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	Engineering and Design COASTAL FIELD DATA COLLECTION	
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DEPARTMENT OF THE ARMY
U. S. Army Corps of Engineers
CECW-EH Washington, D. C. 20314-1000

Regulation
No. 1110-2-1406

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Engineering and Design
COASTAL FIELD DATA COLLECTION

1. Purpose. This regulation describes the Coastal Field Data Collection (CFDC) Program and establishes the procedures by which the U. S. Army Corps of Engineers gathers, archives, and disseminates coastal field data.

2. Applicability. This regulation applies to all HQUSACE elements and field operating activities (FOA) having coastal engineering responsibilities.

3. Authority. The CFDC Program is authorized by 33 U.S.C. 426 to 426d.

4. References.

a. ER 10-1-3

b. ER 1110-2-1403

5. General. The CFDC Program is an effort to obtain coastal field data required by the USACE that would not otherwise be available to perform its coastal engineering missions. Long-term statistical data on physical environmental parameters, such as the wave climate, the erosion and/or accretion rates along the shore, coastal currents, water levels, and the location and amount of sand resources, are needed for coastal navigation, coastal flood protection, and beach erosion control project planning, design, construction, operation, and maintenance. Sufficient time is not available during pre-authorization and design studies to accumulate a statistically significant data sample necessary for reliable technical assessments or estimates. Data are seldom available to judge the validity of delays or damage claims due to adverse wave conditions during construction. Rarely are data available on episodic events which critically test the performance of our projects and which likely account for most of our maintenance needs. The CFDC Program serves local, regional and national investigation, design, construction, and operation and maintenance needs developed and justified by USACE field operating activities.

This regulation supersedes ER 1110-2-1406, 29 April 1988.

6. Management. The CFDC Program will be managed by a field review group consisting of representatives (appointed by the Director of Civil Works) from all Divisions with coastal engineering responsibilities, the U.S. Army Waterways Experiment Station's Coastal Engineering Research Center (CERC), and HQUSACE. The group will meet once a year and additionally as needed.

7. Funding. The CFDC Program efforts described in this ER are funded as a line item in the Collection and Study of Basic Data portion of the General Investigations (GI) budget. Other coastal field data collection efforts, not covered by this ER, are funded by studies or projects from the appropriate GI, Construction General (CG), or Operation and Maintenance (O&M) budgets. Funds from other GI, CG, O&M, or non-Corps activities may be accepted by the program in exchange for products or services uniquely available through the CFDC Program.

8. Responsibilities.

a. The FOA justify, plan, and conduct or arrange for coastal field data collection to meet their specific project study, design, construction, or O&M needs. The coastal engineering element of each FOA (ER 10-1-3) is responsible for identifying and justifying coastal field data needs and coordinating study, project, and CFDC Program efforts in their area. CFDC Program data will be furnished to CERC for storage and dissemination. CFDC Program needs, justifications, and funding requirements will be gathered by CERC from the coastal engineering elements in the division offices periodically as needed. Study or project related coastal data collection not included in the CFDC Program should continue to be identified, approved and funded under existing procedures.

b. The coastal engineering element in each coastal division office will approve the CFDC Program requirements submitted by their districts, ensure coordination of the plans and cost estimates with CERC, and consolidate the needs, justifications, and funding requirements into a single response to CERC as requested.

c. CERC will conceive, plan, and conduct or arrange for coastal field data collection. CERC will provide technical advice and standardized procedures for instrument calibration, data formatting, data analysis, and coordination of data gathering, storage, and distribution. Provide coastal information and analysis services including a centralized Coastal Engineering Management Information System (CEMIS), electronically accessible to the FOA. CERC will provide a representative to act as secretary to the field review group.

d. The field review group will review the needs and justifications of the FOA and recommend priorities for scheduling and funding. They will review the services provided by and the needs of CERC in the CFDC Program and recommend funding levels, service changes, or new initiatives.

e. The Chief, Hydraulics and Hydrology Branch, HQUSACE, is assigned overall staff responsibility for the CFDC Program efforts.

9. Technical Assistance. CERC will provide technical assistance in the installation, maintenance, quality assurance, and standardization of data gathering and analysis systems. Extended support to FOA in these efforts will be available on a reimbursable basis. CERC will act as the Corps' technical expert when FOA contract out coastal field data collection work and the amount of the contract requires CECW-EH approval.

10. Program Elements. CFDC Program activities include obtaining coastal engineering field data required to optimally develop functional and detailed coastal project designs, prudently construct coastal projects, efficiently operate and maintain coastal projects, and effectively provide information to assist the creation and implementation of coast and shoreline utilization programs. The program currently consists of the following elements:

a. Wave Information Study. Numerical models have been developed to predict wave characteristics, including directionality, from atmospheric pressure charts. The objective of this element is to provide accurate, statistically significant, spacially dense, directional coastal wave data from numerical models. Comparisons are made with field data to evaluate, verify and improve the predictions. These data are made available to FOA in report form and through an interactive user friendly computer system. The use of these data facilitates refinements in design and planning previously unattainable.

b. Wave Measurement. The objective of this element is to acquire wave data from strategically located stations along the United States coasts. These data will supplement deep water wave data collected by the National Oceanic and Atmospheric Administration (NOAA). Data will be analyzed and made available to potential users in monthly and annual reports which contain spectral wave heights, periods, and direction (in many instances). Collection of these data is required to provide site-specific wave data, long-term wave statistics, and validation of wave prediction models. The cost effectiveness of wave data acquisition is significantly enhanced by cooperative efforts with other state and federal agencies.

c. Beach and Nearshore Information. The objective of this element is to quantify long-term, seasonal, and storm-induced dune, beach, and nearshore environment changes. These data are essential to the determination of erosion and accretion rates, sand budgets, inlet or entrance shoaling potential, beach fill requirements, and shoreline impacts of man's activities and natural events. The required data base is developed from the following sub-elements:

(1) Documentation of episodic events provides the quantity and quality of timely data required to more accurately characterize effects of episodic coastal storms. Specialized instruments and pre-selected instrument sites, travel procedures and survey team organization will facilitate instrument deployment and data recovery. These data will provide historic records of open coast storm surge heights and spacial distribution of those heights along and across the shore. Storm duration, shoreline response and other pertinent characteristics will be measured.

(2) Littoral Environmental Observations (LEO) consist of visual observations of surf conditions and nearshore currents. Research experience with volunteer observers has shown that nearshore wave data, including breaker height, breaker period, and direction of wave approach, can be obtained visually along with inexpensive determinations of longshore current velocities. These data provide means of estimating the local wave climate, longshore sand transport rates, shoreline erosion/accretion rates, and a means by which wave gage data may be interpolated to improve estimates of wave conditions at nongaged sites. FOA in coordination with state or local agencies select sites where volunteers collect LEO data.

(3) Beach profile data are used to identify areas of erosion and accretion and the extent and volume of shore changes. This sub-element identifies, interprets, reduces, and archives existing profile data sets stored at FOA. Many such data sets exist, however they have not been integrated into a standardized easy-to-use analysis system. Collection of profile data may be accomplished when needed and justified.

d. Data Management. The objective of this effort is to develop a standardized shareable data base, CEMIS, so that coastal data formats and analysis procedures are comparable throughout the USACE. Maximization of the value of shared data is accomplished through the use of standards, routine publication of available data or data sources, utilization of centralized data archives, and maintenance of the CEMIS system (item 10a above). CEMIS products include data reports, data source reports, and computer based data files for FOA use.

11. Procedures.

a. CFDC Program. The CERC, under the direction of CECW-EH, will conceive, plan, and conduct a coastal data collection program on a national basis to meet long-term Corps of Engineers needs. The national data collection efforts will be carried out with the guidance of the field review group and in cooperation with the affected Corps of Engineers Division and District Commanders to insure maximum usefulness to the field. Program requirements will be developed by the field review group based on the needs and justifications provided by each coastal division. These requirements will be incorporated into the budget justification by CECW-EH-D and scheduled for accomplishment by CERC and FOA.

b. Project and Study Related CFDC. Project or study related coastal field data will be collected by or at the direction of the responsible FOA. Coastal data collection efforts which are contracted out will be approved in accordance with ER 1110-2-1403. Coordination of these efforts with those of the CFDC Program should result in maximum satisfaction of coastal data requirements.

12. Publications. CERC will publish findings and data derived from the CFDC program in such form and frequency as directed by the Chief, Hydraulics and Hydrology Branch, HQUSACE. It is anticipated that data collected on a daily or more frequent basis will be published in monthly summaries. Data collected less frequently will be published in annual summaries or as required by the nature of the data.

FOR THE COMMANDER:

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Colonel, Corps of Engineers
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