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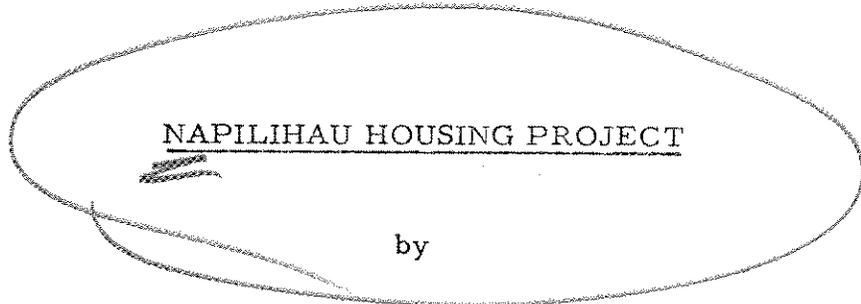
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FINAL

ENVIRONMENTAL IMPACT STATEMENT

for



NAPILIHOU HOUSING PROJECT

by

HAWAII HOUSING AUTHORITY

February 9, 1972

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The Hawaii Housing Authority has agreed to enter into a joint-venture agreement with the Honolulu Plantation Land Company, Inc., a wholly owned subsidiary of the Maui Land & Pineapple Company, Inc. ("the Company"), for the development of approximately 174 moderate-cost, single-family housing units in the Napili district of West Maui. The project will be located approximately ten miles north of Lahaina, on 37.8 acres of land, specifically identified by Tax Map Key 4 - 3 - 01, portion of parcel 1.

In response to your request for a statement, we submit the following description of the project, including a specific analysis of its probable environmental impact and its effect on adjacent socio-economic centers.

Description of Project. The Napilihou Project utilizes a planned-unit-development format, in which the 174 single-family housing units will be clustered, with relationships among the units planned so as to provide maximum privacy and individual yard areas. Approximately 19 percent of the total project area will consist of open spaces between the clusters of homes, which will be landscaped and may be utilized for commonly-owned amenities, including play-

grounds, garden areas, and a recreation center.

The project plans have been approved up to the sketch plan stage by Maui County and through review form ASP 6 by the Federal Housing Administration. More detailed plans are now in preparation for submittal to the County for final stage approval and to the FHA for more advanced review. Additionally, all County and State agencies that will be required to sign the construction plans are being consulted as the plans are being prepared. A concerted effort is being made to produce a moderately priced housing project that will be compatible with the planned Honolua resort area of which it is a part. Design criteria used in Napilihau will be comparable with those to be used throughout the entire area under the control of Honolua Plantation Land Company.

It is anticipated that land preparation will commence early in 1972, with some housing to be completed by September, 1972. The entire project is scheduled to be completed by Spring of 1973. The units will be moderately priced, in a range under the FHA Section 235 maximum of \$31,500 for a three-bedroom unit and \$36,000 for a four-bedroom unit, and will be offered for sale in fee simple, with financial assistance under FHA and State Act 105 available to qualified buyers.

It is estimated that 40 to 50 percent of the housing units will be purchased by residents of Honolua Village, a substandard and dilapidated plantation village operated by Maui Land & Pineapple Company, and located approximately one mile to the north of the Napilihau Project. Maui Land & Pineapple Company, in turn, will phase out the half-century-old Honolua housing concurrently with

the relocation of its residents to Napilihau. The remaining units in the Project will likely be purchased by current residents of Maui, and West Maui in particular, who are presently employed in West Maui, but are unable to find suitable housing there at a reasonable cost. Thus, the Napilihau Project will tend to relocate current residents of Maui and should not bring a significant number of new families into the area.

Governance of the Napilihau Housing Project, including maintenance of common areas and amenities, and operation of the sewage treatment plant, among other duties, will be carried out by a non-profit corporation of home owners called the Napilihau Community Association (hereinafter referred to as "the Community Association"). The Community Association will be a legally chartered non-profit corporation, set up in accordance with FHA regulations, which will initially be managed by the Project Developers. Provision is made in the charter for the management of the Community Association to be transferred to the property owners in Napilihau within one year of the completion of the project.

It should be noted that the 174-unit joint-venture project detailed herein is the first increment of a two-stage project which will include a total of approximately 254 units, with the later addition of 80 apartment rental units. The studio and one bedroom apartments will be located on an adjoining parcel of about three acres. Napilihau, in turn, will ultimately be included as a part of a major destination resort area, which is currently in an advanced planning state. For purposes of this report, however, we will be considering only the impact of the immediate development of the first increment of Napilihau, with

the understanding that the environmental and socio-economic ramifications of the remainder of the proposed development are being considered as a part of the planning of the development as a whole. Advanced planning for Honolulu has included consideration of Napilihau. Siting, architectural design, landscaping, and the many other aspects of the design for Honolulu have served to establish the basic criteria for the design of Napilihau. Since it will be the first project in the resort area, it will, in part, set the stage for all that follows.

I. Environmental Impact of the Proposed Project.

A. Land. The land area of the proposed project is approximately 37.8 acres, including about 30.4 acres of Class C pineapple land, and 7.4 acres of gulch, roads and open area. The gulch is not suitable for residential development, but may, in time, be beautified and incorporated as a part of the development plan.

The land is classified urban by the Hawaii State Land Use Commission, and has been zoned Residential R-1 by Maui County (except for 1.3 acres containing 10 units, which were added to the plan after the initial zoning, and are to be requested for rezoning by the County). At the present time, the developable surface of the project site is covered with abandoned pineapple plants and weeds.

A comprehensive soils evaluation has been performed by the engineering firm of Dames & Moore, which analyzed the suitability of the soil for the proposed project, and recommended earthwork specifications so as to provide foundation groundwork with a minimum of environmental disturbance

and soil run-off. It was determined that the soil is compatible with the proposed use in the development, and that on-site residual soils will provide any necessary compacted fill material.

The engineering firm of Belt, Collins & Associates, Ltd., performed a drainage study of the site to determine the effect of the proposed development on the existing surrounding major drainage areas, including the adjacent gulch, and to identify drainage problems. It was determined that the proposed development will have minimal environmental effect on drainage and storm run-off conditions now existing, contributing an increase of approximately 1%. It might be expected that a much higher increase could be anticipated when an agricultural site is developed for urban use. However, the total off-site contributing drainage areas which are about 378 and 195 acres contribute substantially larger flows and thus the percentage increase when the 37.8-acre development is urbanized is small. (If one were to consider the 37.8-acre development by itself, the difference in run-off before and after urbanization would be 12.1%).

Honokeana Gulch, the large gully immediately to the north of the project, transmits major storm water run-off from the agricultural and forest reserve areas mauka of the development and will not be disturbed except for the construction of a 12-foot wide concrete service road to the project sewage treatment plant. Since the entire project is a planned-unit-development, common maintenance will ensure that improved common areas will remain grassed and landscaped on a year-round basis, and thus will not be subject to the seasonal fluctuations of pineapple cultivation when the land lies fallow and open for substantial periods of time between growing cycles. The Soil Conservation Service

of the U. S. Department of Agriculture prepared a watershed work plan (dated July, 1970) for West Maui which included the Napilihau area. In general, the report recognized that major floods have been caused by erosion resulting in crop losses and sediment pollution. The SCS's primary recommendations were land treatment and structural measures. The development of Napilihau, along with landscaping, is a form of land treatment. The SCS proposed a desilting basin with a concrete spillway be constructed in Honokeana Gulch, which forms to the northern boundary of Napilihau. The basin would probably be located below Napilihau and above the existing Honoapiilani Highway on lands not a part of the project.

In order to keep soil erosion to a minimum during and immediately after construction, the following measures will be implemented.

1. The maximum area to be graded or bared at any one time will be limited to 14 acres unless erosion control measures are implemented on constructed land; then, proportionally, additional lands may be opened for grading.
2. All slopes with grades steeper than 2 (horizontal) to 1 (vertical) shall have planting or other protection commence within one week after fine grading operations have been completed.
3. Dust control measures shall be the responsibility of the contractor and requirements established by local and State governments will be complied with. The contractor will be allowed the flexibility to select whatever method is best suited to control dust, meeting

the established standards, i. e. , water sprinkling, chemical palliatives, oiling, etc. Controls will be placed on the contractor in the use of dust pallatives. Chemical, oil or other similar pallatives when used will be restricted to roadway portions of the project. The site is located approximately 1,000 feet from the ocean with intervening existing development. The potential for polluting of near shore waters is as great as pollution from sedimentation as outlined in the Soil Conservation Service report mentioned previously.

4. Storm waters over embankments exiting from closed conduits, parking pavements or swales serving two or more lots, will have their energy dissipated over rock rubble and/or ground cover planting to a more level area, allowing sheet flows over grassed lawns. The rubble, with the slower velocities, will allow the soil particles to settle and be removed and the planting will assist and beautify correspondingly.
5. All remaining exposed non-paved or constructed areas will be planted after fine grading has been completed. Maintenance of the area by the contractor shall extend for a period of two months after acceptance of the landscaping. An automatic irrigation system will adequately water all common ownership areas. Those areas in private ownership must be irrigated by their respective tenants. Further maintenance after the two-month period will be the responsibility of the individual tenants and the Community Association.

B. Water. The developers are aware of the chronic water shortage in West Maui due to increasing demand, and, more particularly, are aware of the inadequate County water distribution system and storage facilities in the immediate project area. The State Department of Land and Natural Resources has solicited bids for the construction of a one million gallon storage tank in the Paili area, above and near Napilihau; and these bids were opened on November 11, 1971, with the contract being awarded to E. T. Ige Contractors. Construction on this tank is expected to commence in late December or early January, with the project scheduled for completion before the end of 1972.<sup>1/</sup> Based on this, and discussions with Maui County Board of Water Supply, it is proposed that service to the development be directly from the new tank by means of a new water main. Initially, this tank, and hence, Napilihau, will be supplied from the current water source for the area, the Honokohau tunnel system.

The State has, in addition, completed a successful test well mauka of Napilihau at the 700-ft. level, reaching to the basal water table and has determined that an adequate quantity of good-quality water is potentially available from this source, a quantity in excess of 1.0 MGD per well. The State plans to complete development of this and a second well in the area and to connect it to the above-mentioned storage tank as funds are made available for this purpose. Upon completion of this project, Napilihau, as well as the entire Alaeloa-Napili area, will be served from this source, which is not now used.

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<sup>1/</sup> Source: Mr. Takeo Fujii, Chief Design and Construction Engineer, Division of Water and Land Development, Department of Land and Natural Resources.  
Date of Interview: 15 November, 1971.

C. Sewage Treatment. Napilihau will be served by a secondary sewage treatment plant utilizing an activated sludge process with aerobic digestion and a contact stabilization process design, and treated effluent will be disposed of in an exfiltration well. Initially, the plant will utilize an extended aeration process of treatment, because the volume of sewage will be insufficient for efficient processing by contact stabilization. When the project is approximately 60 percent occupied, the plant will switch over to the contact stabilization method. Each method will provide approximately identical results: 90 percent removal of all suspended solids, and five-day biochemical oxygen demand (BOD). The plant will accommodate a maximum flow of 90,000 gallons per day, servicing a population of approximately 900. There will be a physical capacity to expand the plant if such action should be warranted.

A test exfiltration well has been constructed on the site in order to determine the feasibility and capacity of an exfiltration disposal process. The tests, conducted by Dames & Moore, were successful and indicate that such a procedure is well in accordance with State and County public health requirements. The procedure, in coordination with the State Department of Land and Natural Resources, has been approved by the State Board of Health. A new well will be constructed to service the sewage treatment plant, with the test well to be available for use as a back-up facility if needed. Necessary irrigation in and around the plant will utilize the treated effluent as a water source where possible. Other systems of disposal were considered for the treated effluent. These included:

- (a) Tertiary treatment of the effluent to provide potable water.

This is technically possible but the small quantities of water

generated by the project make this solution un-economical.

In addition to further treatment facilities, storage would have to be constructed, pumps installed, and an additional feeder line from the Board of Water Supply's main laid for make-up water.

- (b) Use of secondary treated effluent for more irrigation. This is also possible but would require not only the construction of the overflow seepage wells but also a storage reservoir, feeder mains, large pumps, an irrigation system and an area of approximately 40 acres to constantly accept the waste water without harmful effect. The use of secondary effluent in close proximity to housing has not reached the point of public acceptability as yet. Tertiary effluent probably would be acceptable but costs would be prohibitive.

The treatment plant is sited at a high enough elevation to provide the flexibility for connection to a future county sewer system along Honoapiilani Highway. Appropriate easements to the Highway for this utility's access are also to be provided. The oversizing of mains within the proposed development will adequately service future surrounding developments with respect to sewage collection. The collection system will be constructed to County standards and the treatment plant will be designed to State requirements. The sewage treatment plant (the material contract for which has been awarded to DAVCO Manufacturing Company, Thomasville, Georgia) and collection system will both be owned by the Community Association. Should a County sewer collection and

treatment system be extended to the development, the Community Association will decide whether to continue with the proposed system or be serviced by the County, thereby abandoning their treatment plant.

D. Impact of Development on Existing State or County Facilities.

Because of the general relocational nature of the proposed project, the net effect is expected to be one of consolidating people who already live throughout the general area of West Maui into a single geographical area. Since there will be few new families, the effects on State and County resources and services are expected to be minimal.

1. Roads. The subject property is currently served by Honoapiilani Highway, a two-lane road which is the only artery around the western portion of the island. Plans are in preparation by the State Department of Transportation for a State highway by-passing the major destination resort area of which the Napilihau project will ultimately be a part. This new road will be mauka of the Napilihau project and will provide a second point of access to the development. Subject to Legislative appropriation and release of funds, work on this stretch of highway could begin as early as late 1973. Again, because the proposed Napilihau Project will largely be relocating persons who already live and work in the general area, it is not expected to add significantly to any traffic problems in the area. The concentrative nature of the project will add some to traffic congestion on existing Honoapiilani Highway in the vicinity of the project. Future construction of the by-pass should relieve any traffic problems created by the project on the existing highway.

2. Schools. At the present time, there are two public schools and one private school which service all of West Maui. Kam III in Lahaina services grades K -8, with a current enrollment of 910 students, and Lahainaluna High School serves grades 9 - 12, with an enrollment of 601 students. In addition, there is Sacred Hearts School in Lahaina, which currently enrolls 125 students in grades K - 5. The capacity of Kam III was officially set at 918 students, but this must be adjusted downward due to the loss of three classrooms in a fire early this school-year. Kam III is scheduled for relocation and expansion by 1975, and until then will accommodate any overflow by the use of portable facilities. Lahainaluna, with a stated capacity of 840 students, still has a capability for additional enrollment.

Most of the students who will live in Napilihau will be already enrolled in one of these schools, so the problem will be less one of enrollment capacity for the schools than one of transportation for the students. While the Department of Education has the legal authority to provide transportation to all students who live more than a mile away from their area school, the rules and regulations of the DOE, reflecting the financial constraints and logistical problems inherent in large-scale bussing, limit this service to a subsidy for low-income families. Thus, transportation for the Napilihau students will likely be either individually furnished, arranged on a group basis through the Community Association, or continued use of existing transportation systems.

It should be noted that the County General Plan for the area currently calls for a K - 3 school in the Honolulu area. Recent discussions with the County Planning Staff and the Department of Education indicate that a K - 6 school and associated park is a more probable development in the area, when justified by local population growth. Accordingly, Maui Land & Pineapple Company has set aside approximately 10 acres adjacent to and mauka of the Napili Hau Project for a school/park site.<sup>2/</sup>

3. Other Services. Select ancillary County services presently do extend to the subject area. Trash collection and disposal will be either via the County collection service presently in existence in the area, or provided through private contractual arrangements with the Community Association. Recreation facilities will be provided as a part of the planned-unit-development.

## II. Unavoidable Adverse Environmental effects.

The Hawaii Housing Authority is certainly aware that with existing levels of technology and engineering development, it is impossible to create a housing area which has a completely neutral effect on the environment. Major areas of environmental concern include the destruction or displacement of indigenous flora and fauna, as well as such technical problems as soil run-off and air pollution during and immediately after construction, and water pollution.

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<sup>2/</sup> D. O. E. Sources: Mr. James E. Edington, Administrator of Advance Planning; Mrs. Ah Jook Ku, Director of Information.  
Date of Interview: 8 November, 1971.

The Napilihau Project has been carefully planned with these problems in mind, and every precaution has been taken to ensure that environmental disturbance is kept at the lowest possible level.

The land in question has been used in agriculture, specifically pineapple cultivation, for some time, and thus does not now exist in a virgin wilderness state. Indigenous plants and animals have long since been driven away or destroyed by the agriculture, and presently the land is barren and covered with abandoned pineapple plants and weeds. Thus, the Napilihau Project is not likely to disturb or destroy indigenous life.

Soil run-off and dust pollution will be controlled as outlined in Section I, Part A of this report. It should be repeated, however, that once the project has been completed, all non-constructed areas will be landscaped and maintained on a year-round basis, minimizing soil movement as a result of storm water run-off. When contrasted with pineapple cultivation, in which the land lies fallow and open for substantial periods of time between pineapple growing cycles, this results in a net positive impact created by the housing development.

To a certain extent, water pollution is inevitable in any area in which man works or lives, however again, every effort has been made to ensure that the effect of Napilihau will be minimal. As outlined in Section I, Part C of this report, sewage will be processed by a package treatment plant, and disposed of in an exfiltration well. It cannot be determined economically as to how much, if any of the treated effluents will seep into the ocean. A test exfiltration well has already been dug on the project site, and found to meet State health requirements.

In addition to providing efficient and effective sewage treatment, the Napilihau Project will have another, serendipitous effect on the present environment. Once all of the residents of Honolua Village have relocated to Napilihau, the Honolua Village sewer system, which presently discharges untreated, raw sewage directly into the ocean will be permanently closed down.

### III. Alternatives to the Proposed Project.

In considering an overall plan for the Honolua resort area, a number of alternative uses were considered for the Napilihau project site. The alternatives ranged from various agricultural uses to a wide number of possible urban uses. Presently, the land is neither a virgin wilderness, nor is it productively engaged in agriculture. Thus, it is logical to question the highest and best use for the land. In order to make this determination, it must be asked: (a) is it economically feasible to remove the land from agriculture; (b) is there a need for urban development in the area; and (c) will the proposed development fill that need?

The removal of the land from agriculture is justifiable on two counts: The land is not currently in active agricultural cultivation, and Maui Land & Pineapple Company has indicated its intention to upgrade acreage of comparable productivity to that removed for the Napilihau Project. The demand for urban development, and especially for moderately priced, modern housing in the area emanates from several sources, including present residents of substandard housing in the area, and those who work in West Maui, but are unable to find suitable housing in that area at affordable prices. In addition, it is hoped that the availability of suitable housing in the area will increase the

desirability of plantation employment, thus enabling the plantations to recruit and retain sufficient manpower to maintain the agricultural operation.

B. Once it is determined that the housing is necessary and the location is right, the only alternatives are different types of developments, that is, whether to build a conventional subdivision or a planned-unit-development. As pointed out in detail in Section VI of this report, there are significant advantages which a planned-unit-development, such as that proposed herein can offer over a standard subdivision, including: common amenities, and more housing units at the expense of less agricultural land. (For a complete analysis of economic and social benefits of a planned-unit-development, see Section VI, Parts B and C of this report.)

#### IV. Relationship Between Short-Term and Long-Term Uses of the Land.

The development of modern, well-priced housing in the near vicinity of employment opportunities is essentially compatible with both short and long-term uses of the land. The creation of a superior living environment in the Napili area should enhance the appeal of agricultural employment, and consequently will help to maintain the economic viability of the major agricultural enterprise in the area (Honolua Pineapple Plantation of the Maui Land & Pineapple Company).

In addition, a well-planned residential community can aid significantly in the future development of the land to its highest and best potential. The masterplan for the Napili area which has been outlined earlier in this report includes a major destination resort area. Napilihau will ultimately be a part

of this planned complex, and will provide necessary and appealing housing for the employees of the resort.

V. Resources Irreversibly Committed to the Project.

Effectively, two State resources will be irreversibly committed to the proposed project: land and water. As the homes will be sold in fee simple, the land must be viewed as a permanently committed resource. To compensate for the loss of agricultural potential, Maui Land & Pineapple Company has indicated that it will shift the agricultural production of this land to other lands in its control by upgrading some of these lands to intensive agricultural use. Thus, the overall productivity of the operation will not be lost.

The domestic water required for this project will eventually come from the new source now being developed by the State. This water is not now being used for any purpose, except as a portion of the basal water table or fresh water lens in the area, and once developed, it will be utilized by much of West Maui in addition to the Napilihau development. Until such time as these have been developed, domestic water will come from the County System, which utilizes water from the Company-owned Honokohau tunnel system.

Insofar as it might be altered by the development, we must consider the ocean to be a resource which is irreversibly subjected to the abuses of man. In order to ensure the long-term protection of its greatest resort asset - the ocean - the Honolua Plantation Land Company has contracted with Environmental Consultants, Inc., a group of University of Hawaii scientists who specialize in environmental disciplines, to analyze the oceanic environment as it presently exists, to indicate areas of ecological frailty which must be

protected, and to outline plans for avoiding oceanic contamination or ecological disturbance. To date, this group has completed studies which monitored current and drift patterns under prevailing wind conditions to determine the flushing patterns and capabilities of the several bays along the coast. It has also conducted underwater inspections to identify areas of particular undisturbed virginity, and areas which have already experienced environmental damage. It is anticipated that this group shall conduct a continuing series of oceanographic studies to ensure that development activity to the Honolua Plantation area will have a minimal deleterious impact on the beaches and ecology of the West Maui shoreline. Base line investigations conducted just prior to construction will establish changes occurring over a specific time period, unaffected by the development. Another investigation approximately one year after completion of the project should indicate the effects of the development on the ocean and if any of the treated effluent is diluted or nutrients removed in its flow to the sea.

#### VI. Economic and Social Impacts of the Proposed Project.

A. Napilihau will provide good housing in a planned natural environment, at reasonable prices and affordable financial terms. It will replace severely substandard housing in Honolua Village and elsewhere in the area, and will help relieve the general shortage of moderately priced housing in West Maui, thereby enhancing the appeal of agricultural employment, and enabling the pineapple operation to continue to attract and hold employees as well as providing suitable housing for other persons employed in West Maui.

B. Napilihau, as a planned-unit-development, will provide recreational facilities, a social center, and common open greenspace areas, which will be maintained by the Community Association, both insuring the quality of the environment, and giving the homeowners a vital role in maintaining this quality. Oriented as it will be toward these common facilities, the planned-unit-development is likely to foster more social interaction among the residents than is common in ordinary subdivisions.

C. The aesthetic quality of the development is guaranteed by the restrictive covenants which impose standards for the external appearance of all structures, including those owned by the individual homeowners, and by the guaranteed maintenance of the common areas and recreational facilities. It has been the experience of the three existing planned-unit-developments in the West Maui area that these unique features provide a solid basis for continuing property values for homeowners in the area.

D. The additional West Maui housing generated by the Napilihau development will provide the nucleus around which to develop a high-quality major destination resort area, which will broaden and substantially diversify the economic base of the area.

The Hawaii Housing Authority is satisfied that the Napilihau Project as herein outlined will not have an adverse environmental impact; that its net impact, including environmental, social and economic factors will be a positive one. We therefore request your favorable action on this project.

Environmental Impact Statement: Bibliography

1. Napilihau Drainage Study - July, 1971, revised October 13, 1971, Belt, Collins & Associates, Ltd.
2. Site Investigation - Proposed Napilihau Development, January 22, 1971, Dames & Moore.
3. Pumping Test Results - Proposed Napilihau Development, August 3, 1971, Dames & Moore.
4. Water Quality Test - Proposed Napilihau Development, July 30, 1971, Nathan C. Burbank, Jr., Sc.D.
5. Current Measurements between Alaeloa Point and Lipoa Point - February 21, 1971, Environmental Consultants, Inc.
6. Current Measurements between Alaeloa Point and Kanounou Point - March 22, 1971, Environmental Consultants, Inc.
7. Chemical Measurements between Makaluapuna Point and Alaeloa Point - June 11, 1971, Environmental Consultants, Inc.
8. Preliminary Benthic Biological Survey along the Northwest Coast of Maui - November, 1971, Environmental Consultants, Inc.

Belt, Collins & Associates, Ltd.  
Honolulu, Hawaii  
February 1, 1972