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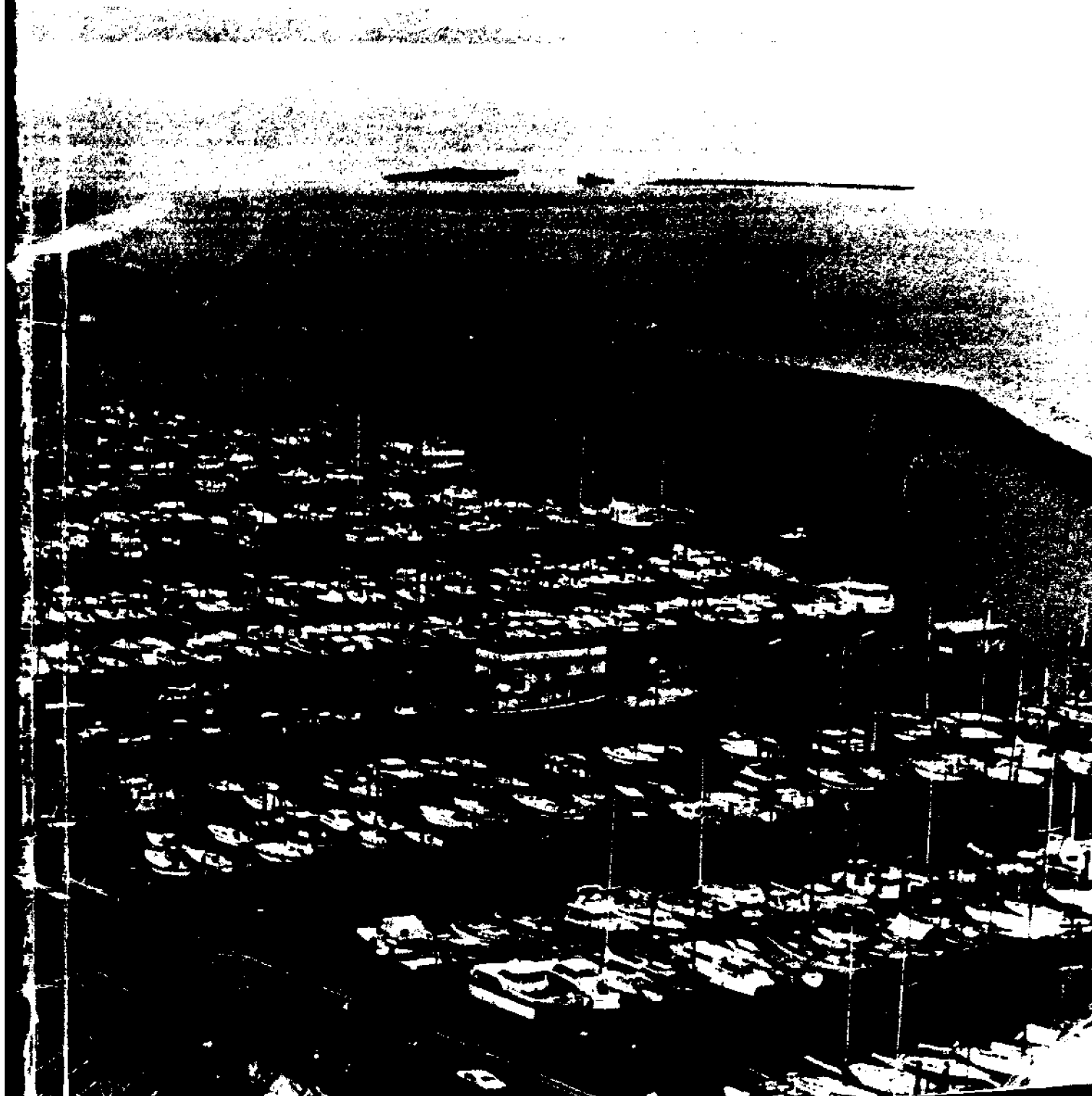
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MOORAGE WORKSHOP

Proceedings
April 6-7, 1977
Seattle, Washington

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UNIVERSITY OF WASHINGTON
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Caroline C. Tobin and Robert F. Goodwin, Editors

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MOORAGE WORKSHOP
April 6 - 7, 1977
Seattle

Workshop Sponsors

Northwest Marine Trade Association
Washington Sea Grant Program

Workshop Coordinators
and
Session Chairmen

Louis V. Larsen, Executive Vice President
Northwest Marine Trade Association

Robert F. Goodwin, Coastal Management
Specialist
Washington Sea Grant Marine Advisory
Program

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INTRODUCTION

The Northwest Marine Trade Association Moorage Workshop was held on Wednesday and Thursday, April 6 and 7, 1977 at the Seattle Airport Hyatt House. The Workshop was designed to serve the information needs and interests of the recreational and commercial small boat moorage industry in the Pacific Northwest. Louis V. Larsen, Executive Vice President, Northwest Marine Trade Association, and Robert F. Goodwin, Coastal Management Specialist, Coastal Resources Program, Washington Sea Grant, co-sponsors, were responsible for setting up the Workshop. The agenda covered some of the major factors affecting the provision of adequate moorage for small craft in the Northwest, including economic aspects, financing, government policies toward marinas, environmental regulatory controls and engineering aspects of marina design.

The program was divided into six sessions, each dealing with different aspects of marina development and operations.

- The first session on "Economic Aspects of Marina Development and Operations" addressed the current state of the market guiding the provision of small craft moorage, from the perspectives of both the public and private sectors. Also, the general problem of recognizing recreational boating as a definable industry was viewed as critical to the industry's future.
- Session two, "Marina Financing: Public and Private," explored mechanisms for financing public and private moorages, financing problems, and the role of the state landlord agency (Department of Natural Resources).
- The third session concerned "Local, State and Federal Agencies' Policies Affecting Marina Location and Size." The agencies represented on the panel included; federal -- U.S. Army Corps of Engineers; State Department of Natural Resources, Parks and Recreation Commission, Interagency Committee for Outdoor Recreation, and the Department of Ecology; and local government -- Skagit County.
- Sessions four and five addressed "Environmental Quality and Regulatory Controls." State and local government programs and permits were distinguished from federal policies and regulations in the organization of these sessions.
- Session four, "Local Ordinances and State Statutes," included discussions of the Washington State Coastal Zone Management Program, Shoreline Management Act (SMA), Environmental Coordination Procedures Act (ECPA), State Environmental Policy Act (SEPA), and local government's role in marina development and expansion.

- Session five, "Federal Statutes and Programs," covered federal policy and regulatory procedures of the Corps of Engineers, Fish and Wildlife Service and Environmental Protection Agency.
- The final session, session six, addressed two important issues involved in "Engineering Aspects of Marina Design." These were: 1) hydraulic design features of marinas to ensure adequate flushing for water quality purposes, and, 2) protective devices such as floating breakwaters to ensure safe moorage.

The proceedings are organized according to these six workshop sessions. Introductory comments, individual presentations and audience discussion are summarized in this account to be of maximum use to workshop participants.

The featured speaker on the evening of April 6, 1977 was Bert Cole, Commissioner of Public Lands, Washington State Department of Natural Resources. Because his speech was not taped, it is not included in these Moorage Workshop proceedings.

SESSION ONE

ECONOMIC ASPECTS OF MARINA DEVELOPMENT AND OPERATIONS

INTRODUCTORY REMARKS

The program was opened by Louis V. Larsen, Executive Vice President of the Northwest Marine Trade Association, who explained the background of the workshop. Bob Goodwin, Coastal Management Specialist with the Coastal Resources Program/Washington Sea Grant at the University of Washington, introduced the first session on the Economic Aspects of Marina Development and Operations. He stressed the need for data and information on the moorage industry to demonstrate its economic importance to the State of Washington. In 1973, a study done for Northwest Marine Trade Association showed healthy growth of Washington's boating industry. (MacLachlan, 1973) From 1963 to 1972, the number of boating establishments increased from 47 to 391 and sales expanded from \$8 million to \$115 million in almost the same time period. Two important problems were identified in this study. First and most important, the shortage of moorage space places a considerable constraint on the marine recreation industry. Second, governmental environmental regulation, a topic addressed in workshop sessions the following day on environmental quality and regulatory controls, is a constraint on the expansion of the boating industry. Goodwin introduced the lead speaker for the morning session, Neil Ross.

NEIL ROSS

Marine Recreation Specialist, Sea Grant Marine Advisory Program
University of Rhode Island

Before proceeding into his talk on recreational boating as big business, the speaker departed from his original presentation to conduct a mini-workshop, seeking innovative ideas from the audience on boating facilities (moorage) and management. Because the single greatest overriding problem facing the recreational boating industry is that demand is outpacing facilities, it is critical to figure out how to increase capacity without expanding the geographic areas that marina facilities now occupy. Within this context, it is important to expand capacity and hopefully, at the same time, also raise profits.

Some of the ideas suggested by members of the audience include the following:

- . drystacking 40 to 50 foot boats
- . bunk moorages or self-operating dry land marinas
- . an automatic self-operated dry stack system to get boats out of the water
- . and standardization of equipment such as fittings and hoses for pump-out facilities

Neil Ross added two additional thoughts:

- . in the future, small boats may have to yield their water space to larger boats which cannot get in and out of the water as easily
- . and dry land marinas that are not on the shorefront but some distance away may be necessary

Many marinas were not built according to today's resource constraints and are inefficient for handling modern boats. Several suggestions for upgrading marina facilities included:

- . redesigning marinas to meet current needs could help economize on existing space. For instance, older docks are too far apart and 90 degree finger piers are less efficient than 60 degree piers.
- . fingers between boats may have to be eliminated altogether.
- . planning policy should encourage modernization which aims at increasing the efficiency of moorage facilities, since many marinas are in a continuous state of being rebuilt
- . an administrative permit would encourage improvement of a facility in any way you could within the bounds of your territory, so long as you did not dredge below a certain level specified in the permit

Several additional ideas were emphasized by Neil Ross that might enhance moorage facilities development. First, he suggested that permits might be consolidated and reduced in number so that only one or a few permits would be required to undertake marina development or improvement. Presently, 13 permits are necessary in Washington, whereas Rhode Island only requires 3. Bob Goodwin pointed out that Washington State's Environmental Procedures Coordination Act (ECPA) permit the preparation of a single master application for multiple state permits, but he said that some people prefer not to use it because it takes longer than the normal process. Further, he suggested that underlying environmental regulations from state statutes passed by the Legislature is an intent which is to protect the marine recreation business, too. The boating industry is involved in selling the recreational experience, and the business depends upon the quality of the coastal environment. If the quality of the marine experience deteriorates, then the boating industry loses, too.

Neil Ross reiterated the importance of coastal management legislation and the fact that more people are concerned about the shoreline and what to do with it than ever before. Coastal zone management is a federal program to stimulate each state to manage and plan its shorelines. Because there are development pressures on the waterfront and

the shoreline is not expanding, it is necessary to divide it up and allocate it among competing land and water uses. During the process of developing coastal management plans, it is important for Marine Trade Associations to supply information about the boating industry for input to coastal plans. Planners themselves may be unfamiliar with recreational boating. Ross also predicted that more regulations of coastal areas would be forthcoming.

In order to get the most mileage out of the environmental legislation, he suggested that there is more to gain by being an environmentalist than there is to lose. In fact, Neil Ross asserted that you can be in the marina development business and also claim to be an environmentalist because there are no significant data that say you are degrading water quality. In Rhode Island, a scientific study of the ecology of small boat marinas concluded that if shorelines and marshes are to be altered, then a marina is the best use for these areas. (Nixon, et al., 1974) A second study which analyzed oil spills showed that the oil pollution level was lower during the boating season (summer) than it was when the boaters were out of the water. Ross also mentioned the problem of holding tanks and marine sanitation devices which may introduce more toxic chemicals into the water than normal wastes. A final suggestion offered by Ross for providing additional moorage space, was the concept of multi-boat moorage which would consist of single point offshore moorings to which ten to thirty boats could be tied.

Neil Ross then launched into a discussion of the economic impact of recreational boating. In 1976, 50 million people participated in recreational boating, spending just under 6 billion dollars. There were over ten million recreational boats serviced by over six thousand marinas, yacht clubs and boat yards across the country. Seattle-Everett was the seventh largest metropolitan market for outboard motors and the leading market for inboard-outboards. In 1969, the Stratton Commission on Marine Science, Engineering and Resources indicated that, in terms of shoreline economics, marine recreation was second in impact only to that of offshore oil and gas. Number three was commercial fishing which has much stronger political support. Recreational boating comprises a very high percentage of total marine recreation because a boat is both the means to an end (such as sportfishing or waterskiing) and an end in itself.

However, despite these impressive facts, recreational boating is still not identified formally as an industry by the U.S. Commerce Department. Recreational values provide a number of explanations for this. First, recreational values are difficult to define and qualify. Second, these statistics are estimates or guesses, not hard core data. Third, facts and figures on recreational boating compiled by the federal government and states are organized differently and listed under several different names in various studies and reports. Fourth, there is no uniform systematic method established across the country for gathering boating information. For instance, each state has different requirements for boat registration and Washington does not even register boats. Ross stated

that the recreational boating industry needs to stand alone to be counted.

Further problems which confront the industry include false comparisons with the auto industry. The differences between boating and the auto industry are obvious in such areas as depreciation value and the fact that recreational sales continued to advance during the recession while auto sales declined. Boating sales have even increased at a faster rate than the GNP. Second, politicians look to the bottom line when comparing the relative importance of recreational boating with other industries, and if the bottom line is unknown, recreational boating is unlikely to fare too well. According to a State of Connecticut study conducted in 1973, the total value of recreational boating was equivalent to that of agriculture. A third problem confronting the recreational boating industry is that terminology such as yachting can be misleading and detrimental. In contrast to the rich man image that "yachting" connotes, the actual average boatowner earns between \$12,000. and \$18,000. per year. The next largest income bracket for boat owners is from \$9,000. to \$12,000. and the third largest is from \$18,000. to \$23,000. Fourth, bankers do not know where to find economic statistical information about the recreational boating industry since it is not listed in Standard and Poor's.

In conclusion, Neil Ross offered a number of ideas which might help recreational boating gain the status and recognition that the industry deserves. First, more economic studies should be done on a state by state basis as well as a nationwide boating study. The report on the Washington boating industry done for the Northwest Marine Trade Association in 1973 needs updating. Second, through a coordinated effort, the regional trade associations could play a valuable role in bringing political pressure for recreational boating to the attention of planners, politicians and legislators. Third, the marine industry has a voice in coastal zone management and their concerns, as an interested group, are required to be considered in the development of state coastal zone management programs. Further, if statistical information is not available for the boat industry, the industry will end up on the short side in the allocation of coastal resources. The recreational boating industry is big; it is important; it is valuable. Neil Ross urged that the audience, as members of the business, need to work together to build it into an "industry" that will be recognized by the government.

Bob Goodwin made a few additional comments about coastal zone management following Neil Ross' talk. From a showing of hands, he noted that a large number of the audience participated in the development of local shorelines master programs in Washington. Washington was the first state to get federal approval of their coastal zone management program in June 1976. He mentioned the coastal management requirement for federal consistency which requires any federal agency conducting an activity or development or issuing a license or permit to anyone in the coastal zone of that state to do so in a way that is consistent with the state's approved coastal zone management pro-

gram to the maximum extent practicable.

CLIFTON C. STEELE, President, First Priority Corporation
Seattle, Washington

Mr. Steele began his presentation by re-emphasizing two important points already stated. First, we do not know enough about boating/moorage statistics, and adequate information about moorage supply and demand is critical. Second, he cited past moorage studies which provided valuable data. These include the 1973 Washington boating industry study previously mentioned, the 1966 Puget Sound pleasure boating study done by the Corps of Engineers (published in 1968), a 1950 City of Seattle study, and numerous studies done at the University of Washington. His subsequent remarks focused on problems of analyzing supply and demand for moorage space.

In terms of supply, most of his information was drawn from the Seattle area. His firm, First Priority Corporation, had recently completed the market analysis and demand segment of the City and Port sponsored Seacrest Marina Feasibility Study. Their inventory of local marinas conducted in late 1976 showed that the supply had not expanded significantly since 1966. Only 173 new open-wet slips had been added since that date. In terms of covered-wet moorage, expansion is very limited, if not non-existent. The reasons for the lack of provision of covered wet moorage include the fact that they are discouraged according to environmental legislation (primarily Seattle's Shoreline Master Program) and community opposition. Thus, it appears that additional supply will have to come from new technology and added wet-open slips.

Besides the impact of environmental laws and EIS requirements, other problems related to expanding the moorage supply include access problems and environmental pre-requisites for suitable marina sites. A site which is being considered for marina development must not only be appropriate from the water side, but the land area must also be feasible for construction of parking and supporting marina services. Further, a marina should constitute the highest and best use of the land and be expected to yield a good rate of return on the investment.

The second aspect that First Priority Corporation analyzed for the Seacrest study was the problem of assessing moorage demand. The findings of the inventory suggested that there are several kinds of operational marinas. Each type of marina approaches the market-place differently, supplies various services, and charges different rates for moorage space. First, public agencies including the Port and City of Seattle operate both small and large marinas. Second, some marinas are operated with moorage as an incidental business, in that moorage income comprises a very small proportion of the total income. These marinas are often price-setters, since they are less impacted by a decline in occupancy rate. Third, some marinas are on lease. Publicly owned marinas are sometimes leased to private operators. Other marinas are associated with living

quarters such as condominiums or apartment houses. Fourth, yacht clubs supply moorage space to their members. Although moorage prices at yacht clubs appear low, the per footage rate does not reflect club dues which are really part of the price. Fifth, there is the marina owner/operator who supplies moorage services as a prime business, which fits the traditional definition of a marina. In addition to wet-open and wet-covered moorage, dry land facilities are also available, such as dry stack or pigeon-hole storage. Prices vary for these different types of moorage space as well as according to the type of marina operation.

Kip Steele mentioned a few factors which influence demand. Different locations on Puget Sound, depending upon their proximity and accessibility from the boat owner's place of residence and/or to desirable boating areas, experience different levels of demand. Generally, there is a preference for saltwater over freshwater moorage. Much of the demand is "relocation demand," boatowners who already have moorage, but would relocate to a better location or a superior facility. Demand also varies according to the kind of marina and the extent and the quality of the services it provides.

CAPTAIN W. H. BUXTON
Manager, Shilshole Bay Marina
Port of Seattle

Captain Buxton focused his presentation on a discussion of the Shilshole Bay Marina where he is the Manager, and the role of the public sector in marina operations. Shilshole was built in 1961, thirty-five years after the first efforts of the Shilshole Bay Association, organized in 1925. It is the third largest marina in the country. In its early years, the marina was not very profitable. Construction was originally planned to occur in stages. However, Shilshole was filled to capacity when it first opened and demand seemed to be so large that by 1964 all three stages were completed, providing moorage for 1200 boats. The construction of such a large new marina attracted customers away from existing private marinas. Consequently, Shilshole raised rates and lost customers.

Captain Buxton addressed the issue of government operated versus private marinas, asserting that government run marinas do serve a public purpose. For instance, the wide variety of services available at Shilshole would not be profitable for a private marina to offer. Among the services listed by Buxton at Shilshole and the adjacent areas along the waterfront were: general recreational facilities such as beach, play areas, scuba diving area, fishing piers, etc., commercial facilities such as restaurants, gift shop, grocery stores, boat sales, brokerage and marine hardware; boat moorage for boats from 20 feet to thirty feet long; guest moorage; boat repair area; tidal grid and many others. According to Buxton, it takes a government operated marina to provide this number and variety of services because it is necessary for private operators to make a profit.

A public marina like Shilshole requires established rules, regulations, policies and procedures which can be fairly applied to all customers. Some of these policies and procedures at Shilshole include a waiting list (the total number of names is close to 1200), a moorage assignment policy, a subleasing policy and liveaboard procedures. Moorage rates are particularly difficult for public marinas to establish because they must be justified to a disbelieving public. According to Buxton, public ports are presently trying to establish a good basis for rates which reflect investment as well as operating expenses. Square footage rather than slip length is being considered as a more equitable method of establishing rates since the length and the beam of boats is taken into account. Currently boatowners moored at public marinas must pay a 12% leasehold tax. Last year revenue for Shilshole was over a million dollars and the total operation showed a small profit. Shilshole has reached its capacity in terms of moorage space.

Captain Buxton discussed plans for the future of Shilshole and his predictions for the marina/boating business:

- . the number of liveaboards will probably continue to grow
- . the percentage of sailboats will also continue to increase. (sailboats currently comprise about 75% of the moorage at Shilshole.)
- . he saw boating as becoming more and more of a rich man's sport. (see Ross' comments above.)
- . multiple ownership of boats is a probable trend
- . perhaps special rates will be available for senior citizens
- . future demands may include subsidizing moorage for commercial fishing boats, more facilities for trailered boats, and multi-level dry storage
- . he foresaw problems with environmentalists on water pollution policies
- . Buxton recognized the need for boat registration in the State of Washington

JOHN RADOVICH
Newport Yacht Basin
Bellevue, Washington

As a private marina owner, John Radovich focused his discussion on the problems facing the private operator as opposed to a public agency like the Port. Mr. Radovich drew upon his own experience as one of the owners of Newport Yacht Basin and his experiment with condominium moorage.

The biggest problem confronting the private operator is that of money. Private marinas do not have the statutory authorities of public agencies such as the power to raise tax free bonds, or the power of condemnation. Further, they do not have the leverage the another governmental body might have with other public agencies. Economically, one cannot justify owning a marina today based solely on rental income. An appraisal of marina value based on rental in-

come is usually far below the asking price for waterfront property where the marina is located. Further, once the marina is purchased, it is difficult to build or expand because of government agency requirements.

In order to achieve a financially feasible moorage operation, the owners of Newport Yacht Basin developed the idea of letting an individual own his own moorage. Originally, they entered into a forty year lease with boat owners, at a price for covered moorage of \$100./foot. By employing this scheme, they were able to get the total project capitalized at a value high enough to carry financing, and far greater than the value based on rental income. Currently, they are in the process of converting the forty year leases into actual sales with deeds.

A further problem they faced in their strategy of moorage ownership was local platting and zoning code setback requirements. In order to circumvent these restrictions, they utilized a condominium approach established under the Washington State Horizontal Regime Act known as the "condominium act." Radovich felt that the condominium concept is the only financially viable way to develop a private marina at the present time.

Mr. Radovich cited one example of the time delays involved in the permit process from his own experience. A permit was required for the minor improvement of adding tires to strengthen a log boom which constituted a change in design. Corps of Engineers approval took five months despite the fact that there was no opposition from a single agency and the Corps even praised the project because they used waste product tires.

W. S. LAGEN
Meydenbauer Bay Marina, Bellevue
and President of Association of Independent Moorages (AIM)

As an independent marina owner and operator and president of AIM, Mr. Lagen also addressed the problems facing the private marina. However, in contrast to the previous speaker, he felt that moorage is now an attractive business investment as evidenced by the number of marinas now in the planning or construction stage. He believed that the reason for the shortage of moorage in Seattle and King County is that the public port has had a stranglehold on marina rates for the past fifteen years. Historically, moorage has always been cheap in public marinas. When public moorage was developed in the early sixties, the public rates were low, forcing private rates down in order to be competitive and inhibiting construction of marinas for the last fifteen years. It is only in the past two or three years that private moorage development has revived as an attractive investment.

Lagen asserted that there is a place for both public and private moorage operations. However, public marinas should also be money-making propositions which can compete with private industry on an equal basis. For example, in California, the public sector installed breakwaters and did the dredging, assuming initial development costs, but the actual business is contracted out on long-term leases to private industry. In return, private industry pays a percentage of its return to the county. This seems to be a desirable situation: both the public and private sectors make money, and the unfair competition of low rates charged by public facilities is avoided when the business is run by a private operator.

Lagen illustrated the problem of low moorage rates, using a hypothetical example.* In order to get a reasonable rate of return for a 100 slip marina with 36 open slips, it would be necessary to charge \$2.53 per slip foot.

However, Shilshole charges \$1.75 and the average rate in Seattle is only \$1.59. The \$2.53 rate which would be financially feasible for a private moorage facility is not competitive with these current market rates. At present, the private marina industry is lobbying to get private sector leasing from the public sector in order to get rates up to where private construction of new marinas is an economically viable proposition. The provision of additional moorage space is likely to occur if a reasonable return on investment is possible.

*See Appendix for full description of this example

SESSION TWO

MARINA FINANCING: PUBLIC AND PRIVATE

INTRODUCTION

Having explored in the first session, some of the problems and possibilities facing marinas on an industry-wide scale, the second session shifts to the level of the individual enterprise, public or private, and the issues involved in financing new or expanded moorage facilities.

In spite of our efforts, no commercial banking spokesperson could be found to address the topic of private financing for marinas. However, some of the remarks made by Mr. Dowd, Seattle Northwest Securities Corporation and by Mr. Sleater, Small Business Administration, apply to the private sector marina developer.

The role played by the Washington State Department of Natural Resources in marina development is included in this session rather than later ones dealing with state regulatory agencies. Without a lease from the DNR for occupying state-owned waterbottoms, few marinas could be built. Policies and guidelines developed by the DNR's Division of Marine Land Management determine if, and under what lease terms, marinas may occupy waterbottoms within their jurisdiction. An understanding of DNR's role in this regard is crucial for the moorage developer and operator.

WILLIAM A. JOHNSON
Supervisor, Division of Marine Land Management
Washington State Department of Natural Resources

A portion of most marinas are constructed over state-owned land and require a lease from the Washington State Department of Natural Resources (DNR). Mr. Johnson discussed the Department's policies for leasing and managing these aquatic lands so that marina owners and developers could better understand their importance. The State owns two million acres of marine lands consisting of:

- . 1) harbor areas,
- . 2) first and second-class tidelands,
- . 3) beds,
- . 4) shorelands of navigable waters 1/

The management objectives for aquatic land differ from those for other lands owned by the state. Aquatic lands are truly public lands, owned by all the people of Washington State, whereas most other state lands are trust lands, managed to maximize economic return. On aquatic lands, the objective is to maximize the long-term public benefit.

This difference in management objectives is reflected in the terms and conditions of DNR leases for aquatic lands. For example, the percentages used to calculate annual lease rates are 6% for private recreational leases and 7.6% for commercial lease applied to the full value of the land, and these percentages are lower than market rates. In some cases, lease conditions include providing various public benefits, such as increased public access, which are partially offset by the lower lease rates. Another important management consideration on state aquatic lands is the multiple use concept which involves the placement of more than one activity or a combination of activities on any given parcel of marine land.

All aquatic lands leases are based on market value. However, the market value of this land, much of which has never been sold, is very difficult to ascertain. The State has developed various methods for determining land value which can be averaged to arrive at an acceptable figure.

- . the first method is to value the abutting tideland properties for which you have information and relate their value to the adjacent water area. The common ratio used in valuing water-covered area relative to upland area is one to three or one to four
- . a second way of determining aquatic land value is based on leasehold value, including value of the harbor area, leasehold interest and harbor area improvements, minus the value of the structures on the land.
- . another method is using other leases
- . a fourth approach is based on income (e.g., what do moorage operators charge for the use of the area?)
- . finally, MAI (Member of the Appraisal Institute) reports, when available, are useful

By averaging the values you get from these various approaches, a realistic value for determining lease prices may be placed on aquatic lands.

Lease rates vary depending on the degree to which the activity interferes with public use of the same property. For example, a marina is considered to be a total withdrawal of State land since other public uses are usually preempted on the site. However, a use such as geoduck harvesting might receive a lower lease rate because it would not pre-empt other public uses of the surface water area, such as recreational boating. Special consideration may be warranted for uses with a high public benefit. In particular, public uses of harbor areas which enhance public access, such as a fishing pier, may receive lower lease rates.

Lease terms vary for different categories of aquatic lands. First and most common is the harbor area. Harbor areas were set aside in the State Constitution for purposes of navigation and commerce. Marinas have been interpreted to serve such a purpose. Harbor areas are located in front of incorporated cities and extend to one mile beyond city corporate limits. In addition to restricting uses, the Constitution limits the maximum lease term to thirty years. Since more harbor areas were set aside by the Constitution than are necessary for navigation and commerce today, a set of guidelines for interim uses has been established by the State Harbor/Line Commission.^{2/} These guidelines allow interim uses in harbor areas, but under lease terms shorter than thirty years -- usually ten -- and subject to frequent DNR review.

A second area where marinas are frequently located is on first class tidelands which extend up to two miles beyond the city limits. DNR policies encourage locating all commercial activities, including marinas, in either harbor areas or first class tidelands. First class tidelands may be leased up to a maximum of 55 years. Upland property owners have a preference right to lease such tidelands. Second class tidelands are located beyond two miles from the corporate limits of the city, and are reserved primarily for recreation and private uses. All lands lying seaward of the outer harbor line or the line of extreme low tide are bedlands. Yacht clubs are often located on the beds, and the right to lease is based on a preference right with the owner of the abutting tidelands. To lease the beds, one either has to own the tidelands, or obtain a waiver from the tidelands owner.

Johnson re-emphasized that maximizing the public benefit is the long-term objective in the DNR's management of marine lands. Finally, he felt that the gravest problem in the use of aquatic lands is that the individual benefit often prevails over the public benefit. For example, one of the major causes of delay in obtaining Corps of Engineers and Shorelines Management permits is the objections raised by private interests to new uses of water areas which they have come to consider their own. Johnson hoped that the larger public interest would prevail over individual property-owners preferences in the future.^{3/}

TOM DOWD

Vice President, Seattle Northwest Securities Corporation

Tom Dowd focused his remarks on tax exempt financing by public agencies. Marina financing is quite different from other types of financing by tax exempt bodies in that marinas are not an essential public service, such as water or sewers. The unusual status of marina financing by public agencies requires time and study by an investment banker.

The banker should be brought in at the beginning of the project and be kept aware throughout its development. Without such on-going in-

volvement and accurate information about the project, an investment banker might put a high interest rate on the bonds or back out of the project completely. The speaker outlined a series of phases that are important in the development of a successful public marina project and critical to ensuring a good financing arrangement.

- . first, a consulting team should be established at the very beginning. This team should include consulting engineers, designers, bonding attorneys and an investment banker.
- . the second phase consists of feasibility studies performed by a consulting engineering firm, encompassing design, planning, financing and market demand studies of the proposed marina development. This up front cost can provide the developer and banker with valuable information and save a lot of money in the long run.
- . the third phase is taking the plan, now in the form of narrative and maps, and applying the necessary permits to that plan. Again, these are up front costs, some of which did not exist ten years ago.
- . fourth is the final design phase. The original feasibility plan is compared with permit conditions and monetary constraints in order to develop your final design.
- . during the fifth phase, contractors' bids are obtained for the final development plans. The actual go or no-go decision is made when the construction bids are in. If the decision is to go ahead, then you set your financing and award construction bids.

In marina development, it is important to design your financing terms to avoid paying principal and interest before you are receiving revenue. The speaker reiterated that your lending agency or investment banker should be continually kept informed throughout the project's development.

Tom Dowd then outlined several methods of financing for public agencies which included:

- . general obligation bonds
- . revenue bonds
- . grants and loans

Despite their problems, general obligation bonds which are paid from taxes should be considered for every marina project because of their low interest rates and flexible terms. Another normal method of public financing is revenue bonds. Revenue bonds which pledge gross revenues from a port district rather than from marina revenues are desirable. Interest rates are higher and less flexible for revenue bonds that pledge only marina revenues because they are

based on a single source of payment. Grants and loans as a financing possibility should be explored early in the preparation of the feasibility study. For example, the State Inter-Agency Committee for Outdoor Recreation (IAC) which coordinates outdoor recreation planning and allocates outdoor recreation funding for the State can be very helpful if they are brought into the project early so that you will know their restrictions. The Corps of Engineers also has some project monies that are available for marinas, but the speaker felt that the problem with using Corps money is that it can be extremely long range. Also, there is an excellent loan program through the Farmer's Home Administration, but it is limited to projects in rural areas.

Tom Dowd concluded that the biggest factor in setting an interest rate for borrowing tax exempt bonds for a moorage facility is to be sure your investment banker knows what you need and understands your project.

EDWARD SLEATER

Small Business Administration, Seattle

Edward Sleater spoke about the role of the Small Business Administration (SBA) in financing private sector marina projects. He regretted that no commercial bankers were represented on the panel to explain their loan programs because the SBA's role in financing is as a support for the banks. The SBA, as an agency of the federal government, has two functions. First, it guarantees loans to private enterprise made by commercial banks. The SBA becomes involved when the bank wants to grant a loan to a private company but lacks sufficient collateral. The bank can ask the SBA to guarantee 90% of the outstanding balance of the loan or five hundred thousand dollars, whichever is less. Secondly, the SBA makes loans of up to \$100,000. directly to private businesses.

Unfortunately, the SBA's loan guarantee limitation of five hundred thousand dollars is too small to be of much help to people who want to develop a new marina. However, the SBA does get involved in guaranteeing loans for expansion and improvement projects which fall within their dollar limitations. For instance, they can provide funds for construction of new docks and slips; funds for machinery, equipment, furniture and fixtures, as well as funds for shore-based facilities required in operating a marina such as a workshop for engine repair or a grocery store. The speaker suggested that marina developers interested in larger volume loans should explore the possibility of EDA (Economic Development Administration) financing.^{4/}

In summary, the SBA gets into the act when a local commercial bank like Seattle-First or Seattle Trust requests the SBA to guarantee a loan which they consider credit-worthy, but which requires some additional security. Generally, if the bank finds the credit appropriate, the SBA will also find it acceptable. The SBA also has a direct loan program where there is no bank involved, but their maximum

is only a hundred thousand dollars, too small to be of much use in financing marina development or expansion. Another problem is that SBA funds are not normally available on a direct basis. 95% of the SBA's business is through the banks and 99% of their dollar value on a guarantee basis is also through the banks. Basically, the SBA can do a very simple service for the marina owner or developer; that of guaranteeing a loan through the bank.

ROBERT D. KELLER
Washington Public Ports Association
Manager, Port of Anacortes

Drawing upon his experience at the Port of Anacortes, Bob Keller addressed the financial aspects of managing a public port-operated marina and cited some of the problems involved in public marina development and expansion. The Port of Anacortes, with the assistance of Corps of Engineers' dredging activities, developed a harbor-of-refuge for commercial small craft and pleasure boats in the early 1930's. During its first years, this moorage operation was very profitable, and a major expansion was undertaken in the 1950's. Although they ran into some financial problems, eventually revenue and bond dollars and general obligation funds were obtained. Since then there has been one additional expansion at Anacortes which nearly doubled their moorage capacity, bringing the total number of slips to about 500. Currently, the Port is considering adding another 350 spaces, but has a problem involving dredging costs and low moorage rates.

If the Anacortes expansion is realized, the present \$.65/foot monthly rate will have to be increased. This rate applies to both commercial and pleasure boats. Besides wet open moorage, the marina also provides a full range of services including security and messenger service, electrical outlets, sewage connections, rest rooms and hot showers, parking space and many others. Getting the moorage rates to a level where a reasonable return is possible is very difficult for a public port-operated marina. Rate increases must be approved by the Port Commission and increasing rates is very unpopular.

In conclusion, Robert Keller noted several suggestions for improving the public ports' involvement in the moorage business being explored by the Marina Committee of the Washington Public Ports Association. Two especially promising suggestions are a State boating registration law and legislation that would permit public ports to become involved in other kinds of water-related developments.

DISCUSSION

Following Robert Keller's remarks, there was a brief question and answer period. Some of the highlights are presented here.

- . how does one put a value on harbor areas when there is no access to the harbor?

According to Bill Johnson, the Department of Natural Resources assumes that the applicant has access to the area, but at least access from the water is always possible. According to the DNR's current lease policy, a structure on the property belongs to the lessee during the terms of the lease, and at the termination, it belongs to the State. The DNR can also stipulate that a structure be removed at the termination of the lease. The standard lease terms for the various types of aquatic lands were reviewed:

-harbor areas - thirty years
-tidelands or shorelands - fifty-five years
-beds of navigable waters - thirty years
-booming leases - special ten year maximum

- . why were there no commercial bankers on the panel?

One explanation of their reluctance to participate was that because earnings from marina operations are derived from several different sources, no one person in a commercial bank could discuss the entire topic of a marina loan. For example, a loan for developing a marina splits into two loans at the bank because real estate loans are processed separately. Besides moorage, income is derived from gasoline sales, store operations, recreational facilities, etc. Rarely would a single individual in a bank have the opportunity to work with a marina loan from start to finish.

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1. "Navigable" is defined as capable of supporting commerce and transportation.
 2. The Harbor Line Commission is a constitutionally authorized board also known as the Natural Resources Board. See next session for further discussion on this topic.
 3. This point was reiterated by Bert Cole, Commissioner of Public Lands, during his keynote address to the Moorage Workshop participants.
 4. The EDA Business Development Program loans start at \$500,000. but loans are only available if over 50 permanent year-round jobs are created. Marinas would rarely fall into this category. The EDA Public Works Program is available to public agencies involved in developing a marina.
 5. The possibility of setting up a half-day seminar strictly on marina financing via banks was suggested as a way for the bankers to learn more about the marina industry as well as an opportunity for the in-

SESSION THREE

LOCAL, STATE AND FEDERAL AGENCIES' POLICIES
AFFECTING MARINA LOCATION AND SIZE

INTRODUCTION

A large number of local, state and federal agencies have separate policies which effect the selection of sites for marinas and also place restrictions on their size and physical design. These policies are in forced by government agencies or through financing dredging and protection projects of the Corps of Engineers. Each panelist described policies relating to marinas from the perspective of their agency or department. (The specifics of governmental permitting processes were covered in sessions four and five on the following day.)

JOHN D. WELCH, P.E.
United States Army Corps of Engineers
Seattle District Office

The U. S. Army Corps of Engineers derives its authority for development of the nation's water and related land resources from legislation enacted under the commerce and welfare clauses of the Constitution. Congress has declared a policy to promote the nation's recreational resources to include safe and adequate navigation facilities for recreational craft. Congress has also established that the federal government should undertake only those projects which local levels of government or private enterprise cannot do as readily or as well from the standpoint of the public interest.

In 1950 the Corps developed a uniform method of evaluating recreation navigation benefits in allocating agency funds. Recreation navigation benefits are calculated according to the "small boat formula." According to this method, recreation navigation benefits are equal to the depreciated investment in boats received by owners of equivalent for-hire boats. The depreciated investment is assumed to equal one-half the value of the new boat. The net return on boats operated for-hire ranges from about eight to fifteen percent annually. Total navigation benefits of a small boat harbor development are calculated by multiplying the navigational benefit per boat times the number of boats the marina will hold.

The federal government, through the Corps of Engineers, will assume.....

- . all pre-authorization planning and investigation processes for navigational facilities
- . the total costs of navigation aids through the U.S. Coast Guard

- . and not more than one-half of the first cost of the general navigation facilities serving recreational traffic.

General navigation facilities are defined as necessary breakwaters, a safe entrance channel, protective anchorage basin, interior access channels and turning basins. A federal project must have a local sponsor, usually a state or local government. The sponsor must bear one-half the construction costs of the general navigation facility and provide lands, easements, rights of way, a public wharf, and servicing facilities. Dredging in the berthing areas and minor access channels and services such as policing are also local costs.

A Corps study of boat harbor development optimizes size based on navigation benefits and the costs of the general navigation facilities. The project sponsor, who puts up about three-fourths of the total investment, conducts a revenue/cost analysis. Generally, the project sponsor perceives the need for a marina in his/her jurisdiction before requesting assistance from the Corps. Corps regulations require evaluating all alternative sites to determine the best location according to economic, engineering, environmental and social considerations. Usually, much of the planning effort in terms of location and size is done by the local sponsor before coming to the Corps.

In the mid-sixties the Corps participated in a study of pleasure boating in Puget Sound which identified the need for both moorage and potential boat harbor sites. Since the study's completion in 1968, new factors such as the fuel shortage and national and state environmental and shoreline management legislation have altered local conditions. This winter, the Corps plans to initiate an update of the Pleasure Boating Study with the assistance of the Bureau of Outdoor Recreation, State Parks Department and other State agencies. Besides moorage demand and siting, this study will also address the need for launching facilities. According to John Welch, the Corps views the determination of potential moorage sites in Puget Sound as important, and the possibility of a limited amount of moorage sites in the future could result in a much greater demand for launching facilities.

BILL JOHNSON

Supervisor, Division of Marine Land Management
Washington State Department of Natural Resources

Bill Johnson described the policies that the DNR developed as guidelines for moorage development.

- . the preferred aquatic lands for locating marinas are harbor areas and first-class tidelands, as he mentioned in his previous talk
-

in order to minimize the impact of moorage demand on natural shorelines and provide a better service to the public, large marina developments in urban areas are preferred over numerous small marinas widely distributed

- . open moorage is favored in relatively undeveloped areas and in locations where view preservation is desirable and/or where leisure activities exist
- . covered moorage may be considered in highly developed areas and locations in a commercial environment
- . enclosed moorage (covered and enclosed with sidewalls) and enclosed boathouses will be confined to areas of industrial character where there is a minimum of aesthetic concern
- . in general, covered moorage will be preferred to enclosed moorage and open moorage will be preferred to covered moorage
- . moorage should be designed to be compatible with the local environment and to minimize adverse aesthetic impacts
- . anchorage suitable for both residential and transient use should be identified in appropriate locations so as to reduce dependence on developed marinas
- . acceptable locations for marina development should be identified to meet public needs during the next thirty years
- . the use of floating breakwaters shall be encouraged over the use of solid fills

At the time of his presentation, these marina policies had not yet been reviewed by the State Harbor Line Commission. The Harbor Line Commission, a policy-setting board for the DNR, includes the same five people that sit on the State Board of Natural Resources. They are the Governor, Commissioner of Public Lands, Superintendent of Public Instruction, and the Deans of the University of Washington College of Forestry and the Washington State University College of Agriculture. Bill Johnson ended his remarks with a few comments on lease terms. He said that the reason that many lease terms are shorter than the maximum allowed is that it is important for the state DNR, in its capacity as land manager, to review the leases as often as possible.

BILL BUSH
Washington State Parks and Recreation Commission
Olympia, Washington

Bill Bush confirmed the participation of the State Parks and Recreation Commission in the update of the Pleasure Boating Study mentioned earlier by John Welch. The scope of the new study will

include boating supply and demand statewide, so that data will be available for the Columbia River and the lakes and rivers in Eastern Washington. The Commission is charged by law with providing for developing destination recreation areas in Puget Sound and throughout the State of Washington. The Parks and Recreation Commission does not have any specific regulations that deal with marina size and location. However, the speaker recognized the negative impact that a shortage of moorage in terms of destination areas could have on the whole boating industry.

The problem of boat sewage regulation has been a long and abiding concern of the State Parks Commission. Through its buoy moorage program, the Commission has dealt directly with the boat sewage issue. Although the question of whether boat sewage is detrimental to the environment is still unresolved, the State Department of Social and Health Services (DSHS) has restricted the Commission from issuing buoy permits in certain areas. The Commission has also been concerned with the subject of holding tanks versus flow-through devices. Recently, other state agencies advocated a statewide policy to prohibit flow-through devices and to adopt total pump-out facilities. The Parks Commission, representing the interests of the pleasure boating industry within state government, led the fight against this policy.

In conclusion, Bill Bush mentioned that the Parks Commission has statutory permit responsibilities for Port Districts. Permit requests can only be processed in a timely and orderly fashion if pertinent information is received well in advance of the time approval is required. The Commission is also the boating safety agency for the State. Because of their interest in boating safety, they have also pursued the matter of State Boating Registration. According to the speaker, there is a possibility that the State of Washington could lose some federal money by not having a state boating registration requirement.

STEVE HARVEY

Planner, Skagit County, Washington

Steve Harvey presented highlights from Skagit County's recent marina siting study, one of the first comprehensive moorage studies of its kind in the Puget Sound area. Skagit County, traditionally an agricultural, lumbering and fishing area, is now feeling pressure from the recreational boating/marina industry for land and water use. Many boaters come to Skagit County from population centers of Seattle, Tacoma, Everett and British Columbia. Also, Skagit County is a major jumping off point for boaters destined for the popular San Juan Islands. One of the findings of a State Shorelines Hearings Board investigation involving the La Conner Marina was that Skagit County lacked any type of a formal comprehensive marina planning study. This finding, and the availability of Coastal Zone Management 306 (program administration) funding provided the impetus for the County to undertake a comprehensive marina study.

The study involved both marine recreation/marina siting and dredge spoil disposal. The program was designed to solicit the involvement of all interested agencies and people at an early stage. Among its many explicit and implicit goals were:

- . to prevent costly conflicts and delays incurred by an applicant who is putting together a marina development package.
- . to research inventory, identify and document existing and potential marina recreation sites and their capacity for expansion, development, and/or use in the future.
- . and to provide local public and private officials with data and planning information for the siting of marina recreational development, including marine parks.

More specifically, the program addressed the following objectives for marine recreation:

- . to generate regional demand and need data for marine recreation-oriented activities
- . to develop site evaluation criteria by which various sites around the country and local area could be evaluated as to suitability for marina development
- . and to inventory and analyze the existing and potential marina and marine recreation sites, utilizing the above evaluation criteria.

Under the guidance of the regional planning staff, Skagit County put together a team of professional consultants headed by The Richardson Associates of Seattle, which included a recreation planner, soil specialist, biologist, oceanographer and economist. A technical advisory committee composed of government agency representatives and interested local groups, businesses and citizens reviewed the program's progress and made decisions about its direction. They were instrumental in evaluating the criteria to be used in examining potential sites and in reviewing the draft report.

The following three categories of criteria were developed to evaluate potential sites:

- o physical aspects of siting
 - exposure to wind and waves
 - water quality
 - hydraulic processes
 - littoral drift
 - erosion
 - living marine resources
 - physical capacity of the site
 - and site suitability

- developmental constraints
 - ownership patterns
 - breakwater requirements
 - dredging needs
 - engineering considerations
 - and benefits of marina development relative to other uses

- public policies
 - existing land uses
 - plans for the area by state and local agencies and special districts
 - social and cultural values
 - compatibility with other uses
 - shoreline master program regulations
 - and general community support

In conclusion, Steve Harvey felt that the marina siting study would enhance the pre-application process for marina development and expansion projects by identification of potential conflicts and problem areas. The results of the study constitute a preliminary environmental assessment of sites in Skagit County, by outlining major constraints on marina development. Public-private sector coordination at the early stages of a project could reduce the uncertainty involved in securing necessary permits. The speaker also hoped that the marina study would ultimately enhance public use and access to shoreline area, an important goal of coastal zone/shoreline management.

DISCUSSION

Bob Goodwin stressed the importance of Steve Harvey's point about the current trend of planning agencies and permitting authorities to shift from a reactive stance to a more positive approach by removing some of the uncertainty for the developer. Goodwin singled out a fundamental problem faced in planning and regulation; balancing community development goals for uses of shorelines and waters with the physical capability of those water and shoreland areas to absorb increased development. The Skagit County marina siting study is an example of a "new breed" of planning programs, an updatable and flexible study that can help remove some of the uncertainty facing the marina developer.

KEN BOWRING

Washington State Interagency Committee for Outdoor Recreation
Olympia, Washington

Ken Bowring outlined the responsibilities of the Interagency Committee for Outdoor Recreation (IAC) and discussed their policy document, the State Comprehensive Outdoor Recreation Plan (SCORP).

The IAC consists of five appointed citizen members and the directors of seven state agencies; DNR, Parks and Recreation, Ecology, Fisheries, Game, Commerce and Economic Development, and Highways.

In 1964, the state voters passed Initiative 215, the Marine Recreation Land Act, which established the IAC and provided continued funding by setting aside unclaimed pleasure craft marine fuel taxes which amount to about 1.5 million dollars per year. Since then, additional funds have been appropriated by three voter-approved state bond issues, and federal funds from the Land and Water Conservation Fund are distributed to the state. These federal funds are disbursed by the Bureau of Outdoor Recreation (BOR), Department of the Interior, and must be matched on a 50% basis with either state or local funds. Washington state receives approximately 3.5 million dollars annually for the BOR.

Because competition for grants is keen among local, regional and state agencies, it is incumbent upon the IAC to develop an equitable method for establishing funding priorities. To this end, the State Comprehensive Outdoor Recreation Plan (SCORP) serves as a policy document which helps guide IAC funding priorities and policy decision-making. SCORP guidelines specify procedures for identification of regional needs for a broad spectrum of outdoor recreational activities and facilities. The SCORP also maintains Washington's eligibility to receive federal matching grants.

Three basic elements are involved in the needs analysis for developing a data base for outdoor recreation in the state. They are:

- . a determination or estimation of current and future participation in outdoor recreation
- . an inventory of existing outdoor recreational facilities
- . the application of facility and space standards to compare current and projected demand with existing supply

The final analysis provides an estimate of regional needs for various recreational facilities.

A household-based participation survey was conducted from the summer of 1975 through Spring 1976 to be used as a basis for the participation element of the needs analysis for the 1979 edition for SCORP.

A major portion of the supply element is being obtained from the IAC public lands inventory which is currently being completed. This is the first comprehensive and detailed public land inventory conducted in the State of Washington. All existing recreation sites managed by the various levels of government within the state are to be identified. Information on size, location, characteristics and facilities is also being obtained. Once operational, information on the vast majority of recreation sites within the state will be available on a standardized basis. The speaker viewed this as a major

first step toward the standardization of recreational data information systems within the state.

A comparison between the supply and participation elements highlights the discrepancies between the two and aids in identifying regional recreational needs. Based on the needs analysis, regional acquisition and development priorities are established. The most current SCORP (1973) identifies the top three priorities of the local agencies:

- . 1) the acquisition of shoreline and necessary upland to support multiple water-related activities accessible to local residents
- . 2) development or redevelopment of local recreational areas to provide opportunities for a variety of day use activities
- . 3) development of facilities to provide recreational opportunities which are related to the water

The first six capital priorities for state agencies include the following:

- . 1) the acquisition of critical resource areas including ocean beaches and wildlife habitat areas
- . 2) the development of those critical resource areas
- . 3) the acquisition of saltwater shorelines
- . 4) the development of freshwater shorelines
- . 5) the development of saltwater shorelines
- . 6) the acquisition of freshwater shorelines

Grant applications for funding are reviewed by the IAC staff and recommendations are based upon the degree to which proposed projects coincide with the priority needs established in SCORP and the suitability of specific sites to meet those needs.

In closing, Ken Bowring noted two concepts which underlie the planning efforts of IAC. First, an ongoing planning program is important in ensuring timely reaction to changes in public preferences and attitudes. Second, the development of a standardized recreation information system for both the supply and participation elements of the needs analysis formula is crucial so that information from a variety of sources can be collected on a comparable basis statewide.

LEE PRATT
Shorelands Division
State Department of Ecology, Olympia, Washington

Lee Pratt began his presentation by listing the names and phone numbers of Department of Ecology (DOE) staff to whom people could direct their questions.

- . DOE Headquarters, Olympia, Lee Pratt, 753-6832
- . Northwest Office, Redmond, Duane Wagner, 885-1900
- . Southwest Office, Olympia, Vic Schaefer 753-2353
- . Central Office, Yakima, Doug Klassine, 575-2800
- . Eastern Office, Spokane, Ted Olson 456-2026

For questions regarding federal and state regulations on marine sewage and pump out facilities, contact Lt. Com. Keith Harrell, 442-7643 or Lt. Scott Merrill, 442-5840 at the Seattle office of the U. S. Coast Guard.

The speaker quoted from a section of the Shoreline Management Act which outlines policies which relate directly to marinas. "Uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shorelines. Alternations of the natural conditions of the natural shorelines of the state, in those limited instances where authorized shall be given priority for single family residences, ports, shoreline recreational uses including, but not limited to, parks, marinas, piers" and other industrial developments. (RCW 90.58.020)

Enforcement of the Shoreline Management Act is handled through local master programs which indicate permissible uses within the shoreline area of their particular jurisdiction. Pratt suggested that marina developers contact their local planning departments who can show how the master program affects a particular development and explain the permit procedures. The shoreline permit is actually a local permit over which the State retains review power.

Pratt also noted several useful reports/documents issued by state agencies which are pertinent to marinas. (*note at bottom of page)

- . "Guidelines for Marina Development and Operation" (Department of Social and Health Services) which deals with such things as marina location, restroom facilities, water supply, solid waste collection, bulkheads, sewage disposal, etc. For copies write to P.O. Box 1788 MS4-1, Department of Social and Health Services, Olympia Airport, Olympia, WA. 98504.
- . "Criteria Governing the Design of Bulkheads, Landfills and Marinas for Protection of Fish and Shellfish Resources" (Department of Fisheries) Write to Department of Fisheries, General Administration Building, Olympia, WA
- . "Criteria Governing the Design of Bulkheads, Landfills and Marinas for Smelt-spawning Beaches" Also available from the Department of Fisheries.

* The DNR's Marine Atlas should also be consulted by a marina developer. The Atlas contains useful natural resources information including shellfish and fin-fish areas, oceanographic and meteorological conditions. (Ed.)

In conclusion, the speaker briefly discussed the Environmental Coordination Procedures Act (ECPA) which was developed to help people wade through the permit system. This procedure would allow you to fill out a single master application and submit it to the Department of Ecology who, in turn, would submit it to the various state agencies. These agencies have fifteen days to determine whether or not they have an interest in your project. ECPA has a built-in time period, they cannot come back at a later time and require a permit from you. A critical problem in the permit process which ECPA begins to address is the difficulty of knowing what permit applications you need.

DISCUSSION

Following the presentations by individual panelists, the program was opened to questions from the audience. Some pertinent issues raised in the discussion are listed below.

- . Governmental involvement in marina siting:
 - for waterfront and over-water areas where marinas are located, governmental jurisdiction lines are often vague and somewhat ill-defined.
 - three levels of government are normally involved: 1) federal agencies like the Corps who have authority over a navigable body of water, 2) the state which owns the bedlands, and 3) the county or municipality which administers the local shoreline master program.
 - the initial decision regarding a shoreline development is usually made at the local level through the master program. One panelist called the Shoreline Master Program the single document which will give you a 90% answer regarding development feasibility.
 - state environmental agencies conduct a monthly meeting where they discuss permits. A presentation can be made to these people regarding a development proposal as a first step in receiving comments from affected agencies and in determining necessary permits. (See discussion by Mel Hester)
 - federal policies such as Fish and Wildlife Service's mandate against filling tidelands and EPA's water quality standards should be considered in marina siting.
- . Department of Natural Resources Activities:
 - The DNR is looking into acceptable moorage sites for three years in the future. Through the use of their Marine Atlas, they have allocated tidelands to certain uses such as commercial, navigation, aquaculture, public use, natural preserves, etc. According to their policies, some activities which would degrade a site for a preferred use are precluded in certain aquatic lands.

..... leases Before DNR issues a lease, the lessee needs:

- 1) a shoreline management permit
- 2) a Corps of Engineers permit
- 3) compliance with SEPA

. Department of Ecology, Shoreline Management Appeals:

..... the Shoreline Management Act provides an appeals mechanism for issuance of substantial development permits. An aggrieved third party (neighbor, environmental organization, etc.) can appeal a decision of local government; or, if a decision by local government to grant a shorelines permit is not consistent with its master program, then the DOE or Attorney General can appeal that decision to the Shorelines Hearing Board. There is usually an opportunity for a pre-hearing conference, obviating the need for a formal Shorelines Hearings Board review, in most cases.

. Environmental Impact Statements:

..... the State will accept a federal impact statement, but the federal government will not consider an impact statement done under state guidelines (SEPA) for its own use.

. Interagency Committee for Outdoor Recreation - Recreational Facilities Survey:

..... the IAC survey includes all moorage slips, but they are surveying public agencies only. The private agency facilities survey is being conducted by the National Association of Conservation Districts which is being coordinated in Washington by the Agricultural Extension Service of Washington State University.

. Role of Northwest Marine Trade Association in Government Agency Activities:

.....for example, the Trade Association can provide information for the Corps of Engineers demand analysis and inventory of marine recreational facilities. Also, the Trade Association can provide input from their point of view on survey data and serve as a check on correctness and relevancy of marine recreational data.

SESSIONS FOUR AND FIVE

ENVIRONMENTAL QUALITY AND REGULATORY CONTROLS

SESSION FOUR: LOCAL ORDINANCES AND STATE STATUTES

INTRODUCTION

Sessions Four and Five addressed the regulatory process which all marina operators must face when contemplating new development or expansion of their facilities. The agenda was divided into two separate sessions in order to distinguish state and local statutes and ordinances from those that occur on the federal level. The state has little discretion over federally mandated programs even when it is responsible for program implementation. For instance, federal agency rules and guidelines set minimum standards for water and air quality under which states must operate.

Session Four dealt with "Local Ordinances and State Statutes." The state's Coastal Zone Management Program, State Environmental Policy Act (SEPA), and Environmental Coordination Procedures Act (ECPA) are discussed in this session. Two different perspectives on the regulatory process are also presented here; the views of county government involved in administering a local shorelines master program and those of consultants representing a large marina developer.

WES HUNTER

Former Acting Director, Department of Ecology
Olympia, Washington

Mr. Hunter specifically related the Department of Ecology's programs -- the state Coastal Zone Management Program and administration of ECPA-- to marina development and expansion. At the time of its passage, the State Shoreline Management Act (SMA) was generally understood to be a shorelines preservation act. However, Hunter asserted that the act which established a management scheme for shoreline development and which required local governments to develop master programs, is more management than preservation-oriented.

Mr. Hunter felt that the SMA has come into an era of good management. For example, appeals of permits once running at 70%, are now down to less than 20%. The total number of appeals under the SMA is less than 7% of all permit applications, or fewer than 300 out of 4,000 applications. Historically, marinas have had a somewhat higher rate of appeal both by the DOE and by individuals or local governments, than other types of permit applications.

Ideally, the SMA should identify appropriate areas for marina siting in order to minimize opposition to marina development. One purpose

of shorelines management is to make the best use of the state's limited water areas, and marinas are considered water dependent. A common problem that DOE sees in some marina permit applications is that moorage is only an incidental use, while the primary use is non-water dependent condominiums. Some of the supporting facilities and activities that are part of a marina operation such as parking lots over-water or on landfill, are not water-related activities and should be moved inland. *

According to Hunter, coastal zone management (CZM) runs hand in hand with the Shoreline Management Act. Since the state has been receiving federal CZM grants, there have been few changes to DOE's shoreline management administration, except that federal participation is a required element in the CZM program.

The speaker discussed the problems that would be involved in establishing a single master permit system. The Environmental Coordination Procedures Act was designed to simplify the state permit process. ECPA is a discretionary process administered by the Department of Ecology. If the state agencies do not have a problem with a permit application, DOE can usually get an answer back to an applicant within fifteen days. Hunter mentioned that a process similar to ECPA is being considered for local government permits. ** However, for political reasons the establishment for a statewide master permit is very unlikely because it would require legislative action to coerce the state and local agencies to adopt such a process.

According to Hunter, the Department of Ecology reflects the thinking of the Governor since it is directly under her control. The new administration exhibits a difference in thinking from the previous one regarding the location of oil ports and tanker traffic on Puget Sound. Nevertheless, there are few changes in day-to-day coastal zone management administration in the DOE. Thus, there should be no noticeable change in DOE action regarding permit applications under the Shoreline Management Act.

Hunter placed the burden of speeding up the permit process on the applicant who should seek to minimize his/her own time delays and those involving local government. Unfortunately, the speaker said that the DOE has sometimes been used as a scapegoat for delaying or stopping development. The SMA was originally passed to provide for orderly development of the shorelines and enumerates various avenues available for people who oppose particular projects. In closing, Mr. Hunter asked that he or another DOE staff member be notified if anyone in the audience found a DOE action or procedure to be particularly unreasonable.

* For a more complete discussion of marinas under the Shorelines Management Act, See Appendix.

** 1977 Amendments to ECPA permit local government to participate in the ECPA process, at their discretion.

Following Mr. Hunter's presentation, Bob Goodwin injected a few comments about the marine recreation industry and the subject of environmental controls. Goodwin said that according to futurist Herman Kahn, economic activities of the Twenty-first Century would shift toward the quaternary sector of the economy and would include more leisure time activities. He felt that this was encouraging for the future of the recreational boating industry. Another point raised by Goodwin was that mistrust of government following Watergate created a new arm of grassroots government known as community councils which have assumed a great deal of power. In Seattle, community councils have exerted a great deal of influence on the shorelines decisions made by City Council.

Goodwin concluded with some observations on Washington State's Coastal Zone Management Program. Part of the State's CZM program is a letter from Former Governor Dan Evans stating the state's intent that there be a single oil transportation facility near Port Angeles, and secondly that the Washington Tanker Safety Act was part of the program. Since then, the Department of Commerce has said that the Tanker Safety Act was not part of the program, although the Act will be enforced until the Supreme Court ruling is issued. Further, the current administration's policies on oil ports and transportation do not agree with Evans memo.*

STEVE CRANE

Attorney, Seattle

Former Director, Council on Environmental Policy

Mr. Crane directed his presentation toward practical tips and advice regarding the State Environmental Policy Act of 1971 (SEPA). According to Crane, SEPA is probably as important as the Shoreline Management Act in terms of realizing proposed marina developments. The Council on Environmental Policy, which was charged with developing SEPA Guidelines, addressed shorelines and marinas through SEPA's general language on preserving environmental quality and through specific references in the Act to preserving non-renewable natural resources and shoreline areas. Since the disbanding of the Council on Environmental Policy in the Summer of 1976 following completion of the SEPA Guidelines, Crane has represented both developers and citizen groups in a number of cases involving shorelines management.

The speaker felt that is important for marina developers and operators to learn about SEPA because their development and economic future may live, die, or be somewhat constrained by the extent to which they understand the Act. He suggested learning about SEPA by reading the

* Senator Magnuson's recent sponsorship of an amendment to the Marine Mammals Protection Act has prohibited new or expanded oil transportation facilities East of Port Angeles, thereby reaffirming Governor Evans policy and the position taken by the 1977 Washington State Legislature in an act vetoed by Governor Ray.

Act and the Guidelines and regulations. The Guidelines were intended to eliminate some of the confusion in deciding whether an environmental impact statement is required.*

Beyond familiarizing oneself with the Act and Guidelines, the main point that Steve Crane emphasized was to be candid about your development proposal. A detailed environmental impact statement (EIS) must be prepared whenever a government agency is about to undertake a major action that will significantly affect the quality of the environment. Issuance of a permit is such an action. Two major questions focus on:

- . what is the proposed action that might trigger this EIS requirement?
- . what will be the possible or probable effects of that proposal on the environment?

SEPA Guidelines specify that a proposal considered by the government agency should be the total project, including all future activities which facilitate the operation of the proposed facilities and are thereby functionally related to the present proposal. Once an EIS is prepared, that impact statement can be re-used for subsequent permit applications for later phases of a project. Thus, the speaker urged that marina developers should not, in their own self-interest, attempt to present their project in a piecemeal fashion.

According to Crane, early drafts of the SEPA Guidelines attempted to define a "major action." However, establishing a size threshold might invite numerous small developments with a cumulatively greater impact than one large project. Further, size is not a reliable indicator of environmental impact. For example, geographic location and the sensitivity of a particular area to a given proposal are important considerations in assessing environmental impact. Also, the Guidelines do not establish a concrete definition of significant effect. However, the environmental checklist has been designed to determine whether a full EIS is required for a given project.

Mr. Crane pointed out that no Washington court has yet held a prepared EIS to be inadequate, but that many decisions have required preparation of an EIS when none was originally prepared. Finally, Crane suggested that a subscription to the State Bar Association's Environmental Newsletter**would be a good way for non-lawyers as well as attorneys to keep up to date on environmental regulations.

* Copies of SEPA and its Guidelines are available from the Department of Ecology, Olympia, Washington 98504.

** The Newsletter which costs \$5. a year for six issues is available from the Washington State Bar Association, 505 Madison Street, Seattle, Washington.

DISCUSSION

Bob Goodwin interjected the thought that the burden of state environmental legislation falls not only on the marina developer, but also on the local planner who helps provide the developer with the information he/she needs.

Peter Buck who had recently drafted some amendments to SEPA for several clients, discussed some possible changes to SEPA which are currently being considered by the State Legislature. He felt it unlikely that SEPA would be gutted by weakening amendments. Some of the proposals currently before the State Legislature would add some certainty to the process. One suggestion is to shorten the time period for filing lawsuits under SEPA. Mr. Buck disagreed with Steve Crane that a layperson could read the Act and guidelines and know how to proceed. He termed SEPA the Lawyer's Full Employment Act because you almost need a lawyer to interpret the law. Further, Buck believed that no major changes in the legislature would be forthcoming until the Guidelines had more time to be worked out.

Mr. Buck emphasized that environmental regulations are here to stay and the quickest, most economical and profitable way to progress is to accept these regulations and live with them. For instance, today it is possible to minimize the major problems which face a given development by compiling a laundry list of permits, examining zoning designations and shorelines environmental designations, and making some general cost and time estimates. However, it is impossible to give the marina developer a guarantee that he/she will be able to build a marina on a particular site.

MARK MITCHELL,
Planner, King County

Mr. Mitchell examined the role that county government plays through the shorelines management master program, focusing on information requirements and common difficulties faced by permit applicants who come to King County. Prior to filing for permits, two questions should be answered by the applicant:

- 1) Is the property presently zoned correctly? For example, in King County marinas are allowed in business, commercial and industrial zones and in certain residential and non-residential zones subject to a conditional use permit.
- 2) According to the local Shorelines Master Program, does the particular environment where the marina site is to be proposed permit the marina to be located there?

Three questions are most commonly asked by people in King County proposing a development in a shoreline area:

1. What development permits are required by the local agency?

..... In King County, three are normally required; the shoreline management substantial development permit, the building permit, and, if the location is in one of the major river systems, a flood control zone permit might also be required.

2. What level of information will the developer be required to submit to local authorities?

..... Such information as plot plans, drainage plans, access plans, parking and landscape plans is generally required by local agencies.

3. How long does it take to get permits?

..... In King County, a building permit takes from 45 to 60 days, a flood control zone permit might take 30 days and a shoreline management permit could take from 90 to 100 days.

In terms of the shorelines management process, any action taken by a governmental agency will require an environmental checklist to determine whether or not an EIS is necessary. The first step in the permit process, the affidavit for publication, is the responsibility of the developer. Local government cannot make a decision until after 30 days from the last day of publication. Copies of the shorelines permit, once issued by local government, are sent to the Department of Ecology and the Attorney General's office for review. During this period, either office or an aggrieved third party may appeal. If an environmental impact statement is required, this will slow the process down considerably. Also, a public hearing may be required if the proposed development is of broad public significance or if one or more interested persons requests a public hearing. In order to ensure smooth processing, Mitchell suggested getting input at an early stage from all the government agencies involved.

In King County, the Shorelines Master Program is presently in the process of being revised and refined in light of several years of experience. King County's master program is directly concerned with water quality and land-use relationships. It provides for activities that are shoreline dependent or water-oriented, and marinas are shoreline dependent. Provided that a marina is environmentally sound, and land-use relationships are compatible, a marina will satisfy the spirit of the master program. Currently, there is a shortage of moorage space in King County and the county would like to see more marinas constructed; the only question is where the

marinas should be located. In concluding, Mitchell noted that getting permits is not hard if you apply for all the necessary permits at the same time. By programming for sufficient time for obtaining permits into the pre-development schedules, developers will find dealing with governmental agencies less of a burden.

PETER BUCK

Attorney, Hillis, Phillips, Cairncross, Clark and Martin
Seattle, Washington

JEFF LAYTON

Project Manager, Marina Facilities, Ch2M Hill
Bellevue, Washington

Peter Buck and Jeff Layton drew upon their experiences as user's consultants in outlining the problems marina developers confront when dealing with the regulatory process. They presented a case study of Point Roberts Marina which demonstrated CH2M Hill's environmental design process for small craft harbors. The uncertainty regarding development inherent in environmental laws is equally frustrating to consultants who try to focus on solutions for the developer. The slide presentation on Point Roberts Marina illustrated a process devised by one consultant to maximize the chances of success for a large marina development.

The Point Roberts Marina is an example of the application of CH2M Hill's environmental design process for the development of small craft harbors. Point Roberts, although politically in the U. S., is geographically connected to Canada. The location of a marina at the southern boundary of the Point is ideal from a boater's standpoint. It is close to both the American San Juan Islands and the Canadian Gulf Islands. Besides the construction of a large inland marina, the initial development also includes single family residential lots and a variety of marine service activities. The second phase includes multi-family residential housing (condominiums and town houses) and a retail area with a hotel and restaurant. From Buck's perspective, having represented a number of people in the moorage business, the real profit comes from related development, not the marina itself. Related development makes construction of moorage an economically viable proposition while allowing more reasonable moorage rental rates. The Point Roberts Marina, under construction only a year and a half after the consultants were retained, is built on former pasture land.

Jeff Layton described the project design process developed for the Point Roberts Marina and its role in obtaining early project approval from numerous regulatory agencies. A project that is environmentally acceptable and financially feasible can only be realized by applying a process that systematically directs study efforts

immediately to problem areas while undergoing continuous change and refinement. This process relates not only to marinas, but also applies to any type of waterfront development, ranging from various port harbor activities to small shoreline developments.

The Point Roberts developer gave the consultants considerable flexibility to apply this special planning process which involved learning, probing, testing and exploring so that the final proposal would be acceptable to citizens and government agencies and also meet the goals of the sponsor. Creditability with key people in the regulatory agencies was important in ensuring smooth and rapid approval of the project.

The overall process used at Point Roberts Marina is comprised of four design phases:

- . 1) the feasibility studies phase involves conceptual studies which set the groundwork for the whole project, including economic and environmental studies. The major issue at this stage for the Point Roberts Marina was whether a backshore marina could be built at that particular site which would maintain sufficient water quality. One of the first problems was to determine if it was possible to design a hydraulically efficient boat basin with only one entry (outlet) that could flush properly and maintain water quality.
- . 2) the preliminary design studies phase included more detailed studies by the project team composed of an engineer, planner and scientist. Early contact was made with all of the various regulatory agencies and the team began a series of environmental studies as support documentation for their environmental impact statement. Requests for permits were submitted to the appropriate agencies during this phase. Preliminary engineering studies were conducted to ascertain project feasibility.
- . 3) the environmental review phase begins when the final EIS report is prepared and project approvals are received. Sixteen permits and project approvals were required for the Point Roberts Marina -- all accomplished in a year and a half. However, over 100 conditions were placed on the project. Financial feasibility is reassessed here and in this case, the project sponsor decided to proceed with the development.
- . 4) final design phase: Project approvals are put into a set of final plans and specifications which will allow actual building of the development. This was an intensive six month period of final design in putting together the total project and designing it to meet the various conditions enumerated in the final approvals.

Even after project approvals were received, it was difficult for the Point Roberts developer to meet some of the conditions placed on the project. For instance, one of the conditions was that no construction could take place on the beach of Strait of Georgia area between January 1 and June 15, 1977 because of salmon migration and herring spawning. This might have meant delaying dredging operations the first part of the marina construction. However, the consultants devised a revised plan which enabled dredging to begin on the back-shore by delivering the disassembled hydraulic dredge to the site overland. According to Jeff Layton, the key to the success of Point Roberts Marina was the fact that the overall development scheme remained flexible enough to commence construction at the earliest time possible.

DISCUSSION

Several questions related specifically to the Point Roberts Marina. The consultants informed the audience that there was no way to really protect a project against possible lawsuits. However, the chances of a lawsuit can be minimized by being explicit in your environmental impact statement. For example, if your development will displace animals, you should be clear that they are field mice rather than the last of an endangered species.

In response to the question of costs, the consultants gave a percentage breakdown of the Point Roberts Marina consultants' fee. The first stage costs are only about 5 to 10 percent of the total fee. The second and third phases together constitute 40 to 50 percent and the final stage, the actual preparation of the land specifications, construction inspection and construction management, is approximately 40 to 50% of the cost. Therefore, forced abandonment of the project if necessary permits are denied does not entail severe non-recoverable losses.

Other questions were related to SEPA and regulatory controls more generally.

- . What are the time horizons for permits and environmental impact statements?

The impact statement process should typically be completed before the first governmental approval is granted. The time lag between completion of the final EIS and the time you receive your last permit (usually your Corps of Engineers permit or Fish and Wildlife sign off) could stretch into six months or a year.

Specific time frames/requirements include:

- . environmental checklist -- 15 days for local agencies and DOE comments
- . optional publication of notice
- . SEPA process (without impact statement) 45 to 47 days

- . Impact statement -- 4 or 5 months to a year or more depending upon the complexity of the project.

In some instances an environmental impact statement is not necessary. When, for example, a project involves some additional development in a built-up area, an EIS may not be very useful and a negative declaration can be made very fast.

- . What happens if you wish to incorporate an addition to a project at a later date.

If you want to expand a project at a later date, such as adding extra slips to a marina development project, you have two options:

- . 1) develop a comprehensive proposal which includes all phases of the proposed development. (According to the Shoreline Management Act, you have five years from start to finish to a project with a possible one year extension. Substantial progress must be made within two years from the beginning of your project.)
- . 2) file for a second shorelines permit

OTHER DISCUSSION COVERED THE FOLLOWING TOPICS:

- . THE "TAKING ISSUE"

The limitations on the "Taking Issue," governmental taking through regulation of private property without compensation, have been difficult for the courts to define. Historically, individual property owners have never had the absolute right to do whatever they wanted with their property. However, courts have generally ruled that if your land is left with no use at all, then you have a basis for filing suit. Government can regulate your land and reduce the amount of rights you have on the land in terms of where you can build and what you can fill, but they have to leave you with some reasonable economic use of your land. Remedies are generally in order at this point according to the courts.

- . local contact with people surrounding a marina project

It is important to inform people in the community early about a project development in their area and to keep them informed. At Point Roberts, the consultants held a number of community meetings and 95% of the local people were very much in favor of the project. Nevertheless, it is impossible to make everyone happy, and someone will always oppose a development.

. small projects

Small clients who cannot afford an expensive and elaborate design process like the Point Roberts Marina have several options for dealing with permit requirements and environmental controls. Most engineering, planning or law firms will accept small projects. Also, the marina owner or developer can put the proposal together him/herself by maintaining close contact with local planners and state agency staff who can be of invaluable assistance in getting through the permit process.

Bob Goodwin had a different observation of the small project. He felt that one long-term effect of SEPA may be to encourage small scale developments because it is easier to get through SEPA with a small project. One of the resulting problems could be the cumulative impact of numerous small developments rather than the big developments which are more strictly regulated under the law. Thus SEPA may encourage a proliferation of small scale projects rather than the concentration of development in a few large projects.

SESSION FIVE

FEDERAL STATUTES AND PROGRAMS

INTRODUCTION

Session Five focuses on federal environmental statutes and programs, including federally-mandated programs which are delegated to states, such as water and air quality. Federal policy and regulatory procedures devolve from statutes giving authority to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and the Environmental Protection Agency. Panelists from the regional offices of these three agencies related their agencies' programs to the provision of adequate small-craft moorage space. A fourth speaker, Mel Hester, a marina developer, described the problems encountered by a marina applicant seeking the necessary local, state and federal permits.

In introducing the panelists, Bob Goodwin noted that Washington has the first federally approved coastal zone management program in the country. One of the requirements for an approvable program is that the program demonstrate all affected agencies are consulted during its development. Goodwin asked the panelists to consider whether coastal zone management program approval has made any difference in their offices' administration of permits and programs which regulate coastal land and water space.

BOB SPEARMAN

United States Army Corps of Engineers
Seattle District

The constitutional basis for the U.S. Army Corps of Engineers permit authority for development on navigable waters and for regulating the disposal of dredged or fill material stems from the articles which vested admiralty and marine jurisdiction in the federal government and authorized Congress to regulate interstate and foreign commerce. Subsequent to the enactment of the Constitution, a number of River and Harbor Acts have been passed by Congress which assigned further and more specific responsibilities to the U.S. Army Corps of Engineers.

The two primary acts affecting the Corps of Engineers are:

- . 1) River and Harbor Act of 1899
- . 2) Section 404 of the Federal Water Pollution Control Act Amendments of 1972

Other laws which are related to the Corps' permit program and procedures include:

- . the Fish and Wildlife Coordination Act of 1958
- . the Marine Protection, Research and Sanctuaries Act of 1972
- . the Coastal Zone Management Act of 1972
- . and the National Environmental Policy Act of 1969

Additionally there are intergovernmental agreements such as the memorandum of understanding between the Fish and Wildlife Service and the U.S. Army Corps of Engineers in issuing permits for developments in navigable waters. Originally, the Corps only considered navigation aspects in issuing permits, but with the additional mandates of these other acts, they now consider many other environmental, social and economic factors.

According to Section 10 of the River and Harbor Act of 3 March 1899, prior approval of the Department of the Army (Corps of Engineers) is required for all work done in the navigable waters of the United States. Navigable waters of the United States include all tidal waters, major rivers and four lakes in the State of Washington: lakes - Washington, Union, Sammamish, and Chelan. Permits are required for any structures or activities in navigable waters,* including, but not limited to: buoys, pilings, dolphins, filling, dredging, wharves, piers, marine railways, water intake lines, sewer lines, etc. Section 404 of the Federal Water Pollution Control Act Amendments of 1972 requires Department of the Army approval for all disposal of dredge material or fill in any waters of the United States. These waters include any stream that has a flow greater than 5 cubic feet per second, and lake that is greater than 10 acres in size, and any adjacent wetland. It also applies to major rivers and tidal waters.

In terms of the precessing of permit applications, Mr. Spearman outlined the following guidelines.

- . After the Corps receives a complete application, there is an advertising period of only 30 days. If there are objections or materials missing, the application is returned to the applicant and it is his/her responsibility to assemble and submit the required materials.
- . For minor or non-controversial permit application, approximately 120 days is required from the date of receipt of the complete application to the date of issuance.

* For futher discussion of navigable waters see: Johnson, Ralph., "Public Rights to Private Beaches, Lakes and Streams." in Shorelines '77 Conference Proceedings, Washington Sea Grant and Washington State Department of Ecology, 1978 (forthcoming).

- . Complex or controversial applications may take up to several years to process. Sometimes a public hearing or a federal EIS may be required before final action is taken.*

In closing, Spearman encouraged all applicants to visit the Army Corps of Engineers local district office and those of related agencies in order to better understand their procedures and to minimize potential objections and problems in processing their permit applications.

RALPH BOOMER

Fisheries Biologist, U.S. Fish and Wildlife Service
Olympia, Washington

One basic involvement of the U.S. Fish and Wildlife Service in the review of the Corps of Engineers permit application is through the Fish and Wildlife Coordination Act of 1958. The Act states that construction agencies, such as the Corps of Engineers, will consult with the Fish and Wildlife Service and gain their advice on the impact of a proposed project on fish and wildlife habitat. The act also calls for possibilities for permit modification for a project and opportunities for discussion of Fish and Wildlife Service concerns.

Until about 1968, the basic involvement of the Fish and Wildlife Service consultation was only through the impact of navigation. However, in 1968, a major federal court case in Florida (Zabel vs. Tabb, 430 F.2d 199, 5th Cir. 1970) established that fish and wildlife concerns should receive equal consideration with other features such as navigation and the public interest in the planning of federal water resource development programs. Apparently a number of Corps of Engineers permitted activities were having adverse effects on fish and wildlife. As a response to this court action, there was some modification of federal laws which incorporated fish and wildlife values more formally into the permitting process.

* Under the National Environmental Policy Act (NEPA) -- upon which the state SEPA was modelled -- any federal action having a significant impact on the environment requires preparation of an environmental impact statement (EIS). The draft EIS is circulated among all affected federal, state, and local agencies and interested parties for comments. The determination of "significant impact" is made on the basis of an "environmental assessment" of the project, prepared by the Corps. In practice few marinas require a full EIS, in sharp contrast to the experience under SEPA. The Corps will not accept a SEPA EIS as satisfying NEPA requirements, though the State will accept a federal EIS. (Ed.)

Dr. Boomer said that there was a lot of interchange between the Fish and Wildlife Service and the Corps of Engineers and other agencies in reviewing permit applications. He said that the Fish and Wildlife Service reviews approximately 300 applications a year and they have no objection to at least 90% of them. The Fish and Wildlife Service appreciates early coordination with permit applicants, including pre-permit consultations.

The speaker concluded with several comments on the Coastal Zone Management Act. Coastal Zone Management has helped to screen out some of the more objectionable applications. However, local or state approval of an applicant's shorelines permit does not necessarily mean that they have solved their problems. Boomer felt that there are a number of differences in the quality of the shorelines master programs up and down the coast. Presently, the state is encouraging local governments to review and update their master programs, especially as they regulate and allocate uses in waterbottoms and wetlands.

RON LEE

Environmental Protection Agency
Seattle District Office

Ron Lee, representing the Environmental Protection Agency, discussed federal air and water standards and delegated state programs as they relate to marina development. Air quality standards are not normally associated with small point sources except industrial effluents and the standards are generally applied to large areas. In most cases, then, air quality standards are not a major consideration in the evaluation of marina projects because the emissions from small boat basins are not considered to be significant.

On the other hand, water quality considerations are important in marina project evaluation. The very nature of a marina directly affects water quality in that the purpose of a marina is to enclose a body of water where boats will be moored and protected from current and wave action. The marina structure itself will generally alter or impede water circulation and flushing which are major factors in maintaining water quality. Because restriction of circulation and flushing tends to reduce water quality, it is important to design a marina facility which will maximize flushing and water circulation.

Another important factor in maintaining water quality is the marina's location. Location is particularly important in areas where water quality is already poor, such as water areas in close proximity to industrial and municipal discharges or water bodies which are naturally poor in circulation. The sensitivity of a specific site in terms of water quality and possible adverse effects on aquatic and fish life should be taken into account in developing appropriate marina locations in your planning process.

Although local shoreline master programs and local zoning allow or prohibit the building of marinas in certain areas according to zone, these zones are based on land-use considerations and they may not adequately address the water quality or water resources concerns. In many cases, the areas where marinas are allowed according to zoning and shoreline master program classifications, such as industrial areas or population centers, may also be locations where the water quality is poor.

In terms of state delegation of programs and water quality standards, a state certification for water quality is required before any federal permit can be issued for a marina project, such as the Corps of Engineers permit. The Department of Ecology is assigned this regulatory function in Washington. Once state water quality standards are adopted and approved by EPA, the major responsibility of providing certification that a marina project will not adversely affect water quality is delegated to the state.

Bob Goodwin commented on the problems of assembling data for the management of water areas. The State Department of Ecology contracted a consulting firm to develop an aquatic area study which would provide guidelines to assist local government in refining master programs. These aquatic area management guidelines include a close examination of water quality as well as habitat (eel grass beds, clam beds, fish breeding, etc.) Once you get off the land and into the water region, scientific resource information is very scarce and the complementary process of the State Environmental Policy Act and shorelines management is important in assessing development suitability for specific sites. The DOE is also currently involved in a scientific baseline study, an inventory of shoreline areas and resources, which will provide base line information for use by DOE and local governments.

Secondly, Goodwin noted that there have been movements in Congress to delegate Section 10 Corps of Engineers responsibility of the states. He felt that, in some respects, this would simplify the process because the state agency responsible for coastal zone management would make all the principal decisions, and coordination with federal agencies would be simplified.

MEL HESTER
Duwamish Marina, Seattle, Washington

Mel Hester described his experience as a permit applicant involved in the development of the Duwamish Marina. When he contracted some engineers to work on the roof structures and design to the marina, one engineer told him that it would take two years to get all his permits. Mr. Hester, determined that he could not wait two years to begin construction, agreed to take on the entire permit process himself. He had six months to obtain all permits for the marina before construction was to commence in June. At the time of this

presentation, Mr. Hester said that he had already received some of the permits and that everything was proceeding very smoothly.

He shared some insights gained from his experience with the audience!

- . Do the permits yourself, or if this is not feasible, assign it to a trusted employee. Working on permits is a one-person job, although you will want to ask advice from a variety of specialists and government agency personnel.
- . Get to know each agency, meet with their staff, and learn their requirements. A good way to develop contacts with the state agencies and to obtain their advice is to attend a meeting known as "The Muskox Club." This round table meeting is held in Olympia on the second Wednesday of every month and all Federal and State agencies that review Section 10 Corps of Engineers permits are represented, such as DOE, Department of Fisheries, etc. An applicant for a Section 10 permit can get on the agenda, present his/her proposal and ask for suggestions from the agencies. Although their recommendations are unofficial, you can acquire a lot of good information at "Muskox."
- . Organize your thoughts because the permit process is very complicated. If Hester had the chance to change the system, he was not sure what improvements he could make.
- . Learn the system and try to work with it. Permits demand an incredible amount of information, but if you submit the necessary information at the beginning, it is much easier than meeting demands later. The permit process has very little flexibility, and everytime you change something in your plan, it will cost you approximately 30 to 45 days.
- . Although Hester felt that engineering consulting firms and attorneys were not required for small marina projects, he thought that contracting on a fee basis with individuals in the areas of biology or oceanography could be invaluable in meeting water quality and other permit requirements.

Mr. Hester saw a potential role for the trade association in creating a positive public attitude toward marinas. He felt that publicity which emphasized the attractiveness of marinas and the fact that they are not necessarily detrimental to water quality would be very healthy public relations for the industry.

DISCUSSION

Bob Goodwin mentioned a booklet which contains a lot of useful information about state natural resources agencies. It is the "Annual Report of the Natural Resources and Recreation Agencies in the State of Washington" and is available from the Office of Program Planning and Fiscal Management, Olympia, Washington 98504.

SESSION SIX

ENGINEERING ASPECTS OF MARINA DESIGN

INTRODUCTION

A final subject which is important in the development of new and expanded moorage facilities is "Engineering Aspects of Marina Design." Marina engineering is becoming increasingly sophisticated with technological advancements such as hydraulic modelling and the development of floating breakwaters. Two important engineering issues presented in the final session are 1) the hydraulic design features of marinas to ensure adequate flushing for water quality purposes, and 2) protective devices, particularly floating breakwaters, to ensure safe moorage. These issues were addressed by Eugene Collias and Eugene Richey from the University of Washington, Departments of Oceanography and Civil Engineering, respectively. Lloyd Nelson, consultant, commented on the broader topic of comprehensive marina planning and showed slides representing the various elements of marina design and construction.

EUGENE E. COLLIAS

Principal Oceanographer

Department of Oceanography, University of Washington

Mr. Collias discussed characteristics of the water surrounding a marina and the water quality standards which have been established by the State Department of Ecology. In 1973, the Department of Ecology established a group of water quality standards for both the marine and fresh waters of the State of Washington. The water quality was graded from AA to C, (AA, A, B, C) based upon dissolved oxygen content, with C being the poorest rating. Unfortunately, whoever set up the standards was not well acquainted with our marine waters. Due to natural occurrences, the waters of Puget Sound often fall into categories of lower standard. Many times the dissolved oxygen concentration is considerably less than prescribed by the established standard for that area. During the summer, there is considerable upwelling of cooler, low oxygen content, high nutrient-laden water entering the Strait of Juan de Fuca. This water, which often has an oxygen content of 3 parts per million (ppm) or less, causes an oxygen depression in Puget Sound off Port Townsend in late summer or early fall. In Puget Sound proper, the oxygen concentration rarely if ever falls below 4.5 ppm. However, this oxygen depression will vary according to different locations within Puget Sound.

When designing a marina it is essential to know the characteristics of the water surrounding the marina, including both the chemical properties and the circulation patterns at and near the marina site. Mr. Collias listed several water quality considerations which should be addressed when designing a marina.

- Any material coming from the marina should be removed from the marina site and not be recycled on the next high tide. If there is adequate circulation outside the marina, recycling will not be a problem
- Long term changes must be considered
 - . If you dredge the marina, what types of material will be dredged and what types of material will be brought into the marina from the outside?
 - . Is there sufficient current to keep the mouth of the marina open without frequent dredging?
- If you must dredge, where will you dispose of the spoils?
 - . Will you seek land disposal or do you plan to dispose at sea? The problem with disposal at sea is obtaining the necessary permits from the county agencies or state and federal agencies who control the disposal of dredge spoils at sea.*
- Disposing of sewage generated by the boats is also a problem. According to federal regulations, all or most boats are to have holding tanks or other sewage treatment facilities.
 - . Where is the waste to be taken?
 - . Will you provide pumping facilities and will the effluent go into septic tanks or will it go into some type of a waste disposal plant onshore for further treatment?

The speaker mentioned a paper he wrote several years ago for the Department of Ecology in which he discussed the characteristics of proposed effluent and the character of the receiving waters. He suggested that the character of the effluent be controlled so as not to change the character of the receiving waters and that the treatment not be excessive. Standards do not need to be as high for effluent in areas of good mixing as those for effluent discharging into areas of poor circulation, or areas with problems in assimilation. A reasonable balance should be maintained and the system must be economically feasible.

*The Department of Natural Resources maintains sites in Puget Sound for the disposal of clean uncontaminated dredged material. A fee is levied by the DNR on the user. Contaminated material must be disposed of upland. (Ed.)

EUGENE P. RICHEY
Professor, Department of Civil Engineering
Harris Hydraulics Laboratory, University of Washington

Professor Richey centered his presentation on two aspects of marinas:

In regard to water quality, a marina development can only approach the same water quality that exists outside the marina's particular location.* The circulation in the water adjacent to the marina entrance or entrances bears a close relationship to what goes on within the marina itself.

In the saltwater region of the Pacific Northwest, we are fortunate to have extensive tidal ranges of approximately six to eight feet. The tidal range is the main mechanism for flushing and provides an important forcing function in improving water circulation. In contrast, marina developments on lakes or in salt water regions where the tidal range is smaller face intrinsic hydraulic problems.

In analyzing the circulation aspects of marina developments, Professor Richey and his associates have reviewed hydraulic layouts and designs in order to make the most of available forcing functions and provide the maximum of mixing. They have used hydraulic models and correlated them with field studies. Some features which they found to be important in marina design were:

- Continuous circulation. This can be adjusted to some extent by shape of the marina basin and, to a limited extent, by the alignment of the entrances.
- Two entrances. These are required by the Washington State Department of Fisheries Guidelines.

Shilshole is an example of a marina with excellent water quality. However, water quality is site specific and each marina is sensitive to its particular location. Richey and his colleagues have not yet been able to devise a classification system which could measure comparative water circulation quality.

Since the number of conveniently usable sites for marinas is limited and most of these sites have already been developed, it is necessary to devise some kind of protection from waves to enable utilization of those available sites which are intrinsically less suitable for marina development. One of the devices that is being utilized to provide this wave protection is the floating breakwater. Advantages of floating breakwaters include:

* In rare circumstances where the outside water is highly stratified due to poor circulation, water leaving the marina on an ebb tide can induce local circulation and mixing, which can result in an improvement in ambient water quality. (Ed.)

- Floating breakwaters are relatively cheap compared to fixed structures, at least at first glance
- They provide a freer exchange of water beneath them than would rigid structures, such as rubble mound breakwaters

Disadvantages of floating breakwaters include:

- Costs escalate with increasing wave energy
- There are many unknowns concerning their long-term structural life. The cost of floating breakwaters ranges anywhere from \$150.00 to \$200.00 per lineal foot to \$2,000.00 per lineal foot

Professor Richey discussed several types of floating breakwaters. Breakwaters using rubber tires have been developed through the University of Rhode Island Sea Grant Program. Another type consisting of tethered floats have been designed by Dick Seymour in California. Dr. Richey suggested reading a Corps of Engineers small craft harbors publication: "Small Craft Harbors Design Construction," Special Report Number 2. (This publication is available from the U.S. Government Printing Office, in Seattle at the Federal Building.)

Neil Ross of the University of Rhode Island Sea Grant Program commented on floating breakwaters and related subjects. He listed two references:

- Marinas: Recommendations for their Design, Construction and Maintenance, Chaney, Charles A., National Association of Engine and Boat Manufacturers, 1961
- Marinas: A Working Guide to their Development and Design, Adie, Donald W., 1975

Ross also mentioned a free trade magazine called "Marina Magazine." He suggested -- perhaps with tongue-in-cheek -- that people involved in the boating industry should update their vocabulary; dredge spoils are now dredged materials, life-saving devices are called personal floatation devices, and floating scrap tire breakwaters are more positively termed floating tire breakwaters.

Floating tire breakwaters were first developed about four years ago at the University of Rhode Island. Advantages of using tires include the fact that there are abundant scrap tires available and they have good absorption capacity. However, tires attract fouling organisms, which, if not removed, will sink the structure in time. Some permitting agencies favor tire breakwaters because they view them as temporary structures.

Floating tire breakwaters need to be greater in width than one half of the wave length of the incident waves. In constructing tire breakwaters for salt water use, units are joined together by conveyor belting made of nylon ply which is at least a half inch thick, and at least three inches wide.

According to Ross, the University of Rhode Island Sea Grant Program has constructed about twenty-five of these breakwaters and permitting agencies tend to look favorably on them. Several questions should be considered when building a floating tire system.

- Is it going to give you the effect your want?
- Is it cost effective? \$27. per lineal foot is a standard cost.
- How much maintenance will be required?

LLOYD NELSON, P.E.
Reid Middleton and Associates
Edmonds, Washington

By means of a slide presentation, Lloyd Nelson depicted the various elements involved in marina design and construction. These include: site analysis, protection from waves, bulkheads, dredging, moorage types, float construction, utilities and other services, and support facilities. Although all slides portrayed features of marinas in tidal waters of Puget Sound, design features for marinas on inland lakes and rivers are similar, except for unique problems such as seasonal water fluctuation, flood potential and currents.

SITE ANALYSIS

Each site is unique and has corresponding physical features which present particular design and construction constraints and opportunities for marina development. Mr. Nelson showed slides of marina sites in Port Orchard, Des Moines, Everett, Edmonds, Friday Harbor and Sequim Bay, pointing out advantages and disadvantages of each location.

- For example, the Port Orchard site had the advantages of an urban location oriented toward its waterfront environment, some upland parking, and minimal dredging requirements.
- Disadvantages of the Port Orchard site included insufficient parking to serve shopping, ferry traffic and marina, soft and hard bottom conditions, and exposure to wind and waves.

PROTECTION FROM WAVES

The speaker presented slides which illustrated several different types of breakwaters.

- Rock breakwaters provide excellent protection and have a long life. They are built on firm bottoms and their construction consists of a gravel core faced with rock weighting from 2 to 5,000 pounds. Costs per lineal foot were approximately \$220 in 1968 and \$350 - \$400 in 1977.
- Timber pile breakwaters are space saving, suited to shallow water, and cost \$165 - \$180 per lineal foot in 1968 and \$350 - \$400 in 1977.
- Floating breakwaters are used in deeper waters to provide moorage for transient boats and fishing floats. He showed a breakwater constructed of 3 x 21' post-tensioned concrete units filled with polystyrene and connected with rubber hinges. The structure is anchored to the bottom with chain and nylon rope and pile deadmen. This floating breakwater was designed to reduce 2 foot waves to .6 feet. Their cost rose from approximately \$170/lineal foot in 1973 to \$350 in 1977.

Another slide showed an Alaskan type of floating breakwater which was designed for 4 to 6 foot waves and cost approximately \$430/lineal foot in 1972.

BULKHEADS -- FOR LANDSLIDE PROTECTION*

In his slides, Mr. Nelson portrayed several different types of bulkheads.

- A concrete gravity wall is well-constructed and has a long life, but is expensive to build.
- Woodpile and timber with rocked slope is simple in construction, has a thirty-year life, and is relatively inexpensive.
- Two-step wood pile and timber is space-saving, has a thirty-year life, and is medium in cost range, although costs vary according to soil conditions.
- A rock slope bulkhead, due to its angle of repose, is space consuming, but maintenance free and relatively inexpensive.

*The Corps of Engineers is constructing a "shoreline erosion demonstration project" at Oak Harbor, Whidbey Island Naval Air Station. Approximately six methods will be employed. The site will be open for public inspection in 1978. Since site conditions exhibit wide variation, a consulting engineer should be retained for any specific installation, however. (Ed.)

DREDGING -- TO SECURE MOORAGE DEPTH

Two types of dredging operations were depicted in the slides.

- Suction dredges move voluminous amounts of sand and water mixture and require a settling pond and overflow weir to control silt and preserve water quality.
- A clamshell dredge is used for dredging smaller quantities and trimming slopes. Spoils are loaded on barges for deep-water disposal or off-loading as fill.

TYPES OF MOORAGE

Slides of covered, open, boathouse (enclosed), dry storage and visitor moorage were shown. The ratio of covered to open slips should be dictated by needs and estimated revenues. Sailboats which require open slips are increasing relative to power boats. Estimated current construction costs for different types of moorage were:

- Open -- \$900 - \$1,500/berth
- Covered -- \$2,400 - \$6,500/berth
- Dry Storage (for boats up to 24' long) -- \$2,000/unit

FLOAT CONSTRUCTION

Two types of float construction were presented.

- Timber and polystyrene is less expensive and works well in covered moorage where there is less exposure to weather and marine attack. The cost is estimated at \$7.50 to \$8.00 per square foot. (1977 figures)
- Lightweight concrete is filled with polystyrene, neat in appearance and resistant to physical damage and marine attack. In 1977, the cost is approximately \$8.00 - \$9.00 per square foot.

UTILITIES AND OTHER SERVICES

Marinas normally provide electrical and water services to their tenants.

- Electrical installations include 20 amp or 30 amp locking type receptacles, meters (or monthly charge without meters), circuit breakers and junction boxes. Transformers, located on floats, break up service areas and reduce wire sizes.

- . Water services include hose bibs, fire hose connections at intervals and backflow prevention devices.

SUPPORT FACILITIES

A variety of supporting facilities are required to complete a marina operation.

- . Marina Office -- located to provide surveillance of the harbor. Costs approximately \$35,000.
- . Parking and public access. Parking ratio should be three spaces for every four moorages.* Traffic access should be easy and sidewalks should provide for public viewing.**
- . Public launcher -- single or double monorail hoists with capacity of four tons each. Requires additional parking space.
- . Travel-lift -- for heavier boats with capacities up to 60 tons.
- . Fueling facility
- . Restrooms
- . Sewage pump-out

DISCUSSION

In the final session discussion centered around water quality questions. Several provisions for handling bilge water at a marina location with no sewage facility were suggested. (The problem of bilge waste is essentially one of oil.)

- . Some marinas provide waste disposal cans for oily wastes.
- . Since Coast Guard regulations provide for fines when a slick is visible, the problem should be corrected before oil is discharged into the water.
- . Oil absorption devices thrown into bilge water can reduce oily wastes.

*Local requirements may vary, however, and your local planning or building department should be consulted. (Ed.)

**Marinas providing public access have received favorable treatment by the Shorelines Hearings Board. (See pp. 35 and 37)

- Another possibility is an oil retaining or separation facility into which bilge water is pumped.

Another topic of discussion centered on how marinas and shellfish culture can be compatible. Controlling the wastes that flow from marinas is critical. Nevertheless, some shellfish do thrive on the waste that is put out by a boat. However, human wastes also contribute to the contamination of the waters at a marina. If holding tanks are adequate and boat tanks are pumped into a good treatment system, sewage problems should be minimal. The worst pollution occurs after boats leave the area and start pumping their bilges immediately outside the marina.*

*For a synoptic discussion of the Coast Guard regulations on boat wastes, see "Marine Sanitation Devices," Washington Sea Grant Seaward publication, available from Washington Sea Grant Communications Program, Division of Marine Resources, University of Washington, 3716 Brooklyn Avenue N.E., Seattle, WA. 98105.

APPENDIX

FIGURES FOR UNCOVERED WET MOORAGE

W. S. LAGEN

\$75.00 per foot per finger for dock and fingers	
Assume 100 open 36' slips = 3600 slip feet	
* Pier Cost 3600 x 75	\$270,000
Assume 50 slips per pier	
Assume 50' between piers	50'
Assume 12½' setback each side	25'
Requires 2 piers and 6' walkway	156'
	<hr/>
Total	231'
Assume \$800 per foot	
* Land Cost 231 x \$800	\$184,800
Assume ¼ car per slip	
Assume 1200/car net parking lot cost	
Parking lot cost 1200 x 50	\$ 60,000
* Total	\$514,800

$$1\frac{1}{2}\% \times \$514,800 = \$7722$$

$$\frac{7722}{3600} = \$2.14 \text{ per slip foot per month}$$

No Rip rap	No Labor
No Bulkhead	No Security
No Dredging	No Wiring
No Buildings	No Office
No Fences	No Toilets
No Lighting	No Amenities
No Water	No Tidelands Lease
No Sewage Disposal	No Permits Cost

Rip rap/ Bulkhead cost \$70 per foot	
Bulkhead cost (minimum)	\$ 16,200
Dredging	
Office Building (minimum)	\$ 35,000
Fencing and Security	\$ 6,000
Lighting and Wiring and Meters	\$ 15,000
Water-- Fire and Washdown	\$ 10,000
Sewage Disposal	?
Toilets and Connections	\$ 10,000
	Subtotal
	\$ 92,200
	From Page One
*	Grand Total
	\$607,000

$$1\frac{1}{2} \times \$607,000 = \$9105$$

$$\frac{9105}{3600} = \$ 2.53 \text{ per slip foot}$$

No Amenities

No Tidelands Lease

No Possessory Interest Tax

No Permits Cost

Robert F. Goodwin
Coastal Management Specialist
Coastal Resources Program

MARINAS UNDER THE SHORELINES MANAGEMENT ACT*

The development of new or expanded marina facilities in Washington State's coastal waters requires compliance with numerous local, state and federal statutes and regulations. Of these, none has commanded more attention from marina planners and developers than the Shorelines Management Act (SMA). Enacted in 1971, the SMA authorizes local governments to plan and regulate development along most of the state's shorelines, each in accordance with guidelines developed by the Department of Ecology (DOE). Once approved, "master programs", prepared by local governments with public participation and a state-level review, provide the basis upon which permission for any "substantial development" on state coastal waters is approved or denied.

Since compliance with MSA regulations is required for nearly all developments within 200 feet of the ordinary high water mark or "associated wetlands" costing in excess of \$1,000*, marinas by their very nature fall under SMA jurisdiction. In addition, under provisions of the State Environmental Policy Act (SEPA), it is very likely that an Environmental Impact Statement will be required if the responsible government agency determines that a given development will have a significant environmental impact.

The Shorelines Hearing Board and the courts have ruled that failure to comply with this latter requirement is itself grounds for

* Research and data collection for this paper were performed by Sue Heikkala and Saskia Schott, Coastal Resources Program, Washington Sea Grant. Substantial editorial and rewriting assistance was provided by Craig Bartlett.

denial of a substantial development permit. Even after a permit has been granted under the SMA, it is subject to appeal by the State Department of Ecology (DOE), the Attorney General or an aggrieved third party. The Shorelines Hearings Board hears appeals and may rescind, condition or demand a permit to local government. Further appeal may be made through the judicial process.

How then have marina developments fared under the requirements of the SMA?

In examining this question, it is first necessary to understand the specific requirements and restrictions imposed by the master program on marina location and standards for design and operation. As mentioned before, these programs vary from locality to locality within the broad guidelines established by the state. Each master program operates within a common scheme. Four or more "environments" are designated in which preferred use for coastal land and waters are specified. Marinas are one such use. The requirements for marinas in various municipalities or counties in accordance with their respective master programs are presented environment by environment in the table attached.

Table #1 shows the four major classifications of shorelines environments; natural, conservancy, rural and urban, along with two additional classifications; suburban and aquatic, incorporated in some plans. Note also that of the four major classifications, three are broken down into sub-categories (e.g. conservancy natural, conservancy management, etc.) The discussion below offers some insight into the management approaches in each environment by representative local governments.

	Seattle (1)	King Cty. (3)	Snohomish Cty. (4)	Pacific Cty. (5)	Mason Cty. (6)	Kitsap Cty. (7)	Bremerton (9)	Clallam Cty. (10)	Jefferson Cty. (11)	Whatcom Cty. (12)	Skagit Cty.	San Juan	Pierce Cty.
<u>Natural</u>		X	X	X	X	X		X	C	X	X	X	X
<u>Conservancy</u>		X	A*	X	X	A* ⁸		X	C	C	X	C	X
Cons. Natural	X												
Cons. Mgmt.	A* ²												
<u>Rural</u>		A*	A*	A*	A*	A*		A*		A*	A*	A*	C
Semi-rural						A*							
Rural Resid.											C		A*
<u>Urban</u>		A*	A*	A*	A*	A*		A*	A*	A*	A*	A*	A*
Residential	X												
Stable	A												
Stable (lk. Un.)	A												
Stable (Cent. Wtr.)	A												
Development	A												
U. Conser.							C						
U. Resd.							C						
U. Comm.							A						
U. Indst.							A						
<u>Suburban</u>			C						A*			A*	
<u>Aquatic</u>		A*									A*	A*	

X = Use Prohibited

A = Permitted Use

C = Shoreline Conditional Use

* = Subject to provisions and/or regulatory controls

(1) Seattle Shoreline Master Program p 16 + Table 3

(2) Except yacht or boat clubs

(3) King County Master Program p 40

(4) Snohomish County Master Program p F-3

(5) Pacific County Shoreline Master Program p 30 - 31

(6) Shoreline Master Plan for Mason County p 25

(7) Kitsap County Shoreline Management Master Program p 21

(8) Marinas are prohibited in: estuaries, bogs, marshes & swamps, longshore drift, bars & spits, smelt spawning beaches, shore bluffs, and lakes, as designated on Natural System Map.

(9)

(10)

(11) Shoreline Management Master Program for Jefferson County and Port Townsend p 33

(12) Whatcom County, Washington Shoreline Management Program p 98

Disposition of marinas in selected local Shorelines Master Programs

NATURAL ENVIRONMENTS - Of the counties studied, marinas are prohibited in all natural environments except in Jefferson County where they are a conditional* use. Since the purpose of the natural environment is to protect the shoreline as a natural resource area and avoid degradation of natural characteristics, it is likely that Shoreline Master Programs will continue to prohibit marinas in this environment.

CONSERVANCY ENVIRONMENTS - As evident from the chart, no clear pattern of treatment emerges for marinas in conservancy environments. They are prohibited in seven jurisdictions, conditional uses in three, and permitted in three other programs subject to special controls. Even in those programs which permit marinas, environmentally strict controls may be applied. Within the Seattle conservancy management environment for instance, restrictions include those on lot coverage, maximum height and accessory facilities. Programs permitting marinas in this environment also frequently require strict controls on water quality, sewage disposal and oil and gas handling.

Jefferson County, Whatcom County and San Juan County (including Pt. Townsend), all designate marinas as a conditional use. Conditional uses are defined as "least desirable" in keeping with the "Definition and Policy" of a particular Shoreline Designation. Applicants for substantial development permits bear the burden of proof that their projects will not violate the goals and policies set forth for the conservancy environment.

RURAL ENVIRONMENTS - In most cases, marinas are permissible uses in rural environments. Two exceptions are Skagit and Pierce Counties where

* Permits issued by local governments for conditional uses and variances are subject to denial by the DOE and the Office of Attorney General; Permissible use permits are subject to appeal only.

marinas are conditional uses. Because the rural environment emphasizes recreational uses, applicable regulations are not as strict as those imposed on marinas in conservancy environments. Often, regulations focus on the marinas compatibility with the natural shoreline surroundings in addition to environmental considerations. In addition, marinas will probably be more acceptable if they are located in/or adjacent to a high use area rather than in an active farming area. For this reason, smaller marinas may be preferred to large, multi-service marinas since intensive development along undeveloped shorelines is discouraged.

In Kitsap County, where shorelines can be designated rural or semi-rural, this distinction is especially apparent. While marinas are permissible uses in both, the program is clear in its intention to "protect agricultural land from urban expansion." It is also important to note that Jefferson County does not have a rural designation. Here, the conservancy environment is used for agricultural uses and a suburban designation is similar to the semi-rural designation of Kitsap County.

URBAN ENVIRONMENTS - Marinas are permitted uses in the urban environments of all the counties studied: San Juan, Whatcom, Skagit, Island, Snohomish, King, Pierce, Mason, Clallam, Jefferson, and Pacific. In most cases, specific conditions or regulations will also be applied. Two cities, Bremerton and Seattle, divide the urban environment into several classifications, and marinas may be prohibited or greatly restricted in some of these areas. In both cases, they are prohibited or conditional uses in the equivalent of the cities' conservancy and residential environments, but otherwise permitted. As in the rural environment, urban marina developments are often

required to show concern for the aesthetic quality of the surrounding areas.

OTHER RESTRICTIONS - If current trends hold, it stands to reason that more marinas will be built in the urban and rural environments than in the more restrictive conservancy and natural environments. Yet, while the study of environmental classifications can give planners a good overall picture of how their proposals might be received in various localities, it hardly tells the whole story of marina regulations under the SMA. Besides those restrictions imposed upon marinas for various areas, master plans may also place certain general restrictions upon marina construction and location within their respective jurisdictions. Some of the regulations most often applied relate to sewage disposal, fuel and oil spills, surface runoff, flushing and water quality and aesthetic considerations. In addition, the Washington State Department of Fisheries and state and local health agency standards are usually applied to new marina proposals. The following table lists those restrictions specifically mentioned in the master plan of various Northwest localities.

Adequate sewage facilities	-	X	SEA	SEATTLE
Provisions for fuel and oil spill prevention and clean-up	-	X	KING	KING COUNTY
Control surface runoff	-	X	SNO.	SNOHOMISH
Provide landscaping	-	X	PAC.	PACIFIC
Aesthetic quality compatible with surroundings	-	X	MASON	MASON
Avoid interfering with rights of adjacent property owners	-	X	KITSAP	KITSAP
Natural site constraints considered in marina location	-	X	BREM.	BREMERTON
Adequate flushing	-	X	CLALL.	CLALLAM
Locate marinas near 'high use' areas	-	X	JEFF.	JEFFERSON
Compatible with Wash. State Dept. of Fisheries Guidelines on marinas	-	X	WHAT.	WHATCOM
Compatible with state and local health agencies' guidelines on marinas	-	X	SKAG.	SKAGIT
Prohibit overhead power lines	-	X	S. JUAN	SAN JUAN
Preserve upland views	-	X	PIERCE	PIERCE
Provide off-street parking	-	X		
Provide public access to waterfront	-	X		
Landfill not to be used for parking	-	X		
Provide boat launching facilities	-	X		

Table 2. Conditions Imposed on Marinas on selected local Shorelines Master Programs

MARINAS AND THE PERMITTING PROCESS: Even after consideration of these additional restrictions, the picture is not complete; the real test for a proposed marina comes during the permitting process where the powers of all interested parties and agencies is brought to bear. Besides the conditions spelled out in the master programs, marina proposals are also subject to numerous statutes and regulations of other authorities (such as the State Environmental Policy Act and the Army Corps of Engineers Sec. 10 and Sec. 404 permit requirements). And, as mentioned before, even after a permit has been granted, the State Department of Ecology (DOE), the Attorney General, or an aggrieved third party may see fit to appeal the decision.

Since 1971, when the SMA went into effect, 242 permit applications have been filed with the DOE for construction or expansion of marinas and related facilities. According to DOE records, none were denied by local government. Twenty six local decisions were flagged by DOE or the Attorney General for review; of these, seven reached the Shorelines Hearings Board. The remaining 19 appeals were resolved during informal, pre-hearing conferences. These conferences have been particularly useful areas for negotiating acceptable compromises on the objectionable aspects of developments. Resulting "out-of-court settlements" have saved both the state and the developer the time and expense necessary for formal hearing preparations.

Three of the seven appealed projects were affirmed by the Board, two were remanded to local government for conditions to be imposed on the projects and two were denied outright. Therefore, of 242 permits filed with the DOE, only two - less than one percent - were ultimately denied. Developers complain bitterly about the complex regulatory procedures, but upon closer examination it is clear that marinas have

been treated well by local and state governments in past actions.

HOW DOES THE SHORELINES HEARINGS BOARD TREAT MARINAS? While the total number of appeals heard by the SHB is small, a pattern of similar reasoning in each decision leads to some generalizations regarding marinas in the shorelines. Available evidence shows that DOE's performance standards have been applied rather flexibly to these cases, for two apparent reasons; first, and most importantly, marinas satisfy the SMA goal of providing increased public access to water-based recreation. Second, the present shortage of moorage space in the Puget Sound region seems to encourage a favorable review of marina proposals. A review of specific cases reveals additional points on marina treatment and regulatory flexibility.

The SHB's approval of the Hylebos and Meaker marinas, both located in Tacoma on Commencement Bay, were due in a large part to their enhancement of public shoreline use. While in both cases shoreline filling and dredging-actions strongly discouraged in the DOE guidelines-were allowed, the marinas' location on highly-developed shorelines was a mitigating factor in allowing the development. Thus the success of these proposals depended on: 1) the provision of public access to the shore, 2) location on urbanized shorelines, and 3) the flexible, not mandatory, nature of DOE guidelines.

In contrast, the Penn Cove marina on Whidbey Island is proposed on an undeveloped shore. Although the SHB approved the proposal, the prospective owners would be held in strict account for any adverse impacts upon local water quality and marine life. In spite of substantial planning and design efforts on the part of the developer, involving an analysis of circulation and flushing through the use of a physical hydraulics model, the proposal was nonetheless subject to

a vigorous design review. Here, the thorough planning process demonstrating environmental compatibility was instrumental in permit approval.

Although the SHB might reject a developer's original plan, it has shown itself willing to consider a revised version of the proposal. One example is the Hadley development project, proposed for downtown Kirkland on Lake Washington. In its original form, the Hadley project provided very little public access and the commercial building exceeded SMA height limits. For these reasons, the SHB reversed the local approval. The project was then substantially redesigned, incorporating three remodelled historic ships as a floating maritime museum and providing more public access to the waterfront. The revised project approval was not appealed and the project is now completed.

Where the developers of the Hadley project were able to successfully bring their proposal into line with the Board's requirements, the Forest Investment Corporation was not so lucky. The Corporation's proposal for a development complex in Aberdeen originally included a motel, restaurant, 80-slip marina, and a parking facility. There were several problems with the proposal, but the main one was 30,000 square feet of over-water development. However, the site was termed "an environmental disaster area" and the SHB felt the project would have some restoration value. The Board approved the project, subject to resolution of certain inconsistencies in the local Shoreline Master Program and a preparation of an EIS. Unfortunately, these delays were partially responsible for a loss of financial backing and the project was dropped. This is the only instance where project failure is associated with delays due to SMA and SEPA requirements.

CONCLUSIONS

The Shoreline Management Act was designed to give local governments a substantial voice in helping to maintain the balance between private property rights and environmental protection. Its intent was therefore not to prevent shoreline development, but rather to determine those uses "which are consistent with the control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline." A review of Shoreline Hearings Board cases thus far demonstrates a history of favorable treatment toward marinas since the implementation of the Act. While there are bound to be conflicts under the law, developers who have been best informed about the workings of the SMA and have demonstrated their willingness to work within the bounds have thus far been most successful.

Three of the marina developments appealed to the SHB and finally approved - Hylebos, Meaker and Penn Cove marinas - are stalled by federal permit requirements. Where federal/state conflicts such as these arise, further refinements of the state's coastal management program are indicated. An effort is underway in the DOE to do this through a re-assessment of the guidelines for developments in aquatic areas. But until federal agencies such as the U.S. Fish and Wildlife Service (USF&WS) and the Bureau of Indian Affairs (BIA) reach agreements with state and local agencies concerning developments in marine water bottoms and wetlands, conflicts will continue to arise over where marinas are permitted to be developed. In the case of Meaker and Hylebos these two federal agencies (USF&WS and BIA) have taken a hard line on developments in intertidal, estuarine areas. Where marinas have been proposed in the badly deteriorated City Waterway

in Tacoma, however, prior understanding between the U.S. Fish & Wildlife Service and the city lead to rapid approval of permits by the Corps of Engineers during Sec. 10 and 404 review. Therefore, the degree to which federal agencies were consulted during the development of local master programs - a requirement under the Federal Coastal Zone Management Act will continue to effect the treatment of marinas during federal permit review.

MOORAGE FACT SHEET

Assembled by Sue Heikkala
for Moorage Workshop

Major source of Puget Sound information: 1968 COE Pleasure Boating Study

1966 estimate 186,000 pleasure boats owned by Puget Sound residents. Population approximately 2 million.

1965 estimate 223,000 pleasure boats in State, growth trend - Seattle Only

1950 - 3667 boats

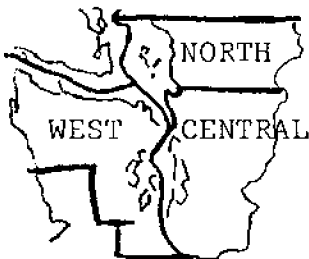
1966 - (COE Study) 5881 (wet - 5022; dry - 829)

1976 - 6434 - 6473 (wet - 5723 to 5757; dry 711-71

COE - 290,800 boats in Puget Sound by 1980

Estimate - 551,100 boats in Puget Sound by 2000

Boat ownership and distribution (1966 figures) (1968 COE)



94 boats/1000 population total Puget Sound region

109/1000 North Region (7.9% regional population)
(9.1% boat ownership)

88/1000 Central Region (86% regional population)
(81% boat ownership)

155/1000 West Region (6.1% regional population)
(9.9% boat ownership)

40.8/1000 U.S. average

53/1000 St. of Georgia B.C.

Historic trends

1937 - 6.7 boats/1000 population Puget Sound

1950 - 17.1/1000 6 times national average

1966 - 14/1000 2 times national average

High volume boat usage in Puget Sound attribute to plenty of salt and fresh water good for boating and temperate climate.

Boating use (1968 COE)

34% Puget Sound population engaged in recreational boating

20% U. S. total Population engaged in recreational boating

8.3 activity days per person in Puget Sound

2.6 activity days per person in United States

Type of Boat

1968	Inboard	18200		
	Outboard - Auxiliary	94400		
	Sailboat	1400		
	Sailboat w/o power	6300		
	Misc. rowboats canoes	65700		
	Power	Sail	Other	
1968 (COE)	60.5%	4.2%	35.3%	
1973	60.2%	23.7%	10.1%	
1976	57%	43%	--	

MacLachlan: Trend to larger sized and more expensive boats to more sailboats

Boat Characteristics

U.S. Coast Guard Registered Boats (1968)

	Mean Length	Mean h.p.	Mean fuel consump. gal/yr.
Inboard	25.3'	159.3	536.9
Outboard	15.8'	48.1	189.5
Auxiliary Sailboat	29.8'	33.7	106.1

Hull Material (Coast Guard registered boats 1968)

Wood -	68.6%
Steel -	.1
Aluminum -	.7
Fiberglass -	30.0
Other -	.6

Boating Industry (from MacLachlan 1973)

	1963	1967	1972*
No. of boat dealer establishments	47	97	391
Total retail sales in 1000's	\$7890.	\$24,187.	\$114,455.

*1972 not directly comparable to 1963 - 1967

Seasonal Use (1968)

One-third craft in year round use
83% in use in May
98 - 100% in use June - September

Shoreline Use - (1968)

Approximately 9 miles of shoreline occupied by public and private pleasure boat facility development. An additional 200 miles is suitable.

Marinas Location (1968 COE)

167 marinas in Puget Sound
15941 rental moorages
185 trailer boat ramps w/221 launching lanes
scattered throughout area.

Located on a wide range of sites: some in sheltered coves and river estuaries or inland waterways - others as summer resorts with limited protection

Regional location (see map on first page)

North - Concentration around Anacortes, Bellingham and the San Juans

Central - Major concentration along the Lake Washington Ship Canal connecting Lake Washington with Puget Sound and along waterways of Commencement Bay in Tacoma also several in Everett, Bremerton, Bainbridge Island and Vashon Island.

West - Clustered in Southern Puget Sound near Olympia. Also cluster around Cape Flattery

Fewer marinas located along Puget Sound frontage due to lack of sheltered locations. Ones that have been built (i.e. Edmonds, Shilshole) require breakwaters.

*Most moorages are private, water-based, all year facilities.

	Marinas	Boat Launching Ramps	Launching Hoists
North	30	44	20
Central	102	66	60
West	35	67	18

Other services: gas-oil, boat rentals, eating facilities, groceries, camping space, showers, over-night accommodations, charters, dry storage

Moorage Rates (Seattle only - First Priority Corporation Study 1976)

Range	Low	\$.70'	wet open
	High	\$ 3.25'	wet covered
Mean	\$1.56'		wet-open
	\$2.23'		wet-covered
	\$1.67'		dry-storage

Type of rental moorage desired (1968 COE)

	Perm. summer	
Auxiliary Sail	100%	Covered moorage required by 62.6% boaters desiring permanent summer moorage at 85.5% of those who de- sire permanent winter moorage
Inboard	70%	
Outboard	31%	

Permanent summer wet moorage demanded by 74.4%
 Permanent winter wet moorage demanded by 56.1%

1966 Moorage

Public				Private			
summer only		all year		summer only		all year	
wet	dry	wet	dry	wet	dry	wet	dry
117	-	3765	786	688	280	7654	2651
						TOTAL	
						15941	

Moorage preference by craft type

	Permanent summer	Permanent winter
Inboard	70%	72%
Outboard	31%	25%
auxiliary Sailboat	100%	89%