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City Building Department Koneiulu, Kowait of Honolule

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INDUSTRIES THAINING INDEVEN ENVIDONMENTAL FIRE AND

SUMMARY SHEET

FIRE AND POLICE JOINT TRAINING FACILITY

() Draft	(X) Fina	al Environmental Impact
Responsible Office:	Building Department,	City and County of Honolulu
Name of Action:	() State () Federal	(X) Federal and State() Legislative

- I. Description of Action (Brief Statement)
 - 1. Environmental Impact: The construction of a joint training facility for the Honolulu Fire and Police Departments on an un-used portion of land adjacent to Waipahu Incinerator. The facility will have training exercises resulting in airborne emissions (smoke), and noise emissions (gunfire, fire trucks, helicopter, dogs, and automobiles).
 - 2. <u>Adverse Environmental Effects</u>: Potentially adverse effects include smoke emissions and gunfire noise.
 - Alternatives: Alternatives to the proposed facility include:

 a) No facility, b) Utilization of existing private, public, or
 military facilities, or c) Construction of separate facilities.
 The evaluation of eight alternative sites based on criteria establish the proposed site as the best location.
 Alternative means of minimizing or eliminating adverse effects are available, and in certain instances, will be utilized.
 - 4. Short-term Benefits vs Long-term Benefits: The proposed training facility will result in both short and long term benefits to the Waipahu Community and to the City and County of Honolulu.
 - 5. <u>Commitments of Natural Resources</u>: A slightly greater use of water which will be retrievable. A long-term commitment of 15 acres of un-used land. An irretrievable commitment of labor and materials for the planning, design, and construction of the proposed facility.
 - 6. Economic and Social Analysis: There are both economic and social benefits through the construction of the facility. Social benefits will outweigh economic benefits. There are no economic or social non-benefits.

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I. INTRODUCTION

The proposed project is a joint training facility for the Fire and Police Departments of the City and County of Honolulu. It is intended to provide all of the facilities needed by the respective departments for the training of both recruits and in-service fire-fighters and law-enforcement officers. It is being planned to satisfy the two departments' training needs for the next twenty years (1975 to 1995).

The total project will occupy approximately fifteen (15) acres of land owned by the City and County of Honolulu in an area immediately mauka of the existing Waipahu Incinerator (T.M.K. 9-3-02: Portion of 9). It is bordered on the west by Waipahu Depot Road, and on the east by the Ted Makalena Municipal Golf Course. The mauka boundary of the project is adjacent to an unimproved open area, and will be determined by the fifteen acre area allotment. (See Location Map, Figure 1 and Tax Map, Figure 2).

The project will include the following: 1) Administration/Classroom Building, 2) Gymnasium, 3) Training Pool, 4) Outdoor Fire-training
area with a Fire-Training Building, 5) Radiological Building, 6) Firing
Range, 7) Canine-Training Building, 8) Driver-Training Course,

9) Drill Field with a helicopter landing pad, and 10) a parking area.

A graphic presentation of the facility is shown in Appendix F including building heights, areas and projected personnel capacity.

The goal of the proposed facility is to provide a complete training complex which will accommodate and encourage, both presently and in the future, the development of all possible knowledge and techniques of the training of firefighters and law-enforcement officers. In order to achieve this goal, the facility has to meet the following objectives:

- lities (i.e. classrooms, gymnasium, firing range).

 This would a) reduce the amount of wasted travel time between separated facilities , b) eliminate scheduling and logistical problems inherent in separated facilities, c) enable the sharing of certain types of facilities by both the Fire and Police Departments (i.e. classrooms, training pool, driver training course), d) enable joint fire and police training exercises to simulate actual emergency situations where both firefighters and police officers cooperate as a team.
- 2. Adequate amount and proper type of training facilities.
 This would: a) Reduce the presently overcrowded class-room conditions of the Police Department, b) Eliminate

usage of public and private facilities (i.e. Koko Head Firing Range, Manoa Recreational Pool, Hawaii Raceway Park), c) Provide necessary simulated conditions of any situations which firefighters and police officers may experience (such as heat and flame exposure), d) Assume the safety of all new and in-service trainees during training exercises.

3. Flexibility of the different types of training facilities to accommodate the development and execution of new types of firefighting and law-enforcement techniques. This would assure the long-term capacity of the facility to serve any future training techniques which may be developed.

Both the Honolulu Fire and Police Departments have needed this joint training facility for many years. The inadequacies, problems, and effects of the present training conditions of these Departments have been documented in a Report written earlier by this consultant². The Honolulu City Council, recognizing this need, appropriated funds in 1970 to begin the acquisition of land, planning, design, and construction of this joint training facility. A study of the current and future needs of the training programs of the two departments³, and an extensive evaluation of possible alternatives sites have resulted in the selection of the proposed Waipahu site. It is to this proposed site which this environmental impact statement is addressed.

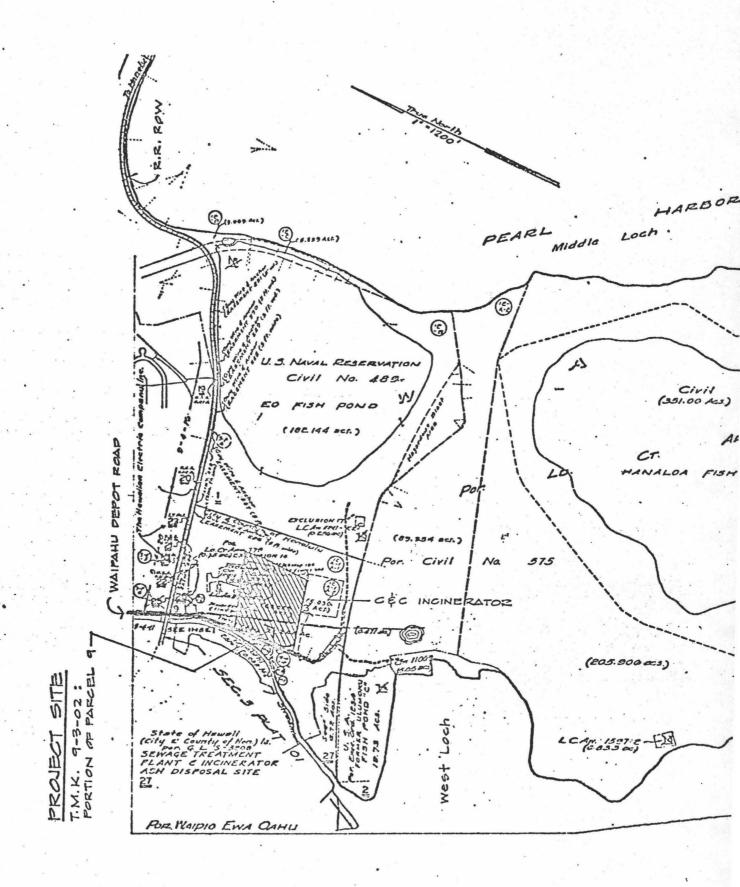


FIGURE 2: TAX MAP

II. EXISTING CHARACTERISTICS

A. Physical Characteristics

The proposed site for the training facility is a 15 acre portion of an approximately 100 acre area designated for public facility use. It is a flat, low-lying area with existing grade elevations averaging approximately 4 feet above sea level. Portions of the site which lie below sea level are constantly inundated due to the high water table in the area. There are no unique physical features to the site. The use of the area as rice ponds, and its subsequent use as a silting basin until 1962, have significantly altered the original marshy characteristics of the site.

Ash and refuse residue from the adjacent City and County Incinerator may be utilized to fill and raise the elevation of the existing ash/refuse landfill to eliminate the problem of tidal and riverine flooding. A master grading plan has been prepared of the Waipahu Refuse and Incinerator Ash Disposal Site for the City and County of Honolulu Building Department. This master grading plan includes the area west of the proposed Fire-Police Training Facility site to the shores of West Loch. 4

The soil in the area has been classified by the State Land

Study Bureau as Class E (lowest of all classes A to E). This indi
cates its undesirability for any agricultural type of usage. This

classification is primarily due to three factors: a) High salt content of the soil, b) High water table of the area, and c) Marshland conditions which have been alleviated somewhat by its use as a silting basin.

Test borings taken in the adjacent area (for the incinerator) show firm red silty clay down to sea level; soft gray silty clay mixed with fine gravel, decayed vegetation, coral and shell fragments between sea level and twenty feet below sea level; soft gray silty clay graduating to a hard brown silty clay between twenty feet and 100 feet below sea level. These findings confirm the original marshy conditions and the later silting operations.

The atmospheric conditions are as follows: a) Rainfall: 25 inches annual average; monthly average between 1-3 inches, b)

Temperature: 73.8 degrees Fahrenheit annual average; range: 65°-83°, c) Wind velocity: 10 miles per hour average 75% of time, d)

Wind direction: from the Northeast, 75% of the time.

The atmospheric quality in the area is affected by several factors such as the incinerator which operates on a daily basis, the sugar cane mill, the industrial types of operations, and the H-1 Freeway mauka of Waipahu. The constant tradewinds in the area tend to alleviate this atmospheric condition quite significantly.

The proposed site is bordered on the mauka side by a low-lying marshy area similar to the subject site (See Figure 1). Approximately one-fourth of a mile beyond this area is the edge of a light industrial/residential area. It is bordered on the Honolulu side by the Ted Makalena Municipal Golf Course, the makai side by the Waipahu Incinerator, and on the Ewa side by Waipahu Depot Road and the dumping/landfill area.

B. Biological Factors

On March 8, 1974, Dr. Horace Clay, PhD. Horticulture, a faculty member at Leeward Oahu Community College, was taken to identify all plant materials. His findings are as follows: a) All of the existing plant materials are exotic to Hawaii and may all be considered weeds. b) The shrubs appear to be between 5 to 10 years old. The trees (only Kiawe) appear to be 20 to 25 years old. They can all be considered relatively young plant material. c) Nothing significant or worth saving exists on the site. With the possible exception of several shallow rooted Kiawe trees, they could all be removed from the site and new landscaping brought in. A list of the plant materials identified on the site may be found in Appendix A of this EIS.

C. Land Use

With the exception of some incinerator residue and refuse around its fringes, the subject land is not presently being used for any purposes. A central portion of the site is cleared where a utility easement and lines (from the mill to the canefields on Waipio Peninsula) cross the site in a mauka-makai direction. These would have to be relocated along Waipahu Depot Road.

The State Land Use Designation for this area is Agriculture. As indicated previously, the soil type does not make it desirable for agricultural purposes and a State Land Use Special Permit is now being processed to allow the construction of the proposed facility.

The present City and County Zoning of the parcel is AG-1, under which the proposed public facility is a permitted use.

The Oahu General Plan designates this area for Public Facility use. This indicates the appropriateness of the proposed facility in terms of the comprehensive long-range plan for the area.

D. Cultural and Social Factors

The existing cultural and social factors may be investigated in four categories: a) Recreation, b) Aesthetics and Human Interest, c) Social Status, and d) Demography. Since there is no existing population on the proposed site or in the immediately surrounding

area, all of these factors will be discussed at the larger scale of the Waipahu area, and where applicable, the County-wide area.

The existing recreational facilities of the Walpahu area total approximately 223 acres (See Figure 3). These consist of the Ted Makalena Municipal Golf Course (200 acres), Walpahu District Park (15 acres), Hans L'Orange Field (4 acres), and the Honowai Playground (4 acres). Additional facilities presently in the planning stages consist of the Walpahu Garden Park (40 acres), 80% of which has already been acquired by the City and County to establish this Botanical/Cultural type of facility depicting the former Plantation Lifestyle, and a neighborhood park (4 acres) between the mauka edge of Walpahu Town and H-1 Freeway to serve the residential development planned for that area.

In addition, the Department of Recreation is investigating the potential of establishing a major Regional Park on the Waipio Peninsula to serve the lower Central Cahu area. Although, this possibility does not appear feasible at this time due to the use of that land by the Navy, Oahu Sugar Co., and the City and County (as ash-disposal site), it has been indicated that the proposed training facility would not adversely affect or hinder the development of this Regional Park. This is due to the following reasons: a) The proposed facility is not located along the shoreline which is considered prime land for recreational facilities, b) It is not adjacent to the

		Netghborhood Park	
	Walpahu Garden	Hans L'Orange Field	
Honowai Playground			
			Waipahu District
		Project Site	
			Ted Makalena V. J. Golf Course
FIGURE 3: EXISTING AND PROPOSED RECREATIONAL FACILITIES	OPOSED		

residential areas, which means that the area between the proposed facility and the residential area could be developed for park usage to serve the immediate residents in that area, c) There is a large amount of area on the Peninsula (1900 acres), of which 15 acres for the proposed training facility is an insignificant amount, d) The major portion of the proposed facility will be large, open, landscaped areas, which would make it similar to any recreational type of development. e) Any adverse conditions such as open burning exercises can be scheduled to respect periods of highest park use such as weekends and holidays. Training exercises can be held when tradewind conditions are directed towards Pearl Harbor West Loch, thereby minimizing the impact of smoke. The effect of this smoke upon future recreational facilities at West Loch will have less of an impact than over the residential areas in the opposite direction.

It appears, therefore, that the proposed training facility would have negligible impact on the recreational facilities in the area due to:

a) the already adequate amount of existing and planned facilities in the area, and b) the long-range development of the major Regional

Park, which would not be hindered by this proposal.

The site of the proposed training facility is in an area which does not possess any significant aesthetic or human interest quality.

As stated earlier, the area is presently a neglected flat area used

as a disposal area for refuse and incinerator residue. Its original marshland characteristic has been modified significantly through siltation and refuse disposal. The plant material which has developed since the siltation is exotic, relatively young, and may be considered as "weed" types.

There are no specific historical or archaelogical significances on the proposed site or in the immediate surrounding area. However, Pearl Harbor in general is considered a National Historic District due to its unique role in World War II. The Fire-Police Training Facility will have no effect on the natural function of the harbor, on the operations of the naval base and due to the lack of specific sites of historical or archaeological significance in the immediate area, the project site is not eligible for inclusion on the National or the Hawaii Register of Historic Places.

In terms of the County-wide community, however, the Waipio Peninsula does offer potentially significant aesthetic and human interest opportunities, since it is one of the few publicly-accessible areas to Pearl Harbor. This opportunity, however, is not presently realized due to several reasons including military restrictions, unattractive polluted waters, and the neglected shorelines along this waterway. Future developments such as the major Regional Park being

investigated by the Department of Recreation could reverse this present situation and result in giving this area a significant aesthetic and human interest quality which it now lacks.

In terms of the social and demographic factors, it is appropriate to consider these at the County level due to the community-wide significance of the proposed training facility.

The population of the City and County of Honolulu (presently 650,000) has experienced a tremendous rate of growth within the past decade. Furthermore, projections by various agencies for different purposes (DPED, Dept. of General Planning) all indicate that this rate of growth can be expected to continue for the next few decades (unless drastic measures are taken), and can also be expected to result in increased densities. Both of these factors will undoubtedly have significant impacts upon the social lifestyles and well-being of the population. Effects such as overcrowding, pollution problems, housing crises, transportation woes, increased crimes, etc. have already been felt and can be expected to continue until solutions through legislative actions, governmental services, and public attitudes, etc. can be found. It is in this social and demographic context that the proposed training facility must be viewed and analyzed as to its effects upon the County-wide community.

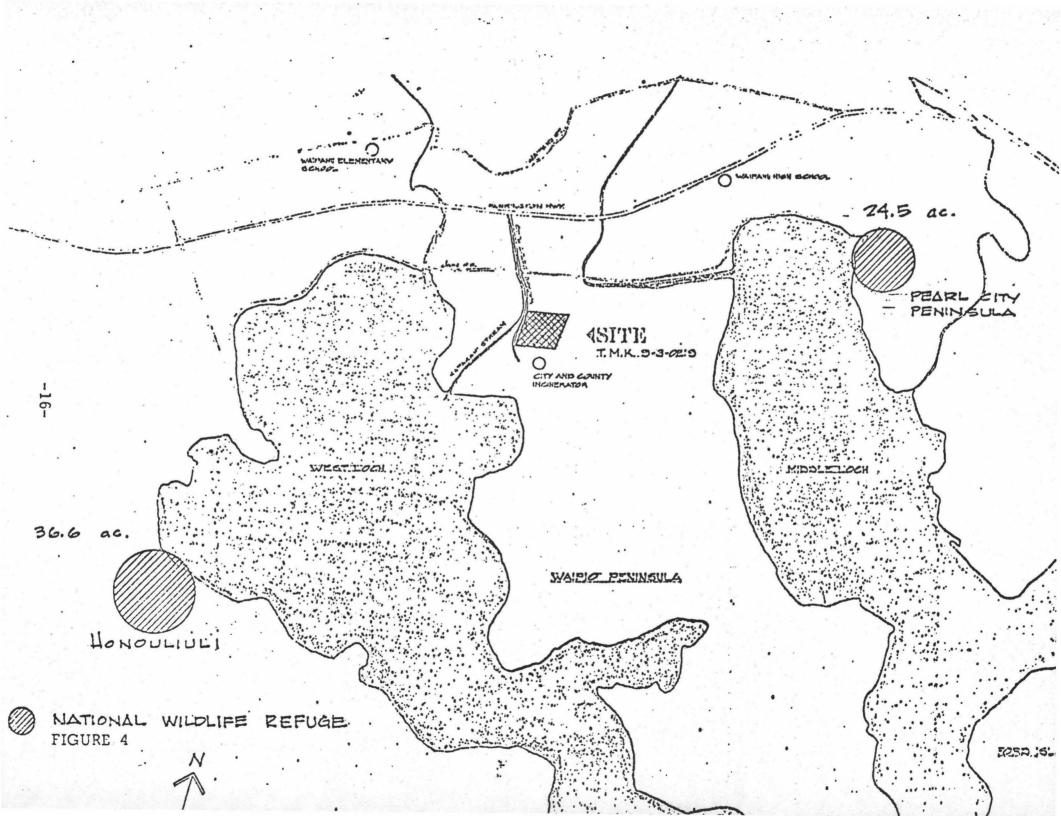
E. Ecological Relationships

Detailed investigations have indicated no significant or threatened ecological relationships existing on the proposed facility site.

The relatively young age of the plant material on the site, and the soil characteristics through test borings indicated that the existing characteristics of the area are the results of relatively recent developments which modified the original landscape.

Two Federal Wildlife Refuges are located approximately 2 miles to the east and west of the proposed training site. The east site on Pearl City Peninsula is 24.5 acres and the west site at Honouliuli is 36.6 acres. Both of these refuges which include ponds and nesting areas, guard two endangered species of waterfowl, the Alaekeokeo (Hawaiian Coot) and the Aeo (Hawaiian Stilt). These birds also feed on the mudflats near the mouth of Kapakahi Stream. State Fish and Game Officials see no adverse effects to these birds resulting from the proposal facility. See Figure 4.

Pearl Harbor West Loch has been designated Class AA waters by the State of Hawaii Department of Health. Since pollution to these waters must be kept to an absolute minimum, all surface runoff from the proposed facility will be channeled to encourage percolation.



III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

A. Airborne Emissions

The airborne emissions generated at the site will be from two primary sources: a) Exhaust emissions from internal combustion engines of the automobiles and fire trucks, and b) Smoke from fire training burning exercises.

In terms of internal combustion engines, the actual daily training exercises will involve two police pursuit cars operating periodically and a maximum of six fire trucks (3 in the morning and 3 in the afternoon) for a total of five vehicles potentially operating simultaneously. The exhaust emissions from these training vehicles can be expected to be negligible.

The police driver training roadway consists of a network of "minor streets" for traffic control and accident investigation. These streets will be similar to typical paved city streets with intersections, sidewalks and fire hydrants. A longer, straight "major street" will be used for accelerated pursuit training.

In addition, there will be approximately 100-150 automobiles parked on the site during the average training day. These will be primarily private automobiles of trainees, training officers and administrators, instructors, and visitors. Since most of the circulation within the site will be pedestrial, it can be expected that these

automobiles will be operated primarily during the mornings and afternoons for commuting purposes. Therefore, the exhaust emissions from these vehicles would not occur for any prolonged period. Also, the emissions from these private automobiles are regulated by the Federal Exhaust Emission Standards.

Burning will occur at the facility as an integral part of the training drills in order to give the trainees actual exposure to heat and flames. These burning exercises will be involved in three types of facilities: a) Fire Training Building, b) Concrete slab and pit, and c) X-mas Tree. The eight-story Fire Training Building will have a series of valve-controlled natural gas pipes, which will be ignited in the interior of the building. Wood and oil fires will also be ignited in this building to simulate the full range of fire types and situations. The resulting smoke from these exercises will be contained within the building and can be released slowly to minimize the amount of dense emissions. The average exercise will take approximately a total of five minutes from the time of ignition to total extinguishment.

The concrete slab and pit (a raised concrete slab and a concrete depression), and the X-mas tree (a series of gas pipes protruding from the ground) will have oil, gasoline, and other fires ignited to simulate gas and oil leaks, debris fires, automobile fires, etc.

These exercises will consist of a 15 second pre-burn stage followed by a 40 second extinguishment stage for a total duration of approximately one minute. The projected maximum frequency of all of these burning exercises is six drills per day.

The total duration of these smoke producing fire-training exercises, including the fire-training building, will be approximately 36 minutes of an eight hour training day, of which approximately 6 minutes will be actual open burning.

During the course of a training day it is expected that a maximum of five gallons of diesel oil and 5 gallons of gasoline will be utilized in a mixed solution. The amount of fuel consumed will vary according to the time required to extinguish the fire in each separate drill.

Areas around and between the fire training building, concrete slab, pit and X-mas tree will be paved for the operations of vehicles and equipment. Training exercises will be conducted with strict adherence to Fire Department safety procedures and all burning exercises will be concentrated in one particular area of the site.

Since open burning is permitted by State law only for agricultural purposes, a variance must be obtained for the Fire-Police Training

Facility. This variance procedure would required approximately two months and would include: a) The variance application, b) Review by

the Pollution Investigation and Enforcement Branch, State Department of Health, c) A public hearing thirty days after a notice is given,

- d) A decision by the Director of the State Department of Health,
- e) If the decision is favorable, further approval is required by the Federal Environmental Protection Agency, Region 9.9

In addition to water, three types of extinguishing agents will be used by the Fire Department for these burning drills:

- a. Carbon Dioxide Extinguisher: an inert gas, heavier than air, which will dilute the oxygen content of the air to a point at which there is insufficient oxygen to support combustion. It is non-toxic in open air conditions and dissipates rapidly.
- b. Light Water: an aqueous film-forming foam that floats on oil fires and smothers the flame. It meets the requirement of MIL-F-24385 specifications for fire extinguishing agents, is manufactured by the 3M Company, and is a very quick acting agent. It is water soluble, biodegradeable, and non-toxic. The 3M Company declined to release its chemical composition, which is a trade secret.
- in the form of small bubbles. It is used for combatting flammable liquid fires in three ways: 1) excluding air or oxygen, 2) eliminating vapor release, and 3) separating the flame from the fuel

surface. The manufacturer (National Foam Systems, Inc.) indicated that proper usage of the foam would eliminate smoke and combustion bi-products from entering the atmosphere. The protein base type concentrates are primarily hydrolyzed protein, freezing point depressant, and organic and inorganic stabilizers. The foam is non-toxic, biodegradable and contains no phosphates, lead, mercury, or other materials identified as contaminants or pollutants. The manufacturer declined to release the specific chemical composition. 10

The purpose of these foam extinguishing agents is to smother the fire. They do not combine with the fuel, but instead prevent oxygen from combining with the superheated vapor, thereby eliminating combustion. Thus, no airborne pollutants can be expected from the application of these foam extinguishing agents to the fires.

It should be pointed out again that all emissions from these burning exercises may be permitted after a variance is processed through the State Department of Health and The Environmental Protection Agency. In addition, to avoid any adverse environmental impact of any air-borne emissions upon any residential areas (which are upwind of the proposed facility during prevailing tradewinds), the Honolulu

Fire Department will hold all exercises involving smoke emissions only during prevailing tradewind conditions. They will not hold any of these exercises during adverse wind conditions such as Kona wind, "no-wind", or extreme trade winds (exceeding 20 mph).

B. Waterborne Effluents

The potential sources of waterborne effluents are from three fire-training exercises: a) Hose evolution drills, b) Extinguishment of wood type fires, c) Extinguishment of oil type fires. It is estimated that approximately 10,000 to 12,000 gallons of water will be used per training day (5 days a week). Also, sanitary waste disposal must be considered.

Hose evolution drills are used to give firefighters practice in all aspects of hose handling, connections, layouts, and proper applications of water streams, sprays, etc. Water from the City Board of Water Supply will be used via a 12" diameter water main (existing) and hydrant system. The resulting run-off water will be collected through a drainage system and returned to the drafting pit to be re-used. All excessive amounts of water will feed into the existing storm drainage system in the area or used to irrigate the facilities' landscaping. The run-off water from these hose evolutions will not carry any waterborne effluents and even significant excess run-off will not affect the existing adjacent sanitary land fill area if proper drainage engineering measures are utilized.

The water used to extinguish wood fires in the Fire-Training Building or at the slab or pit, will be mixed with ashes, charcoal, cinders, etc. This mixture will be drained to a sump pit, then filtered to remove debris before the water is drained to the drafting pit or storm drainage system. The debris will be cleared and removed to the adjacent incinerator for disposal. The drafting pit will be cleaned periodically to prevent odors resulting from bacterial degradation.

As pointed out in the previous section, the oil fires will be extinguished by foam. The resulting foam mixture will not enter the drafting pit, but will be washed off the slab, pit, and X-mas tree areas, starting the breakdown of the foam. This mixture could be collected in a separate drainage system, removed and disposed of by an acceptable method.

According to the City and County of Honolulu Building Department's master grading plan for the Waipahu Refuse and Incinerator

Ash Disposal Site, the storm drainage system in the area utilizes

Kapakahi Stream which in turn flows into Pearl Harbor West Loch,

classified as Class AA water. The excess run-off from hose evolutions

and some of the water used for extinguishing wood fires which does

not enter the drafting pit for re-use may ultimately flow into this

storm drainage system.

The run-off from hose evolution drills will not carry any water-borne effluents, but water used to extinguish wood fires will contain particles and chemicals as a result of the combustion process. Due to the nature of the Fire-Police Training Facility, there may be limited amounts of chemicals such as oil, gasoline, and extinguishing foam entering the storm drainage system regardless of the precautions taken to collect them in a separate drainage system. Oil from car and truck engines may drip on paved surfaces and could be carried by rainwater into the drainage system along with foam and other chemicals.

The quantity of pollutants resulting from the Fire-Police Training site, however, is infinitesimal when compared to the volume of drainage and pollution resulting from the surrounding region and Waipahu Town flowing into West Loch via Waikele Stream and Kapaleahi Stream. (See Figure 5)

The City and County of Honolulu Sewers Division concurred that domestic waste from the Fire-Police Training Facility, including canine waste, can be handled by an existing gravity sewer line via a new 8" line connection at an existing manhole near the Waipahu Sewage Pumping Station mauka of the training site. A permit is being processed to allow this new connection. 11

In view of the above, there will be no unusual direct discharge of adverse waterborne effluents into Pearl Harbor West Loch.



C. Noise Emissions

The potential sources of adverse noise emissions are:

a) Gunfire, b) Pumper Trucks, c) Helicopter, d) Driver-training exercises, and e) Canine dogs. With the exception of the helicopter (which will land at the site only for emergency purposes and not for training exercises) all of the above will be occurring on a daily basis (5 days per week).

The Honolulu Police Department will be utilizing the firing ranges 4 nights per year to train a Special Task Group and 2 nights per year for basic recruit training. The total of 6 night firing sessions will be spaced throughout the year and will never be conducted on consecutive nights. These classes will terminate promptly at 9:00 p.m. each night. Driver training classes will not be held at night.

The Honolulu Fire Department will be conducting night training sessions on two nights for each recruit group. A maximum of three recruit groups would necessitate 6 nights of training per year. The training will basically entail entering and exiting from a darkened building utilizing simulated fire conditions to provide realism. There will be no sirens or other loud noises to disturb the residents in the area and all training will be conducted within the Fire-Police Training Facility.

Due to the significant potential impact of noise generated by the above sources at the proposed facility, actual on-site sound level measurements of these noise generators were taken by an acoustical consultant, Mr. James Chang, on February 19, 1974. His measurements, calculations, and conclusions are included in Appendix B and C as a supplement to this section of the Environmental Impact Statement.

Several findings are significant: 1) The highest sound level recorded was generated by gunfire. The sound level of all the other noise generators such as the fire trucks and helicopters were significantly lower. 2) The highest level of sound at the closest residence is within the limitations of the CZC under normal tradewind conditions. 3) A comparison to National and Military standards indicated that the highest noise level recorded would not be expected to attract public complaints or reactions.

It is important to note that the measurements were taken in an open area without any sound baffles, earth berms, or landscaping. All of these devices will be utilized for both safety and acoustical reasons in the design and construction of this facility, thereby reducing considerably the sound levels recorded that may extend beyond the site. If firing tests using many weapons to simulate an actual

training session were held at another firing range where conditions are different from the Waipahu site, the sound readings would not be representative of the new site or proposed facility.

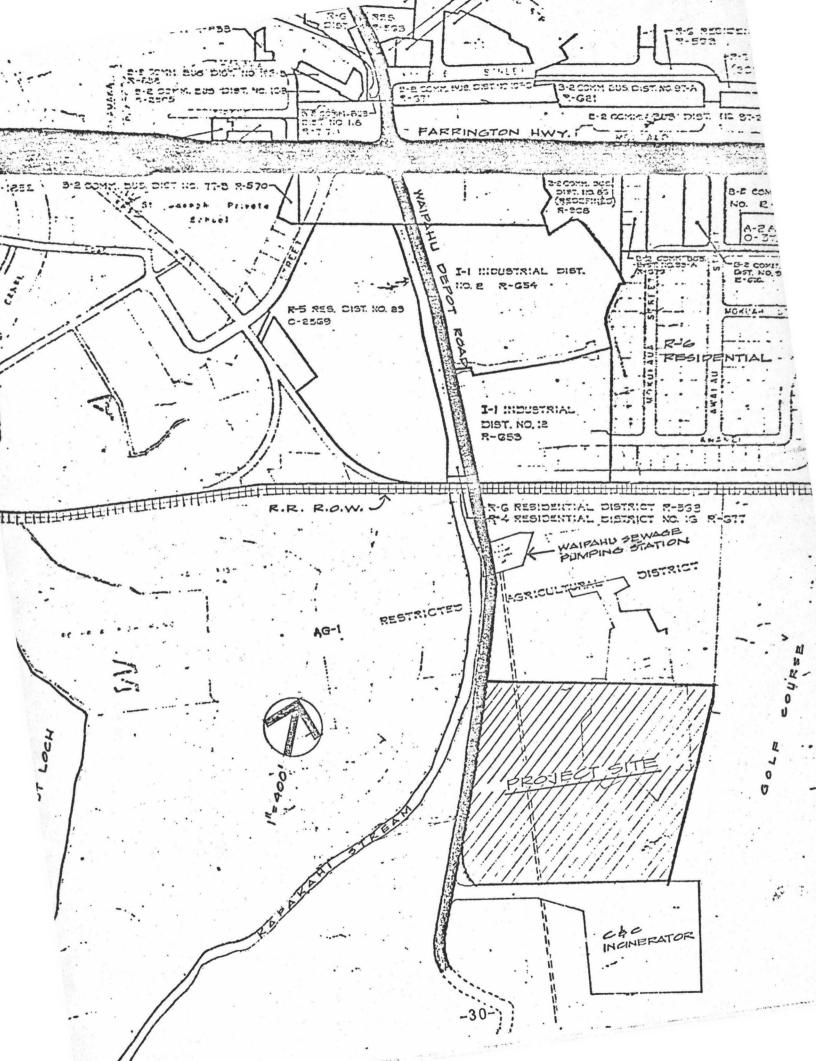
Since the highest level of sound was generated by gunfire, a major effort will be made to incorporate specific design features for the firing ranges and site characteristics for maximum sound attennuation. The Honolulu Police Department will be firing approximately 1,900 rounds of ammunition per day which will consist of 1,000 pistol, 500 shotgun and 400 AR-15 rifle rounds. These figures are based on a training class of 20 recruits. Night firing sessions can be identified as a potential worst impact condition and emphasis will be placed on achieving acceptable noise levels during this period. See Appendix C.

The design of the firing shed (facility at the position of weapon discharge) is most critical for maximum sound attenuation. Parallel surfaces will be avoided and a choice of materials such as leaded vinyl walls with a combination of fiberglass and air space insulation may be utilized. The geometric configurations of the sheds will be studied with acoustical consultants in the final design and ranges will be enclosed on all sides by earth berms topped with concrete and wood baffle fences for safety and to direct sound waves in a vertical direction. Horizontal overhead baffles will also be used above the firing range to insure adequate sound control and safety for the surrounding community.

A. T.

Earth berms and other man-made or natural barriers such as dense foliage will be utilized to minimize sound disturbances to the residential area in the main noise sensitive direction mauka of the project site. See Figure 6. Under normal wind conditions from the Northeast, noise will dissipate away from residential areas. During Kona winds, which occur 25% of the time, the wind direction will be towards inhabited areas, but the high moisture content in the air will tend to lessen noise.

Locations of noise sources (such as fire engines and other vehicles used in training) relative to these barriers will be established for optimum noise control and building massing will reflect a separation of incompatible activites and patterns of angularity for maximum sound suppression within the site. Classrooms and administrative functions are intentionally placed on the mauka portion of the site and greatest noise producers such as the driver pursuit course and firing ranges will locate on the makai side farthest from the residential areas. The direction of firing will also be away from inhabited areas for maximum safety and minimum sound propagation. Interior spaces such as classrooms and offices will be designed and insulated to minimize exterior sound to recommended noise levels of 40 to 50dB with reverberation times of 1.5 to 2 seconds.



Helicopters will be used for emergencies such as injuries resulting from fire or police training activities or unique circumstances such as visits by government officials or dignitaries. The Fire Department does not plan to use these aircraft in hi-rise fire fighting procedures and the Police Department will limit their training on helicopters to classroom lectures by the crew utilizing video tapes. The helicopters assigned to both departments are permanently based and maintained at the Honolulu Airport. The flight path of these infrequent helicopter landings will not violate air space over residential districts and the area around the landing pad within the training site may be enclosed by earth or dense foliage barriers for sound control. Since night training activities are limited, these flights would occur mainly during normal daylight working hours.

The camine training area is primarily a grassy area where dogs will be trained to attack, subdue and guard on command. This area will include a one-story structure containing a veterinary examining room and kennels. The dogs will normally accompany their masters. to private homes after training hours so canine activities would mainly be limited to working hours. Dogs remaining at the kennels will not create a noise problem if proper sound control measures are incorporated in kennel design.

An extensive review of the preliminary environmental noise survey was conducted by Dr. John C. Burgess of the University of Hawaii Department of Mechanical Engineering. He concurred that earth berms, building location and massing, acoustical treatment, and direction of firing can be used to control noise emissions. He also stated that the proposed site has a great advantage due to only one noise sensitive direction (mauka of the site) which encourages the effective use of barriers. In his opinion there are no significant technical problems to overcome to create a negligible environmental noise impact.

The final design of the Fire-Police Training facility will incorporate a maximum input from the consultants mentioned above to insure that all Federal, State and City noise control codes are satisfied. Special emphasis will be placed on the Source-Path-Receiver relationship. Noise will be controlled at the source and maximum attentuation will be achieved along the path to the receiver.

D. Solid Waste

There are three primary sources of solid wastes: a) Debris from fire-training exercises, b) Spent cartridges and shells from the firing range, and c) Radioactive wastes from the future Radiological Building.

As noted in an earlier section, the debris from the fire training exercises will be removed to the adjacent City & County Incinerator. A significant amount of debris is not expected to be generated due to the burning exercises which would considerably reduce any combustible materials (wood) to ashes or charcoal.

The spent cartridges and shells from the firing range will be collected, reloaded, and re-used, thereby not creating any waste problem.

The radiological building is being included in this proposal for planning purposes only, and would not be built until an appropriate time in the future. At that time, the building will be designed to conform to all Atomic Energy Commission standards and specifications. At present, the nature or quantity of radioactive waste to be used in training programs is not known. The problems of handling and removing radioactive wastes, and conformance to safety and environmental standards will be determined when more information is available.

E. Resource Depletion

The proposed training facility would involve the depletion of three resources: a) Ground water supply, b) Land (15 acres), and c) Ash-residue and earthfill.

The amount of water to be used by the training facilities and training exercises such as hose evolutions is anticipated to average approximately 10,000 to 12,000 gallons per training day (5 days a week). The average daily water consumption of the Waipahu area is approximately 3.5 million gallons. 13 The proposed facility would therefore create an additional 3/10 of 1 percent increase of water usage in the area. Preliminary checks with the Board of Water Supply have indicated that the water supply for the area and the existing water main systems are sufficient to accommodate the increased demand.

It has been pointed out earlier that the water utilized for fire training exercises will be filtered, then re-cycled into the drafting pit for additional use in either training exercises or for landscape irrigation purposes. It can be assumed, therefore, that maximum use will be made of the water supply entering the facility, and that any run-off water returning to the original ground water source will contain a minimum amount of ash residue similar to natural run-off from the total ash disposal site.

The proposed facility is located on the Waipio Peninsula (approximately 1900 acres) of which 1215 acres are presently being leased to and cultivated by Oahu Sugar Company, 200 acres are

being used for the Municipal Golf Course, 400 acres are being retained by the Navy, and 100 acres are being set aside for public facility uses. The proposed facility will occupy an un-used fifteen acre portion of this 100 acre public facility area. The remaining area includes an ash disposal site and is also being considered as a future site for a refuse power generating plant. However, a recent feasibility study by the Department of Public Works states that this site is the least desirable of several alternative sites and probably will not be selected.

As discussed previously, although the land is presently zoned and designated (State Land Use) for agricultural uses, the soil and water table conditions do not make it desirable, nor feasible for that purpose. The proposed usage, therefore, would not deplete any quantity of land presently cultivated or desirable for agriculture.

Instead, it will utilize a presently un-used portion of land which has been designated for public facility use by the City and County General Plan, and which is adjacent to similar types of land uses such as the incinerator and ash-disposal site.

The effects of the commitment of fiteen acres of land for the proposed facility appear to be beneficial rather than adverse: a) It will make a better and higher use of land presently un-used.

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b) The City and County of Honolulu will not encounter land acquisition costs due to its ownership of the subject land. Since the nature of the training facility suggests industrial zone compatibility, purchase of an equivalent amount of land in an industrial area at market prices could mean costs of approximately 7 million dollars assuming a cost of \$10.70 per square foot. c) The proposed training facility can be expected to be an improvement to the present disposal area, thereby potentially raising the resource value of the area.

It is also significant to point out that the commitment of the subject land for the proposed facility does not terminate public ownership nor pre-empt public usage of the land. Due to the continuance of City and County ownership, should another use supplant the need for the training facility in the future, the land may be reverted back to another public use. The Department of Agriculture suggests that filled land, which is not suitable for agricultural production using conventional tillage methods, could be used for nursery and greenhouse culture.

Due to low elevation of the land, approximately 117,000 cubic yards of fill will be required to raise the low-lying areas.

Present strategies are to utilize ash and refuse residue from the

adjacent incinerator to provide the greater portion of this fill material. A sufficient amount of residue is being generated by the incinerator (approximately 3,000 cubic yards per week) and future deposits may be easily diverted from the ash-disposal site to fulfill the needs of the proposed facility site. An additional top layer of earthfill (approximately 24,000 cubic yards) would also be required to provide an adequate landscaping foundation. These requirements are not expected to have significant depletion of incinerator residue or earthfill resources.

Before construction of the proposed Fire-Police Training

Facility, a soil analysis will be made to determine the footing

conditions for the various structures. Generally quarry waste is

used up to two feet below finish grade and select material is placed

up to six inches from finish grade. The final six inches is topsoil

for landscaping purposes. The final site elevations for the structures

will be similar to the adjacent City and County Incinerator site and

consultants will determine the extent and solution to the problem of .

tidal and riverine flooding.

If ash residue from the City and County Incinerator is used initially for the Fire-Police training site, deep burning or smoldering will not be a problem. After combustion, the ash is shifted through a

grate, given a water bath, trucked to the landfill area and spread in layers to specified elevations. Deep burning and smoldering is usually associated with spontaneous combustion when raw refuse and open dumping is allowed. These practices are currently not allowed at the Waipahu site. 15

F. Social and Community Aspects

The proposed facility is not expected to have an adverse social or environmental impact upon the Waipahu Community. There are no existing residents or populations within the immediate area. The closest residential development is one-fourth of a mile upwind of the proposed facility site. The prevailing tradewinds and precautionary measures to be designed into the facility will assure the non-environmental impact of the facility upon these residences.

The social impact upon the Waipahu Community can be considered beneficial rather than adverse. Whereas the existence of the incinerator and rubbish dump, and the designation of the area as an ash-disposal site, has apparently committed the area to an "undesirable" type of environment, the proposed training facility can be expected to improve both the community and physical quality of the area. It will be an educational type of facility (classroom building, gymnasium, pool, etc.) with large grass-covered open areas,

landscaped berms, and perimeter trees. Being the only Fire and Police Training Facility in the County and State, it can be expected to provide an informative educational opportunity not only for fire-fighters and law officers, but also for school and citizen groups, thereby giving the Waipahu area a unique community identity.

The more significant beneficial social/community impact would be County-wide. With the increase in population and density, and the corresponding increase in crime, fire, and rescue incidences, the effectiveness of the firefighting, rescue, and law-enforcement services depends a great deal upon the type and quality of training that these public servants receive (both initially and in-service). The construction of the proposed training facility, the need of which has been evidenced by the many existing problems and shortcomings as pointed out in the Report by Tagawa, Yamachi, A.I.A. & Associates, will have a significant impact upon the effectiveness of these public services, and correspondingly can be expected to have a significant beneficial effect upon the community.

G. Economic Aspects

The economic impact of the proposed facility may be considered in two ways: a) Community and individual losses and income, and b) Governmental expenditures and revenue.

There are no expected community and individual losses. The proposed facility will not be downgrading to the area. Instead, it has been pointed out that it may actually improve the environmental quality of the area. Therefore, no decrease in property values or business activities can be expected. Since the land is presently not used, there would be no existing business or community facilities affected during the construction of the facility.

Although no direct economic benefits can be expected for the Waipahu Community, the proposed facility may have some beneficial economic windfalls such as: a) More business for Waipahu Town due to increased traffic and exposure (trainees, school and citizen groups), b) In addition to 6 new staff jobs, by 1985 there will be other governmental service positions for the maintenance and security of the facility which will be determined by fiscal policies at the time of completion.

Beyond the actual planning, construction, and maintenance costs for the proposed facility, there are no excessive governmental expenditures expected. The availability of all utilities have been preliminarily checked. The relocation of the existing water and irrigation/mud lines from the center of the site to Waipahu Depot Road can be expected to be a minor expense and a sewer connection

would have to be made to an existing gravity line near the Waipahu Sewage Pumping Station mauka of the project site. The access road (Waipahu Depot Road) is sufficient although it may have to be improved due to the excessive wear by the refuse trucks. Farrington Highway is sufficient to accommodate the additional traffic generated by the training facility. There would be no additional required governmental services such as schools, fire and police protection, recreational facilities, etc. As pointed out previously, the utilization of the proposed site for the training facility will not involve land acquisition costs for the City, thereby eliminating that potential governmental expenditure.

There are no anticipated direct governmental revenues from the construction of this facility. Federal and State funding programs have been investigated and may become a source of revenues to alleviate the initial planning and construction costs of the project to the County.

H. Safety Aspects

There are three areas of concern that require safety considerations for the surrounding community: a) Vehicular traffic, b) combustion for fire fighter training and c) gunfire.

Vehicular traffic on streets surrounding the Fire-Police Training site will conform to all City and County of Honolulu Traffic regulations. Driver training will be conducted entirely within the training complex and will present no danger to area residents.

Firefighter training which requires combustion of wood, oil or gasoline will also be confined within the training complex and will be strictly controlled through the use of specially designed facilities such as a slab, pit and fire tower. Due to the safety precautions involved and the distance to the nearest developed area, the danger of fire is negligible.

The firing ranges will conform to all safety requirements which will include earth berms, bullet stops and lateral safety baffles.

Specialized ranges will be included for rifles, shotguns and handguns for additional safety and efficiency. Most important, the direction of firing will be away from inhabited areas.

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IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

a) Airborne Emissions, and b) Noise Emissions.

Upon investigation of all possible environmental impacts resulting from the proposed action, it has been determined that there are
two potential unavoidable adverse environmental effects:

A. Airborne Emissions

As discussed in an earlier section, potential adverse airborne emissions are two-fold: a) Exhaust emissions from internal combustion engines, and b) Smoke from fire-training exercises.

The sources of exhaust emissions at the training site are from private vehicles used for commuting purposes, police pursuit cars, and fire trucks. It has been determined that the exhaust emissions from the operation of these vehicles would not have significant adverse environmental effects for several reasons: a) Daily training exercises will involve, at the maximum, two police pursuit cars and three fire trucks operating simultaneously. The exhaust emissions from these five vehicles can be expected to be negligible. b) The exhaust emissions of all vehicles operated on the site or used for commuting purposes are regulated by Federal Exhaust Emission Control Standards. c) The velocity of the prevailing tradewinds at the site will quickly and effectively dissipate any exhaust emissions.

The more significant potentially adverse airborne emission to be considered is smoke from the fire-training exercises. The sources of these emissions would be a) Natural gas and wood fires ignited within the fire training building, b) Oil and debris fires ignited at the concrete slab and pit, and c) Natural gas ignited at gas pipes from the X-mas tree. As discussed previously, the frequency and duration of all of these drills would amount to a total of thirty-six minutes of airborne emissions during an eight hour training day. The impact of these emissions will be minimized by the following measures: a) The greater portion of the gas and wood fires would occur within the fire training building. The resulting smoke would be contained within the enclosed structure and could be released at a controlled rate thereby maximizing the dissipation rate into the atmosphere. b) The frequency and duration of these exercises (three in the morning and three in the afternoon) indicate that these exercises can be scheduled at separated intervals, thereby reducing concentrated or continuous. smoke-emissions. c) All of these smoke-producing training exercises will be held only under prevailing tradewind conditions. maximize the dissipation rate and guarantee that the smoke emissions will be directed towards Pearl Harbor West Loch away from any residential area.

As stated earlier, all airborne emissions will have to comply with the State Board of Health and Federal Environmental Protection Agency Standards. A variance for open burning will be submitted to both agencies. Should the above control measures fail, the following mitigation measures are possible:

- a) An incinerator may be added to the fire training building. Since most of the black dense smoke visible in burning is unburned carbon, this process would re-burn the carbon before releasing it into the atmosphere. It would draw the carbon-filled smoke through a thermal oxidizing system to re-burn the combustibles to emit only, CO_2 (carbon dioxide) and H_2O (water). Such incinerator devices are being used in various training facilities around the country (Orlando, Florida), and have been successful in reducing the adverse smoke emissions. 16
- b) Water sprays may be used to control the smoke emissions from the slab, pit and X-mas tree. The United States Government (Air Force and Navy) is currently experimenting with a method of controlling smoke with water sprays. Althrough their final results are not yet available, preliminary indications are that the proper application of water sprays can reduce the amount of smoke emitted into the atmosphere. When available, this water spray method may

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be utilized for the training exercises at the slab, pit and X-mas tree.

c) Alternative types of burning fuels may be used. This will automatically be done as newer and cleaner fuels are developed and made available.

This investigation of the airborne emissions to be created at the proposed facility has indicated that control measures will be utilized to minimize the effects and that mitigation measures are available should these controls not be sufficient. It is important to stress that the emissions will not be allowed to adversely affect ambient air quality levels prescribed by the State of Hawaii Air Quality Standards. It is not possible at this time to quantify the expected air pollution levels which are subject to such factors as the final design of the fire training building and natural gas "X-mas tree". However if present methods are used, the pollution levels of oil fires can be estimated by the quantity of fuel consumed during a training day. This data is included in the previous section on airborne emissions.

B. Noise Emissions

The sources of noise emissions resulting from training exercises are: a) Gunfire, b) Pumper trucks, c) Driver Training, and d) Canine dogs. Helicopters will only be used for emergencies. The on-site sound level measurements taken by the acoustical consultant indicated

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that the highest sound level was created by gunfire. It was also found that the highest noise level of gunfire was within the limits of the CZC at the closest residential area during normal tradewind conditions.

Nevertheless, certain controls are being considered to further reduce the possible adverse noise levels. These include: a) Direction Impact sound level studies of gunfire 17 have shown that all guns show a focusing effect in front of the muzzle of approximately 20 decibels, with an egg-shaped polar sound distribution pattern with the lowest sound level in the rear. This indicates that the sound level can be expected to be approximately 20 dbs less in the rear of the gun as compared to the front. Therefore if the direction of firing is away from the closest inhabited residential area, there can be an expected minimization of sound level of approximately 20dbs. b) Acoustical treatment of the firing sheds to absorb the gunfire noise at the point of firing. This can be expected to have a significant effect on the attenuation of the sound level. c) Earth berms will be utilized for both sound attenuation and safety factors. The total enclosure of the ranges by landscaped earth berms to prevent any stray bullets from accidental firings or richocheting, will also contain the gunfire noise and direct the sound waves upward to be dissipated by normal tradewinds away from the upwind residential areas. The high moisture content of Kona winds (which exist 25% of the time in the

opposite direction) significantly reduces the amount of sound carried.

d) Artifical and natural landscaping elements such as earth-filled berms and dense foliage will be carefully located to maximize sound attenuation in the Mauka direction toward populated areas. It has been found that these landscaping elements could reduce sound levels by approximately 6 dbs per 100 feet (ground distance). 18 e) The location of buildings will be carefully studied to utilize them as possible sound attenuators. For example, the upwind location of significant building masses such as the classroom/administration and gymnasium buildings between the firing ranges and the residential areas one-fourth of a mile away will aid to attenuate the sound levels. f) Enclosed, air conditioned classrooms and offices will eliminate any potential disturbance that training exercises or gunfire may have upon the functioning of these spaces.

Should any of these control measures be insufficient in reducing the gunfire noise to an acceptable level, several alternative mitigation measures are available, though not desirable. The pistols and rifles may use "silencer" attachments which would reduce the noise levels almost completely. This measure, however, would add bulk and weight to a weapon and would normally not be used on the job.

Another alternative mitigation measure is to completely enclose the firing ranges, thereby making them indoor ranges. Since most of

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the actual shooting associated with law enforcement is done outdoors, the artificial lighting and controlled atmosphere would create an unrealistic situation and the additional construction costs of completely enclosing the ranges (especially the rifle range) can be expected to be quite significant. Finally, the use of other military and public ranges has been found to be unacceptable by the Honolulu Police Department due to inflexibility of scheduling. Therefore, these three possible mitigation measures should only be regarded as "last-resort" alternatives.

In conclusion, the on-site measurements indicated that the maximum sound levels are within the CZC standards under normal conditions, and the additional control measures to be utilized to further reduce the noise levels significantly can be expected to render negligible the adverse environmental noise emissions generated at the training facility.

V. ALTERNATIVES TO THE PROPOSED ACTION

The alternatives to the proposed action may be investigated in three categories: a) Alternatives to the proposed training facility which may be possible means of attaining the stated goals and objectives, b) The alternative sites considered for the location of the proposed facility, c) Alternatives available to minimize or eliminate any significant adverse environmental effects.

A. Alternatives to the Proposed Training Facility

The alternatives to the proposed training facility which have been considered as possible means of attaining the stated goals and objections of the project are: a) Continuation of the existing training conditions (no-facility-alternative), b) Investigation of existing facilities which may be utilized, and c) Construction of separate facilities.

The continuation of the existing training conditions which utilize crowded classrooms, public facilities, public streets, etc., and the problems which arise from this practice has been documented in the TYA Report and need not be reiterated here. It is significant only to point out that the lack of sufficient and adequate facilities, not only fails to meet the goals and objectives of the proposed facility, but also has restricted the goals and objectives of both the Fire

and Police Departments. Their goal of providing the best-trained and most informed firefighters and law-enforcement officers is simply not possible without adequate training facilities.

The investigation of existing facilities which may be utilized is an alternative which has already been attempted during the past years. Due to the lack of their own training facilities, the Training Divisions of both Departments have had to obtain permission, and schedule classes or training exercises at various public, private, and military facilities such as: Kuakini Hospital, Kewalo Basin, Pearl Harbor Naval Shipyard, Kapahulu Library, Ft. Ruger Armory, Hickam Air Force Base, etc. The continued usage of these facilities on a regular and predictable basis has not been possible due to other prioritive needs of the private, public, and military sectors. Formerly utilized facilities such as the Pearl Harbor Naval Shipyard, and Hawaii Raceway Park are such examples no longer available. use of these facilities (should they become available on a continuous basis) has further problems: a) The use of separated, disjointed facilities does not meet the objectives of having a centralized facility where various types and phases of training can take place. due to scheduling, travel time, etc. still would not be resolved, b) The use of public, private, and military facilities, even if they are available, do not meet the programmatic and physical needs of

the desired training programs. Classrooms at a public school, for example, most often do not have audio-visual equipment available. The equipment, therefore, which is an essential part of training (especially for police officers) has to be carried and set-up for every instructional session.

Another example is the existing fire training facility at the Pearl Harbor Naval Shipyard. Due to its specialized nature as a naval training facility for shipboard fires, it is not appropriate for civilian types of fire training exercises which involve highrises, residences, rescue operations, etc. This facility is no longer operational and will be replaced by a new Navy fire training complex which has a proposed completion date in mid-1976 and an estimated cost of \$4.8 million. The new complex will have four classrooms and will include enclosed structures such as a boiler room simulator, flight deck simulator and gas chamber which are shipboard mock-ups. There will be no open burning since all combustion will take place within these structures and emissions will be consumed by after burners. The fuel and operating expenses of these burners (pollution control) will cost approximately \$157,000 per year.

The new Navy facility will be operational 5 days per week,

Monday thru Friday from 7:30 a.m. to 4:00 p.m. with approximately

2/3 of the training conducted within the classroom and 1/3 devoted to

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practical exercises. The highly specialized firefighting procedures of shipboard fires differ considerably from building-type fires. A Navy fire team must go immediately to the source of the fire which is often in closed quarters such as a boiler room or under a flight deck. These fires usually involve volatile liquids such as gasoline or oil.

The site of the new Navy facility is approximately 3 acres compared to 15 acres for the proposed City and County training site. The physical layout of the Navy facility would be very impractical for civilian firetruck and ladder operations due to limited maneuverability. There is no provision for a high structure to simulate high rise fires and helicopters will not be used in training operations. See Appendix E.

Therefore, the highly specialized training and intensive schedule of Navy training discounts the joint use of this facility on a full-time basis with the Honolulu Fire Department. This facility, however, may be used to train civilian firefighters for shipboard fires. City firemen experience this type of training only once in their careers, but these civilian classes must be scheduled not to interfere with Navy operations.

It is concluded that this second alternative of using private, public and military facilities has been attempted in the past and besides

creating, scheduling and other problems, the facilities themselves do not meet the training needs of both departments.

The construction of separate facilities is another alternative which was considered. As pointed out previously, separated facilities (such as classrooms at one location, gymnasium at another, firing range at a third) create many problems and do not meet the goals and objectives of the Training Programs. The possibility of separate training facilities for the Fire Department and Police Department was also considered. Although this remains a possible alternative, the many advantages of a joint facility in which certain facilities such as the gymnasium, classrooms, etc. could be shared (thereby reducing the construction costs for duplicate facilities), and also the potential of holding joint training exercises, favor the construction of a joint, centralized training facility.

In conclusion, the three alternatives to the proposed training facility have been considered and have been found to be undesirable. Besides not meeting the goals and objectives of the Fire and Police Departments, these alternatives guarantee the continuation of programmatic, scheduling, physical, and economic problems. Therefore, the proposed training facility was considered to be the most desirable and logical alternative to meet the training needs of both Departments.

B. Alternative Sites Considered

An evaluation study to select the most appropriate location of eight possible alternative sites available for the training facility was completed in 1972 by this consultant. 20 The results of that study indicated that of all eight alternatives, the Koko Head Firing Range was the most suitable (due primarily to the existence of its firing range). However, this Koko Head site had certain disadvantages which included its location in a State Conservation District and its General Plan Designation for Park use. Also, an indenture between the Bishop Estate and the City and County of Honolulu which transferred the ownership of the land to the City, designated its use for a park. These were the disadvantages to which several citizen groups (including The Honolulu Rifle Association and the Outdoor Circle) reacted and which led to its withdrawal as the site for the training facility.

The subject proposed Waipahu Incinerator site, which was not among the eight original alternative sites considered, became available after the site study was completed. If it had been available earlier, it would have been selected above these eight original alternative sites. In order to assure its appropriateness and to ascertain its selection as the best alternative site available, the subject site was evaluated by the same criteria and compared to

the other alternative sites. This section, therefore, will summarize the evaluation criteria used and the eight other alternative sites considered for the proposed training facility.

Evaluation Criteria²¹

- Size: A minimum of 14 acres for the total facility. If
 the firing range is located elsewhere, 11.2 acres
 required with an accessory site of 2.8 acres for
 the range.
- Location: As close as possible to Central Honolulu
 (Central Fire Station) to minimize traveling time
 for instructors, trainees, and majority of fire
 trucks.
- 2. Environmental: Generally one-half mile from any incompatible types of inhabited areas (residential, apartment, business, resort). Compatible types of areas include industrial agricultural, and preservation. This distance may be reduced dependent upon unique factors such as topography, existing landscaping, wind direction, etc.
- 4. Topography: As level as possible to minimize grading costs, maximum slope: 10%.

- Utilities: All utilities available on site or nearby
 within reasonable, economically-feasible range.
- 6. Zoning: No incompatible zones within environmental effect range. No negative impact on surrounding zones in terms of land values and future developments.
- 7. Accessibility: Easily accessible from major thoroughfare on improved road of sufficient width capable
 of handling heavy use. Access road through
 compatible types of zones.
- 8. Availability: Land should be available. Owned by City and County of Honolulu or acquirable at a reasonable cost.

The locations of the eight alternative sites evaluated by this criteria are shown in Figure 7. The reason for the rejection of each alternative site is summarized below. The detailed assessments and evaluations of each site may be found in the TYA Report.

Fort Barrette: Located the farthest from Central Honolulu
 (32 minutes via freeway). Due to topography,
 28 acres would have to be purchased to obtain
 14 acres of reasonably sloped, usable area.

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FIGURE 7: ALTERNATIVE SITES

- 2. Waimanalo (Mauka Lands): Located on the windward side, with only access over the Pali, thereby putting additional, unnecessary wear on fire trucks. Environmentally not desirable: surrounded by residential-zoned areas.
- 3. Waimano Ridge: Environmentally not desirable: located adjacent to Waimano Home facility. Only access to the site is through Waimano Home.
- 4. Waipahu: (Industrial Site): The topography of the site is extremely steep along the Pearl Harbor side. Wedge-shape parcel renders portion of site unusable. Of total available 14 acres, a significant portion is unusable, therefore, the site would not be large enough to accommodate the facility.
- presently under consideration. It is located Ewa of Waipahu Depot Road, closer to the mauka residential areas and adjacent to Pearl Harbor West Loch. This site was rejected primarily because of its low-lying elevation which made it subject to flooding due to tidal fluctuations. It is also close to the residential areas.

- 6. Halawa B (Below Board of Water Supply Station):
 Adverse environmental impact upon residential areas
 1/8 mile downwinds. Fairly steep topography requiring significant amount of grading.
- 7. Halawa A (Below Jail): Potential adverse environmental impacts. Adjacent to Halawa Jail. Residential area 3/4 mile downwind but also up on ridge. Any landscaping or earth berms would not prevent sound from rising and reaching this residential area. Since the TYA Report was completed, this parcel was assigned to the Dept. of Public Works for a Corporation Yard. Therefore, it is no longer available.
- 8. Koko-Head Firing Range: One of the more desirable sites.

 Disadvantage: located in Conservation area, and
 designated for park-usage. Public reactions including
 those from Honolulu Rifle Association (which wants
 to retain the crater for future expansion of the firing
 facilities) and the Outdoor Circle has resulted in the
 withdrawal of this site for the proposed facility.

The evaluation of the subject Waipahu site indicated that it is the best alternative of all the available alternative sites previously discussed. The results of this evaluation based on the eight criteria follows:

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- 1. Size: There is a total of approximately 100 acres in the area designated for public facility. The 14 acre requirement for the training facility can readily be accommodated, occupying only a small percentage of the total area available for other public facilities.
 (A total of 15 acres was set aside for this facility to ensure adequate functional configurations).
- 2. Location: It is centrally located on Oahu and approximately 15 miles from Central Honolulu. It is within reasonable driving time from Honolulu (approximately 20 minutes) and centrally-located in terms of all Fire Stations on Oahu (from which all fire trucks will originate).
- 3. Environmental: The closest residential area is approximately 1/4 mile mauka of the proposed site. Although this is less than the general 1/2 mile criteria, the prevailing tradewinds and flat open area will direct any adverse airborne or noise emission away from the residential area. In the downwind direction, the site is bordered by compatible types of areas:

incinerator, dump area, canefields, and Pearl
Harbor West Loch. All other environmental
concerns have been discussed in detail in previous
sections of this Report.

- 4. Topography: The existing land is basically a flat, open area. Its elevation is fairly low and will have to be raised by filling. The availability of incinerator residue from the adjacent incinerator relieves this potential problem.
- phone, sewage system, solid waste disposal) are
 available along Waipahu Depot Road which adjoins
 the proposed site.
- 6. Zoning: The area is presently zoned Agriculture but designated for Public Facility use in the General Plan.
 The proposed facility would not have any negative impact upon the surrounding areas in terms of land values or future developments.
- 7. Accessibility: The proposed site is easily accessible

 from two H-1 Freeway Off-ramps which feed unto

 Farrington Highway (a divided highway) to Waipahu

Depot Road. The distance between Waipahu Depot Road and the freeway off-ramps are: Kunia Interchange (2.1 miles) and Waipahu Interchange (1.1 miles). The site is approximately 1/2 mile from Farrington Highway along Waipahu Depot Road which has just recently been improved for 1/4 mile and is of sufficient width to accommodate the additional traffic.

8. Availability: The proposed training facility site is owned by the City and County of Honolulu and will not incur any acquisition costs.

In conclusion, the alternative sites have been considered and evaluated on an established set of criteria. This evaluation has shown that the proposed site fulfills all of the criteria, and has confirmed that the proposed Waipahu site is the most desirable and reasonable location for the training facility.

C. Alternatives Available to Minimize or Eliminate Any Significant Adverse Environmental Effects.

As discussed in Section IV. Unavoidable Adverse Environmental Effects, the only potential adverse effects are: a) Smoke emissions from the fire training exercise and b) Noise emissions from gunfire.

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Alternatives available to <u>minimize</u> the smoke emissions from the fire training exercises are a) the use of an incinerator attachment to the training building, which would re-burn the carbon content of the smoke, b) the use of water sprays to control the emissions into the atmosphere from the concrete slab and pit, and c) the use of cleaner types of fuels for burning exercises. All of these alternatives and their effects on minimizing smoke emissions have been discussed in the previous section.

There are two alternatives available to eliminate the potential adverse smoke emissions resulting from this proposed training facility: a) Hold elsewhere those fire training exercises which involve the generation of smoke, or b) Eliminate all burning types of exercises completely. Both alternatives are contrary to the goals and objectives of the training facility. The first would physically separate burning drills from other types of drills. Since these burning drills are integral parts of the different types of training, its separation will result in loss of effectiveness of training and in loss of time (due to traveling of fire companies between different training facilities). The second would eliminate one of the most crucial parts of training: exposure to actual heat, flames, and smoke. This has been one of the major deficiencies of the present training conditions, and to construct a new training facility which does not fulfill this specific need of training is unrealistic and self-defeating.

Therefore, there are alternatives available to minimize the potentially adverse smoke emissions. Two of these (water spray and cleaner fuels) will be utilized when they become available. The third (incinerator) involves additional costs to the facility, but may still be utilized should the controlled smoke emissions from the Training Building (through slower release of smoke) prove to be ineffective. The two alternatives available to eliminate the potentially adverse smoke emissions are contrary to the goals, objectives, and to an extent, successful functioning of the proposed training facility, and therefore should be considered only as "last-resort" measures.

The noise emissions from gunfire can be minimized by several alternatives. The use of acoustical treatment, earth berms, land-scaping, building locations and massing, and the direction of firing have all been discussed in detail in Section IV, under B. Noise Emissions. As pointed out, these control devices can be expected to further reduce the measured sound levels (which already meet the CZC Standards under normal conditions). Other available alternatives discussed previously are the use of silencers or the enclosure of the ranges. Although these measures would ensure the minimum sound levels, they are not desirable for training purposes and should also be considered only as "last-resort" measures.

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Another alternative which was considered is the re-location of the firing ranges elsewhere such as at the existing Koko Head Firing Range, the Army's Schofield Range, and the Kaneohe Marine Corps Range. These alternatives were rejected by the Police Department due to the integral part of weapons instruction and practice towards the total training of law-enforcement officers. The use of the firing ranges is linked very closely to other training facilities such as classrooms, canine training, etc. Their separation, besides creating scheduling problems is also contrary to the goals and objectives of the proposed centralized training facility.

The Honolulu Police Department weapons firing program extends throughout the year since all police officers must participate in weapons familiarization and qualification once per year. To accomplish this goal, firing programs will be conducted daily (5 days per week) and this intensive schedule would eliminate the practicality of sharing facilities with the military which will have first priority to satisfy their own requirements. In the past, the Honolulu Police. Department has been utilizing the Koko Head Range on a shared basis with civilians and Wahiawa police officers have been permitted the use of the Army's Schofield Range on a limited basis. The Honolulu Police Department has not been extended an invitation to use the Kaneohe Marine Corps Range. 22

4.

In conclusion, there are several alternatives available to minimize any adverse smoke or noise emissions from the proposed training facility. Many of these alternatives such as the use of water sprays, cleaner fuels for smoke emissions, and earth berms, acoustical treatment, landscaping, etc. for gunfire, will be incorporated into the design of the facility, and should be effective in minimizing or eliminating the potential impact upon the surrounding areas. Should any of these measures not be sufficient to meet present or future standards, "last-resort" measures may be taken to assure compliance.

- VI. RELATIONSHIP BETWEEN LOCAL SHORT TERM USES AND THE MAIN-TENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY
 - A. Expected Long-range Function or Use of the Proposed Facility

 The proposed facility is being planned to accommodate the

 training needs of both the Fire and Police Departments to the year

 1995. As defined previously, one of the objectives of the proposed

 facility (due to the rapid changes in the knowledge and techniques

 of firefighting and law-enforcement) is to be flexible, thereby con
 tinually responsive to any future needs or modifications.

The proposed facility, therefore, will have to meet both shortterm and long-range needs of both Departments. It will have to
satisfy the immediate and urgent needs of firefighting and law-enforcement training. It will also have to satisfy these needs for the next
twenty years, and be responsive to any needs beyond that which are
difficult to predict at this time. In this way, there can be an expected long-range function and use of the proposed facility. In addition, the facility should also result in long-term benefits for the
whole City and County since governmental services such as fire and
police protection (the efficiency and success of which depend greatly
upon training) will always serve important functions in the County
operations.

B. Optional Uses Available for Future Choice and Implementation

The proposed facility will occupy the land for a minimum of twenty years, and should be considered a long-term commitment of the 15 acre parcel for that specific use. For that 20 year period, therefore, no other options will be available for any other alternative uses. After 1995, the land may be converted for another use such as a public facility since the land ownership will still be retained by the City and County. This possibility, however, does not seem realistic, since the need for such a training facility will, in all probability, always be present.

In another sense, however, there will be certain types of options available for future choices during the twenty year period. As indicated in the previous section, one of the objectives of the training facility is to maintain a certain degree of flexibility to accommodate any changes or modifications in training needs. In this way, the options of alternative training methods which may be developed in response to changing needs will be available and may be implemented into this facility, thereby assuring the long-term maintenance of properly-trained firefighters and law-enforcement personnel.

Another option available, though not foreseeable at this time, is the conversion of the proposed training facility from strictly a

fire and police type of function to other types of educational and/or training activities. Facilities such as the classrooms, gymnasium, training pool, drill field, driver training are "general-use" types of educational facilities which may accommodate a variety of different functions such as those required by community colleges, trade schools, etc. However, this does not seem feasible nor desirable at this time.

C. Present and Future Contributions to Economic Productivity and Social Welfare

There will be significant immediate and future contributions to economic productivity and social welfare as a result of the proposed facility. These may be considered in two ways: a) For the surrounding Waipahu Community, and b) For the County-wide population.

As discussed previously, the Waipahu Community may experience some indirect economic windfalls such as an increase in business activities due to the increased exposure to the area, and some governmental service positions for the maintenance and security of the training facility. The potential social contributions would be the improvement of the area and also a favorable community image due to the uniqueness of the proposed facility.

The contributions to the County-wide population are much more significant. The most significant will be towards the Fire Insurance Ratings and premium rates.

"The American Insurance Association (AIA), formerly the National Board of Fire Underwriters, has emphasized the Importance of training as a significant contributor to an effective fire protection service. This non-profit association of fire insurance companies has set up standards by which a city is graded for insurance ratings in terms of water supply, building codes, police department, fire department, etc. Besides being an indicator of adequate protection for all citizens, this grading system effects the insurance rates for residents and private and public agencies. "The gradings that are established are used by rating bureaus as an aid in determining basis rates in a state. The rating bureau will advise city officials as to the approximate reduction in rates due to an improvement in the grade of protection." In their latest complete report for the City and County of Honolulu (1962), the city as a whole was rated in Third Class. The Fire Department, however, was rated in Fourth Class due to a number of deficiencies of which the most significant was the lack of adequate training facilities. In 1970, a supplementary evaluation and report reappraised the Fire Department to account for improvements made by that agency. However, a Fourth Class rating was still retained, again due primarily to the lack of adequate training facilities. The acquisition of adequate training facilities would upgrade the Fire Department rating to place them in Third Class. Conceivably, this could favorably affect the insurance rates of the County. 23

Another significant economic contribution of the proposed facility would be the results of improved fire-fighting services. Although difficult to actually measure, losses due to fire and particularly due to firefighting efforts, can be reduced by more knowledgeable and well-trained firefighters. One such example is the amount of damage in the aftermath of a fire attributable to water. It has been pointed out by the Fire Training Chief that with proper training, a firefighter can use a minimum amount of water to extinguish a flame

incident, thereby reducing the amount of potential water damage.

The Fire Department presently does not have adequate facilities to train and familiarize its firefighers on the practice and development of such techniques.

The County-wide social contribution of better trained lawenforcement officers is obvious. As the population of the County
continues to grow, the importance of the maintenance and the
constant availability of well-informed and skilled officers becomes
more critical. Recently publicized "police brutality" and other
similar reports indicate the problems arising in this area. The
proposed training facility, by providing the means for a more intensive
program for both new recruits and in-service officers, can be expected
to provide an effective law-enforcement agency, a better community
sense of well being, and possibly also improve the image of the
police officer.

The economic and social contributions of the proposed facility, therefore, can be expected to be both short and long term. It may provide some short term windfalls to be the surrounding Waipahu area, but more significantly, it can be expected to have long-term benefits to all citizens of the City and County.

D. Possible Retardation or Enhancement of Future Uses by the Implementation of the Proposed Action

As discussed previously, the proposed facility is expected to

improve the quality of the existing dumping and incinerator area. This will enhance the area and make it much more attractive for other future uses such as recreational or public-use facilities.

There are no anticipated adverse effects (such as down-zoning or decrease in land values) which would retard the future use of the area for similar types of public facilities.

As discussed previously, the future development of a large Regional Park on the Waipio Peninsula would not be hindered by the construction of the proposed training facility.

VII. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

There are four possibly irreversible and irretrievable commitments of resources which should be considered: a) A 15 acre parcel of land, b) The ground water supply which will be utilized in the training exercises, c) The incinerator ash-residue and earthfill, and d) The materials and labor involved in the construction of the proposed facility.

The proposed facility will commit 15 acres of land to a specific use for a period of at least 20 years. As discussed, although certain optional uses of the facilities will remain available, the land for all purposes will be committed, therefore making it irreversible and irretrievable during this period. Should the need for the training facility expire (either during or at the termination of this 20 year period), and another prioritive need becomes apparent, or should the useful age of the physical facilities become dated and obsolete, the facilities may be demolished, thereby retrieving the land for another use. Although such an action does not seem realistic nor probable at this time, the retention of land ownership by the City and County of Honolulu assures this possibility.

A certain amount of ground water supply (10,000-12,000 gallons per day) will be depleted by this facility. As discussed earlier, the water will be utilized to its fullest possiblities through filtration

returning unpolluted (through evaporation and percolation), to its original source. In this sense, the ground water to be depleted will not be an irretrievable commitment of that resource.

Approximately 117,000 cubic yards of incinerator ash-residue will be used to raise the grade elevation of the proposed site. Presently, this residue is being deposited in the dump area and is not being used for any purpose. The use of this material for the proposed facility will actually be making a better use of this waste resource, therefore it may actually be considered as a retrievable process, of solid waste. An additional commitment of approximately 24,000 cubic yards of earthfill (top soil) will be committed for land-scaping purposes, and may be considered irretrievable.

The most significant irreversible and irretrievable commitment of resources will be the materials and labor required for the construction of the proposed facility which will cost an estimated \$10. million. The time and energy of individuals doing the planning, design, and construction of the facility, once expended, are not retrievable. Likewise, the materials used in the construction cannot be returned to its natural state, and therefore, are irreversible and irretrievable commitments of these resources.

VIII. ECONOMIC AND SOCIAL ANALYSIS

A. Economic Analysis

There are no anticipated non-beneficial economic effects resulting from the proposed action.

In terms of the surrounding Waipahu area, the potential adverse economic effects have been investigated and found to be non-existent. The surrounding land values, zoning, environmental, quality, and land use would not have any adverse or downgrading effects. Instead, the proposed action can be expected to improve the quality and potential use of the area. Some beneficial economic windfalls for the area have been discussed and are not unrealistic possibilities.

In terms of the County-wide economic benefits or non-benefits, the total cost of the planning, design, and construction of the facility will have to be weighed against all of the potential benefits such as stable and possibly lower fire-insurance rates, long-range savings of property and lives due to improved firefighting and law-enforcement methods, more efficient training programs and scheduling by the two Departments. In weighing these two factors, it appears that, although the potential benefits are by no means guaranteed, and for the most part are unmeasurable, the greater beneficial economic impact to the community as a whole and as individuals, would be

realized through the commitment of the funds for the construction of the proposed facility.

B. Social Analysis

Since the site of the proposed facility is presently unoccupied and un-used, and the potential adverse environmental and economic effects upon the surrounding area have been determined to be negligible, there are no anticipated adverse or non-beneficial social effects.

Instead, the social effects of the proposed action can be expected to be mostly beneficial. As discussed previously, the uniqueness of the training facility, and the anticipated wide exposure to schools, citizen groups, and visitors may give Waipahu a new and improved community image unlike any other community.

County-wide, the proposed facility will socially benefit all citizens. The tremendous growth of the County's population and density, and the resulting problems which have been surfacing (such as increasing crime rates) will have to be solved. The proposed training facility is one solution which, through the improved training of firefighters and law-enforcement officers, and the utilization of better firefighting and law-enforcement knowledge and techniques, can be expected to increase the safety and sense of well-being for all citizens.

FOOTNOTES

- The existing conditions and problems involving wasted travel time is discussed in detail in the Report by Tagawa, Yamachi and Associates, titled Fire and Police Training Facility, Basis for Request to Amend the General Plan, 1972.
- Report by Tagawa, Yamachi and Associates, 1972.
- 3 Ibid
- Stanley Shimabukuro & Associates, "Waipahu Refuse and Incinerator Ash Disposal Site Waikele and Waipio, Ewa, Oahu, Hawaii", prepared for the Building Department, City and County of Honolulu.
- 5 Sterling, Elspeth P., Sites of Oahu, Bernice P. Bishop Museum, 1962.
- 6 Letter from Historic Preservation Officer, State of Hawaii Department of Land and Natural Resources, December 24, 1974.
- Meeting with Ron Walker, Chief of Wildlife Branch and Widlife Biologists Dave Woodside and Ralph Saito, State Department of Fish and Game, December 2, 1974.
- Telephone interview with Deputy Chief Anthony Lopez, Honolulu Fire Department, January 2, 1975.
- 9 Telephone interview with Paul Aki, State Department of Health, Pollution Investigation and Enforcement Branch, December 9, 1974.
- Letter from L.R. DiMaio, Manager of Technical Service, National Foam System, Inc., March 22, 1972.
- Meeting with Jerry Kami and George Richardson, Engineers, City and County of Honolulu, Division of Sewers, December 26, 1974.
- Meeting with James K. C. Chang, Acoustical Consultant, January 9, 1975.
- Source: Honolulu Board of Water Supply.

- 14 Telephone interview with Herbert Minakami, person-in-charge of Proposed Refuse Power Generating Plant Feasibility Study, Department of Public Works, December 24, 1974.
- Telephone interview with Wally Miyahira, Deputy Director, Department of Public Works, January 2, 1975.
- Further information is available through Combustion Equipment Associates, New York.
- National Rifle Association, see correspondence letter in Appendix D.
- 18 Ibid
- Meeting with Pearl Harbor Naval Officers and Staff: Lt. Commander R. L. Neesley (in charge of firefighting school), Lt. Commander L. W. Lonnon (in charge of shore training), Hall Technician Chief C. A. Jaap (Senior Instructor) January 6, 1975.
- Report by Tagawa, Yamachi and Associates, 1972.
- 21 The basis for these criteria may be referred to in the TYA Report.
- Letter from Major Bernard Suganuma, Training Division, Honolulu Police Department, December 26, 1974.
- 23 Report by TYA, 1972, Page 10.

APPENDIX

FIRE AND POLICE TRAINING FACILITY WAIPAHU SITE SURVEY OF EXISTING PLANT MATERIAL

Survey Taken By: Dr. Horace Clay, PhD. Horticulture

Date of Survey: March 8, 1974, 8:30 a.m.

The following plant materials were found on the proposed Fire and Police Training Facility Site:

- BATIS (Pickle-weed or akulikuli-kai): Salty plant, grows in marshy conditions.
- 2. PLUCHEA (Indian): Exotic weed
- 3. CALIFORNIA GRASS
- 4. SALT-BUSH: Salty soil required.
- 5. "LOVE-IN-A-MIST": Wild Passion Fruit
- 6. KIAWE TREES
- 7. HAOLE KOA
- 8. COCKLE-BURR
- 9. NICANDRA (Apple of Peru): Related to tomato plant.
- 10. SPINY AMARANTH
- 11. DESMANTHUS (Slender Mimosa)
- 12. PENNISETUM (Fountain Grass)
- 13. WILD MORNING GLORY (White and Pink)
- 14. POPOLO: Berry Plant
 - 15. SONCHUS: Snow Thistle
 - 16. SWOLLEN FINGER GRASS
 - 17. KLU: Weed
 - 18. TOMATO
 - 19. BERMUDA GRASS
 - 20. NATAL RED GRASS
 - 21. HEARTSEED (Cardiospermum)

3,0



PRELIMINARY ENVIRONMENTAL NOISE SURVEY of PROPOSED WAIPAHU FIRE and POLICE TRAINING FACILITY and RANGE

I. PURPOSE

The purpose of this preliminary survey was to assess the environmental impact of a proposed Waipahu Fire and Police Training Facility and Rifle Range upon the adjacent community.

II. FIELD INVESTIGATION

A field investigation and noise survey was conducted on February 19, 1974 with the cooperation of the Honolulu Fire and Police Departments to evaluate the acoustical characteristics of existing ambient and of the potential impact the proposed facility would have.

A. Weapons

Acoustical data was obtained for three representative weapons expected to be fired on the proposed range.

TABLE 1: WEAPON CHARACTERISTICS

Weapon/Model	Manufacturer	Ammunition
Pistol - Model 151 Chief's Special	Smith & Wesson	38 Special
Shotgun Model 870 12 gauge	Remington	00-Buck & Slugs
Rifle Model AR-15 30 caliber	Colt	223

B. Ammunition

Standard ammunition was utilized for each of the three weapons to simulate representative range firing conditions.

C. Test Site

All field data was obtained at the proposed outdoor site located just below the Waipahu Dump.



D. Instrumentation

An Impulse Precision Sound Level Meter, Type 2204, manufactured by Bruel and Kjaer was used for measuring the peak sound pressure level. The microphone assembly attached to the Impulse Meter consisted of a one-half inch Bruel and Kjaer Type 4134, cathode follower Type 2614, and Model UA-0052 Nose Cone. All field calibration before and after measurements were performed with Bruel and Kjaer Type 4220 Pistonphone.

E. Measurement Procedures

Sound level measurements were taken at six points including the firer's position, and at 100, 200, and 300 yard intervals down range, closest residence, and also at Kumukahi Street of Lower Village.

F. Meteorological Data

Meteorological data between the hours of 9:00 A.M. and 12:00 P.M. on February 19, 1974 were obtained from Honolulu International Airport and the U.S. Weather Bureau.

Temperature		68 degrees
Humidity		85%
Wind Velocity		8 miles:
Wind Direction		NE .

III. ENVIRONMENTAL IMPACT

A. Acoustical Findings

The average peak sound level in decibels for each weapon at the measuring points are presented in the following table.

TABLE 2: ACOUSTICAL DATA

Weapon	Measuring Points					
	Firer's Position	100 yds.	200 yds	300 yds	Closest Residence	
38 Pistol	122 dB	88 dB	87 dB	78 dB	53 dB	
Shotgun 12 gaug	e 153 dB	113 dB	113 dB	87 dB	61 dB	
Rifle 30 calibe	r 159 dB	126 dB	119 dB	98 dB	77 dB	



The highest level of sound at the closest residence on private land would be well within the limitations of the CZC. However, with baffling for safety, landscaping, etc., further sound reduction would result.

B. Environmental Impact: Human

Field data was compared to the National Academy of Science, National Research Council and the U.S. Army criteria for damage risk. The peak sound level of those weapons, beyond the firer's position, was not found to be hazardous to hearing.

Presently there are no final Federal or State guidelines for impulse noise, however, criteria do exist for calculating the possible annoyance level for impulsive noise sources.

Under Section 6 of the Noise Control Act of 1972, the EPA will develop and publish noise emissions standards by April 1974 which will have to be met and complied with at this proposed firing range and training facility.

1. Aberdeen Proving Ground

For its weapons testing program, Aberdeen Proving Ground, Maryland, has established operational criteria based on their past experience to predict community complaints. Their maximum allowable sound level for impulse noise without the use of hearing protection is 138 dB using the NAS - NRC criteria, and 140 dB using the U.S. Army criteria.

TABLE 3: ANNOYANCE CRITERIA FOR WEAPONS FIRE

Decibel Level	Expected Complaints		
Less than 100 dB	None		
100 ~ 108 dB	Possible		
Greater than 108 dB	Definite		

2. U. S. Air Force

The U. S. Air Force has developed operational criteria for estimating the effects of impulse noise (Sonic Boom) on



people. Sound overpressures up to 1 lb. per sq. ft. of 128 dB do not generate significant public reaction day or night.

TABLE 4: EFFECTS OF SONIC BOOM ON PEOPLE*

Sound Overpressure 1bs. per sq. ft.	Peak Decibel Leve	Predicted Effect
Less than 1.0	up to 128 dB	No significant reaction day or night
1.0 - 1.5	128 - 130 dB	Probable public reaction
1.5 - 1.75	131 - 132 dB	Significant public reaction
1.75 - 2.0	133 - 134 dB	Significant public reaction day or night

Neither of these criteria would be exceeded, therefore, the adjacent community population at large would not be expected to complain.

* C.W. Nixon and P. Borsky: "Effects of Sonic Booms on People", Journal Acoustical Society of America, Vol. 39, No. 5, May 1966.

C. Environmental Impact: Animal

Based upon existing evidence prepared for the U.S. Environmental Protection Agency* the effects of noise on wildlife and other animals would not be of sufficient intensity to alter the normal patterns of animal behavior outside the proposed Waipahu Range.

* "Effects of Noise on Wildlife and Other Animals", U.S. Enfironmental Protection Agency, Dec. 31, 1971, Report NTID 300.5.

D. Fire Engine Noise

With engine and pumps at full throttle, sound level 10 ft. from engine measured 94 dB; with engine and pumps idling, sound level measured 85 dB.



E. Fire Department Helicopter

Landing, take-off and hovering at 500 ft. of the Fire Department helicopter measured between 85 and 90 dB.

F. Police Department Squad Car

The Police Department squad car practicing high speed skids and turns generated sound levels of 90 dB peak at 20 ft.

G. Vehicular Noise

The Garbage Department trucks going to and from the dump site at approximately 40 miles per hour generated peak sound levels of 90 dB.

IV. CONCLUSION

The proposed Waipahu Fire and Police Training Facility and Range under consideration should not constitute an environmental impact problem.

NEW MINIMUM ACCEPTABLE NOISE LEVELS

The minimum acceptable noise level of the proposed range will have to comply with OSHA and the CZC. As of this date, OSHA's limitation is set at 140 dB peak sound pressure level.

Transposing the old CZC Octave Band into the current center frequencies mandates compliance with the following:

Octave Band	Sound Pressure Level
31.5	
63	79 dB
125	74
250	66 dB
500	59
1000	53
2000	47
4000	41
8000	39

During the evening hours of 6:00 P.M. to 12:00 P.M. the Sound Pressure Level should be 6 dB lower and during the morning hours of 12:00 P.M. to 6:00 A.M. the Level should be 10 dB lower than the above figures.

Information obtained from James K. C. Chang, Acoustical Consultant, January 9, 1975.

APPENDIX D

NATIONAL RIFLE ASSOCIATION OF AMERICA

Publishers of THE AMERICAN RIFLEMAN

1600 Rhode Island Avenue, N.W. • Washington, D. C. 20036

783-6505

February 9, 1972

Mr. Gordon D. C. Tyau, Architect Group '70 Lab 1186 Fort Street Mall Honolulu, Hawaii 96813

Dear Mr. Tyau:

Fortuantely, we have done a fair amount of work on the problem of the noise of shooting and its attendant problems.

First, the sound pressure levels (SPL) generated. These levels are peak SPL and cannot be measured by the ordinary sound survey meter since they are impact type sound. The measurements made by NRA were as close to free-field as possible. The formula, SPL = $20\log_{10} P_{0}$ can be used to describe these

measurements. P_1 is the SPL at 1 meter from the source; and $P_0 = 0.0002$ dynes per square centimeter.

It should be noted that all guns show a focusing effect in front of the muzzle of approximately 20dB. This falls off in a nice even predictable manner as the polar pattern is plotted. As a result you have an egg-shaped polar pattern with the lowest SPL directly to the rear.

The SPL measured are (All SPL are 1 meter in front of the muzzle).

Cal. 7.62mm NATO, M118 match=172dB

.38 Special Wadcutter (148gr.)=148dB

12 gauge Shotgun, trap load=160dB

10 .

Equipment used: General Radio type 1551-C Sound Level meter with type 1556-B Impact Noise Analyzer.

Guns used were: a US Rifle, M-1 converted to Cal. 7.62mm NATO; a Smith & Wesson Model 10 Military and Police w/4" bbl., and a Remington 1100 shotgun with 26" bbl.

The radius of audibility is not readily determinable. Ambient noise level, differing meteorological conditions, physical placement of the range itself, in relation to the surrounding landforms; and physical characteristics of the range will all affect the radius of audibility, and of course, any impact on a nearby community.

Ideally, a range should be located in a narrow wooded valley. The direction of firing should be away from and downwind of any inhabited areas. Placement in a wooded valley allows the sound to be reflected from the valley slopes into the air. Vegetation does attenuate sound-a good average figure for Hawaii is about 6dB per 100 feet (ground distance) of trees since your trees have foliage the year around. Firing in a direction away from habitation simply uses the fact of the 20dB focusing previously referred to in order to lower the sound directed at habitation by 20dB. Placing a range downwind actually allows the sound to be blown away from dwellings.

If a range is baffled for safety, it is also baffled for sound. For example, NRA has an Experimental Range. It is located in a shallow (100 feet at most) valley, and is safety baffled. There are dwellings within 2000 feet crosswind of the range. The local county Police Department utilizes the range for their firearms training, and rarely is the sound of firing even audible at the closest dwellings. The combination of baffling and the shallow valley have cut the noise level completely. It should be noted, however, that both high power rifles and shotguns can be heard at the dwellings. It is only the .38 and .45 cal. pistol that cannot be heard.

Several surveys of residential areas near ranges have been conducted. It has been found that if a range is set up properly for maximum sound attenuation, many residents are not even aware of the existence of the range. Others hear it, but get used to it, as people who live close to a jet airport get used to the far greater noise generated there.

We have found that many normal household sounds either mask range noise, or are louder. Television sets, hi fi, children playing, dogs barking, or screen doors slamming all have a tendency to cover the noise of a range. Some residents, of course, convince themselves that guns are bad, therefore the noise is bad, and they are annoyed. Some also claim hearing damage. While there is no way to tell a man he is not annoyed, it is possible to tell him his hearing cannot be damaged. The Walsh-Healey Act has set federal criteria to exposure to noise for hearing damage. A gunshot lasts in the order of a millisecond. The least amount of time allowed for high noise level damage by Walsh-Healey is about 15 minutes. Therefore, 15,000 rounds would have to be fired continuously and consecutively, with a man standing close by in order for his hearing to be damaged. It is hardly likely that this situation would ever occur.

As you may have heard, sound attenuates as it gets further from its source by 6dB each time the distance is doubled. This is more properly known as the Spreading Loss Law, and may be described mathematically as follows:

Spreading Loss = 20log₁₀ R_{1/R_o}

R1 = distance of observation

Ro = reference distance, usually 1 meter.

This equation can be used in predicting noise levels out to about 2000 feet, or 600 meters. After that, the atmosphere and its effects destroys any reliable prediction.

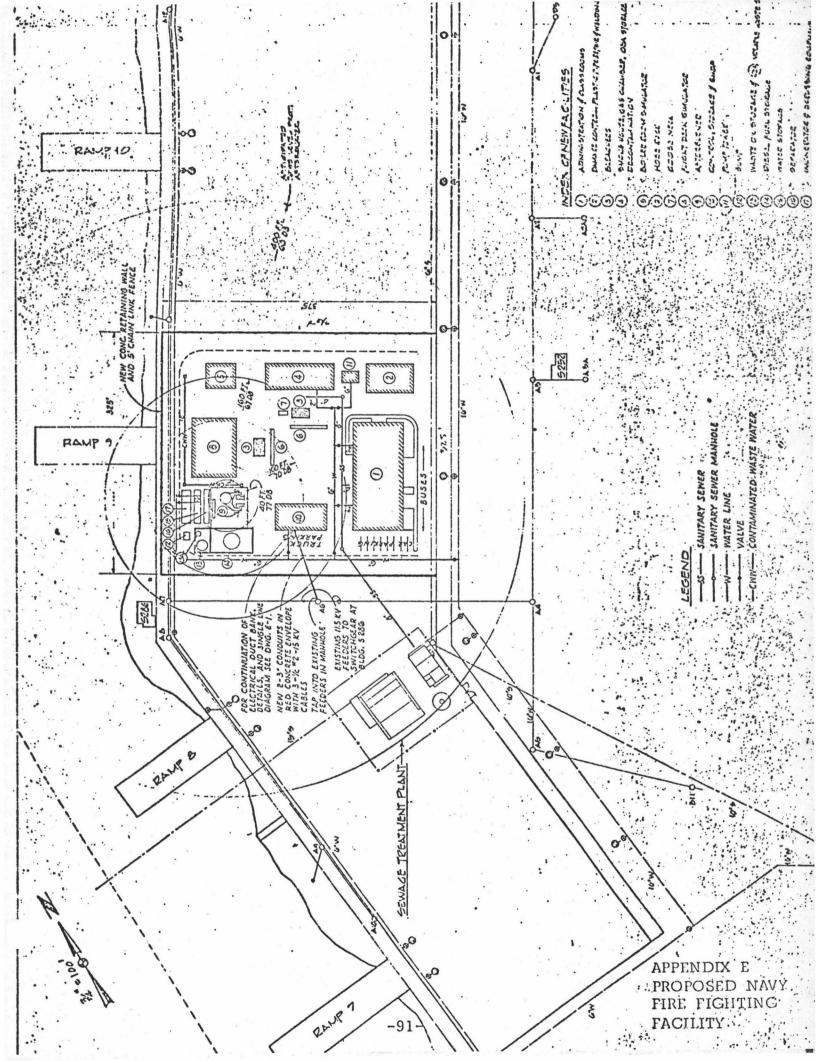
We sincerely hope that this information is in a useable form for you. If you have any questions, please do not hesitate to contact us again.

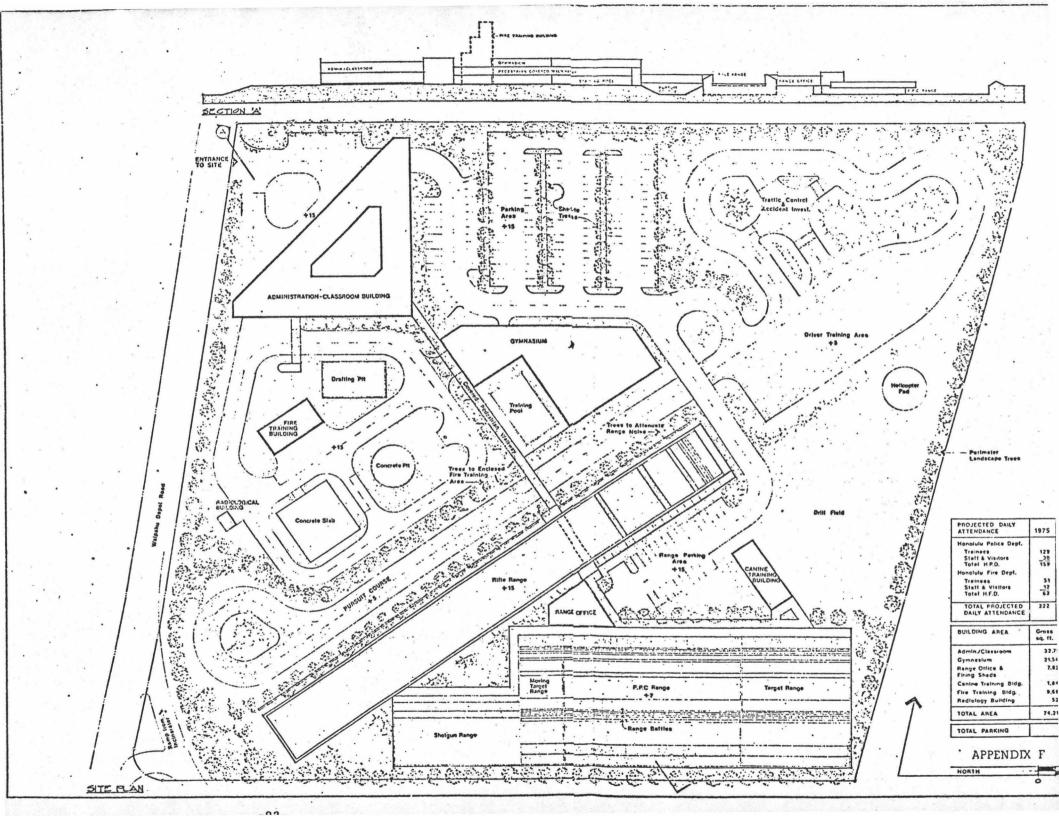
Sincerely, Chalun

Edward D. Andrus, Manager Range Facilities Department

4.5

EDA/dn





Appendix G

Draft Environmental Impact Statement Comments From Various Agencies and Responses by Building Department

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU, HAWAII 96813

K F. FASI

PAUL DEVENS



August 8, 1974

ERNEST T. YUASA BIRECTOR AND BUILDING SUPERINTENDENT

> ROBERT O. TSUMURA BEPUTY DIRECTOR

RESTRED

Group Architects Collaborative, Inc. 926 Bethel Street, Second Floor Honolulu, Hawaii 96813

COLLASOLATIVA INC.

Gentlemen:

SUBJECT: Fire and Police Training Facilities
Draft - Environmental Impact Statement

Please take action on the attached comments made by the Office of Environmental Quality Control and various other agencies on the subject statement.

Very truly yours,

Cornert T Openson ERNEST T. YUASA

Director and Building Superintendent

TH: kh Attach.

cc: J. Harada

APPENDIX G
AGENCY COMMENTS



STATE OF HAWAII

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

OFFICE OF THE GOVERNOR

550 HALEKAUWILA ST.

ROOM 301 HONOLULU, HAWAII 96813

FOR FILING

T... 1 ... 05 ... 107#

July 25, 1974

Ernest T. Yuasa
Director and Building Superintendent
Building Department
City and County of Honolulu

SUBJECT: Draft Environmental Impact Statement for Police

and Fire Training Facilities at Waipahu

Dear Mr. Yuasa,

As of this date, this Office has received sixteen responses to the proposed project. An attached sheet lists the responding agencies.

In our evaluation of the draft EIS (dEIS) and comments provided, this Office finds several areas in which the final EIS should expand discussion. The following comments are offered:

I. INTRODUCTION

This Office recommends the use of a tax map to pinpoint the exact location of the site area. This would
avoid confusion. Reference to the Location Map should
include the page number. Also, City & County's ownership
of the land should be recognized in the second paragraph.

One important part of the dEIS was omitted. A description of the buildings should be included in the final EIS. Information should include building heights, number of buildings, square footage, use of the buildings, and personnel capacity.

Canine training and driver training courses have not been mentioned at all. What kind of training is involved?

RICHARD E. MARLAND, PH.D.
INTERIM DIRECTOR

TELEPHONE NO. 548-6915

January Januar

Page 2 July 25, 1974

Are there going to be any environmental effects, such as noise and air pollution? A discussion of the above subjects should be included in the final EIS.

II. EXISTING CHARACTERISTICS

The dels states on page 10, "...proposed training facility would not have any effect on the recreational facilities in the area..." It states further in the dels that fire training will be conducted when tradewind conditions are directed towards Pearl Harbor West Loch (page 29). This means smoke will blow over the proposed park. Thus, these statements contradict one another.

Corps of Engineers recommends a discussion of the low-lying area's susceptibility to both tidal and riverine flooding in this section, since it is assumed that land filling elevates the ground and will eliminate some of the flooding.

III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

Most comments received pertain to this section.

Please consult individual letter for further information since only a brief summary will be presented.

A. Airborne Emissions

Because burning will be an integral part of the training exercises, a description of the training building, and concrete slab and pit should be provided. Safety precaution measures should be mentioned within the final EIS. Also, this Office recommends emission measurement be taken.

Environmental Center feels that there has been no attempt to quantify emissions. A study of this matter is recommended.

Department of Agriculture recommends that the quantity of fuel consumed for burning exercises be estimated to determine emission values and data.

Department of Health indicates that burning exercises may not comply with present legislation. Although experiments have been conducted, acceptable methods of control are not in sight. A variance might be required. They also point out that complete

Page 3
July 25, 1974

combustion of wood will take longer than five minutes. (p. 15 of dEIS)

Extinguishing agents to be used is another area of concern. Water Resources Research Center at the University of Hawaii points out that any water containing biodegradable and/or non-toxic would constitute pollution since something is added. They further question the composition of the foam which is water soluble and biodegradable. Does it contain nitrates and/or phosphates? Manufacturer's claim does not necessarily mean non-polluting.

Department of Health questions whether bacterial degradation may give rise to odors and other problems from the resulting foam of oil fires. The discharge of this effluent through a storm drainage system may be in violation of State Water Quality Standards and P.L. 92-500.

B. Waterborne Effluents

The statement, "The run-off water from these hose evolutions will not carry any waterborne effluents and therefore would not have any significant environmental effects," does not explain the quantity of run-off which could be a problem if there is significant excess because of the land-fill.

Department of Health finds this section confusing. These questions and factors should be considered. The resulting run-off from hose evolution going into the drafting pit or storm drainage is unclear. This section should also include discharges of sanitary wastes. Since there is a moratorium on new connections to Waipahu oxidation pond, will this delay the project or an on site sewage treatment plant? Canine waste disposal should also be mentioned.

C. Noise Emission

This section has brought substantial comments from other agencies and the Waipahu Community Association. Reference to the appended letters should be made before the final EIS is submitted.

In the Appendix under acoustical data, do the numerical values represent actual noise emission during a practice session? Data for each weapon is noted but

Page 4
July 25, 1974

more than one gun will be fired during a practice session and more noise will be produced. Thus, from the given figures, minimum moise factors are represented rather than the maximum. Therefore, a discussion on noise reduction should be included in the final EIS.

*University of Hawaii's Department of Engineering discusses this subject in great detail. The major concern is the gunfire noise measurements and impact. Discussion of the design and operational features should be included in the final EIS. (See letter for details.)

Department of Health feels this section should include a discussion concerning night training on firing range and other noise generating activities. All regulations regarding noise must be complied with during construction and operation of this proposed project.

Department of Land and Natural Resources has no objections to the proposed project. However, the Division of Fish and Game requests that the final EIS provide more information of noise impact on the wildlife presently in that area. There is a bird refuge in that area.

The United States Navy finds the noise coverage adequate. But the question of safety is not discussed. They suggest a separate section titled "Safety Aspects" be written in. This Office finds this a very good recommendation and concurs strongly with them.

Waipahu Community Association suggests an alternative to this section. An open invitation at Kaneohe Marine Corps Air Station has been extended to the Police Department for use of their firing range. Has this possibility been checked into?

One additional point concerns the employees who will work there. What will the noise levels be for the workers inside the buildings? Special design is needed to reduce the noise impact.

D. Solid Waste

Since one of the solid wastes will be radioactive, there are a few things that should be noted. The

Page 5
July 25, 1974

radiological building must conform to Atomic Energy Commission standards and specifications. If there is more than the regulated quantity permitted, a certified person from AEC must be present to supervise any action. Although this Office realizes that the dEIS states the building is only planned, we feel it is important that some data be given in the final EIS concerning this subject.

Board of Water Supply notes on page 20, the existing 16-inch sewer cannot handle wastes generated because it is a force main. Connection cannot be made to it.

Offsite sewer construction is necessary. Thus, it is recommended to discuss this section separately from solid waste to include sewage collection and disposal.

The dEIS states on page 21 that debris from the fire training exercises will be removed to an existing dump area. However, Department of Public Works says the existing dump across from Waipahu Depot Road may not be available for disposal of debris. Under these circumstances, debris will have to be removed to a sanitary landfill.

Department of Health comments that solid wastes resulting from the exercises should be disposed at the incinerator.

E. Resource Depletion

Although the dEIS states that ash residue will be used for landfill, it does not indicate what kind of . cover soil will be used. Discussion should be expanded to include the process of packing and filling, the support capacity of the landfill, the elevation of the filled land, and the precautions taken to avoid "fire holes".

Department of Public Works adds useful information concerning a feasible study for refuse power generation in Waipahu area. If the Waipahu site is selected, some adjustment to the project site boundary may be necessary. They also comment on the sewage treatment plant on pages 22, 23, and 25 of the dEIS.

Department of Agriculture proposes another alternative for the land. Without additional fill and grading, the land is suitable for nursery and greenhouse culture. Page 6
July 25, 1974

F. Social and Community Aspects

This Office has found many references made to Report by Tagawa, Yamachi, A.I.A. & Associates, as illustrated on page 25. Please provide this Office with a brief summary or the report itself if it is available.

This section has brought strong criticism from the Waipahu Community Association. Rather than being beneficial to the community, they find it undesirable. (See letter)

IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

B. Noise Emissions

The discussion on page 33, first paragraph needs improvement. The statement that trainees will be given "full and actual experience of firing a weapon" and noise is a major consideration is misleading. It is required that all personnel firing a gun must wear an ear protection device to avoid hearing loss. The other alternative mentioned is to enclose the range. This would allow some safety and noise control. If the two alternatives are "last resort", then what are other reasonable alternatives? These other alternatives should be included in the final EIS.

VII. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

Although the proposed facility is committed for specific use in a period of twenty years, the dEIS seems to indicate that the facility will be permanent. The projected time . period seems rather short for a major facility.

Additional comments from this Office

There are a few questions and points that this Office feels should be addressed. Cost of the project should be mentioned. How many people will this facility accommodate? Impact on wildlife in the area needs discussion. Footnotes need page numbers. Are there any historical or archeological sites? This must be documented. Also, Environmental Center comments on the numerous grammatical errors. We recommend editing.

Page 7 July 25, 1974

RECOMMENDATIONS

We recommend that (1) written responses be sent to all commentators including this Office, indicating how specific concerns were considered, evaluated and disposed; (2) all comments and your responses should be incorporated as an appendix to the final EIS; and (3) a copy of the final EIS should be sent to those individuals that provided substantive comments to the draft EIS.

We trust that these comments will prove to be helpful to you in preparing the final EIS. Thank you for the opportunity to review the draft EIS. Also thank you for the extension granted in order to do a complete review.

Sincerely.

Richard E. Marland Interim Director

Attachment

List of Responding Agencies

Federal

U.S. Navy
Department of the Army
(Corps of Engineers)
Department of Army
July 3, 1974
July 3, 1974
July 10. 1974

State

UH Water Reso	urces Research Center	June 25, 1974
*Department of	Planning & Economic Developmen	t June 27, 1974
Department of	Land and Natural Resources	July 3, 1974
Department of	Agriculture	July 9, 1974
Department of	Health .	July 9, 1974
Environmental	Center	July 15, 1974
UH Department	of Mechanical Engineering	July 5, 1974
*Department of	Transportation	July 18, 1974

City & County

*Department of Transportation Services	June	26, 1974
Board of Water Supply	July	1, 1974
Department of Public Works	July	5, 1974.
Department of Land Utilization	July	10, 1974
*Department of Recreation	May :	22, 1974

Private Organizations

Waipahu Community	Association		July	15,	1974
John Moriyama (Priva	ate Citizen)	S	Sept.	4.	1974

*Offers no comments

PB-75-247

March 17, 1975

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Dr. Richard Marland, Interim Director
Office of Environmental Quality Control
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Dr. Marland:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to your comments submitted on July 3, 1974 pertaining to the subject EIS is as follows:

1. Introduction

- A. A tax map is included in page 5 of the final EIS.
- B. City and County ownership of the subject parcel is recognized in the second paragraph of page 1.
- C. A description of the buildings, including building heights, number of buildings, square footage, use of the buildings, and personnel capacity is graphically submitted in the Appendix on page 92.
- D. Canine training is described on page 31 and driver training is included on page 17.

2. Existing Characteristic

A. The City and County Department of Recreation has found the EIS acceptable. Smoke from fire-training exercises will be emitted during

Dr. Richard Marland lage 2 March 17, 1975

tradewind conditions and would have negligible effect on the proposed park if burning is scheduled to respect periods of highest park use such as weekends and holidays. It will have less of an impact than over the residential areas in the opposite direction. See page 12.

B. Ash and refuse residue from the adjacent City and County Incinerator will be utilized to raise the elevation of the existing landfill according to a recently prepared Master Grading Plan.

Consultants will determine the extent and solution to the problem of tidal and riverine flooding. See pp. 6, 36-37.

3. Environmental Impact of the Proposed Action

A. Airborne Emissions

- A description of the training building, concrete slab and pit is included on pages 18-19. Safety precaution measures are discussed on pages 41-42.
- quantify the expected air pollution levels which are subject to such factors as the final design of the fire training building and natural gas "X-mas tree". However, if present burning practices are used, the pollution levels of oil fires can be estimated by the quantity of fuel consumed during a training day. It is expected that a maximum of 5 gallons of diesel oil and 5 gallons of gasoline will be utilized in a mixed solution. The amount of fuel consumed will vary according to the time required to extinguish the fire in each separate drill.

Dr. Richard Marland 190 3 1rch 17, 1975

- 3. Since open burning is permitted by State law only for agricultural purposes, a variance must be obtained for the burning during training exercises. This variance procedure is outlined on pages 19-20.
- 4. Debris remaining after extinguishment of wood fires will be disposed of at the adjacent incinerator.
- 5. Extinguishing agents, including their composition and disposal, are discussed on pp. 20-25 of the final EIS.

B. Waterborne Effluents

- 1. The 10,000 to 12,000 gallons of water used per training day will not affect the land fill if proper drainage engineering measures are utilized.
- 2. Hose evolution drills are primarily used to train firefighters in the proper application of water streams, sprays etc. The drafting pit will collect most of the water for re-use.
- 3. Canine and human sanitary waste will be handled by a new connection to an existing system as mentioned on page 24.

C. Noise Emission

1. The numerical values on page 83, Appendix B, represent the average peak sound level in decibels for each weapon at designated measuring points on the proposed site. If firing tests using many weapons to simulate an actual training session were held at mother firing range where conditions are different from the Waipahu site, the sound readings would not be representative of the new site or proposed facility.

Dr. Richard Marland age 4 arch 17, 1975

- 2. Design and operational features to minimize noise impact are discussed on pages 28-32.
- 3. Night training activities for the Honolulu Fire Department and Honolulu Police Department are discussed on page 26. Minimum acceptable noise levels for evening and early morning hours are given on page 87 in Appendix C.
- 4. A discussion of Federal Wildlife Refuges in the area is included on pages 15-16.
- 5. A new section entitled "Safety Aspects" has been incorporated on pages 41-42.
- 6. The possibility of sharing the Kaneohe Marine Corps Air Station Firing Range is discounted on page 66.
- Expected building interior noise levels for the proposed facility are included on page 29.

D. Solid Waste

- 1. The proposed Radiological Building and its conformance to Atomic Energy Standards is discussed on page 33.
- 2. Discussion of sewage collection and disposal is included under the heading of "Waterborne Effluents" on page 24.
- 3. Debris from the fire training exercises will be removed to the adjacent City and County Incinerator for disposal.

E. Resource Depletion

1. Site preparation, including packing and filling cover soil, elevations and precautions taken to avoid "fire holes" is discussed on pages 36 through 38 in the final EIS.

- 2. The probability of a refuse power generating plant locating near the Fire-Police Training Facilities is discussed on page 35. The parcels previously designated for a sewage treatment plant have been re-assigned as ash disposal sites.
- 3. An alternative use of filled land for nursery and greenhouse culture is mentioned on page 36.

F. Social and Community Aspects

- 1. A copy of the report titled <u>Fire and Police</u>

 <u>Training Facility, Pasis for Pocuest to Avended the General Plan</u>, by Tagawa, Yamachi and Associates, 1972, will be included with this letter to OEQC.
- 2. A letter has been sent to the Waipahu Community Association addressing their concern for the proposed facility locating in the neighborhood.

4. Unavoidable Adverse Environmental Effects

B. Noise Emissions

- 1. The sentence which states that noise is an important factor in weapons training has been deleted.
- 2. Proposed alternatives to reduce the noise impact of gunfire at the project site are discussed on pages 48-49.
- 5. Any Irreversible and Irretrievable Commitments of Resources Which Would Be Involved in the Proposed Action
 - A. Proposed uses of the subject facility after twenty years are mentioned on pages 68-70 and 74.

A. . .

Dr. Richard Marland Tage 6 arch 17, 1975

6. Additional Comments from OEQC

- The cost of the project has been estimated at 10 million dollars.
- 2. The projected daily attendance for the proposed facility is included in the chart on page 92.
- 3. Impact on wildlife in the area is discussed on pp. 15-16 and historical or archaelogical significance is discounted on page 13.

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We have responded to all commentors and incorporated all comments and responses as an appendix to the final EIS. A copy of the final EIS has been sent to agencies that provided substantive comments to the draft EIS.

We are transmitting twenty (20) copies of the final EIS for your distribution.

Frnest T. Guasa

ERNEST T. YUASA

Director and Building Superintendent

TH:le attach.

cc: J. Harada

Group Architects Collaborative, Inc.

FEDERAL

HEADQUARTERS FOURTEENTH NAVAL DISTRICT BOX 110

FPO SAN FRANCISCO 96610

WHEPLY REFER TO: 48:09F:SH:mm Ser 1913

3 JUL 1974

Dr. Richard E. Marland
Director
Office of Environmental Quality
Control
Office of the Governor
550 Halekauwila Street
Honolulu, Hawaii 96813

Proposed Fire and Policy Training Center

Dear Dr. Marland:

The Draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities to be located on Waipio Peninsula has been reviewed. The U.S. Navy has property near the proposed site.

A letter to Mr. Ernest T. Yuasa, Director and Building Superintendent, Building Department, City & County of Honolulu, on 9 April 1974 pointed out the importance of lateral safety baffles for the firing ranges and assumed that adequate baffling would be incorporated into the final design.

The question of Noise is covered on pages 31-34 and 48, but the general question of safety aspects of this project, including lateral safety baffles, is not discussed. As a suggestion, it is recommended that a new section (111-G) entitled "Safety Aspects" be written into the Final Environmental Impact Statement.

Thank you for the opportunity afforded for review of, and comments upon, this Draft Environmental Impact Statement.

Sincerely,

L. G. TIMBERLAKE

CAPTAIN, CEC, USN

DISTRICT CIVIL ENGINEER

BY DIRECTION OF THE COMMANDANT

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March 13, 1975

Fourteenth Naval District Box 110 FPO San Francisco 96610

Attention: Captain L. G. Timberlake

Gentlemen:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Thank you for your comments of July 3, 1974 regarding the subject project. Our response to your comments is as follows:

- 1. Lateral safety baffles have been included in the design of the firing ranges. These baffles are mentioned on pages 28, 42 and are graphically shown on the schematic architectural drawings on file at the City and County Building Department.
- 2. A new section titled "Safety Aspects" has been added in the final EIS on pp. 41-42.

Very truly yours.

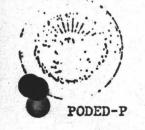
Ernest T. Yussa

Director and Euilding Superintendent

TH:le

cc: J. Harada/

Dr. Richard Marland (OEQC)
Group Architect Collaborative, Inc.



DEPARTMENT OF THE ARMY PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS BUILDING 96, FORT ARMSTRONG HONOLULU, HAWAII 96813

3 July 1974

Dr. Richard E. Marland, Interim Director Office of Environmental Quality Control State of Hawaii 550 Halekauwila Street, Room 301 Honolulu, Hawaii 96813

Dear Dr. Marland:

We have reviewed the draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities and find it to be thorough and detailed in its discussion of impacts. Our comments are as follows:

- a. In the discussion of alternative actions on pages 42 and 43, the statement mentions tidal flooding problems as a reason for eliminating the Waipahu (incinerator site) from consideration. Since the 15-acre recommended site is also a low-lying area in the same general vicinity, its susceptibility to both tidal and riverine flooding might be discussed in Section II Existing Characteristics. It is assumed that the purpose of the proposed filling of low lands described on page 24 is to raise the ground elevation and reduce the probability of flooding.
- b. It is not clear why the proposed action is designated a Federal-State one (See "Name of Action" on summary sheet) since the project is for City and County facilities on land owned by the City and County of Honolulu. This apparent inconsistency should be clarified.

Sincerely yours,

ELROY CHINN

Acting Chief, Engineering Division

March 12, 1975

Department of the Army Pacific Ocean Division, Corps of Engineers Fort Shafter, Hawaii 96558

Attention: Mr. Elroy Chinn

Gentlemen:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to your comments submitted on July 25, 1974 pertaining to the subject EIS is as follows:

- The susceptibility of the project site to both tidal and riverine flooding is discussed on pages 36-37 together with proposed methods to eliminate the problem.
- 2. Federal and State funding programs have been investigated and may become a source of revenue to alleviate the initial planning and construction costs of the project to the County.

Very truly yours,

Ennest T. Vunsa

ERNEST T. YUASA
Director and Duilding Superintendent

.10

: J. Harada

Dr. Richard Marland (OEGC)
Group Architects Collaborative, Inc.



DEPARTMENT OF THE ARMY HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII APO SAN FRANCISCO 96557

HCFE-PS

10 JUL 1974

the and Conch:

we have reviewed the following Draft Environmental Impact Statements:

- a. Proposed City and County of Honolulu Corporation Yard,
- b. Proposed Fire and Police Training Facilities, and
- c. Mahelona Hospital Sewerage System.

ie have no comments to offer.

Sincerely,

COLORALES (S. VARI

Colonel, CE

Director of Facilities Engineering

STATE

UNIVERSITY OF HAWAII

Water Recourses Research Center Office of the Director

MEMORANDUM

June 25, 1974

MEMO TO: Richard E. Marland

Interim Director, OEQC

FROM: Reginald H. F. Younghaf

Asst. Director, WRRC

SUBJECT: Draft EIS, Fire and Police Training Facilities

The subject draft EIS was reviewed in this office principally by llenry Gee and myself and the following comments are submitted for your consideration:

Reference has been made that maximum usage of the water supply will be made and that any runoff water will be returned to the original ground water source in a non-polluted condition. Several points are in error in this statement.

- 1. Any water used for extinguishing fires or used to flush off foam will contain dissolved chemicals (whether biodegradable and/or non-toxic or not) and would constitute pollution in the sense that something has been added.
- 2. The water actually used will dissipate to other sinks other than the original source which includes evaporation to the atmosphere, percolation through the aquifer to the ocean instead of the basal ground water lens, retention in an enclosed aquifer not used for water supply or overland flow to reach Kapakahi Stream and West Loch.

An existing storm drainage system was mentioned on page 18 for the disposal of all excessive amounts of water. Does this system discharge into Kapakahi Stream and eventually into West Loch? If so, what is the composition of the foam which is water soluble and biodegradable? A manufacture's claim of a product being biodegradable and non-toxic doesn't necessarily mean it is non-polluting. Will there be any contribution of nutrients such as nitrates and phosphates to the adjacent Class AA waters by these foams?

RIFY: jmn

cc: II. Goo

J. Johnson

A. .

March 13, 1975

Dr. Reginald H. F. Young Assistant Director Water Resources Research Center University of Hawaii Honolulu, Hawaii 96822

Dear Dr. Young:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to your comments submitted on June 25, 1974 pertaining to the subject EIS is as follows:

- Water used for extinguishing fires or used to flush off foam will be considered as polluted and handled according to methods mentioned on pages 22-25 of the final EIS.
- 2. The quantity of pollutants resulting from the Fire-Police Training site, however, is infinitesimal when compared to the volume of drainage and pollution resulting from the surrounding region and Waipahu Town flowing into West Loch via Waikele Stream and Kapakahi Stream.
- 3. The existing storm drainage system in the area utilizes Kapakahi Stream which in turn flows into Pearl Harbor West Loch. The foam-water mixture can be collected in a separate drainage system and disposed of by an acceptable method.

Pr. Reginald H. F. Young age 2 March 12, 1975

4. The composition of the foam, as given by the manufacturers, is included on pages 20-21.

Very truly yours,

Ernect T. Guasa

ERNEST T. YUAGA

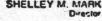
Director and Building Superintendent

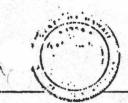
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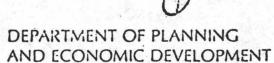
cc: J. Harada

Dr. Richard Marland (OECC)

Group Architects Collaborative, Inc.







EDWARD J. GREANEY, JR. Deputy Director

250 South King St. / Honolulu, Hawaii 96813 / P. O. Box 2359 / Honolulu, Hawaii 96804

June 27, 1974

Ref. No. 1140

MUCHARINAS

:01

Dr. Richard E. Marland, Interim Director Office of Environmental Quality Control

FROM:

SUDJECT: Review of Draft EIS for the City & County Fire and Police

Training Facilities

We have reviewed the above subject draft and feel that it is an adequate evaluation of the probable environmental effects the proposed iccilities will have on the subject site, as well as on its abutting land uses.

This draft EIS appears to be quite comprehensive and objective in its coverage. We consider it to be one of the better EIS prepared for this type of public facilities.

JOHI A. BURNS SHOR OF HAWAII



DIVISIONS: CONVEYANCES FISH AND GAME PORESTRY LAND MANAGEMENT STATE PARKS WATER AND LAND DEVELOPMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES P. O. BOX 621

HONOLULU, HAWAII 96809

July 3, 1974

. I. HIORANDUM

"O: Hon. R. E. Marland, Interim Director

Office of Environmental Quality Control

Sunao Kido, Chairman FROM:

Board of Land and Natural Resources

SUBJECT: Comments on Environmental Impact Statements

Proposed City and County of Honolulu's Proposed Corporation Yard in Malawa Valley, Oahu

This department has reviewed this draft EIS and find that the project will not have adverse effects on any proposed projects of this department for that area.

We have no objections to the proposed Corporation Yard.

Proposed Fire and Police Training Facilities, Waipahu, Oahu

This department has no objections to the proposed Fire and Police Training Facilities at Waipahu, Oahu. The Division of Fish and Game, however, requests that the final EIS provide more reference to the impact of noise on the wildlife presently in the area.

Praft EIS covering the Monolulu District Court Site Selection at Honolulu, Hawaii

This department has no objections to the recommended site selections for the new Monolulu District Court Duilding as proposed in the EIS submitted by the Dept. of Accounting and General Services.

We note that this department will be involved in acquiring the property at the proposed District Court site.

BOARD OF LAND AND NATURAL RESOURCES

SUNAO KIDO

Chairman and Member

PB-75-236

40. .

March 12, 1975

Mr. Christopher Cobb, Chairman Department of Land and Natural Resources P. O. Box 621 Honolulu, Hawaii 96809

Dear Mr. Cobb:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

THE RESERVE OF THE PARTY OF THE

Our response to Mr. Sunao Kido's comments of July 3, 1974 pertaining to the subject EIS is as follows:

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1. Two Federal Wildlife Refuges are located approximately 2 miles to the east and west of the proposed training site. The impact of the proposed facility on the wildlife in the area is considered negligible. We have included a discussion of endangered waterfowl and a map showing Wildlife Refuge locations on pp. 15-16 in the final EIS.

Very truly yours,

Erment T. Cuasa

Director and Building Superintendent

TH:le

cc: J. Harada

Dr. Richard Marland (OEQC)
Group Architects Collaborative, Inc.

JOHN A. BURNS



FREDERICK C. ERSKINE

WILLIAM E. FERNANDES DEPUTY TO THE CHAIRMAN.

STATE OF HAWAII

DEPARTMENT OF AGRICULTURE

1428 SO. KING STREET

HONOLULU. HAWAII 96814

July 9, 1974

MECHANDUM

W: .

Dr. Richard E. Marland, Interim Director Office of Environmental Quality Control

SUBJECT:

Environmental Impact Statement for the Proposed Fire and Police Training Facilities City and County of Honolulu, Building Department

The Department of Agriculture has reviewed this draft statement for agricultural impact and finds it complete and correct except for quantification of smoke emissions. While the proposed site on filled land is not suitable for agricultural production using conventional tillage methods, without additional fill and grading it would be suitable for nursery and greenhouse culture methods which is a possible alternative use.

The Department requests that analysis of airborne emissions recognize the impact of increased vehicular traffic and burning exercises in general terms. It is recommended that quantities of fuel consumed be estimated rather than expressing emissions on the basis of duration of burning exercises. Such quantification of fuel would make it possible to estimate emission values for the incinerator, sugar mill and cane burning activities centered on Waipahu.

The Department does not oppose location of this training center on Ag-1 land. The need for improved training facilities is a vital aspect of public safety programs.

Thank you for the opportunity to comment on this matter.

Frederick C. Erskine

Chairman, Board of Agriculture

March 12, 1975

Mr. John Farias Jr., Chairman Department of Agriculture 1428 South King Street Honolulu, Hawaii 96814

Dear Mr. Farias:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to Mr. Federick C. Erskine's comments of July 9, 1974 pertaining to the subject EIS is as follows:

- The final EIS discusses the possibility of using filled land for nursery and greenhouse culture as an alternative use on page 36.
- Airborne emissions due to vehicular traffic are recognized in general terms on page 17.

Very truly yours.

Ernest T. Guessi

ERMEST.T. YUASA
Director and Building Superintendent

TH:1e

cc: J. Harada/

Dr. Richard Marland (OEQC)
Croup Architects Collaborative, Inc.





STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3376
HONOLULU, HAWAII 96801

July 9, 1974

WALTER B. QUISENBERRY, M.P.H., M.D.

WILBUR S. LUMMIS JR., M.S., M.D. DEPUTY DIRECTOR OF HEALTH

In reply, please refer to: EPHSD-NR

To:

Dr. Richard E. Marland, Interim Director Office of Environmental Quality Control

From:

Director of Health

Subject:

Comments Regarding the Draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities on an Un-used Portion of Land Adjacent to Waipahu Incinerator

- It is expected that all pertinent statutes and regulations regarding the control of air, water, solid waste and noise be complied with during construction and in the operation of these facilities.
- 2. However, regarding the air emissions during burning exercises, it is indicated that the facility may not be able to comply with all details relative to present legislation. We note that experiments are being conducted by the military. However, indications are that an acceptable method of control is not in sight. The Air Force, for example, hopes to have a control method in January, 1977. Therefore, this might require a variance.
- 3. The EIS fails to discuss the fact that a portion of Waipio Peninsula is now used as a bird sanctuary. Discussion in the EIS should include but not be limited to:
 - a. Bird sanctuary location, size in species inhabiting the area. Rare or endangered species should be identified. Eco-description should be provided.
 - b. Effects of air, water and noise pollution on the sanctuary.
 - c. Cumulative effects of water, air and noise pollution on the sanctuary due to the proposed facility, incinerator, open dumping and sewage stabilization pond.
- 4. Section II.B. "Water Borne Effluents" is confusing and a number of questions and factors need to be considered and/or answered.
 - a. Is the run-off resulting from hose evolution going into a drafting pit for reuse and irrigation, or into the atorm draftings system? This is unclear.

- b. Form resulting from oil fires are said to be bio-degradable and non-toxic and will be left on the ground to evaporate and degrade. This is contradictory to the statements concerning drainage around the slab and pit area in the preceding paragraphs. Also, should this effluent be stored in sump or drafting pit, bacterial degradation may give rise to odors and other problem.
- c. Discharge of a bio-degradable effluent through a drainage system and into a storm drain may be a violation of State Water Quality Standards.
- d. This section should include discharges of sanitary sewage. It should be pointed out that there is a moratorium on new connections to the Waipahu Oxidation Pond. Does this mean a delay in the project or an on site sewage treatment plant?
- e. No mention of disposal of canine waste is made.
- 5. In Section II.C "Noise Emissions," a discussion should be made concerning night training on the firing range and other noise generating activities.
- 6. In Section II.D "Solid Waste," it is stated that a significant amount of debris is not expected to be generated due to the combustion of the material. Combustion time given in the EIS is only 5 minutes/drill, much too short for complete combustion of wood. Solid waste generated in this exercise should be disposed of at the incinerator.
- 7. All statutes and regulations regarding noise, including those of the City and County of Honolulu's Comprehensive Zoning Code and others, must be complied with during construction and operation of this facility.

WALTER B. QUISENBERRY, M.D.

PB-75-238

A. . . .

March 17, 1975

Tuber of America

Mr. Ceorge Yuen, Director
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Yuen:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to Dr. Walter Quisenberry's comments submitted on July 9, 1974 pertaining to the subject EIS is as follows:

- All pertinent statutes and regulations regarding the control of air, water, solid waste and noise will be complied with during construction and operation of the subject facility.
- 2. The open burning associated with fire training exercises will require a variance. The variance procedure is discussed on pages 19 and 20 of the final EIS.
- 3. Two Federal Wildlife Refuges are located approximately 2 miles to the east and west of the proposed training site. The impact of the proposed facility on the wildlife in the area is considered negligible. We have included a discussion of endangered waterfowl and a map showing Wildlife Refuge locations on pp. 15-16 in the final EIS.

4. Waterborne Effluents the same in the line in the same in the sa

- a. Most of the water resulting from hose evolution drills will enter the drafting pit for re-use. Excess water will enter the drainage system to Kapakahi Stream and will contain no pollutants since burning is not involved in hose evolution drills.
- b. The foam and water mixture after oil fires will be collected in a separate drainage system and disposed of by an acceptable method.
- c. All discharges will conform to State Water Quality Standards.
- d. Discharges of sanitary sewage has been included in this section. The City and County Division of Sewers has confirmed the possibility of a new connection to the existing sewage system as stated on page 24 of the final EIS.
- e. Canine waste will be handled by the new connection to the existing sewage as stated on page 24 of the final EIS.
- 5. Night training activities by both Fire and Police Departments are discussed on page 26 in Section III C. "Noise Emissions".
- 6. Fire training involving wood fires will not allow the complete combustion of materials. Solid waste generated by these exercises will be disposed of at the adjacent City and County Incinerator.
- 7. All statutes and regulations pertaining to noise, including the CZC and OSHA, will be complied with during construction and operation of this facility. New minimum acceptable noise levels are included in Appendix C on page 87 of the final EIS.

r. George Yuen age 3 March 17, 1975

We are submitting a copy of the final EIS for your information and files.

Very truly yours,

ERNEST T. YUASA

Director and Building Superintendent

Ernest T. Guasa

TH:le attach.

cc: J. Harada

Dr. Richard Marland (OEQC)

Group Architects Collaborative, Inc.



University of Hawaii at Manoa

Environmental Center

Maile Bldg. 10 • 2540 Maile Way

Honolulu, Hawaii 96822

Telephone (808) 948-7361

Office of the Director

July 15, 1974

MEMORANDUM

TO: Richard E. Marland, Director, OEQC

FROM: Jacquelin N. Miller, Environmental Center

RE: Draft EIS for the Proposed Fire and Police Training Facilities

The Environmental Center has solicited a review of the above cited environmental impact statement from two members of the University faculty, Drs. John Burgess, Noise Task Force and Anders Daniels, Air Pollution Task Force, of the Environmental Center. The comments of Dr. John Burgess, Department of Mechanical Engineering, are quite detailed and thus are transmitted here in their entirety.

Dr. Daniels comments are confined to the air pollution aspects of the proposed facility:

There are no attempts to quantify the expected emissions from the proposed facilities. This is unfortunate as it is only with such information that one can get a realistic estimate of the resulting concentrations downwind. Since the training exercises to be conducted at the facilities probably are identical to those at similar facilities on the mainland, quantitative emission data are more than likely available. Such data should then be combined with a realistic diffusion model to produce a concentration estimate which, when added to existing air pollution levels, would yield the information necessary for an unbiased evaluation of the air pollution potential of the project.

It is furthermore erroneous to assume as stated on page 31 that "the emissions will not be allowed to exceed

State Department of Health standards, and therefore would not reach any harmful level," as emission standards do not necessarily guarantee ambient air quality levels. Such levels are prescribed by the State of Hawaii Air Quality Standards.

It is therefore recommended that a study of the proposed facility be undertaken which produces quantitative estimates of the expected air pollution levels.

The Center is in accord with the opinions expressed by Drs. Burgess and Daniels. In addition to their comments regarding noise and air pollution, some comment on the general presentation of the EIS seems necessary. We realize this is a "Draft" statement and that a review should be an evaluation of the content, not grammatical form of an EIS. However, the number of actual errors in word usage, incomplete sentences, repetition, word omissions, redundancy and inconcisely written text does not generate a positive attitude toward an appraisal of the content of the EIS. We suggest that this EIS be carefully edited prior to preparation of the final statement and that pages, 3, 6, 23, 26, 38 and 39, to mention a few, be examined for grammatical errors.

cc: J. Burgess

A. Daniels

March 13, 1975

Ms. Jacquelin N. Miller Environmental Center University of Hawaii at Manoa Maile Bldg. 2540 Maile Way Honolulu, Hawaii 96822

Dear Ms. Miller:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to your comments submitted on July 15, 1974 pertaining to the subject EIS is as follows:

1. It is not possible at this time to quantify the expected air pollution levels which are subject to such factors as the final design of the fire training building and natrual gas "X-mas tree". However, if present training methods are used, the pollution levels of oil fires can be estimated by the quantity of fuel consumed during a training day.

The expected amount of fuel consumed will vary according to the time required to extinguish the fire in each separate drill. A maximum of 5 gallons of diesel oil and 5 gallons of gazoline will be utilized in a mixed solution during the course of a normal training day.

. Jacquelin N. Miller age 2 arch 13, 1975

- 2. The erroneous statement that "the emissions will not be allowed to exceed State Department of Health standards, and therefore would not reach any harmful level" has been deleted. Emissions will not be allowed to adversely affect ambient air quality levels prescribed by the State of Hawaii Air Quality Standards as stated on page 46 of the final EIS.
- 3. A separate letter will be sent to Dr. John C. Burgess in response to his comments on Noise Impact from the proposed facility.

Very truly yours,

Ernect T. Guasa

ERNEST T. YUASA
Director and Building Superintendent

TH:le

cc: Dr. Richard Marland (OEQC)
Group Architects Collaborative, Inc.
J. Harada

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University of Hawaii at Manoa

Department of Mechanical Engineering
Holmes Hall 302 • 2540 Dole Street • Honolulu, Hawaii 96822

July 5, 1974

MEMORANDUM

TO:

Dr. Jerry M. Johnson, Acting Director

Environmental Center

FROM:

John C. Burgess Alburgur

SUBJECT:

Review of Noise Assessment, Draft EIS, Proposed Fire and

Police Training Facilities1

The draft EIS identifies noise emissions from gunfire, fire trucks, helicopters, dogs, and automobiles as having potential environmental impact. The site recommended, adjacent to the Waipahu incinerator, is stated to be flat, open, and about 1/4 mile downwind (normal trades) from the closest residential area. The draft includes a report on measurements made at the proposed site of noise emissions from gunfire and some vehicles.² The principal conclusion stated is that noise emissions will have a negligible environmental impact on people and animals outside the proposed site. This conclusion appears to be based strongly on a noise consultant's opinion³ that "the highest level of sound at the closest residence would be well within the limitations of the CZC". The draft also suggests various structural and operational features that can provide noise reduction at locations outside the proposed site.

Summary of Reviewer's Conclusions

1. Gunfire noise measurements reported by the consultant show that two of the three firearms tested probably created noise levels 6 dB and 22 dB in excess of the impact noise limits of the CZC. This opinion is contrary to that of the consultant.

Draft, "Environmental Impact Statement for the Proposed Fire and Police Training Facilities", Submitted by Building Department, City and County of Monolulu, Prepared by Group Architects Collaborative, Inc., May, 1974.

^{2&}quot;Preliminary Environmental Moise Survey of Proposed Waipahu Fire and Police Training Facility and Range", Consultant's report included as an appendix to made Eug!

Bet (2), p. 3

[&]quot;Comprehensive Zoning Code, City and County of Honolulu, Sections 21-231 and 21-232.

- 2. Gunfire noise measurements reported by the consultant show anomalous sound propagation effects. The absence of these effects could have resulted in sound levels at the nearest residence up to 40 dB higher than those measured.
- 3. Vehicular noise measurements reported by the consultant show that ground vehicle operation may violate the CZC noise provisions at the nearest residential lot boundary. Noise from helicopter operation is likely to exceed CZC limits by 20 to 30 dB.
- 4. The primary conclusion of negligible environmental noise impact in existing residential areas appears to be valid provided that the facility is properly designed, fabricated, and operated.
- 5. A cost-effective approach suggests that initial design, fabrication, and operation of the facility to achieve significant reduction of noise emissions can not only reduce noise impact in the surrounding community, but can reduce the cost of noise control features required for satisfactory classroom and kennel operations.
- 6. The reviewer feels that the Final EIS should identify and recommend specific design and operational features for noise control, rather than just provide a catalog of possible features. The Final EIS should identify the "worst impact condition" in the surrounding area, and it should identify the expected noise levels and their impact under all normal (not just trade wind) weather conditions.

Discussion of Reviewer's Conclusions

1. Gunfire Noise Measurements Show Probable CZC Violation

The consultant reported "average peak sound level" measurements for a 38-tal. pistol, a 12-gauge shotgun, and a 30-cal. rifle. The levels were reported for the firer's position (taken by the reviewer to be 1 yd.), 100 yds, 200 yds, 300 yds, and at the "closest residence" (taken by the reviewer to be 1/4 mile).

The consultant's report does not identify what he means by "average peak sound level." The B and K 2204 Impulse Precision Sound Level Meter measures a maximum rms level with any of several standard frequency weightings. For gunfire measurements, the most logical combination would be "impulse hold" with "linear" weighting. The reviewer will call a reading made with this combination an "impulse" level and assumes that the consultant measured impulse levels.

The impulse level is not the "impact" level required to determine conformance with the CZC. The response time constant for the impulse level measurement is about 35 milliseconds, while that for the impact measurement is 50 microseconds. Within 1/4 mile of a gun, the observed rise time of gunfire sound is probably of the order of 100 microseconds or less. The meaning of this

is that the true impact levels required for comparison with the CZC for gunfire may be 10 dB or so higher than those reported. If the consultant used any weighting network other than "linear", the true impact levels will be still higher.

The levels reported by the consultant appear to be "overall" levels. The CZC requires octave band levels to determine conformance. The reviewer used published data to estimate the spectrum of gunfire noise and used the consultant's "impulse" level as if it were an "impact" level. The reviewer concludes that the critical octave band for gunfire is the 2400 to 4800 Hz band. The reviewer's calculations suggest that the sound from the 30-cal. rifle exceeded the CZC octave band limit at the nearest residence by about 22 dB, that from the 12-gauge shotgun by about 6 dB, while the 38-cal. pistol sound may have been marginal. These values can be increased significantly under different, normal, weather conditions (see next section). They can be decreased significantly by use of structures designed for noise control. Since the consultant's report does not identify the direction of firearm aim during the noise tests, it is not clear to what extent the reported data are affected by the "focussing" effect.6

2. Measurements Show Anomalous Sound Propagation Effects.

The gunfire sound levels reported as functions of distance from the firing point can be compared with the predictions of the spherical spreading law. The comparison shows the measured sound levels to be about 6 dB greater (less attenuation) than expected out to 200 yds for all three firearms. At 300 yds, the measured level of the sound from the 38-cal. pistol was about 6 dB greater (less attenuation) than expected, while that from the 12-gauge shotgun was about 16 dB lower (more attenuation) than expected, and that from the 30-cal. rifle was about 11 dB lower than expected. At the nearest residence, the measured sound levels were about 16 dB lower (more attenuation) than expected for the 38-cal. pistol, about 39 dB lower (more attenuation) than expected for the 38-cal. pistol, about 39 dB lower than expected for the 12-gauge shotgun, and about 29 dB lower than expected for the 36-cal. rifle. If excess attenuation by atmospheric absorption is taken into account, the last three values could be corrected by subtracting a few decibels. They could also be corrected by adding a few decibels to account for the difference between the impulse level measured and the impact level required.

The reviewer feels that the most likely explanation for the excess attenuation experienced for distances greater than 200 yds. is that temporary wind and temperature gradients placed the microphone in a sound "shadow." Under slightly different, and normal, weather conditions, the actual impact sound levels experienced at the nearest residence could be as much as 40 dB greater than the impulse levels measured. The critical octave band impact levels from all three firearms could then be very greatly (possibly up to about 60 dB) in excess of the corresponding level specified as a limit in the CZC.

⁵Galloway, W.J., Watters, B.G., and Baruch, J.J., "An Explosive Noise Source", J. Acons. Soc. Am. 27, 2, pp. 220-223, March 1955. (provides 1/3 octave band spectrum for 10-gauge blank shotgun shell)

^{*}Latter from E.D. Andrus, National Riflo Association of America, February 9, 1972, included as an appendix to Draft EIS!

Transfiried in Rot. 6 as usable for quality nound level predictions out to 2000

3. Vehicular Noise Measurements Suggest Possible CZC Violation

The sound levels reported for the operation of ground vehicles and their auxiliary equipment are equivalent to a range of 79 to 90 dB at 20 ft. (presumably dBA, but not so identified). Helicopter sound levels are reported to be 85 to 90 dB (again, presumably dBA) at 500 ft. Assuming spherical spreading, the corresponding levels at the nearest residence would be about 36 dB lower for the ground vehicles and about 8 dB lower for the helicopter.

Taking into account the spectrum of vehicular noise, a realistic A-weighted equivalent for the CZC octave band limits on noise in a residential area is probably not greater than 50 dBA. Noise from the operation of ground vehicles may thus exceed the CZC limits by a few dB, while that from helicopter operation will exceed the limits by 20 to 30 dB. Since most of the power in the noise from all these vehicles is in the low frequency range, excess attenuation caused by atmospheric absorption will not be significant.

Proper construction and operational use of ground barriers can decrease the noise levels resulting from ground vehicle operation to conform with the CZC. Reduced helicopter noise will require less noisy helicopters.

- 4. Negligible Environmental Noise Impact Possible,
- 5. Cost-Effective Design Approach, and
- 6. Suggested Objectives for Final EIS

The draft EIS is correct in pointing out that earth berms, building location and massing, acoustical treatment, and direction of firing can be used to control noise emissions. Conventional landscaping, however, will have only a cosmetic effect; it has a negligible effect on noise. To the list of means for effective noise control could be added other aspects of training operations, such as locations for fire engines and other vehicles relative to barriers. The proposed site has a great advantage in that there appears to be only one noise. sensitive direction. Barriers can thus be used effectively.

In the reviewer's opinion, there are no significant technical problems to be overcome in achieving a facility operation of which creates a negligible environmental noise impact, except for helicopter operations. The impact from helicopter operations may be small provided that they are used only occasionally (every other week or so) and only during normal daytime working hours.

Consideration given during initial design to control of noise effects within the site may easily lead to cost-effective features which will also reduce environmental noise impact outside the site. The noise from gunfire can interfere not only with expected classroom activities, but may have also a serious effect on animals kept within the site. Although police dogs may be trained to react favorably to occasional gunfire, steady exposure of the kennels to such noise may be counterproductive to training and breeding. The literature on the effects of

moderate noise levels on animals is scarce, but such literature as does exist - suggests that sharp sounds are likely to stimulate the startle reaction in animals, as they do in humans, with undesirable emotional responses.

Construction designed to reduce the sound emissions from gunfire and other operations can be expected not only to reduce the cost of structures on the site for which interior noise levels must be kept low, but to reduce considerably the expected environmental noise impact in the nearby community. The cost of designing such control into the original site improvements can be significantly less than that of corrective measures taken after construction is completed.

Some words of caution may be appropriate concerning estimation of community reaction to noise. Although there are many physical measures of noise intensity, none have shown a perfect correlation with community reaction. Such reaction may be viewed on average as the logical response of intelligent beings. With the great increase in the past few years of public awareness of legal remedies available for treating excessively noisy operations, it is risky to assume that such operations can be safely planned today to meet standards found acceptable in the past, in different communities, and with different noise sources. For example, the reviewer doubts that an American residential community today would passively accept continual exposure to impact sounds, such as sonic booms with peak overpressures of 128 d3, or 100 d3, or even 60 d8 in a quiet neighborhood.

The Final EIS should identify the specific structural and operational configurations recommended, the specific expected noise levels in nearby areas, and the specific worst impact conditions allowed by existing or expected zoning and land use in these areas.

Burtfeets of Noise on Wildlife and Other Animals", U.S. Env. Prot. Agency Report NTTD 300.5, Dec. 31, 1971. See aspecially pp. 15, 18, and 27.

March 14, 1975

Dr. John C. Burgess
Department of Mechanical Engineering
University of Hawaii at Manoa
Holms Hall 302
2540 Dole Street
Honolulu, Hawaii 96822

Dear Dr. Burgess:

SUBJECT: Draft Environmental Impact Statement Fire and Police Joint Training Facilities

Our response to your comments submitted on July 5, 1974 pertaining to the subject EIS is as follows:

- 1. Section III C. "Noise Emissions" has been revised and expanded according to information obtained from Mr. James K. C. Chang, Acoustical Consultant. We have identified the worst impact condition and included specific design and operational parameters for the proposed facility to facilitate minimum sound propagation. This is discussed on pages 26-32 in the final EIS.
- 2. Proposed methods to reduce sound are further discussed on pages 46-49 including "last resort" alternatives.
- 3. New minimum acceptable noise levels which comply to both CEC and OSHA were provided by Mr. James K. C. Chang and are included in Appendix C, page 87 of the final EIS.

r. John C. Burgess age 2 arch 14, 1975

4. The final design of the Fire-Police Training facility will incorporate a maximum input from consultants to insure that all Federal, State and City noise control codes are satisfied.

Very truly yours.

Ermest T. Guasa

Director and Building Superintendent

TH:le

cc: J. Harada

Dr. Richard Marland (OEQC)
Group Architects Collaborative. Inc.

LAWRENCE F O CHUN

MUNNY Y AT LEF DEPUTY DIRECTOR DOUGLAS S SAKAMOTO DEP Y DIRECTOR



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION 869 PUNCHBOWL STREET HONOLULU, HAWAII 96813

ATP 8.2645

July 18, 1974

Or. Richard E. Harland
Interim Director
Office of Environmental
Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Dr. Marland:

GOVERNUE

Subject: Draft Environmental Impact Statement
Proposed Fire and Police Training Facilities

We have reviewed the subject environmental statement and have no comments to offer as it relates to and affects our Department's transportation program.

Sincerely,

CITY AND COUNTY

CITY AND COUNTY OF HONOLULU

CITY HALL ANNEX

NK F. FASI

PAUL DEVENS



June 26, 1974

GEORGE C. VILLEGAS

ROY A. PARKER

PL-2588-74

Dr. Richard Marland Office of Environmental Quality Control 550 Halekauwila Street, Room 301 Honolulu, Hawaii 96813

Dear Dr. Marland:

Subject: Draft EIS for the Proposed Fire and Police Training Facilities

The Department of Transportation Services has no comment on the subject draft.

Very truly yours,

Director

BOARD OF WATER SUPPLY

~~Y AND COUNTY OF HONOLULU

- OUTH BERETANIA

JT OFFICE BOX 3410

HONOLULU, HAWAII 96843

July 1, 1974

11

JOHN HENRY FELIX, Chairman
STANLEY S. TAKAHASHI, Vice Chairn
GEORGE APDUHAN
KAZU HAYASHIDA
WALTER D. HOWARD
ROBERT H. ROTZ
E. ALVEY WRIGHT

EDWARD Y, HIRATA Manager and Chief Engineer

Dr. Richard E. Marland
Interim Director
Office of Environmental Quality Control
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Dr. Marland:

SUBJECT: Draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities

Thank you for sending us the environmental impact statement for our review and comments.

The proposed project is not anticipated to adversely affect our present and future groundwater resources or facilities in the area. However, we have the following comments regarding the sewage system.

- (1) The impact statement should discuss the disposal of sewage separately rather than under the title of "Solid Waste".
- (2) A discussion on the offsite sewer construction required to service the proposed development should be included in the statement. The 16-inch sewer line mentioned on page 20 is a force main and connection cannot be made to it.
- (3) A discussion of the project's impact on the existing and proposed Waipahu force main should also be included. There is an existing force main along the road fronting the project site. A new force main is also proposed along the same route.

If you have any further questions on this matter, please call Mr. Satoru Matsuda at 548-5221.

Very truly yours,

Edward Y. Mrata

Manager and Chief Engineer

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March 14, 1975

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Mr. Edward Y. Hirata Manager and Chief Engineer Board of Water Supply 630 South Beretania Street Honolulu, Hawaii 96813

Dear Mr. Hirata:

SUBJECT: Draft Environmental Impact Statement Fire and Police Joint Training Facilities

Our response to your comments submitted on July 1, 1974 pertaining to the subject EIS is as follows:

- The final BIS discusses the disposal of sewage under Section III B. "Waterborne Effluents" instead of "Solid Waste".
- 2. The City and County of Honolulu Sewers Division concurred that domestic waste from the Fire-Police Training Facility, including canine waste can be handled by an existing gravity sever line via a new 8" line connection at an existing manhole near the Waipahu Sewage Pumping Station mauka of the training site.
- 3. Since the new connection will be made to an existing gravity line, there will be no impact on the existing Waipahu force main. The force main will be properly protected during the construction phase.

Very truly yours,

Ennest T. Guasa

ERNEST T. YUNSA Director and Building Superintendent

TH:10

CCI J. Harada

Dr. Richard Marland (ODQC)

Croup Architects Collaborative. Inc. -141-

JEPARTMENT OF PUBLIC WORK

CITY AND COUNTY OF HONOLULU

HONOLULU, HAWAII 96813





July 5, 1974

BIRECTOR AND CHIEF ENGINEER

WALLACE S. MIYAHIRA
BEPUTY DIRECTOR AND
BEPUTY CHIEF ENGINEER

ENV 74-143

100

Office of Environmental Quality Control Office of the Governor 550 Halekauwila Street, Room 301 Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities

We have reviewed the draft statement and have the following comments.

- 1. Waterborne Effluents (pg. 18): The statement does not adequately address or discuss the probable impact on the existing drainage condition of the area by the proposed fill. The proposed drainage improvement should also be elaborated upon.
- 2. Solid Waste (pg. 20): The discussion on sewage collection and disposal would be more appropriate under subparagraph III B, Waterborne Effluents instead of Solid Waste.
 - (pq. 21): The existing dump area across Waipahu Depot Road may not be available for the disposal of debris from the fire training exercises. Under this circumstance, the debris will have to be removed to a sanitary landfill.

Office of Environmental Quality Control July 5, 1974 Page 2

- 3. Resource Depletion (pg. 22): A feasibility study for refuse power generation, to be undertaken by the Department of Public Works, AMFAC, Inc., and the Hawaiian Electric Company, Inc., will determine whether a proposed refuse power generating plant should be located in the Waipahu area. The feasibility study will be completed in December 1974. In the event the Waipahu site is selected, some adjustment in the boundary of the fire and police training site may be necessary.
- 4. Sewage Tratment Plant (pgs. 22, 23, 25): The parcels earmarked for a sewage treatment plant will be redesignated for ash disposal, inasmuch as the proposed wastewater treatment plant serving the area from Halawa to Honouliuli will be located adjacent to the Barbers Point Naval Air Station.

Very truly yours,

KAZU HAYASHIDA

Director and Chief Engineer

cc: Div. of Engineering
Div. of Refuse Collection and Disposal

March 13, 1975

Mr. Kazu Hayashida Director and Chief Engineer Department of Public Works City and County of Honolulu Honolulu, Hawaii 96813

Dear Mr. Hayashida:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Pacilities

Our response to your comments submitted on July 5, 1974 pertaining to the subject EIS is as follows:

- A master grading plan has been prepared by Stanley Shimabukuro and Associates, titled "Waipahu Refuse and Incinerator Ash Disposal Site Waikele and Waipio, Ewa, Oahu, Hawaii".
 The existing drainage condition of the area will be improved if this plan is followed.
- 2. Discussion on sewage collection and disposal has been included under Section III B. "Waterborne Effluents" in the final EIS.

Debris remaining after fire training exercises will be disposed of at the adjacent City and County Incinerator.

3. The feasibility study by the Department of Public Works for a proposed refuse power generating plant states that the Waipahu site is the least desirable of several alternative sites and probably will not be selected.

Mr. Kazu Hajashida age 2 farch 13, 1975

4. The parcels earmarked for a sewage treatment plant have been redesignated for ash disposal in the final EIS.

Very truly yours,

Ennest T. Guasa

ERNEST T. YUASA Director and Building Superintendent

TH:le

cc: J. Harada

Dr. Richard Marland (OEQC)
Group Architects Collaborative, Inc.

CITY AND COUNTY OF MONOLULU

HONOLULU, HAWAII 86813

MAYOR

PAUL DEVENS



July 10, 1974

GEORGE S. HORIGUCHE

WILLIAM E. WANKET

LU6/74-1777(BI

MEMORANDUM

TO : DR. RICHARD E. MARLAND, INTERIM DIRECTOR

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM : GEORGE S. MORIGUCHI, DIRECTOR OF LAND UTILIZATION

SUBJECT : DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR FIRE AND

POLICE TRAINING FACILITY, WAIPAHU

We have no objections to the above proposal. The selected site is shown for public facility use on the General Plan and is zoned AG-1 Restricted Agricultural District. The proposed use is permitted within the zoning district.

It is noted, however, that the proposed site is within a state-designated agricultural district. A special permit from the State Land Use Commission will be required.

GEORGE S. MORIGUCHI

Director

GSM: sk

PB-75-243

March 14, 1975

Mr. George Horiguchi, Director Department of Land Utilization City and County of Honolulu Honolulu, Hawaii 96813

Dear Mr. Moriguchi:

SUBJECT: Draft Environmental Impact Statement Fire and Police Joint Training Facilities

Our response to your comments submitted on July 10, 1974 pertaining to the subject EIS is as follows:

- 1. The subject site is shown for public facility use on the General Plan and is zoned AG-1 Restricted Agricultural District. Although the proposed use is permitted within the AG-1 designation it is not allowed within the State Land Use Agricultural District.
- 2. Therefore, a special permit is now being processed to allow this facility within the State Agricultural District.

Very truly yours,

Errnest T. Guasa

Director and Building Superintendent

TH:le

c: J. Harada

Dr. Richard Marland (OEQC)
Group Architects Collaborative. Inc.

ARTMENT OF RECREATION

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET

K F. FASI

PAUL DEVENS



May 22, 1974

Mr. Norman Hong
Group Architects
Collaborative, Inc.
765 Amana Street
Honolulu, Hawaii 96814

Dear Mr. Hong:

SUBJECT: EIS ON PROPOSED FIRE AND POLICE TRAINING FACILITY AT WAIPAHU

The EIS statement made regarding the recreational facilities in the Waipio Peninsula is acceptable.

Sincerely,

TO YOUNG SUK KO, Director



VOUNG SUK KO

RAMON DURAN

DEPUTY DIRECTOR

PRIVATE ORGANIZATIONS



Waitharter Community Association

HONOLULU SAVINGS AND LOAN BUILDING 94-229 WAIPAHU DEPOT STREET WAIPAHU, HAWAH 96797 TELEPHONE 677-4950

July 15, 1974

Mr. Ernest T. Yuasa,
Director and Building Superintendent
Building Dapartment
City and County of Honolulu
Honolulu, Hawaii 96813

Door Mr. Yuasa:

Subject: Fire and Police Training Facility at the Waipahu Incinerator Site.

We have corefully reviewed your letter of response dated May 13, 1974 and the accompanying Environmental Impact Statement in regards to the above subject matter. While many of your comments are true and worthy of this community's consideration, we do not agree that the points made are the only ones to be considered. With all due respect for your findings, our review of the matter reveals that there are much deeper and underlying problems and possibilities open for further study.

Both the latter and the Environmental Impact Statement indicate that the main concern is the centralization of the Fire and Police Training Facilities. The need as described is a matter for conjecture, particularly if there is any doubt in regards to the monetary savings and undesirable impact on the communities involved. Bearing this in mind, we begin by referring to the statement, bottom, page 3, of the Environmental Impact Statement: "... an extensive evaluation of possible alternative sites have resulted in the selection of the proposed Waipahu site."

Evon as this evaluation and selection were in progress, the Waipahu community was naively dreaming of the sanitary landfill (dump) area on West Loch including the 15 acres now under discussion, as the possible site of the much needed Regional Park. Young Suk Ko, Director of the Department of Recreation, indicated in a letter addressed to you, dated April 4, 1974, that there was such a long range plan to develop the park that he did not feel that the proposed subject facilities would adversely affect the plans.

However, on site evaluations and conversations by and between state officials and representatives of the Waipahu Community Association reveals that the sanitary landfill area may indeed be unsuitable for park consideration due to the danger inherent in continuous deep burning and smoldering



Waifrabre Community Association

HONOI ULU SAVINGS AND LOAN BUILDING 94-229 WAIPAHU DEPOT STREET WAIPAHU, HAWAII 96797 TELEPHONE 677-4950

Mr. Ernest T. Yuasa, C/C Honolulu Pg. Two of Five July 15, 1974

of underground dump materials beneath the landfill crust. This may then leave for park use ONLY the 15 acres you propose to undertake for the subject facilities, with perhaps many years hence the obtaining of beach areas further out on the penninsula! Middle Loch can hardly be considered, for not only is it being used by the Navy, but it is receiving the runoff waters of the sewage treatment plant.

Evan though the subject side, zonad Agriculture, is only designated on the Dahu General Plan as "Public Facility", there were plans made for davelopment of a park. Though, not as specifically indicated for park use as was the Koko Head site, we feel we are entitled to the same consideration and right to object to its being taken away from us as was given the citizen committees of Koko Head, or any other community who did not welcome the subject facilities within their midst.

There are several glaring, undesirable aspects glossed over by the Environmental Impact Statement:

A. Reference is made on pages 18, 21, 24 and 45 for the use and disposition of debris and solid waste materials. Utilizing ash and refuse residue from the adjacent incinerator to raise the land elevation may be a noble gesture, but once completed, the problem of the disposal of waste materials will be compounded by the addition of another facility unfortunately bound to be categorized the same as the unwanted and undesirable incinerator.

And where is this waste to go? Indications are, it will be disposed of onto the adjacent and existing dump area across Waipahu Depot Road. It is questionable how this fits in with any community plans for a park in, near or throughout that area!

In regards to sewage disposal, the State Department of Health is at present not permitting further hookups to the existing sewage system. Indications are that the C/C of Honolulu may be faced with the need to construct more pends. This they may well not be able to do unless the Navy, who controls the land, and the community which is already disenchanted with the sewage facilities in its midst, permits them to do so. Already, housing developments and schools are being faced with the unavailability of sewage hook—ups and the subject facility will only compound the problem.

B. Reference to smoke emissions on pages 28, 29 and 30 load to the possibility of the addition of an incinerator should certain control measures fail. The Waipahu Community feels it doesn't need another incinerator -- for whatever reason! One fiasco of that sort is enough!

It should also be pointed out that any open burning may result in a great emount of inconvenience to the subject facility. A recently enacted law forbids such without a permit. So far as is known, only Campbell Industrial Park is exampt.



Weifeakes Community Association

HONOLULU SAVINGS AND LOAN BUILDING 94-229 WAIPAHU DEPOT STREET WAIPAHU, HAWAH 96797

TELEPHONE 677-4950

Mr. Ernost T. Yuasa C/C Honolulu Pg. Three of Five July 15, 1974

C. Noise, page 19 and traffic, pages 14, 20, 26 and 27 are considerations that unless tests for which are made under actual conditions, may prove invalid. It is to be assumed that dogs will be the least of the problems since the very nature of their work procludes their silence except under certain necessary conditions. Gunfire, muffled, would probably not affect the ears, though it well might affect the nerves of many because of what it represents.

However, trucks, automobiles and helicopters are all LOUD noise producers. In addition, trucks and automobiles will be expected to use the narrow Waipahu Depot Road. Already overburdened by trucks, cars and garbage trucks going to and from the incinerator, in the light industrial area, and of necessity lined with parked cars of industrial workers. The street is barely passable. Add to this an additional 100 to 150 vehicles moving in and out, morning and evening, plus heavy fire equipment whose very weight creates a rumble wherever they go, and the picture is one of noisy chaos.

In addition, traffic in Waipahu Town is increasing daily and can be expected to increase even more if and when additional housing is made available. 100 to 150 cars adding to the congestion of Farrington Highway is not felt to be needed. Businesswise, it can be expected that merchants will not benefit to any extent from people not of the area.

Milicopters cannot be expected to add anything to the benefit of the townspeople, but WILL produce noise to assault the ears, vibrations to affect television sets and danger to residents (and park users if such is ever developed on West Loch.) With approaches planned for the Pearl Harbor West Loch area, there remains the question, what if "prevailing wind conditions" are not in that direction?

D. Reference is made on page 23 to the possible saving of some 7 million dollars by utilizing the already exising C/C owned land in Waipahu. If saving taxpayer's money is of any concern, the several alternatives that have been are and will be available free for the use of the police department and as early as September, 1975, for the fire department, should be given more serious consideration. Also a suggestion that helicopters be used jointly with the military be looked into.

On pages 36 and 37, you give reasons for not making use of these alternatives, such as lack of centralized facilities, travel time and scheduling difficulties. May we suggest that perhaps in your desire to build one facility you have not made a really concerted effort to utilize what is available? All classes must be scheduled, regardless of where they are hold. Is a firing range for a military policement that much different from that of a civilian? Perhaps the new planned fire fighting. Navy complex might prove adequate for your purposes!



Merifrestres Community Association

110 SOLULU SAVINGS AND LOAN BUILDING 94-229 WAIPAHU DEPOT STREET WAIPAHU, HAWAH 96797

TELEPHONE 677-4950

Mr. Ernest T. Yuasa C/C Honolulu Pg. Four of Five July 15, 1974

Fids are being accepted now for the building of a complete fire training complex including classrooms at Poarl Harbor by Semptember, 1975, for the specific purpose of training firefighters. It will be built, we are informed, under the strictest of environmental law guidelines and the facilities will be available free for the use of the C/C of Honolulu. The classrooms may also be available for police use.

From the element of time alone, the utilization of those facilities are a much nearer concept. From a monetary standpoint, they can hardly be brushed aside. Undoubtedly the complex will be the best obtainable anywhere and the taxpayors will have alroady paid for them through federal taxes. Further money from the C/C would not be required.

The C/C facilities as described would necessitate the allocation of a large amount of funds to create a double burden for taxpayers. Futhermore, we feel a 7 or 8 story training structure leaves something to be desired in preparing firefighters for battling 30-story blazes! The use of helicopters and training from this standpoint would seem to be more in keaping with the realities of the problem.

Which takes us to the suggestion for joint use of helicopters with the military. Helicopters use and training, whether for police work or fire fighting, must require a tremendous outlay of money. Heliports, machines, and necessary equipment would, in all probability create a training expenditure for beyond that of which the C/C can cope with. Yet, without it, the C/C can hardly be giving its people the proper protection in regards to high-rise fires!

The police department has had available since last year the use of a pistol and rifle range which they had only to share on a scheduled basis with the military. They would not have to share with civilians as with the Koko Head range. And yet, they have not seen fit to give it maximum use. According to knowlegeable personnel at Kaneohe Marine Corpair Base, Police Chief Keale was invited as of last year to use that range, but their response has been minimal. As with the fire facilities, the range is free to the C/C of Honolulu.

Another possibility is the range at Schofield in Wahiawa, though personnel contacted there would appreciate more information on group size, targets and equipment required before making a committment.

With a complex available to firefighters; with a joint helicopter program with the U.S. military possible if it is pursued further; and with classrooms and a range available to the police, all of which would save the texpayers many hundred of thousands of dollars and keep Waipahu from of another unwanted burden, it would appear that the few other requirements might be minimal.

Policemon have to travel in their care from some point to some point



Maifrake Community Association

HONOLULU SAVINGS AND LOAN BUILDING 94-229 WAIPAHU DEPOT STREET WAIPAHU, HAWAH 96797 TELEPHONE 677-4950

Mr. Ernost T. Yuasa C/C Honolulu Pg. Five of Five July 15, 1974

regardless of where it might be. Classes are always subject to scheduling. A gun, and a victim, civilian or military, tend to be aimed toward the same end. It would appear that a central location is not as prime a necessity as we are being led to believe. Dahu by its general characteristics and roadway systems put none of us in a central location unless we never leave the City of Honolulu.

Failing all else, consideration might be given to a suggestion that a request be made to the State of Hawaii for land for subject facility use such as that of Campbell Industrial Park.

We, of the Waipahu Community Association feel that the points made here are worthy of your consideration and that the suggestions are valid means by which the same purposes could be accomplished with a maximum use and minimum outlay of taxpayers money, while sparing the community of Waipahu the undesirability of the subject facility being built in their midst.

Respectfully yours,

Mits Shito President

MS:tr

4.0

March 13, 1975

Mr. Mits Shito
President
Waipahu Community Association
Honolulu Savings and Loan Building
94-229 Waipahu Depot Street
Waipahu, Hawaii 96789

Dear Mr. Shito:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Our response to your comments submitted on July 15, 1974 pertaining to the subject EIS is as follows:

- 1. Deep burning or smoldering will not be a problem if ash residue from the City and County Incinerator is used as fill material. This is further discussed on pages 37-38 of the final EIS.
- 2. Waste (ash residue) from the City and County Incinerator will be distributed on Waipio Peninsula according to a master grading plan prepared for the City and County of Honolulu Building Department. This master grading plan includes the area west of the proposed Fire-Police Training Facilities site to the shores of West Loch. The utilization of ash materials will not prevent future park development in the area.
- 3. The sanitary wastes from the proposed Fire-Police Training Facilities will be accommodated by a new connection to an existing gravity line. This is discussed on page 24 of the final EXS.

- 4. Open burning is permitted by State law only for agricultural purposes. Therefore a variance must be obtained for combustion during fire training exercises. The variance application procedure is explained on pages 19-20 of the final EIS.
- 5. Noise measurements of traffic and gunfire taken under actual conditions at another site would not be representative of the new site or proposed training facility where different conditions exist.
- 6. Waipahu Depot Road can be improved to accommodate the additional traffic generated by the proposed facility.
- 7. Helicopters will be used for emergencies only and will not be directly involved in training exercises. A discussion of helicopter operations and measures to minimize noise impact is included on page 31 of the final EIS.
- 8. Joint use of helicopters with the military has been discounted due to the different types of aircraft used and varied operational requirements. The Fire and Police Departments currently maintain their own helicopters and station their respective crews at Honolulu International Airport.
- 9. A new Navy Fire Training Complex is planned with a proposed completion date in mid-1976. Meetings with Navy officials have confirmed that this facility will be highly specialized for shipboard fire training and not suitable for the broad exposure to various types of fires required by civilian firefighters. A detailed discussion is presented on pages 52-53 of the final EIS.
- 10. According to Fire Department officials, helicopters will not be used in high-rice fire training exercises. The proposed eight-story fire training tower is considered adequate for high-rice training since the basic procedure for each floor is identical.

wr. Mits Shito age 3 warch 13, 1975

- 11. Joint use of private and military firing ranges is inadequate according to Police Department training requirements. The training schedules of the military and the intensive use of public ranges does not permit the Police Department full implementation of its training program. A discussion of shared use of ranges and its inadequacies is presented on page 66 of the final EIS.
- 12. It has been stated that a central location for the Fire-Police Training Facilities is not a prime necessity. This argument is discussed in Section V "Alternatives to the Proposed Action" on pages 50-54 in the final EIS.
- 13. Your suggestion to use Campbell Industrial Park for the proposed facility was considered, but the high cost of land discounted this proposal.

We are submitting for your information a copy of the final EIS.

Very truly yours,

Ernest T. Guasa

ERNEST T. YUASA
Director and Building Superintendent

TH:le attach.

cc: J. Harada

Dr. Richard Marland (OECC)

Group Architects Collaborative, Inc.

Mr. Richard F. Marland, Interim Director Office of Environmental Quality Control 550 Halekauwila St. Room 301 Honolulu, Hawaii 98613

Dear Mr. Marland,

I have reviewed a copy of the "Draft Environmental Impact Statement for the Proposed Fire and Police Training Facilities" submitted by the City and County of Monolulu Building Department, and would appreciate it if the following questions and comments would be considered during the review.

USE OF HELICOPTERS

- 1) The EIS states that helicopters landing on the heli-pad would occur only during emergencies and not during training exercises. What events would constitute such emergencies?
- 2) The goal of the proposed facility is to provide a <u>complete</u> training complex which will accommodate the development of all possible knowledge and techniques of the training of firefighters and law enforcement officers. Does this training include high rise fires? Would such a facility such as a mock high rise structure be vital for such training? Would helicopters also be used?
- 3) Two statements seem inconsistent:

"With the exception of the helicopter (which will land at the site only for emergency purposes and not for training exercises..." p. 19

"The sources of noise emissions resulting from training exercises are: a) Gunfire,
b) Pumper trucks, c) Helicopters..."

COMMITMENT TO THE FUTURE

- 1) The facility is planned to be useful for at least 20 years. What new type of equipment and techniques are being presently considered for this site? The EIS fails to provide such a list. What will be the environmental impacts of these techniques?
- 2) The facility will occupy 14 acres out of the 100 acres available in the area. By committing ourselves to this training facility, the area will soon house the arch disposal site, the incinerator, and the training center. What other type of public facility would be compatible with these undesirable facilities? Will we have committed ourselves to only permitting a limited type of facilities on the remaining 86 acres? What is the full, long range impact of permitting this training center to the area?

3) The EIS argues that the training facility would not adversely affect or hinder the development of the planned regional park in the same area. However, it fails to convince anyone that open air burning of oil and other fuel, a radiological building, and gunfire from such weapons as the AR-15 would not adversely affect the users of this park. The facility commits the area to a certain limited land use, but this impact has not been addressed.

NOISE

- 1) In the noise survey in the appendix of the EIS, sounds were measured with an impulse precision sound level meter. In the CZC, Section 21-232, "sounds of short duration, as from forge hammers and punch presses, which cannot be measured accurately with a sound level meter, shall be measured with the impact noise analyzer... If gunfire belongs to the same category as "sounds of short duration" should not an impact noise analyzer be used in this case?
- 2) How does the noise to be generated from the training facility compare to the new noise emission standards that were just approved this year?
- 3) How heavily will the firing range be used? # of rounds of firing per day?
- 4) Does gunfire travel a longer distance when it is fired with the direction of the wind? Will target practice be postponed during kona winds?

SMELLS

Presently, Wailani subdivision residents suffer from smells generated from the incinerator and the settling ponds during kona weather. The EIS Tails to mention the potential smells that would result from the training facility. What types of smells could be expected from 1) the burning of various fuels, 2) the extinguishing materials, 3) the sump pit? According to the EIS, the Waipahu area experiences kona weather 25% of the time.

FILL

- 1) Fill is planned to be added to build up the low lying area. What has been the historical success or failure in the use of such materials? Has any complications or extra expense resulted?
- 2) 24,000 cubic yards of top soil is proposed for the landscaping of the site. How many truck trips could this be translated into? The daily refuse truck traffic already taxes Farrington Highway and adds noise to the residents who live adjacent to the highway.
- 3) How stable will the fill be? Could it support such a critical structure as the radiological building?

RADIOLOGICAL BUILDING

Would a separate EIS be necessary prior to the construction of this building? What is the purpose of such a building to be included in the training facility? What is the potential danger of locating such a building next to a firing range where ricocheting bullets might fly?

OTHER COMMENTS

The EIS states that "purchase of any equivalent amount of land in an industrial type of area at market prices could mean costs of approximately 7 million dollars." Where is the documentation for this statement? Why was an industrial type land used for the study? The Waipahu site is located on Ag - 1 zoned, Public Facility general planned land.

The location map on page four neglects to label the residences situated between Farrington Highway and the Ted Makalena Golf Course. These residents would be directly affected by this facility.

One of the central arguments showing the need for such a training facility is that it will help to solve the present scheduling problem. The projected maximum frequent of all the burning exercises is six drills a day, or a total of 36 minutes per day. Is it difficult to schedule for this?

Would there be any kind of scheduling problem if no exercises involving smoke emissic will be held during adverse wind conditions? Prevailing winds blow only 75% of the time.

Why must the firing range be out in the open? Under actual conditions, aren't a lot of firing done indcors; therefore if they want to create a realistic condition, perhaps an enclosed firing range might be appropriate.

How many new governmental service positions will result from opening this facility?

The EIS fails to show any real benefit to the residents of Waipahu for locating a training facility in their neighborhood. The only argument is that the entire island would benefit, ergo, Waipahu will too. Such statements as:

"the proposed training facility can be expected to be an improvement to the aesthetic quality of the present dump area..."

does not belong in an EIS.

This concludes my questions and comments. I appreciate the opportunity to comment on this environmental impact statement. Thank you.

Sincerely yours,

~ Of windhow

P.O. Box 1095
Waipahu, Hawaii
96797

March 14, 1975

Mr. John Moriyama P. O. Box 1095 Waipahu, Hawaii 96797

Dear Mr. Moriyama:

SUBJECT: Draft Environmental Impact Statement
Fire and Police Joint Training Facilities

Thank you for your comments of September 4, 1974 regarding the subject project. Our response is as follows:

A. Use of Helicopters

- 1. Helicopters will be used for emergencies such as injuries resulting from fire or police training activities or unique circumstances such as visits by government officials or dignitaries.
- Training for hi-rise fires will be conducted at the eight-story fire training tower.
 Helicopters will not be used in these exercises.
- 3. Helicopters will be mainly used for emergencies. This has been clarified on pages 26 and 46 of the final EIS.

B. Commitment to the Future

1. The joint training facility for firemen and police officers will help to develop greater coordination between the departments during emergencies. Structures such as the 8-story fire training tower will enable firemen to develop skills needed to control hi-rise fires. The proposed Radiological Building will familiarize both departments with the handling of radioactive substances should an emergency arise.

r. John Moriyama age 2 Warch 14, 1975

To summarize, the training programs and experiences in the field will be in close proximity to the classrooms. Theory and practical experience with experimentation will hopefully lead to the development of new techniques to combat the rise in crimes and fires.

2. The ash disposal sites near the water may be converted to park use if they are properly treated and landscaped. A refuse power generating plant has also been considered for that area, but is considered a last alternative to other sites.

The Department of Agriculture has suggested nursery and greenhouse culture for the filled land.

The full, long range impact of permitting the subject facility on Waipio Peninsula is discussed on pages 69-73.

3. The Department of Recreation finds the EIS for the proposed facility acceptable and does not foresee conflict with plans for a regional park.

C. Noise

- 1. James K. C. Chang, the acoustical consultant, used an impulse precision sound level meter which has been factory modified to perform similarly to an impact noise analyzer.
- 2. New minimum acceptable noise levels which comply to both CZC and OSHA standards have been included in Appendix C of the final EIS.
- 3. The Honolulu Police Department will be firing approximately 1,900 rounds of ammunition per day which will consist of 1,000 pistol, 500 shotgun and 400 AR-15 rifle rounds. These figures are based on a training class of 20 recruits. The design of the facility will minimize the noise levels to conform to all Federal, State and City regulations.

Mr. John Moriyama Page 3 March 14, 1975

4. The location and orientation of the firing ranges will greatly aid in minimizing noise impact. The direction of firing will be away from residential areas in the direction of prevailing winds. Kona Winds, which occur 25% of the time in the opposite direction toward residential areas, contain a high moisture content which will tend to lessen noise.

D. Smells

- 1. Since open burning will occur during favorable tradewind conditions the odors associated with oil and gasoline fires will be dissipated away from residential areas.
 - 2. The drafting pit which collects water for re-use, will be cleaned periodically to prevent odors resulting from bacterial degradation.

E. Fill

- 1. The use of fill materials will not create a problem if proper engineering methods are employed. A master grading plan has been prepared for the area including the project site and the treatment of fill material is discussed on pages 36-38 of the final EIS.
- 2. Translated into truck trips of 30 cubic yards per truck, 24,000 cubic yards of top soil would require 800 truck trips.
- 3. Filled land will support structures if it is adequately prepared and if proper building foundations are utilized.

F. Radiological Building

1. A separate EIS would not be required but an Environmental Assessment may be appropriate.

Mr. John Moriyama ge 4 March 14, 1975

- 2. The Radiological Building will train both departments in the equipment and techniques needed to deal with radioactive substances during emergencies.
- 3. The location of the proposed Radiological Building and the safety factors designed into the firing ranges exclude the possibility of danger from ricocheting bullets.

G. Other Comments

- Since the nature of the training facility suggests industrial zone compatibility. purchase of an equivalent amount of land in an industrial area at market prices could mean costs of approximately 7 million dollars assuming a cost of \$10.70 per square foot.
- 2. The illustrations on pages 4, 11 and 30 have labeled the residences situated between Farrington Highway and the Ted Makalena Golf Course.
- 3. Open burning exercises at the Waipahu Fire-Police Training Facilities will be scheduled only during favorable tradewind conditions. The new Navy Facility, designed for shipboard fires will have complete smoke abatement devices which will provide an unrealistic simulation of civilian building-type fires.
- 4. During actual police operations, gunfire usually occurs outdoors. Therefore the artificial lighting and controlled atmosphere of indoor ranges would create an unrealistic situation and a significant increase in construction cost.
- 5. The proposed facility will create 6 new staff positions by 1985 in addition to other governmental jobs for maintenance and security.

SP75-205 C+C BldgDept.

A SUMMARY OF THE SITE SELECTION PROCEDURE FOR THE FIRE AND POLICE JOINT TRAINING FACILITY

THE SITE SELECTION PROCEDURE FOR THE SUBJECT FACILITY WAS UNDERTAKEN IN FOUR PHASES:

- I. ESTABLISH SITE REQUIREMENTS FOR THE PROPOSED FACILITY WITH PRIMARY EMPHASIS ON THE FOLLOWING FACTORS:
 - A. SIZE
 - B. LOCATION
 - C. ENVIRONMENTAL IMPACT
 - D. TOPOGRAPHY
 - E. UTILITIES
 - F. ZONING
 - G. ACCESSIBILITY
 - H. AVAILABILITY
 (SEE APPENDIX A, PP. 28-40)
- II. SEARCH FOR POSSIBLE SITES ON OAHU OWNED OR CONTROLLED BY:
 - A. FEDERAL GOVERNMENT
 - 1. ARMY
 - 2. NAVY
 - 3. AIR FORCE
 - 4. U.S.A. GENERAL SERVICES ADMINISTRATION
 LETTER SENT BY MAYOR FASI ON OCTOBER 13, 1972
 TO G.S.A. EXPRESSING INTEREST IN SURPLUS PROPERTY KNOWN AS PORTION, EWA TRANSMITTER SITE,
 EWA, OAHU, U-HAW-522.

SUBJECT PROPERTY WAS WITHDRAWN FROM SURPLUS BECAUSE FEDERAL NEED DEVELOPED. THEREFORE IT WAS UNAVAILABLE FOR THE FIRE-POLICE TRAINING FACILITY. (SEE APPENDIX B FOR CORRESPONDENCE)

- B. STATE OF HAWAII

 LETTER SENT BY MAYOR FASI TO GOVERNOR BURNS REQUESTING

 15 ACRES ON ANUENUE ISLAND(SAND ISLAND) ON MARCH 31,

 1971. REQUEST WAS DENIED DUE TO MARITIME AND RECREATIONAL
 NEEDS OF THE STATE. (SEE APPENDIX B FOR CORRESPONDENCE)
- C. CITY AND COUNTY OF HONOLULU
- D. PRIVATE

III. EVALUATION OF AVAILABLE ALTERNATIVE SITES

- A. FORT BARRETTE (MAKAKILO)
 TMK 9-1-16: 2, 21
- B. WAIMANALO (MAUKA LANDS)
 TMK 4-1-08: 1
- C. WAIMANO RIDGE TMK 9-7-25: 1
- D. WAIPAHU (INDUSTRIAL SITE)
 TMK 9-4-48: 1
- E. WAIPAHU (INCINERATOR AREA)
 TMK 9-3-01: 2, 12
- F. HALAWA B (BELOW BOARD OF WATER SUPPLY STATION)
 TMK 9-9-10: 2
- G. HALAWA (BELOW JAIL)
 TMK 9-9-10: 27
- H. KOKO HEAD FIRING RANGE TMK 3-9-12: 1

(SEE APPENDIX A, PP. 41-56)

IV. SITE SELECTION

- A. DETAILED EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE. (SEE APPENDIX A, PP. 57-61)
- B. REJECTION OF KOKO HEAD FIRING RANGE SITE DUE TO STRONG PUBLIC REACTIONS INCLUDING THE HONOLULU RIFLE ASSOCIATION AND OUTDOOR CIRCLE.
- C. REQUESTS BY MR. ERNEST T. YUASA, DIRECTOR AND BUILDING SUPERINTENDENT, BUILDING DEPARTMENT, TO THE FOLLOWING AGENCIES REQUESTING 15 ACRES OF LAND FOR THE PROPOSED FIRE-POLICE TRAINING FACILITY. (SEE APPENDIX C FOR CORRESPONDENCE)

1. DEPARTMENT OF LAND AND NATURAL RESOURCES, JULY 20, 1973

REQUEST: KEEHI LAGOON

TMK 1-1-03: 3 (EAST OF DISABLED AMERICAN VETERANS BUILDING) ALSO REQUESTED AVAILABILITY OF OTHER STATE-OWNED LANDS.

ACTION: I

DELAYED DUE TO POSSIBLE LAND REQUIREMENTS OF THE NEW MIDDLE STREET INTERCHANGE AND DLNR BEGAN STATE-LAND SEARCH FOR OTHER POSSIBLE SITES.

2. DEPARTMENT OF THE ARMY, JULY 24, 1973

REQUEST: FORT SHAFTER AREA OR OTHER ARMY-

OWNED LAND.

ACTION: NO AREAS AVAILABLE WITHIN FORT

SHAFTER BUT FOREST AND WATER-SHED AREAS REPORTED IN EXCESS COULD REVERT BACK TO THE STATE. ALSO SUGGESTED NIKE LAUNCHER

SITE AT PALEHUA.

3. HEADQUARTERS, FOURTEENTH NAVAL DISTRICT JULY 24, 1973

REQUEST: DEVELOPABLE NAVY-OWNED LAND.

ACTION: NAVY HAD NO PROPERTY WHICH COULD

SATISFY SITE CRITERIA.

4. DEPARTMENT OF THE AIR FORCE, JULY 24, 1973

REQUEST: FEDERAL LAND PREFERABLY AT HICKAM

AIR BASE OR IN THE VICINITY OF HONOLULU INTERNATIONAL AIRPORT.

ACTION: NO LAND AVAILABLE FOR FIRE-POLICE

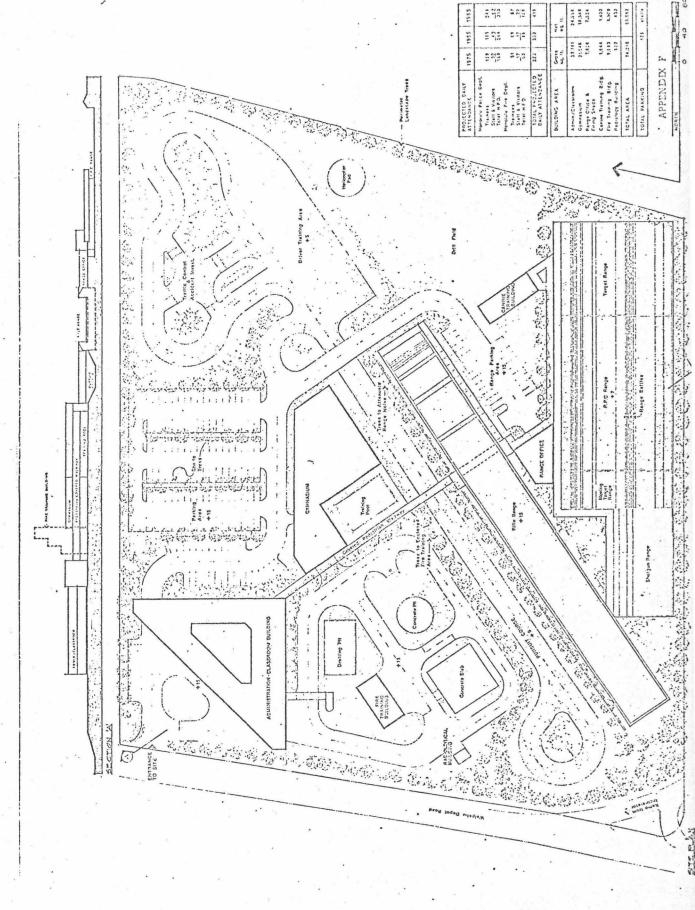
TRAINING FACILITY.

D. AVAILABILITY AND SELECTION OF AN AREA IMMEDIATELY MAUKA OF THE EXISTING WAIPAHU INCINERATOR.

TMK 9-3-02: PORTION OF 9

THIS SITE WAS NOT CONSIDERED WITH THE EIGHT ALTERNATIVES LISTED IN PHASE III ABOVE BECAUSE IT WAS NOT AVAILABLE AT THAT TIME. IF IT HAD BEEN AVAILABLE EARLIER, IT WOULD HAVE BEEN SELECTED ABOVE THE EIGHT ALTERNATIVE SITES. (SEE APPENDIX D, PP. 61-63)

E. OPPOSITION BY THE WAIPAHU COMMUNITY ASSOCIATION.



STATEMENT OF SITE REQUIREMENTS

APPENDIX A

FROM TAGAWA, YAMACHI AND ASSOCIATES, "FIRE AND POLICE TRAINING FACILITY, BASIS FOR REQUEST TO AMEND THE GENERAL PLAN", 1972.

SITE EVALUATION SIZE REQUIREMENT

The required size of the site is based on the respective training programs of the Fire and Police Departments. To calculate the total size of the required site, each department's training program was analyzed separately in terms of physical space requirements. At this point it was determined which facilities could be shared and the actual required size was then adjusted to reflect this joint use.

There are basically two types of facility requirements: 1) Indoor instructional spaces which include classrooms, administrative offices, related spaces, and 2) Outdoor physical types of facilities.

The first type was calculated from basic information on number of trainees, frequency of courses, size of classes, and number of classes required, to reach the total number of classrooms required. Office requirements were based on size of administrative staff and their space requirements. These figures and calculations can be found in the appendix.

The second type can be described as types of physical equipment or facilities such as firing range, drill towers, fire pits, gymnasium, training pool, etc. which have definite optimum sizes. The sizes of these specific facilities can also be found in the appendix.

Table XIV summarizes these size requirements in four categories:
1) Central Building Area, 2) Police Department Outdoor Areas
& Ancillary Structures, 3) Fire Department Outdoor Areas & Ancillary Structures, and 4) Parking.

The total required acreage for this joint Fire and Police Training Facility is 14 acres. As noted earlier in this report, one possible alternative is to locate the firing range elsewhere (depending upon environmental restrictions). This would lower the required acreage to 11.2 acres, creating the need to find an accessory site of 2.8 acres for the range.

It should be pointed out that the above calculations were based on the 1995 projected requirements. Since the objective of this study is primarily for the acquisition of a site, it is logical to assume the eventual optimum development as the determinant for total acreage. The actual facilities development would probably be phased to meet projected requirements at incremental years. The appendix includes area calculations for both 1985 and 1995.

TABLE XIV SIZE REQUIREMENTS

	GROSS AREA	ACRES
Central Building Area	62,290 sq.ft.	1.4
Police Department: Outdoor Area & Ancillary Structures	271,928 sq.ft.	6.2
Fire Department: Outdoor Areas & Ancillary Structures	222,010 sq.ft.	5.1
Parking Area	55,250 sq.ft.	1.3
TOTAL	611,478 sq.ft.	14.0



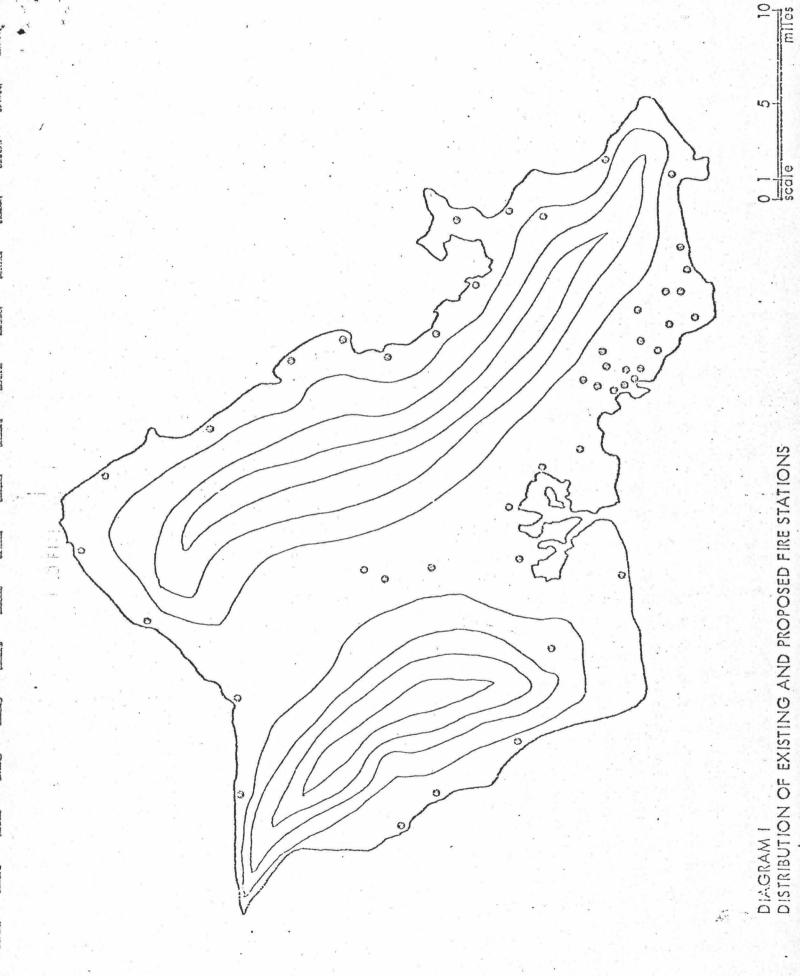
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Both the Fire and Police Departments have expressed the desirability to locate the joint training facility as close to Central Honolulu as possible and have given their reasons why such a requisite is important and should be considered in selecting a site for the facility.

Diagram I is a map of Oahu showing the distribution of the existing and proposed fire stations (as designated on the Capital Improvement Budget). The greatest concentration is within Honolulu (Aiea to Hawaii Kai). As pointed out earlier in the goals and objectives, the locations and numbers of these stations were determined by the density of the population of the various areas. Furthermore, this significance of the distribution of fire stations is verified by the number of fire calls received by the various fire stations. Table XV lists the existing fire stations and the average number of fire calls received per day (calculated over a five year period between 1967 and 1971). The stations located within the city received a significantly greater number of calls.

The Fire Department's in-service training program has important implications upon the relative distance between the training facility and this concentration of fire stations. To eliminate overtime expenses, fire companies are trained while on duty. Thus, when they are called in for re-training (four companies per half day shift; eight total companies per day), they will leave the stations unattended and consequently will be out of service as a response unit. The surrounding fire companies must then cover for any fire calls that the absent training companies may receive. Although the Central Alarm System would account for the unavailability of companies in training and transfer the calls efficiently, the absence of these companies does place a greater responsibility on the other companies in terms of the area to be covered. Quite possibly, an extreme fire situation could develop which could activate these available companies and which might require recalling a training company. Thus, the amount of time that a critical training company is absent and unavailable can be minimized by locating the training facility as close as possible to the greater number of fire stations. This would also minimize the number of fire calls which might have to be transferred to covering companies since the greater frequency of fire calls coincides with the greater concentration of fire stations.



(31)

TABLE XV EXISTING FIRE STATIONS
DISTANCE FROM CENTRAL HONOLULU
FREQUENCY OF FIRE CALLS

<u> </u>		
FIRE STATION	DISTANCE TO CENTRAL HONOLULU	AVERAGE NO. CALLS PER DAY
1 Central 2 Pawaa 3 Makiki 4 Kuakini 5 Kaimuki 6 Kalihi 7 Waikiki 8 Iwilei 9 Kakaako 10 Aiea 11 Sunset Beach 12 Waipahu 13 Kahuku 14 Waialua 15 Hauula 16 Wahiawa 17 Kaneohe 18 Kailua 19 Aikahi 20 Pearl City 21 Kaaawa 22 Manoa 23 Wailupe 24 Ewa Beach 25 Nuuanu 26 Waianae 27 Waimanalo 28 Nanakuli 29 McCully 30 Moanalua 31 Kalihi-Kai 32 Kalihi-Uka 33 Palolo 34 Hawaii Kai	0.00 3.25 1.75 1.00 8.00 2.00 7.00 0.75 0.75 8.25 3.80 16.40 36.00 32.00 29.30 21.00 8.80 15.30 13.80 12.25 22.80 6.00 8.00 31.00 1.00 32.50 19.00 27.50 2.50 4.60 0.50 3.00 5.00 12.70	1.39 1.64 .89 1.01 0.93 1.54 1.15 1.06 0.96 1.23 0.40 0.64 0.17 0.52 0.24 0.51 0.71 0.78 0.51 0.71 0.78 0.51 0.31 0.65 0.38 0.48 1.38 0.41 0.60 1.19 1.03 1.06 0.71 0.39

SITE EVALUATION LOCATIONAL REQUIREMENT Continued

A second reason for the desirability of locating the facility close to the majority of the stations is the effect of traveling time on the condition of the in-service trainees. For training, each company will be using its own equipment (engine, ladder, or rescue) and thus, will have to transport it to the training facility. Unlike enclosed vehicles, the fire vehicles are heavy equipment on which the men are exposed to the wind, dust, etc. while in motion. An unnecessarily prolonged trip would have a deliterious effect upon the condition and attitude of the men to train once they reach the facility. This is especially significant since superb condition is a requirement for a half day of intensive training exercises. Moreover, after returning from a training session, a fire company is still responsible to respond to any fire calls it may receive.

A third reason is the excessive operating costs of having to transport the equipment to the facility if it were located a great distance from the majority of the fire stations. The extra wear and additional costs of operating the equipment is a cumulative effect when one considers the total amount of companies training over a period of time.

A fourth reason for locating the facility near Honolulu was given by the Police Department. The majority of the instructors for the various courses are commissioned officers of higher ranks who are stationed at Police Headquarters (Pawaa Annex). Other instructors include prosecuting attorneys, corporation counsels, and guest lecturers who contribute their time freely. Since all of the classes are held during the day (with the exception of Police Reserve), these instructors would have to commute to and from the training facility. It would be desirable to eliminate unnecessary costs in time lost and extra vehicular expenses by minimizing traveling time and distance to the training facility.

There are other reasons, mainly in terms of convenience for the trainees, visitors, services, etc., for locating the training facility as close as possible to the city. All of these reasons, however, fail to provide an explicit basis for establishing a maximum distance or traveling time between Central Honolulu and the training facility. Unlike the size requirement with a definite minimum acreage, it is not possible to state the locational requirement in an absolute value (i.e. miles from Honolulu). Therefore this locational requirement will have to be considered in the proper context with the other site requirements (size, environmental, utilities, etc.) which are equally significant requirements for the selection of the facility site. Thus, although it is not absolutely essential, it is very

SITE EVALUATION LOCATIONAL REQUIREMENT Continued

desirable to have the facility located close to Honolulu to 1) minimize the time that critical fire companies are absent from the stations, 2) minimize the fatigue of trainees arriving at the facility, and 3) minimize operating (traveling) costs of both the Fire and Police Departments' training operations.

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ENVIRONMENTAL IMPACT REQUIREMENT

The environmental impact of any human created activity can be stated in two terms: 1) Short and long term effects on the natural environment (micro and macro structure) and 2) Effects on the immediate human environment in which such activities occur. The concern of this section is to investigate any environmental effects that the training facility could have which would be a determinant as to its location relative to surrounding types of areas.

The short and/or long term effects of this proposed facility on any immediate natural environment havebeen determined to be of a negligible nature. The only possible environmental pollutant would be the emission of smoke into the atmosphere. The low frequency of this activity (and only under favorable wind conditions to maximize the dissipation rate) minimize the possible harmful effects. The chemical content of these smoke emissions, as determined by the types of materials burned, would be regulated by Federal and State pollution standards with which the user agency is prepared to comply.

The effects of this proposed facility on the immediate human environment are two-fold: 1) Visual and Respiratory – primarily smoke resulting from simulated firefighting drills and 2) Audio – from equipment operations which include fire trucks and apparatus, helicopters, gunfire, and dogs.

VISUAL

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Smoke and fire drills consists of two types: 1) Simulated fires in the fire building, and 2) Flammable liquid fires. The first type will present no visual or respiratory smoke problems since the fire building will have an incinerator to treat the resulting smoke before letting it out into the atmosphere. The second type, however, is to be held in open fire pits. These drills will occur three to four times daily for approximately five minutes duration (from lighting of fire to complete extinguishing). It will, however, be a Fire Department policy that

SITE EVALUATION
ENVIRONMENTAL IMPACT REQUIREMENT
VISUAL Continued

these drills will be held only on days when the wind (prevailing trades) is favorable for rapid smoke dissipation. Hence, the facility should be in a location such that there are no urbanized areas (residential, business, apartment, etc.) downwind within smoke range under prevailing wind conditions. The limit of this range is, of course, dependent upon localized conditions and thus should be investigated for all of the possible alternative sites.

Another visual consideration is in terms of distractions to the public which could create hazardous conditions. For example, the facility should not be located adjacent to a major thoroughfare or freeway since the training activities could distract motorists. If such a site is considered, sensitive site planning and/or visual buffers should be utilized to isolate the facility from any adjacent highway.

AUDIO .

Noise and its effects on the human environment is one of the more difficult standards to measure. The harmful level of noise can be measured in terms of decibels (db). However, the disturbance level of noise (the point at which a noise becomes disturbing) is dependent upon a lot of factors, many of them subjective and unmeasurable. These include type of noise (continuous or sporadic, high or low frequency, sudden or progressive), its level, background noise (again its type and level), hearing sensivity of listeners, psychological condition of listeners, etc. Therefore, the following analysis of the possible disturbing sound levels created at the facility is a comparative one in terms of equivalent decibel levels between an average residential environment and the noise levels created by the various training equipment and exercises measured at certain distances away.*

Fire Trucks and Apparatus: In a recent survey conducted by the Hawaiian Electric Company, the noise of the fire trucks was measured at a distance of twenty (20) feet: Operating truck, 88–90 db; with sirens, 110 db; with sirens and horns, 114 db. During training operations, the horns and sirens will not be operated and therefore need not be considered here. This noise level of an operating fire

^{*}The decibel reduction rate for free-field conditions as found in <u>Time Savers Standards</u> was used. This rate of decrease is 6 db each time the distance from the source is doubled.

SITE EVALUATION ENVIRONMENTAL IMPACT REQUIREMENT AUDIO Continued

truck decreases to 60 db at an eighth of a mile away (equivalent to the noise level of dense traffic from a hundred feet), and to 46 db at a half mile away (equivalent to the noise level of a quiet residential street).* Therefore, at a half mile away, the noise level of the fire trucks will have a negligible effect on residential communities.

Helicopter: The noise levels created by an helicopter varies between 86 db (operating at rest) and 92 db (cruising).** These measurements were taken in the cockpit and if it is assumed to be about four feet from the source of noise (engine), the noise level reduction to 46 db would occur at approximately one fourth mile away.

Gunfire: Gunfire would be the biggest noise producing activity at the facility. The decibel level of gunfire ranges from 148 db (38 caliber pistol) to 172 db (M-1 rifle).*** Unlike the other sounds created by trucks and helicopters which are of the sustained type, gunfire is of the impact type, lasting in the order of a milli-second. If the free-field decibel reduction rate was applied to the above readings, the distance required to reduce the sound level to the equivalent of a residential street is an unreasonable and unrealistic one (150 miles). Therefore it appears that the noise from the firing range will have to be controlled either through the utilization of natural geographical conditions or man-made baffles. The National Rifle Association has suggested three ways that this sound level could be controlled:

1) By the direction of firing, 2) By vegetation (trees and foliage) between the firing range and any residential community, and 3) By sound baffles around the range (such as natural hills or earth berms).

Due to the focusing effect of the rifle or pistol, the sound level measured at the rear of the gun is less than in front of it (20 db less).***

So to help reduce the noise level, the direction of firing should be away from any residential areas.

Vegetation is one of the more effective ways of attenuating sound. The NRA has indicated that with vegetation, there could be a reduction of 6 db per 1000 feet (ground distance). Applying this rate to the decibel readings of gunfire, the sound level would be reduced to the equivalent of a residential street at a distance of 1800 feet.

^{*}Time Savers Standards, page 615.

^{**}Theodore Berland, Fight for Quiet.

^{***}National Rifle Association.

SITE EVALUATION
ENVIRONMENTAL IMPACT REQUIREMENT
AUDIO Continued

The sound level could be controlled even more significantly by noise baffles. Earth berms, for instance, could be used to direct the noise upward and away from any residential areas. "Several surveys of residential areas near ranges have been conducted. It has been found that if a range is set up properly for maximum sound attenuation, many residents are not even aware of the existence of the range."*

Thus, assuming that the gunfire noise will be controlled in some manner (through the selection of a properly isolated site or through artificial means), a reasonable, minimum ground distance from any residential area would be a half mile. This criterion is again not absolute, but dependent upon the unique localized geographical situations of the alternative sites.

Canine Training: The noise created by canine training is insignificant compared to the other sources of noise such as fire trucks, helicopters, and gunfire. This is particularly true since this training will occur during the day and not at night when the barking of dags can be a disturbing factor. The half mile minimum range determined by the other noise factors is more than a sufficient acceptable distance for canine training.

Besides visual and audio, there are other potential environmental pollutants that this facility could produce such as debris and wastes from simulated fires, run-off water with chemical contents, etc. These factors will have to be recognized and solved to eliminate any possible harmful effects. However, these types of problems would be inherent of any chosen site regardless of its relative location to other types of land uses. The concern of this section of the report was to investigate and recognize those areas of environmental problems which could affect the location of the facility and to establish criteria by which the potential alternative sites can be evaluated to assure the adequacy of a selected site.

The two recognized environmental factors to be considered in this evaluation are: 1) Smoke – its potential visual and respiratory effect, and 2) Noise – its potential audio effect. These two factors could be detrimental to incompatible inhabited areas such as residential, apartment, hotel, and business zones. Thus, the training facility should be located such that there are no incompatible types of zones within the smoke and noise ranges as previously identified.

^{*}National Rifle Association.

SITE EVALUATION TOPOGRAPHY_REQUIREMENT

There are four primary reasons why the topography of the facility site should be as level as possible.

The first two concern the training operations of the Fire Department. As pointed out earlier, the conditions of the training exercises should approximate as closely as possible the operations of an actual situation. The majority of the streets in the City and County of Honolulu are relatively flat (the maximum slope for major and minor streets is 1:10*) and thus there is no reason for the fire training facilities to exceed this slope. The second reason involves the fire equipment. Many of the pumper trucks leak oil after prolonged operations on a slope and this increases the wear on the equipment. Even when actual fire conditions occur on a hill or sloped streets, the engine operator will turn the truck to park as nearly level as possible. Thus, the fire training facilities should be as level as possible, not only to approximate actual conditions, but also to eliminate excessive wear on the equipment.

The third reason for relatively level training areas is to minimize the unnecessary strain and possibilities of accidents inherent in sloped training situations. The firefighters train by carrying heavy equipment such as hoses, couplings, ladders, etc. To practice on a slope would unnecessarily exhaust the trainees and could limit the amount of training possible.

The fourth reason is the most significant one. Most of the facilities and ancillary structures require a flat site in order to function properly. These obviously include classrooms and offices (although terracing is possible), gymnasium, training pool, firing range, helicopter/drill field, etc. A steep site would require excessive, yet necessary, excavation.

Thus, regardless of existing topography, the majority of the facility site will have to be graded to a relatively flat slope to accommodate the types of facilities required. Therefore, unless site acquisition costs outweigh site development costs from a total cost standpoint, it is of an economic advantage to select a relatively flat site with a minimum amount of grading required.

^{*}Department of Public Works, Engineering Department.

SITE EVALUATION UTILITIES

All of the necessary utilities should be available to the site. These include water, electricity, telephone, sewage disposal and water drainage. The water supply should be sufficient to sustain the required pressures of a network of fire hydrants (minimum 6" main). The sewage disposal could be handled by a sewage pipe system or if not available, by cesspools (which will have to be checked with the Board of Health). Water drainage could be through a storm drain system or merely through surface run-off (depending upon natural drainage conditions). If any of the above utilities are unavailable to the site, the possibility of acquiring such utility service and its cost should be investigated and thus be used as a criteria for evaluating the alternative sites.

ZONING

As determined in the environmental impact requirements, there should not be any type of incompatible zoning within the affectable range of the facility (determined generally to be a 1/2 mile radius). Another zoning consideration is an economic one. The location of the facility site in any type of area should not have any adverse effects upon the existing land values of the surrounding properties. Neither should this location of the facility place any restrictions on the possible further development of the surrounding areas. Thus, the impact of the facility (due to the types of activities occurring there) on the surrounding area in terms of zoning and possibly land values is another criterion to be used for site evaluation.

ACCESSIBILITY

The facility site should be readily accessible from major thoroughfares. The access roads between the facility and the major thoroughfare should be paved and of sufficient width to accommodate both the high frequency of use and the size of the trucks. The type of zoning that these access roads pass through should also be of a compatible type. For example, it would be very hazardous if access to the training facility was through residential streets. This type of conflicting situation should be avoided in selecting the proper facility site.

AVAILABILITY

Ideally the selected site should be owned by the City and County of Honolulu to eliminate any acquisition costs. However, if the site is cwned by a private party and/or another governmental agency, the possibility of acquiring it at a reasonable price without complications would be one of the criteria for evaluating it and the other alternative sites.

SITE EVALUATION SUMMARY AND CONCLUSIONS

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In summary, these eight criteria should be considered in evaluating all the possible alternative sites to arrive at the best alternative. Ideally, all of these criteria should be of equal weight as determinants of this selection. They represent a series of ideal conditions under which the facility should be established. However, in evaluating specific sites, trade studies might be required to weigh certain advantages against disadvantages in determining, perhaps, the "best available compromise". The conclusions of each of the eight criteria follow.

- Size: Minimum 14 acres for total facility. If firing range is located elsewhere, 11.2 acres required with accessory site of 2.8 acres for the range.
- (E) Location: As close as possible to Central Honolulu (considered to be Central Fire Station) in terms of traveling time.
- Environmental: Generally 1/2 mile from any incompatible types of inhabited areas (residential, apartment, hotel, business, light-industrial). Compatible types of zones include heavy-industrial, agricultural, preservation. Visually isolated from major thoroughfares or freeways.
- Topography: As level as possible to minimize grading costs. Maximum slope: 10%.
- Utilities: All utilities available on site or nearby within reasonable economic range.
- Zoning: No incompatible zones within environmental effect range (1/2 mile). No negative impact on surrounding zones in terms of land values and future developments.
- Accessibility: Easily accessible from major thoroughfare on improved road of sufficient width capable of handling heavy use. Access road through compatible types of zones.
- (4) Availability: Land should be available. Owned by City & County of Honolulu or acquirable at a reasonable cost.

ALTERNATIVES AVAILABLE

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The eight criteria established determined the type of facility that the Fire and Police Training Facility would be and the type of site that would be required to accommodate it. The facility is a unique kind of situation. Although it is basically a training type of facility with provisions for physical types of training with resultant visual and audio disturbances which give it an industrial nature, it is also an educational facility with classrooms and offices which give it an academic nature, too. Therefore, to find an appropriate site for it, various types of areas (from industrial to residential) had to be investigated to discover the possible alternative locations for the facility. All eight site criteria were used as general determinants to isolate certain areas of the island in which to start searching. The result was eight possible alternative sites.

Diagram II lists the eight alternatives and shows their locations on the Island.

The analysis of each of these eight sites on the eight criteria can be found on the following pages. Following the analysis of the alternative sites is an evaluation of each summarizing the advantages and disadvantages of each site.

ALTERNATIVE SITES

scale

FORT BARRETTE (MAKAKILO) TMK 9-1-16-2, 9-1-16-21

CRITERIA		PRO	CON
SIZE	28 acres	Х	
LOCATION	20 miles and 32 minutes from Central Honolulu		X
environmental	Surrounded by cane fields Nearest residential subdivision: 1/2 mile upwind. H-1 freeway: 1/3 mile upwind.	X	
TOPOGRAPHY	50% of site: 4-6% slope 50% of site: too steep for usage. Buildable area is scattered, not all in one area.		X
UTILITIES	Water: 30" main at Farrington Highway: 1/3		Χ
	mile away. Electricity: Available at Farrington Highway. Telephone: Available on site. Sewage: Nearest line uphill at Farrington. Cesspools possible. Drainage: Gulch adjacent to site which drains	X X X	X
	to coral pits.		
ZONING	Presently military reservation, surrounded by agriculture. Nearest residential zone: 1/2 mile.	Х	
ACCESSIBILITY	Direct access from H-1 along improved government road.	Х	
AVAILABILITY	Presently owned by U.S. government and a private owner.		Х

WAIMANALO (MAUKA LANDS) TMK 4-1-08-1

CRITERIA		PRO	CON
SIZE	100 acres available.	Х	
LOCATION	14 miles from Central Honolulu via Pali Highway.		Х
ENVIRONMENTAL	School, residential areas, and forest reserve adjacent to site.		X
TOPOGRAPHY	Fairly flat: 2-4% slope	Х	
UTILITIES	All utilities except sewage (cesspools possible) available adjacent to site.	x	
ZONING	Residential zoned area.		Χ.
ACCESSIBILITY	1/8 mile from Kalanianaole Highway. Paved for 100 feet only, dirt road for 300 feet. Access through residential areas.		×
AVAILABILITY	Owned by State of Hawaii: Hawaiian Homes.		Х

WAIMANO RIDGE TMK 9-7-25-1

CRITERIA		PRO	CON
SIZE	Approximately 70 acres	Х	*
LOCATION	15 miles from Central Honolulu		x
ENVIRONMENTAL	Waimano Home for Retarded located in same area. Residential areas adjacent downwind of site (approximately 1/3 mile away).		X
TOPOGRAPHY	Relatively level at top of ridge. Steep drop to valley on both sides.	x	
UTILITIES	Water: Available at Waimano Home or 8" main at street 1 mile away.	. X	
	Electricity: Available at Waimano Home. Telephone:	X	
	Sewage: " " " " " Drainage: Natural run-off into adjacent gulch.	X	
ZONING	Presently zoned public facility (Dept. of Health). Surrounding zoning downhill: residential.		X
ACCESSIBILITY	Uphill road 2 1/2 miles from Kam Highway through residential areas.	l	x
	Access road passes through Waimano Home.		
AVAILABILITY	Owned by State of Hawaii, Department of Health		Х

WAIPAHU (INDUSTRIAL SITE) TMK 9-4-48-1

CRITERIA		PRO	CON
SIZE	11.76 acres2.8 acres of privately owned adjacent land.14.5 total if private land available.	Х	X
LOCATION	14.5 miles and 23 minutes from Central Honolulu		х
ENVIRONMENTAL	Canefields and Pearl Harbor downwind. Industrial area adjacent upwind. Waipahu Town 1/4 mile upwind.	X .	
TOPOGRAPHY	Relatively flat (2–4%) for most of site. Edge at Pearl Harbor very steep and unusable. Wedge shape at southern end of site very narrow: approximately 1 acre unusable.		X
UTILITIES	All available adjacent to site.	X	
ZONING	Presently public facility. Surrounding zoning: industrial.	X	Х
ACCESSIBILITY	1.3 miles from H-1 exit through Waipahu Town and Industrial area.	X	
AVAILABILITY	City & County owned land. Private parcels have to be purchased to fulfill size requirement.	X	х

WAIPAHU (INCINERATOR AREA) TMK 9-3-01-2, 9-3-01-12

	PRO	CON
28.2 acres	X _.	
15 miles from Central Honolulu		×
Uninhabited land fill, incinerator, and Pearl Harbor downwind of site. Marshland and bird breeding ground adjacent upwind. Waipahu Town 1/4 mile upwind.	X	
Flat land: marsh area (formerly fishponds) subject to tidal fluctuations. Fill required to raise land to safe level.		X
Available at access road but across Kapakahi Stream at property line.	Х	
Presently zoned public facility (sewage treatment plant and ash disposal site). Residential zone 1/4 mile upwind.	X	
1.6 miles from freeway through Waipahu Town. Gravel road for portion of access road.		X
10.9 acres owned by City & County. 17.4 acres owned by State of Hawaii leased to City & County.	X	
	Uninhabited land fill, incinerator, and Pearl Harbor downwind of site. Marshland and bird breeding ground adjacent upwind. Waipahu Town 1/4 mile upwind. Flat land: marsh area (formerly fishponds) subject to tidal fluctuations. Fill required to raise land to safe level. Available at access road but across Kapakahi Stream at property line. Presently zoned public facility (sewage treatment plant and ash disposal site). Residential zone 1/4 mile upwind. 1.6 miles from freeway through Waipahu Town. Gravel road for portion of access road. 10.9 acres owned by City & County. 17.4 acres owned by State of Hawaii leased to	28.2 acres X 15 miles from Central Honolulu Uninhabited land fill, incinerator, and Pearl X Harbor downwind of site. Marshland and bird breeding ground adjacent upwind. Waipahu Town 1/4 mile upwind. Flat land: marsh area (formerly fishponds) subject to tidal fluctuations. Fill required to raise land to safe level. Available at access road but across Kapakahi X Stream at property line. Presently zoned public facility (sewage treatment plant and ash disposal site). Residential zone 1/4 mile upwind. 1.6 miles from freeway through Waipahu Town. Gravel road for portion of access road. 10.9 acres owned by City & County. 17.4 acres owned by State of Hawaii leased to

HALAWA B (BELOW BOARD OF WATER SUPPLY STATION) TMK 9-9-10-2

CRITERIA		PRO	CON
SIZE	15 acres	X	
LOCATION	6.4 miles and 14 minutes from Central Honolulu.	Х	
environmental	Residential area 1/8 mile away on hill. Quarry to south and east. Light Industrial area adjacent downwind.		X
TOPOGRAPHY	Steep grade: approximately 13%.		х
UTILITIES	Water: Tank tower required. Electricity: Available at pumping station. Telephone: " " " Sewage: Cesspools required. Drainage: Natural drainage to existing stream.	X X X	X
ZONING	Light Industrial zone: just re-zoned with justi- fication of need for light-industrial areas.		X
ACCESSIBILITY	1.2 miles from H-1 along dirt road. Future industrial paved road might be used.	X	
AVAILABILITY	Private ownership: light industrial zoning might create high selling price.		х

HALAWA (BELOW JAIL) TMK 9-9-10-27

		PRO	CON
SIZE	15 acres of possible 28 acres.	Х	
LOCATION	6.4 miles and 14 minutes from Central Honolulu.	Х	
ENVIRONMENTAL	Residential area on hills 3/4 mile away in both east and west directions. C & C Jail adjacent upwind. Quarry and Quarantine Station to the west and southwest. Proposed H-3 freeway adjacent to the east.	X	X
TOPOGRAPHY	Favorable slope: 6-8%.	Х	
UTILITIES	Water: Share water tank with jail. If insufficient, separate tank required.	Х	
	Electricity: Available at jail.	X	
*	Telephone: " " "	X	
	Sewage:	X	
	Drainage: Surface run-off to stream adjacent at property line.	Х	
ZONING	Presently zoned golf course. Surrounding land: transitional stage (growing industrial and residential area).	X	X
ACCESSIBILITY	1.2 miles from H-1 along proposed jail road through quarry site.	Х	
AVAILABILITY	Private owner: relatively high cost expected due to rising land values.		х

KOKO HEAD FIRING RANGE TMK 3-9-12-1

CRITERIA		PRO	CON
SIZE	18–20 acres	Х	
LOCATION	13 miles from Central Honolulu		X
ENVIRONMENTAL	Residential area 1/2 mile away. Site isolated by being in a natural crater. Noise from existing firing range presently acceptable.	X	
TOPOGRAPHY	Flat site with slight grade upwards towards Koko Crater.	х	
UTILITIES	Water: Existing 6" main.	X	
	Electricity: Available at site.	X	
* * * *	Telephone: " " "	X	
	Sewage: Cesspools required.	X	
	Drainage: Natural drainage to low area: pump required to get water to highway culvert.		X
ZONING	Presently in conservation area: part of Koko Head Natural Park.	Х	X
	Surrounding zoning: conservation. Stable area in terms of zoning.		
ACCESSIBILITY	Direct access from Kalanianaole Highway	X	
AVAILABILITY	Owned by City & County of Honolulu, Parks and Recreation Department.	Х	

FORT BARRETTE (MAKAKILO)
TMK 9-1-16-2, 9-1-16-21 (Refer: Page 43)

The greatest advantage of this site is its isolation from other inhabited areas by the canefields which surround it. The nearest residential area, a half mile upwind, is out of the range of any disturbances. The present agricultural zoning around the site would not be affected by the facility. The government access road from H-1 freeway (thru canefields) is sufficient to handle the projected heavy use.

The disadvantages, however, are significant. Of the eight sites evaluated, this site was located the farthest from Hanolulu. The thirty-two minute drive (via the freeway) would be exhaustive to the firefighter trainees commuting to the site on exposed equipment. Another disadvantage is the topography. All 28 acres would have to be purchased to obtain 14 acres (50%) of reasonably sloped, usable area. Moreover, because this usable area is scattered around the total site, the location of the various facilities (requiring different areas) is not very flexible. The unavailability of water and electricity (except from Farrington Highway, 1/3 mile away) is a third disadvantage.

The disadvantages of this site greatly outweigh the advantages it does have. Therefore this site is not recommended for the training facility.

WAIMANALO (MAUKA LANDS) TMK 4-1-08-1 (Refer: Page 44)

The only advantages to this site is the available acreage, its fopography, and the availability of utilities.

Its location on the windward side via the Pali Highway is not unreasonable in distance from Central Honolulu. But it would require the majority of the fire trucks to travel over the Pali putting a lot of unnecessary wear on them.

The environmental, zoning, and accessibility factors are all negative. The site is at the base of high mountains enclosing the valley. Therefore, any sounds created at the facility would reverberate throughout the valley (as does present periodical gun noises). The greater portion of the valley is zoned residential. Thus, a training type of facility would definitely be an incompatible type of usage in this area. With

the exception of a few companies, all of the fire trucks would have to reach this site by passing directly through Waimanalo Town (a densely populated residential, commercial strip) via Kalanianaole Highway which is a narrow two lane highway. This would be a very hazardous situation.

Therefore, this site is very inappropriate for the facility location. It is not recommended.

WAIMANO RIDGE TMK 9-7-25-1 (Refer: Page 45)

This site is similar to Waimanalo in that it has some advantages such as ample acreage, fairly level topography, and all available utilities. However, the disadvantages are much more significant.

The most important consideration is the Waimano Home Facility. This is a home for the mentally retarded and should not have any unnecessary disturbances. The training facility (should it be located here) would be disturbing, even traumatic, to the residents of the Home since it would be within both visual and audio range of the training activities. This problem is compounded by the fact that access to the training site would be through the grounds of the Home.

Besides Waimano Home, there are residential zones a third of a mile downwind. This is well within the audio range of the site and would not be acceptable. Furthermore, the access road (Waimano Home Road) is uphill through these residential areas. Besides unnecessary wear on the training equipment, this would be excessively noisy to the residents living along the road.

This site is not recommended.

WAIPAHU (INDUSTRIAL SITE) TMK 9-4-48-1 (Refer: Page 46)

There are many advantages to this site which include favorable environmental surroundings, available utilities, present zoning as a public facility, favorable access, and ownership by the City and County of a greater portion of the required acreage.

The most significant disadvantage is the amount of acreage usable. Even if the smaller private parcels could be purchased to obtain the required 14 acres, the extremely steep topography along Pearl Harbor and the very narrow tip of the wedge-shaped parcel would be very difficult to use. So the actual amount of acreage available for the type of facilities required might be less than 14 acres.

A second disadvantage is the surrounding zoning in terms of economic impact. Since the area is a growing industrial zone, the rising land value might pre-empt this parcel for another more economically feasible use. Furthermore the parcels which would have to be purchased are very desirable industrial parcels and the purchasing price can be expected to be high.

Thus, because of the questionable amount of actual usable acreage available and the transitional nature of the area, this site is not recommended.

WAIPAHU (INCINERATOR AREA)
TMK 9-3-01-2, 9-3-01-12 (Refer: Page 47)

Despite of the many advantages of this site (size, environmental, utilities, zoning, and ownership by the City and County), the greatest disadvantage is the type of land which the site is located on. Formerly fishponds, the site is a very low marshland adjacent to Pearl Harbor, and subject to tidal fluctuations. It would require a great amount of fill to raise the required acreage to a safe level to avoid any possibility of flooding. This would definitely be an expensive economic factor to consider.

Of the eight alternative sites considered, this was the seventh farthest from Central Honolulu (15 miles) and therefore, is considered somewhat undesirable from the locational standpoint. Access to the site (through Waipahu Town and on a gravel road subject to excessive wear due to the heavy use by refuse trucks) is another disadvantage of this site.

Due primarily to the amount of fill required to make it acceptable for the facilities, this site is not recommended.

HALAWA B (BELOW BOARD OF WATER SUPPLY STATION) TMK 9-9-10-2 (Refer: Page 48)

The only advantages to this site are its sufficient size, location close to Honolulu, accessibility, and the availability of most of the utilities (except water which requires a water storage tank).

The most significant disadvantages are its environmental impact on the surrounding residential areas (which is only 1/8 mile away), its topography (which would require a large amount of grading), and the zoning (of both that specific parcel and the area below it which were just recently re-zoned to light industrial). All of these disadvantages make this site undesirable for the training facility, and therefore it is not recommended.

HALAWA (BELOW JAIL)
TMK 9-9-10-27 (Refer: Page 49)

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This is one of the more favorable sites for the training facility due to its many advantages. These include: 1) Sufficient size, 2) Ideal locational distance from Central Honolulu, 3) Some favorable environmental considerations, 4) Favorable slope, 5) Availability of utilities, 6) Compatible type of present zoning, and 7) Easy accessibility from H-1 freeway.

There are, however, some disadvantages to this site which would have to be overcome. The first is in terms of environmental impact. The Halawa Jail is immediately adjacent upwind of the proposed site. Unless buffered somehow, the noise created by training exercises could be disturbing to the inmates of the Jail. If this site is considered, an official from the jail facilities should be consulted as to the impact that this noise could have on the inmates, staff, visitors, etc. Another environmental consideration is the impact that the facility noise could have on the residential areas on the hills on both sides of the valley. Although they are three-fourths of a mile away, they are above the facility site and therefore would not be buffered from the sounds by any ground foliage or terrain. The most critical sound would be gunfire and tests should be conducted to check if such sounds would be disturbing to these residential areas. If they are found to be at a definite disturbance level, the alternative to locate the firing range elsewhere (at the present Koko Head firing range) would have to be considered. Another environmental consideration is the proposed H-3 freeway which would pass immediately adjacent

to this site. The training activities could be distracting, thus hazardous, to the passing motorists on the freeway. Therefore, should H-3 freeway be built, visual buffers would have to be provided to eliminate this problem.

Another disadvantage is that this area is in a stage of transition as to its land use. A significant amount of area on the apposite side of the valley has recently been re-zoned to light-industrial. This is indicative of the growth of this area in terms of land use. A training facility located here (although appropriate now) could become an incompatible type of use in the future. Related to this growth is an expected high cost of acquisition due to the rising land values in this area. All of these factors will have to be studied for this alternative site.

Most of these problems, though significant ones, could be resolved to successfully locate a training facility at this site. Therefore, this site is recommended contingent upon the consideration and solution of the stated problems.

KOKO HEAD FIRING RANGE TMK 3-9-12-1 (Refer: Page 50)

Of all eight alternatives, this site is the most desirable one. Its advantages greatly outweigh the few disadvantages it has. It is of sufficient size, favorable (negative) environmental impact upon the surrounding areas, and flat topography. It has available existing utilities, direct access from Kalanianaole Highway, and is owned by the City and County of Honolulu (Department of Parks and Recreation).

One disadvantage is that it is not located as close to Central Honolulu as the Halawa site. Out of the eight alternatives, however, it is the third closest to Honolulu. Therefore this relative locational distance is not a very significant disadvantage when the other requirements which this site fulfills are considered.

The drainage problem could be solved by pumping the excess run-off water up forty feet to the existing highway culvert. The amount of rainfall in this area (approximately 25 inches annually) is not a great amount and, thus, would not create any pumping problems.

The only other disadvantage would be the present zoning of the site. It is in an area designated as Parks and Recreation on the General

Plan and is in a State Conservation District. The present use of the site, however, is as a firing range (public facility) which the training facility would be similar to in terms of land use. The location of the training facility here would not significantly alter the nature of activities which presently take place in the crater. Moreover, the area that the training facility would occupy approximates that being used for the existing firing range. This is limited to the floor of the crater where there are no recognizable indigenous trees or foliage significant to this conservation area. Also, because of the relatively flat topography of the site, there would be a minimum amount of grading involved to accommodate the various facilities. Therefore, the basic land form would be retained. Sensitive landscaping at the entrance to the site would make the facility non-apparent to the passing motorists on Kalainanaole Highway. The high crater walls isolate the site on the other surrounding sides.

Therefore, because of its many advantages and the few disadvantages which can be resolved, this site is the most appropriate one of the eight sites evaluated, and is therefore recommended for the training facility.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS

After evaluation of eight possible alternative sites for the training facility, Koko Head Firing Range was determined as the most feasible one fulfilling most of the site requirements (see evaluation sheet for Koko Head). There are four major advantages to this site:

1) City and County ownership, eliminating cost of acquisition, 2)

Natural physical factors conducive to this type of facility, 3) Existing firing range with a noise producing factor presently acceptable by the public, and 4) Total training facility, eliminating the necessity to separate the firing range (as required for certain other alternative sites).

The most significant disadvantage of this site is its location in a Conservation area. This disadvantage, however, is alleviated by its present use as a firing range.

Therefore, considering the definite potential of this site and its one significant disadvantage, a decision was made to do a preliminary site plan study of the total facility to investigate and confirm, if possible, the feasibility of this site to accommodate all of the facilities requirements in a reasonable and environmentally acceptable manner. Diagram III titled Site Plan Study reflects the results of this study. It should be pointed out that this drawing does not in any way represent a final layout of facilities. It is merely a preliminary study of what could be achieved and thus should be considered in that context.

One of two main objectives of this site study was to retain as much as possible the existing land forms and natural foliage of the site. This was particularly significant considering the location of this site in a conservation area. The other objective was to make this facility as inconspicuous as possible to the public (specifically motorists along Kalanianaole Highway and Hawaii Kai residents).

The existing natural physical factors made it relatively simple to achieve these two objectives. The site is basically a crater bowl with nearly a flat base, rising gradually in the mauka direction towards Koko Crater. The amount of cut and fill required to build the facility is practically negligible. Furthermore, there are no recognizable indigenous plants or trees on the crater floor; they are predominantly on the slopes of the crater walls which would not be disturbed.

The contained configuration of the crater makes this site invisible from the Hawaii Kai residential areas to the west and visible to Kalanianaole Highway for a short stretch of approximately seventy-five (75) feet at

DIAGRAM III

(SC)

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS Continued

the entrance to this site. This latter problem could be solved by realigning the entrance road and sensitive landscaping with indigenous trees. This has been reflected in the Site Plan Study drawing. Thus, the site plan was developed recognizing and utilizing the natural physical advantages of this crater site.

In terms of the total training facility, there are four general zones:

1) Central Building Zone (consisting of classrooms, offices, gymnasium, pool, cafeteria), 2) Noise Zone (consisting of firing ranges),
3) Fire and Smoke Zone (consisting of fire training structures and pits), and 4) Open Field Zone (consisting of helicopter/drill field, canine training, driver training/skid pad).

The Central Building Zone is centrally located near the entrance as the control point and activity spine to all the other facilities. Its close proximity to the firing range implies that sound levels will have to be controlled architecturally.

The firing range (Zone 2) had two possible alternative locations: the existing pistol range at the lower, makai side of the site or the existing rifle range at the mauka side. The decision to utilize the existing mauka rifle range to consolidate all gunfire activity was due to two reasons: 1) the existing pistol range was next to the higher makai crater wall resulting in gunfire echoing within the crater, and 2) the noise from the existing rifle range dissipated much better because of the gradual slope up towards Koko Crater. Moreover, the direction of firing is away from the rest of the facilities. Another important consideration of the location of the firing range was its continuing usage as a public firing range, especially on weekends. By locating it near to and directly accessible from the parking lot, the range could be continually used while the rest of the facilities remained secured.

The fire training structures and pits (Zone 3) were located at the downwind side of the site. Since these structures would be considered the most visually objectionable (due to their usage), their location in the southernmost pocket of the crater renders them practically invisible from the highway. Again with a minimum amount of landscaping, they would not be seen at all by the passing motorists. This area is also the flattest and lowest part of the crater floor. These factors are taken advantage of by having the pumper test pit (drafting pit) located at the lowest point to collect surface run-off water to be re-cycled in pumper training exercises. Any excess run-off can be pumped up to the existing drainage culvert along Kalanianaole Highway.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS Continued

The rest of the site is utilized for the open field facilities (Zone 4). Because of the relatively flat topography, there is a minimum amount of earthmoving to prepare the site for these facilities. Moreover, the greater part of the area will be grass covered, thus remaining very similar to the existing conditions.

In summary, the development of this site study confirmed preliminary conclusions of the potentiality of this site. With a marginal amount of landscaping and site work, this facility could be achieved recognizing the two objectives established earlier. Furthermore, the existing facilities (rifle range), land forms, and topography were utilized advantageously to produce a workable and realistic concept, involving a minimum amount of change to the total existing environment of that area.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE APPROPRIATENESS AS AN ALTERNATIVE USE FOR THE SITE

Although this site is zoned for conservation which implies a "hon-use" type of area to be left in a natural state, it is, nevertheless, presently being utilized as a public firing range by the Department of Parks and Recreation. This use is justifiable since, besides presently being used by the Police Department, it is the only firing range available to the public in the City and County of Honolulu. Therefore, it is very likely that it will remain for this special type of recreational use.

Considering its present zoning and its present use, there are, however, three possible alternative uses: 1) Converting it back to a natural conservation area, 2) Converting the whole area or part of it for park use (i.e. picnic grounds), and 3) Using it for the Fire and Police Training Facility.

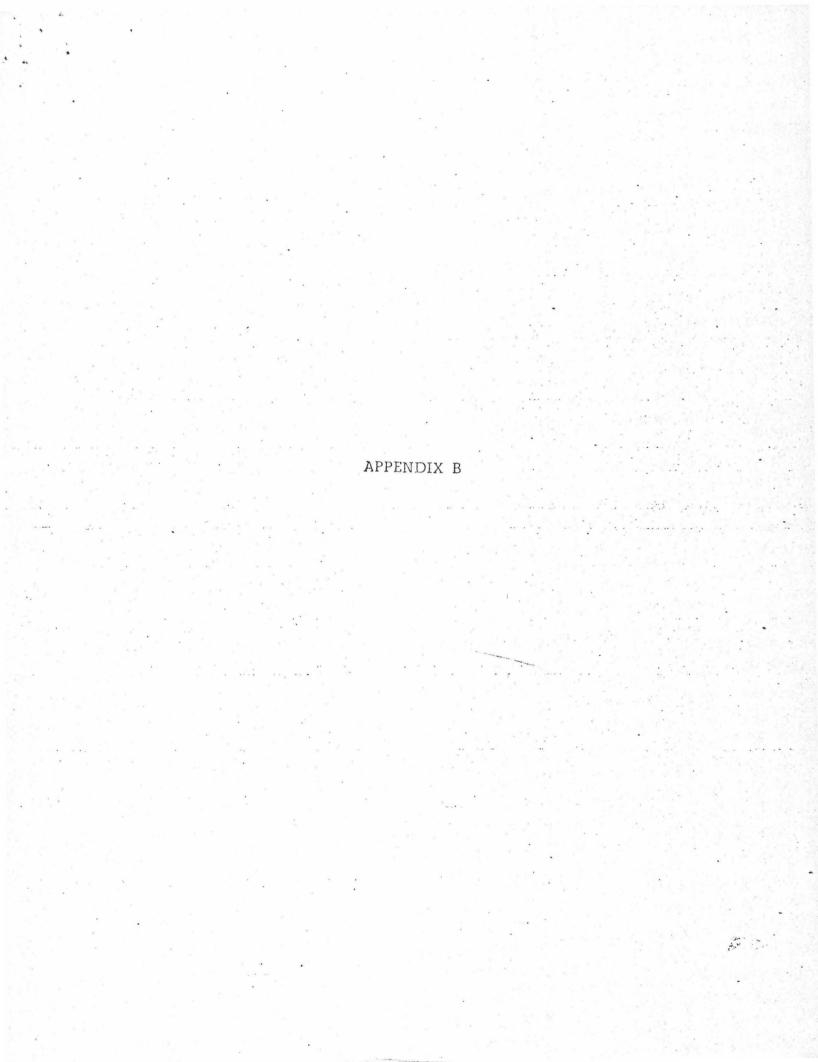
The first alternative is an appropriate one considering its location in a conservation area. However, because of its use as a firing range, there are no significant natural features such as indigenous trees or landscape within the crater. Furthermore, due to its location and size, the crater itself is not a significant landmark when compared to the others in the conservation area such as Koko Crater, Hanauma Bay, the rugged shoreline along Blowhole, Sandy Beach, and Makapuu Point. In fact because of its limited exposure to motorists along Kalanianaole Highway, the crater is virtually invisible to visitors of the area. This alternative to convert it back to a natural conservation area would also eliminate the use of it as a firing range. The present facility there would have to be relocated elsewhere (to accommodate public usage) which would be difficult because of the high noise levels created at such a facility. Hence, recognizing the relative insignificance of the site in the total conservation area, and the resulting elimination of a public recreational facility, the first alternative is not a realistic one.

The second alternative could also be an appropriate use for the site. However, asides from being an open area, the site does not have any special amenities to make it a desirable park location. It is in a relatively low area isolated from the shoreline and nearby beaches. There are definitely more attractive park grounds in the surrounding area such as Hanauma Bay and the recently completed Sandy Beach area. The Department of Parks and Recreation has also just completed a park with picnic grounds in the Job Corps area. Therefore, it appears that more parks and picnic grounds are not needed in this area (the Dept. of Parks and Recreation has no plans for the crater site in the foreseeable future). Converting the whole site to park use would also eliminate the firing range facility. Converting only the unused portion of the site for park use would result in a dangerous kind of mixed usage. Therefore, this second alternative is also not a realistic one for this site.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE APPROPRIATENESS AS AN ALTERNATIVE USE FOR THE SITE Continued

The third alternative, though somewhat unusual in a conservation area, is a very realistic one for this site because of three reasons:

1) The type of activities to be held at the training facility would be very similar and compatible to the existing activities of the firing range, 2) The firing range would still be available for use by the public, and 3) As pointed out earlier, the existing natural physical factors of this site along with sensitive site planning and land-scaping could be utilized advantageously to retain existing conditions and make the facility inconspicuous to visitors of the area. The need for the training facility and the restrictive site requirements have been established earlier. Of eight possible alternative sites, this site best fulfills these requirements. Therefore, of the three possible alternative uses for this site, the third, for use as a training facility for the Fire and Police Departments, is the most realistic and appropriate one.



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EXECUTIVE CHAMBERS HONOLULU

JOHN A. BURNS

April 23, 1971

Dear Mayor Fasi:

Thank you for your letter of March 31, 1971.

While I fully appreciate the need for a training site for the use of police and fire-fighting units, we do not have enough land area on Anuenue Island for recreational needs and for maritime port facilities to meet the demands of the public and government agencies. As I believe you know, the demand for land to accomodate both these activities is considerable.

Therefore, I regret that I must inform you that the State will be unable to consider your request for an area on Anuenue for the purpose stated.

Warmest personal regards. May the Almighty be with you and yours always.

Sincerely,

Jame a. Busell

The Honorable Frank F. Fasi Mayor City & County of Honolulu Honolulu Hale Honolulu, Hawaii 96813

March 31, 1971

Ronorable John A. Hurns, Governor State of Hawaii State Capitol Honolulu, Hawaii

Dear Governor Burns:

The City and County of Honolulu requests that a 15-acresite at Sand Island be set aside for a joint Police and Fire Training Pacility.

At present, the Police Department's basic recruit training, special refresher and other special and technical courses are being conducted at the Pawaa Annex. A "Police Academy" type facility is required to preparly address the increasing problems relating to crime, law and order.

The Fire Department's training is being carried out in scattered public and private buildings, streets, docks, playgrounds and other available open spaces. This training program is limited and woefully inadequate. A specialized training complex is needed where fire personnel can be properly trained to fight fires in high rises, industrial complexes and other special highly developed area.

The Police and Fire Departments agree that a joint use will eliminate the duplication of facilities such as driver training, helice ter training, drill field, outdoor athletic field, parhite lot, swiming pool and classroom facilities. Separate facilities would be provided for training which is unique to each department.

Lorent de la Meha A. Marao, Mevernor Ferra 2 Espeir 31, 1971

Your consideration and approval of our request will be greatly appreciated.

With warm personal regards.

Sincerely,

FRANK F. PAGI, Mayor

MFFF

City and County of Honolulu

FFF: jo (M. Tsugawa, Building Dept.)

cc: E. Y. Mirata (2)

Fire Department

Police Department

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PACIFIC SOUTHWEST REGIONAL OFFICE OFFICE MOST NO.

450 GOLDEN CATE AVENUE SAN FRANCISCO, CALIFORNIA 94102

December 27, 1972

AIR MAIL

Honorable Frank F. Fasi, Mayor City and County of Honolulu Honolulu, Hawaii 96813

Dear Mayor Fasi:

We have been informed by the General Services Administration that two parcels of surplus property known as Portion, Ewa Transmitter Site, Ewa, Oahu, U-Haw-522 have been withdrawn from surplus because a Federal need for them has developed. These parcels will not, therefore, be available for disposal for park and recreation purposes as earlier indicated.

Sincerely yours,

Frank E. Sylvester Regional Director

Cs: 5/0

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Office of Surplus Property Utilization 72 OCT 30 AM 8:46

112 McAllister Street, Room 2 San Francisco, California 94102

October 26, 1972

AIR MAIL

The Honorable Frank F. Fasi Mayor of the City and County of Honolulu 96813 Honolulu, Hawaii

Dear Mayor Fasi:

Reference is made to your letter to General Services Administration dated October 13, 1972, in which you expressed an interest in a portion of Ewa Transmitter Site, U-Hawaii-522, for a Fire and Police Training Facility. We are enclosing instructions for making application for the property for educational utilization.

We have expressions of interest in portions of this site from the State Department of Health and the State Department of Education. It is suggested that you coordinate your requirements with them.

We will appreciate receiving the application as soon as possible if you believe this proposed use is eligible under our public benefit programs and is operated by an entity primarily for educational purposes on a full-time basis for a minimum school year.

Sincerely yours,

Mel R. Summers

Assistant Regional Director

for Surplus Property Utilization

El R. Summess

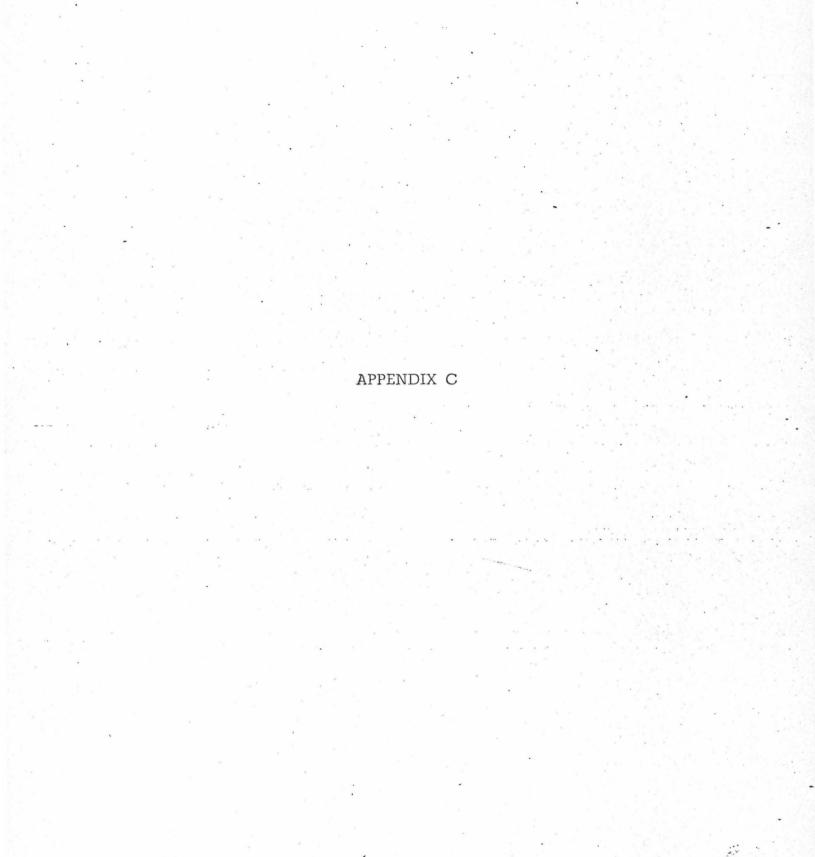
Enclosure

cc:

HEW, D.C.

Mr. Chikasuye

oor Atte. Works Sound Propontie



JOHN A. BURNS



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF LAND MANAGEMENT

P. O. BOX 621

HONOLULU, HAWAII 96309

July 31, 1973

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

0/3/73

108/6/13

Mr. Ernest T. Yuasa Director and Euilding Superintendent Building Department City & County of Honolulu Honolulu, Eawaii 96813

Dear Mr. Yuasa:

I am afraid I cannot give a definite answer, at this time, on your request for land in the Keehi Lagoon area on which to site a joint Fire and Police Training Center. It is possible that a portion of the acreage will be required for the Middle Street interchange and we will have to wait until the interchange plans have been finalyzed before entertaining other requests.

I will get in touch with you when the interchange plans are definite. In the meantime, I will also investigate the possibility of an alternate site.

Very truly yours,

BOARD OF LAND AND NATURAL RESOURCES

SUMAO KIDO Chairman and Member

cc: Mr. J. Barada Fire Department Police Lepartment

M

July 20, 1973

Mr. Sunao Kido, Chairman
Board of Land and Natural Resources
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Kido:

This is to respectfully request that the State land identified by Tax Map Key: 1-1-03:3 and located east of the Disabled American Veterans Building at Keehi Lagoon be made available for a joint Fire and Police Training Center.

For years both the Honolulu Fire and Police Departments have needed training facilities to properly train and prepare their respective personnel in the execution of their duties and responsibilities. This need has been long established and is increasing as the population grows and technological advances are made.

At the present, the personnel of these departments are training on makeshift basis in scattered areas, using public libraries and parks and other private facilities whenever they are available.

A specialized training complex is urgently needed where the personnel of the Fire and Police Departments can be adequately trained.

If the aforementioned site is not available, we would appreciate your making available other State-owned lands, approximately fifteen acres, for the training center.

Your favorable consideration of this request will be greatly appreciated.

Very truly yours,

ERNEST T. YUASA

Director and Building Superintendent

. TH: jo

cc: J. Harada

Fire Department Police Department

DEPARTMENT OF THE ARMY

HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, EXWELLED APP SAN FRANCISCO 96557 C & D GF HOROLULU

Aug 21 4 40 PH 13

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HCFE-RE

Building Department City & County of Honolulu ATTN: Mr. Ernest T. Yuasa,

Director and Building Superintendent Honolulu, Hawaii 96813 1 6h

Gentlemen:

Reference is made to your letter of July 24, 1973 requesting approximately fifteen acres of Army owned land at Fort Shafter or other areas be made available for a City & County of Honolulu Fire and Police Training Center.

Your request in reference letter has been reviewed by this headquarters and it is regretted that there are no areas available within Fort Shafter that can be favorably considered for the establishment of fire and police training facilities. Under the Project FRESH study, an area encompassing forest reserve and watershed areas has been reported as excess at Fort Shafter and will therefore revert back to the State in the event there are no other Federal requirements. You may wish to contact the State if you feel that the parcel proposed for excess may offer some potential for the proposed facilities.

There is a possibility that the former NIKE launcher site at Palehua, reported as excess, would be suitable for your purposes and may possibly be available upon vacation of the premises by the Hawaii Army National Guard approximately two years hence. However, this land is owned in fee by the U. S. Government and any disposal action will require payment for the land, together with the improvements thereon.

HCFE-RE

Building Department, City & County of Honolulu

We would also like to call your attention to a site which it is believed is ideally situated and suitable for the type of training indicated; that is at Sand Island which was released to the State by the U. S. Government in 1965.

Sincerely yours,

DONALD D. GABE

Colonel, CE

Director of Facilities Engineering

July 24, 1973

Commander, U.S. Army Support Command, Hawaii Attn: HCFE-RE APO 96557

Dear Sir:

This is to respectfully request that approximately fifteen acres at Fort Shafter or other Army-owned land be made available for a City and County of Honolulu Fire and Police Training Center.

The training facilities will include gymnasium, classrooms, swimming pool, fire drill tower, helipad, firing range and driver training area.

For years both the Honolulu Fire and Police Departments have needed training facilities to properly train and prepare their respective personnel in the execution of their duties and responsibilities. This need has been long established and is increasing as the population grows and technological advances are made.

At the present, the personnel of these departments are training on makeshift basis in scattered areas, using public libraries and parks and other private facilities whenever they are available.

A specialized training complex is urgently needed to adequately train the personnel of our Fire and Police Departments.

We believe that suitable arrangements can be made where your fire and police personnel may also be able to utilize the training facilities when completed.

Your favorable consideration of this request is greatly appreciated.

Very truly yours. Ennest T. Yuasa

ERNEST T. YUASA

Director and Building Superintendent

TH: jo

cc: Fire Dept.

Police Dept. J. Harada

August 27, 1973

Mr. Sunao Kido, Chairman

Board of Land and Natural Resources

Department of Land and Natural Resources

P. O. Box 621

Honolulu, Hawaii 96809

Attn: Planning Office

Dear Mr. Kido:

By the attached letter dated August 17, 1973, the Army has informed us that the area encompassing forest reserve and watershed areas (identified by Tax Map Key: 1-1-08:5) has been reported as excess at Fort Shafter and will most likely be returned to the State.

Please comment on the suitability and availability of the excess land for our proposed Fire and Police Training Facilities.

If the Fort Shafter land is not suitable or unavailable for the training center, we would appreciate your making fifteen acres of other State-owned land available to us.

Very truly yours,

ERNEST T. YUASA

Director and Building Superintendent

TH: jo attach.

cc: W. Thompson, Dept. of Land
& Natural Resources
J. Harada

no reply from Hate

HEADQUARTERS FOURTEENTH NAVAL DISTRICT

FPO SAN FRANCISCO 96610

18:LGT:ci Ser 3236 19 SEP 1973

Mr. Ernest T. Yuasa Director and Building Superintendent Building Department City and County of Honolulu Honolulu, Hawaii 96813

Dear Mr. Yuasa:

Your letter of 24 July describing your search for developable land on which to construct a joint fire and police training center has been referred to me.

I have caused my staff to review the Navy land holdings in the hope that we might be able to accommodate you. As reported to you by Captain Timberlake, following your further description of your requirements, the Navy does not have any properties which could reasonably satisfy your criteria. Accordingly, I must regretfully state that we are in no position to help.

Sincerely

RICHARD A. PADDOCK Rear Admiral, U. S. Navy

Commandant

July 24, 1973

Commander, Pacific Division
Naval Facilities Engineering Command
SPO San Francisco 96690

Attn: Mr. Joseph Samaritano (Code 24)

Dear Sir:

This is to respectfully request that approximately fifteen acres of developable Navy-owned land be made available for a City and County of Honolulu joint Fire and Police Training Center.

For years both the Honolulu Fire and Police Departments have needed training facilities to properly train and prepare their respective personnel in the execution of their duties and responsibilities. This need has been long established and is increasing as the population grows and technological advances are made.

At the present, the personnel of these departments are training on makeshift basis in scattered areas, using public libraries and parks and other private facilities whenever they are available.

A specialized training complex is urgently needed to adequately train the personnel of our Fire and Police Departments.

We believe that suitable arrangements can be made where your fire and police personnel may also be able to utilize the training facilities when completed.

Your favorable consideration of this request is greatly appreciated.

Very truly yours. Ennest T. Yuasa

ERNEST T. YUASA

Director and Building Superintendent

TH: jo

cc: J. Harada

Fire Dept.

Police Dept.

July 24, 1973

Commander 15th (PACAF)/DEPR APO 96553

Attn: Mr. Roderick Harvey

Dear Sir:

The City and County of Honolulu is in desperate need of a site for a joint Fire and Police Training Center. We would appreciate your making available approximately fifteen acres of Federal land, preferably at the Hickam Air Base or in the vicinity of the Honolulu International Airport, for the training center.

For years both the Honolulu Fire and Police Departments have needed training facilities to properly train and prepare their respective personnel in the execution of their duties and responsibilities. This need has been long established and is increasing as the population grows and technological advances are made.

At the present, the personnel of these departments are training on makeshift basis in scattered areas, using public libraries and parks and other private facilities whenever they are available.

A specialized training complex is urgently needed to adequately train the personnel of our Fire and Police Departments.

We believe that suitable arrangements can be made where your fire and police personnel may also be able to utilize the training facilities when completed.

Your favorable consideration of this request is greatly appreciated.

Very truly yours,

EDUCATT. YUNSA

Director and Building Superintendent

TII:jo

cc: Fire Dept.
Folice Dept.
J. Harada

DEPARTMENT OF THE AIR FORCE

THE ADQUARTERS 15th AIR BASE WING (PACADOLIVE)

APO CAN-GRANGISCO 00553 EULI HER LEST.

APO SAN-FRANCISCO 26553 C & C OF HOROLULU

REPLY TO ATTN OF: DEPR Aug 1 10 04 AH '73

Site for Joint Honolulu Fire and Police Training Center 10 SUBJECT:

Director and Building Superintendent Building Department City and County of Honolulu Honolulu, HI 96813

8-1-13 8/4/73

- 1. Reference is made to your letter of July 24, 1973 requesting a site on Hickam AFB for a joint Fire and Police Training Center.
- 2. At this time all areas on Hickam AFB are programmed for nearfuture use or are now under use on a long-term basis.

RODERICK L. HARVEY

Chief, Real Estate Branch Dep Comdr for Civil Engrg

APPENDIX D

FROM GROUP ARCHITECTS COLLABORATIVE,
"FIRE AND POLICE JOINT TRAINING FACILITY
ENVIRONMENTAL IMPACT STATEMENT"
JANUARY 1975.

B. Alternative Sites Considered

An evaluation study to select the most appropriate location of eight possible alternative sites available for the training facility was completed in 1972 by this consultant. The results of that study indicated that of all eight alternatives, the Koko Head Firing Range was the most suitable (due primarily to the existence of its firing range). However, this Koko Head site had certain disadvantages which included its location in a State Conservation District and its General Plan Designation for Park use. Also, an indenture between the Bishop Estate and the City and County of Honolulu which transferred the ownership of the land to the City, designated its use for a park. These were the disadvantages to which several citizen groups (including The Honolulu Rifle Association and the Outdoor Circle) reacted and which led to its withdrawal as the site for the training facility.

The subject proposed Waipahu Incinerator site, which was not among the eight original alternative sites considered, became available after the site study was completed. If it had been available earlier, it would have been selected above these eight original alternative sites. In order to assure its appropriateness and to ascertain its selection as the best alternative site available, the subject site was evaluated by the same criteria and compared to

the other alternative sites. This section, therefore, will summarize the evaluation criteria used and the eight other alternative sites considered for the proposed training facility.

Evaluation Criteria²¹

- Size: A minimum of 14 acres for the total facility. If
 the firing range is located elsewhere, 11.2 acres
 required with an accessory site of 2.8 acres for
 the range.
- Location: As close as possible to Central Honolulu
 (Central Fire Station) to minimize traveling time
 for instructions, trainees, and majority of fire
 trucks.
- 2. Environmental: Generally one-half mile from any incompatible types of inhabited areas (residential, apartment, business, resort). Compatible types of
 areas include industrial agricultural, and preservation.
 This distance may be reduced dependent upon unique
 factors such as topography, existing landscaping,
 wind direction, etc.
- 4. Topography: As level as possible to minimize grading costs, maximum slope: 10%.

- Utilities: All utilities available on site or nearby within reasonable, economically-feasible range.
- 6. Zoning: No incompatible zones within environmental effect range. No negative impact on surrounding zones in terms of land values and future developments.
- 7. Accessibility: Easily accessible from major thorough—
 fare on improved road of sufficient width capable
 of handling heavy use. Access road through
 compatible types of zones.
- 8. Availability: Land should be available. Owned by City and County of Honolulu or acquirable at a reasonable cost.

The locations of the eight alternative sites evaluated by this criteria are shown in Figure 7. The reason for the rejection of each alternative site is summarized below. The detailed assessments and evaluations of each site may be found in the TYA Report.

Fort Barrette: Located the farthest from Central Honolulu
 (32 minutes via freeway). Due to topography,
 28 acres would have to be purchased to obtain
 14 acres of reasonably sloped, usable area.

- 2. Waimanalo (Mauka Lands): Located on the windward side, with only access over the Pali, thereby putting additional, unnecessary wear on fire trucks. Environmentally not desirable: surrounded by residential-zoned areas.
- 3. Waimano Ridge: Environmentally not desirable: located adjacent to Waimano Home facility. Only access to the site is through Waimano Home.
- 4. Waipahu: (Industrial Site): The topography of the site is extremely steep along the Pearl Harbor side. Wedge-shape parcel renders portion of site unusable. Of total available 14 acres, a significant portion is unusable, therefore, the site would not be large enough to accommodate the facility.
- presently under consideration. It is located Ewa of Waipahu Depot Road, closer to the mauka residential areas and adjacent to Pearl Harbor West Loch. This site was rejected primarily because of its low-lying elevation which made it subject to flooding due to tidal fluctuations. It is also close to the residential areas.

- 6. Halawa B (Below Board of Water Supply Station):

 Adverse environmental impact upon residential areas

 1/8 mile downwinds. Fairly steep topography requiring significant amount of grading.
- 7. Halawa A (Below Jail): Potential adverse environmental impacts. Adjacent to Halawa Jail. Residential area 3/4 mile downwind but also up on ridge. Any landscaping or earth berms would not prevent sound from rising and reaching this residential area. Since the TYA Report was completed, this parcel was assigned to the Dept. of Public Works for a Corporation Yard. Therefore, it is no longer available.
- 8. Koko-Head Firing Range: One of the more desirable sites.

 Disadvantage: located in Conservation area, and

 designated for park-usage. Public reactions including
 those from Honolulu Rifle Association (which wants

 to retain the crater for future expansion of the firing
 facilities) and the Outdoor Circle has resulted in the
 withdrawal of this site for the proposed facility.

The evaluation of the subject Waipahu site indicated that it is the best alternative of all the available alternative sites previously discussed. The results of this evaluation based on the eight criteria follows:

- 1. Size: There is a total of approximately 100 acres in the area designated for public facility. The 14 acre requirement for the training facility can readily be accommodated, occupying only a small percentage of the total area available for other public facilities.

 (A total of 15 acres was set aside for this facility to ensure adequate functional configurations).
- 2. Location: It is centrally located on Oahu and approximately 15 miles from Central Honolulu. It is within reasonable driving time from Honolulu (approximately 20 minutes) and centrally-located in terms of all Fire Stations on Oahu (from which all fire trucks will originate).
- 3. Environmental: The closest residential area is approximately 1/4 mile mauka of the proposed site. Although this is less than the general 1/2 mile criteria, the prevailing tradewinds and flat open area will direct any adverse airborne or noise emission away from the residential area. In the downwind direction, the site is bordered by compatible types of areas:

incinerator, dump area, canefields, and Pearl
Harbor West Loch. All other environmental
concerns have been discussed in detail in previous
sections of this Report.

- 4. Topography: The existing land is basically a flat, open area. Its elevation is fairly low and will have to be raised by filling. The availability of incinerator residue from the adjacent incinerator relieves this potential problem.
- 5. Utilities: All required utilities (water, electricity, telephone, sewage system, solid waste disposal) are available along Waipahu Depot Road which adjoins the proposed site.
- 6. Zoning: The area is presently zoned Agriculture but designated for Public Facility use in the General Plan.

 The proposed facility would not have any negative impact upon the surrounding areas in terms of land values or future developments.
- 7. Accessibility: The proposed site is easily accessible

 from two H-l Freeway Off-ramps which feed unto

 Farrington Highway (a divided highway) to Waipahu

Depot Road. The distance between Waipahu Depot
Road and the freeway off-ramps are: Kunia Interchange (2.1 miles) and Waipahu Interchange (1.1
miles). The site is approximately 1/2 mile from
Farrington Highway along Waipahu Depot Road which
has just recently been improved for 1/4 mile and is
of sufficient width to accommodate the additional
traffic.

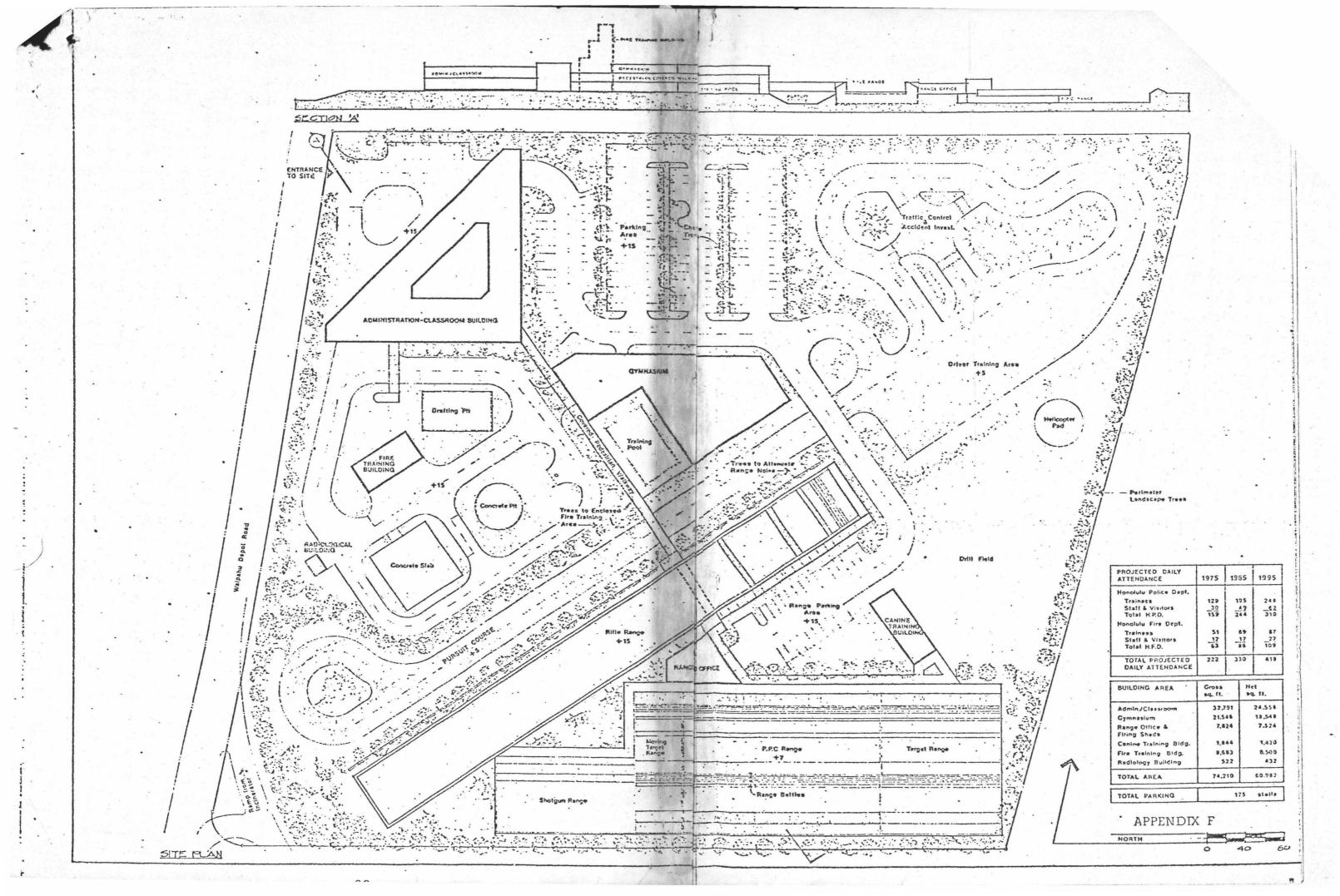
8. Availability: The proposed training facility site is owned by the City and County of Honolulu and will not incur any acquisition costs.

In conclusion, the alternative sites have been considered and evaluated on an established set of criteria. This evaluation has shown that the proposed site fulfills all of the criteria, and has confirmed that the proposed Waipahu site is the most desirable and reasonable location for the training facility.

Alternatives Available to Minimize or Eliminate Any Significant Adverse Environmental Effects.

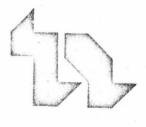
As discussed in Section IV. Unavoidable Adverse Environmental Effects, the only potential adverse effects are: a) Smoke emissions from the fire training exercise and b) Noise emissions from gunfire.

....



SP75-205 Coc Bldg Dept.

TAGAWA, YAMACHI A.I.A. & ASSOCIATES, INC. 765 AMANA HONOLULU HAWAII 96814 TELEPHONE 9460233



BASIS FOR REQUEST TO AMEND THE GENERAL PLAN

STATEMENT OF NEED

FIRE AND POLICE TRAINING FACILITY	
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PROJECTED GROWTH OF POPULATION

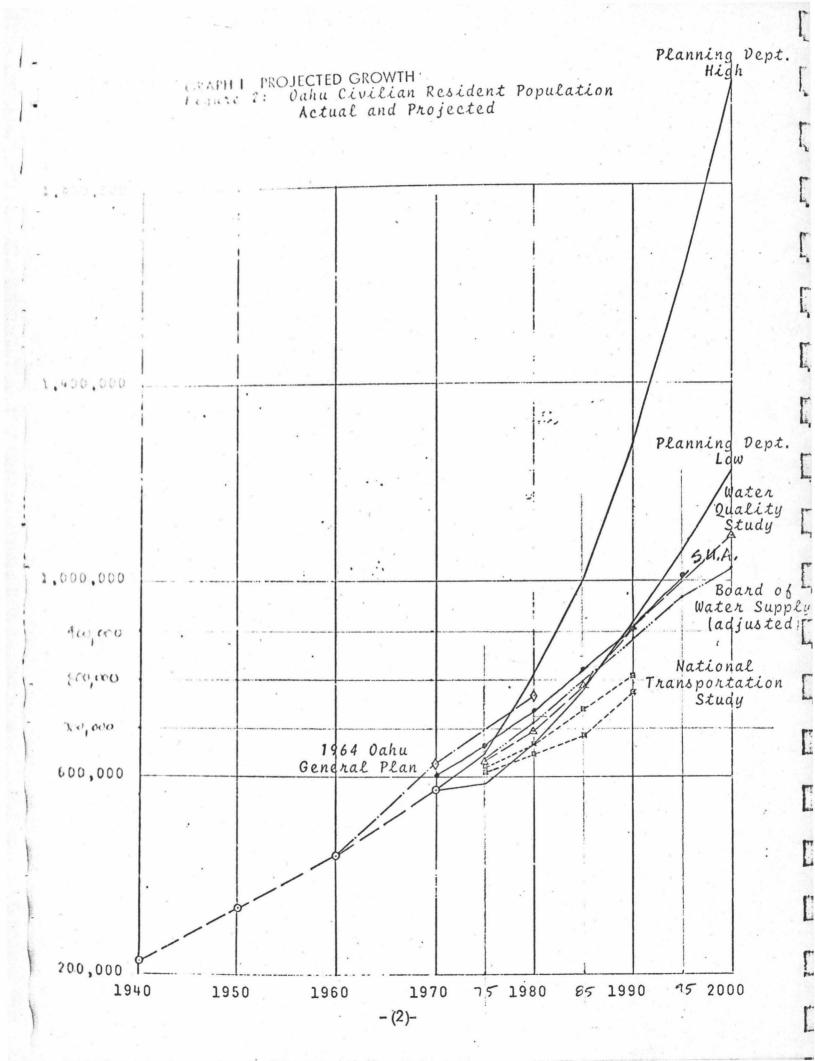
The projected growth of population is an essential base upon which future required fire-protection and law-enforcement services to be provided can be calculated. For purposes of this report, the popu-Totion growth projected by SUA* was used. It was felt to be a realistic one and was found to be reasonable when the actual 1971 population was included. Graph I compares SUA's projections with those made by the various City Agencies including the Planning Department's high and low.** SUA's coincides very closely with those made by the Board of Water Supply and the Water Quality Study. In comparing it to the projections made by the Planning Department, SUA's is higher than Planning's up to 1975. From 1975 to 1985, SUA's falls within Planning's high and low projections. After 1990 up to 1995 when SUA's projections terminate, SUA's talls below Planning's. Considering the variables which affect population projections (particularly very distant projections as 1990-95 is), there should not be too much significance given to this latter difference. Table I shows the historical and projected growth of the City and County of Honolulu.

TABLE I HISTORICAL & PROJECTED GROWTH CITY & COUNTY OF HONOLULU

YEAR	4	POPULATION
1960		500,409
1961	* *	507,000
1962	* : Y	513,500
1963		520,200
1964		526,900
1965		533,500
1966		539,954
1967		562, 124
1968		570,776
1969		589,570
1970		601,802
1975		670,560
1980		741,234
1985		819,085
1990		900,541
1995		1,001,700

^{*}SUA Feasibility Study for a Training Center for Law Enforcement, 1970

**Planning Department's Projection based on Employment, 1970



PROJECTED GROWTH OF FIRE DEPARTMENT

The size of the firefighting force required is related to the size of the population it must serve. It is determined generally by the location and density of the population. When the population expands (or is projected to expand) into a particular area, it becomes necessary to provide fire-protection services there and the number of fire companies required is determined by the [projected] density for that area (i.e. urban density requires more stations than does residential density primarily because of its frequency of fire calls and its potential as a critical fire area). However, there is an optimum number of stations required for a particular density (i.e. the Central Business District does not require any more stations in order to provide maximum coverage). On the basis of available information relating to land use trends, the Honolulu Fire Department has estimated the number and locations of additional fire companies required through 1985. The number of new personnel to man the projected stations plus an attrition factor, based on historical patterns, to account for retirements, resignations, and deaths, resulted in the total number of recruits per projection year to be trained.

Table II shows the historical and projected growth of the Fire Department, the increase per five year period, and the ratio of firefighters per 1000 population.

Table III shows the number of new recruits per projection year.

PROJECTED GROWTH OF POLICE DEPARTMENT .

The size of the police force required is determined by the size of the population: the greater the population, the greater number of officers required. However, it is not a simple linear proportion: the denser the population, the greater number of officers per capita is required. Much material has been written on this subject of how denser living conditions affect the socio-psychological condition of its inhabitants and eventually the crime rate. Thus for Honolulu (where there is a severely limited amount of space, it is axiomatic that density will increase to accommodate population growth), it is valid to assume that there will be a need for a greater ratio of officers per capita. The historical growth of the police force and its ratio of officers to the population has substantiated this.

Table IV shows the historical and projected growth of the police force, the increase per five year period, and the ratio of officer type per 1000 population.

PROJECTED GROWTH OF POLICE DEPARTMENT Continued

Table V shows the projections of types of officers.

Table VI shows the breakdown of officer-type increases with an attrition factor* applied to arrive at the total projected number of new officers per type per projection year. This information will be important when applied to the type of training per officer types.

^{*}SUA's attrition rates were used, based on historical attrition patterns due to promotions, retirements, resignations.

HONOLULU FIRE DEPARTMENT

		FIREFIGHT	ING POSITI		
			5 YEAR	RATIO PER	
YEAR	POPULATION	NUMBER	INCREASE	1000 CAPITA	
1965	533,500	666		1.25	
1966	539,954	666		1.23	
1967	562,124	667		1.19	1
1968	570,776	744		1.30	
1969	589,570	777		1.32	
1970	601,802	778	112	1.30	
1975	670,560	1,034	256	1.55	Reduced work week. New fire companies at Waipahu, Palolo, Moanalua, Kailua, Mililani, Kahaluu, Ewa-Makakilo, Olomana, Waianae, International Airport. *
1980	741,234	1,193	159	1.61	New fire companies: Hawaii Kai, Kawela, Crestview, Kualoa, Kaimuki, Campbell Industrial Park.
1985	819,085	1,325	132	1.62	New fire companies: Kaneohe, Wahiawa-Whitmore. Others un- known – using average of 2 new companies per year.
1990	900,541	1,490	165	1.66	New locations unknown - using average of 2 new companies per year.
1995	1,001,700	1,655	165	1.66	New locations unknown - using average of 2 new companies per year.

^{*}Proposed companies under CIP Budget.

TAB	LE III PROJEC	CTED NUM	ABER OF RE	CRUITS		
	1970	1975	1980	1985	1990	1995
	(1969)	(1974)	(1979)	(1984)	(1989)	(1994)
Fire Force - Projection Year	778	1034	1193	1325	1490	1655
(Prior Year)	703	881	1157	1292	1457	1622
Net Increase	75	153	36	33	33	33
Attrition @ 5%	35	44	58	65	73	81
New Recruits	110 -	197	94	98	106	114

TABLETY HISTORICAL & PROJECTED GROUP

		COMMISSIONED CHICEES					
1			5 YEAR	RATIO PER			
YEAR	POPULATION	NUMBER	INCREASE	1000 CAPITA			
	500 500	770					
1965	533,500	770		1.44			
1966	539,954	846		1.55			
1967	562,124	931		1.66			
1968	570,776	997		1.75			
1969	589,570	1,002		1.70			
1970	601,802	1,070	300	1.80			
1971	630,000	1,379*		2.20			
1221	000,000	.,0,,		2.20			
1975	670,560	1,724	654	2.60			
1	0,0,000	.,					
1980	741,234	1,979	255	2.68			
1700	/41,201	.,,,,	200	2.00			
1985	819,085	2,234	255	2.73			
1705	017,003	2,204	200				
1990	900,541	2,509	275	2.80			
1770	700,541	2,507	2/5	2.00			
1995	1,001,700	2,854	345	2.85			
1773	1,001,700	2,054	040	2.00			

^{*}Increased by Supplementary Budget (349 men)

TABLE V PROJECTED TYPES OF OFFICERS

TABLE	V PROJECT	ED TYPES OF	OFFICERS				
		YEAR					
	1970	1975	1980	1985	1990	1995	
Policemen	740	1190	1366	1542	1731	1970	
Sergeants	139	225	258	290	326	371	
Detectives	112	181	208	235	264	300	
Lieutenants	52	85	97	110	124	141	
Captains and above		43	50	57	64		
Total Commissioned Officers	1070	1724	1979	2234	2509	2854	

TABLE VI PROJECTED GROWTH PER OFFICER TYPES HONOLULU POLICE DEPARTMENT

OFFICER TYPE	1970	1975	1980	1985	1990	1995
	(1969)	(1974)	(1979)	(1984)	(1989)	(1994)
Police Force: Projection Year	1070	1724	1979	2234	2509	2854
(Prior Year)	(1002)	(1593)	(1928)	(2183)	(2452)	(2785)
Net Change	68	131	51	51	57	69
Attrition @ 6%		95	118	130	150	167
New Recruits	128	227	169	181	207	236
Sergeants: Projection Year	139	225	258	290	326	371
(Prior Year)	(130)	(208)	(251)	(283)	(319)	(362)
Net Change Attrition @ 9%	9 12	17 19	7 23	7 25	7 28	33
New Sergeants	21	36	30	32	35	42
Detectives: Projection Year	112	181	203	235	264	300
(Prior Year)	(105)	(167)	(203)	(230)	(258)	(293)
Net Change	7 9	14	5	5	6	7
Attrition @ 9%		15	18	21	24	
New Detectives	16	29	23	26	30	33

HONOLULU FIRE DEPARTMENT GOALS AND OBJECTIVES

As the projections show, the population of the city is expected to grow at an increasing rate. Likewise, the physical facilities necessary to accommodate this growth are not only expected to increase, but due to the limited amount of space on the Island, they are also expected to get denser. As a result, the possible occurrence of emergencies such as fires increases.

The methods which municipalities use to address these problems are two-fold: 1) Prevention - through codes and regulations governing the design, construction, and maintenance of physical facilities to ensure minimum safety standards, and 2) Response - through an efficient firefighting force to react to any fires occurring in spite of precautionary measures. One of the concerns of this report is with the Honolulu Fire Department and its ability to fulfill its primary role as an efficient response agency.

Traditionally, the responsibility of a fire department has been to protect and save the lives and property of its citizens primarily through the prevention and fighting of fires. This remains true for most of the municipalities today. However, some of them, due to unique geographical conditions and/or administrative policies, have had to extend their responsibilities.

Such is the case of the Honolulu Fire Department. Besides preventing and fighting fires, they provide emergency rescue aid to swimmers, hikers, and others whose lives may be imperiled. Thus, besides firefighting companies (engines, ladders), the HFD has specialized rescue companies with special apparatus (fireboats, rescue boats, helicopters, surfboards, etc.) to respond to the different types of emergencies. Likewise, additional specialized knowledge (an understanding of ocean currents, weather conditions, mountain trails and terrain) is required.

It is the goal of the Honolulu Fire Department to provide a complete and efficient system of men and equipment to respond to any type of emergency which may arise anywhere on or around the Island.

To attain this goal, the HFD has established three objectives: 1) An efficient communications network system to handle emergency calls to start response procedures, 2) Capable and knowledgeable men with the physical skill and condition to handle any situation, and 3) A systematic team of both men and equipment with the timing and precision to respond and adapt immediately to various emergency situations.

HONOLULU FIRE DEPARTMENT GOALS AND OBJECTIVES Continued

The first objective has been achieved through a Central Alarm Bureau at City Hall which will handle any emergency call, analyze the situation in terms of location and closest available emergency service, and dispatch the alarm to that particular service (fire or rescue company) to initiate its response.

The second and third objectives, in contrast, are dynamic ones subject to many variables. The skill and condition of individual men are very personal, subjective values dependent upon personal attitudes, psychological conditions, etc. Likewise, the timing and precision of a team of firefighters and equipment are dependent upon the ability to work together, frequency of replacements, familiarity with equipment, etc.

Recognizing these variables, the one factor that can help maximize these abilities, skills, teamwork, and precision in order to achieve or even approach the two objectives is an effective and continuous training program.

ROLE OF TRAINING

Training can be divided into two phases: 1) Initial recruit training, and 2) In-service training.

Initial training is basically the development of individual skills. It includes a theoretical understanding of the principles of fire and rescue, and the technical knowledge and skill of the use of different equipments and their appropriateness in various situations. In developing individual skills, recruit training also exposes to the recruits what firefighting and rescue really involves. Ideally at this time of training, they should be exposed to simulated fires and rescues (involving heights) to test their reactions and abilities to perform under extreme conditions which they will eventually face in their future careers. This type of training assures the Fire Department that the men who do pass and are assigned to the various companies are capable in terms of skill, knowledge and conditioning. Thus, an effective initial recruit training program will be one of the most significant means to enable the Fire Department to achieve its second objective.

In-service training is basically the development and maintenance of teamwork to ensure precision and timing in firefighting and rescue operations. The individual skills that a recruit develops in initial training becomes an intricate part of a total operation once he is assigned to a

HONOLULU FIRE DEPARTMENT ROLE OF TRAINING Continued

specific company. For each type of firefighting or rescue operation, he has a specific duty to perform as part of a four or five man team (depending on the type of company). Furthermore, since certain emergency situations might require an unpredictable series of operations, a team of men will have to understand the different types of operations, know immediately what each man will have to do, and be able to adapt as a total unit to perform accordingly. Also in the case of absence or injury of one member of the team, the others will have to be able to substitute or function without him. To do this requires a total understanding of the responsibilities of each member of the team for each type of operation. Thus, to be successful, it is essential that an in-service training program provide a maximum amount and appropriate type of continuous re-training to attain and maintain this level of precision, timing, and adaptability.

The American Insurance Association (AIA), formerly the National Board of Fire Underwriters, has emphasized the importance of training as a significant contributor to an effective fire protection service. This nonprofit association of fire insurance companies has set up standards by which a city is graded for insurance ratings in terms of water supply, building codes, police department, fire department, etc. Besides being an indicator of adequate protection for all citizens, this grading system affects the insurance rates for residents and private and public agencies. "The gradings that are established are used by rating bureaus as an aid in determining basis rates in a state. The rating bureau will advise city officials as to the approximate reduction in rates due to an improvement in the grade of protection."* In their latest complete report for the City and County of Honolulu (1962), the city as a whole was rated in Third Class. The Fire Department, however, was rated in Fourth Class due to a number of deficiencies of which the most significant was the lack of adequate training facilities. In 1970, a supplementary evaluation and report reappraised the Fire Department to account for improvements made by that agency. However, a Fourth Class rating was still retained, again due primarily to the lack of adequate training facilities. The acquirement of adequate training facilities would upgrade the Fire Department rating to place them in Third Class. Conceivably, this could favorably affect the insurance rates of the county.

^{*}Municipal Fire Administration, International City Managers' Association, page 16.

HONOLULU FIRE DEPARTMENT EXISTING AND PROPOSED TRAINING PROGRAMS

The existing training programs presently utilize a diverse number and types of public facilities: most of the classroom instructional courses are held in a public library; most of the drill/exercise courses which require open spaces are held at public parks, streets, beaches, etc.; the remaining courses are held at existing fire stations. As an example, Table VII lists the various facilities utilized by a recruit training session. This list would vary with other training sessions (both recruit and in-service) depending upon the availability of these and other facilities.

The use of these public facilities (due to the lack of a centralized training facility) present problems to both the public sector and the Fire Department: 1) Traffic congestion and hazardous conditions created by curious drivers and spectators, 2) Possible injury to spectators, 3) Deprived use of parks and other facilities by the public, 4) Inability of HFD to use water freely for their training exercises, 5) Inability to use certain equipment due to obstructions, 6) Congestion in the fire stations due to training sessions. According to HFD spokesman, the major problem with this present arrangement is that it limits both the amount and type of training possible. As pointed out earlier, this could eventually affect the efficiency of the firefighting and rescue companies.

TABLE VII FACILITIES UTILIZED
RECRUIT TRAINING SESSION: OCT. 18 - NOV. 12, 1971

FACILITY	NO. OF HOURS
Kapahulu Library	11.5
Pearl Harbor Naval Shipyard	15.0
Sand Island	4.0
Ala Moana Park	20.0
Honolulu Waterfront	3.5
Kuakini Hospital	12.0
Kewalo Basin	3.5
Public Parks (various)	29.5
Fire Stations	66.5
TOTAL HOURS	165.5

HONOLULU FIRE DEPARTMENT EXISTING AND PROPOSED TRAINING PROGRAMS Continued

RECRUIT TRAINING

Table VIII compares the existing and proposed recruit training program courses and the number of hours for each. The current total hours for Introduction and Procedures is at a minimum amount due to the lack of available classroom facilities. In the proposed program this area of training would be expanded to include a wider range of relevant, procedural information important to the potential firefighters. The other major area of training with a significant difference is hose and ladder evolutions. The amount of these evolution exercises, presently at a minimum due to the lack of physical training facilities, is almost doubled under the proposed training program. The reason is because of the importance of these two types of firetighting tactics in the total operation of the fire response agency.

IN-SERVICE TRAINING

Table IX compares the existing and proposed in-service training program courses and the number of hours for each. The total number of hours for the proposed program is more than double that of the existing with the most significant change in the area of company operations and evolutions. The expansion of these areas of training recognizes the objective of in-service training by providing a significantly greater opportunity for the members of the companies to practice together with the various types of equipment. The proposed program also includes a significant number of miscellaneous courses which are not held presently because of lack of classroom facilities. The inclusion of these courses would provide members of the Fire Department with a more complete understanding of their responsibilities.

For all of the proposed program courses (both recruit and in-service), the most significant change would not be so much the number of hours of training, but more the quality of training. As pointed out earlier, the need is for the correct type of training through an ideal, controlled, uninterrupted training environment with provisions for simulated conditions. A training facility would enable the Fire Department to implement the proposed training program and thus satisfy this need.

TABLE VIII RECRUIT TRAINING PROGRAMS

EXISTING	HOURS	PROPOSED	HOURS
Introduction & Procedures Orientation Civil Service T.I.EI.G.	4.5 3.0 4.0	Orientation Introduction to Fire Service Job Classification Fire Safety Demonstration Rules & Regulations Manual of Operations Department Procedures Communications	4.0 4.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0
First Aid Senior Life Saving Standard First Aid Cardiopulm. Resuscit. Total	20.0 17.5 12.0 49.5	Senior Life Saving Red Cross First Aid Cardiopulm. Resuscit.	20.0 18.0 12.0 50.0
Equipment Operations Breathing Apparatus Engine Equipment Ladder Equipment Engine/Ladder Portable Pumps Total	2.0 3.5 3.5 4.0 3.5	Breathing Apparatus Pumper Equipment Ladder Equipment Auxiliary Pump Operation Portable Pumps Hose Operations	6.0 3.0 3.0 3.0 3.5 3.0 21.5
Evolutions Ladder Evolutions Hose Evolutions Sprinkler System Tota!	12.0 22.0 4.0 38.0	Ladder Evolutions Hose Evolutions Sprinkler System	21.0 36.0 4.0 61.0
Rescue Operations Ropes & Knots Salvage Rappelling Rescue Procedures Helicopter Rescue Total	4.0 2.0 3.5 4.0 4.0	Ropes & Knots Salvage Rappelling Rescue Procedures Helicopter Rescue	3.0 2.0 3.5 4.0 3.0
Basic Firefight. Techn.	3.5	Basic Firefight. Techn.	3.0
*	conti	nued	- 1

TABLE VIII RECRUIT TRAINING PROGRAMS Continued

EXISTING	HOURS.	PROPOSED	HOURS
Fleet Training	15.0	(currently not available)	16.0
Inspection Program Company Inspection Dwelling Inspection Total	3.5 3.5 7.0	Company Inspection Dwelling Inspection	8.0 3.0 11.0
Psychophysical Testing	3.5	Psychophysical Testing	4.0
Fireboat	3.5	Fireboat	3.5
		Radiological Theory	4.0
TOTAL HOURS	165.5		209.5

TABLE IX IN-SERVICE TRAINING PROGRAMS

	EXISTING	HOURS	PROPOSED	HOURS
			Engine Company Operations	
			Standpipe Operations	2.5
	x			2.5
			Sprinkler Operations	
٠.			Structural Fires A	2.5
			Structural Fires B	2.5
			Flammable Liquids	2.5
ă.			Chemical	2.5
	Hose Evolutions	2.5	Hose Evolutions	
	BANKATORI OF STORE AND		Hose Equipment	4.0
•	*		Hose Lays of Multiple Lines	4.0
			Hose Handling	2.0
	Ladder Evolutions	2.5	Ladder Evolutions	2.5
	Use of Life Net	2.5	Aerial	2.5
			Ladder Pipe Evolution	2.5
	* * * * * * * * * * * * * * * * * * * *		Hoisting Equipment	2.5
	Multiple Co. Operations		Multiple Co. Operations	4.0
	Location & Use of Tools &		Driver Training	4.0
b e		2.5	Direct Hanning	7.0
	Equipment		D 0.16	0.0
	Ropes & Knots	2.5	Ropes & Knots	2.0
	Salvage	5.0	Salvage & Overhaul Practice	5.0
	Rescue Companies		Rescue Companies	
	Rappelling	2.5	Rappelling	2.5
	Rescue Operations	2.5	Rescue Operations	2.5
	Rescue Tools & Equipment	2.5	Rescue Tools & Equipment	2.5
	and the contract of the contra			
	Mt. Trails: Familiarization	2.5	Mt. Trails: Familiarization	2.5
	*		Rescue-Water	4.0
			Helicopter	4.0
	First Aid	2.5	First Aid	2.5
	Breathing Apparatus	2.5	Breathing Apparatus	2.5
	Resuscitator	2.5	Resuscitator	2.5
	TOTAL HOURS	35.0		75.5
	Resuscitator TOTAL HOURS	35.0	Resuscitator	2.5
	Miscellaneous Courses (Clas Radiological-Use of Meters	sroom Typ	Radiological–Use of Meters	
	5		Ventilation Theory	
			Inspection Practices	
			Firefighting – Facilities, Plan	nning, Procedure
			Traffic Codes	*
			Attacking & Extinguishing Int	erior Fires
	100		Water Supplies for the Fire So	
			Fire Service Instructor Training	

HONOLULU FIRE DEPARTMENT ALTERNATIVE MEANS OF PROVIDING TRAINING FACILITIES

There are three possible alternative means of providing training facilities: 1) To find available classroom space and continue to use public facilities (streets, parks, etc.) for the physical training courses, 2) To find both available classroom space and existing physical training facilities (i.e. military), or 3) To provide a new complete training facility.

The first is not really a feasible alternative. If classroom space could be found, it would not alleviate the problems, since more than two-thirds of training is of a physical nature requiring special facilities. The difficulties of using public facilities such as streets and parks has been discussed earlier. Thus to continue the existing training arrangements would only further endanger the public, limit their use of public facilities, and would further affect the efficiency of the Fire Department.

The second alternative is to find existing training facilities which could be utilized. Up to the end of 1971, the Fire Department had been using the Pearl Harbor Naval Shipyard fire training facility on a limited basis. However, since the beginning of this year, all fire training has been eliminated at this facility due to two main reasons:

1) Cutback on federal military funds and 2) Public outcry towards the continuous, unlimited use of the fire and smoke training structure and the resulting emissions into the atmosphere. These Naval facilities had no emission control devices on the fire and smoke structures. That factor combined with the continuous use of simulated fires throughout the day resulted in an unnecessary amount of pollutants into the atmosphere.* So the military fire training facilities, the only appropriate type of facilities which were once available on a limited basis, has been terminated and is no longer a possible alternative.

On the basis of the foregoing, the only reasonable alternative is the third: a new, complete, centralized training facility which includes adequate classrooms and appropriate physical training facilities to accommodate the necessary amount and type of training. This would remove all training from public streets and parks, eliminating the problems they create. This would provide the Fire Department the opportunity to implement the desired training programs and thus promote the efficiency of the firefighting force.

^{*}The Honolulu Fire Department has pointed out that, should they get a training facility, they would utilize a smoke incinerator on their fire building to eliminate polluting emissions into the atmosphere. Also, their use of open fire pits would not be as extensive as the Navy's (see section on visual environmental impact).

HONOLULU POLICE DEPARTMENT GOALS AND OBJECTIVES

The primary goal of law-enforcement is to protect the individual rights of citizens. Historically, it was a simple matter because the laws, which determined when an individual's rights were threatened, were basically very simple. Society, however, has evolved into such a complex and intricate system that the laws are in a process of change to better cope with the resultant complex problems. The recently revised penal code is indicative of this. Therefore, the effective law-enforcement officer must have a basic understanding of what the laws are, how they are changing, which laws are relevant under varying conditions, and how his actions, in turn, could affect the laws. Furthermore, he has to be constantly aware of new law-enforcement techniques, how, and when they are applicable.

In essence, this puts the law-enforcement officer in a very important and at times very crucial position as a decision-maker. Subsequently, an officer's ability to make the right decisions and to effectively carry these out, is based primarily on his training as a law-enforcement officer. Thus, one of the primary objectives of the HPD is to provide the best training possible for its law-enforcement officers to best equip and prepare them to fulfill their primary goal.

It is within the scope of this report to evaluate the effectiveness of the present training program, point out existing problems, and recommend solutions to these problems.

ROLE OF TRAINING

Basically, the role of training is to provide an officer with a base of background information upon which all of his individual decisions will be made while on (and off) duty in as professional a manner as possible. The importance and relevance of this information cannot be underestimated. Thus, according to HPD, an effective training program must include two principle elements: 1) Initial recruit training, and 2) Continuous in-service training.

Initial recruit training is the basic preparation of the individual officer in all facets of his duties and responsibilities. It should provide him with both theoretical and practical knowledge; both physical expertise and mental astuteness. It can be considered the most important part of training since his life and lives of others may depend on the abilities that he develops during this phase of training.

HONOLULU POLICE DEPARTMENT ROLE OF TRAINING Continued

In-service training is the continuous re-training of commissioned officers to make them constantly aware of new techniques, laws, moral responsibilities and whatever else becomes necessary to effectively serve the community. It is this part of training which will determine whether an officer will be able to adapt to make the right decisions at the right time under all conditions over time.

EXISTING AND PROPOSED TRAINING PROGRAMS

Table X compares the existing and proposed training programs and the scheduled number of hours for the different courses.

RECRUIT TRAINING

The present basic recruit training course of 600 hours is scheduled to be expanded to 700 hours with a greater emphasis placed on Law and Investigation. The proposed recruit program is also scheduled to include two new recruit classes: Special Recruit A and Special Recruit B.

Special Recruit A is a training course for para-professional, community service officers. These are not commissioned officers but are volunteers from various problem areas interested in community-oriented law-enforcement. Their training will cover a basic understanding of the laws, and the legal procedures involved in making citizen's arrest. These types of community-oriented law enforcers have been tried at Kuhio Park Terrace and has been quite successful. Besides freeing commissioned officers from the necessity of heavily patroling these areas, it increases the awareness of the members of these communities towards law-enforcement. Thus the intent of HPD is to expand this program to include numerous other communities.

Special Recruit B is an abbreviated recruit training course for officers with an acceptable amount of pre-service education (such as a degree in Police Science) or experience (such as a transferee from another police force). The acceptance of these new types of "professional" law officers with broad backgrounds (i.e. liberal arts degree) is very significant considering the impact the officers can make as individual decision-makers.

Except on very special occasions, the HPD has not been able to hold these two special recruit courses on a continuous basis primarily due to lack of classroom facilities. With available facilities,

HONOLULU POLICE DEPARTMENT EXISTING AND PROPOSED TRAINING PROGRAMS RECRUIT TRAINING Continued

these courses would be a continuous on-going program which could eventually be a significant source of capable commissioned officers.

IN-SERVICE TRAINING

Currently there are three recall classes being held on a scheduled basis. Although these should be separate recall classes for the different types of officers, under the current training program these are combined for different types. Patrolmen's Recall is a refresher course for both recruits (after one year of service prior to getting their commissions) and for commissioned patrolmen. Fundamentals of Supervision is an initial course for both new sergeants and new detectives. Sergeants and Detectives Recall is a refresher course for the two types of officers. Ideally, these annual in-service courses should be taken by every commissioned officer per type. However, not all of the commissioned officers of these specific types attend these refresher courses on an annual basis. For example, it may require two or three years before all of the patrolmen go through the Patrolmen's Recall. The situation is identical for the other two inservice courses.

The reason for this combination of types of officers in recall classes and the failure to accommodate all officers on an annual refresher basis is due to lack of available facilities, specifically classroom space. Basic Recruit Course (the mere duration of it and the number of recruits per year which have to be processed through training) occupies the two available classrooms for most of the year. It is only during the rest of the available time that these recall classes can be scheduled.

The Special and Technical Courses are specific classes on special subjects of which the commissioned officer should be knowledgeable. Examples are FBI Management, Narcotics and Drugs Examination, Collective Bargaining, etc. At present, only certain officers are able to attend these classes (usually of supervisory ranks) and it is their responsibility to disseminate the information to the rest of the force. Again, it is due to lack of facilities that these courses are scheduled on a "space available" basis. Under the proposed program, most of these special and technical courses would be incorporated into the relevant in-service courses.

Thus under the proposed in-service training program, each commissioned officer will have specific in-service courses to go through

HONOLULU POLICE DEPARTMENT EXISTING AND PROPOSED TRAINING PROGRAMS IN-SERVICE TRAINING Continued

on both an annual basis and whenever a rise in rank determines a need for new training. For example, if a commissioned officer's training throughout his career was recorded, it might be as follows: Basic Recruit, Recruit Refresher after one year of experience; Patrol Refresher annually (as a patrolman); Police Supervision A (when he is promoted to sergeant), Police Supervision B annually (as a sergeant); Investigators Training A (when he is promoted to detective), Investigators Training B annually (as a detective); etc. All of this intensive and continuous in-service training is a necessary process which all law-enforcement officers will have to go through in order to more effectively attain the goals and objectives of the Law-enforcement Agency as set forth earlier.

In summary, the existing training program provides 1) a sufficient recruit course but with no opportunity to expand further on relevant subject areas and diverse recruit programs, 2) a general in-service recall program but on a sporadic, unstructured schedule, and 3) special courses on relevant and diverse subjects but on a very limited basis. All of this is due to a lack of facilities, particularly classroom space. Furthermore, the existing training program fails to recognize the future growth of the police force.

In contrast, the proposed training program acknowledges 1) the need for an expanded recruit program in both subject areas and personnel types, 2) the need for continuous and intensive in-service training for commissioned officers, 3) the need for more training on relevant and diverse subject areas, and 4) the projected growth of the police force.

TABLE X POLICE TRAINING PROGRAMS

existing	HOURS	PROPOSED	HOURS
Recruit Training	600	Basic Recruit	700
		Special Recruit A	480
		Special Recruit B	511
Cadet Training Class	48	Police Cadet	120
Patrolmen's Recall	72	Recruit Refresher	120
	*	Patrol Refresher	80
Fundamentals of Supervi	sion 40	Police Supervision A	120
Sergeants & Detectives I	Recall 40	Police Supervision B	40
		Investigators Training A	120
		Investigators Training B	40
	- e	Police Management A	80
		Police Management B	40
		Field Trainers A	80
		Field Trainers B	40
*		Trainers Course A	120
the same of the sa		Trainers Course B	40
Special & Technical Cou	rses 327	Special & Technical Courses	400
Police Reserve Training	56	Police Reserve Training	60
TOTAL HOURS	1,183	*	3,191

HONOLULU POLICE DEPARTMENT EXISTING TRAINING FACILITIES

Table XI compares the growth of the Police Department between 1961 and 1972 in terms of personnel, length of Recruit Training, number of courses in Recruit Training, the Training Division Staff, and the number of motor vehicles.

Table XII compares the Training Division facilities at Pawaa Annex between 1961 and 1972.

In 1961, when the Police Department moved into Pawaa Annex, the facilities for the training division were adequate with the capability to accommodate future growth. However, since that time, other City agencies have been located there (Parks & Recreation, Licensing Division, Liquor Commission, etc.), limiting any possible expansion for the Training Division. As a result, their facilities have remained static and in the case of classrooms, have even decreased.

Besides the classroom shortage which limits the training program, the lack of adequate office and storage spaces is at a critical level. Presently three sergeants (with their files and desks), share one cubicle-type office (12'x12'). When a recruit requires counseling, a sergeant must gather the pertinent information and relocate to the library. If the library is not available (used also as a conference room), the other two sergeants must leave the office until the counseling session is over. Another sergeant is located in the secretarial/clerical area. Likewise, for counseling he has to either retire to the library or if unavailable, displace three sergeants in order to counsel a recruit in private. Recently, a secretary has been located in the library due to lack of space in the secretarial/clerical area. Needless to say, this further complicates the operating efficiency of the Training Division.

In summary, the existing training facilities at Pawaa Annex has not expanded at all since 1961 although, in terms of training, the department has almost tripled. The lack of classroom facilities has limited the desirable training program. The lack of office and storage space, library, and conference areas has affected operational procedures and it would only be a question of time before the situation becomes an impossible one. It is obvious that this problem will have to be resolved.

TABLE XI COMPARISON BETWEEN 1961 AND 1972

	1961	1972
Number of Departmental Personnel (total)	683	1779
Length of Police Recruit Training (hours)	215	616
Total Number of Courses in Recruit Training	35	91
Training Division Staff: Captain Lieutenant Sergeants Policemen Small Arms Repairman Clerk Stenos Cadet Total Motor Vehicles: C & C Vehicles Privately Owned (subsidized)	1 2 2 1 0 1 0 7	1 1 5 1 1 2 1 12

TABLE XII PAWAA ANNEX COMPARISON

	1961	1972
Number of Classrooms	3	2*
Number of Private Offices	3	3
Total Area Training Division	4932 sq.ft.	3892 sq.ft.
*One classroom converted to Board Room for Pol	ice Commission	•

HONOLULU POLICE DEPARTMENT ALTERNATIVE MEANS OF PROVIDING TRAINING FACILITIES

Two alternative means of providing facilities to accommodate the proposed training program are:

- to utilize existing facilities to its maximum capacity (as is being done presently), tinding available facilities elsewhere for the remaining courses, and continue using existing physical training facilities.
- 2) to provide a new training facility.

ALTERNATIVE ONE

The shortage of classroom space is the biggest problem affecting the existing training program and is, likewise, the primary restriction on implementation of the proposed training program. The Community College facilities has been suggested as possible alternative means of providing classrooms. However, within the past year, the search for a second university campus to accommodate the growing proportion of the population seeking higher education and vocational training, has indicated that both the Community College and University System are lacking in facilities. Presently, even the Police Science courses of the Honolulu Community College are held during evenings at the classroom facilities at Pawaa Annex.

The utilization of the Police Science courses to provide instruction to the police trainees has also been suggested as a possible alternative. The difference between Police Science courses and Police Training courses is significant enough to restrict this possibility. The Police Science courses (leading to a degree) are very general, academic types of courses covering law-enforcement on a very theoretical level. Police training courses, on the other hand (which leads to a commission as a police officer), are intensive, practical types of courses covering law-enforcement on a very localized, "street law" level. Both types of curriculum are necessary but for different purposes and thus cannot be combined to alleviate the classroom shortage problem.

Besides classroom spaces, the other major facility requirement is for physical training spaces such as 1) Firing range, 2) Open space for drills, 3) Beach or swimming pool for life-saving, 4) Gymnasium for self-defense, etc. Presently, these types of training are held at public facilities.

Table XIII lists the existing training program, the existing facilities used, and the advantages and disadvantages of using those facilities.

HONOLULU POLICE DEPARTMENT ALTERNATIVE MEANS OF PROVIDING TRAINING FACILITIES ALTERNATIVE ONE Continued

Assuming that there are available classroom facilities elsewhere and that the existing physical training facilities could be utilized without the possibility of public consternation, the major consideration that this alternative fails to recognize is the desire of the HPD to have a cohesive, continuous, and unified training program. Under this alternative, it would still remain a disjointed, segregated, piecemeal type of operation. Thus, it is recommended, for the efficiency of the Police Department, that the idea of this type of separated facility not be pursued.

ALTERNATIVE TWO

Generally speaking, all of the disadvantages and problems of a separated facilities would be overcome by a centralized facility. It would accommodate ideally the proposed training program and its facility requirements. Of course, sufficient space will have to be programmed into such a facility to accommodate the projected number of classes and types of physical training to be held.

One possible problem would be a noise conflict between classroom usage and the firing range. This could be solved architecturally by sensitive site planning and/or by providing buffers to absorb the disrupting sounds. It is, however, also reasonable, if the chosen site has definite restrictions on noise levels, to have the firing range enclosed or located elsewhere (possibly at the existing Koko Head range) particularly since it is a special facility which the training program recognizes in terms of scheduling. In the site evaluation set forth later in this report, this alternative is considered.

A complete, centralized training facility, however, is the most desirable alternative. Such a facility would enable the Police Department to implement the complete proposed training program resulting in continuous, relevant, and modern training for all law-enforcement officers of the Department.

TABLE XIII PRESENT TRAINING FACILITIES USED

PRESENT TRAINING COURSES	PRESENT FACILITIES	ADVANTAGES	DISADVANTAGES
Classroom Courses	Pawaa Annex	Close to Headquarters	Crowded conditions for both trainees
			and training personnel.
•		2	Limited number of classes which can
			be held.
			Impossible parking conditions. Separation from physical-training
			facilities.
	Ft. Ruger Armory (on over-	T.	Separation from other training facilities
	flow basis)		Available only on limited basis.
			Difficulty in scheduling.
Physical-Demonstration Training			
Water Safety	Ala Moana Beach		
Trailer Surery	Magic Island	Relatively close to	Separation from other training facilities
	Manoa Recreation . Pool]	Headquarters	Limits public use of park and pool.
Physical Training and Exercise	Public Parks]	Relatively close to	Separation from other training facilities
Self-defense Training	Waialae Gymnasium]	Headquarters	Limited availability.
Firearms Training	Koko Head Range]	Within reasonable driving	Separation from other training facilities
Mock Crime Scene	п 1	distance to Headquarters.	
Civil Disturbance	· 1	Favorable noise isolation.	
Traffic Accident Investigation	" ×]	Excellent firearms facilities.	
Canine Training			
Police Driving	Hickam AF Base	Favorable driving facility	Separation from other training facilities Limited availability.

FIRE AND POLICE TRAINING FACILITY JOINT TRAINING FACILITY

The desirability of a joint fire and police training facility has been an assumption ever since the inception of this project. Ideally, some study should be made on this basic assumption. However, the City Council has given its approval (through appropriations) to such a joint facility. Furthermore, neither the Fire Department nor the Police Department and their respective training personnel foresee any problems arising out of such a concept. Instead there are definite advantages which include 1) joint use of certain facilities such as the training pool, cafeteria, gymnasium, helicopter training area, etc. 2) favorable public image as a joint public service training facility, 3) decrease in maintenance costs, and 4) decrease in other City and County expenditures such as site acquisition, utilities services, etc.

STATEMENT OF SITE REQUIREMENTS

SITE EVALUATION SIZE REQUIREMENT

The required size of the site is based on the respective training programs of the Fire and Police Departments. To calculate the total size of the required site, each department's training program was analyzed separately in terms of physical space requirements. At this point it was determined which facilities could be shared and the actual required size was then adjusted to reflect this joint use.

There are basically two types of facility requirements: 1) Indoor instructional spaces which include classrooms, administrative offices, related spaces, and 2) Outdoor physical types of facilities.

The first type was calculated from basic information on number of trainees, frequency of courses, size of classes, and number of classes required, to reach the total number of classrooms required. Office requirements were based on size of administrative staff and their space requirements. These figures and calculations can be found in the appendix.

The second type can be described as types of physical equipment or facilities such as firing range, drill towers, fire pits, gymnasium, training pool, etc. which have definite optimum sizes. The sizes of these specific facilities can also be found in the appendix.

Table XIV summarizes these size requirements in four categories:
1) Central Building Area, 2) Police Department Outdoor Areas
& Ancillary Structures, 3) Fire Department Outdoor Areas & Ancillary Structures, and 4) Parking.

The total required acreage for this joint Fire and Police Training Facility is 14 acres. As noted earlier in this report, one possible alternative is to locate the firing range elsewhere (depending upon environmental restrictions). This would lower the required acreage to 11.2 acres, creating the need to find an accessory site of 2.8 acres for the range.

It should be pointed out that the above calculations were based on the 1995 projected requirements. Since the objective of this study is primarily for the acquisition of a site, it is logical to assume the eventual optimum development as the determinant for total acreage. The actual facilities development would probably be phased to meet projected requirements at incremental years. The appendix includes area calculations for both 1985 and 1995.

TABLE XIV SIZE REQUIREMENTS

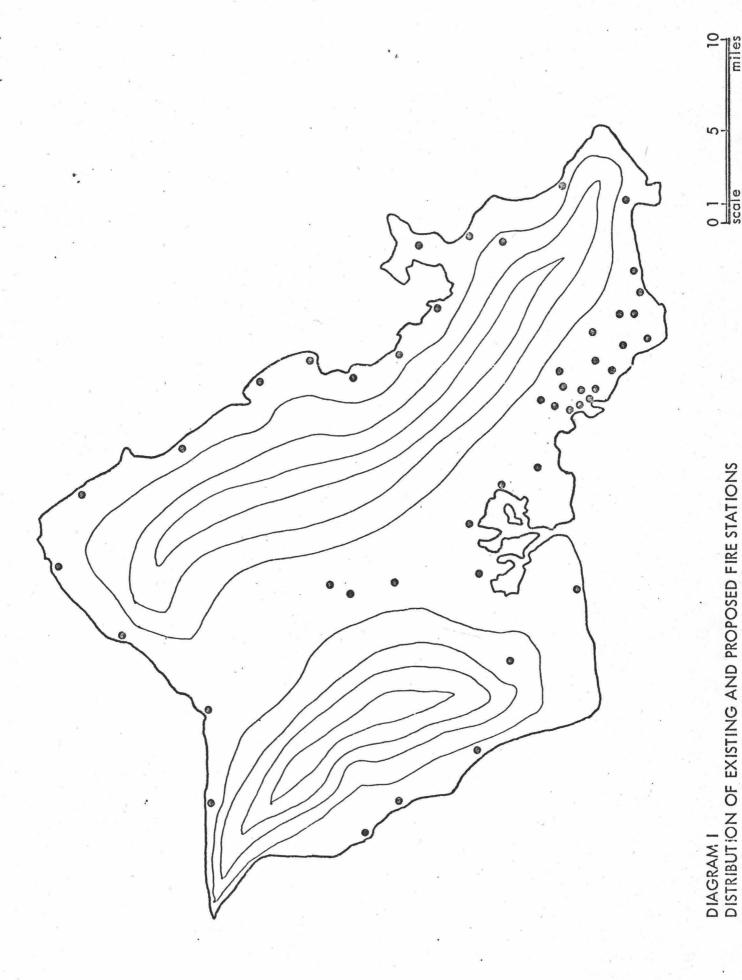
,	GROSS AREA	ACRES
Central Building Area	62,290 sq.ft.	1.4
Police Department: Outdoor Areas & Ancillary Structures	271,928 sq.ft.	6.2
Fire Department: Outdoor Areas & Ancillary Structures	222,010 sq.ft.	5.1
Parking Area	55,250 sq.ft.	1.3
TOTAL	611,478 sq.ft.	14.0

SITE EVALUATION LOCATIONAL REQUIREMENT

Both the Fire and Police Departments have expressed the desirability to locate the joint training facility as close to Central Honolulu as possible and have given their reasons why such a requisite is important and should be considered in selecting a site for the facility.

Diagram I is a map of Oahu showing the distribution of the existing and proposed fire stations (as designated on the Capital Improvement Budget). The greatest concentration is within Honolulu (Aiea to Hawaii Kai). As pointed out earlier in the goals and objectives, the locations and numbers of these stations were determined by the density of the population of the various areas. Furthermore, this significance of the distribution of fire stations is verified by the number of fire calls received by the various fire stations. Table XV lists the existing fire stations and the average number of fire calls received per day (calculated over a five year period between 1967 and 1971). The stations located within the city received a significantly greater number of calls.

The Fire Department's in-service training program has important implications upon the relative distance between the training facility and this concentration of fire stations. To eliminate overtime expenses, fire companies are trained while on duty. Thus, when they are called in for re-training (four companies per half day shift; eight total companies per day), they will leave the stations unattended and consequently will be out of service as a response unit. The surrounding fire companies must then cover for any fire calls that the absent training companies may receive. Although the Central Alarm System would account for the unavailability of companies in training and transfer the calls efficiently, the absence of these companies does place a greater responsibility on the other companies in terms of the area to be covered. Quite possibly, an extreme fire situation could develop which could activate these available companies and which might require recalling a training company. Thus, the amount of time that a critical training company is absent and unavailable can be minimized by locating the training facility as close as possible to the greater number of fire stations. This would also minimize the number of fire calls which might have to be transfered to covering companies since the greater frequency of fire calls coincides with the greater concentration of fire stations.



(31)

TABLE XV EXISTING FIRE STATIONS
DISTANCE FROM CENTRAL HONOLULU
FREQUENCY OF FIRE CALLS

TREGOLING FOR THE CALES				
FIRE STATION	DISTANCE TO CENTRAL HONOLULU	AVERAGE NO. CALLS PER DAY		
1 Central 2 Pawaa 3 Makiki 4 Kuakini 5 Kaimuki 6 Kalihi 7 Waikiki 8 Iwilei 9 Kakaako 10 Aiea 11 Sunset Beach 12 Waipahu 13 Kahuku 14 Waialua 15 Hauula 16 Wahiawa 17 Kaneohe 18 Kailua 19 Aikahi 20 Pearl City 21 Kaaawa 22 Manoa 23 Wailupe 24 Ewa Beach 25 Nuuanu 26 Waianae 27 Waimanalo 28 Nanakuli 29 McCuliy 30 Moanalua 31 Kalihi-Kai 32 Kalihi-Uka 33 Palolo 34 Hawaii Kai	0.00 3.25 1.75 1.00 8.00 2.00 7.00 0.75 0.75 8.25 3.80 16.40 36.00 32.00 29.30 21.00 8.80 15.30 13.80 12.25 22.80 6.00 8.00 31.00 1.00 32.50 19.00 27.50 2.50 4.60 0.50 3.00 5.00 12.70	1.39 1.64 .89 1.01 0.93 1.54 1.15 1.06 0.96 1.23 0.40 0.64 0.17 0.52 0.24 0.51 0.71 0.78 0.51 0.71 0.78 0.51 0.31 0.65 0.38 0.48 1.38 0.41 0.60 1.19 1.03 1.06 0.71 0.39		

SITE EVALUATION LOCATIONAL REQUIREMENT Continued

A second reason for the desirability of locating the facility close to the majority of the stations is the effect of traveling time on the condition of the in-service trainees. For training, each company will be using its own equipment (engine, ladder, or rescue) and thus, will have to transport it to the training facility. Unlike enclosed vehicles, the fire vehicles are heavy equipment on which the men are exposed to the wind, dust, etc. while in motion. An unnecessarily prolonged trip would have a deliterious effect upon the condition and attitude of the men to train once they reach the facility. This is especially significant since superb condition is a requirement for a half day of intensive training exercises. Moreover, after returning from a training session, a fire company is still responsible to respond to any fire calls it may receive.

A third reason is the excessive operating costs of having to transport the equipment to the facility if it were located a great distance from the majority of the fire stations. The extra wear and additional costs of operating the equipment is a cumulative effect when one considers the total amount of companies training over a period of time.

A fourth reason for locating the facility near Honolulu was given by the Police Department. The majority of the instructors for the various courses are commissioned officers of higher ranks who are stationed at Police Headquarters (Pawaa Annex). Other instructors include prosecuting attorneys, corporation counsels, and guest lecturers who contribute their time freely. Since all of the classes are held during the day (with the exception of Police Reserve), these instructors would have to commute to and from the training facility. It would be desirable to eliminate unnecessary costs in time lost and extra vehicular expenses by minimizing traveling time and distance to the training facility.

There are other reasons, mainly in terms of convenience for the trainees, visitors, services, etc., for locating the training facility as close as possible to the city. All of these reasons, however, fail to provide an explicit basis for establishing a maximum distance or traveling time between Central Honolulu and the training facility. Unlike the size requirement with a definite minimum acreage, it is not possible to state the locational requirement in an absolute value (i.e. miles from Honolulu). Therefore this locational requirement will have to be considered in the proper context with the other site requirements (size, environmental, utilities, etc.) which are equally significant requirements for the selection of the facility site. Thus, although it is not absolutely essential, it is very

SITE EVALUATION LOCATIONAL REQUIREMENT Continued

desirable to have the facility located close to Honolulu to 1) minimize the time that critical fire companies are absent from the stations, 2) minimize the fatigue of trainees arriving at the facility, and 3) minimize operating (traveling) costs of both the Fire and Police Departments' training operations.

ENVIRONMENTAL IMPACT REQUIREMENT

The environmental impact of any human created activity can be stated in two terms: 1) Short and long term effects on the natural environment (micro and macro structure) and 2) Effects on the immediate human environment in which such activities occur. The concern of this section is to investigate any environmental effects that the training facility could have which would be a determinant as to its location relative to surrounding types of areas.

The short and/or long term effects of this proposed facility on any immediate natural environment havebeen determined to be of a negligible nature. The only possible environmental pollutant would be the emission of smoke into the atmosphere. The low frequency of this activity (and only under favorable wind conditions to maximize the dissipation rate) minimize the possible harmful effects. The chemical content of these smoke emissions, as determined by the types of materials burned, would be regulated by Federal and State pollution standards with which the user agency is prepared to comply.

The effects of this proposed facility on the immediate human environment are two-fold: 1) Visual and Respiratory – primarily smoke resulting from simulated firefighting drills and 2) Audio – from equipment operations which include fire trucks and apparatus, helicopters, gunfire, and dogs.

VISUAL

Smoke and fire drills consists of two types: 1) Simulated fires in the fire building, and 2) Flammable liquid fires. The first type will present no visual or respiratory smoke problems since the fire building will have an incinerator to treat the resulting smoke before letting it out into the atmosphere. The second type, however, is to be held in open fire pits. These drills will occur three to four times daily for approximately five minutes duration (from lighting of fire to complete extinguishing). It will, however, be a Fire Department policy that

SITE EVALUATION ENVIRONMENTAL IMPACT REQUIREMENT VISUAL Continued

these drills will be held only on days when the wind (prevailing trades) is favorable for rapid smoke dissipation. Hence, the facility should be in a location such that there are no urbanized areas (residential, business, apartment, etc.) downwind within smoke range under prevailing wind conditions. The limit of this range is, of course, dependent upon localized conditions and thus should be investigated for all of the possible alternative sites.

Another visual consideration is in terms of distractions to the public which could create hazardous conditions. For example, the facility should not be located adjacent to a major thoroughfare or freeway since the training activities could distract motorists. If such a site is considered, sensitive site planning and/or visual buffers should be utilized to isolate the facility from any adjacent highway.

AUDIO

Noise and its effects on the human environment is one of the more difficult standards to measure. The harmful level of noise can be measured in terms of decibels (db). However, the disturbance level of noise (the point at which a noise becomes disturbing) is dependent upon a lot of factors, many of them subjective and unmeasurable. These include type of noise (continuous or sporadic, high or low frequency, sudden or progressive), its level, background noise (again its type and level), hearing sensivity of listeners, psychological condition of listeners, etc. Therefore, the following analysis of the possible disturbing sound levels created at the facility is a comparative one in terms of equivalent decibel levels between an average residential environment and the noise levels created by the various training equipment and exercises measured at certain distances away.*

Fire Trucks and Apparatus: In a recent survey conducted by the Hawaiian Electric Company, the noise of the fire trucks was measured at a distance of twenty (20) feet: Operating truck, 88-90 db; with sirens, 110 db; with sirens and horns, 114 db. During training operations, the horns and sirens will not be operated and therefore need not be considered here. This noise level of an operating fire

^{*}The decibel reduction rate for free-field conditions as found in <u>Time Savers Standards</u> was used. This rate of decrease is 6 db each <u>time the distance from the source is doubled</u>.

SITE EVALUATION
ENVIRONMENTAL IMPACT REQUIREMENT
AUD!O Continued

truck decreases to 60 db at an eighth of a mile away (equivalent to the noise level of dense traffic from a hundred feet), and to 46 db at a half mile away (equivalent to the noise level of a quiet residential street).* Therefore, at a half mile away, the noise level of the fire trucks will have a negligible effect on residential communities.

Helicopter: The noise levels created by an helicopter varies between 86 db (operating at rest) and 92 db (cruising).** These measurements were taken in the cockpit and if it is assumed to be about four feet from the source of noise (engine), the noise level reduction to 46 db would occur at approximately one fourth mile away.

Gunfire: Gunfire would be the biggest noise producing activity at the facility. The decibel level of gunfire ranges from 148 db (38 caliber pistol) to 172 db (M-1 rifle).*** Unlike the other sounds created by trucks and helicopters which are of the sustained type, gunfire is of the impact type, lasting in the order of a milli-second. If the free-field decibel reduction rate was applied to the above readings, the distance required to reduce the sound level to the equivalent of a residential street is an unreasonable and unrealistic one (150 miles). Therefore it appears that the noise from the firing range will have to be controlled either through the utilization of natural geographical conditions or man-made baffles. The National Rifle Association has suggested three ways that this sound level could be controlled:

1) By the direction of firing, 2) By vegetation (trees and foliage) between the firing range and any residential community, and 3) By sound baffles around the range (such as natural hills or earth berms).

Due to the focusing effect of the rifle or pistol, the sound level measured at the rear of the gun is less than in front of it (20 db less).***

So to help reduce the noise level, the direction of firing should be away from any residential areas.

Vegetation is one of the more effective ways of attenuating sound. The NRA has indicated that with vegetation, there could be a reduction of 6 db per 1000 feet (ground distance). Applying this rate to the decibel readings of gunfire, the sound level would be reduced to the equivalent of a residential street at a distance of 1800 feet.

^{*}Time Savers Standards, page 615.

^{**}Theodore Berland, Fight for Quiet.

^{***}National Rifle Association.

SITE EVALUATION
ENVIRONMENTAL IMPACT REQUIREMENT
AUDIO Continued

The sound level could be controlled even more significantly by noise baffles. Earth berms, for instance, could be used to direct the noise upward and away from any residential areas. "Several surveys of residential areas near ranges have been conducted. It has been found that if a range is set up properly for maximum sound attenuation, many residents are not even aware of the existence of the range."*

Thus, assuming that the gunfire noise will be controlled in some manner (through the selection of a properly isolated site or through artificial means), a reasonable, minimum ground distance from any residential area would be a half mile. This criterion is again not absolute, but dependent upon the unique localized geographical situations of the alternative sites.

Canine Training: The noise created by canine training is insignificant compared to the other sources of noise such as fire trucks, helicopters, and gunfire. This is particularly true since this training will occur during the day and not at night when the barking of dogs can be a disturbing factor. The half mile minimum range determined by the other noise factors is more than a sufficient acceptable distance for canine training.

Besides visual and audio, there are other potential environmental pollutants that this facility could produce such as debris and wastes from simulated fires, run-off water with chemical contents, etc. These factors will have to be recognized and solved to eliminate any possible harmful effects. However, these types of problems would be inherent of any chosen site regardless of its relative location to other types of land uses. The concern of this section of the report was to investigate and recognize those areas of environmental problems which could affect the location of the facility and to establish criteria by which the potential alternative sites can be evaluated to assure the adequacy of a selected site.

The two recognized environmental factors to be considered in this evaluation are: 1) Smoke - its potential visual and respiratory effect, and 2) Noise - its potential audio effect. These two factors could be detrimental to incompatible inhabited areas such as residential, apartment, hotel, and business zones. Thus, the training facility should be located such that there are no incompatible types of zones within the smoke and noise ranges as previously identified.

^{*}National Rifle Association.

SITE EVALUATION TOPOGRAPHY REQUIREMENT

There are four primary reasons why the topography of the facility site should be as level as possible.

The first two concern the training operations of the Fire Department. As pointed out earlier, the ∞ nditions of the training exercises should approximate as closely as possible the operations of an actual situation. The majority of the streets in the City and County of Honolulu are relatively flat (the maximum slope for major and minor streets is 1:10*) and thus there is no reason for the fire training facilities to exceed this slope. The second reason involves the fire equipment. Many of the pumper trucks leak oil after prolonged operations on a slope and this increases the wear on the equipment. Even when actual fire conditions occur on a hill or sloped streets, the engine operator will turn the truck to park as nearly level as possible. Thus, the fire training facilities should be as level as possible, not only to approximate actual conditions, but also to eliminate excessive wear on the equipment.

The third reason for relatively level training areas is to minimize the unnecessary strain and possibilities of accidents inherent in sloped training situations. The firefighters train by carrying heavy equipment such as hoses, couplings, ladders, etc. To practice on a slope would unnecessarily exhaust the trainees and could limit the amount of training possible.

The fourth reason is the most significant one. Most of the facilities and ancillary structures require a flat site in order to function properly. These obviously include classrooms and offices (although terracing is possible), gymnasium, training pool, firing range, helicopter/drill field, etc. A steep site would require excessive, yet necessary, excavation.

Thus, regardless of existing topography, the majority of the facility site will have to be graded to a relatively flat slope to accommodate the types of facilities required. Therefore, unless site acquisition costs outweigh site development costs from a total cost standpoint, it is of an economic advantage to select a relatively flat site with a minimum amount of grading required.

^{*}Department of Public Works, Engineering Department.

SITE EVALUATION UTILITIES

All of the necessary utilities should be available to the site. These include water, electricity, telephone, sewage disposal and water drainage. The water supply should be sufficient to sustain the required pressures of a network of fire hydrants (minimum 6" main). The sewage disposal could be handled by a sewage pipe system or if not available, by cesspools (which will have to be checked with the Board of Health). Water drainage could be through a storm drain system or merely through surface run-off (depending upon natural drainage conditions). If any of the above utilities are unavailable to the site, the possibility of acquiring such utility service and its cost should be investigated and thus be used as a criteria for evaluating the alternative sites.

ZONING

As determined in the environmental impact requirements, there should not be any type of incompatible zoning within the affectable range of the facility (determined generally to be a 1/2 mile radius). Another zoning consideration is an economic one. The location of the facility site in any type of area should not have any adverse effects upon the existing land values of the surrounding properties. Neither should this location of the facility place any restrictions on the possible further development of the surrounding areas. Thus, the impact of the facility (due to the types of activities occurring there) on the surrounding area in terms of zoning and possibly land values is another criterion to be used for site evaluation.

ACCESSIBILITY

The facility site should be readily accessible from major thoroughfares. The access roads between the facility and the major thoroughfare should be paved and of sufficient width to accommodate both the high frequency of use and the size of the trucks. The type of zoning that these access roads pass through should also be of a compatible type. For example, it would be very hazardous if access to the training facility was through residential streets. This type of conflicting situation should be avoided in selecting the proper facility site.

AVAILABILITY

Ideally the selected site should be owned by the City and County of Honolulu to eliminate any acquisition costs. However, if the site is owned by a private party and/or another governmental agency, the possibility of acquiring it at a reasonable price without complications would be one of the criteria for evaluating it and the other alternative sites.

SITE EVALUATION SUMMARY AND CONCLUSIONS

In summary, these eight criteria should be considered in evaluating all the possible alternative sites to arrive at the best alternative. Ideally, all of these criteria should be of equal weight as determinants of this selection. They represent a series of ideal conditions under which the facility should be established. However, in evaluating specific sites, trade studies might be required to weigh certain advantages against disadvantages in determining, perhaps, the "best available compromise". The conclusions of each of the eight criteria follow.

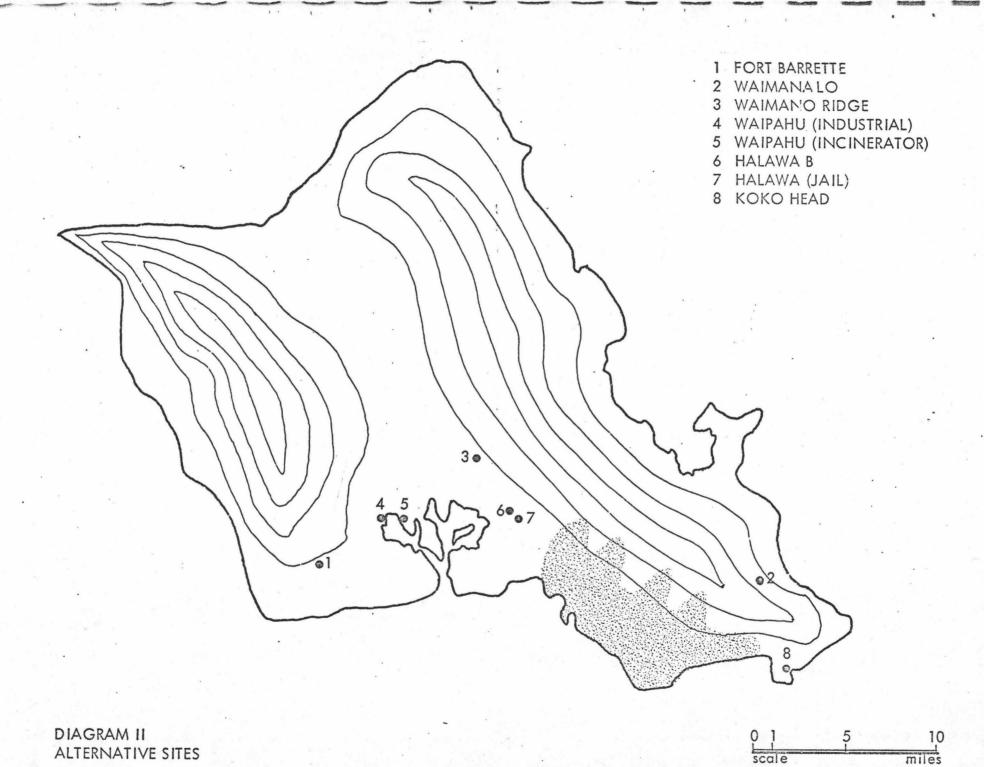
- Size: Minimum 14 acres for total facility. If firing range is located elsewhere, 11.2 acres required with accessory site of 2.8 acres for the range.
- Location: As close as possible to Central Honolulu (considered to be Central Fire Station) in terms of traveling time.
- Environmental: Generally 1/2 mile from any incompatible types of inhabited areas (residential, apartment, hotel, business, light-industrial). Compatible types of zones include heavy-industrial, agricultural, preservation. Visually isolated from major thoroughfares or freeways.
- Topography: As level as possible to minimize grading costs. Maximum slope: 10%.
- Utilities: All utilities available on site or nearby within reasonable economic range.
- Zoning: No incompatible zones within environmental effect range (1/2 mile). No negative impact on surrounding zones in terms of land values and future developments.
- Accessibility: Easily accessible from major thoroughfare on improved road of sufficient width capable of handling heavy use. Access road through compatible types of zones.
- Availability: Land should be available. Owned by City & County of Honolulu or acquirable at a reasonable cost.

ALTERNATIVES AVAILABLE

The eight criteria established determined the type of facility that the Fire and Police Training Facility would be and the type of site that would be required to accommodate it. The facility is a unique kind of situation. Although it is basically a training type of facility with provisions for physical types of training with resultant visual and audio disturbances which give it an industrial nature, it is also an educational facility with classrooms and offices which give it an academic nature, too. Therefore, to find an appropriate site for it, various types of areas (from industrial to residential) had to be investigated to discover the possible alternative locations for the facility. All eight site criteria were used as general determinants to isolate certain areas of the island in which to start searching. The result was eight possible alternative sites.

Diagram II lists the eight alternatives and shows their locations on the Island.

The analysis of each of these eight sites on the eight criteria can be found on the following pages. Following the analysis of the alternative sites is an evaluation of each summarizing the advantages and disadvantages of each site.



FORT BARRETTE (MAKAKILO) TMK 9-1-16-2, 9-1-16-21

CRITERIA		PRO	CON
SIZE	28 acres	Х	
LOCATION	20 miles and 32 minutes from Central Honolulu		X
environmental	Surrounded by cane fields Nearest residential subdivision: 1/2 mile upwind H–1 freeway: 1/3 mile upwind.	X	
TOPOGRAPHY	50% of site: 4-6% slope 50% of site: too steep for usage. Buildable area is scattered, not all in one area.		X
UTILITIES	Water: 30" main at Farrington Highway: 1/3		X.
	mile away. Electricity: Available at Farrington Highway. Telephone: Available on site. Sewage: Nearest line uphill at Farrington. Ces	X s- X	X
	pools possible. Drainage: Gulch adjacent to site which drains to coral pits.	X	
ZONING	Presently military reservation, surrounded by agriculture. Nearest residential zone: 1/2 mile	. X	
ACCESSIBILITY	Direct access from H-1 along improved government road.	X	
AVAILABILITY	Presently owned by U.S. government and a private owner.		X
*			

WAIMANALO (MAUKA LANDS) TMK 4-1-08-1

CRITERIA		PRO	CON
SIZE	100 acres available.	X	
LOCATION	14 miles from Central Honolulu via Pali Highway.		X
environmental	School, residential areas, and forest reserve adjacent to site.		X
TOPOGRAPHY	Fairly flat: 2-4% slope	X	
UTILITIES	All utilities except sewage (cesspools possible) available adjacent to site.	X	
ZONING	Residential zoned area.		X
ACCESSIBILITY	1/8 mile from Kalanianaole Highway. Paved for 100 feet only, dirt road for 300 feet. Access through residential areas.		X
AVAILABILITY	Owned by State of Hawaii: Hawaiian Homes.	7. *	X

WAIMANO RIDGE TMK 9-7-25-1

CRITERIA		PRO	CON
SIZE	Approximately 70 acres	X	
LOCATION	15 miles from Central Honolulu		X
environmental	Waimano Home for Retarded located in same area. Residential areas adjacent downwind of site (approximately 1/3 mile away).		X
TOPOGRAPHY	Relatively level at top of ridge. Steep drop to valley on both sides.	X	
UTILITIES	Water: Available at Waimano Home or 8" main at street 1 mile away. Electricity: Available at Waimano Home. Telephone: " " " " " Sewage: " " " " " Drainage: Natural run-off into adjacent gulch.	X X X X	
ZONING	Presently zoned public facility (Dept. of Health). Surrounding zoning downhill: residential.		X
ACCESSIBILITY	Uphill road 2 1/2 miles from Kam Highway through residential areas. Access road passes through Waimano Home.		X
AVAILABILITY	Owned by State of Hawaii, Department of Health		X

WAIPAHU (INDUSTRIAL SITE) TMK 9-4-48-1

•			
CRITERIA		PRO	CON
SIZE	11.76 acres2.8 acres of privately owned adjacent land.14.5 total if private land available.	X	X
LOCATION	14.5 miles and 23 minutes from Central Honolulu		X
ÉNVIRONMENTAL	Canefields and Pearl Harbor downwind. Industrial area adjacent upwind. Waipahu Town 1/4 mile upwind.	X	
TOPOGRAPHY	Relatively flat (2-4%) for most of site. Edge at Pearl Harbor very steep and unusable. Wedge shape at southern end of site very narrow: approximately 1 acre unusable.		X
UTILITIES	All available adjacent to site.	×	
ZONING	Presently public facility. Surrounding zoning: industrial.	X	X
ACCESSIBILITY	1.3 miles from H-1 exit through Waipahu Town and Industrial area.	X	
AVAILABILITY	City & County owned land. Private parcels have to be purchased to fulfill size requirement.	X	X

WAIPAHU (INCINERATOR AREA) TMK 9-3-01-2, 9-3-01-12

CRITERIA		PRO	CON
SIZE	28.2 acres	X	
LOCATION	15 miles from Central Honolulu		X
environmental	Uninhabited land fill, incinerator, and Pearl Harbor downwind of site. Marshland and bird breeding ground adjacent upwind. Waipahu Town 1/4 mile upwind.	X	
TOPOGRAPHY	Flat land: marsh area (formerly fishponds) subject to tidal fluctuations. Fill required to raise land to safe level.		X
UTILITIES	Available at access road but across Kapakahi Stream at property line.	X	
ZONING	Presently zoned public facility (sewage treat- ment plant and ash disposal site). Residential zone 1/4 mile upwind.	X	
ACCESSIBILITY	1.6 miles from freeway through Waipahu Town. Gravel road for portion of access road.		X
AVAILABILITY	10.9 acres owned by City & County. 17.4 acres owned by State of Hawaii leased to City & County.	X	

HALAWA B (BELOW BOARD OF WATER SUPPLY STATION) TMK 9-9-10-2

CRITERIA		PRO	CON
SIZE	15 acres	X	
LOCATION	6.4 miles and 14 minutes from Central Honolulu.	X	
environmental	Residential area 1/8 mile away on hill. Quarry to south and east. Light Industrial area adjacent downwind.		X
TOPOGRAPHY	Steep grade: approximately 13%.		X
UTILITIES	Water: Tank tower required. Electricity: Available at pumping station. Telephone: " " " " Sewage: Cesspools required. Drainage: Natural drainage to existing stream.	X X X	X
ZONING	Light Industrial zone: just re-zoned with justi- fication of need for light-industrial areas.		X
ACCESSIBILITY	1.2 miles from H-1 along dirt road. Future industrial paved road might be used.	X	
AVAILABILITY	Private ownership: light industrial zoning might create high selling price.		X
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HALAWA (BELOW JAIL) TMK 9-9-10-27

CRITERIA		PRO	CON
SIZE	15 acres of possible 28 acres.	X	
LOCATION	6.4 miles and 14 minutes from Central Honolulu.	X	
environmental	Residential area on hills 3/4 mile away in both east and west directions. C & C Jail adjacent upwind. Quarry and Quarantine Station to the west and southwest. Proposed H-3 freeway adjacent to the east.	X	X
TOPOGRAPHY	Favorable slope: 6-8%.	Х	
UTILITIES	Water: Share water tank with jail. If insufficient, separate tank required.	X	
	Electricity: Available at jail.	X	
	Telephone: " " "	X	
	Sewage: " " "	X	
	Drainage: Surface run-off to stream adjacent at property line.	Χ	
ZONING	Presently zoned golf course. Surrounding land: transitional stage (growing industrial and residential area).	X	X
ACCESSIBILITY	1.2 miles from H-1 along proposed jail road through quarry site.	X	
AVAILABILITY	Private owner: relatively high cost expected due to rising land values.		X

KOKO HEAD FIRING RANGE TMK 3-9-12-1

CRITERIA		PRO	CON
SIZE	18-20 acres	Х	×
LOCATION	13 miles from Central Honolulu		X
environmental	Residential area 1/2 mile away. Site isolated by being in a natural crater. Noise from existing firing range presently acceptable.	X	
TOPOGRAPHY	Flat site with slight grade upwards towards Koko Crater.	X	
UTILITIES	Water: Existing 6" main. Electricity: Available at site. Telephone: " " " Sewage: Cesspools required. Drainage: Natural drainage to low area: pump required to get water to highway culvert.	X X X	X
ZONING	Presently in conservation area: part of Koko Head Natural Park. Surrounding zoning: conservation. Stable area in terms of zoning.	X	X
ACCESSIBILITY	Direct access from Kalanianaole Highway	X	
AVAILABILITY	Owned by City & County of Honolulu, Parks and Recreation Department.	X	

FORT BARRETTE (MAKAKILO)
TMK 9-1-16-2, 9-1-16-21 (Refer: Page 43)

The greatest advantage of this site is its isolation from other inhabited areas by the canefields which surround it. The nearest residential area, a half mile upwind, is out of the range of any disturbances. The present agricultural zoning around the site would not be affected by the facility. The government access road from H-1 freeway (thru canefields) is sufficient to handle the projected heavy use.

The disadvantages, however, are significant. Of the eight sites evaluated, this site was located the farthest from Honolulu. The thirty-two minute drive (via the freeway) would be exhaustive to the firefighter trainees commuting to the site on exposed equipment. Another disadvantage is the topography. All 28 acres would have to be purchased to obtain 14 acres (50%) of reasonably sloped, usable area. Moreover, because this usable area is scattered around the total site, the location of the various facilities (requiring different areas) is not very flexible. The unavailability of water and electricity (except from Farrington Highway, 1/3 mile away) is a third disadvantage.

The disadvantages of this site greatly outweigh the advantages it does have. Therefore this site is not recommended for the training facility.

WAIMANALO (MAUKA LANDS) TMK 4-1-08-1 (Refer: Page 44)

The only advantages to this site is the available acreage, its topography, and the availability of utilities.

Its location on the windward side via the Pali Highway is not unreasonable in distance from Central Honolulu. But it would require the majority of the fire trucks to travel over the Pali putting a lot of unnecessary wear on them.

The environmental, zoning, and accessibility factors are all negative. The site is at the base of high mountains enclosing the valley. Therefore, any sounds created at the facility would reverberate throughout the valley (as does present periodical gun noises). The greater portion of the valley is zoned residential. Thus, a training type of facility would definitely be an incompatible type of usage in this area. With

the exception of a few companies, all of the fire trucks would have to reach this site by passing directly through Waimanalo Town (a densely populated residential, commercial strip) via Kalanianaole Highway which is a narrow two lane highway. This would be a very hazardous situation.

Therefore, this site is very inappropriate for the facility location. It is not recommended.

WAIMANO RIDGE TMK 9-7-25-1 (Refer: Page 45)

This site is similar to Waimanalo in that it has some advantages such as ample acreage, fairly level topography, and all available utilities. However, the disadvantages are much more significant.

The most important consideration is the Waimano Home Facility. This is a home for the mentally retarded and should not have any unnecessary disturbances. The training facility (should it be located here) would be disturbing, even traumatic, to the residents of the Home since it would be within both visual and audio range of the training activities. This problem is compounded by the fact that access to the training site would be through the grounds of the Home.

Besides Waimano Home, there are residential zones a third of a mile downwind. This is well within the audio range of the site and would not be acceptable. Furthermore, the access road (Waimano Home Road) is uphill through these residential areas. Besides unnecessary wear on the training equipment, this would be excessively noisy to the residents living along the road.

This site is not recommended.

WAIPAHU (INDUSTRIAL SITE) TMK 9-4-48-1 (Refer: Page 46)

There are many advantages to this site which include favorable environmental surroundings, available utilities, present zoning as a public facility, favorable access, and ownership by the City and County of a greater portion of the required acreage.

The most significant disadvantage is the amount of acreage usable. Even if the smaller private parcels could be purchased to obtain the required 14 acres, the extremely steep topography along Pearl Harbor and the very narrow tip of the wedge-shaped parcel would be very difficult to use. So the actual amount of acreage available for the type of facilities required might be less than 14 acres.

A second disadvantage is the surrounding zoning in terms of economic impact. Since the area is a growing industrial zone, the rising land value might pre-empt this parcel for another more economically feasible use. Furthermore the parcels which would have to be purchased are very desirable industrial parcels and the purchasing price can be expected to be high.

Thus, because of the questionable amount of actual usable acreage available and the transitional nature of the area, this site is not recommended.

WAIPAHU (INCINERATOR AREA) TMK 9-3-01-2, 9-3-01-12 (Refer: Page 47)

Despite of the many advantages of this site (size, environmental, utilities, zoning, and ownership by the City and County), the greatest disadvantage is the type of land which the site is located on. Formerly fishponds, the site is a very low marshland adjacent to Pearl Harbor, and subject to tidal fluctuations. It would require a great amount of fill to raise the required acreage to a safe level to avoid any possibility of flooding. This would definitely be an expensive economic factor to consider.

Of the eight alternative sites considered, this was the seventh farthest from Central Honolulu (15 miles) and therefore, is considered somewhat undesirable from the locational standpoint. Access to the site (through Waipahu Town and on a gravel road subject to excessive wear due to the heavy use by refuse trucks) is another disadvantage of this site.

Due primarily to the amount of fill required to make it acceptable for the facilities, this site is not recommended.

HALAWA B (BELOW BOARD OF WATER SUPPLY STATION) TMK 9-9-10-2 (Refer: Page 48)

The only advantages to this site are its sufficient size, location close to Honolulu, accessibility, and the availability of most of the utilities (except water which requires a water storage tank).

The most significant disadvantages are its environmental impact on the surrounding residential areas (which is only 1/8 mile away), its topography (which would require a large amount of grading), and the zoning (of both that specific parcel and the area below it which were just recently re-zoned to light industrial). All of these disadvantages make this site undesirable for the training facility, and therefore it is not recommended.

HALAWA (BELOW JAIL) TMK 9-9-10-27 (Refer: Page 49)

This is one of the more favorable sites for the training facility due to its many advantages. These include: 1) Sufficient size, 2) Ideal locational distance from Central Honolulu, 3) Some favorable environmental considerations, 4) Favorable slope, 5) Availability of utilities, 6) Compatible type of present zoning, and 7) Easy accessibility from H-1 freeway.

There are, however, some disadvantages to this site which would have to be overcome. The first is in terms of environmental impact. The Halawa Jail is immediately adjacent upwind of the proposed site. Unless buffered somehow, the noise created by training exercises could be disturbing to the inmates of the Jail. If this site is considered, an official from the jail facilities should be consulted as to the impact that this noise could have on the inmates, staff, visitors, etc. Another environmental consideration is the impact that the facility noise could have on the residential areas on the hills on both sides of the valley. Although they are three-fourths of a mile away, they are above the facility site and therefore would not be buffered from the sounds by any ground foliage or terrain. The most critical sound would be gunfire and tests should be conducted to check if such sounds would be disturbing to these residential areas. If they are found to be at a definite disturbance level, the alternative to locate the firing range elsewhere (at the present Koko Head firing range) would have to be considered. Another environmental consideration is the proposed H-3 freeway which would pass immediately adjacent

to this site. The training activities could be distracting, thus hazardous, to the passing motorists on the freeway. Therefore, should H-3 freeway be built, visual buffers would have to be provided to eliminate this problem.

Another disadvantage is that this area is in a stage of transition as to its land use. A significant amount of area on the opposite side of the valley has recently been re-zoned to light-industrial. This is indicative of the growth of this area in terms of land use. A training facility located here (although appropriate now) could become an incompatible type of use in the future. Related to this growth is an expected high cost of acquisition due to the rising land values in this area. All of these factors will have to be studied for this alternative site.

 Most of these problems, though significant ones, could be resolved to successfully locate a training facility at this site. Therefore, this site is recommended contingent upon the consideration and solution of the stated problems.

KOKO HEAD FIRING RANGE TMK 3-9-12-1 (Refer: Page 50)

Of all eight alternatives, this site is the most desirable one. Its advantages greatly outweigh the few disadvantages it has. It is of sufficient size, favorable (negative) environmental impact upon the surrounding areas, and flat topography. It has available existing utilities, direct access from Kalanianaole Highway, and is owned by the City and County of Honolulu (Department of Parks and Recreation).

One disadvantage is that it is not located as close to Central Honolulu as the Halawa site. Out of the eight alternatives, however, it is the third closest to Honolulu. Therefore this relative locational distance is not a very significant disadvantage when the other requirements which this site fulfills are considered.

The drainage problem could be solved by pumping the excess rur.-off water up forty feet to the existing highway culvert. The amount of rainfall in this area (approximately 25 inches annually) is not a great amount and, thus, would not create any pumping problems.

The only other disadvantage would be the present zoning of the site. It is in an area designated as Parks and Recreation on the General

Plan and is in a State Conservation District. The present use of the site, however, is as a firing range (public facility) which the training facility would be similar to in terms of land use. The location of the training facility here would not significantly alter the nature of activities which presently take place in the crater. Moreover, the area that the training facility would occupy approximates that being used for the existing firing range. This is limited to the floor of the crater where there are no recognizable indigenous trees or foliage significant to this conservation area. Also, because of the relatively flat topography of the site, there would be a minimum amount of grading involved to accommodate the various facilities. Therefore, the basic land form would be retained. Sensitive landscaping at the entrance to the site would make the facility non-apparent to the passing motorists on Kalainanaole Highway. The high crater walls isolate the site on the other surrounding sides.

Therefore, because of its many advantages and the few disadvantages which can be resolved, this site is the most appropriate one of the eight sites evaluated, and is therefore recommended for the training facility.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS

After evaluation of eight possible alternative sites for the training facility, Koko Head Firing Range was determined as the most feasible one fulfilling most of the site requirements (see evaluation sheet for Koko Head). There are four major advantages to this site:

1) City and County ownership, eliminating cost of acquisition, 2)

Natural physical factors conducive to this type of facility, 3) Existing firing range with a noise producing factor presently acceptable by the public, and 4) Total training facility, eliminating the necessity to separate the firing range (as required for certain other alternative sites).

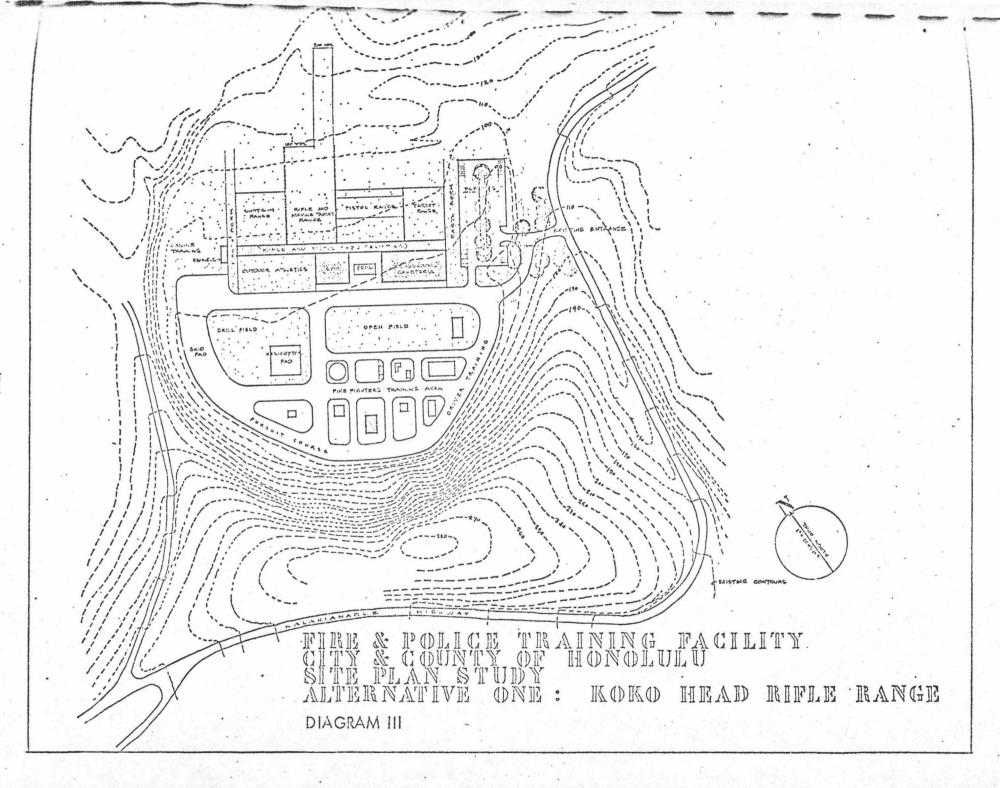
The most significant disadvantage of this site is its location in a Conservation area. This disadvantage, however, is alleviated by its present use as a firing range.

Therefore, considering the definite potential of this site and its one significant disadvantage, a decision was made to do a preliminary site plan study of the total facility to investigate and confirm, if possible, the feasibility of this site to accommodate all of the facilities requirements in a reasonable and environmentally acceptable manner. Diagram III titled Site Plan Study reflects the results of this study. It should be pointed out that this drawing does not in any way represent a final layout of facilities. It is merely a preliminary study of what could be achieved and thus should be considered in that context.

One of two main objectives of this site study was to retain as much as possible the existing land forms and natural foliage of the site. This was particularly significant considering the location of this site in a conservation area. The other objective was to make this facility as inconspicuous as possible to the public (specifically motorists along Kalanianaole Highway and Hawaii Kai residents).

The existing natural physical factors made it relatively simple to a-chieve these two objectives. The site is basically a crater bowl with nearly a flat base, rising gradually in the mauka direction towards Koko Crater. The amount of cut and fill required to build the facility is practically negligible. Furthermore, there are no recognizable indigenous plants or trees on the crater floor; they are predominantly on the slopes of the crater walls which would not be disturbed.

The contained configuration of the crater makes this site invisible from the Hawaii Kai residential areas to the west and visible to Kalanianaole Highway for a short stretch of approximately seventy-five (75) feet at



EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS Continued

the entrance to this site. This latter problem could be solved by realigning the entrance road and sensitive landscaping with indigenous trees. This has been reflected in the Site Plan Study drawing. Thus, the site plan was developed recognizing and utilizing the natural physical advantages of this crater site.

In terms of the total training facility, there are four general zones:

1) Central Building Zone (consisting of classrooms, offices, gymnasium, pool, cafeteria), 2) Noise Zone (consisting of firing ranges),
3) Fire and Smoke Zone (consisting of fire training structures and pits), and 4) Open Field Zone (consisting of helicopter/drill field, canine training, driver training/skid pad).

The Central Building Zone is centrally located near the entrance as the control point and activity spine to all the other facilities. Its close proximity to the firing range implies that sound levels will have to be controlled architecturally.

The firing range (Zone 2) had two possible alternative locations: the existing pistol range at the lower, makai side of the site or the existing rifle range at the mauka side. The decision to utilize the existing mauka rifle range to consolidate all gunfire activity was due to two reasons: 1) the existing pistol range was next to the higher makai crater wall resulting in gunfire echoing within the crater, and 2) the noise from the existing rifle range dissipated much better because of the gradual slope up towards Koko Crater. Moreover, the direction of firing is away from the rest of the facilities. Another important consideration of the location of the firing range was its continuing usage as a public firing range, especially on weekends. By locating it near to and directly accessible from the parking lot, the range could be continually used while the rest of the facilities remained secured.

The fire training structures and pits (Zone 3) were located at the downwind side of the site. Since these structures would be considered the most visually objectionable (due to their usage), their location in the southernmost pocket of the crater renders them practically invisible from the highway. Again with a minimum amount of landscaping, they would not be seen at all by the passing motorists. This area is also the flattest and lowest part of the crater floor. These factors are taken advantage of by having the pumper test pit (drafting pit) located at the lowest point to collect surface run-off water to be re-cycled in pumper training exercises. Any excess run-off can be pumped up to the existing drainage culvert along Kalanianaole Highway.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE FULFILLMENT OF SITE REQUIREMENTS Continued

The rest of the site is utilized for the open field facilities (Zone 4). Because of the relatively flat topography, there is a minimum amount of earthmoving to prepare the site for these facilities. Moreover, the greater part of the area will be grass covered, thus remaining very similar to the existing conditions.

In summary, the development of this site study confirmed preliminary conclusions of the potentiality of this site. With a marginal amount of landscaping and site work, this facility could be achieved recognizing the two objectives established earlier. Furthermore, the existing facilities (rifle range), land forms, and topography were utilized advantageously to produce a workable and realistic concept, involving a minimum amount of change to the total existing environment of that area.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE APPROPRIATENESS AS AN ALTERNATIVE USE FOR THE SITE

Although this site is zoned for conservation which implies a "hon-use" type of area to be left in a natural state, it is, nevertheless, presently being utilized as a public firing range by the Department of Parks and Recreation. This use is justifiable since, besides presently being used by the Police Department, it is the only firing range available to the public in the City and County of Honolulu. Therefore, it is very likely that it will remain for this special type of recreational use.

Considering its present zoning and its present use, there are, however, three possible alternative uses: 1) Converting it back to a natural conservation area, 2) Converting the whole area or part of it for park use (i.e. picnic grounds), and 3) Using it for the Fire and Police Training Facility.

The first alternative is an appropriate one considering its location in a conservation area. However, because of its use as a firing range, there are no significant natural features such as indigenous trees or landscape within the crater. Furthermore, due to its location and size, the crater itself is not a significant landmark when compared to the others in the conservation area such as Koko Crater, Hanauma Bay, the rugged shoreline along Blowhole, Sandy Beach, and Makapuu Point. In fact because of its limited exposure to motorists along Kalanianaole Highway, the crater is virtually invisible to visitors of the area. This alternative to convert it back to a natural conservation area would also eliminate the use of it as a firing range. The present facility there would have to be relocated elsewhere (to accommodate public usage) which would be difficult because of the high noise levels created at such a facility. Hence, recognizing the relative insignificance of the site in the total conservation area, and the resulting elimination of a public recreational facility, the first alternative is not a realistic one.

The second alternative could also be an appropriate use for the site. However, asides from being an open area, the site does not have any special amenities to make it a desirable park location. It is in a relatively low area isolated from the shoreline and nearby beaches. There are definitely more attractive park grounds in the surrounding area such as Hanauma Bay and the recently completed Sandy Beach area. The Department of Parks and Recreation has also just completed a park with picnic grounds in the Job Corps area. Therefore, it appears that more parks and picnic grounds are not needed in this area (the Dept. of Parks and Recreation has no plans for the crater site in the foreseeable future). Converting the whole site to park use would also eliminate the firing range facility. Converting only the unused portion of the site for park use would result in a dangerous kind of mixed usage. Therefore, this second alternative is also not a realistic one for this site.

EVALUATION OF SELECTED SITE: KOKO HEAD FIRING RANGE APPROPRIATENESS AS AN ALTERNATIVE USE FOR THE SITE Continued

The third alternative, though somewhat unusual in a conservation area, is a very realistic one for this site because of three reasons:

1) The type of activities to be held at the training facilty would be very similar and compatible to the existing activities of the firing range, 2) The firing range would still be available for use by the public, and 3) As pointed out earlier, the existing natural physical factors of this site along with sensitive site planning and land-scaping could be utilized advantageously to retain existing conditions and make the facility inconspicuous to visitors of the area. The need for the training facility and the restrictive site requirements have been established earlier. Of eight possible alternative sites, this site best fulfills these requirements. Therefore, of the three possible alternative uses for this site, the third, for use as a training facility for the Fire and Police Departments, is the most realistic and appropriate one.

INADEQUACY OF THE GENERAL PLAN

FIRE AND POLICE TRAINING FACILITY INADEQUACY OF THE GENERAL PLAN

The current General Plan - Detailed Land Use Map does not have any provisions for this specific public facility: Fire and Police Training Facility.

The need for such a facility has been established by the preceding information which includes 1) Projected growth of population, 2) Related growth of Fire and Police Departments to adequately service this population, 3) Importance of training towards the effectiveness and relevancy of this service, 4) Inadequacy and lack of present facilities to provide for desired current and projected growth of training.

The investigation of possible alternative means of providing training facilities has resulted in the conclusion that a centralized training facility with adequate provisions for training instructions and exercises would be the most reasonable alternative. This would enable both the Fire and Police Departments to implement their desired training programs.

The evaluation of possible alternative sites on the established site requirements has resulted in the selection of Koko Head Firing Range as the most appropriate and reasonable one.

On the basis of the foregoing, an amendment to the General Plan-Detailed Land Use Map is requested to change the land use designation of the Koko Head Firing Range (identified as Tax Map Key 3-9-12-1) from Park to Public Facility (Fire and Police Training Facility).

APPENDIX

FIRE AND POLICE TRAINING FACILITY GENERAL FACILITIES DESCRIPTION

The Fire and Police Training Facilities can be described as three basic areas: 1) Central Building Complex, 2) Police Dept. Outdoor Areas and Ancillary Structures, and 3) Fire Dept. Outdoor Areas and Ancillary Structures.

The Central Building Complex consists of 1) a two story structure housing classrooms, administrative offices, a media center, cafeteria, and building/grounds maintenance, 2) a gymnasium, and 3) a training pool.

The Police Department Outdoor Areas and Ancillary Structures consists of 1) firing range (for both handguns and rifles), 2) driver training skid pad, 3) helicopter training area & drill field (to be used jointly with the Fire Dept., and 4) canine training area. All of these facilities are basically open areas with low, one story structures. The firing range is primarily a grassy area (with earth berms to contain the gunshots) with one story shed-like roofs covering the shooting area. The driver training skid pad is a paved extension of the internal driver training roadway system (also used jointly with the fire dept.) The helicopter training area and drill field is basically a grass field with a paved landing and take-off pad for the helicopters (approximately 90'x90'). The canine training area is again primarily a grassy area with a one story structure containing a veterinary examining room and kennels.

The Fire Department Outdoor Areas and Ancillary Structures consists of 1) training structures, 2) outdoor training pits and slabs for liquid and gas fires, and 3) driver training roadway.

The training structures are a series of buildings of different sizes and heights. The highest structure is the training (drill) tower: twenty feet square and seven stories high. The next highest is the fire building: 35 ft. by 50 ft. and 2 1/2 stories high. This building will have an incinerator on top of it to treat the resulting smoke from simulated fires. So the total height of the building will be approximately five stories. The other training structures are basically low, one story structures. These include: a rescue building (30x30), a radiological building (15x20), and a multipurpose storage/repair/briefing building (30x30). All of these training structures will have a paved area around them to accommodate the operations of training vehicles and equipment.

The training pits and slabs are primarily open, paved areas with different types of depressions and raised slabs to contain flammable liquid fires. The sizes and shapes of these pits vary according to their different purposes. Similar to the training structures, the area around and between these pits are paved for the operations of the vehicles and equipment.

FIRE AND POLICE TRAINING FACILITY GENERAL FACILITIES DESCRIPTION Continued

The driver training roadway consists of 1) a network of twenty foot wide "minor streets" running between and around the training structures and pits, and 2) a longer fifty foot wide "major street" (to be used jointly as a police driver training/pursuit course). The minor street network will be similar to typical paved city streets and corners with sidewalks and fire hydrants to be used in conjunction with the training structures and pits. The longer fifty foot wide street could run around the periphery of the site with part of it incorporated as the skid pad for the police department.

In terms of the total training facility and the location requirements of the various parts of it, there are four general zones: 1) central building as control zone, 2) firing range as noise zone, 3) fire and smoke zone, and 4) open field zone. There are certain criteria which are determinants of the relative locations of these four zones and which should be considered applicable to any particular site.

Zone One: Consists of central building complex (classrooms, offices, gym, pool, etc.). Should be centrally located as control point for total facility. Most courses require classroom briefing prior to physical training, thus centrally located classrooms desirable. Should also be in quiet zone, although sound isolation can be achieved architecturally. Can be described as central spine from which other activities radiate.

Zone Two: Firing Range - biggest noise producing activity - thus should be as isolated as possible. Use of natural physical factors and/or berms to control noise. Direction of firing is important - shoot in opposite direction of quiet area. Also, a danger zone - rear of range should be against berm and inaccessible to prevent accidents.

Zone Three: Consists of fire training structures and pits. Should be downwind of other facilities. Should be in flat part of site for street system.

Zone Four: Open field consists of helicopter/drill field, canine training, and driver training/skid pad. Should be in relatively flat area.

HONOLULU FIRE DEPARTMENT CLASSROOMS & ADMINISTRATIVE/TRAINING OFFICES

1985	SQ.FT.	1995	SQ.FT.
1 Training Chief1 Assistant Chief4 Training Officers @ 180 per 22 Secretaries	180 180 360 110 830	1 Training Chief1 Assistant Chief5 Training Officers3 Secretaries	180 180 540 165 1,065
1 Supply/Workroom 1 Staff Conference	240 360 600	1 Supply/Workroom 1 Staff Conference	240 360 600
Total Offices	1,430		1,665
1 Classroom (Seminar)	390	1 Classroom (Seminar)	390
TOTAL	1,820		2,055

HONOLULU POLICE DEPARTMENT CLASSROOMS & ADMINISTRATIVE/TRAINING OFFICES

1985	SQ.FT.	1995	SQ.FT.
Total Offices & Related Spaces*	3,692	Total Offices & Related Spaces*	4,017
3 Seminar Rooms @ 390 6 Lecture Rooms @ 729 1 Demonstration Room @ 1215	1,170 4,374 1,215	4 Seminar Rooms @ 390 7 Lecture Rooms @ 729 1 Demonstration Room @ 1215	1,560 5,103 1,215
Total Classrooms	6,759	Total Classrooms	7,878
Related Spaces*	2,282	Related Spaces*	2,282
TOTAL	9,041		10,160

^{*}See SUA Report.

HONOLULU POLICE DEPARTMENT PROPOSED TRAINING PROGRAM TRAINEES PER YEAR

TRAINCES TER TEAR	Trainees	Per Course F	Per Year
	1975	1985	1995
1. Basic Recruit Course	227	136	158
2. Special Recruit A (20% of total recruits)		36	47
3. Special Recruit B (up to 1/3 of total recruits)		45	78
Total Recruits	227	217	283
4. Police Cadet	35	45	55
5. Recruit Refresher (Total recruits less 10% attrition)	204	163	212
6. Patrol Refresher (All ranks below sergeant, excl. recruits, + 10%)	1309	1696	2167
7. Police Supervision A (New sergeants +25%)	45	40	52
8. Police Supervision B (Sgts & lieutenants less new sgts. +10%)	301	405	517
9. Investigators' Training A (New detectives +25%)	36	32	41
10. Investigators' Training B (Detectives less new detectives +10%)	167	230	294
11. Police Management A (New captains and above)	3	4	5
12. Police Management B (Captains and above +25%)	54	71	90
13. Field Trainers A (New field trainers)	9	12	15
14. Field Trainers B (Equal to no. of recruits in trng. at one time +10%)	61	50	65
15. Trainers' Course A (New trainers +50%)	15	21	30
16. Trainers' Course B (Police trainers +20%)	84	74	96
TOTAL TRAINEES PER YEAR	2550	3024	3875

HONOLULU POLICE DEPARTMENT PROPOSED TRAINING PROGRAM

		HOURS	TRAIN	EES	TYPE OF	CLASSES	PER COURS	E PER YEAR*
	COURSE	PER CLASS	PER SE	SSION	CLASSROOM	1975	1985	1995
1.	Basic Recruit	410	3.5	5	Lecture	6.5	3.9	4.5
2.	Special Recruit A	480	33	5	u .		1.0	1.3
3.	Special Recruit B	300	33	5	, m		1.3	2.2
	Total Recruit Classes					6.5	6.2	8.0
4.	Police Cadet	120	3.	5	Lecture	1.0	1.3	1.6
5.	Recruit Refresher	80	30)	II .	6.8	5.4	7.0
6.	Patrol Refresher	52	3	0	u s	43.6	56.5	72.2
7.	Police Supervision A	120	13	5 , , ,	Seminar	3.0	2.7	3.5
8.	Police Supervision B	40	1.	5	II.	20.0	27.0	34.4
9.	Investigators Training A	120	1.	5	n	2.4	2.1	2.7
10.	Investigators Training B	40	1.	5	II .	11.1	15.3	19.6
11.	Police Management A	80	1:		Seminar	1.0	1.0	1.0
12.	Police Management B	40	1:	5	11	3.6	4.7	6.0
13.	Field Trainers A	80	1.	5	II .	1.0	1.0	1.0
14.	Field Trainers B	40	1.	5	n	4.0	3.3	4.3
15.	Trainers Course A	120	1.	5	11	1.0	1.4	2.0
16.	Trainers Course B	40	1.	5	II	5.6	5.0	6.4

^{*}See SUA Report for calculation formulas.

HONOLULU POLICE DEPARTMENT PROPOSED TRAINING PROGRAM

		TYPE OF	CLASSRC	CLASSROOMS REQUIRED*	
	COURSE	CLASSROOM	1975	1985	1995
-	Basic Recruit Special Recruit A	Lecture	1.58	1.34	1.55
3.	Special Recruit B Total Recruit Classes	Lecture	1.58	$\frac{.33}{2.07}$	$\frac{.55}{2.62}$
	Police Cadet	Lecture	.07	.13	.16
	Recruit Refresher Patrol Refresher	n	.32 1.34	.36 2.47	.47 3.16
7.	Police Supervision A	Seminar	.21	.27	.35
	Police Supervision B	п	.47	.91	1.15
9.	Investigators Training A	II .	.17	.21	.27
10.	Investigators Training B	n .	.26	.51	.66
	Police Management A	uí .	.05	.07	.07
	Police Management B		.09	.16	.20
	Field Trainers A	i II	.05	.07	.07
	Field Trainers B	U .	.10	.11	. 15
15.	Trainers Course A		.07	.14	.20
16.	Trainers Course B	"	.13	.17	.21
17.	Special & Technical	Lecture	.12	.24	.31
		Seminar	21		47
	TOTAL SEMINAR ROOMS		1.81	2.98	3.80
	TOTAL LECTURE ROOMS		3.43	5.27	6.72

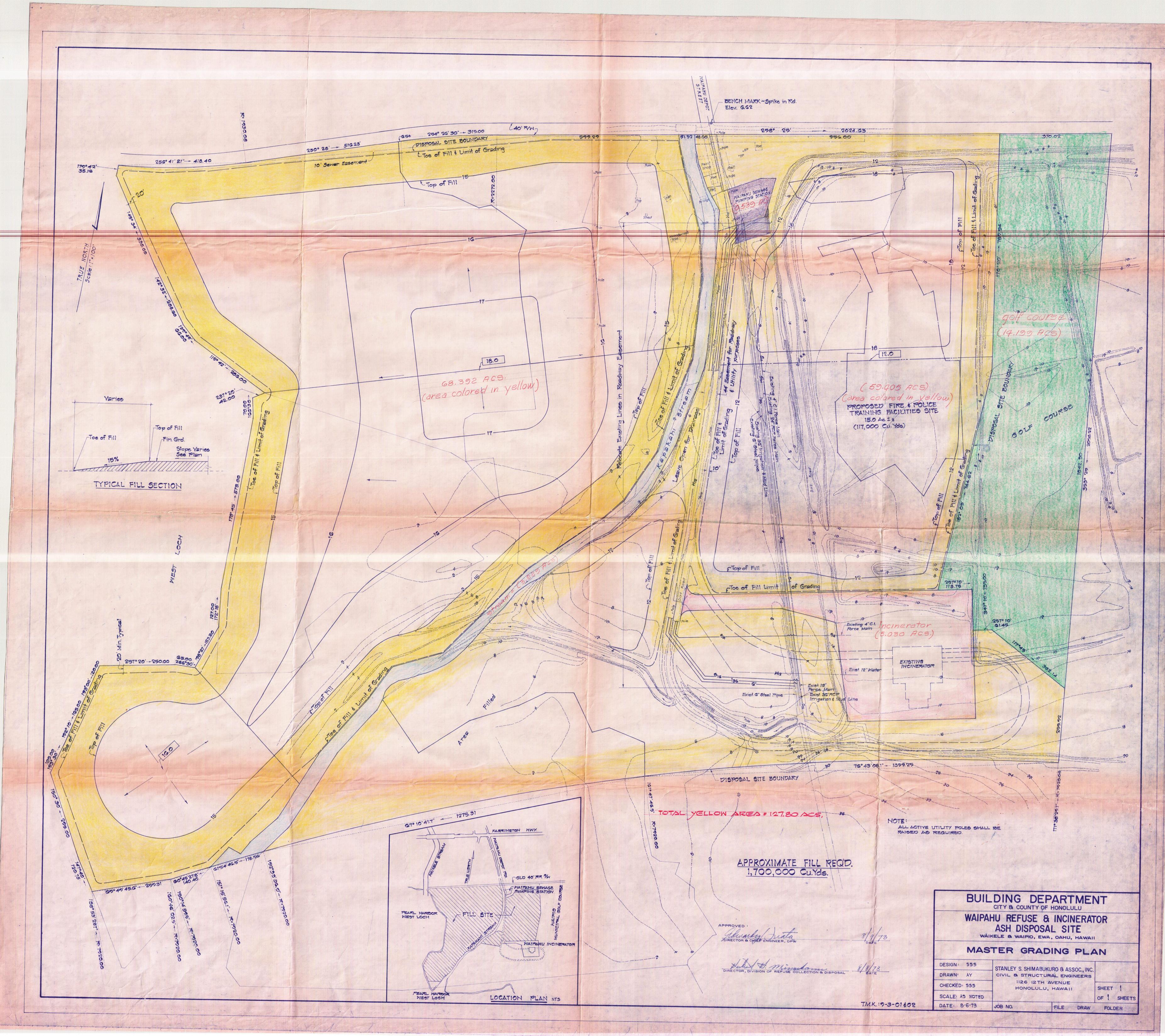
^{*}See SUA Report for calculation formulas.

FIRE AND POLICE TRAINING FACILITY CENTRAL BUILDING AREAS

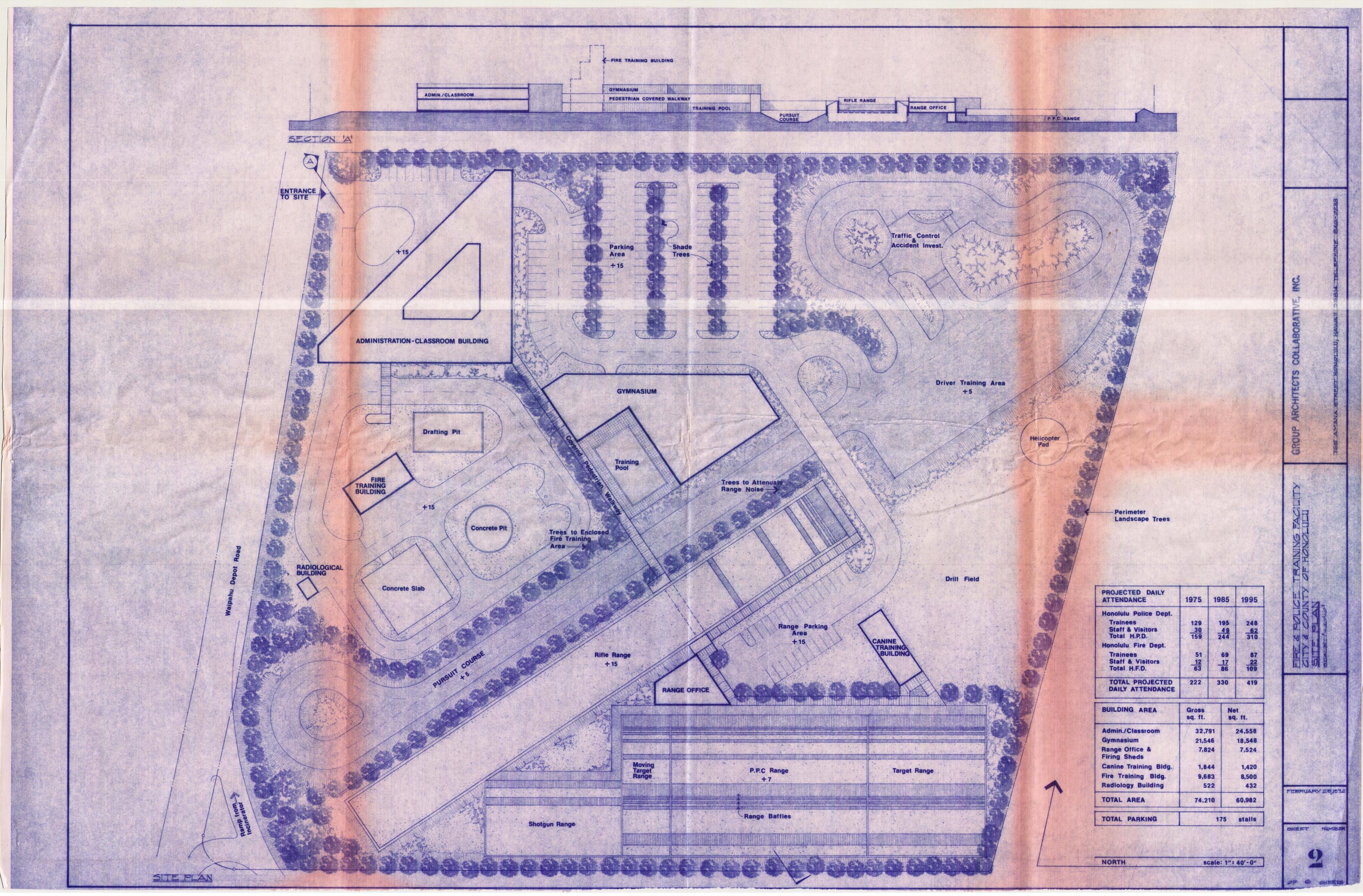
		NE ⁻ 198	T REQUIRE 5	D AREA 1995	
Police Department: Administrative & Training Offic Classroom Area	ce	3,6 9,0		4,017 10,160	
Fire Department: Administrative & Training Office Classroom Area (one seminar ro		1,4	30 90	1,665	
Total Administrative & Training Total Classroom Area	Offices	5,1 9,4		5,682 10,550	
Media Center Cafeteria Building and Grounds		4,5 4,4 2,6	30	4,549 5,342 2,616	
Gymnasium Training Pool		10,0 7,3		10,028 7,344	
TOTAL CENTRAL BUILDING AREA 43,520 46,111					
NET AR	EA	%NET		S AREA	
1985	1995	TO GROSS	1985	1995	
Second Floor: Admin. & Train.] Classroom Area] 13,024 Media Center]	1995	TO GROSS	1985	20,530	
Second Floor: Admin. & Train.] Classroom Area] 13,024					
Second Floor: Admin. & Train.] Classroom Area] 13,024 Media Center] First Floor: Classrooms] Cafeteria] 13,024	14,370	70%	18,606	20,530	
Second Floor: Admin. & Train.] Classroom Area] 13,024 Media Center] First Floor: Classrooms] Cafeteria] 13,024 Bldg. & Grds.] Gymnasium] 17,272	14,370 14,370 17,372	70% 70%	18,606	20,530	
Second Floor: Admin. & Train.] Classroom Area] 13,024 Media Center] First Floor: Classrooms] Cafeteria] 13,024 Bldg. & Grds.] Gymnasium] Train. Pool] 17,372	14,370 14,370 17,372	70% 70% 90%	18,606	20,530 20,530	

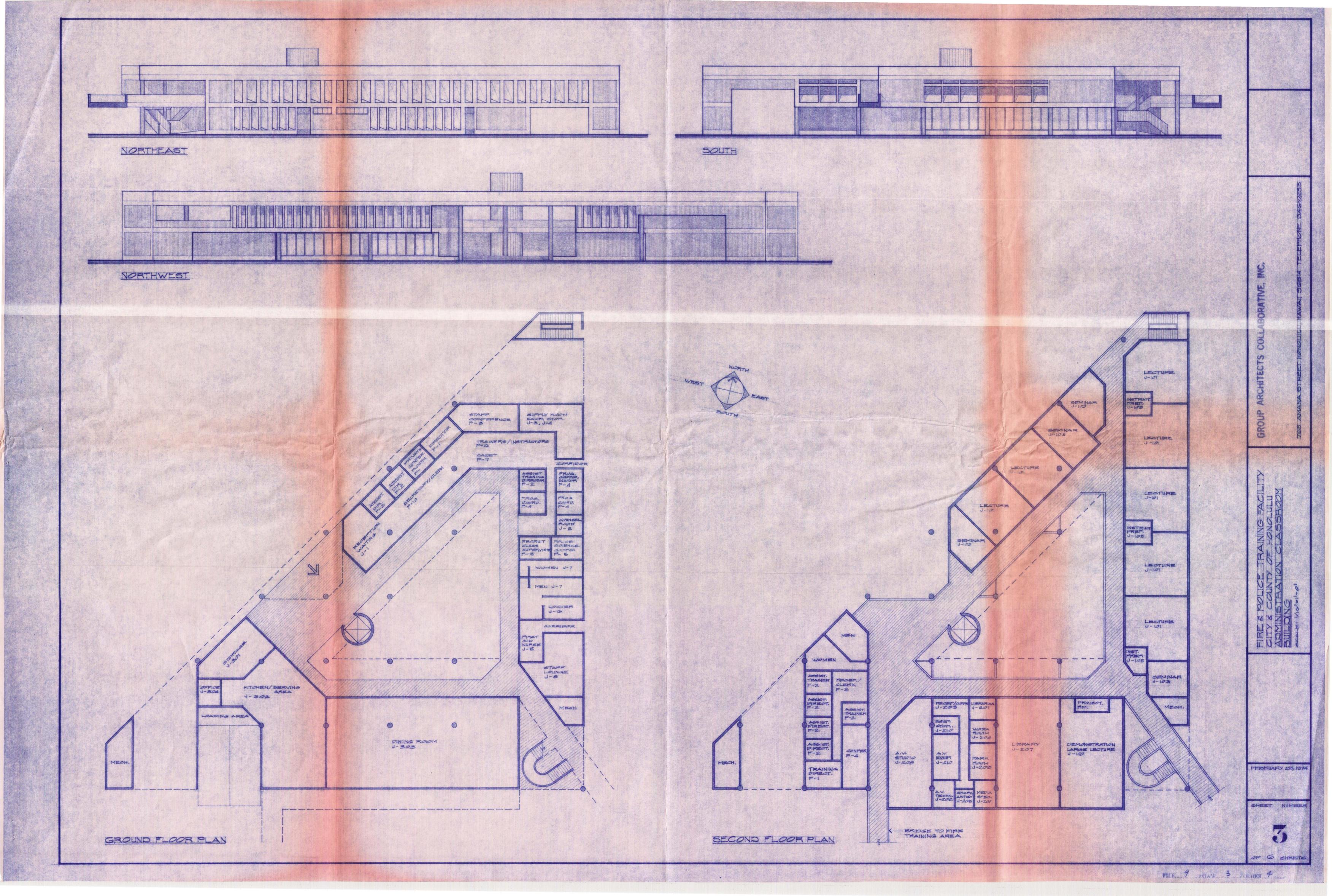
FIRE AND POLICE TRAINING FACILITY OUTDOOR AREAS & ANCILLARY STRUCTURES

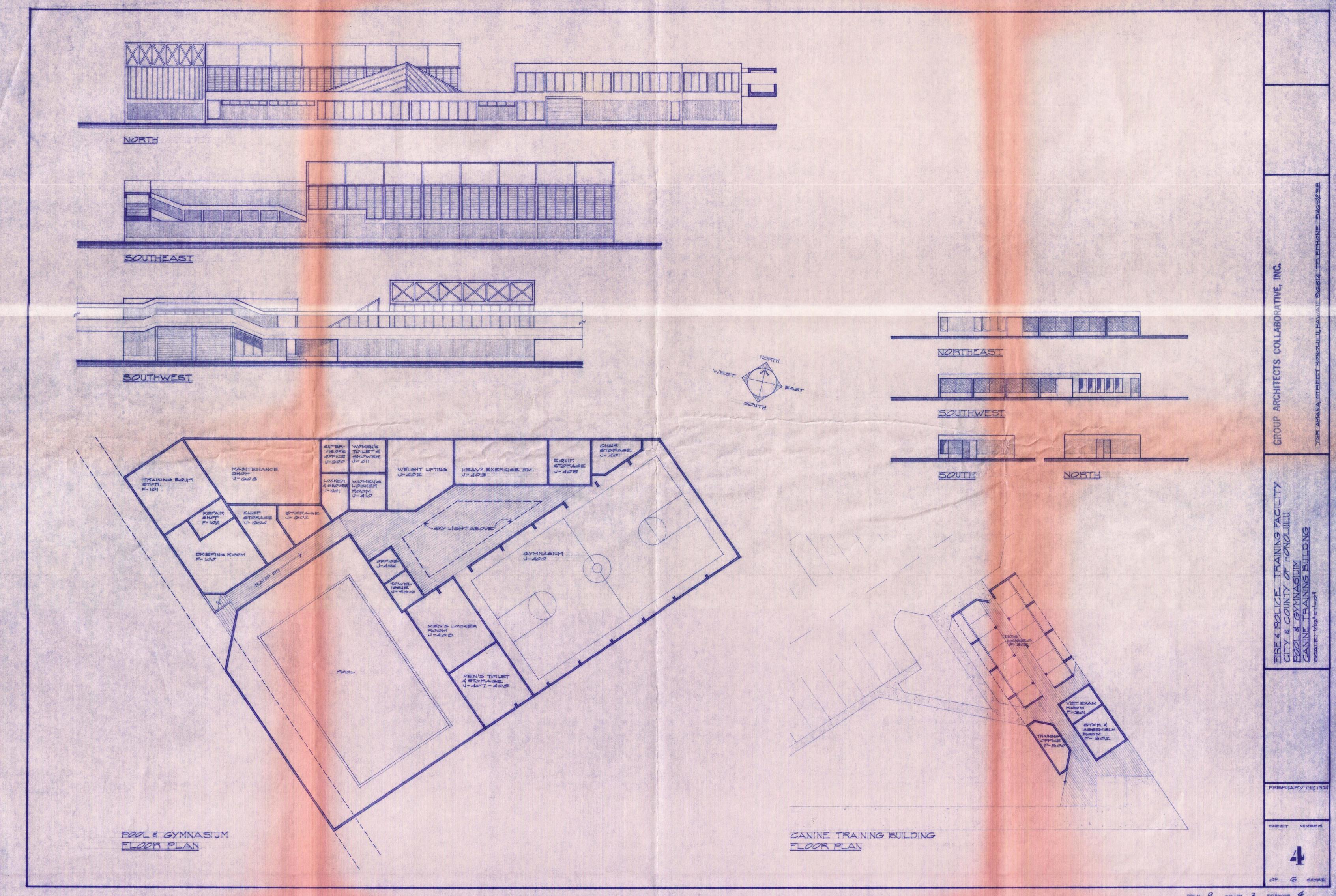
POLICE DEPARTMENT		GROSS AREA	ACRES
Outdoor Training Areas: Firearms Training (Firing Driver Training (Skid Pad Helicopter Training Area Canine Training Area	120,000 35,700 81,900 34,328	1	
Total		271,928	6.2
FIRE DEPARTMENT Training Structures:	20 20	4.000	
Training Tower	20 x 20 35 x 50	4,900	
Fire Building Rescue Building	30 x 30	8,500 6,400	
Radiological Building	15 × 20	4,550	
Multi-purpose Building Total	30 × 30	3,860 28,210	
Training Pits and Slabs:			
Circular Pit (Aircraft)	50' diameter		
Rectangular Pit	20×40		
"L" shaped Pit	$20 \times 10 \times 5$		
Concrete Slab	70 × 70		
Rectangular Slab Rectangular Slab	20 x 50 10 x 20		
Pumper Test Pit	44 x 75 x 8		
Total		60,800	
Open Training Area		30,000	
Driver Training Roadway		103,000	
Total		222,010	5.1
Parking Area (170 stalls @ 3	55,250	1.3	
TOTAL OUTDOOR AREAS &	2. 549, 188	12.6	



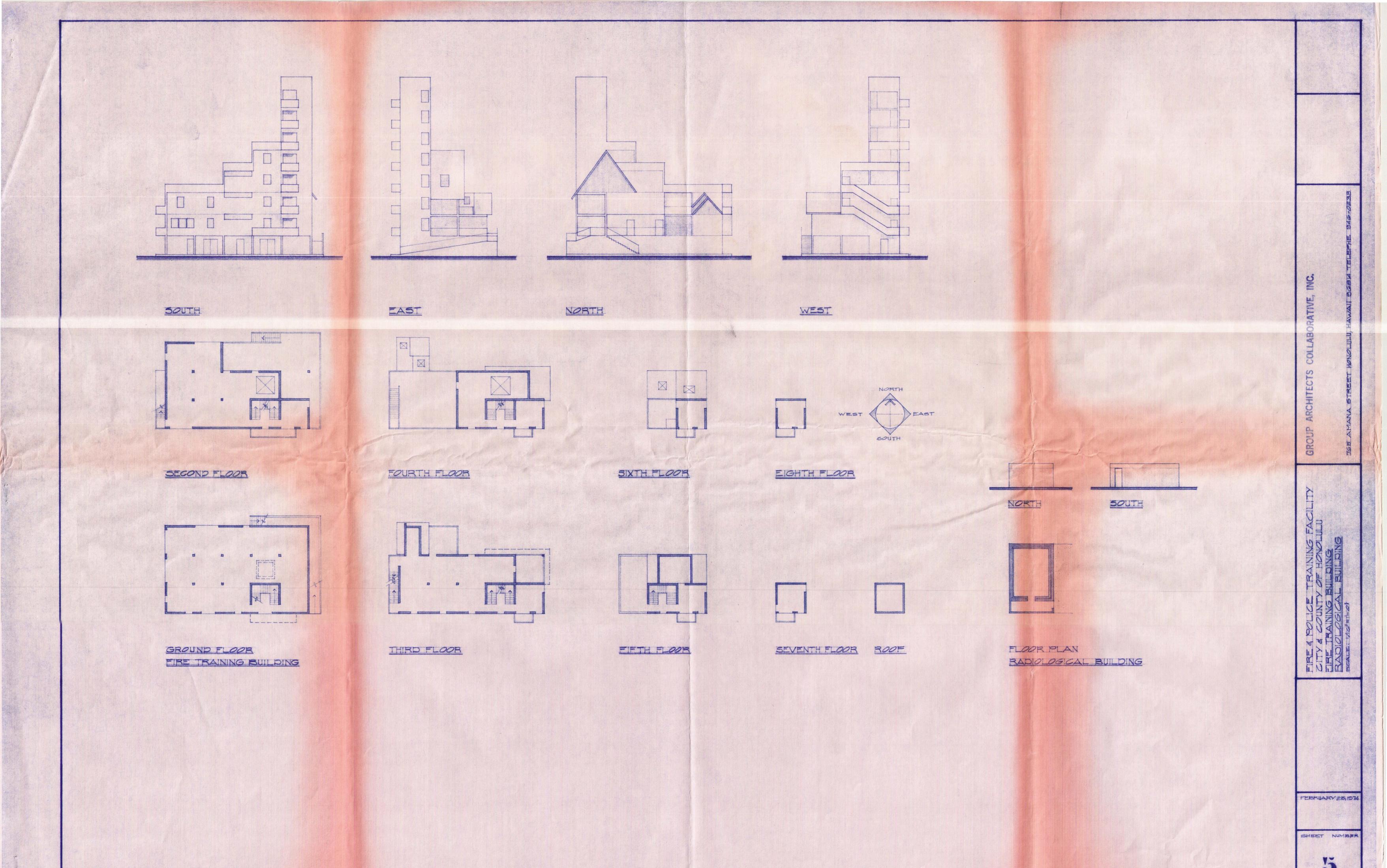








FILE 9 DRAW 3 FORDER 4



FILE 9 DRAW 3 FOTDER 4

