

**DRAFT**

## **State Planning and Evaluation Guidelines for Submarine Fiber Optic Cables**

### **I. Introduction**

The Office of Planning has prepared this report to guide the planning of **undersea cables, including but not limited to** submarine fiber optic telecommunications cable (FOC), ~~and other undersea cables [make conforming changes throughout]~~ in a manner which assures protection of natural resources and the public's interest while providing for needed technological development and advancement. It is meant to assist developers by: 1) identifying the multi-layered government approval processes needed for submarine ~~cables~~FOC; 2) highlighting certain decision-making criteria for mitigating adverse impacts under these permit processes; and 3) citing options for consideration in meeting public benefit requirements resulting from public/private sector partnerships in developing submarine ~~cables~~FOC. It is premised upon the need to assure the protection of the public's interest and the fulfillment of the State's resources stewardship role.

**The Office of Planning was asked to address FOC in particular, and this report does so. However, its conclusions generally apply also to other types of undersea cables.**

This report first presents an overall statement of the problem regarding the demand for landing submarine FOC in Hawaii. This section describes the constraints and opportunities facing both the government and the private sector in addressing the cable landing process.

This report next sets forth a position statement that supports cable landings which is consistent with the public trust doctrine, in that specific concerns are met to include minimizing adverse impacts, maximizing public benefits, and assuring a sensitivity to community needs.

The report's concluding sections discuss public participation and ways to improve the overall project review and approval process. The appendices contain supplementary detailed information of use to those interested in the specifics of development permissions necessary for submarine ~~cable~~FOC landings.

### **II. Problems, Issues and Opportunities**

Hawaii serves as a hub for submarine telecommunications systems in the Pacific Rim Basin. Over the past 10 years, Hawaii has become a landing site for an increasing number of submarine telecommunication fiber optic purveyors wishing to develop local and global networks. Fiber optic networks, both terrestrial and submarine, provide the backbone for telecommunications, including **voice, data,** broadcasting services and the

Internet. And beyond their continental uses, they have become a lifeline for remote and isolated areas, including Hawaii, which lies over 3,000 miles from mainland networks.

~~The influx of proposed FOC projects is largely due in part to the technology~~ ~~ical~~ has essentially replaced coaxial cable technology, and plays a much larger role than satellite telecommunications, because ~~advancements in telecommunications whereby~~ fiber optics provides a higher transmission capacity, higher reliability for uninterrupted service and greater security and cost efficiency ~~than other types of telecommunications cables.~~

~~All over the continental United States,~~ For a few years ending in about the year 2000, many coastal states ~~have similarly~~ experienced a marked increase in the number ~~influx~~ of submarine FOC applications. Since 2000, nationally, the rate of applications for such applications has plummeted. Industry projections are that after at least a few years with very little new construction, the present FOC “glut” will be absorbed by gradually increasing demand, and some construction will again be necessary, although probably not again at the rate briefly experienced in the late 1998 - 2000.

**(Comment regarding national cable-laying trends: Data to support the changes suggested above can be found in comments submitted July 19, 2002 to NOAA by the North American Submarine Cable Association (“NASCA”), at pages 24 – 31 and Table 1 therein. A copy of those NASCA comments is attached. It is important for the Department and these guidelines to recognize that the rate of future cable laying is expected to be moderate, and not accelerating over time. No “influx” is likely anywhere, and particularly not in Hawaii from trans-Pacific cables, for reasons discussed below.)**

In response to the late-1990s spike in FOC applications, several coastal ~~states and~~ have explored or established new policies specific to such projects. For example, Oregon completed a rulemaking, and New Jersey and Florida have begun but not yet completed rulemakings. ~~measures to adequately deal with them.~~ In California, regulatory costs and permitting time requirements have risen to the point that cable owners predictably will land cables elsewhere. In the alternative, Florida’s ~~stated~~ policy goal ~~is are~~ to make Florida the fastest, cheapest, most FOC-friendly state, while balancing this appeal with protection of Florida’s environmental and natural resources.

## **Constraints on FOC Developments**

The existing terrestrial telecommunications network usually is a constraint on the selection of a FOC undersea route and landing point. Submarine cables must bring their traffic to that terrestrial network. Typically such cables connect first to a building known as a cable landing station, which in turn is connected through terrestrial FOC to the rest of the terrestrial network. Installing new terrestrial telecommunications “backbone” can be done, typically through some combination of trenching and horizontal directional

drilling, but may have some impacts on traffic and the natural environment, in addition to the direct expense to the developer. Thus feasibility of connecting terrestrially to major populations centers is one constraint on where a cable landing station can be located.

The terrestrial and submarine installation of FOC can have environmental impacts. Such impacts generally can be reduced to acceptable levels through appropriate route planning and installation procedures. Environmental values that may constrain FOC routing include the desire to avoid adversely impacting ~~A major constraint on the development of submarine FOC is the protection of valuable natural resource areas which limits the number of areas that FOC may land. In particular, the routing and landing of cables in marine and near shore areas has the potential to impact rare or endangered species or their habitats,~~ including coral reef communities, and to minimize ~~promote~~ soil erosion. ~~Further, the long-term impacts of submarine FOC are not yet apparent.~~

Landing sites in areas of major public use are considered a constraint ~~in that particularly during~~ the installation stage of the FOC ~~that~~ may briefly disrupt public uses of near shore areas. Specifically, trenching through a beach may preclude public access for a few days, or directional drill equipment may occupy a nearby parking lot for up to several weeks.

Areas of potential historical and archaeological significance in close proximity to cable landing sites are also considered a constraint. ~~Potential sites may have to be investigated, and known sites may have to be avoided.~~

Private industry is faced with a multi-layered, and in some areas duplicative, permitting/approval process that lacks specificity from which developers are better guided to narrow down appropriate sites for submarine FOC landings. Both private industry and government regulators are constrained by the lack of coordination among all parties and permits/approvals. ~~The FOC industry states that typically a particular commercial FOC project is very sensitive to delays, since a delayed project may quickly become technologically out-of-date and financially unsuccessful. For transoceanic cables, the current target time interval between contracting for the supply of a new cable system and activation of service on that cable is typically between 12 and 18 months. In deciding the location of landing points, the industry therefore gives great weight both to the estimated time necessary to complete permitting and to the degree of certainty of such time estimates.~~

## **Opportunities for FOC Developments**

Generally, FOCs assist in the State's objective of positioning Hawaii as the leader in providing information services in the Pacific. FOC landings continue development and expansion of Hawaii's telecommunications infrastructure and will help to accommodate future growth in the information industry. FOCs support the State's goals for achieving telecommunications systems necessary for statewide social,

economic and physical services for Hawaii by promoting efficient management of existing and proposed facilities, and by promoting installation of new telecommunications cables.

Hawaii historically has been an important mid-Pacific hub for telecommunications cables. However, high-speed multi-wavelength digital fiber optic technology already in use in the Pacific today allows direct long-haul cable connections between Asia and North or Central America. Thus, Hawaii is not a required stopping-off point for trans-Pacific cables, as it was with older cables employing digital and analog technologies. The most recent example of this was Tyco's installation of a new FOC network directly linking Japan with the US west coast, bypassing Hawaii. However, some new intercontinental cables presumably will be landed in Hawaii, to serve needs of Hawaii and/or to allow connection with older cables already landed on Hawaii. ~~Hawaii is a prime location for submarine FOC landings. At this point in submarine FOC technology, it is ideal for the cables to have a mid station for trans-Pacific routes. This vantage provides leverage for Hawaii in relation to prospective submarine FOC developers in bargaining for the most appropriate routing that is beneficial to the public interest and environmental concerns.~~

The development of telecommunications is said to bring greater employment opportunities realized in connection with the cable laying procedure, maintenance and operation activities; tax revenue for the State from the cable vendor, and increased public and private telecommunications usage.

Currently, little or no fees are obtained for the use of State lands. ~~The practice of other U.S. coastal states varies widely. Four charge no fee, seven charge a one-time fee, and four charge annual fees. Such fees, which have been set up in states such as Oregon and Florida, could support marine conservation programs. In considering what fees to charge, the State needs to consider legal limitations that may be imposed by the federal Telecommunications Act of 1996. The State also should consider the degree to which cable companies will have the option not to land in the State. The State could examine the level of revenue cable companies are making and obtain fees in return for what the State is providing them.~~

Since the landing of FOCs requires the use of State lands, the State could use the provisions of Chapter 171, Hawaii Revised Statutes (HRS), to set aside and commit more lands for this purpose. First, lands could be transferred to the State's land management agency, the DLNR Division of Land Management under an Executive Order after review as required by Chapter 343, HRS. Once the Executive Order is approved, the agency could enter into leases; provide easements; and issue licenses, revocable permits, concessions or rights of entry as long as such uses are consistent with the purpose for which the lands were set aside. The State may also decide at some later date that funds for such leases, licenses, or permits should be deposited into the Land Management Special fund to protect marine resources. Prior approval by the Governor and the State Legislature would also be required for the leasing of submerged lands.

## State Roles and Responsibilities

While submarine FOC development could help meet much of the demand for telecommunications advancement in the State, the public's interest must always be served in the process. Given the possible conflict between private submarine FOC projects designed to fulfill an acknowledged technological need and the nature and extent of their potential negative impacts on the environment, these projects need to be assessed within the context of a public policy framework.

Such a framework reflects the public interest primarily through the exercise of the State's statutory responsibilities for statewide and regional planning and for land and water-use regulation. In exercising its planning, regulatory, and management responsibilities in this regard, the State must consider and balance several functions which it performs in the public interest. These are:

- ?? the public trust function – insuring that ocean and coastal resources and the ecosystems of which they are a part are protected for both current and future generations;
- ?? the conflict resolution/allocation function – resolving ocean and coastal conflicts and allocating scarce resources and valuable ocean space in a fair and equitable manner;
- ?? the proprietary function – maximizing monetary returns resulting from the exploitation of the State's submerged lands, coastal fast lands, and ocean and coastal resources; and
- ?? the promotional function – encouraging ocean and coastal industries to develop job and revenue generating businesses that will benefit the State.

Uncontrolled development of submarine FOC could undermine the State's ability to fulfill its stewardship obligation over public lands and ocean and coastal resources. If properly planned and managed, on the other hand, development of submarine FOC could also provide an opportunity for the State to better serve its resource stewardship responsibilities.

## Problem Statement Conclusions

In summary, the following conclusions can be drawn:

- ?? ~~Additional proposals for~~ ~~There is an influx of proposed~~ submarine FOC landings can be expected; one inter-Island project has been proposed, and at least a few years from now, additional landings by some trans-Pacific cables may be proposed statewide. **(Comment: Our comments above regarding environmental issues explain our suggestion that**

**this bullet be amended as shown here, and the fifth bullet be deleted.)**

- ?? Development of submarine FOC can bring many benefits to the State such as jobs, improved telecommunications systems and fees for the use of State lands.
- ?? Submarine FOC landings have the potential to impact natural, historic and cultural resources as well as public uses.
- ?? Better coordination and communication between and among industry and government is needed. **Specifically, making the overall permitting timeline for a FOC project as short and as predictable as possible will attract good FOC projects to Hawaii rather than deterring them.**
- ?? ~~More information on the long-term impacts of submarine FOC is necessary in order to formulate appropriate state guidelines.~~
- ?? ~~The State should amend its laws as may be necessary to facilitate public/private partnerships in the development of submarine FOC.~~ . **(Comment: We suggest deleting this bullet because this draft does not yet explain what facilitating public/private partnerships would mean, nor why such legislation is needed.)**
- ?? ~~State guidance on implementing FOC developments by the private sector is needed to assure protection of the public's interest.~~ **(Comment: As we and others stated at the meeting, the existing permitting procedures as applied to FOC projects seem already to fully protect the public's interest. Additional state guidance does not seem to us necessary, except to pursue streamlining and thus advancing the public interest in getting good FOC projects timely installed. Therefore we suggest deleting this bullet, and modifying the fourth bullet as shown above.)**

### III. Position Statement

In consideration of the above, the following statement provides the basis for guiding State actions relating to submarine FOC landings:

*Although the State supports the laying of submarine FOC where appropriate which helps in the development of telecommunications, the State can only allow such development if it is consistent with the public trust doctrine in that it:*

- ?? *minimizes adverse impacts;*
- ?? *maximizes public benefits; and*
- ?? *is sensitive to community needs.*

### IV. Minimizing Adverse Impacts

The dynamic linkages among the open ocean, near shore coastal and land environments, and their uses must be considered, when implementing Hawaii's ocean

and coastal management policies for submarine FOC development. Understanding the purposes and relationships of Federal, State and County permit and approval processes will help assure that a project's impacts are properly assessed and that potential adverse impacts are appropriately mitigated.

The Federal government's regulatory role for the development of submarine FOC will usually address **installation** work in navigable waters, **plus any particularly** dredge and fill activities, through **a permit or other approval from** the U.S. Army Corps of Engineers' ~~permits~~. Activities regulated by the State focus on water quality, permitted land and water uses, historic site protection, natural and coastal resource protection, and general public health concerns. The Counties must determine if a development conforms with their overall planning and zoning authorities and, if not, the applicant may need to seek an amendment to a given County's planning ordinances. The counties issue Coastal Zone Management (CZM) Special Management Area permits and shoreline setback variances and also regulate activities related to building, grading, stockpiling and construction. Appendix B describes the major permits and approvals **that which** may be required for the development of submarine FOC and lists the State agencies maintaining administrative authority over each permit process.

Applicants should seek assistance from each responsible regulatory agency to determine applicable permit requirements among the three levels of government. In general, the following will apply to the development of submarine FOCs:

#### Federally administered permits and reviews

- ?? Federal Communications Commission **Permit landing license**
- ?? Department of the Army (DA) **Permit authorization under Section 10 of the Rivers and Harbors Act and sometimes under Section 404 of the Clean Water Act. (Comment: The ACOE authorization often is in the form of a permit, letter of permission or other authorization rather than a permit.)**
- ?? ~~Environmental Impact Statement — Federal~~ **(Comment: This bullet should be deleted, since a federal EIS has never yet been required for a submarine FOC project.)**

#### State administered permits and reviews

- ?? Environmental Impact Statement (EIS) - State of Hawaii
- ?? State Land Use District Boundary Amendment
- ?? Conservation District Use Application (CDUA)
- ?? Permit for Work in Ocean Waters of the State of Hawaii CZM Federal Consistency Review
- ?? Historic Site Review
- ?? Section 401 Water Quality Certification
- ?? National Pollutant Discharge Elimination System
- ?? Zone of Mixing

#### County administered permits and approvals

- ?? General Plan amendment
- ?? Development or Community Plan amendment
- ?? Plan Review Use (City and County of Honolulu only)
- ?? Zoning Permit (Kauai and Maui Counties only)
- ?? Zoning Variance
- ?? Special Management Area permit
- ?? Shoreline Setback Variance

Each of the agencies responsible for reviewing a proposed submarine FOC project will determine if the development meets criteria set by statute, rules, ordinances and regulations. Across the board, however, there are certain routing, landing, construction and operations criteria ~~that~~<sup>which</sup> should be incorporated into a FOC plan submitted to agencies for review and approval. These include:

#### Routing Criteria

- ?? ~~Avoid trenching through or crossing hard substratum — sandy bottoms are preferred.~~  
**(Comment: The Hawaiian Islands are by their nature volcanic mountains of rock and debris extending thousands of meters above the surrounding ocean basin. While sandy bottoms are generally preferred for cable if they exist in near shore areas, and trenching is not typically undertaken for Hawaiian installations, crossing of hard substratum is essentially unavoidable in routing of cables in Hawaii. Therefore this criterion should be deleted.)**
- ?? Avoid endangered or threatened species habitat such as coral reef communities and environmentally sensitive areas such as marine life conservation districts. **(Comment: We are not sure of the extent of the referenced marine life conservation districts, nor whether a prohibition against cable-laying in such districts is appropriate.)**
- ?? Minimize to the extent possible any potential conflict with State water quality standards and provisions.
- ?? Avoid development of and assure continued access to areas customarily and traditionally exercised for subsistence, cultural and religious purposes by Native Hawaiians.

#### Landing Criteria

- ?? Do not exacerbate shoreline erosion problems if present. Minimize risk of adverse impacts on beach processes.
- ?? ~~Avoid~~<sup>Minimize</sup> encroachment on scenic and open space resources.  
**(Comment: A majority of the sandy and rocky shorelines of Hawaii might be classified as scenic and open space resources. Therefore, to avoid blocking all new development, we suggest focussing here on minimizing rather than completely avoiding any encroachment.)**



- ?? Sanding bottoms are preferred in order to minimize any possible environmental impacts of anchoring, armoring, or trenching through rock or coral in order to securely fasten the FOC.
- ?? Landing sites in areas of major public use should not **permanently** disrupt public uses of near shore areas.  
**(Comment: Some short-term disruption may be unavoidable, since as noted above sandy landings are generally preferred and also are typically areas of public use. The duration and extent of temporary impacts are normally considered during the permit review process.)**
- ?? **Adverse impacts on areas of ~~potential~~—historical, archaeological and cultural significance are to be avoided. Areas known to have potential historical, archaeological and cultural significance should be evaluated before new development disturbs them in a destructive way. (Comment: We have a concern about how broadly the word “potential” might be interpreted; it might be interpreted to mean the entire coastline. Note also that merely laying a cable on the seabed would not adversely affect any buried cultural resources there.)**
- ~~?? Landings must be at least 50 to 60 deep in the water to protect the cable during storm and other high wave conditions.~~  
**(Comment: This item is unclear and may be based on a misunderstanding; it should be deleted. Some related background information follows. To stay clear of the surf zone and to avoid running aground, cable installation vessels usually land the cable (pulled ashore either using floats or through a bore pipe) while maintaining a distance offshore where the water is greater than the draft of the vessel plus a factor of safety – thus typically in at least 50 or 60 feet of water. Protecting the cable from abrasion in the shallow surf and surge zones is a separate issue. It may be done by directionally drilling so as to emerge offshore from such zones. Alternatively, additional cable protection (such armor protector units) may be applied over the cable during installation from the beach manhole out to a depth of water beyond the surge zone. In either case, such protection often will not be necessary to 50 feet water depth.)**
- ?? ~~Comply with State-designated corridors. See Part V below.~~

#### Construction Criteria

- ?? Construction should limit disruption of public uses of near shore areas.
- ?? Monitor and report upon marine resource impacts before, during and after construction.  
**(Comment: Such monitoring and reporting already is required, typically through a permit condition, if a potential impact has been identified. Once installation is completed, there are no further potential impacts to natural resources for which monitoring is needed.)**

- ?? Assure that disturbed soils, silt, sediment, debris, trash, rubbish, surplus and waste construction materials, and human wastes are kept from falling, blowing, washing, or flowing into stream and ocean waters. Take appropriate measures to contain project-related turbidity during dredging operations, e.g., utilization of silt screens.
- ? If directional boring is used, areas affected by the process should be restored as closely as possible and feasible to pre-construction conditions.
- ?? ~~Avoid construction work during the months of December through May when Humpback whales make their seasonal appearance throughout the Hawaiian Islands.~~ Follow anti-harrassment regulations when working in close proximity to humpback whales and other marine mammals.

**(Comment: Vessel activities associated with cable installations are typically of short duration (on the order of a few days). They are no more threatening to humpback whales than are any of the other large commercial vessels that continue to transit the area. Procedures exist (including the use of marine mammal monitors) to minimize the risk of impacts on whales, and can be included as permit conditions. Therefore there is no reason to expect any significant adverse impact on Humpback whales and no justification for prohibiting cable-laying December through May.)**

- ?? Elevated noise levels and vessel traffic associated with the laying of cable shall be minimized.

#### Maintenance and Retired FOC Criteria

- ?? ~~Installed cables shall be monitored by the cable owner.~~  
**(Comment: Where cable burial has been required to minimize seabed use conflicts with trawlers, some state agencies have required inspection to check that the desired burial has been achieved and maintained. However, the steep undersea slopes of the Hawaiian islands are not trawled (and are not amenable to burial). Once installed, submarine cables do not slide around or otherwise have potential adverse impacts on the environment. Therefore we know of no reason to require special efforts to monitor cables landed at Hawaii.)**
- ? ~~Out of service cables shall be removed by the cable owner within a specified time period after discontinued service.~~  
**(Comment: For the same reasons as discussed above, we know of no reason to presume that out-of-service cables generally need to be removed. By time they are out of service, various soft and hard-body organisms typically have attached to or even fully encrusted them, which organisms would be destroyed by removal of the cables. In addition, when taken out of telecommunications service, many cables have found new use in scientific research, including many**

landed on Hawaii (see Appendix A). There are many practical issues associated with removing old cables, including (as is typically the case in Hawaiian waters) newer active cables have been laid over top of older cables, making it impractical for total removal without damaging active cables. Additionally, recovered cables have no salvage value, so when recovered disposal becomes an issue. Therefore removal should not be required unless there is some substantial site-specific need.)

## V. State-Designated Corridors or Exclusion Zones

Some have suggested that ~~Much, though not all of the above criteria can be consolidated to create~~ State-designated corridors ~~be created~~ that ~~would~~ unify the efforts of various government regulators in communicating their criteria specific to submarine FOC, as well as provide developers a narrower “ballpark” of pre-designated, fully approved landing sites.

Opponents argue that separation of cables is necessary to prevent a catastrophic event such as a major hurricane, ship grounding, or earthquake from destroying all the cables thereby effectively cutting Hawaii off from the rest of the world. The International Cable Protection Committee (ICPC, 1985 Plenary Meeting Minutes, Sydney, Australia) recommends that no previously existing cable be crossed at less than a 45 degree angle, the closer the crossing can be to a right angle the better, and where possible a spacing of five miles should be maintained.

However, ~~narrow~~ corridors ~~probably are not necessary~~~~need not be so restrictive~~. The State could ~~identify~~ ~~develop~~ general ~~corridors of~~ allowable areas that exclude any particular areas ~~whose~~~~of~~~~greater~~ environmental, historical or cultural characteristics would make them either inappropriate or relatively less desirable for cable-laying. ~~vulnerability~~ This might be done by creating a comprehensive mapping of bathymetry, national marine sanctuaries, essential fish habitat, national and state historic preservation, and other criteria relevant to routing submarine cables and their associated terrestrial backhaul ~~etc.~~

The following is a listing of the minimum submarine FOC information requirements that ~~would be~~ needed to assess the viability of ~~thus~~~~state-designating~~ ~~ed~~ exclusion areas ~~corridors~~:

- ?? Bathymetry of the seafloor. UH, US Geological Services and several other scientific organizations have collected quality bathymetry data over the last fifteen years in the Hawaii region. This data was collected by each organization using different grids and projections as reference. It is impossible to simply overlay all the data and make any sense of what is on the ocean bottom. It would not take much effort to fund a project to re-process all of this valuable data which has cost millions to collect, and

properly merge it into comprehensive bathymetry maps for the entire Hawaiian Islands.

- ?? Environmentally designated or sensitive areas.
- ?? Historic/cultural districts.
- ?? Moderate to high fishing and recreational areas.
- ?? Areas to be avoided because of rapid erosion, giant landslides, downed coral reefs, seismic activity, dumping, ship and airplane wrecks, and pipelines.
- ?? Currently laid cables.
- ?? Existing and potential routes of terrestrial conduit carrying FOC linked to submarine FOC.

## **VI. Maximizing Public Benefits**

The State's role in submarine FOC development is not solely regulatory in nature. As the trustee of public lands and resources, the State must also undertake an affirmative management posture in accordance with the "public trust doctrine" in securing appropriate public benefit from the use of those lands and resources for submarine FOC telecommunications purposes.

### Public Trust Doctrine

The traditional principles of the public trust doctrine are: 1) all tidelands and lands under navigable waters are owned by each state at the time of its admission to the Union as successors in sovereignty to the English Crown in the same manner as the original thirteen states; 2) these lands are subject to a "public trust" for the benefit of the state's citizens with respect to certain rights of usage, particularly those related to maritime commerce, navigation and fishing; and 3) state grants of such lands to private owners are subject to that trust and to the state's obligation to protect the public interest from any use that would be contrary to the trust. In particular, any conveyed lands must be used by the private owners in such a manner as not to unduly interfere with the public's several rights under the public trust doctrine and so as to promote the public interest.

In sum, the public trust doctrine protects the state's fundamental rights to and over the property in a number of different ways, even in a situation where title to the property has been conveyed into private ownership. Accordingly, state agencies responsible for land and water resources management have a right and a duty to assure the public's interest in the development of submarine FOC and the use of state resources will result in accrued benefits to the general public.

### Examples of Public Benefits

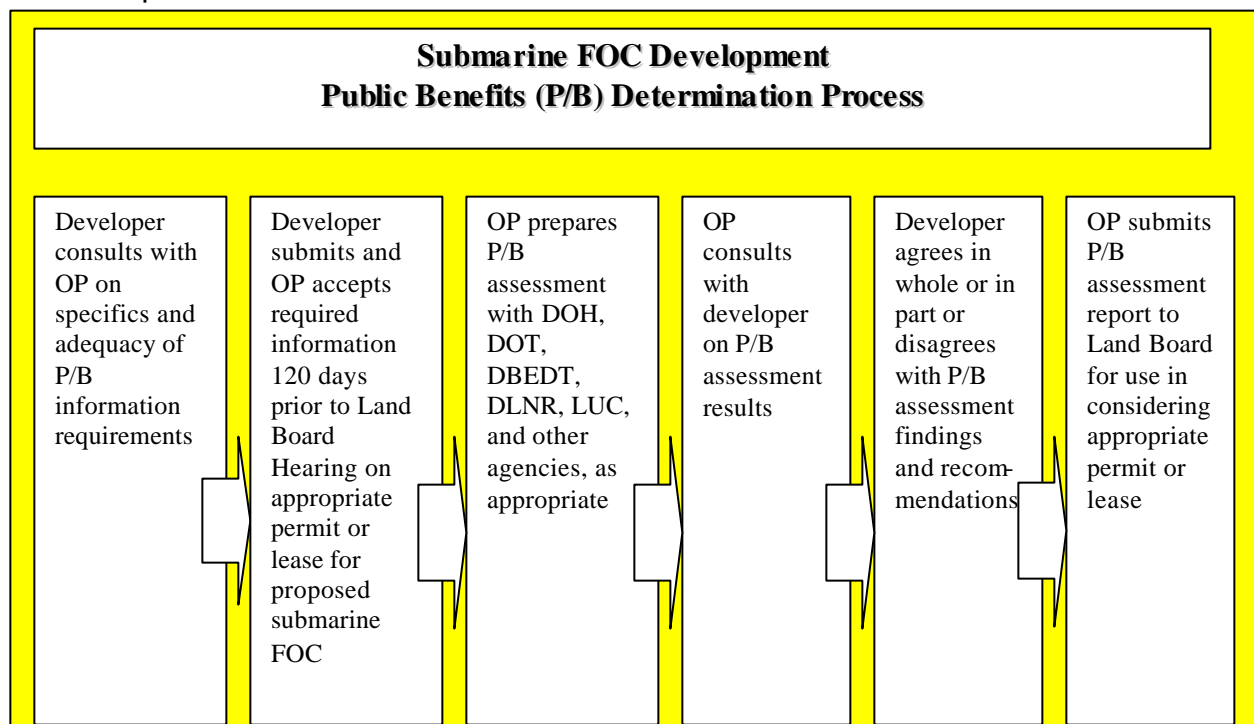
The following is a partial list suggesting the types of benefits that could be considered as compensation for the public for use of public trust resources:

- ?? Improved telecommunications systems.
- ?? On-site preservation of natural resources.
- ?? Ocean resource use enhancement such as beach replenishment.
- ?? Continued access along the shoreline and minimal interruption of lateral shoreline access.
- ?? Fees for the use of State lands to support marine conservation programs.

Such benefits may vary depending on the submarine FOC location, impacts, and degree of public use, and the benefit to and/or burden on the community as a whole.

Determining Public Benefits

A process for determining public benefits in the processing and evaluation of submarine FOC projects provides that the Office of Planning (OP) take the lead for the State in determining and negotiating public benefits because of its lead agency role in carrying out the objectives and policies of the Hawaii CZM law, Chapter 205A, HRS, and its CZM Federal consistency review responsibilities and land use regulatory responsibilities under Chapter 205, HRS. These review processes involve all three levels of government in approving major land and water uses. The Board of Land and Natural Resources is the most appropriate State agency to review and act upon the public benefits report because of its stewardship role in managing State lands and waters, and because any submarine FOC development will involve some kind of Board action or permission.



The following is a listing of the minimum public benefit information requirements that the OP will need in order to assess the public benefits of a given submarine FOC development:

- ?? Accepted Project EIS.
- ?? CZM Federal Consistency Determination.
- ?? Summary description of how project meets the siting, construction, and operating criteria as set forth in this document.
- ?? Results of one or more on-island public information meetings on the proposed submarine FOC.
- ?? Listing and description of developer-perceived public benefits (direct and indirect).
- ?? Draft public benefits proposal to compensate for the use of public trust resources.
- ?? Submarine FOC costs (siting, construction, operations and maintenance).
- ?? ~~Level of revenue cable company is expected to make on proposed submarine FOC.~~
- ?? Project phasing and timing.
- ?? Anticipated use of and affect on public funds (capital and operating) and land/water resources in developing the submarine FOC.
- ?? Summary technical data, diagrams, and other information deemed necessary by the OP to permit an adequate assessment of public benefits relationships.

Finally, developers are encouraged to use the HCZMP assessment form in their public benefits information and environmental assessment scoping process. This will assist in insuring that information developed to describe the project and its impact addresses policy criteria most government agencies will use in their review and approval processes.

## **VII. Sensitivity to Community Needs**

In representing the public interest, the State requires that the various development permit and review processes include opportunities for public input. Whether these are public hearings, public notices of reviews, or information meetings, the public should be involved in identifying community desires and concerns. Early public input and sensitivity by the developer to the method and substance of that participation will benefit both the community and the developer.

Major community issues, relating to the development of submarine FOC are likely to revolve around primary and secondary impacts. These include primary impacts on: marine resources; endangered or threatened species such as humpback whales and sea turtles; existing beaches; and recreational activities, and secondary impacts on: fisheries. Socio-cultural issues may additionally include possible disruptions of public access to and along the shoreline, impacts on traditional fishing areas, enforcement of

controls on marina uses, and the potential destruction or desecration of historical and cultural sites.

The process by which the submarine FOC developer identifies and responds to public concerns on these issues must extend beyond the usual preparation of an environmental impact statement. It requires a concerted, affirmative strategy on the part of each developer to involve the public in all phases of the planning process and to respond quickly to perceived needs and concerns. Such a strategy will go a long way in assuring that the public's needs are anticipated as well as addressed.

### **VIII. Permit Streamlining and Coordination**

For the submarine FOC evaluation and approval process to be successful, it is important that the project's information document, the EIS, be as complete and thorough as possible. The information relating to the proposed submarine FOC development, its impacts on the physical and social environment and mitigation measures to address adverse impacts need to be properly disclosed. As each agency makes use of the EIS in conducting its review of the project, additional information may be required. Thus, it is recommended that as many of the reviewing agencies as possible be contacted and consulted on the scope of the environmental impact document. The DBEDT can assist in this effort by convening a meeting of appropriate State agencies to review permit and information requirements under the "Consolidated Application Process" set forth in Section 201-62, HRS.

The U.S. Army Corps of Engineers frequently takes the lead in working with submarine cables, inasmuch as Federal laws governing work in navigable waters can require a ~~lengthy and~~ thorough review process. As with other types of complex developments, the initial reviewing and decision-making agency will often establish an information base and decision-making record used by the applicant in seeking subsequent permits and approvals. Thus, if the initial Corps of Engineers' permit or the State Conservation District Use Permit is obtained after thorough agency and public review, the subsequent processing of approvals may be expedited. Since providing a broad range of information for these major permits may be necessary, preparing a single EIS to meet ~~allboth Federal and~~ State ~~and any Federal~~ requirements is not only advantageous, but strongly recommended.

Finally, joint public hearings among Federal, State and County agencies may save processing time. The public's interest in resource protection needs to be balanced with the cost to developers in receiving project approval. Accordingly, a joint hearing can be of benefit both to the decision-making agencies and the developer in terms of time and costs. While joint hearings between the DLNR for a Conservation District use permit and the City and County of Honolulu for a Special Management Area permit have been utilized on coastal-related projects, the possible use in submarine FOC development needs to be explored further on a case by case basis.

### **IX. Conclusion**

While the State supports the private development of submarine FOC, there are indeed constraints on such development given the responsibility placed upon the State to insure that the public's interest is furthered by a particular project. In this regard, it is hoped that this guide will be useful in facilitating the process of dialogue among the governmental agencies and development interests so that each may have a better understanding of how appropriate submarine FOC development can best be accomplished.



## APPENDIX A: LOCATION OF EXISTING SUBMARINE CABLES

The first submarine telegraph cables were installed at Honolulu in 1903. Between 1957 and 1984 a number of coaxial submarine telephone cable systems were installed on Oahu. Submarine fiber optic cables were introduced to Hawaii beginning in 1989. Following retirement from commercial service, a number of the coaxial cables were turned over to the scientific community for use in deep sea oceanographic, geophysical and seismic monitoring. (\*Retired cables in continued use for scientific purposes are asterisked and highlighted in bold below.)

### *In service cables:*

- ?? 1989 HAW 4 – Transpacific (Makaha Keawaula Beach - California)
- ?? 1989 TPC 3 – Transpacific (Makaha Beach – Guam & Japan)
- ?? 1993 PACRIMEAST – Transpacific (Keawaula Beach – New Zealand)
- ?? 1993 HAW 5 – Transpacific (Keawaula Beach - California)
- ?? 1994 HICS (Hawaii Island Cable System) – Interisland Network
  - (Koko Head, Oahu - Kihei, Maui)
  - (Kihei, Maui – Kawaihae, Hawaii)
  - (Ko Olina, Oahu – Lihue, Kauai)
- ?? 1995 TPC 5 Seg.G – Transpacific (Keawaula Beach, Oahu - California)
- ?? 1995 TPC 5 Seg. H – Transpacific (Keawaula Beach, Oahu – Guam)
- ?? 1996 HIFN (Hawaiian Island Fiber Network) – Interisland:
  - (Makaha Beach - Keawaula Beach)
  - (Lihue, Kauai – Makaha Beach)
  - Kihei, Maui – Spencer Beach, Hawaii
  - Sandy Beach, Oahu – with branch connections to Kauanakaai, Molokai, Manele Bay, Lanai and Lihei, Maui
- ?? 1999 JAPAN– U.S. Seg. 1 Transpacific (Makaha Beach - California)
- ?? 1999 JAPAN – US Seg. 2 Transpacific (Makaha Beach – Japan)
- ?? 2000 Southern Cross Cable Network – Transpacific (Kahe Point, Oahu - Oregon)
- ?? 2000 Southern Cross Cable Network – Interisland (Spencer Beach, Hawaii Island – Kahe Point)
- ?? 2000 Southern Cross Cable Network – Transpacific (Kahe Point – Fiji & Australia)
- ?? 2000 Southern Cross Cable Network – Transpacific (Spencer Beach – New Zealand)
- ?? 2001 Southern Cross Cable Network – Transpacific (Spencer Beach – California)

### *Out of service cables:*

- ?? 1903 Telegraph (Honolulu – San Francisco)
- ?? 1903 Telegraph (Honolulu – Midway)

- ?? **\*1957 HAW 1 East (Hanauma Bay - California)**
- ?? **\*1957 HAW 1 West (Hanauma Bay – California)**
- ?? 1963 COMPAC – Transpacific (Keawaula Beach - Canada)
- ?? 1963 COMPAC – Transpacific (Keawaula Beach – New Zealand)
- ?? 1964 Oahu Tie Cable (Hanauma Bay – Makaha Beach)
- ?? **\*1964 HAW 2 – Transpacific (Makaha Beach – California)**
- ?? **\*1964 TPC 1 Transpacific ((Makaha Beach - Guam)**
- ?? **\*1974 HAW 3 Transpacific (Makaha Beach – California)**
- ?? **\*1975 TPC 2 – Transpacific (Makaha Beach - Guam)**
- ?? **\*1984 ANZCAN “C” – Transpacific (Keawaula Beach - New Zealand)**
- ?? 1984 ANZCAN “D” – Transpacific (Keawaula Beach - Canada)

*Status not known:*

- ?? 1966 Wet Wash C – Makua – Johnston Island

Installation of military cables is not normally disclosed to the public, although the U.S. Navy utilizes a FORACS system of undersea cables in the vicinity of Nanakuli Beach for naval purposes.

**APPENDIX A:  
LOCATION OF EXISTING SUBMARINE FOC**

*In-service cables:*

- ? 1964 TPC 1 – Hawaii – Guam (Makaha Beach)
- ? 1966 Wet Wash C – Hawaii – Johnston Island (Makua)
- ? 1975 TPC 2 – Hawaii – Guam (Makaha Beach)
- ? 1984 ANZCAN “D” – Transpacific (Keawaula Beach)
- ? 1989 HAW 4 – Transpacific (Makaha Keawaula Beach)
- ? 1989 TPC 3 – Transpacific (Makaha Beach)
- ? 1993 PACRIMEAST – Transpacific (Keawaula Beach)
- ? 1993 HAW 5 – Transpacific (Keawaula Beach)
- ? 1994 Hawaii Island Cable System – Interisland (Kahe Point Beach Park)
- ? 1995 TPC 5 – Transpacific (Keawaula Beach)
- ? 1996 Hawaiian Island Fiber Network – Interisland (Makaha Beach and Keawaula Beach)
- ? 1999 Japan – U.S. Cable System (Makaha Beach)
- ? 2000 Southern Cross Cable Network – Transpacific (Spencer Beach and Kahe Point)

*Out of service cables:*

- ? Stalled 2002 Tyco Transpacific – Transpacific (Kahe Point Beach Park)
- ? Retired 1983 COMPAC – Transpacific (Keawaula Beach)
- ? Retired 2001 ANZCAN “E” – Transpacific (Keawaula Beach)

Installation of military cables is not normally disclosed to the public, although the U.S. Navy utilizes a FORACS system of undersea cables in the vicinity of Nanakuli Beach for naval purposes.

**APPENDIX B:  
FEDERAL, STATE, AND COUNTY PERMIT AND REVIEW DESCRIPTIONS**

**A. Federal**

***Department of the Army, ~~Permit, Section 404/Section 10 of the Rivers and Harbors Act~~***

Administered by the U.S. Army Corps of Engineers, Operations Division, the Department of the Army Permit ~~or other authorization~~ assures that the navigational characteristics of coastal waters of the United States are not impaired by development. Generally defined, these waters include all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. ~~If the project involves dredge or fill of "wetlands", the ACOE approval will also be issued under Section 404 of the Clean Water Act.~~

***National Marine Sanctuaries Act***

The National Marine Sanctuaries Act provides authority for the establishment of a unique network of marine protected areas dedicated to the conservation of nationally significant areas of the marine environment. The National Marine Sanctuaries Program is administered by the Marine Sanctuaries Division, within the National Ocean and Atmospheric Administration (NOAA).

Congress, in consultation with the State of Hawaii, designated the Hawaiian Islands Humpback Whale National Marine Sanctuary on November 4, 1992. The Hawaiian Islands National Marine Sanctuary Act identified the following purposes for the sanctuary: to protect humpback whales and their habitat within the sanctuary; to educate and interpret for the public the relationship of humpback whales and the Hawaiian Islands marine environment; to manage human uses of the sanctuary consistent with the Hawaiian Islands National Marine Sanctuary Act and the National Marine Sanctuary Act; and to provide for the identification of marine resources and ecosystems of national significance for possible inclusion in the sanctuary.

~~Relevant to submarine cables, a~~All sanctuaries have some type of regulation that regulates activities, including ~~prohibits~~ the installation of submarine~~ch~~ cables. **(Comment: As originally drafted, the foregoing sentence incorrectly implied that the sanctuary regulations speak specifically to cables, and that they presumptively prohibit them.)** For example, the regulations specific to the Hawaiian Islands Humpback Whale National Marine Sanctuary would allow cable laying there if done consistent with the terms of a federal permit (see 15 C.F.R. 922.184(a)(5). ~~However, prohibited activities may be conducted under certain limited circumstances to the extent they are compatible with the resource protection mandate and meet regulatory and other requirements for a sanctuary permit or other authorization.~~

## ***Endangered Species Act***

The Endangered Species Act (ESA) protects species of plants and animals that have been listed through regulations as threatened or endangered. After a species is listed as threatened or endangered, the National Marine Fisheries Services (NMFS) or the U.S. Fish and Wildlife Service is required to designate critical habitat and develop and implement recovery plans for the threatened and endangered species. Every Federal agency must ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. Federal agencies must consult with NMFS or FWS to avoid, minimize, or mitigate the impacts of their activities on listed species.

Submarine cable projects will trigger this consultation process whenever a federal permit, license or other action is needed for an activity that may affect a listed species. If a protected species or its critical habitat is present in the vicinity of the cable laying project, a Biological Assessment must be prepared by the permitting agency. Essentially the permitting agency must demonstrate that the proposed project will not jeopardize any protected species or adversely modify their critical habitat, and describe those efforts being made to prevent any adverse effects to protected species. If they believe there are no applicable alternatives to the project and that the project will jeopardize the continued existence of a protected species, they may apply to the Endangered Species Committee for an ESA exemption.

## ***Marine Mammal Protection Act***

The Marine Mammal Protection Act establishes a moratorium on the “taking” of marine mammals within U.S. waters or by U.S. citizens on the high seas.

Laying cable on the seabed could potentially result in the incidental taking of marine mammals due ~~for example to collision with a vessel to the elevated noise levels and vessel traffic associated with the laying of cable and entanglement of whales in the cable.~~ **(Comment: Cable vessels are no noisier than other vessels, and when laying cable move more slowly. There is no reason to believe that any marine mammal could become entangled in a cable being laid, nor is there any evidence that any marine mammal ever has become entangled in a modern submarine cable.)** The regulations provide for expedited one year authorizations for takes by harassment only and for five year authorizations covering all forms of takes.

## ***Magnuson-Stevens Fishery Conservation and Management Act***

The Magnuson-Stevens Fishery Conservation and Management Act, administered by the NMFS is the primary federal fishery management authority. In addition to the Act’s focus on managing fishing activities, it mandates protection of “essential fish habitat” (EFH) for each of more than 700 species under federal authority.

The EFH requires consultation with NMFS for any project that may adversely affect habitats of federally-managed species.

Submarine cable projects will trigger the EFH consultation process whenever a federal permit, license or other action is needed, if the proposed activity may adversely affect EFH. The EFH consultation will be conducted between field offices of the action agency and NMFS. Regional NMFS offices have maps, tables, and reports documenting areas designated as EFH and can work with the authorizing agency and industry to determine whether a submarine cable project affects EFH. In combination with any documents associated with the traditional environmental review process Permit application, engineering plans, NEPA documents), an EFH Assessment must be prepared describing how the proposed project may affect EFH.

### ***Section 106, National Historic Preservation Act***

The National Historic Preservation Act (NHPA) directs federal agencies to develop programs to protect their cultural and historic properties. Section 106 of the NHPA directs that all federal or federally-funded undertakings, including federally permitted activities, be reviewed to ensure that no historic properties are negatively affected. The federal agency must work in cooperation with states and the Advisory Council on Historic Preservation to minimize or prevent damage to the resources.

### ***Executive Order 13089 – Coral Reef Protection***

In 1998, Executive Order 13089 on Coral Reef Protection was adopted "to preserve and protect the biodiversity, health, heritage, and social and economic value of U.S. coral reef ecosystems and the marine environment." The order established the interagency U.S. Coral Reef Task Force, co-chaired by the Secretary of the Interior and the Secretary of Commerce through the Administrator of NOAA. The U.S. Coral Reef Task Force, in cooperation with State, territory, commonwealth, local governments, and other organizations, is charged with developing and implementing a comprehensive program of research and mapping to inventory, monitor, and "identify the major causes and consequences of degradation of coral reef ecosystems."

### ***National Environmental Policy Act***

National Environmental Policy Act (NEPA) is the law that requires federal projects to prepare an Environmental Impact Statement (EIS) to assure that environmental concerns are given appropriate consideration in decision-making in conjunction with economic and technical factors. The federal agency that funds or has jurisdiction over the proposed project is responsible for determining the need for an EIS and for coordinating its preparation and review. ~~Some projects require both a state and federal EIS and the public comment procedure should be coordinated.~~

~~For the purpose of a proposed submarine cable to transit the coastal zone including a portion of a national marine sanctuary, several permits or approvals may be required, each requiring federal or state environmental review.~~ After providing sufficient background information on the proposed action to the involved agencies, the requisite level of review is determined, and a NEPA document is prepared and circulated for public review as appropriate. Upon completion, final NEPA documents are cleared by the agency and a determination is made on the applicable authorization or permit. No final action by an applicant may occur prior to completion of the NEPA review process.

The FCC has determined that an EIS is never needed in connection with its grant of a cable landing license. Similarly, the ACOE has issued Nationwide General Permit 12 for submarine cables based on a Finding of No Significant Impact. Therefore, no federal EIS has been required for installation of a submarine telecommunications cable.

### ***Executive Order 10530 – Submarine Cable Landing Licenses***

Pursuant to Executive Order 10530, the President delegated authority to the Federal Communications Commission (FCC) to grant, deny, or condition submarine cable landing licenses, except that no license can be granted or revoked without the FCC first obtaining approval from the Secretary of State and advice from any executive department of the Government as the Commission may deem necessary. National Telecommunications and Information Administration (NTIA), an agency within the Department of Commerce, advises the Department of State and the FCC on all submarine cable landing license applications. The factors NTIA considers in reviewing these applications involve competition issues and consumer matters.

### **B. State**

#### ***Environmental Impact Statement (EIS) – State of Hawaii***

Hawaii's Environmental Impact Statement law (Hawaii Revised Statutes, Chapter 343) requires the preparation of environmental assessments (EA) and environmental impact statements (EIS) for many development projects. The law requires that government give systematic consideration to the environmental, social and economic consequences of proposed development projects before granting permits that allow construction to begin. Projects that propose the use of: state or county lands or funds; land in the conservation district; land in the shoreline setback area; any historic site or district; or land in Waikiki must be subject to an environmental review prior to its implementation.

~~Like NEPA,~~ several permits and approvals may be required for a proposed submarine cable landing that will likely trigger a State EA or EIS.

#### ***Conservation District Use Application (CDUA)***

Any use of lands within the State-zoned conservation district is required to submit an application for approval prior to undertaking the proposed use. The conservation district includes all submerged ocean lands. Applications are reviewed and approved by the Board of Land and Natural Resources (BLNR). Members of the public may intervene in the permit process. CDUA review also requires a historic/cultural site review.

### ***Right-of Entry and Establishment of Offshore Easement***

Issued by the Department of Land and Natural Resources,

### ***Coastal Zone Management Consistency Review***

The Office of State Planning administers the Coastal Zone Management Federal Consistency Review to assure that federal agencies conduct their planning, management, development, and regulatory activities in a manner consistent with federal approved state Coastal Zone Management programs.

### ***Section 401 Water Quality Certification***

Chapter 174C, HRS, State Water Code establishes that all waters of the state are subject to regulation by the state Commission on Water Resource Management in the Department of Land & Natural Resources. The Water Code requires the preparation of a State Water Plan and its component plans, and provides the regulatory framework for water development statewide. Thus, any projects or proposals requiring the development of water sources or which would seriously impair the sustainable yield of aquifer systems is subject to the review and approval of this body.

## **C. County**

### ***Plan Review Use (City and County of Honolulu only)***

The purpose of the Plan Review Use approval is to review uses of a permanent and institutional nature which, because of characteristics fundamental to the nature of the uses, provide essential community services but which could also have a major adverse impact on surrounding uses. The design and siting of structures and landscaping, screening and buffering for these uses must be master planned so as to minimize any adverse impacts on other uses permitted in the zoning district.

### ***Special Management Area Use Permit***

Aquaculture development within the Special Management Area (SMA) defined by the Coastal Zone Management (CZM) program Chapter 205A, HRS, defines Coastal Zone Management (CZM) goals, objectives, and policies; authorizes Special Management Areas (SMAs) for county jurisdiction in coastal areas; sets guidelines for the statewide CZM program; and establishes shoreline setbacks. The CZM program is



administered by the state Office of Planning. The Special Management Area (SMA) is along the coastlines of all our islands. Most development in this area requires a Special Management Permit (SMP). The Counties regulate development of this area. On Oahu, the County law requires an Environmental Assessment be prepared to accompany a permit application. This permit covers any development, structure, or activity within the Special Management Area (SMA) as defined by Chapter 25, Revised Ordinances of Honolulu (ROH). A minor project involves development with a valuation that does not exceed \$125,000; and which has no substantial adverse environmental or ecological effect, taking into account potential cumulative effects. All other developments are considered major projects, and are processed accordingly.

### ***Shoreline Setback Variance***

This permit covers structures and activities in the "Shoreline Area" as defined in Chapter 23, Revised Ordinances of Honolulu (ROH). The shoreline setback area is the area between the shoreline and the shoreline setback line. Currently, most shoreline setback lines are set at 40 feet from the shoreline, although in some places the Shoreline Setback boundaries extend further inland. The Counties have the authority to set deeper setbacks. Structures or portions of a structure are not permitted in the shoreline setback area without a variance. Variances may be granted for specified structures or activities including private facilities or improvements. No variance shall be granted unless appropriate conditions are imposed:

- ?? To maintain safe lateral access to and along the shoreline or adequately compensate for its loss;
- ?? To minimize risk of adverse impacts on beach processes;
- ?? To minimize risk of structures failing and becoming loose rocks or rubble on public property;
- ?? To minimize adverse impacts on public views to, from and along the shoreline.