808

HAWAII DEEP WATER CABLE PROGRAM

PHASE II-B

ENVIRONMENTAL REVIEW PLAN

Department of Planning and Economic Development

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Prepared by

Parsons Hawaii

for

Hawaiian Electric Company

and the

State of Hawaii

Department of Planning and Economic Development

JANUARY 1986

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SECTION 1

INTRODUCTION

The subject of this plan is the content of an environmental assessment for the interisland submarine electrical transmission cable system which may be developed following the successful completion of the HDWC Program. The HDWC Program is assessing the feasibility of developing an electrical transmission cable system between the islands of Hawaii and Oahu. The State of Hawaii has abundant potential alternative energy resources. Some, such as biomass, wind and solar, are already being exploited for energy production. In terms of the potential magnitude of the resource and the applicability of existing technology, the most promising near-term, baseload alternative energy resource in the State is geothermal. The potential for development of this resource is greatest on the Island of Hawaii, however, nearly 80 percent of the State's demand for electricity is on Oahu. It is estimated that the resource could supply at least half (approximately 500 MW) of Oahu's present electricity requirements. At present, it appears that the most feasible method of transporting geothermal electrical power to Oahu is by submarine, high-voltage, direct-current (HVDC) cables.

1.1 PROGRAM DESCRIPTION

The HDWC Program will provide proof-of-concept data and at-sea experience for the submarine cable design and cable laying equipment and operations that will be directly transferable to commercial development. For the purpose of producing an environmental assessment, commercial development is assumed to include implementation in terms of a defined baseline commercial cable system along a most likely route. The system is a HVDC, bipolar, multiple cable system capable of transporting 500 MW of baseload electrical power from the island of Hawaii (Big Island) to Oahu. The physical components of the subsystems of the baseline commercial cable system are as follows:

(a) On-Shore Facilities Subsystem - Transmission lines will run from the geothermal energy generation plants to the submarine cable takeoff point. It is presently assumed that the power generation facilities would be located in the Puna District of the Big Island, and the overhead lines would traverse the saddle between Mauna Loa and Mauna Kea and terminate in the vicinity of Mahukona. Rectifier facilities to convert ac current to dc current will be located either: (1) adjacent to the geothermal power generation plants, (2) at a common overhead transmission line starting point (assuming multiple power generation plants), or (3) at the terminus of the overhead transmission system on the Big Island. Similarly, inverter facilities to convert dc current to ac current will be located at the shoreside terminus of the submarine cable subsystem or at some distance inland from the submarine cable terminus, but prior to distribution of power into the transmission/distribution grid.

Ancillary facilities will be located along the power transport route. Oil pumping/reservoir facilities may be required at intermediate points (e.g., Maui or Molokai) if a self-contained oil-filled (SCOF) cable is selected for the commercial cable system. Intermediate landing/takeoff point facilities may be needed to connect cable sections of different designs, in the event this is determined to be technically and economically desirable, or to tap off a portion of the power. Also, intermediate landing points may provide switching options to improve power delivery/power availability. Spare cable storage and cable repair equipment storage facilities are other possible ancillaries.

(b) Submarine Cable Subsystem - The submarine cable subsystem will extend from a Big Island takeoff site to an Oahu landing site. It will consist of two to four individual HVDC power transmission cables and possibly a metallic return cable. (One of the power transport cables may also be used as a metallic return cable.)

(c) Cable Vessel and Cable Handling Equipment Subsystems - These subsystems will be used in submarine cable deployment, repair and redeployment efforts.

The HDWC Program is a part of the State's strategy to attain two major energy objectives outlined in the Hawaii State Plan. These are to develop dependable, efficient, and economical Statewide energy systems capable of supporting the needs of the people, and to increase energy self-sufficiency for Hawaii.

1.2 REVIEW PLAN PURPOSE AND STRUCTURE

This Environmental Review Plan discusses the proposed commercial cable program and its alternatives and options. It compiles and updates pertinent information; identifies the related environmental issues and required permits; and outlines the contents of an Environmental Assessment for a potential commercial cable development program. The Environmental Assessment will be necessary to ensure investor confidence that such a system is environmentally acceptable and to minimize delays in permitting at the implementation stage.

Information from other documents is utilized throughout this report, particularly the Environmental Analyses for Phase II-B of the HDWC Program (Krasnick and Chapman, 1984). Early integration of environmental concerns has helped to develop the data base needed for environmental assessment. A summary of work accomplished and work to be done is included in this review plan. For the Environmental Assessment much of the material in this review plan will be rearranged to suit the Environmental Impact Statement format, and will include maps, tables, and related illustrations.

SECTION 2

ALTERNATIVES

According to EIS rules, "alternatives requiring actions of a significantly different nature which would provide similar benefits with different environmental impacts" should be examined (Chapter 200, Hawaii Administrative Rules). Although discussion of alternatives is not required in an EA, the intent of this effort is to provide a basis for a future EIS and therefore our EA will discuss alternatives.

Three alternatives that address the goal of energy transmission between islands will be discussed in this Environmental Assessment (EA). The first is to implement the commercial cable system between the islands of Hawaii and Oahu. This is the "proposed action". The second alternative will consider the relative benefits and impacts of "energy bridging" using transportable products (hydrogen, ammonia, methanol) produced from renewable energy resources. The third alternative is to continue with existing methods. This is refered to as the "no action" alternative.

2.1 ALTERNATIVE 1 - "PROPOSED ACTION"

As described in the introduction, a commercial cable system transmitting energy derived from the geothermal resource could supply fifty percent of Oahu's demand for electricity. The technical and economical feasibility of the system will be firmly established at the completion of the HDWC Program. The system is projected to be "on-line" by 1993, and a detailed scenario will be available when the HDWC Program is complete. However, there has been considerable work on a number of route options. Derivation of these options proceeded through a three-step process. First, from the preliminary cable, cable vessel and cable handling equipment subsystems design concepts, the generic characteristics of potential routes which could influence any subsystem design decision were identified. Second, literature reviews and field surveys of the important route parameters were conducted, and all potential route alternatives identified. Third, route specific information was integrated with the subsystems design requirements to provide an objective basis for definition of three baseline route options. One of these options ("No. 2") was then selected as the "preferred option". Work completed in Phase II-B further refined this into the preferred route shown in Figure 1.

Phase II-C work will further define and quantify the identified submarine hazards, as well as evaluate potential terrestrial route segments. As additional route-related information is generated, it will be provided to each subsystem planning and design organization for evaluation of the impacts on each subsystem. Similarly, as subsystems planning and design progresses, new information will be evaluated for route selection implications. The environmental impact statement will evaluate a selected or preferred route after these studies are completed.

THE PREFERRED CABLE ROUTE - Following is a description of the segments comprising the preferred route. The route is graphically depicted in Figure 1.

Segment Number	Segment Description	Segment Type
1H	Puna, East Hawaii to Keaau, East Hawaii	Overland
2H	Keaau to Kawaihae, West Hawaii	Overland
3H	Kawaihae to Mahukona, Northwest Hawaii	Overland
4H	Mahukona to Alenuihaha Channel	Submarine
1A	Alenuihaha Channel width	Submarine
1M	Alenuihaha to Huakini Bay, South Maui	Submarine
2M	Huakini Bay to Ahihi Bay, West Maui	Overland
3M	Ahihi Bay to Waimanalo, East Oahu	Submarine
1O	Waimanalo to Aniani, East Oahu	Overland

The route begins in Hawaii's Puna District where the electricity (ac) is generated from the geothermal resource. Transmission lines from the geothermal plants would traverse north to a point near Keaau and then head northwest to a

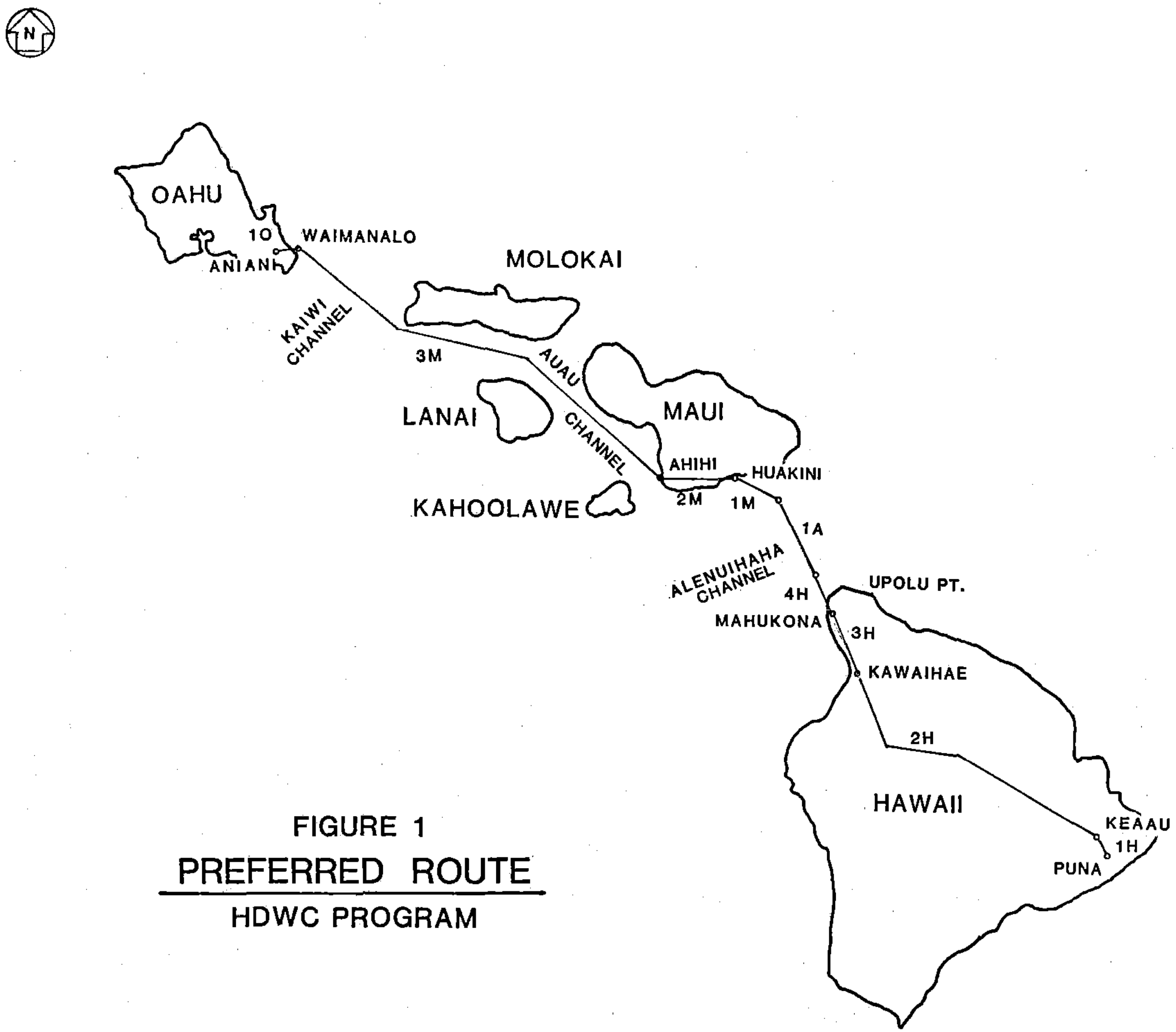

FIGURE 1

PREFERRED ROUTE

HDWC PROGRAM

rectifier station at Kaumana where the alternating current would be transformed into direct current. The dc transmission lines would then follow an existing corridor across the middle of the island. This corridor leads to the Keamuku substation at the top of the North Kona District. The overhead lines would follow a major road north to a point just below Waimea, then turn to the west and follow another major road to the coast at Kawaihae Bay. The lines would travel up the coast, on the inland side of road, from Kawaihae to Mahukona. Just above Mahukona Harbor is Makaohule Point which is the proposed take-off site for the submarine cable. A shoreside facility would be required for transition from overhead lines to submarine cables.

The cables would be embedded across the shoreline and out to water depths of at least 100 feet. The cables would be laid perpendicular to the bottom contours to a depth of about 490 feet and then proceed northward along a terrace towards Upolu Point. They would then proceed northwesterly across the Alenuihaha Channel. The saddle portion of the channel would direct the cable in a relatively straight path toward Maui's southern coast, where the cable would come ashore. Huakini Bay is the preferred landing site and there the cable would again connect to overhead transmission lines. The lines would traverse the southern coast of east Maui to Ahihi Bay.

The longest submarine route segment would begin there. The cables would follow an underwater path to the northwest between Maui, Kahoolawe and Lanai, pass to the south of Molokai, cross the Kaiwi Channel and land on Oahu's eastern shore. The landing point would be near Waimanalo Beach. Offshore there is a natural break in the reef fronting that coast. In Waimanalo the cables would again connect to overhead transmission lines which would extend three miles inland to the Aniani inverter site where the dc power would be converted back to ac power for distribution in Oahu's electrical grid system.

2.2 ALTERNATIVE 2 - "ENERGY BRIDGING"

An alternative that could fulfill the goal of using Big Island resources to help meet Oahu's energy needs involves the production of an intermediate, transportable, versatile product, such as hydrogen. As described in the 1984 International Symposium on Hydrogen Produced from Renewable Energy, held in Hawaii, "Hydrogen could provide an 'energy bridge' alternative to link the Big Island's potentially vast geothermal and wind resources to the energy use center, Oahu, by itself or in hydrogen-produced ammonia or methanol." Hydrogen produced by electrolysis is compatible with geothermal electricity because it could make use of both the electrical and thermal components of geothermal energy. It would be possible to transfer the product by barge between islands and through pipelines overland.

There are, of course, uncertainties affecting hydrogen's potential as the fuel of the future and, although it is being produced commercially, it is currently expensive and uses are limited. Methanol and ammonia production may have even nearer-term commercial prospects for Hawaii. OTEC produced power, for example, could be used to produce methanol from coal in a floating plant.

2.3 ALTERNATIVE 3 - "NO ACTION"

If a system is not developed to transmit energy between Hawaii and Oahu, the adverse environmental impacts specific to that proposed action will be avoided. However, beneficial impacts would not occur either. Consequences may be as follows:

o The geothermal development program would become less significant in the statewide energy plans as the scale of production is reduced to meet only Big Island energy needs.

o Because no other large-scale alternative energy sources are accessible for use in the near-term, Hawaii would have to continue current methods of electrical generation using fossil fuel.

o The efforts to reach the State Energy Plan objectives relating to energy self-sufficiency would be greatly hindered.

o Existing rates for imported fuel and cost to the consumer would continue to be uncontrollable.

o Another oil embargo could cripple Hawaii business and the State's economy at any time. In the area of producing energy, burning larger amounts of coal may be the only alternative at this time for Hawaii to reduce amounts of imported oil.

o Money that could be used in the State to stimulate economic growth would continue to go out of the State to purchase oil.

SECTION 3

SCOPING PROCESS

Scoping meetings began with the first phase of the HDWC Program. A narrated, 35 mm slide program was prepared and presented to private and public sector groups and agencies. The Phase I Executive Summary was also widely distributed. During Phase II-A of the HDWC Program, federal, state and county agencies were contacted regarding their environmental concerns about the program, permitting requirements, environmentally sensitive areas, endangered and threatened species, and other environmental and regulatory considerations. While no major environmental concerns were expressed about the HDWC Program in the formal agency briefings, a number of concerns were expressed relative to a potential commercial cable system. These potential impacts are discussed in this report.

A large number of subconsultants have been a part of the HDWC Program. Experts in various fields of research have contributed to the multi-phased program. Therefore, 'expert opinion' has also been an important method of information gathering. In the future, with the advent of actual commercial cable development, public scoping meetings will be held with federal, state, and local guidance. This will include informational meetings and the required public hearings.

SECTION 4

ENVIRONMENTAL ISSUES

One of the main purposes of this report is to identify environmental impacts that may result with an operating interisland electrical cable system. The term "environment" is used to include both the human and natural environment. Impacts can be addressed in terms of creating positive or negative effects. They can be considered to be significant or not significant. Impacts can be short-term, long-term, direct, indirect, and/or cumulative.

Clearly, the presence and significance of many of the impacts are highly dependent on the route selected for commercial cable deployment. Therefore, route-specific environmental constraints will be further evaluated and integrated within the Environmental Assessment. The following environmental issues are discussed in general terms. Only initial evaluation of the significance of the potential impacts has taken place. Probable mitigation measures are identified for some impacts. Environmental effects on both the marine (ocean) and terrestrial (land) environment are described under each topic.

4.1 SOIL EROSION

The environmental impacts of soil erosion in the marine environment include turbidity and sedimentation in down-slope aquatic habitats. Turbidity will be caused by trenching in the marine environment, but this will be localized and transient. Subsequent impacts in aquatic habitats may include reduced oxygen concentrations and light penetration, burial or gill abrasion of aquatic organisms. Negative impacts on fisheries, water bird habitats, recreational and aesthetic resources if the cable route cannot avoid these special areas.

In the terrestrial environment soil erosion is a route-specific impact which is readily mitigable with adequate planning, appropriate scheduling of clearing, grading and grubbing, and replanting. Most of the potential impacts of the commercial cable program would occur during construction of overhead transmission lines or on-shore terminals. Impacts of overhead transmission line construction in forested areas can be minimized by transporting poles, equipment and personnel by helicopter if road access is inadequate.

4.2 UNIQUE OR NATIVE ECOSYSTEMS

In the marine environment, some amount of nearshore habitat will be disrupted by trenching and backfilling. Soft bottom environments will rapidly return to pre-disturbed conditions. Rock bottoms may be enhanced as benthic habitats by the additional small-scale relief associated with backfilling. The most negative impacts would result from trenching through viable coral communities, although recolonization could be expected in subsequent years. Careful route selection will help to avoid this potential impact. Marine Life Conservation Districts will also be avoided.

Species of endangered plants along candidate commercial routes have been listed by the United States Fish and Wildlife Service (FWS). Prior to final route selection, a survey of flora and fauna along terrestrial route segments will be necessary. Potential impacts to the plants listed will be evaluated and mitigative measures taken where necessary. If clearing of rights-of-way through virgin forest has to take place rather than utilizing existing rights-of-way, there is the potential to alter microclimates by changing small-scale wind patterns, rainfall and sunshine. Natural Reserve Areas, such as the Kipahulu Forest Reserve, will be avoided.

4.3 WILDLIFE

Endangered and threatened species of wildlife in both the marine and terrestrial environments along the potential cable routes have also been listed by the FWS. Again the necessary mitigative measures will be taken. Agency briefings indicated particular concern with impacts on humpback whales, fishery resources and precious corals.

4.4 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

It is relatively easy to avoid known archaeological and historical resources, and potential commercial cable routes can be checked against site catalogs at the State Department of Land and Natural Resources. However, before construction begins at any site, a survey by a qualified archaeologist will be required. Monitoring during construction may also be required.

4.5 LAND USE

The implementation of a commercial cable system is not expected to have a significant or negative impact on land use. A small number of acres will be needed for ancillary facilities. Nearshore cable segments will be buried in trenches to avoid conflicts with other users of these areas. The submarine cable corridor will be charted for mariners and fishermen. Some restrictions may have to be imposed on bottom trawling and anchoring within the corridor. Certain areas will not be considered for use for the cable program. These are called "exclusion areas" and include Natural Area Reserves, Protective

Subzones, National Parks, and Military Impact Areas. From a standpoint of damaging lands or removing them from other beneficial uses, construction of poles or towers and electrical transmission lines have little impact.

Land ownership is an important factor when a utility company must aquire rights-of-way for transmission lines. Generally, the impacts are greater where small parcels are held by numerous owners as opposed to situations where large parcels are held by few owners.

4.6 SOCIOECONOMICS

The economic and social impacts of the commercial cable could be quite significant. There will be temporary employment opportunities in cable deployment-related tasks and construction of on-shore facilities. There will be long-term employment opportunities associated with operation, maintenance and repair of the system. Additional jobs will be indirectly created through a multiplier effect. Creation of new jobs will increase income and excise tax revenues to the State. Development of the geothermal power resource could stimulate economic growth on the Big Island and throughout the State in general through the anticipated stabilization of electric rates to consumers.

4.7 FIELD EFFECTS

A major effort of the previously prepared environmental analyses was to compile a bibliography of dc electrical and magnetic field effects. (This bibliography and summary of electrical and magnetic field effects are in the Environmental Analyses document.) Briefly, along the submarine cable route, external electric and magnetic fields are expected to be extremely small and of minor consequence.

Electric fields near HV transmission lines are several kV/m and magnetic fields are less than one Gauss. These may be compared with ac fields near household appliances which are typically in the ranges of 10 to 250 V/m and 0.001 to 25 Gauss. Although it appears that the impact is not significant there exists a perceived notion of adverse impact to health and safety. This topic will receive close attention in the environmental assessment.

4.8 AIR QUALITY

Temporary reductions of air quality may accompany overhead transmission line installation and terminal construction. Long-term improvements in overall state ambient air quality may accompany substitution of geothermal plants for fossil fuel burning generation units.

4.9 WATER QUALITY

Impacts of the commercial system on water quality are not expected to be significant. Some temporary water quality degradation, in both the marine and terrestrial environment, could result from erosion due to right-of-way clearing, terminal construction, and nearshore trenching. Construction monitoring programs will be implemented to prevent serious or irreversible impacts.

If a SCOF cable is utilized, it is important to note that the dielectric oils used in SCOF cables are of very low viscosity, solubility and toxicity. Unlike other oils that have caused great damage in ocean spills, this oil is not sticky, dissolves easily and is not poisonous. The Environmental Assessment will have to thoroughly describe the actions to be taken in the event of a break in the cable and the potential impacts to the environment, nevertheless.

4.10 VISUAL QUALITY

A commercial cable system will have localized negative impacts on scenic values along terrestrial route segments. The magnitude of these impacts will depend upon final route selection, terminal facility location and the effectiveness of mitigation measures. Terminal facility location selection will consider visual impacts as well as other types of potential impacts such as incompatible land use, fire hazards, etc. Zoning regulations (Honolulu) specify mitigation of visual impacts through vegetative screening, which also provides a noise buffer. It is presently envisioned that the overhead transmission lines associated with the commercial cable will require poles or towers about 30.5 m (100 ft) in height. Poles are generally favored because their visual impact is significantly less than that of towers. Route selection and pole placement will determine the magnitude of the visual impact. Impacts may be minimized by using existing rights-of-way where possible, and avoiding road crossings and setting poles as far back from roadways as possible.

4.11 NOISE

Ambient noise levels will rise during nearshore blasting, overhead transmission line installation and terminal construction. This will be a short-term impact and is not expected to exceed levels acceptable for construction.

SECTION 5

PREPARATION OF ENVIRONMENTAL ASSESSMENT

The commercial cable system will require a detailed Environmental Assessment to aid in the preparation of a clear and concise Environmental Impact Statement (EIS). The Environmental Assessment must be thorough and include all the relevant issues to aid the EIS process. When it is determined early in the planning process that an EIS will be required for the proposed project, the EIS outline becomes a work program. An Environmental Review Plan is a useful tool for this sequence of work. This has been the case for the Hawaii Deep Water Cable Program and its preliminary commercial cable work.

The Environmental Assessment outline on the next page, (patterned after Federal and State regulations) will be expanded into a full EIS during the actual commercial cable program. Following this brief outline is a summary listing of activities already completed in preparation for the commercial cable EA, and another summary of plans to further assess environmental issues, including work in progress.

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Cover Sheet

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5.2 COMPLETED PREPARATORY ACTIONS

The proposed commercial cable system is being defined through the research and development efforts of the HDWC Program. Cable system construction, operation, maintenance and repair are all being investigated and equipment and techniques are being developed. Information derived from the program will also be used in the preparation of the required EIS. Within the HDWC Program, critical subsystems to be designed, fabricated and tested in the laboratory and at-sea are the cable (including all splices, terminations, and accessories), the cable handling equipment, and the cable vessel. Detailed supplementary efforts include environmental analyses, electric grid system integration studies, cable materials corrosion and abrasion testing, at-sea route surveys, cable system route analyses, development of a public information program and analysis of legal, institutional and financial factors affecting a commercial cable system in Hawaii. The final output of the HDWC Program will be a set of design criteria for a baseline commercial cable system in Hawaii.

At this point in the HDWC Program, all major system components and operations appear technically feasible. In future work, technical feasibility will be examined further and, as components are better defined, increasingly refined projections of system economics will be made. Economic viability will depend not only on hardware and construction costs, but on institutional arrangements for financing the system and methods of establishing rates to consumers for the bulk-transmitted power.

Specific accomplishments of the HDWC Program, to date, include:

Cable Design- A cable design has been selected from hundreds of candidates, and a segment is being built for electrical and mechanical testing in the laboratory. The design accommodates the severe constraints of great water depth and pressure, steep slopes and rough bottom areas inherent in linking the Hawaiian Islands.

Cable Handling Equipment- To safely deploy the cable in the deepest portion of the likely route requires equipment larger and stronger than ever before assembled for this purpose. Equipment systems and the means to integrate their control with that of the cable vessel have been investigated. It has been determined that existing types of cable laying equipment can be modified to suit the purposes of both the at-sea test program and the eventual commercial cable deployment, but an integrated control system will have to be designed and fabricated.

Cable Vessel- Because of the weight of the lead-shielded, double steel-armored cable and its large minimum bending radius, as well as the precise maneuverability required in the rough waters between the islands, none of the existing cable-laying vessels are adequate to deploy this cable. The optimum size and configuration of an appropriate vessel has been determined through computer modeling, and for the commercial program, a 400' by 100' barge can be outfitted with adequate propulsion, navigation, cable handling and control equipment to safely and efficiently deploy the selected cable. Plans are presently underway to develop a somewhat smaller system for use with a scaled-down cable in the at-sea tests which will culminate the HDWC Program.

Supplementary Efforts- Other accomplishments of the program have resulted from investigations of the potential effects of the environment on the cable and of the cable on the environment. These include both submarine and overland route surveys, tests of potential corrosion and abrasion of the cable, and environmental impact analyses. Additional program accomplishments include plans to link the cable system to the geothermal power source and the respective electrical grid systems on Hawaii and Oahu. Also being examined as part of the HDWC Program are the economic feasibility of the baseline commercial cable system and potential means to finance its implementation.

5.3 PLANS TO FURTHER ASSESS ENVIRONMENTAL ISSUES

Preparation of the Environmental Assessment will require information searches within several areas, in addition to the HDWC Program information. Any new decisions in the area of state energy development will need to be identified, as they could cause related or cumulative impacts on the commercial cable program. For example, if a decision was pending to greatly increase the amount of coal burned to generate power in Hawaii, the cable development (in association with geothermal power development) would become a more prominent issue. Or, if geothermal power development became hindered, commercial cable development would be affected. The 'value' of the program, therefore, is a dynamic issue. The Environmental Assessment will have to address the most current situation, in addition to describing the historic context, for proper evaluation of the overall impact of the potential commercial cable system.

There are several more specific issues that will require current information. For example, through advances in equipment miniaturization, terminal station sizes may decrease as much as 90 percent in the future (EDAW, 1975). This could significantly reduce the impacts of the shoreside facilities and converter stations. Preferred route-related tasks are as follows: a) a survey of plants and wildlife along the route, including marine segments; b) a check of the State Department of Land and Natural Resources' Historic Sites list; c) a survey by a qualified archaeologist contractual agreement with an archaeologist for historical/cultural artifacts; d) a plan to determine land aquisition actions; e) a plan to quantify socioeconomic impacts; f) further elaboration of field effects; g) further discussion of consequences and actions for a SCOF cable break, including a formal plan; h) visual impact surveys for overland transmission line placement; i) a real-time schedule for acquiring permits and project phasing; j) fully developed discussions on formally outlined topics, i.e. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; k) evaluation of environmental issues, to the point where it can be stated that: "this issue is significant", "this issue is not a major environmental concern", etc. All of these tasks will need to be performed for an environmental impact statement and thoroughly addressed in the Environmental Assessment.

There will be many impacts to society and the economy with the availability of a new electrical power source. There may be a fear of property value loss and a fear of health hazards created with the commercial cable program. These concerns must be addressed during corridor identification as well as during detailed alignment investigations. A review of county plan and zoning designations should be done during more refined alignment analyses. Access roads for the overland portions of the cable system may take significant amounts of land and cause impacts on certain areas. Use of public funds and lands requires justification. These issues need to be well defined or resolved during EIS preparation.

SECTION 6

REGULATIONS AND PERMITS

6.1 COUNTY

Basically, three groups of permits are required and are administered at the county level. The first group results from federal and state legislation relative to the coastal zone. Included are Special Management Area (SMA) use permits and shoreline setback variances. An SMA permit is required for any project which involves lands within the designated Special Management Area. The SMA includes coastal lands from the shoreline to at least 100 yards inland. SMA permits are required for projects having a total cost or fair market value exceeding $25,000 or which may significantly affect the coastal zone. If significant impacts are possible, before a permit will be issued, the applicant must identify mitigation measures and demonstrate that the project has significant public benefits. To analyze potential impacts, the counties use the state Environmental Impact Statement (EIS) format. This "SMA EIS" does not take the place of a State EIS if one is required for another (State) permit. However, the same document may be used to meet both needs. The State EIS must be processed by the first agency applied to for a permit. This could be, in Honolulu County, the Department of Land Utilization or, in Maui or Hawaii Counties, the Planning Departments, because the SMA permit is a prerequisite for most other permits. However, because several counties will be involved in any commercial cable program, the State Department of Land and Natural Resources would probably be a more appropriate lead agency for the State EIS. The SMA EIS differs from the State EIS in that distribution of copies is handled by the County department rather than the Office of Environmental Quality Control (OEQC), and appeals are directed to the County (City) Councils, not the Environmental Council.

The shoreline setback exists to protect access, view planes and recreational values immediately adjacent to the shore. It includes land from the highest wash of the waves and extends 40 feet (sometimes 20 feet) inland. All types of construction are prohibited within the shoreline setback, unless the applicant is granted a variance. Criteria for granting a variance include a significant public benefit resulting from the project or a significant applicant hardship if denied. A recent (within twelve months) land survey by a registered surveyor is required.

The second category of county permits arises from land use planning and zoning considerations. The zoning code for each island affected by the commercial cable program needs to be examined during the development of the on-shore facilities system. Public facilities may be permitted in certain zones and require a special permitting procedure in others. The size and type of facility will also determine what restrictions may apply. It is important to note that the new zoning code for the City and County of Honolulu, titled the Land Use Ordinance (LUO), will be in effect by early 1987. The proposed commercial cable, therefore, will need to comply with the LUO rather than Honolulu's current Comprehensive Zoning Code. Most likely, the facilities will require a Conditional Use Permit, without a public hearing, in all zones. Depending on the route selected, a waiver of the height limitations may additionally be required for the overhead line poles.

The Honolulu City Charter establishes the powers, purposes, and structure of city government and the Oahu General Plan establishes the basic objectives and policies of the city government. Implementation of the General Plan is achieved through Development Plans, which are relatively detailed guidelines for the physical development of the island of Oahu. Installation of a terminal complex will have to comply with the county Development Plans.

The Development Plans divide Oahu into segments according to the General Plan objectives for population growth and land use. Each Development Plan includes text material and two maps: a Land Use Map and a Public Facilities Map. The Land Use Map identifies existing land uses. The Public Facilities Map identifies future public facilities developments in each of the three categories: funds appropriated, funds proposed (two to six years in the future) and planned for future funding (seven years or more in the future). Alteration of the appropriate Public Facilities Map will be required prior to installation of an on-shore terminal for the commercial cable development. The process of amending a Development Plan requires a minimum of sixteen months. Smaller projects without significant land use impacts may be accepted for 'Independent Consideration' which has a processing period of approximately six months. Current initiatives before the City Council, if passed, may provide additional filing options.

The third class of county permits with relevance to implementation of a commercial cable program is concerned with design and construction of facilities. Included herein are building, grading and street usage permits.

6.2 STATE

The principal State involvement in permitting for the commercial cable program will be the Conservation District Use Permit (CDUP). All of the submarine portions of the commercial cable system will be on Conservation District lands. A portion of the overhead routes may also be on Conservation District lands.

Conservation Districts are designed to protect open space, recreation, aesthetic, historic and cultural values as well as critical wildlife habitat and watershed areas. Potential environmental impacts are thus a key factor in evaluation of a CDUP application by the Board of Land and Natural Resources. For the development of a commercial cable system, a State EIS will be required.

A second permit, for work in the shorewaters of the State, is administered by the Department of Transportation (DOT), Harbors Division. This permit applies to projects involving permanent or temporary construction in shorewaters. In recent years the shorewaters work permit application has been combined with the CDUP application. The DOT functions as a reviewing agency only, unless the BLNR approves a proposal over the objections of the DOT. In such a case, an applicant would be required to apply separately to the DOT for a shorewaters construction permit.

For the above permitting actions, analysis of environmental impacts is required. For projects using State or County lands or funds, land in the Conservation District, lands in the shoreline area and certain other types of actions, if a significant impact is possible, an EIS must be prepared. The accepting agency will be the first agency applied to for a permit. For the commercial cable program, the counties will probably be applied to first for SMA permits and shoreline setback variances. However, because the project will not be located entirely within one county and because significant portions of it will lie within state controlled submerged lands, the Department of Land and Natural Resources will likely function as the lead State agency as part of the CDUP application process.

In the event that both State and Federal EIS's are required, one document may be prepared to meet both needs. However, the "two" statements cannot be filed concurrently. The draft State EIS must be submitted to the OEQC at least thirty days before the draft Federal EIS is submitted. The final State EIS must be approved by the Governor (or Mayor in the case of an SMA EIS) at least thirty days before the final Federal EIS is filed with the President's Council on Environmental Quality.

A DOT permit is also required for new utility installations which are to cross or otherwise occupy the rights-of-way of State highways or for existing utility facilities which are to be retained, relocated or adjusted within these rights-of-way. Permit requirements apply to utility facilities which are privately, publicly, or cooperatively owned. Plans describing the location and nature of the proposed utility installation must be submitted to the DOT along with an application for "Permit to Perform Work Upon State Highway."

The final State requirement is the Coastal Zone Management (CZM) Consistency Certification. Although actually a Federal requirement, this program is administered at the State level by the Hawaii CZM of the Department of Planning and Economic Development. The purpose of this certification is to ensure that Federal actions which may significantly affect the coastal zone are consistent with Hawaii's approved CZM Program.

6.3 FEDERAL

Only one Federal permit, a Department of the Army Permit, issued by the Corps of Engineers (COE), will be required for the commercial cable program. The permit requirement applies to any project that involves construction of any type within the navigable waters of the United States, generally defined to include any waters subject to tidal influence. Actually, as noted above, many aquatic environments which could not be considered navigable in a strict sense are included within the COE's juridisdiction.

In the permit application, the applicant is required to provide a physical description of the project in sufficient detail so that its potential impact on the affected environment can be fully evaluated. Both a narrative description and engineering plans and drawings are required. The COE's evaluation goes considerably beyond the potential impact of the project on navigation, and includes a detailed environmental evaluation of impacts on wildlife, flood control, water quality, socioeconomics, historic values, and land use. In the case of actions with significant potential environmental effects, an Environmental Impact Statement may be required.

In judging the magnitude and scope of the potential impacts, the COE will consult with a number of Federal, State and County agencies including the National Marine Fisheries Service, the United States Fish and Wildlife Service, the United States Coast Guard, and others, as appropriate.

All State and County approvals, including CZM consistency certification, must be obtained before the COE will issue its permit. In all likelihood the COE will require a NEPA EIS (in accordance with the National Environmental Policy Act of 1969) for the commercial cable program. Again, the same document may be used for this EIS requirement.

SECTION 7

REFERENCES

EDAW, Inc. 1975. Study of Environmental Impact of Underground Electric Transmission Systems. Prep. for EPRI and the U.S. Energy Research and Development Administration.

Hawaii Administrative Rules, Title 11, Chapter 200. Environmental Impact Statement Rules.

Krasnick, G. and G.A. Chapman. March 1984. HDWC Program, Phase II-A, Task 1, Environmental Analyses. Report prepared for Hawaiian Electric Company, Inc. and the State of Hawaii Department of Planning and Economic Development.