CHAPTER 206

APPLICATION OF CERC SPECIAL REPORT NO. 2

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PURPOSE AND SCOPE

The purpose of this paper is to discuss the new manual titled Small Craft Harbors: Design, Construction and Operation, published by the U. S. Army Corps of Engineers Coastal Engineering Research Center (CERC) as Special Report No. 2 dated December 1974. The objective of the manual is to enable anyone with a basic engineering background to plan and design small craft harbors or do so with the help of one or more specialists. The manual outlines methods of investigating the problems involved and the various engineering, economic and environmental criteria to be applied. It covers much of the planning and design considerations discussed by the A.S.C.E. Committee on Small Craft Harbors in manuals and reports on engineering practice, #50, "Report on Small Craft Harbors 1969". However, it also incorporates a considerable amount of additional information in the form of special design and construction techniques, certain rules of thumb commonly accepted in marina design practice, and observations as to elements of good practice in this field. It provides a compendium of planning data gleaned through a nationwide canvassing of marina operators, marina design engineers, and trades people who provide commonly used marina construction products. Also included in the manual are some of the design and construction requirements of various Federal, state and local government agencies having jurisdiction over, or assisting with the development of small craft harbors.

CONTENT

SR-2 takes the reader step by step through the process of planning and designing a marina, beginning with site analysis and ending with the functional design of structures. It covers the special problems of harbor sites on rivers, in interior lakes and bays, in roadsteads and along open continental shorelines. Environmental considerations such as snow, wind, ice, fog, waves, surge, tides, littoral drift, river deposits, material sources, soils and seismic activity are discussed. Ecological and sociological factors are evaluated as they relate to harbor construction and operation. The special problems of entrance design under various conditions are discussed at length, including methods of construction and the capabilities and limitations of presently available construction equipment. The proper layout of the various components of a marina for functional efficiency is demonstrated, and rules of thumb are given for allocating space. Detail design criteria are then presented for such items as basin geometry, perimeter stabilization, fixed and floating docks, geometric requirements for various types and sizes of craft, launching equipment, etc., along with charts and graphs for layout and design. Numerous line drawings and photographs are presented to illustrate both good and inferior design.

Following the planning and design chapters of SR-2 is a description of the roles played by various Federal, state, and local governments in marina financing, construction, and operation. Because a successful marina requires a sound economic foundation, one chapter deals with feasibility studies, pre-design planning, and methods of financing. Construction contracting and timing are discussed, operating principles are outlined, and some of the more important features of marina maintenance are described. Statistical data on U.S. marina practice derived from replies to questionnairs are tabulated, and 12 case studies are presented to illustrate different planning, management, and design techniques.

It is the intention of CERC to eventually incorporate a manual such as this as an appendix to its Coastal Engineering Manual which will extend the present Shore Protection Manual coverage to all facets of the coastal engineering discipline. This initial effort by CERC in the small craft harbors field was pursued through a contract with Moffatt & Nichol, Engineers, of Long Beach, California, to prepare such a manual under a set of general guidelines as to content. Although this placed the responsibility for the publication primarily with that firm, every effort was made to reflect the soundest thinking in marina design construction and operation that evolved through the many contacts made with personnel living daily with marina design and operation problems. Because it was impossible to contact personnel in many areas, some features may have been overlooked or additional criteria should have been included to cover special cases or conditions of environment.

COMMENTS INVITED

In the preface of SR-2 is the statement "Comments on this Publication are invited". Because the intent of CERC is to upgrade SR-2 to the status of a manual of proven worth and highest possible quality for inclusion as an appendix to the Coastal Engineering Manual, it is imperative that all personnel actively engaged in the small craft harbors field review the publications and submit comments to CERC. Thus, the purpose of presenting this paper at a coastal engineering conference is to call the attention of the coastal engineering profession to the existence of this publication and to solicit comments on it. Most desirable would be comments concerning ideas that were not included or that were covered insufficiently and could be improved upon by inclusion of additional information. Comments of a general nature, such as which parts of the manual are considered too detailed and which too general would also be welcome. Comments should be addressed to the Director, Coastal Engineering Research Center, Kingman Building, Fort Belvoir, Virginia 22060.

SR-2 is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, under Stock No. 0822-00091. Checks should be made payable to the Superintendent of Documents. The price, postpaid, is \$4.50 in the United States, Canada, and some Latin American countries. The price to other foreign countries is \$5.63, postpaid.

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