and the installation of a sprinkler system will facilitate maintenance of green areas.

IV. WILDLIFE

Short-term impacts. Clearing and grading activities will remove the existing vegetation which provides a habitat for mice, rats, exotic birds (introduced) and mongoose. All animals will be able to migrate from the project site and relocate in surrounding areas. These animals are not considered rare or endangered and typical populations can be found in surrounding areas.

Long-term impacts. The removal of part of the feeding area for exotic birds (introduced) is not anticipated to create a significant impact on the existing bird population. Provisions for bird feeding and watering areas will encourage the bird life to remain in the project location and will augment and improve the feeding area removed by the project.

V. UTILITIES

A. Electricity

Short-term impacts. Electrical power is required during the construction phase of the project. Temporary power lines will be installed, and no adverse environmental impacts are anticipated.

Long-term impacts. Electrical power for the operation of the commercial complex is required. Adequate power supply is available and has been confirmed by Donald Chai of Maui Electric.

B. Gas

Short-term impacts. No impacts are anticipated.

Long-term impacts. An adequate supply of L.P. gas is available from a three-inch high pressure main along Papalaua Street. Jerome Sano, Gasco, confirmed that supply was adequate to meet the needs of the commercial complex.

C. Water

Short-term impacts. Water will be required during the construction phase for dust control. The use of water for dust control is desirable and should not have an adverse environmental impact.

Long-term impacts. The amount of water required for the operation of the commercial center is not known. The developer will be required to install a 12"

water line to provide additional pressures for fire protection. No serious impact on the existing water supply for the Lahaina District is anticipated at this time. Table 5-2 presents Lahaina water consumption from 1964 to 1974.

D. Sewage

Short-term impacts. No environmental impacts on existing sewage systems will occur during construction. Portable chemical toilets will be used for sewage disposal.

Long-term impacts. The County of Maui operates the sewage collection and disposal system for the Lahaina District. Sewage is collected through an existing 8-inch gravity line located off Papalaua Street. This system is adequate to handle the project's needs. Sewage disposal occurs through an ocean outfall located off Ala Moana Street. No treatment is provided, although the County has plans for the construction of a waste water treatment plant which will eliminate the present raw sewage discharge.

Until the treatment plant is constructed, the sewage from the project will contribute to minor pollution of the offshore waters.

E. Storm Water Drainage

Short-term impacts. No special provisions will be required for drainage during construction. However, special provisions for siltation may have to be implemented. The contractor will be responsible for installation of berms and/or silting basins, if required by the County, to prevent siltation of the near shore waters. The alternative of immediate construction of the parking lot and landscaping after grading will also prevent siltation.

Long-term impacts. The beach fronting the culvert mouth is rocky and storm water flows have not altered the shoreline. The beach area, therefore, is not used for water contact activities due to the absence of a sandy beach, traffic on Front Street, and a three-foot stone wall.

The existing 30" storm culvert on Papalaua Street is capable of handling the existing (9.04 cfs) and projected flows (14.88 cfs). The entire 11.761 acre parcel when fully developed will require another storm culvert to handle the projected flows of 30.57 cfs. The existing discharge (9.04 cfs) has not adversely affected recreational use of the waters, caused beach erosion, nor significantly degraded the water quality, and the increased flow of 14.88 cfs will not significantly alter the existing conditions.

VI. PUBLIC SERVICES

A. POLICE PROTECTION

Short-term impacts. No additional demand for police protection is anticipated during the construction phase.

Long-term impact. The project is located within the beat route of the Lahaina Police, and should not create additional demands for police protection. If additional security is required, private security guards can be provided by the owner.

B. FIRE PROTECTION

Short-term impacts. No additional demand for fire protection is anticipated during the construction phase.

Long-term impacts. The County of Maui provides fire protection for the Lahaina District and the project will have an impact on the existing services. In order to minimize fire hazard, the developer will install additional fire hydrants, as required, and provide interior sprinkler systems for the building.

C. REFUSE COLLECTION

Short-term impacts. The clearing of the project site will generate organic matter which will be disposed of by the contractor at the County-operated sanitary landfill site located four miles from Lahaina. No significant environmental impacts are anticipated from the disposal of the predominantly organic matter.

Long-term impacts. The commercial center will generate solid waste, but the collection and disposal of the solid waste are not anticipated to present serious problems. Two options are available for solid waste disposal: contracting with a private refuse disposal company or utilization of County services. It is anticipated that the former will be utilized by the tenants of the proposed project.

Presently, there are 172 businesses and governmental accounts in the Lahaina area generating approximately 150 tons of refuse per week. The amount of refuse to be generated from the proposed project is not known at the present time. However, it is not anticipated that the additional solid waste generated will significantly tax the existing services nor the sanitary landfill activities.

Also, the type of solid waste generated is not classified as hazardous or toxic and will not require special disposal procedures or problems.

VII. TRAFFIC AND PARKING

Short-term impacts. The proposed project will not substantially affect the traffic situation in Lahaina town during short-term construction activities, since the number of vehicles associated with the project will not be great and a constant traffic flow to and from the site is not anticipated. On-site parking for construction vehicles will help to alleviate the burden on existing parking facilities.

Long-term impacts. The traffic situation in Lahaina town is a problem, with congestion compounded by the lack of adequate off-street parking facilities. The proposed project may increase the number of cars arriving in Lahaina town and may thus contribute to traffic congestion.

In order to alleviate traffic congestion, the proposed project will provide approximately 262 parking spaces for cars, and six parking spaces for buses, with access to the parking area from Papalaua Street.

The parking will substantially increase the existing parking stock of Lahaina town, and thereby relieve some of the street congestion, particularly on Front Street. It is anticipated that vehicles arriving

from points outside of Lahaina will use Wainee Street and the Honopiilani highway as access routes to the parking area, and thereby avoid the traffic situation and lack of parking facilities in the Front Street core area. Residents of Lahaina, who heavily utilize the block opposite the project block, across Papalaua Street, will be provided with supplemental parking close to their activities.

The proposed project's impact on traffic parking, then, will be beneficial. Although the development may increase the number of vehicles in Lahaina and increase usage of Papalaua Street, it will provide additional off-street parking area for both cars and buses, thereby diverting traffic from Front Street and easing traffic congestion.

VIII. FLOOD-TSUNAMI ZONES

The proposed project is located near the south-western edge of the 100 year flood boundary of Kahoma Stream and within the Tsunami innundation limit. The project's impact on flood hazard is anticipated to be minimal, as there has been no serious incidence of flooding on the project site. During the October 31 to November 3, 1961 cyclonic storm, considered by many as the worst of the past 15 floods, the Lahaina area suffered over $1.5 million in flood damage from Kahoma Stream overtopping. The flood waters did not cause erosion or serious flooding of the project site.

However, the project site may by affected by the occurrence of a 100 year flood. It is estimated, under the present situation, that the project site may be covered with two to three feet of water. This is not considered a critical danger due to:

1. The Kahoma Stream Flood Control Project, planned by the Army Corps of Engineers, which will mitigate flood problems in the area;

2. The limited likelihood of a 100-year flood occurring before Kahoma Stream channel improvements are completed.

The project will be impacted by tsunami innundation, as will most of Lahaina town, as the tsunami limit is defined by a line parallel to and mauka of Honoapiilani Highway. The developer accepts all risks attendant with development in the tsunami zone, and has not incorporated tsunami design considerations in the project structure. Flood-tsunami resistant design will be difficult to incorporate because of the Historic District design criteria which limits building heights to two stories.

IX. SOCIAL IMPACTS

Short-term impacts. It is anticipated that the proposed project will reduce the number and incidence of parking violations and citations, thereby reducing, in part, the workload of police officers, and facilitating their concentration on other areas of law enforcement.

Long-term impacts. An analysis of the long-term social impact of the project on Lahaina town is difficult to quantify at the present time. As the project is part of the economic development of Lahaina, the project may be said to contribute to the long-term social impacts associated with commercial development. The project is only a small portion of such development, however, so any social impacts that may be generated by the proposed project will be minimal in nature. The following general comments can be made:

A. The proposed development will not substantially affect the existing life-style of community residents. It may, however, provide for greater resident-visitor interface, as the project is anticipated to attract both residents of and visitors to Lahaina. It will not change the social situation in Lahaina beyond that which was anticipated in the General Plan under the proposed hotel usage of the site.

B. The project, itself, is not anticipated to stimulate any increase in population in Lahaina. As part of the overall economic development of Lahaina, however, it will contribute to increased employment opportunities and may thus contribute to an increase in population. Projected population increases occurring as a result of hotel and visitor-support industry expansion have been presented in Section 1.

C. The proposed project will provide an increase in the number of goods and services offered to Lahaina residents, thereby increasing the choice and range of shopping activities for residents. This increase may also stimulate existing commercial establishments to upgrade their standards and services, which will further benefit the Lahaina shopper.

D. The project will not adversely affect existing community facilities such as nursing homes, hospitals, or schools, and will not require the relocation of any homes or public facilities.

E. The project will increase the demand for public services and utilities, as has been discussed in V. and VI. of this section.

X. ECONOMIC IMPACTS

Short-term impacts. Constuuction costs of the proposed project are estimated at $1.5 million, with construction length estimated at approximately one year. During this period, a short-term cash infusion is anticipated into Lahaina's economy, generated primarily by wages and salaries paid to construction workers. It is anticipated that most of the wages paid to construction workers from the Lahaina area will be reinjected into the economy of Lahaina town, with a smaller income flow from non-Lahaina based workers going into the Lahaina economy.

Long-term impacts. It is difficult to quantify the long-term impacts of the proposed project on Lahaina's economy. The general anticipated impact will be beneficial, since the proposed project will provide employment opportunities to community residents, will broaden the tax base of the town, and will increase total retail sales in Lahaina town.

It is anticipated that the addition of approximately 30 shops and 4 restaurants in a quality commercial plaza may stimulate existing commercial establishments to upgrade and expand their offering of goods and services for both visitor and resident.

It has not yet been determined what shops will lease space in the proposed plaza. It is difficult, therefore, to determine potential shopper characteristics, whether shoppers will be residents or visitors, and the extent to which shoppers will be drawn from existing establishments to the proposed development.

XI. OPEN SPACE

"Open space" is a term generally used to designate a landscape, natural or man-made, unoccupied by structures. It can fall within any of the following general catagories:

1. Areas of natural beauty;
2. Areas for the preservation of natural resources;
3. Areas reserved for resource production;
4. Areas reserved for recreational use;
5. Areas kept open in order to protect and promote public health and safety;
6. Areas not in current use.

Legislative support for open space is found in Act 247, SLH 1974, Section 4, Item (d) Parks, Recreation, and Open Space, which encourages the promotion of open space "...in view of its natural beauty and as an enobling, living environment for the residents of a community."

Impact of Existing Site Use.

The project site is currently unused except for unauthorized parking, and may be considered as open space within the developed Lahaina business core. The site is littered, overgrown with scrub vegetation, and except for several large coconut trees, its condition cannot be said to contribute to the natural beauty of Lahaina.

Impact of Planned Site Use.

Under the advisory guidelines of the Lahaina Community Development Plan, the project site is proposed as O-1, Open Space. This usage provides for a vehicular turnaround and a passive recreational space. The vehicular turnaround was intended to facilitate guest arrivals at a planned hotel development adjacent to the project site. Because of size constraints, the recreational space would be for passive activities and would primarily cater to the downtown pedestrian shopper as a convenient place to rest and relax. "Active" recreational areas for the Lahaina resident are numerous, and are presented in Table 5-3.

The impact of the Development Plan use would be primarily visual, since recreational usage of the site would be limited. Visually, the site would provide a maintained, natural green area, visible from a one-

block distance on either side of the site along Front Street. The green area would also be visible along Papalaua Street, and possibly from Honoapiilani Highway, if the buildings of the proposed hotel development adjacent to the site did not completely obscure it.

Under the land use controls of the Lahaina General Plan, the site is designated as H-1, low-density hotel. This use of the site would remove the existing open space and replace it with building coverage. It is anticipated that hotel use would generally remove the site from the use of the general public.

Proposed Use Impact

The implementation of this or any similar project on the existing site would convert presently unused open space to useable open space. Under the proposed project, most of the converted open space would be pedestrian-oriented and would create new spaces for "side-walk socializing" where none now exist. Passive recreational uses would be further accomodated by the development of a "mini-park" adjacent to the building complex. Sitting areas would also be provided within the complex itself. As the success of a commercial development of this type is attendent

on public usage, every attempt will be made to encourage and accommodate public usage of the site and its facilities.

In addition to passive recreational activities, the proposed development will also provide for vehicular usage. As in the Development Plan open space use, the project will provide bus loading and turnaround points, in addition to parking spaces in an area off Papalaua Street. The parking area will be attractively landscaped and provide a "contained" type of open space, shielded from street view by a green buffer strip along Papalaua Street.

As the proposed project development will provide for public recreational and vehicular use, as provided under the Development Plan open space designation, the primary impact of the proposed site use will be visual. Visually, the proposed development will be in consonance with the architectural character of Lahaina, particularly along Front Street. Materials designated for the buildings, architectural detailing, and building scale are in harmony with the existing buildings on Front Street. The proposed plaza will extend the linear shopping characterof Front Street, and ample sidewalks and the roof overhang of the plaza buildings will be both attractive and promote

pedestrian use along Front Street.

The project buildings have been sited in accordance with open space considerations. The buildings have been recessed off Papalaua Street to increase the area available for landscaping. The site's most positive visual element, the coconut trees, will remain in place when possible to preserve this natural site asset.

The project will, however, alter existing views. Views from Front Street to the West Maui mountains will be obstructed in the area directly makai of the proposed structures. It should be noted that the development of any structures on this site, on the project block, or on blocks mauka of the project block, would also obscure this view. The Papalaua view corridor, however, will be retained and remain intact, as shown in Figures 5-1 to 5-2.

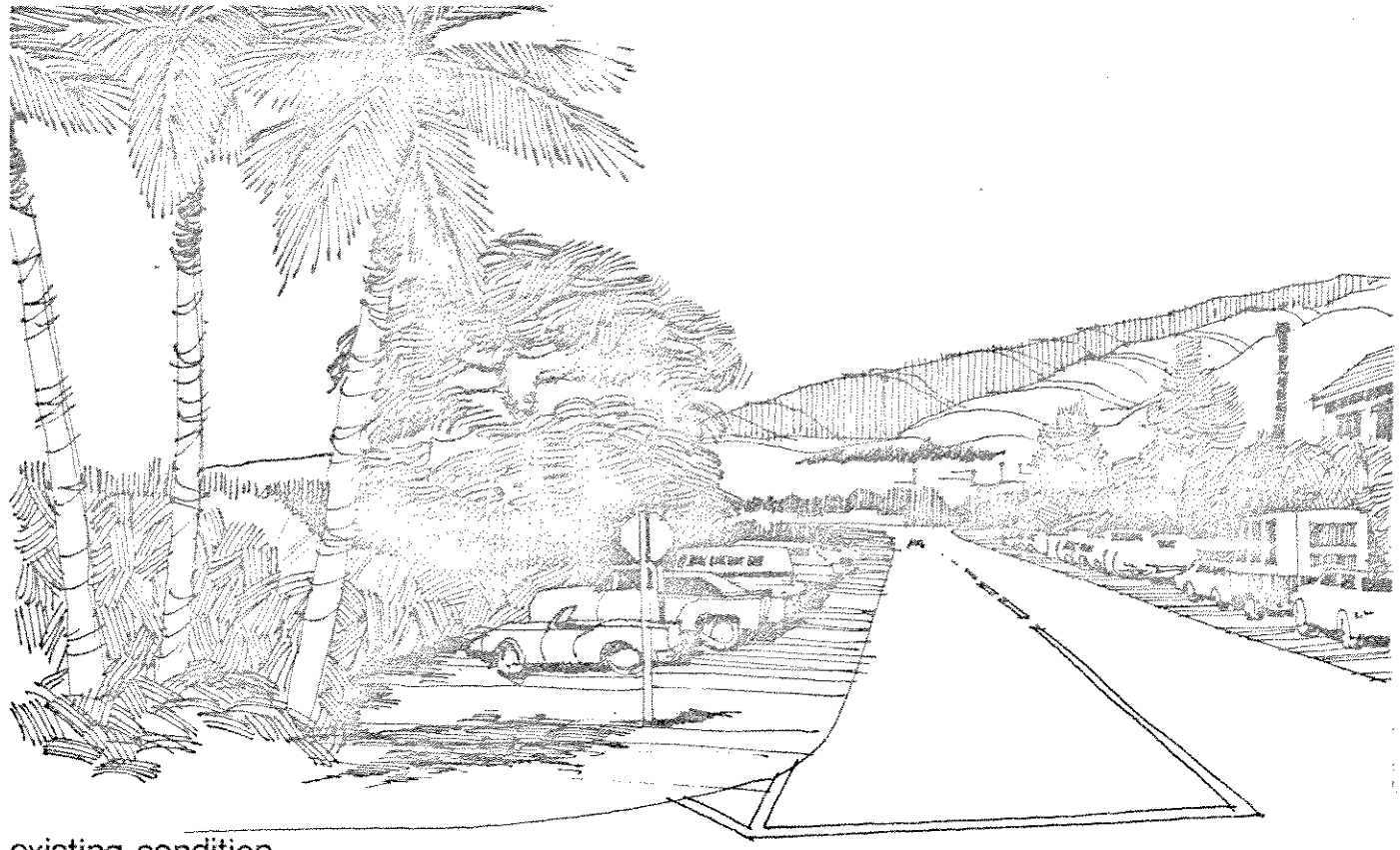
The proposed project, therefore, will not impact open space usage as delineated in the Community Development Plan. The proposed commercial use will provide for Development Plan uses and will encourage general public use of the site. The proposed project will convert presently unused open space into usable, maintained space and facilities. It will offer a visual alternative to developed open space

that may be said to contribute equally to, if in a different manner, to thecharm and beauty of Lahaina town.

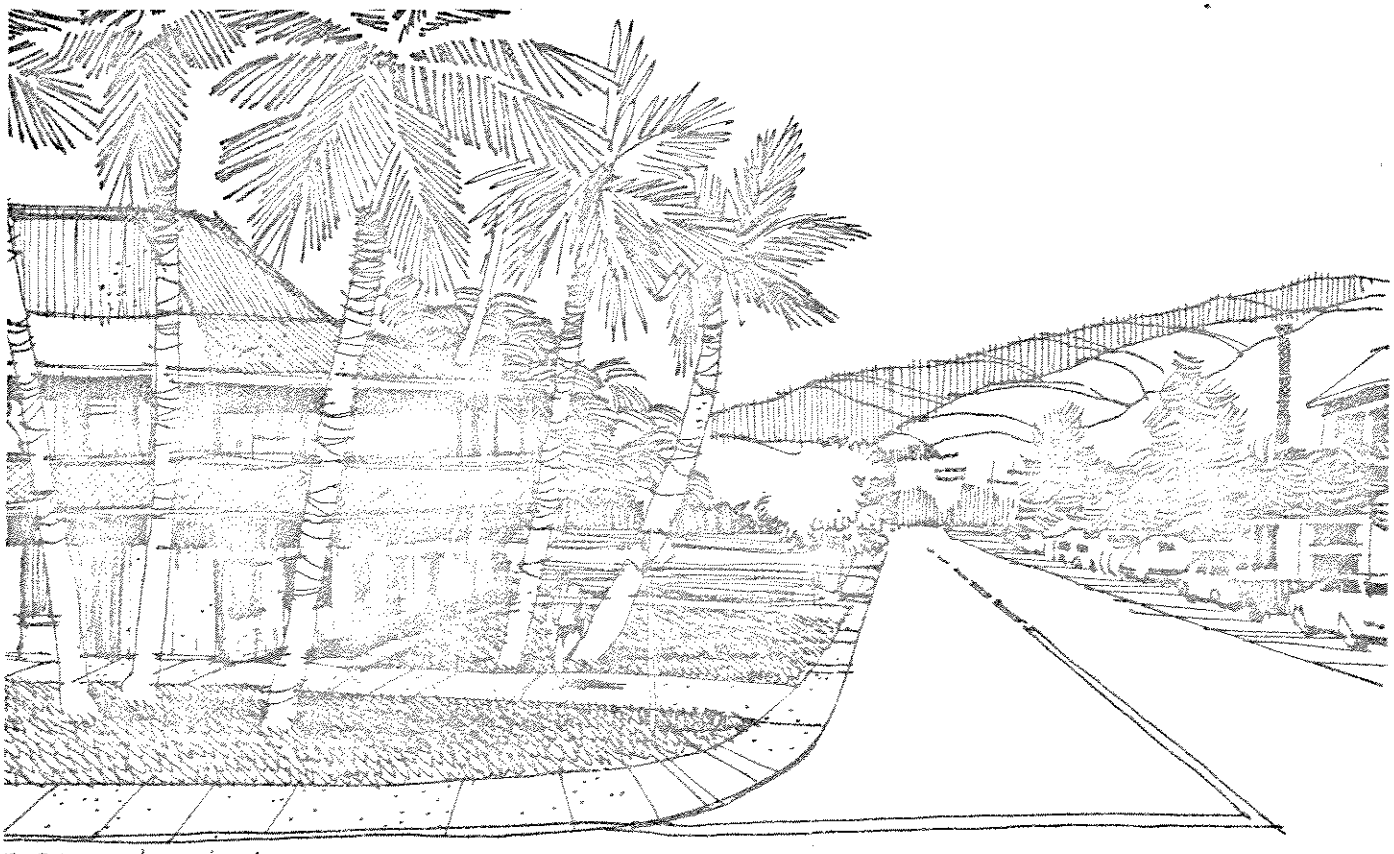
XII. AESTHETIC CONSIDERATIONS

The proposed plaza has been designed to evoke an "old Lahaina" atmosphere, combining Polynesian-inspired pitched roofs with two-storied, balconied buildings that resemble the "old West" type of architecture prevalent in Lahaina during the late 1800's and early 1900's. The simple design and low-profile, the extensive use of wood, the balcony overhang above the sidewalks, the open veranda effect of the structures and the architectural detailing on the building facades are in harmony with the scale and architecture of the existing buildings along Front Street.

The plaza illustrates the design concept of "containment" as described in the urban design section of the Lahaina General Plan. The plaza structures contain and shield the development's open parking area from view. The linear shopping character of Front Street is thus emphasized, while necessary parking spaces are hidden behind the plaza buildings and accessible only from Papalaua Street. The Front Street shopping area is thereby emphasized for pedestrian use with vehicles relegated to side street use.



existing condition

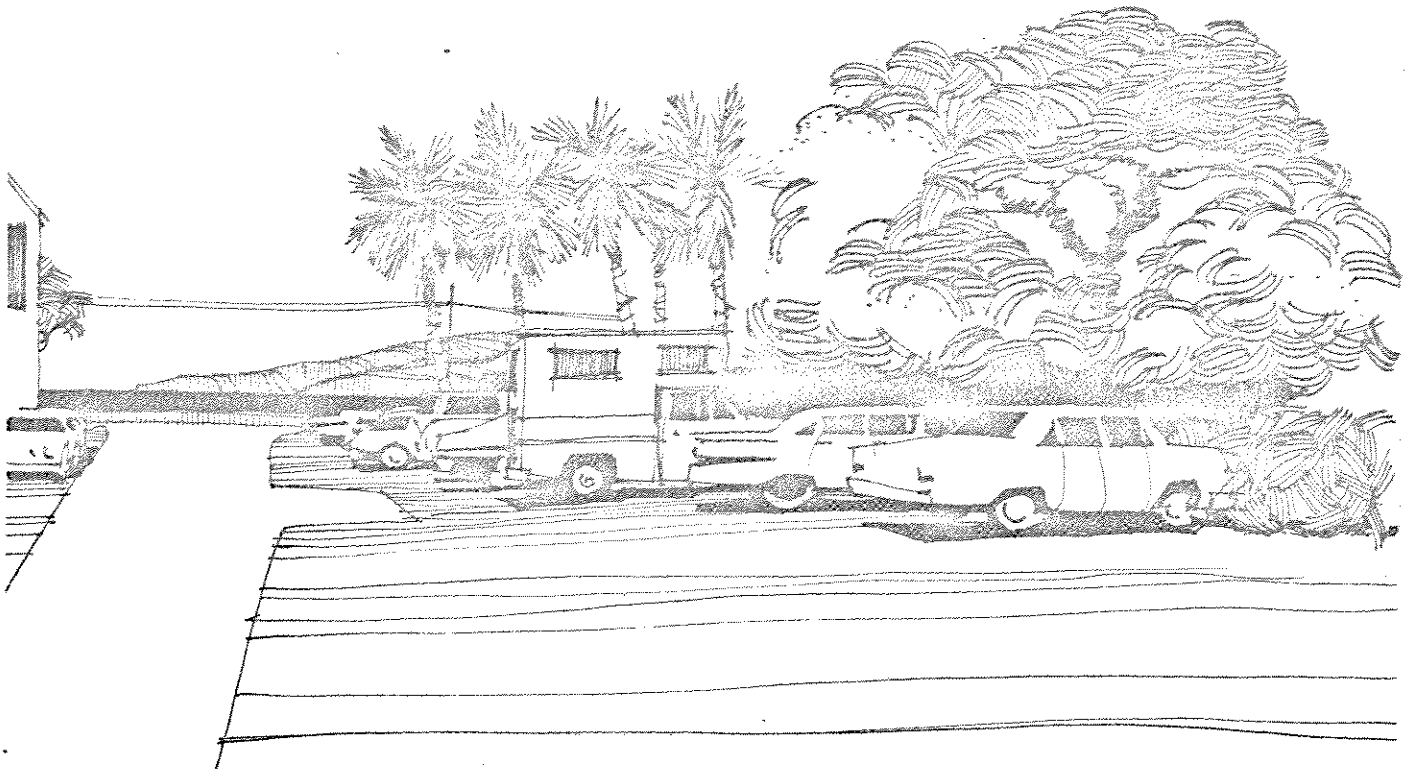


proposed project

View A · PAPALAUA ST. MAUKA

figure 5-1

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii



existing condition

proposed project

View 'B' · PAPALAUA ST. MAKAI

figure 5-2

LAHAINA PLAZA E.I.S.
Lahaina Maui Hawaii

TABLE 5-1

Pollutant	State Ambient Air Standards	Estimated Emissions				
		300ADT	600ADT	900ADT	1200ADT	1500ADT
Carbon Monoxide	5000 Ug/m^3 8 hr. period	125Ug/m^3	250Ug/m^3	385Ug/m^3	500Ug/m^3	625Ug/m^3
Hydrocarbons	100 Ug/m^3 3 hr. period	.009Ug/m^3	.018Ug/m^3	.027Ug/m^3	.036Ug/m^3	.045Ug/m^3

ADT=Average Daily Traffic

Assumptions

1. Volume of air mass of 11 acres , 15 ft. high = 203,527.5 M^3
2. Assume average speed of 20 mph and distance of 1 mile.
3. Assume majority of vehicles - pre 1966 models without emmission control devices.
4. Assume no air mixing by tradewinds or by moving vehicles.

TABLE 5-2

LAHAINA
WATER CONSUMPTION

YEAR	1,000 Gallons
1974	363,745
1973	433,986
1972	377,516
1971	330,283
1970	298,865
1969	250,759
1968	220,760
1967	196,470
1966	176,951
1965	161,289
1964	168,631

TABLE 5-3

STATE AND COUNTY RECREATIONAL AREAS

WEST MAUI FACILITIES	ACRES	USE
D. T. Fleming Park	3.50	Beach and Picnic
Honokowai Beach Park	2.73	Beach and Picnic
Lahaina Civic Center	16.78	Conventions Concerts Basketball
Lahaina Courtyard	1.94	Historic-Open Space
Lahaina Old Prison	0.82	Historic-Stageshows Basketball
Malu-ulu-olele Park	7.59	Ball Park, Basketball Tennis
Paunau Park	0.35	Playground
Puamana Park	1.42	Picnic
Ukumehame Park	3.75	Picnic
Wahikuli Park	2.21	Playground
Wahikuli Terrace Park	2.25	Playground
Launiupoko State Wayside Park	4.0	Picnic and fishing
Wahikuli State Wayside Park	6.0	Picnic and swimming

SECTION 6

ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

I. SHORT-TERM. All short-term, adverse impacts that may be generated by the proposed project are associated with site development and construction activities. These include impacts on noise levels and air quality, and the removal of the existing wildlife habitat provided by site vegetation. Noise and ambient air quality impacts are not anticipated to be severe, and will be mitigated by actions discussed in Section 5, I and II. The removal of the wildlife habitat will occur during site clearing and grading. It is anticipated that such wildlife will move to other undeveloped areas of the project block.

II. LONG-TERM. The proposed project will convert open, unused space into a usable commercial shopping development. The existing open space character of the site will then be altered. This alteration may be adverse or beneficial, depending on subjective perspectives, and is further discussed in Section 5, XI.

The operation of the development will contribute to sewage discharge into off-shore waters. This pollution of off-shore waters by untreated sewage will continue until a proposed sewage treatment plant is constructed to abate such pollution.

SECTION 7

ALTERNATIVES TO THE PROPOSED ACTION

I. NO ACTION. If the proposed action is not implemented, the project site will continue to be vacant and unsightly, used as a depository for litter and for unauthorized, hazardous right angle parking off Papalaua Street. In addition, availability of parking spaces in Lahaina will continue to be severely limited, and traffic congestion on Front Street will continue unabated.

II. ALTERNATIVE DESIGN. Alternative designs for the proposed project are possible, but it is felt that the proposed project design is in harmony with the town's existing architectural character. The proposed design meets all of the historic district's architectural requirements, and it has been received favorably by the Maui Historic Commission during informal reviews.

III. ALTERNATIVE SITES. The developer owns the 11.761 acre parcel of which the proposed project site is a portion. Alternative sites for commercial development are possible on other portions of the site. The alternative sites, however, would not extend the commercial "spine" character of Front Street, and would thus not be so favorably located. The proposed site is a natural extension of the linear Front Street shopping area, and will attract pedestrian use. Commercial development on alternative sites may not be so readily accessible or apparent to the pedestrian, and

these other portions may thus be better suited to uses requiring a higher degree of privacy and seclusion, such as in a hotel development.

Since the developer owns no other land suited for commercial development within Lahaina town, other sites within Lahaina are precluded due to economic reasons.

SECTION 8

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed project site is currently vacant and unused, except for unauthorized parking off Papalaua Street. Covered with scrub vegetation and litter, the site may be considered as open space within the developed urban context of Lahaina.

The proposed site use will convert unused open space into usable space for shopping, parking and passive recreational activities. The existing 'open space' character of the site will thus be altered and replaced by an attractively landscaped, well-maintained commercial development, with a parking area available to Lahaina residents and visitors.

The commerical development of the site will preclude other potential site development. As discussed in previous sections, it is felt that the proposed commercial development will provide the highest and best use of the site.

SECTION 9

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The only resource that will be irreversibly and irretreivably committed will be that of energy, both in terms of labor and in terms of fuel and electrical power required during the construction and operation of the proposed facility. Land will be committed to the activities of the project for the duration of the project's amortization, but can be converted to other uses upon the expiration of this period. There will be no loss of any cultural or natural resources.

SECTION 10

ORGANIZATIONS AND PERSONS CONSULTED

Federal Government

U.S. Army Corps of Engineers,
Honolulu District

State of Hawaii

Jane Silverman, Historic Preservation Officer
James Kumagai, Deputy Director, Department of Health
Larry Dunbar, Fire Marshal

County of Maui

Ralph Masuda, Planning Department
Wayne Uemae, Director, Public Works Department
Mrs. Nakasone, Administrator, Land Use and Codes Division
Shigeto Murayama, Director, Department of Water Supply
Ronald Mokugawa, Deputy Fire Marshal
Economic Coordinator
Lt. Honda, Police Department, Traffic
Abraham Aiona, Chief of Police
Edward Kaahui, Parks and Recreation
Ann Masuda, Commission on Aging
Winston Miyahira, Liquor Commission
Ken Kong and J. Souza, Public Works Department

Other

Lahaina Chamber of Commerce
Donald Chai, Maui Electric
Jerome Sano, Gasco
Ron Kawahara, C.P.A.

RONALD A. KAWAHARA
CERTIFIED PUBLIC ACCOUNTANT

204 LAHAINA SHOPPING CENTER
OFFICE BUILDING
LAHAINA, MAUI, HAWAII 96761
TELEPHONE (808) 661-4405

September 17, 1975

Dr. Miura
American Savings & Loan Bldg.
915 Fort Street, Suite 401
Honolulu, Hawaii 96813

Dear Dr. Miura:

Mr. William Wilmore of Global Contractors, has requested that I give you my candid opinion on the possible economic impact of Mr. Weinberg's commercial development on Front Street, adjacent to the present Lahaina Shopping Center. It is my opinion that development of this approximately 50,000 square feet of commercial space would be desirable. It is my understanding that this commercial development will provide for architectural design in conformance with the Historical Commission's standards, and that an excess of 200 parking stalls will be provided, although there is no legal requirement to do so.

I feel that the construction of additional commercial properties in Lahaina would provide for a greater base for attracting tourists from the outlaying areas. It is well recognized that the Lahaina economy depends on the tourist traffic. And that the tourist traffic, in turn, depends on the attractiveness of the town itself, in terms of architectural appeal, historical significance, and a wide variety of unique commercial shops offering a variety of goods and services.

If I can be of further assistance, please do not hesitate to contact me.

Yours very truly,

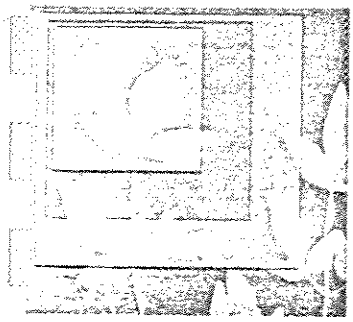
Ronald A. Kawahara

Ronald A. Kawahara

RAK:jp

cc: William Wilmore

BRANCH OFFICE: SUITE 300, THE KAHULUI BUILDING 33 LONO AVENUE KAHULUI, MAUI, HAWAII 96732 TELEPHONE (808) 877-7611



October 7, 1975

Mr. Ronald A. Kawahara
204 Lahaina Shopping Center
Office Building
Lahaina, Maui, Hawaii 96761

Dear Mr. Kawahara:

Thank you for your review of the proposed Lahaina Plaza Development. A copy of the Environmental Impact Statement for the project will be sent to you shortly for your further review.

Very truly yours,

Marvin T. Miura

Marvin T. Miura, Ph.D.
President

MTM:gc

ENVIRONMENT IMPACT STUDY CORP.
SUITE 401 AMERICAN SAVINGS & LOAN BLDG. / FINANCIAL PLAZA OF THE PACIFIC / 915 FORT STREET MALL / HONOLULU, HAWAII 96813 / TELEPHONE (808) 521-2567

COUNTY OF MAUI
PLANNING DEPARTMENT
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

September 24, 1975

Dr. Marvin Miura, PH.D.
President
Environmental Impact Study Corp.
Suite 401
American Savings & Loan Building
915 Fort Street Mall
Honolulu, Hawaii 96813

Dear Dr. Miura:

Re: E.I.S. - Lahaina Plaza Project,
TMK 4-5-02:portion of 9, Lahaina, Maui

In response to your recent communication, dated September 3, 1975, requesting comments relative to the Environmental Impact Statement Preparation Notice for the above project, please be advised as follows:

1. Planning Department: Enclosed herewith is a copy of the Assessment Report as prepared by the Planning Department staff which clearly defines the comments and concerns of this department.

2. Economic Coordinator: As also expressed in the enclosed Assessment Report, the project will have an economic impact on the community as follows:

a. There will be a positive impact through the creation of jobs during the construction phases and operational employment, following completion.

b. And, it is felt that the potential economic impact resulting from the addition of approximately 30 shops and 4 restaurants should be addressed in the E.I.S.

If additional information is required, please contact this office.

Very truly yours,

TOSHIO ISHIKAWA
Planning Director

Encl.

cc: R. Yasui
R. Masuda
C. Hart

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BLDG. 230, FT. SHAFTER
APO SAN FRANCISCO 96558

PODED-P

26 September 1975

Dr. Marvin Miura, President
Environmental Impact Study Corporation
915 Fort Street Mall, Suite 401
Honolulu, Hawaii 96813

Dear Dr. Miura:

Your 3 September 1975 request for comments on the Lahaina Plaza project has been reviewed, and the following comments are offered for consideration in preparation of the environmental impact statement.

a. The project site was evaluated with reference to the "Kahoma Stream Flood Hazard Area, Map FP-1," prepared by the Honolulu District, U.S. Army Corps of Engineers for the State of Hawaii Department of Land and Natural Resources. While it is true that the project lies on the shoreline (western) fringe of the flood plain, the southern limit of the 100-year flood plain extends about 1,700 feet beyond Lahainaluna Street.

b. The impact statement preparation notice appropriately addresses the need for evaluation of the project's impact upon the flood plain. Similar attention should be given to the effects of flooding upon the proposed project. Since the site is susceptible to flood damages, flood protection measures to minimize flood damages should be considered and discussed.

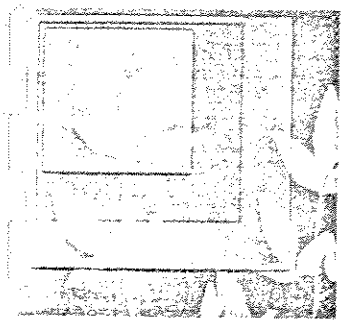
c. It is suggested that the comments on the determination that the project is within a "geographic region which is not critically susceptible to tsunami inundation" be referenced.

d. Although the site is privately owned, consideration should be given to a discussion of alternatives to the proposed action.

Thank you for the opportunity to comment on the preparation notice. We would appreciate a copy of the impact statement when it is available.

Sincerely yours,

KESSEL CHEUNG
Chief, Engineering Division



October 7, 1975

Mr. Kisuk Cheung, Chief
Engineering Division
U.S. Army Engineer District, Honolulu
Bldg. 230, Ft. Shafter
APO San Francisco, Calif. 96558

Dear Mr. Cheung:

Thank you for your comments on the proposed Lahaina Plaza project. We hope we have adequately addressed the concerns expressed in your letter. A copy of the Environmental Impact Statement will be sent to you shortly for your further review.

Very truly yours,

Marvin T. Miura

Marvin T. Miura, Ph.D.
President

MTM:gc

NVIRONMENT IMPACT STUDY CORP.
SUITE 401 AMERICAN SAVINGS & LOAN BLDG / FINANCIAL PLAZA OF THE PACIFIC / 915 FORT STREET MALL / HONOLULU, HAWAII 96813 / TELEPHONE (808) 521-2567

SECTION 11

LIST OF NECESSARY APPROVALS

AGENCY	ACTION	STATUS
Maui Historic Commission	E.I.S. Approval	E.I.S. Submitted Oct. 8, 1975 for approval
Land Use and Codes Administration, Department of Public Works, County of Maui	Building Permit Electrical Permit Grading Permit Driveway Permit	Subject to approval of E.I.S.

APPENDIX A

NOISE CHARACTERISTICS*

No data is available on the existing noise levels in the project area, however, sound levels in the project area can be assumed to be principally the result of vehicular traffic on adjacent streets, parking lots, and normal operations of the miscellaneous retail activities in the vicinity.

In everyday experience, the range of noises that one may hear range from a quiet whisper, to a noisy truck passing by. In a physical sense, the amount of acoustic energy present in the truck signal is perhaps one billion times the amount of energy in a whisper. Because of this large energy range, it is common practice to express noise levels using a logarithmic quantity known as the decibel, or dB. Using this type of scale, noise levels would typically range from 30 to 100 dB, in everyday life.

It has been found that the human ear is much more sensitive to high frequency sound than to sounds of low or middle frequency content. High pitched sounds are judged louder or noisier than low pitched sounds. In order to account for this characteristic of the human ear, sounds are usually measured using a sound level meter which has an A-weighted filter; this filter adjusts the frequency content of the sound in a manner corresponding to the way that the human ear listens to the sound. The resulting noise level is called the A-weighted noise level, and is expressed in units of dB(A). The A-weighted noise level is in widespread use throughout this country as a common measure of all types of noises found in typical communities.

When people listen to noises of different levels, they judge a difference of 10 dB between sounds as a factor of 2 in loudness. Thus, if two cars were to successively pass by a person on the street, and the second was 10 dB(A) louder than the first, the person would judge the second car twice as loud as the first. Every increment of 10 dB)A) in level corresponds to a factor of 2 in judged loudness or noisiness. Table A lists the A-weighted noise levels of many common everyday sounds. Note that the corresponding relative loudness of each of these sounds is also listed in the Table.

The A-weighted noise level, or A-level, is used to define the noise level in a community at any point in time. However, in order to define the daily noise environment, that is, the total exposure to noise existing for a full 24 hour period, one must obtain an average of the A-levels occurring each moment of the day, according to a special formula. This

*From the Environmental Impact Report for the Downtown Redevelopment Plan for Santa Monica, California, EDAW, Inc.

procedure will result in a number that is known as the Community Noise Equivalent Level, or CNEL. The CNEL is the average (on an energy basis) noise level for a 24-hour period, with different weightings for day, evening and nighttime periods; it is used in those standards as a measure of aircraft noise, but it may be applied as a measure of all noises in the community. In addition to the averaging that is explicit in the definition of this noise measure, the procedure for obtaining the CNEL value involves applying an adjustment to the noise levels measured during the evening and during the nighttime, to account for the increased sensitivity of people to noises in the evening and night.

If the noise level in a community does not vary very much over the course of a 24-hour period, the community noise equivalent level for that noise environment, because of the averaging procedure and application of evening and nighttime adjustments, results in a noise level that is approximately seven dB above the particular background level. On the other hand, if the noise environment at a certain location varies considerably during the day, because of intermittent vehicle passbys or aircraft flyovers, the CNEL would be a function of the number of different noise intrusions, as well as the magnitude of each intrusion. Examples of these concepts are shown in Graphs 1 and 2 which illustrates the meaning of the CNEL value for different types of noise environments.

The community noise equivalent level, as a measure of the 24-hour noise environment, can be applied to any noise source in the community. Thus, one may obtain separate CNEL values for the noise exposure resulting from surface transportation, as well as from aircraft operations or railway vehicles. The various CNEL values may be combined to give a total CNEL for that particular location of interest. This measure of the total noise exposure can then be related to noise criteria which define those land uses that are compatible with different ranges of CNEL values. Table A shows a land use compatibility chart for a wide range of typical land uses that may be found in the city. For a particular land use, the compatibility of that use with noise exposure is expressed in terms of four categories of acceptability. Listed in Table B are the interpretations that one can apply to these four acceptability categories.*

---

* Note that these four acceptability categories are those that are defined in the HUD policy circular 1390.2. However, the criteria given in that policy circular, which are in terms of maximum A-levels allowable for a certain portion of the day, are not the criteria that have been used in the Table.

TABLE A

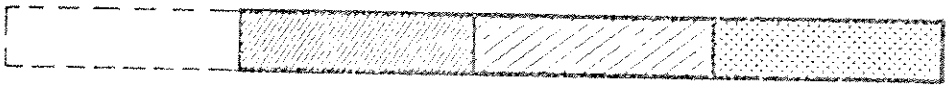
SOUND LEVELS OF COMMON SOUNDS

Sound	Sound Level dB(A)	Relative Loudness (Approximate)
Jet Plane, 100 Feet	130	128
Rock Music with Amplifier	120	64
Thunder, Danger of Permanent Hearing Loss	110	32
Boiler Shop, Power Mower	100	16
Orchestral Crescendo at 25 Feet, Noisy Kitchen	90	8
Busy Street	80	4
Interior of Department Store	70	2
Ordinary Conversation, 3 Feet away	60	1
Quiet Automobile at Low Speed	50	1/2
Average Office	40	1/4
City Residence	30	1/8
Quiet Country Residence	20	1/16
Rustle of Leaves	10	1/32
Threshold of Hearing	0	1/64

Source: Bolt, Beranek and Newman, Inc., 1974

TABLE B

LAND USE ACCEPTABILITY CLASSIFICATION



CLEARLY ACCEPTABLE | NORMALLY ACCEPTABLE | NORMALLY UNACCEPTABLE | CLEARLY UNACCEPTABLE

CLEARLY ACCEPTABLE:

The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

NORMALLY ACCEPTABLE:

The noise exposure is great enough to be of some concern, but common building constructions will make the indoor environment acceptable, even for sleeping quarters.
(Residential areas: the outdoor environment will be reasonably pleasant for recreation and play.)

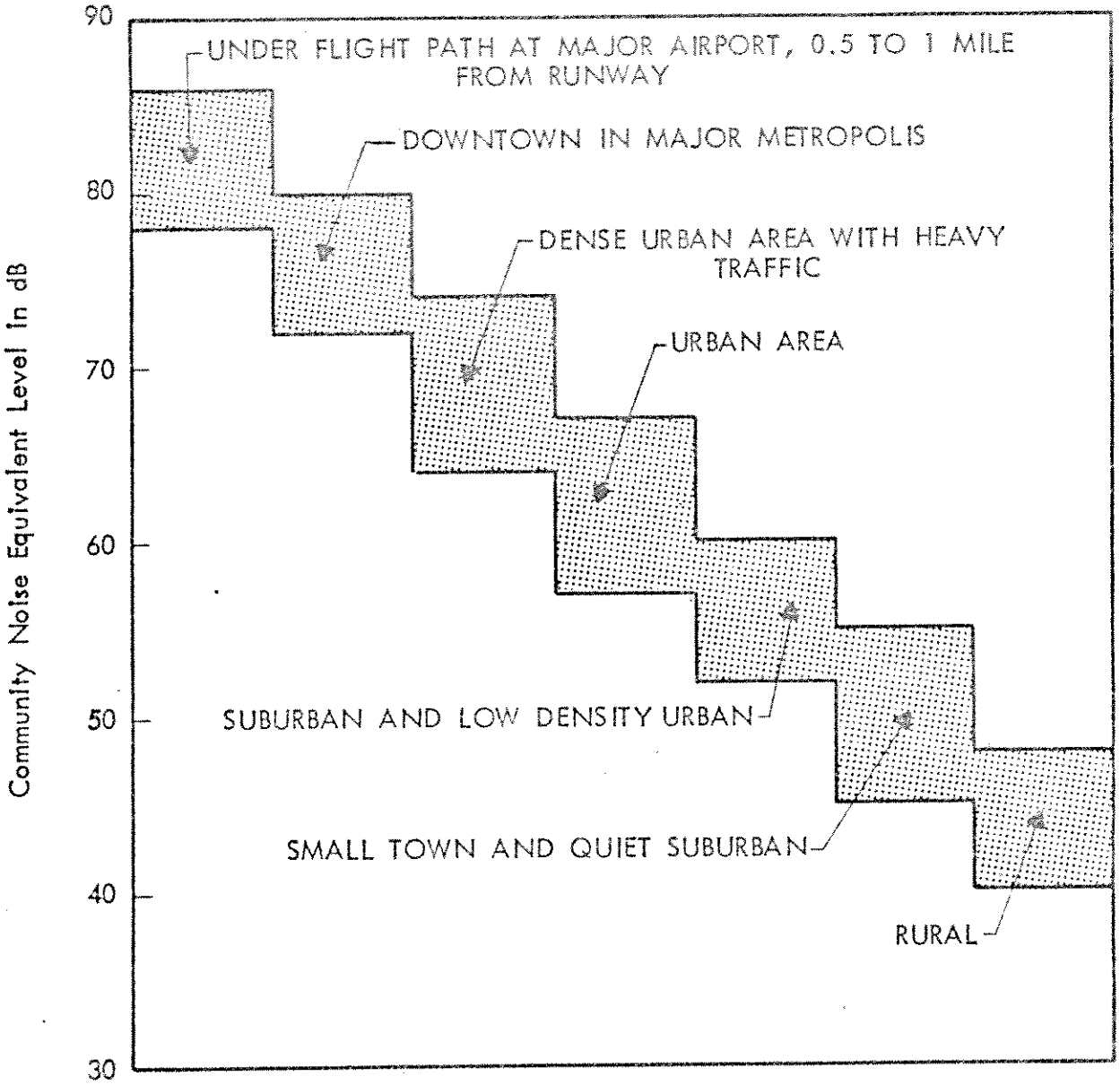
NORMALLY UNACCEPTABLE:

The noise exposure is significantly more severe so that unusual and costly building constructions are necessary to ensure adequate performance of activities.
(Residential areas: barriers must be erected between the site and prominent noise sources to make the outddor environment tolerable.)

CLEARLY UNACCEPTABLE:

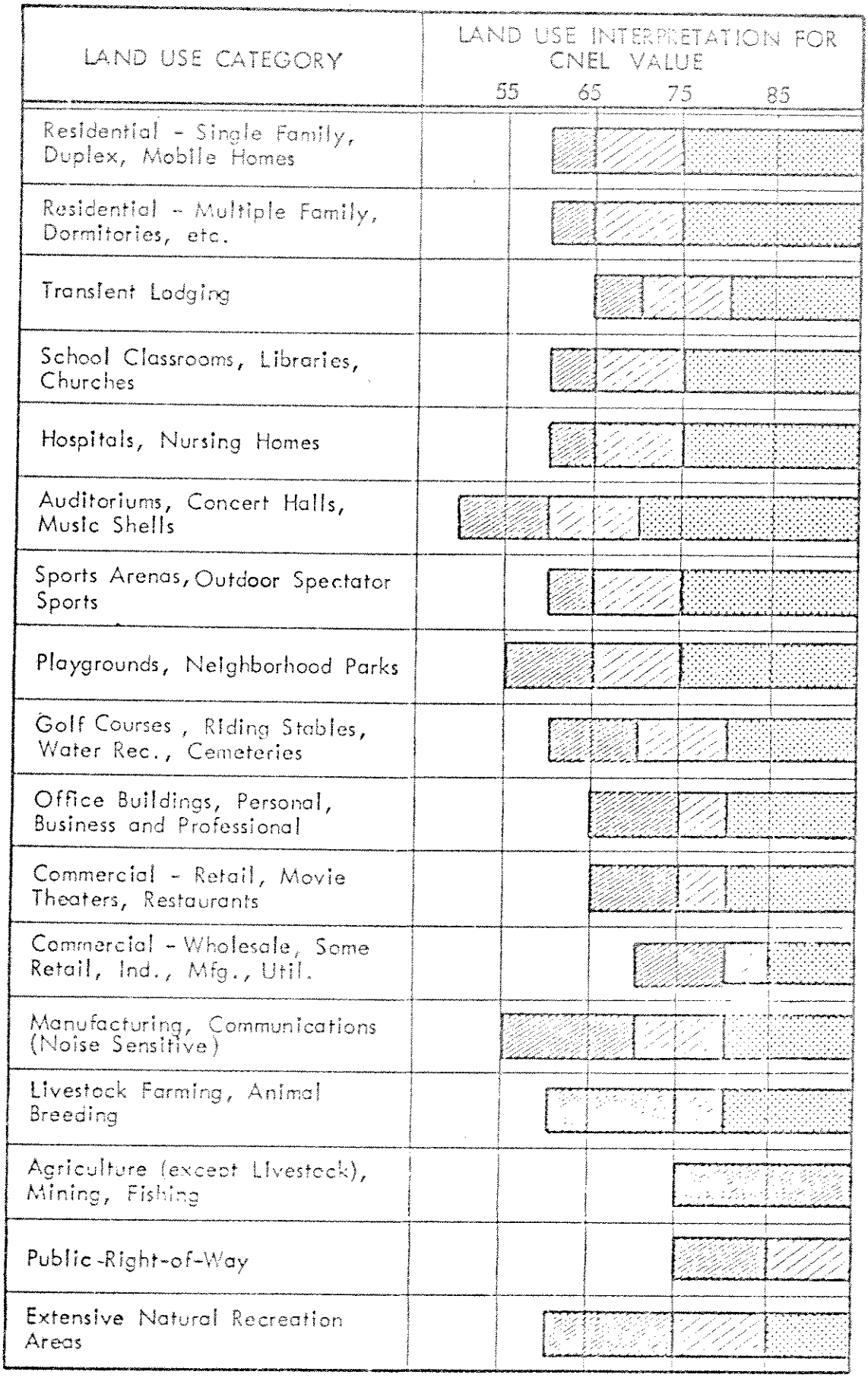
The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive.
(Residential areas: the outdoor environment would be intolerable for normal residential use.)

Source: Bolt, Beranek and Newman, Inc., 1974.

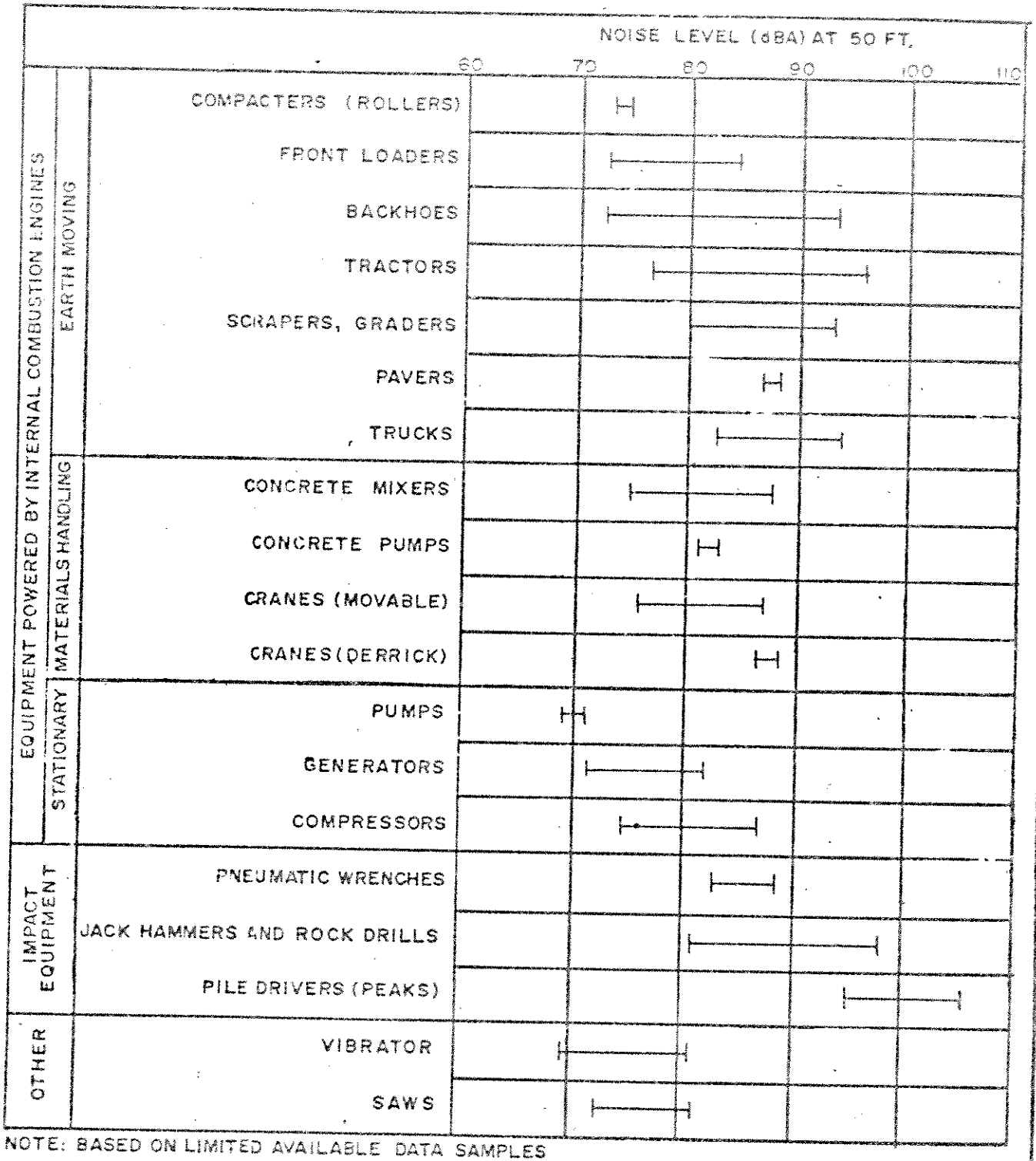


GRAPH 1 TYPICAL RANGE OF OUTDOOR COMMUNITY NOISE EXPOSURE LEVELS

Source: Bolt, Beranek, and Newman, Inc., 1974.



GRAPH 2 LAND USE COMPATIBILITY GUIDELINES
Source: Bolt, Beranek, and Newman, Inc., 1974.



NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

Source: Environmental Impact Statement for The Seibu Makena Master Plan, Neighbor Island Consultants, Inc.

CONSTRUCTION EQUIPMENT
NOISE RANGES

BIBLIOGRAPHY

AIR QUALITY MANUAL, Vols. III and VIII, Traffic Information Requirements for Estimates of Highway Impact on Air Quality, Federal Highway Administration, Office of Research, 1972.

ANNUAL REPORT, 1960 to 1974, Maui Department of Water Supply.

DRAINAGE MASTER PLAN FOR THE COUNTY OF MAUI, R. M. Towill Corporation, 1971.

ENVIRONMENTAL IMPACT REPORT FOR THE DOWNTOWN REDEVELOPMENT PLAN, SANTA MONICA, CALIFORNIA, EDAW, Inc., 1975.

ENVIRONMENTAL IMPACT STATEMENT FOR THE SEIBU MAKENA MASTER PLAN, Neighbor Island Consultants.

FACILITIES MANUAL ON THE ISLANDS OF MAUI, MOLOKAI, AND LANAI, Sylvia Scott, Hawaii Visitors Bureau, 1975.

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CONSTRUCTION OF A SEWAGE COLLECTION SYSTEM AND WASTEWATER RECLAMATION PLANT, LAHAINA, MAUI, HAWAII, Park Engineering, Inc., 1973.

FLOOD CONTROL AND FLOOD WATER CONSERVATION IN HAWAII, Vols. I and II, Department of Land and Natural Resources, State of Hawaii, 1963.

GENERAL PLAN FOR THE LAHAINA DISTRICT, Hiroshi Kasamoto and Muroda and Tanaka, Inc., 1968.

HANDBOOK OF HAWAIIAN WEEDS, Haselwood and Motter, Editors, Hawaii Sugar Planters Association, 1966.

HAWAIIAN BIRDLIFE, Andrew Berger, University of Hawaii Press, 1972.

HAWAIIAN LAND MAMMALS, Raymond Kramer, Charles Tuttle Company, Inc.

HAWAII REGIONAL INVENTORY OF THE NATIONAL SHORELINE STUDY, U. S. Army Corps of Engineers, 1971.

HAWAII STATE COMPREHENSIVE OUTDOOR RECREATION PLAN, Marshall Kapalan, Gans, Kahn, and Yamamoto.

IN GARDENS OF HAWAII, Marie Neal, Bishop Museum Press, 1965.

LAHAINA COMMUNITY DEVELOPMENT PLAN, Chapman, Phillips, Brandt and Associates, Inc., 1973.

MAMMALS IN HAWAII, Quentin Tomich, Bishop Museum Press, 1969.

MASTER PLAN FOR THE TOWN OF LAHAINA, John Carl Warnecke and Associates, 1966.

PRELIMINARY REPORT ON THE WATER RESOURCES OF THE LAHAINA DISTRICT, George Yamanaga and C. J. Hoyel, United States Geological Survey in cooperation with the Division of Water and Land Development, Department of Land and Natural Resources, State of Hawaii, 1969.

STATE OF HAWAII DATA BOOK-1974, Department of Planning and Economic Development, State of Hawaii, 1974.

WAILUKU - KAHULUI GENERAL PLAN, EDAW, Inc., 1972.