

U.S. Department  
of Transportation

United States  
Coast Guard



Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: G-SEC-2  
Phone: (202) 267-1907

COMDTNOTE 11000  
JUL 2 1997

COMMANDANT NOTICE 11000

CANCELLED: JUL 1 1998

Subj: CH-5 TO COMDTINST M11000.11A, CIVIL ENGINEERING MANUAL

1. PURPOSE. This change publishes a revision to Commandant Instruction M11000.11A. The subject manual provides policy, information, and guidance to those Coast Guard personnel working with and within the Civil Engineering Program.
2. ACTION. Area and District Commanders, Commanders of Maintenance and Logistics Commands, Commanding Officers of Headquarters units, Assistant Commandants for Directorates, Chief Counsel, and Special Staff Offices at Headquarters shall ensure compliance with the provisions of this Notice.
3. PROCEDURE.  
Remove  
Insert  
Page v CH-5  
Pages 23-1 thru 23-11 CH-5
4. SUMMARY OF CHANGES. This change incorporates a new chapter for the Civil Engineering Manual. It describes the AC&I Waterways approval process and provides guidelines for the execution of AC&I Waterways projects.

/s/ E. C. KARNIS  
Director of Engineering

Encl: (1) CH-5 to COMDTINST M11000.11A



OCT 9 1996  
COMDTNOTE 11000

COMMANDANT NOTICE 11000

CANCELLED OCT 8 1997

Subj: CH-4 TO COMDTINST M11000.11A, CIVIL ENGINEERING MANUAL

1. PURPOSE. This change publishes revisions to Commandant Instruction M11000.11A. The subject manual provides policy, information, and guidance to those Coast Guard personnel working with and within the Civil Engineering Program.
2. ACTION. Area and district commanders, commanders maintenance and logistics commands, commanding officers of headquarters units, chiefs of offices and special staff divisions at Headquarters shall ensure compliance with the provisions of this Notice.
3. Procedure.

Remove

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Pages 20-1 thru 20-4 CH-4  
Pages 22-1 thru 22-2 CH-4

4. SUMMARY OF CHANGES. Revisions of the manual to reflect the new routing symbol "G-SEC" (old G-ECV) have only been made on those pages that are being replaced for some other reason. The remaining old routing symbols will be corrected when the manual is reprinted in its entirety. New or revised material is indicated with side bars to the right of the text. Revisions are summarized as follows:
- a. Table of Contents: Reflects subject matter additions, deletions, and corresponding changes in page numbering.
  - b. Chapter 1: Revises organizational charts to reflect restructuring of COMDT (G-SEC).
  - c. Chapter 2: Adds Program Performance Measures to comply with the Government Performance and Results Act of 1993 (GPRA). Reflects changes to the Project Funds Status Report (PFSR), Major Project Program, Budget Request and Management Data Letter. Contains new information regarding the Shore Plant Replacement Model.
  - d. Chapter 3: Reflects changes to Project Development Submittals.
  - e. Chapter 4: Raises AC&I level for AToN structures to \$10K. Modifies guidance regarding the combined use of AC&I and OE expenditures. Modifies the definitions of Real Property Facility (RPF) and Improvement (I).
  - f. Chapter 6: Adds requirements for certain documentation when acquiring existing facilities.
  - g. Chapter 9: Deletes obsolete guidance regarding the use of project data sheets, data is now entered into CEDS instead. Also adds requirement that certain CEDS data shall be up to date to allow the annual budget build, annual FEDPLAN submissions to the EPA, and the annual EC&R report to Congress.
  - h. Chapter 10: Contains new design policies regarding sprinkler heads for foam-water deluge systems in aircraft hangars, aircraft hangaring policy, aircraft runway requirements, child development centers, alarm systems at remote locations, sprinklers for office buildings and multi-family housing, alternative fire fighting water supplies, air emissions, landscaping, and environmental justice.

OCT - 9 1996  
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- i. Chapter 11: Revises the definition of net area, authorizes additional spaces, establishes smoke detector and sprinkler policies, and provides space standards in metric for family housing.
- j. Chapter 12: Contains new barrier-free access requirements to bring existing facilities into program compliance with Section 504 of the Rehabilitation Act of 1973.
- k. Chapter 16: Clarifies the MLC's role in organizing unit level maintenance programs, and also the AFC-43 self help program.
- l. Chapter 18: Reflects changes to the FEMR.
- m. Chapter 19: Chapter 19 has been rewritten to reflect the creation to the Civil Engineering Technology Program (CETP).
- o. Chapter 22: NEW. Establishes metric policy for the Shore Facility Construction Program.

/s/ E. J. BARRETT  
Chief of Systems

Encl: (1) CH-4 to COMDTINST M11000.11A



COMDTNOTE 11000

FFB 23 1995

COMMANDANT NOTICE 11000

CANCELLED: AUG 23 1995

Subj: CH-3 TO THE CIVIL ENGINEERING MANUAL, COMDTINST M11000.11A

1. **PURPOSE:** This Notice publishes revisions to the Civil Engineering Manual, COMDTINST M11000.11A. The subject manual provides policy, information, and guidance to those Coast Guard personnel working with and within the Civil Engineering Program.
2. **ACTION.** Area and district commanders, commanders maintenance and logistics commands, commanding officers of headquarters units, Commander, Coast Guard Activities Europe and chiefs of offices and special staff divisions at Headquarters shall ensure compliance with the provisions of this Notice.
3. **DISCUSSION.** In response to concerns over the responsiveness and efficiency of the Shore Facilities Planning Process (SFPP), a Quality Action Team (QAT) was established to evaluate the existing system and develop recommendations for improving the entire process. Several of the QAT's final recommendations approved by Commandant (G-CCS) directly addressed the need to improve SFPP documentation. The QAT also recommended that a cross-functional work group, with members from various field units and Headquarters staff, be established as a vehicle to obtain field input, implement approved QAT recommendations and generate revised process documentation. The Shore Facilities Project Development Manual, COMDTINST M11010.14, and this change to the Civil Engineering Manual were developed by the group.
4. **SUMMARY OF CHANGES.** Newly revised material is denoted by a vertical line in the margin. Editorial changes are not marked. Revised changes to chapters are as follows:

DISTRIBUTION - SDL No. 132

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COMDTNOTE 11000

FFB 23 1995

- a. The Table of Contents shows changes and additions to the manual's organization.
  - b. Chapter 3 contains new guidance concerning documentation for OE projects between \$175,000 and \$200,000.
  - c. Chapter 5 reflects the creation of Project Proposal Reports - Parts A and B, PPR(A)s and PPR(B)s, clarifies descriptions for funding elements, and revises the format for the AC&I Work Progress Report to match the Civil Engineering Data System (CEDs) printout.
  - d. Chapter 6 was reduced by eliminating specific format and procedures for AC&I documentation since this is now in the Shore Facilities Project Development Manual, the PPR(B) was changed to a 35% design submittal which eliminated the Design Development Submittal (DDS), and Minor AC&I and CGES projects will now use the same PPR(A)/PPR(B) process as other AC&I projects.
  - e. Chapter 7 was reduced by eliminating discussions of AC&I documentation cost estimates since this is now in the Shore Facilities Project Development Manual, and discussions of format and follow-on costs were clarified.
  - f. Chapter 19 was revised since a new Civil Engineering Data System (CEDs) has been implemented.
  - g. Chapter 21 was revised since several reports are no longer prepared on forms.
5. PROCEDURES. Remove and insert the following pages:


Remove

Pages 1 thru iv  
Pages 3-1 thru 3-2  
Pages 5-1 thru 5-14  
Pages 6-1 thru 6-20  
Pages 7-1 thru 7-15  
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6. FORMS. The AC&I Work Progress Report, Form CG-2617, is hereby cancelled.

  
E. J. BARRETT  
Chief, Office of Engineering,  
Logistics and Development

Encl: (1) CH-3 to The Civil Engineering Manual,  
COMDTINST M11000.11A



COMDTNOTE 11000

02 NOV 1992

COMMANDANT NOTICE 11000

CANCELLED: **01 MAY 1993**

Subj: CH-2 to COMDTINST M11000.11A, Civil Engineering Manual

1. PURPOSE. This change publishes revisions to Commandant Instruction M11000.11A. The subject manual provides policy, information, and guidance to those Coast Guard personnel working with and within the Civil Engineering Program.
2. SUMMARY OF CHANGES. Newly revised material is denoted by a vertical line in the border. Editorial changes are not marked. Revised changes to chapters are summarized as follows:
  - a. The Table of Contents shows changes and additions to the manual's organization.
  - b. Chapter 1 reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC).
  - c. Chapter 2 reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC), the new EC&R account, and improvements to the Management Effectiveness Visit and the Management Data Letter to better manage program responsibilities.
  - d. Chapter 3 reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC).
  - e. Chapter 5 describes a change in when it is appropriate to request authority to procure a construction contract from Commandant (G-ECV) and in the definition of an independent estimate for IFB packages.

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0 2 NOV 1992

2. f. Chapter 6 contains new information pertaining to the Planning Proposal Process, estimates, Design Development Submittal approval, and construction contract solicitation.
- g. Chapter 7 has been rewritten to address new policies pertaining to cost estimating and reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC).
- h. Chapter 9 has been rewritten to incorporate new policies and procedures for compliance with the Federal environmental policy and the Coast Guard Environmental Compliance and Restoration program.
- i. Chapter 10 contains new policies regarding Barrier-Free Access, Shore Facility Standards, the use of Halon Fire Suppression Systems in new construction at shore facilities, the venting/use of materials containing chlorofluorocarbons (CFCs), and the operation of motorized hangar doors.
- j. Chapter 12 contains Barrier-Free Access requirements for new family housing projects.
- k. Chapter 14 reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC).
- l. Chapter 16 reflects the change of the Operating Guide (OG) to the Allotment Fund Code (AFC) and contains an additional paragraph pertaining to project close-out.
- m. Chapter 17 contains a new CEDS requirement pertaining to the Shore Facilities Inspections Table and additional inspection requirements for motorized hangar doors.
- n. Chapter 18 now includes Support Centers in the organization and management of facilities engineering functions. Support Center New Orleans, Base San Juan and Support Center San Pedro are added to the list of professionally staffed facilities engineering organizations. The change from Operating Guide (OG) to Allotment Fund Code (AFC) was made and the Facilities Engineering Management Report was updated.
- o. Chapter 20 now states that the Cowart Plaque AND the Sargent Medal are presented at a Coast Guard Ceremony at the receiving unit and it also includes Civil Engineering Program Standards.
- p. Chapter 21 contains an additional report that must be submitted. The Annual Report of Real Property Owned By or leased to the United States is due by 1 September.



COMDTNOTE 11000

02 NOV 1992

3. ACTION. Remove and insert the following pages:

Remove

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P. A. BUNCH  
Chief, Office of Engineering,  
Logistics and Development

Encl: (1) CH-2 to COMDTINST M11000.11A



Commandant G-ECVs  
United States Coast Guard

MAILING ADDRESS:  
2100 SECOND ST SW  
WASHINGTON DC 20593-0001  
(202) 267-1856

COMDTNOTE 11000

5 DEC 1991

COMMANDANT NOTICE 11000

CANCELLED: 5 JUN 1992

Subj: CH-1 to COMDTINST M11000.11A, Civil Engineering Manual

1. PURPOSE. This change publishes revisions to Commandant Instruction M11000.11A. The subject manual provides policy, information, and guidance to those Coast Guard personnel working with and within the Civil Engineering Program.
2. SUMMARY OF CHANGES. Newly revised material is denoted by a vertical line in the border. Editorial changes are not marked. Revised changes to chapters are summarized as follows:
  - a. Chapter 1 shows changes in the Coast Guard Civil Engineering Organizations.
  - b. Chapter 2 shows additional information regarding Personnel Resources and the Management Effectiveness Program.
  - c. Chapter 3 reflects a change in OE project documentation, preparation, and routing responsibilities.
  - d. Chapter 4 reflects a change in the replacement of an element of the shore plant.
  - e. Chapter 5 reflects a change in the requirements of the AC&I Work Progress Report.
  - f. Chapter 6 has been revised to formalize the changes in the AC&I project documentation process instituted by Commandant (G-ECV) in December 1990, which provides for a more efficient transition from project planning documentation to project design.

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5 DEC 1991

2. g. Chapter 8 is corrected to show the change in the Real Property Management Manual to COMDTINST M11011.13.
- h. Chapter 9 reflects a change in Spill Prevention Control and Countermeasure Plans.
- i. Chapter 10 reflects a change in the use of Halon for fire suppression, contains a new section on the Halon Policy and Exhibit 10-1 is amended to reflect that use of building codes for geographic regions, as indicated, is mandatory, not recommended.
- j. Chapter 13 reflects changes in authorization to procure professional Architect-Engineering (AE) services.
- k. Chapter 17 contains additional information regarding the inspection and testing procedures for boilers and unfired pressure vessels.
- l. Chapter 18 contains changes in the information reported in the Facilities Engineering Management Report.
- m. Chapter 19 contains new information about procedures to be followed when entering OG43 data in the Civil Engineering Data System (CEDs) and changes in the CEDs Column Definitions.
- n. Chapter 20 reflects a change in the title of the Institute for the Certification of Engineering Technicians (ICET) to the National Institute for the Certification of Engineering Technicians (NICET); shows the addition of a new section describing the Society of American Military Engineer's Coast Guard Awards and the eligibility requirements and nomination procedures. It also reflects the change of the Real Property Management Manual to COMDTINST M11011.13; the Civil Engineering Manual to COMDTINST M11000.11A; adds two more professional societies that Coast Guard engineers are encouraged to join; and the change in responsibility for various manuals from one branch to another.

3. ACTION. Remove and insert the following pages:

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Page 2-1 and 2-2  
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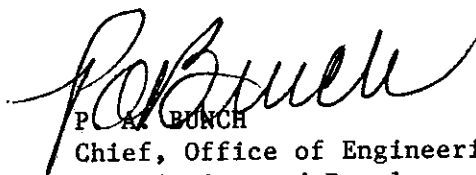
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5 DEC 1991

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P. A. BUNCH

Chief, Office of Engineering,  
Logistics and Development

Encl: (1) CH-1 to COMDTINST M11000.11A



4 AUG 1989

COMMANDANT INSTRUCTION M1100.11A

Subj: Civil Engineering Manual

1. PURPOSE. This manual establishes policy and prescribes procedures for the management and administration of the civil engineering program.
2. DIRECTIVES AFFECTED. COMDTINSTs M1100.1, M1100.2, M1100.11, and 11012.8 are cancelled.
3. DISCUSSION. This directive constitutes a complete rewrite of the Civil Engineering Manual, COMDTINST M1100.1, published in 1967, and those parts subsequently reissued in 1986 and 1987 as COMDTINST M1100.11. Substantive changes include:
  - a. the new organizational relationships and responsibilities associated with the establishment of the maintenance and logistics commands and the shore maintenance detachments.
  - b. modified guidelines for Acquisition, Construction, and Improvement projects.
  - c. additional reporting data for annual management data letters.
  - d. new documentation procedures for Operating Expense (OE) projects.
  - e. a complete revision to the design policy chapter stipulating adherence to national building codes.
  - f. additional policy guidance on family housing.

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4. ACTION. Area and district commanders, commanders of maintenance and logistics commands, unit commanding officers, Commander, CG Activities Europe, and chiefs of offices and special staff divisions at Headquarters shall ensure that the provisions of this manual are followed in the administration of the civil engineering program.
5. REPORTS AND FORMS. See Chapter 21 for a summary listing of reports and forms required. Forms denoted with an asterisk (\*) may be ordered from Coast Guard Supply Center Brooklyn in accordance with the Catalog of Forms, COMDTINST M5213.6 (series). All others may be reproduced locally from this manual.



R. L. JOHANSON  
Chief, Office of Engineering,  
Logistics and Development

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CHAPTER 1. CIVIL ENGINEERING ORGANIZATION

- A. The Civil Engineering Program. The Civil Engineering Program is a support program that provides and maintains Coast Guard shore facilities and fixed aids to navigation, and manages shore facility-related programs, e.g. real property, environmental compliance, etc. It provides support services during the complete life cycle of a shore facility, i.e., property acquisition, design, construction, maintenance and repair, and, eventually, demolition.
- |B. The Civil Engineering Organization. The Office of Civil Engineering, Coast Guard Headquarters, effects the Civil Engineering Program through several field civil engineering components at various organizational levels. Exhibits 1-1 and 1-2 show the Civil Engineering Program's major components, their organizational relationships, and their geographical locations. Exhibits 1-3 and 1-4 present these same civil engineering organizations with an abbreviated listing of their general responsibilities.

## U.S. Coast Guard Civil Engineering Organization

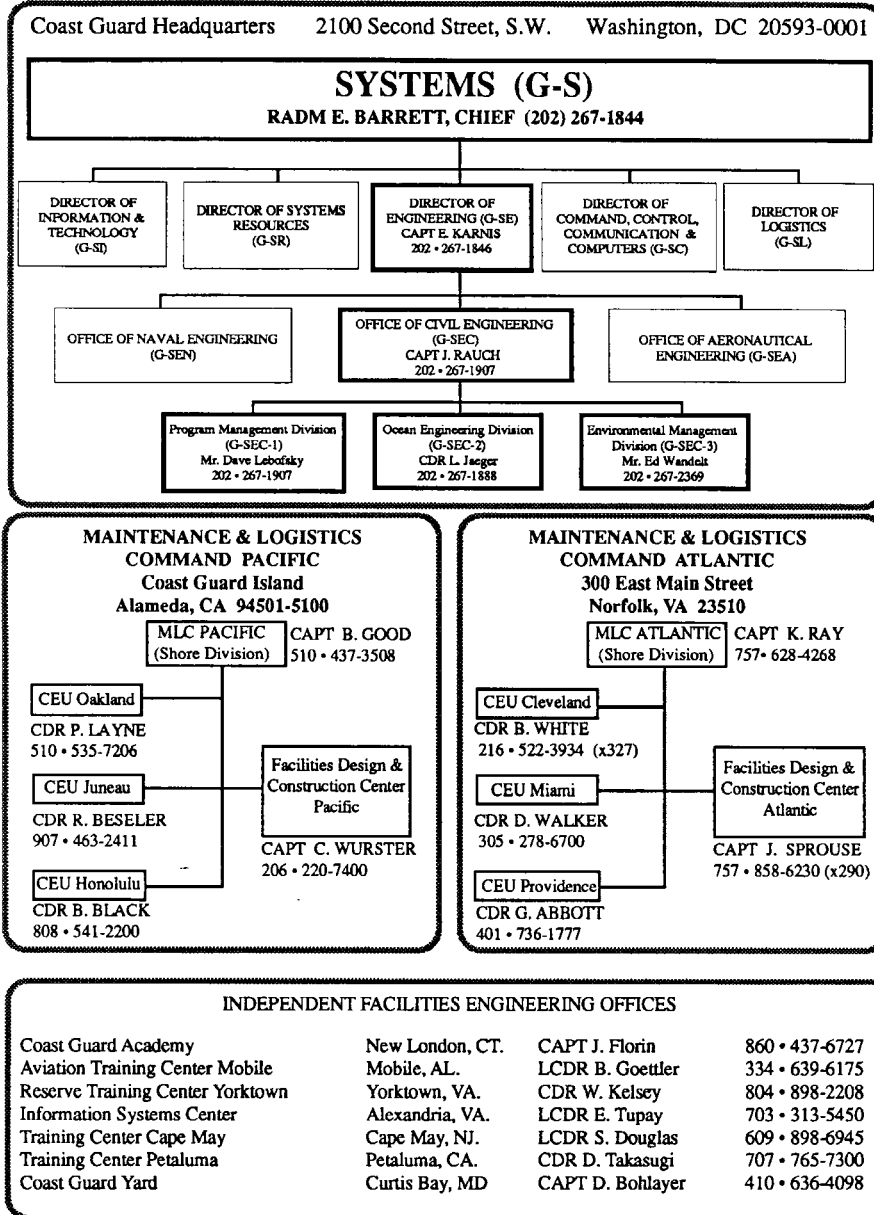


EXHIBIT 1-1

Coast Guard Civil Engineering  
Offices And Areas of Responsibility

**COAST GUARD CIVIL ENGINEERING OFFICES  
AND AREAS OF RESPONSIBILITY**

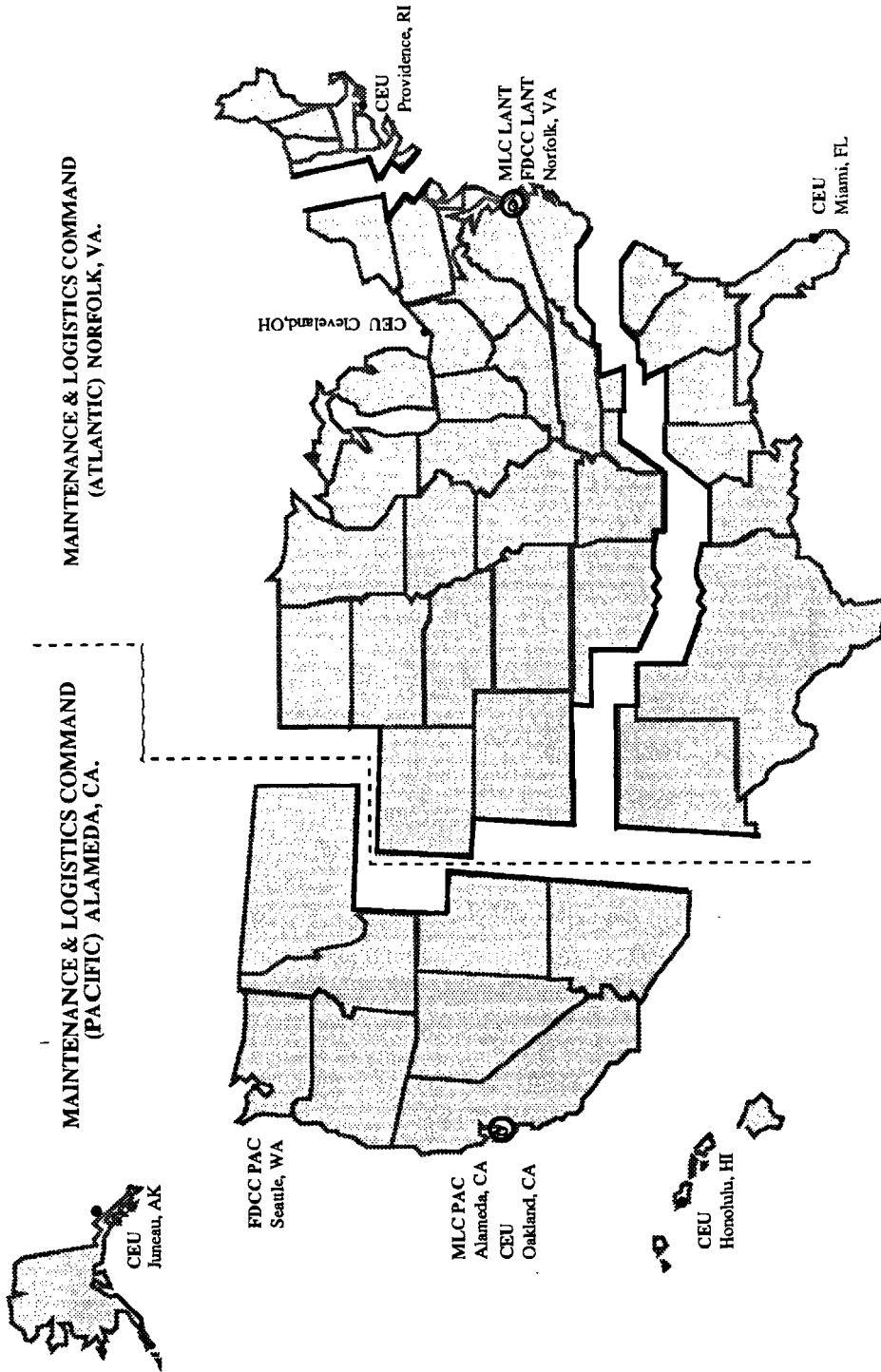


EXHIBIT 1-2

# Headquarters Civil Engineering Organization

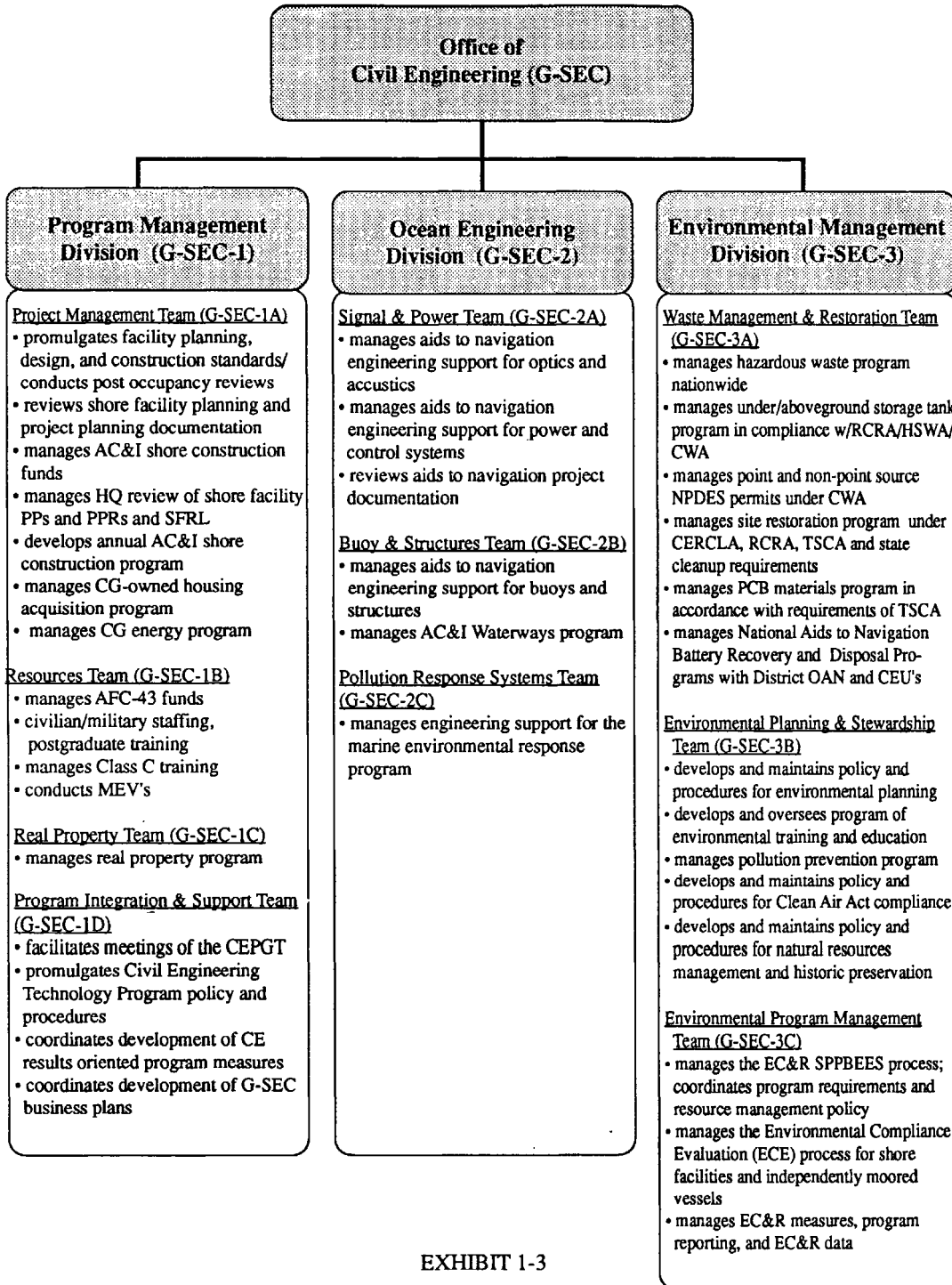


EXHIBIT 1-3

## CIVIL ENGINEERING FIELD UNITS

### Maintenance & Logistics Command (Civil Engineering Division)

- Manages the Area's AFC-43 shore maintenance program
- Coordinates shore facility planning for Area, District, and MLC units
- Oversees the execution of the Area's AC&I shore construction program
- Manages the Area's real property and environmental compliance programs

### Facilities Design & Construction Center

- Provides technical input to shore facility planning documents
- Executes the Area's AC&I shore construction program
- Executes major AFC-43 shore maintenance projects

### Civil Engineering Unit

- Executes AFC-43 shore maintenance and environmental compliance projects
- Performs civil engineering inspections

### Facilities Engineering

- Executes AFC-30 and AFC-43/EC&R (if an allotment unit) shore maintenance projects
- Provide facility-related maintenance services
- Performs shore facility planning, facilities inspections, and environmental compliance actions

Exhibit 1-4



## CHAPTER 2. RESOURCE MANAGEMENT

- A. General. Commandant (G-SEC), as the manager of the Civil Engineering Program, is responsible for the effective use of assigned financial and personnel resources. This chapter describes the resources and the system that manages them. All requirements apply equally at MLCs and Headquarters units unless otherwise noted.
- B. Zero-Based Management System (ZBMS).
1. The Coast Guard Civil Engineering support program is a Zero-Based Management System in which resource distribution is based on explicitly identified needs. This differs from some agency systems where an incremental system of resource management is used.
  2. The ZBMS requires a continuous planning effort to maintain an accurate list of shore facility requirements (i.e. backlog). ZBM promotes stable, orderly work flow, optimum distribution of available resources, and ensures all funds are fully programmed. No contingency funds are permitted. As a result, the AFC-43 program is decentralized and project planning and execution functions are delegated to the allotment unit level.
- C. Financial Resources.
1. The Planning and Programming Manual, COMDTINST M16010.1B, and the Financial Resource Management Manual, COMDTINST M7100.3A, list the funds generally available to Coast Guard Civil Engineering. The sources of these funds are:
    - a. Operating Expense (OE).
    - b. Acquisition, Construction and Improvement (AC&I).
    - c. Environmental Compliance and Restoration (EC&R)
    - d. Coast Guard Exchange System (CGEG).
    - e. Other government agencies.
    - f. Private concerns such as the Coast Guard Foundation.
  2. The Civil Engineer must correctly classify individual projects as either OE, EC&R, CGES, or AC&I. Chapters on AC&I Determination and Environmental Policy detail criteria on the classification of projects.
  3. The Civil Engineer must also correctly classify OE Projects as either AFC-30 or AFC-43. AFC-30 is for Recurring maintenance and repair, or nonrecurring Maintenance and repair costing less than \$3K (this is a

| general rule, there may be exceptions due to new  
| initiatives). Both are defined in the Financial  
| Resource Management Manual, COMDTINST M7100.3A.

- D. Personnel Resources. Civil Engineering personnel are generally funded by the OE, EC&R, or AC&I Appropriations. The use of personnel in support of their appropriations and a review of program accomplishments shall be accomplished during a biennial Management Effectiveness Visit.
1. Management Effectiveness Visit (MEV) Program. A Civil Engineering MEV Program shall be administered in accordance with the following procedures to provide for an exchange of information on current program issues and to evaluate management effectiveness. The decentralized nature of the civil engineering support program makes it appropriate to establish a peer review program for units with civil engineering personnel assigned.
    - a. Biennial MEVs will be held at civil engineering units (CEUs), facilities design and construction centers (FD&CCs), integrated support commands and other major commands with civil engineering billets assigned. During the visit, practices and procedures will be reviewed to verify conformance with program requirements and objectives. Prior to the scheduled visit, a checklist will be provided to assist in preparation for the MEV. Departure briefings will be provided to the chain of command and no follow-up reports or correspondence will be required from the unit. The visit will be documented through a brief post-visit summary report to Commandant (G-SEC).
    - b. The MEV program is an integral part of the civil engineering program's internal controls system mandated by COMDTINST M5700.8, Internal Control Systems Program. To satisfy the internal control requirements, a risk assessment score sheet will be incorporated into the MEV checklist for each MEV.
- E. AFC-43 Project Funds Status Report (PFSR). Two PFSRs shall be submitted by each MLC and HQ unit to Commandant (G-SEC-1) by the 15th of the month immediately after the end of each quarter. One for the current fiscal year and a second for the prior fiscal year.
1. Exhibit 2-1 is an example of the format to be used by all AFC-43 allotment units in their quarterly submissions. This report represents an instantaneous financial "picture" of the program as it existed on the last day of each quarter identifying differences between the local ledger (LUFS) and the official accounting records (DAFIS). Fourth quarter reports will summarize program activity for the entire fiscal year.

- | 2. A spreadsheet version of the PFSR shall be submitted to
- | G-SEC-1B by e-mail to PFSR/G-S.

F. AFC-43 Backlog.

1. The AFC-43 backlog is a list of all AFC-43 projects planned for execution within five years after the current fiscal year. To qualify as a backlog project, the following criteria must be met:
  - a. Identified physical need is firmly established. Statistical projections are not to be used to develop projects.
  - b. Project requires accomplishment within five years after the current fiscal year.
  - c. A preliminary cost estimate has been prepared.
  - d. The project must not be competing for some other source of funding unless it is properly developed to be a combined funding project.
  - e. The project has been approved for accomplishment by the organization chief.
2. The AFC-43 backlog is used as an indicator of the condition of the shore plant. The size and content of the backlog are important to effectively managing AFC-43 funds. Management objectives should be management of the backlog, not elimination of it. Since the backlog is a function of need only its size must be totally independent of both funding expectations and the capacity to execute.
3. Appropriate projects must never be rejected because funding is assumed to be unavailable. Such an assumption inevitably becomes a self-fulfilling prophecy. Conversely, the object is not to "pack" the backlog with every conceivable project possible within the next five years. The backlog needs to reflect a well-balanced program of maintenance-and repair which, in the judgement of the organization chief, will satisfactorily meet the needs of the operational programs and adequately maintain the shore plant.
4. The presence of a project on the backlog schedules it for completion. There should be an orderly progression of projects "up" the list to eventual completion. If projects are not advancing, they shall be revalidated or removed from the backlog.

G. AFC-43 Major Project Program for Headquarters Units.

1. Executing a high cost AFC-43 project may strain the normal level of AFC-43 resources available for a Headquarters unit. To alleviate this problem, Commandant (G-SEC) may provide separate funding for specific projects on a case by case basis. This does not preclude HQ allotment units from funding large projects from their normal allotments, but it does offer an alternative source of funding. In order to be considered for AFC-43 Major Project funding:

- a. The estimated cost of the project must exceed 15% of the HQ unit's normal AFC-43 annual allotment.
- b. Funding for the project must be requested by letter to Commandant (G-SEC) not later than 1 April to allow consideration for current FY 4th/1st funding (e.g. an April 96 request would be for 4th/1st FY96/FY97 consideration). The project schedule must be structured to open bids in the fourth quarter of the current fiscal year, and provide the option of awarding the contract in either the fourth quarter of the current FY or the first quarter of the next FY.
- c. The letter request must contain a Project Development Submittal (PDS) as described in chapter 3 of this manual. If a project has already been approved by G-SEC, enclose a copy of the approval letter. Projects without proper documentation will not be considered. Exhibit 2-2 details instructions for submitting AFC-43 Major Project requests.
- d. If more than one project is requested, list the projects in order of priority.

| H. AFC-43 Budget Requests. IBUDS is used for requesting  
| operating expense funds. Specific guidelines for submission  
| will be issued by G-SEC-lb annually. Typical information  
| requested includes:

- | 1. Maximum AFC-43 funds the organization can effectively  
| administer, design, and execute.
- | 2. Minimum AFC-43 funds required to meet essential customer  
| requirements.
- | 3. Total CEDS gross square footage within units AOR.
- | 4. CEDS Plant Replacement Value.
- | 5. CEDS dollar value of backlog.

I. Input/Output (I/O) Model.

1. As depicted in Figure 2-1, the Civil Engineering I/O resource utilization by Headquarters. Inputs are the cost of salaries and professional services. Output is a measure of products and is based upon the amount of dollars in

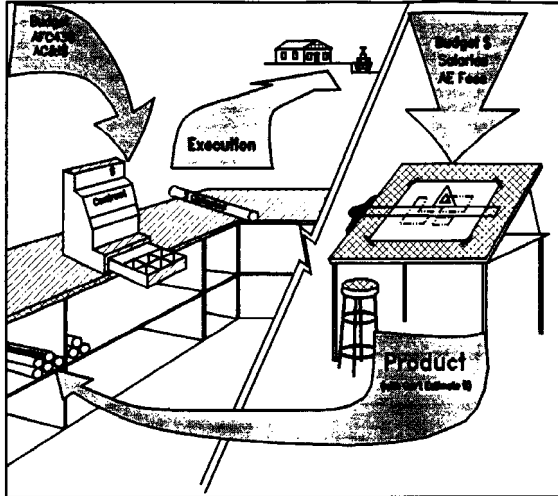


Figure 2-1

government estimates for designs completed (whether executed, or not) in the report period. Other factors considered by the model may include Plant Replacement Value.

2. The model allows the effective determination of productivity and efficiency. The consequences of a change to inputs or outputs can be predicted. The model promotes work load stability through knowledge of productive capacity, which results in a more accurate scheduling of backlog projects. Ratios developed from the model are published by Commandant (G-SEC) in the annual Management Data Summary (MDS).

J. Shore Plant Replacement Model. Facility maintenance should be funded at 2-4% of the plant replacement value. This assumems that 2% of the plant is replaced each year (50 year cycle) by the AC&I program and there is no backlog of work. The 2-4% target includes AFC-43 and AFC-30 maintenance and would be increased to reduce or manage any backlog of work. (See Chapter 7 for calculation of base amounts)

1. The shore plant replacement value (PRV) will be calculated in CEDS based on the facility use code, facility size, DOD geographic cost index, and DOD facility unit cost. Historic or unique facilities may have the PRV computed by an alternate method if it can be supported by local and/or industry wide data. Submit requests for alternate PRVs to G-SEC-1.

K. AFC-43 Funds Distribution.

1. AFC-43 funds are distributed based on Plant Replacement Value, Afc-43 backlog, capacity to execute and customer needs. Individual allotments are the least of the following:
  - a. Maximum Capacity: The unit's ability to effectively plan, design and execute AFC-43 projects during the next fiscal year given staff, and workload.
  - b. Scarcity of Resources (SOR): Ensures a given allotment will never be able to fund every project on its backlog. The SOR ensures that the general scarcity of AFC-43 funds throughout the Coast Guard will be shared by every allotment unit.
  - c. A value derived from the analysis of the following data for all units:
    - (1) The CEDS plant replacement value of the shore plant.
    - (2) The CEDS backlog value.
    - (3) The minimum need of the allotment unit for AFC-43 funds as identified by the allotment unit in the budget request.
2. Allotments will always strongly correlate with these variables, no matter how large backlogs grow or how large the annual statements of minimum need become. Funds are tied to backlog size to provide tangible motivation to extend the planning horizon by identifying projects well in advance of need.
3. In addition to the algorithm, other factors affect AFC-43 funds allocation including:
  - a. AFC-43 Major Project funding.
  - b. Catastrophic loss funds.
  - c. Organizational circumstances/changes.
  - d. Other work loads.

L. Special Funding for Catastrophic losses. Funds for catastrophic losses (due to storms, earthquakes, pollution, etc. ) that exceed 15% of an allotment unit's normal AFC-43 allotment may be requested from Commandant(G-SEC). Losses less than 15% of allotment should be funded from the allotment unit's normally allotted funds. Letter or message requests for catastrophic loss funds should contain a complete description of the damage.

M. Management Data Letter (MDL).

1. The MDL, like the MEV, is an integral part of the Civil Engineering Program's internal controls system mandated by COMDTINST M5700.8, Internal Control Systems Program. The MDL is Commandant's (G-SEC) method to gather information about the performance of the Civil Engineering organization. The report period for this information is 1 October through 30 September of each year. This data is summarized and published by Commandant (G-SEC) annually in the Management Data Summary (MDS)
2. All CEUs, FDCCs, MLCs, and HQ units shall submit completed MDL's annually for receipt by Commandant (G-SEC) no later than 30 November (CEUs and FDCCs submit via their MLC). The MDL shall be completed in accordance with Exhibit 2-3.
3. The MDS will be published annually, not later than 31 January, to allow units to see how they compare with other similar units and against established standards. It will include data on unit size, staffing, productivity, efficiency, and performance of the Coast Guard Civil Engineering organization as a whole. This will help units and program managers make informed decisions regarding financial and personnel resources.
4. Specific reporting items for MLCs are:
  - a. Discuss MLC management goals for civil engineering organizations under area of responsibility for the next FY. Include the status of the MLC Management Effectiveness Visit program.
  - b. Discuss any actions taken to monitor and level workloads between MLC units.

N. Results-Oriented Program Measures.

1. Government Performance and Results Act (GPRA) of 1993. The GPRA places heavy emphasis on improving "Federal program effectiveness and public accountability by promoting a new focus on results, service quality and customer satisfaction." The Act requires Federal Agencies to set program goals, measure performance against those goals, and report publicly on their progress. By FY 1999, the Act requires that all Federal agencies will provide an annual performance plan for each program activity set forth in their respective budget. The Planning and Programming Manual - Volume I, COMDTINST M16010.1B, establishes policy that each CG Program Director shall

develop, implement, and report program measures. The COMDTINST underscores the importance of program measurement in the Congressional budget process. Demonstration of program results and value to the taxpayer is key to continued funding and support in a competitive budget environment.

2. Eight Civil Engineering program measures have been developed by three Working Groups under the direction of the Civil Engineering Program Guidance Team (CEPGT). Each measure meets criteria established in COMDTINST M16010.1B. CE Program measures focus on the outcomes (ends vice means) achieved by the Program; acknowledging that the mission of the CE Program is to provide shore facilities, through all phases of their life cycle, so that Coast Guard operating and support elements can perform their missions. Outcomes are external to the organization, e.g. condition of the shore plant; as opposed to outputs, which are internal to the organization, e.g. the number of projects executed. The eight program measures approved by the CEPGT are:

EC&R	Clean Up Status
EC&R	ECE Findings Index
EC&R	P2S2 Composite Index
AC&I	Customer Satisfaction & Quality Survey Index
AC&I	Facility Delivery Index
AC&I	Obligation Rate
AFC43	Plant Condition Rating
AFC43	Facility Condition Index

### 3. Responsibilities.

- a. Detailed Explanation. Detailed program measure descriptions and reporting requirements are explained in Exhibit 2-4.
- b. CE Program Elements. CE program elements are responsible for collecting and reporting specified data. In addition, there is a fundamental obligation to direct activity that will support continuous improvement of the program outcomes and measures.
- c. Program Managers at Headquarters. G-SEC Program Managers are responsible for oversight and coordination of their respective program measures. Program Managers will routinely analyze field data, develop and promulgate methodology, publish program results for internal CE distribution, and submit required reports to the HQ Chief of Staff.



**EXHIBIT 2-1  
AFC-43 FUNDS STATUS REPORT**

QUARTER	FY				TOTAL
UNIT	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	TOTAL
QUARTERLY APPOINTMENT					
ALLOTMENTS & MODIFICATIONS:					
CUMULATIVE FUNDS FORWARDED FROM PRIOR QTR	0	0	0	0	0
CUMULATIVE TOTAL FUNDS FOR OBLIGATION	0	0	0	0	0
CUMULATIVE DAFIS OBLIGATIONS & EXPENDITURES					
DAFIS ERRORS					
OBLIGATIONS NOT IN DAFIS					
UNOBLIGATED BALANCE	0	0	0	0	0
COMMITMENTS					
UNCOMMITTED BALANCE	0	0	0	0	0

DATE PREPARED:  
POINT OF CONTACT:  
PHONE NUMBER:

APPROVING OFFICIAL:

EXHIBIT 2-2.

INSTRUCTIONS FOR HEADQUARTERS UNIT  
AFC-43 MAJOR PROJECT PROGRAM

Letter requests for Headquarters Unit AFC-43 Major Project funding shall list projects in priority order and include the following information for each project:

1. A brief project description including benefits and estimated cost. Survey and design funds should not be included.
2. Operational and engineering alternatives that were considered | in value engineering review, if required. See chapter 14.
3. Designation as an operational or support project.
4. Number of personnel expected to directly benefit from the project, if applicable.
5. Weather, operational, or other factors which would require project execution at a specific time of the year.
6. Completed Project Development Submittal (PDS) for Commandant approval. See chapter 3 of this manual for PDS preparation details.
7. VHS videotape showing problem areas of the project.  
|The letter request, including project documentation, shall be  
|forwarded to Commandant (G-SEC-1) not later than 1 April to be  
|considered for current FY 4th/1st funding.

Enclosure (1) to the annual Management Data Letter shall contain the following:

1. An organization chart with the position title, PCN/OBC, grade/rank and funding source (OE, AC&I, EC&R) of all positions/billets, as they existed on the last day of the fiscal year. Headquarters units will indicate only those personnel within the Facilities Engineering Division associated with the AFC-43 shore maintenance program.
- | 2. A Personnel Roster based on the latest unit Personnel Allowance list (PAL) indicating each authorized billet/position by position title, PCN#, rank/grade and name. Provide unit totals for overtime and training hours broken down by funding source (OE, AC&I, EC&R). For each billet/position indicate:
  - | a. Every incumbent during the prior fiscal year and the dates of incumbency and standard annual salary. Headquarters unit data on salaries should be reported only on those personnel included in #2 above.
  - | b. Indicate the source of funding (OE, EC&R, AC&I, etc.).
  - | c. Indicate Full-Time Positions authorized.

| G-SEC will E-Mail an MDL Roster Template at the end of each fiscal year which will include a current standard annual salary table. A copy of the completed MDL Roster shall be E-Mailed (include hardcopy with your completed MDL) to MDL/G-S. The file name should be "MDL.[FY].Roster.[unit name]".
- | 3. Identify other technical governmental organizations that have supported your civil engineering organization and note why this support was required.
- | 4. Complete the MDL Obligation Summary shown in Exhibit (1). G-SEC will provide a template of this spreadsheet via E-Mail at the end of each fiscal year. Contracting support provided for others should not be included as obligation output.
- | 5. Provide an end of year AFC-43 LUFs Object Class Summary Report. To produce this report in LUFs access the Accounting Reports/Transaction Summary Report. Enter "A" for everything except the account, which should be a "M" for appropriate AFC and "Sort By" Object Class, enter "Y" for Totals and "N" for Page Break.
 

| The LUFs report should equal the funding totals reported on the Obligation Summary.

EXHIBIT 2-3.  
(Continued)

INSTRUCTIONS FOR ENCLOSURE (1)  
TO THE MANAGEMENT DATA LETTER

|6. For construction projects (\$25K or above) completed (CEDs PC code > 80) provide data in the below format. Award amounts should include any options awarded.

AFC-43      AC&I      EC&R      Other

- | a. Initial Award
- | b. Final Cost
- | c. Change Order Index

|7. The number of designs completed (plans and specs to IFB or RFQ) and the total of Government estimates for all construction projects for which a design was completed during the report period. Also indicate the number of designs completed and total government estimates for those designs that did not result in a contract award during the report period.

AFC-43      AC&I      EC&R      Other

| Designs Completed

- | a. Number
- | b. Government Estimate

| Designs Completed  
| But Not Awarded

- | a. Number
- | b. Government Estimate

|8. Percent facilities (as a function of the total square footage within your AOR) for which CE inspections were completed during the report period.

|9. Changes in the value of the shore plant in CEDS:

Last MDL      Current CEDS      % Change

- | a. CEDS Backlog
- | b. CEDS SF
- | c. CEDS PRV

| Provide an explanation for % changes over 10% (new SF from AC&I construction, housing acquisitions, data validation)

|10.A brief summary of significant organizational accomplishments during the report period, particularly those that are hard to quantify or are not reflected in the MDL.

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

A. AC&I PROGRAM MEASURES

1. AC&I Program Outcomes. The AC&I mission is to provide the quality shore facilities that the Coast Guard needs to perform its operating missions. AC&I program outcomes are:
  - a. Shore plant condition.
  - b. Customer and client satisfaction.
  - c. Standard life cycle cost.
  - d. On-time delivery.
  - e. Quality delivery.
  
2. Specific Measures. AC&I program measures are entitled Customer Satisfaction and Quality Index, Facility Delivery Index, and Obligation Index. These give a reasonable picture of the AC&I program level of success. Condition of the shore plant and standard life-cycle cost are not directly addressed by these measures; these outcomes are monitored by separate AFC43 measures, the Shore Facilities Requirements List, etc. The following sections outline the AC&I program measures and associated data collection and reporting requirements:
  - a. Customer Satisfaction and Quality Index (CSQI). This measures how well the AC&I Program meets customer needs to accomplish unit missions while satisfying the program requirements of the sponsor (client) and the facility standards of CGHQ. This measure will be the end result of project specific surveys by the end users (customers), clients, CEUs, and FDCCs.
    - (1) The index is comprised of the quality shore factors (compressed into six categories) and combines separate assessments of facility quality made by the customer (end user), client (district), servicing CEU, and FDCC. Quality is assessed within one year of delivery using the CSQI Survey Form, Exhibit 2-5 (units may reproduce the form locally). The FDCC is responsible for distributing survey forms to the unit, district Planning Officer, and CEU (and collecting survey forms after they are completed).
    - (2) The survey forms list six standard factors to be rated from 1 to 7. The standard factors are defined in the far left column, and three levels of quality are given to the right of each

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

standard factor. If the observed level of quality does not match up with one of the available descriptions, one of the other available numbers should be marked. The person completing the survey should calculate the average rating and record at the bottom of the survey form.

- (3) The FDCCs will collect the four survey forms and calculate an average survey score for the project being rated. Since all raters use the same standard factors, the data will show differences in perceptions of facility quality. FDCCs will maintain a file of survey data and transmit a summary to G-SEC annually.

b. Facility Delivery Index (FDI). This measures the timeliness of the Shore Facility AC&I planning and execution process. Actual time is measured from when a Planning Proposal (PP) is required to start per the AC&I Strategic Calendar (Exhibit 2-6) to the Project Beneficial Occupancy Date. The standard time is an aggregate of the associated standard planning and design times plus the period from contract award to contract completion date for each project. FDI compares the timeliness of the shore facility planning and execution processes to the associated standard times. Standard time frames differ for Major AC&I, Minor AC&I, Housing Projects -- see the AC&I Strategic Calendar.

$$(1) \text{ FDI} = (\text{Ps} + \text{Ds} + \text{Cs}) / (\text{Pa} + \text{Da} + \text{Ca})$$

Where:

Pa = Time measured from date PP is required to be started per AC&I Strategic Calendar to actual date PP is approved.

Da = Time measured from date PP is actually approved to actual contract award date.

Ca = Time measured from actual contract award date to Beneficial Occupancy Date.

Ps, Ds = Standard times corresponding to Pa, Da obtained respectively from the AC&I Strategic Calendar.

Cs = Time from contract award to contract completion for each project, identified in bid document.

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

- (2) The actual times can be retrieved from the CEDS database, while the Strategic Calendar will provide the corresponding standard time.
  - (3) FDCCs are responsible for tracking FDI and reporting to G-SEC on an annual basis. It is also recommended that FDCCs analyze the separate measures of Ps/Pa, Ds/Da, and Cs/Ca to give more specific information on the planning, design, and construction phases.
- c. Obligation Index (OI). This measures the success at obligating the AC&I Program during the fiscal year. It compares the funds that are programmed for the fiscal year to the funds that are obligated that year. Projects impacted by outside influences (e.g., IG audits, streamlining decisions, etc.) could negatively impact this measure. These "outliers" can be pointed out/addressed by narrative.
- (1) 
$$OI = \frac{\$ \text{ of FY-funded projects awarded in FY}}{\$ \text{ of projects funded in FY}}$$
  - (2) The programmed versus obligated funds can be retrieved from the CEDS and LUFs databases.
  - (3) FDCCs are responsible for tracking OI and reporting to G-SEC on an annual basis.

B. EC&R PROGRAM MEASURES

- 1. EC&R Program Outcomes. The EC&R mission is to improve the environment by carrying out a program of environmental compliance and restoration at current and former Coast Guard facilities. Outcomes of the EC&R Program are:
  - a. Compliance with present regulations.
  - b. Remediation of past contamination.
  - c. Environmental condition of the shore plant.
  - d. Environmental stewardship.
  - e. Public Image.
- 2. Specific Measures. There are three EC&R program measures: (1) Clean Up Status, (2) ECE Findings Index, and (3) P2S2 composite Index. These measures provide a reasonable picture of the EC&R program's level of success. The following sections outline the EC&R program measures and associated data collection and reporting requirements:

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

- a. Clean Up Status. Measures how well contaminated sites are being identified, cleaned up and closed. This measure compares the number of sites with cleanup actions "underway", plus those that have been "closed" to the "overall" number of known contaminated sites. Neither component alone, "underway" or "closed" sites, provides a complete picture of the cleanup program's positive effect on the environment; but, by tracking both components, a realistic picture of the Coast Guard's site cleanup status is obtained. The desired trend is to steadily close the gap between the number of known contaminated sites and the number of sites where cleanup and/or remediation efforts have been completed. The cost of closing the gap between all known cleanup sites and closed sites can be estimated using current CEDS FEDPLAN data.
- (1) Identification of contaminated sites requires that each Coast Guard installation, present and former, be evaluated. The evaluation protocol is called an Initial Assessment Survey (IAS); consisting of a records search, site visit, and personnel interviews to determine if past practices at the site could have or did lead to fast releases of hazardous substances (refer also to COMDTINST 16475.5). Conducting all required IASs is a resource-intensive effort that will be managed by the EC&R Program over a period of ten or more years. If a "site" is suspect, it is verified through further testing. All known existing sites, and new sites identified through the IAS process, will be included in the Cleanup Status Index measure.
- (2) Technical Description:
- (a) "Contaminated Site". A site where there has been a previous spill or accumulation of hazardous substance(s), typically in the soil and/or groundwater, with the concentration of the contaminant(s) exceeding EPA or other regulatory limits, and requiring corrective action.
- (b) "Site With Cleanup Underway". Sites where cleanup progress was actually made during the measure period, either in expenditure of "significant" man-hours, or any expenditure of funds, or both. If these conditions are not met, the site is considered "inactive" and would not be included as part of this measure component. Sites (including those



EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

where cleanup actions have started) are considered inactive if (1) no significant man-hours or funds were expended during the measure period; and (2) significant man-hours or funds were expended, but the cleanup cannot proceed until the regulators have taken certain actions (i.e., review/approval of proposed cleanup plans).

(c) "Closed Site". Those sites where the regulating entity (EPA, State, or local authority) has granted site closure (exclusive of monitoring, if required) during the measure period.

(3) CEUs, FDCCs and Headquarters units will keep routine project data current in CEDS. Of the greatest importance for the purpose of this measure, the CEDS project narrative field must receive timely updates with sufficient information (as described in "Technical Description", above) to portray an accurate picture of each project's cleanup status including progress made during the measure period. G-SEC-3 will periodically download CEDS and analyze the applicable data to derive the measure.

b. Environmental Compliance Evaluations (ECEs) Findings Index. Measures how well Coast Guard shore facilities are operating in compliance with environmental laws and regulations. ECEs are internal audits that are conducted at Coast Guard installations. ECE's of installations are conducted at three-year intervals; accordingly, approximately 1/3 of Coast Guard installations requiring ECEs are audited each year. The measure is an average of all ECE findings for all installations receiving an ECE during the measure period. The desired trend is a decrease in the average number of Class I and II findings, and an increase of in the average number of Class III findings.

(1) Description of Findings. ECE protocols have not yet been standardized, but all significant findings can be classified to fall within 3 broad categories, defined as follows:

(a) Class I findings reflect noncompliance with an existing environmental regulation, compliance agreement, consent order, or operating/discharge permit - they may stem from federal, state, or local requirements. These are significant discrepancies such

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

that, were they uncovered by a regulator through a formal compliance audit, could result in an enforcement action.

(b) Class II findings reflect noncompliance with a future deadline in an environmental regulation, compliance agreement, or consent order. These may stem from federal, state, or local requirements.

(c) Class III findings reflect Good Management Practices (a positive finding) in effect at the unit - practices that reflect compliance with acceptable industry standards or procedures.

(2) There can be a considerable time lag between the date of the ECE and delivery of the final report. Accordingly, a copy of the ECE outbrief report listing the significant ECE findings shall be forwarded to G-SEC-3 within two weeks of the ECE. Copies of the final ECE reports shall be forwarded to G-SEC-3 per established procedures.

(3) G-SEC-3 will analyze the ECE reports, classify findings as Class I, II, or III, and derive the measure.

c. Pollution Prevention Scoring System (P2S2) Composite Index Coast Guard field units are required to prepare annual. P2S2 reports in accordance with COMDTINST M16455.10, EPCRA/P2 Manual. The P2S2 Composite Index is a simple average of all unit composite P2S2 scores for the measure period. The P2S2 Composite Index is a measure of the Coast Guard's stewardship efforts; it measures the success of reducing the quantities of hazardous, toxic, and other regulated materials that are consumed on an annual basis. Over time, an effective P2 program will yield more efficient use of resources, and reduce the potential for adverse effects on the environment through fugitive emissions, improper disposals, and accidental releases. The desired trend is a decrease in the Coast Guard average P2S2 composite score.

(1) P2S2 measures the pounds of product consumed by the unit, and yields a "unit P2 composite score" - this score is a weighted average of the unit's consumption of toxic, hazardous, and other regulated products during the measure period. In the interest of simplicity, P2S2 assumes that once a quantity of product is

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

obtained by the unit, the entire quantity is consumed by the unit.

- (2) Field units (Group and above) annually prepare and submit P2S2 Reports to G-SEC-3.
- (3) G-SEC-3 will analyze P2S2 reports and calculate the measure. P2S2 Scores will vary significantly between the type of unit, and level of operations. Also, care will be exercised by G-SEC-3 to enlist the cooperation of field units to submit required P2S2 reports. A statistical analysis methodology will be developed to ensure confidence in the data and normalization of results.

C. AFC-43 PROGRAM MEASURES

1. AFC-43 Program Outcomes. The AFC-43 mission is to provide the nonrecurring maintenance of existing shore facilities. Outcomes of the AFC-43 Program are:

- a. Shore plant condition.
- b. Customer and client satisfaction.
- c. Physical life extension of facilities.
- d. Facility readiness
- e. On-time delivery.
- f. Quality delivery.

2. Specific Measures. There are two AFC-43 program measures entitled Plant Condition Rating and Facility Condition Index. Both of these measures focus on the shore plant condition.

- a. Plant Condition Rating. Implementation of this program measure is on hold. This measure will require that each shore facility in the inventory be scored for its physical and functional adequacy. Effort is now in progress by the Facility Assessment NWG to develop standard scoring and inspection processes. Implementation of the Plant Condition Rating pends conclusion of that effort.
- b. Facility Condition Index (FCI). This measure is an indicator of the overall condition of the shore plant which compares the cost of the maintenance project backlog to the replacement value of the shore plant. This indicator is a quantitative representation of the Plant Condition Rating.

EXHIBIT 2-4. CIVIL ENGINEERING PROGRAM MEASURES

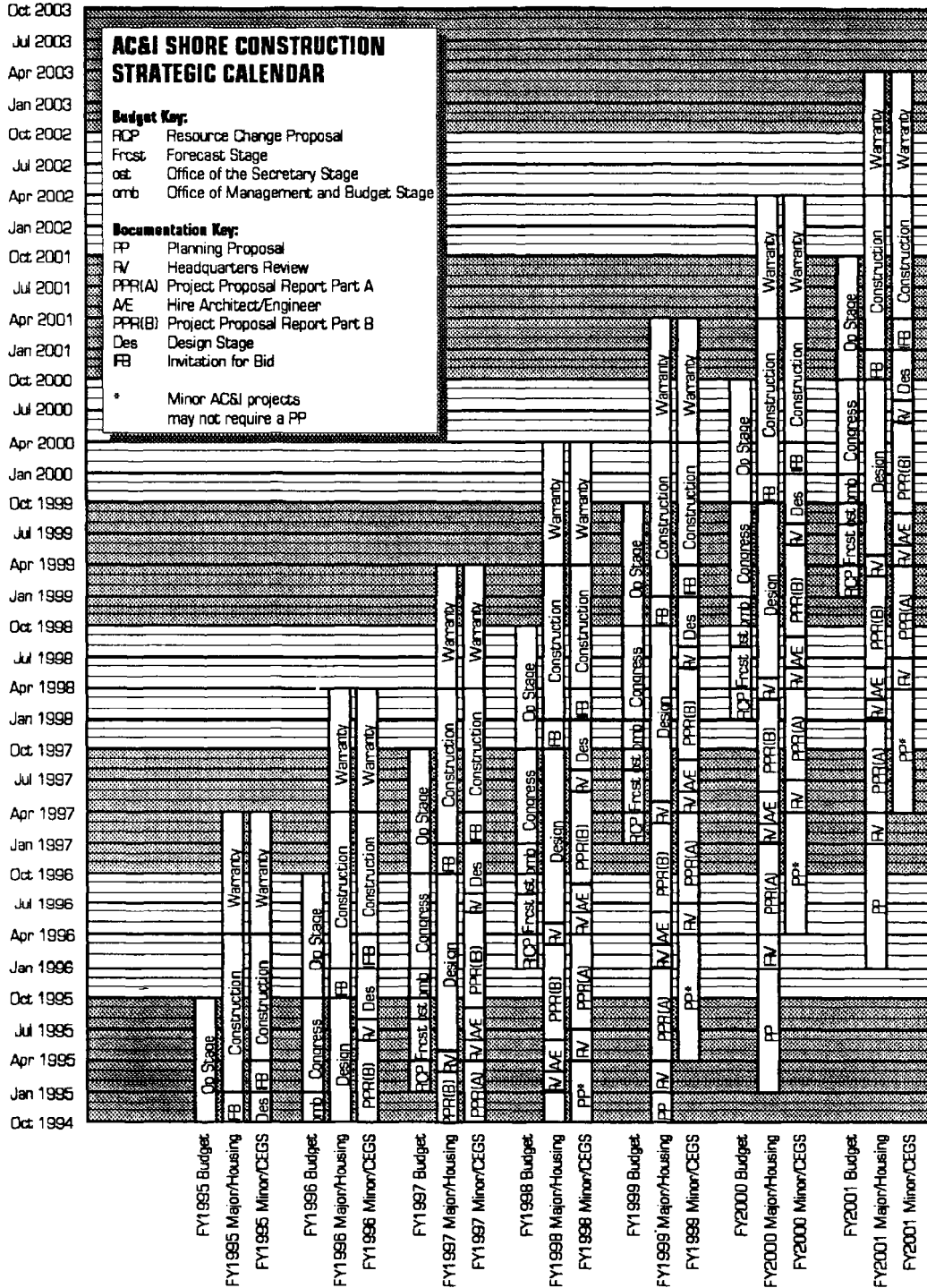
	Facility Condition Index = $\frac{R+M \text{ Backlog}}{PRV}$	PRV
	(1) Because we are concerned with maintenance of and condition of the existing shore plant, the measure only includes the "R" and "M" portions of the backlog, not "I".	
	(2) CEUs, FDCCs, and Headquarters units prepare initial cost estimates, assign RIM codes, and maintain shore facility inventory data in CEDS. G-SEC-1 will analyze CEDS data and calculate this measure.	

Customer Satisfaction and Quality Index Factors

Customer Satisfaction and Quality Index Factors							
1. SAFETY: Extent to which facility is safe for use by Coast Guard personnel / public. Degree of compliance with applicable codes (fire/ egress, seismic, etc.). Adequacy of fire/security systems installed.	1	Facility is non-code compliant. Inappropriate fire/security systems installed. Potential risk to CG/public. Post construction work required to fix safety related deficiencies.	3	Code compliance of facility consistent with prevailing practice. Appropriate and quality fire/security systems installed.	5	Despite project complexity, facility exudes a sense of thoroughness, simplicity, and confidence about customer safety. Fire/security systems state of the art, compatible with existing systems, easy to use.	7
2. ENVIRONMENTAL COMPLIANCE: Extent to which facility incorporates prevailing best management practices. Degree to which design/ construction addressed existing environmental compliance plans and degree to which air/water/ noise pollution issues addressed.		Design/construction unnecessarily increases the Unit's environmental compliance burden. Facility design/construction paid little attention to existing environmental compliance plans or air/water/ noise pollution issues. Remedial work required for compliance.		Good, solid design that incorporates prevailing best management practices. Existing environmental compliance plan requirements addressed. Solutions picked to minimize impacts on Unit's environmental burden.		Simple, elegant solution with lower environmental costs than comparable facilities. Fits extremely well with existing environmental plans. Outstanding management of air/water/ noise pollution issues.	
3. SENSITIVE TO COMMUNITY CONCERNS: Extent to which facility is aesthetically pleasing, design solution accommodates community concerns, and facility projects positive Coast Guard image.		Facility is aesthetically controversial. Customer and community concerns ignored or not sought during design/ construction. Negative Coast Guard image projected by facility.		Attractive facility. Fits in well with surroundings. Good, thoughtful balance of function, costs and community concerns. Facility projects typically positive image of Coast Guard.		Unique, attractive fit with surroundings. Outstanding balance of function, cost and community concerns. Consistently positive comments from CG personnel and public. Reinforces dynamic CG image.	
4. FUNCTIONAL: Degree to which the facility works. Degree to which floor layout enables customer to efficiently meet mission. Compatibility of support systems (HVAC, comms, utility hookups, etc.) provided. Comfort and usability of work environment created.		Marginal ability to meet operational needs. Support systems not compatible with existing systems. Marginal working environment.		Good, professional design, consistent with state of the art practices. Functional layout enables customer to efficiently meet mission. Systems match. Good working environment.		Exuberant, flexible, fits like a glove, efficient. Thoughtful, responsive to operator needs. Outstanding work environment. Promotes efficient response by Unit to mission.	
5. EASILY MAINTAINABLE: How easily customer resources can operate and maintain facility. Degree to which design and materials facilitate low maintenance. Adequacy of O&M documentation and training provided.		Awkward design and material selection. Creates facility operation and maintenance problems. O&M manuals and training incomplete and confusing.		Good solid choice of design and materials. Maintenance levels consistent with that of similar facilities. All O&M manuals and training complete. Maintenance contracts issues addressed.		Demonstrates remarkable combination of state of the art, low maintenance and ease of repair. O&M documentation and on site training complete, well organized and easy to use/ understand. Maintenance contracts issues addressed.	
6. COST-EFFECTIVE: Cost-effectiveness of the facility on a life-cycle cost basis (compared to similar facilities). Includes selection of materials, systems, and energy sources for energy efficiency and life-cycle cost-effectiveness.		Marginally cost-effective. Life-cycle costs are high or predicted to be high compared to similar facilities. Poor choice of materials, systems, or energy sources contributes to high operating cost.		Cost-effective. Life-cycle costs are average or predicted to be average compared to similar facilities. Good choice of materials, systems, and energy sources contribute to a cost-effective facility.		Very cost-effective. Life-cycle costs are low or predicted to be low compared to similar facilities. Excellent choice of materials, systems, and energy sources contributes to a very cost-effective facility.	

EXHIBIT 2-5

AC&I Shore Construction Strategic Calendar



## CHAPTER 3. OE PROJECT DOCUMENTATION

### A. General.

1. This chapter establishes the approval authority and minimum OE project documentation for shore facility projects normally funded by the Coast Guard's AFC-43 operating expense fund. Refer to the approval and documentation guidance provided in Commandant Instruction M16500 series, Automation Technical Guidelines for Lighthouse Modernization and/or Solarization Projects.
2. Project documentation shall be prepared and approved for shore facility projects that meet any of the following criteria: project cost exceeds \$175,000, a Command/Flag quarters project that exceeds \$25,000 or a project for an existing family housing facility that exceeds \$25,000 per dwelling unit. This documentation will normally be prepared and approved at the 35% design phase of the project.
3. No specific project documentation is required by Commandant for projects less than \$175,000 other than those noted above. Maintenance and Logistic Commands (MLC) and Headquarters units shall establish their own internal project documentation and approval procedures for projects less than \$175,000.
4. The review and approval process required by this chapter ensures the project: is funded from the appropriate funding source, complies with existing operational and program needs, and is properly evaluated with respect to the engineering requirements of the project. Operational and program decisions are not normally part of this review and approval process. These decisions should be made prior to the 35% design phase of the project.

### B. OE Project Approval Authority.

1. Commandant (G-E) will approve all OE projects for existing Command or Flag quarters where the cost exceeds \$25,000.
2. Commandant (G-ECV) will approve:
  - a. All projects funded through the Commandant's Headquarters Unit AFC-43 Major Project Program.
  - b. All OE projects exceeding 8500,000 for HQ units and \$1,000,000 for MLCs.
  - c. All OE projects for existing family housing facilities which exceed \$25,000 per dwelling unit.

- B. 3. MLCs shall approve all OE projects exceeding \$500,000 designed by an FD&CC or CEU under their command that does not require Commandant approval as noted above.
- 4. All other OE projects greater than \$175,000 which do not require Commandant or MLC approval may be approved locally by an FD&CC or CEU (as delegated by the MLC), or by a HQ unit executing the project design. MLCs and HQ units may establish procedures to further delegate their local approval authority within their organizations.

C. Required Project Documentation.

- 1. The Project Development Submittal (PDS) forwarded to Commandant for approval shall contain the following items:
  - a. PDS cover letter
  - b. Required Enclosures:
    - (1) Project Scope and Purpose
    - (2) Operating Expense (OE) Certification
    - (3) Cost Estimate Summary Form(s)
    - (4) Economic Analysis
    - (5) Related Actions
    - (6) Design Development
- 2. Documentation required for projects approved by an MLC or HQ unit where project cost exceeds \$175,000.
  - a. Documentation for projects approved by an MLC or HQ unit where the cost exceeds \$175,000 shall be in accordance with their own internal project approval and review procedures. As a minimum, the project approval documents shall contain the items listed below:
    - (1) Project Scope and Purpose
    - (2) Operating Expense (OE) Certification
    - (3) Cost Estimate Summary Form(s)
    - (4) Economic Analysis
    - (5) Master Plan compliance statement
    - (6) Environmental compliance/documentation
  - b. The originals of approved project documentation shall be maintained in the project file at the organization executing the project design.
- 3. Project files at the organization executing the project design shall contain the applicable environmental documentation for the project.



D. Project Documentation Preparation and Routing Responsibilities.

1. The required project documentation shall be prepared by the design office executing the OE project.
2. Project documentation prepared by a CEU or FD&CC for Commandant approval shall be submitted via their MLC. units shall submit their project documentation directly to Commandant (G-SEC).
3. HQ units shall forward an information copy to Commandant (G-SEC) of all locally approved project documentation at the time of approval for projects greater than \$175,000.
4. For projects greater than \$500,000, MLCs shall forward an information copy of all MLC-approved project documentation at the time of approval to Commandant (G-SEC).
5. CEUs and FD&CCs shall forward an information copy to their respective MLC of all locally approved project documentation at the time of approval for projects greater than \$175,000.
6. Inform the approving authority, in writing, of any significant change to the approved scope, design, or cost. If the project documentation limits are exceeded prior to the completion of work, submit "after the fact" documentation. At no time through final project completion can the "improvement" component of the project exceed the thresholds defined in the AC&I Determination chapter of this manual.
7. MLCs and HQ units shall conduct a value engineering analysis for selected OE projects as outlined in the Value Engineering chapter of this manual. Documentation of this analysis shall be maintained in the project file at the organization executing the project design.

E. Project Documentation Formats And Enclosures.

1. PDS Cover Letter: See Exhibit 3-1.
2. Project Scope and Purpose: Include a project description, purpose and impact of denial.
3. Operating Expense (OE) Certification: See Exhibit 3-3. Explain any assumptions used in making the funding determination such as source of facility replacement value in the comment section. Also explain bid strategies which will allow compliance with the AC&I funding criteria if costs are near the threshold limits outlined in the AC&I Determination chapter of this

manual. The OE Certification for project designs executed by a HQ unit shall be signed by the unit's Facilities Engineer.

4. Cost Estimate Summary Form: See Exhibit 3-4 and the chapter on cost estimating contained in this manual. Prepare a separate form for each affected RPF. Where the project consists of similar work at multiple RPFs such as a housing renovation project, a Cost Estimate Summary Form may be prepared for a typical RPF. Prorate general project costs such as mobilization, overhead and profit for the costs identified for a typical RPF. Explain RIMD cost distribution for each item that is not clearly identified in the remainder of the project documentation. Information on this sheet may be handwritten.
5. Economic Analysis: An economic analysis is required to ensure that the most cost effective engineering solution is identified. Conduct an economic analysis of major (20% of project cost) systems.
  - a. This analysis should address replacement costs, energy costs, and maintenance costs for equipment, systems and building schemes when applicable. The analysis should support the Design Development. The NAVFAC P-442 Economic Analysis Handbook provides guidance for preparing economic analyses. If the most cost effective solution is not selected, attach an explanation.
  - b. Major systems will be different on each project. Examples of cost alternatives that could be considered major are: wood versus metal studs/framing, roofing systems, window types, bulkhead or piling types, HVAC system alternatives, paint versus vinyl siding/wall-covering, etc.
  - c. Do not address typical AC&I alternatives, such as status quo or replacement, since these are not relevant to the chosen OE design solution. However, AC&I solutions should be considered prior to submitting a PDS, particularly if a large project backlog exists at an RPF.
6. Related Actions: Cite status and schedule of related actions such as Department of the Army permits, environmental impact procedures, FAA determinations, real property actions, pollution abatement approval, other planned or ongoing AC&I/OE work at the affected RPF/OPFAC etc.
7. Design Development: Prepare a design development submittal detailed enough to enable a complete understanding of the scope of the project and its impact

on its surroundings. Clearly indicate additive bid items and/or project phases as appropriate. This submittal shall include as a minimum the following items as appropriate:

- a. Site plan indicating new and existing conditions such as utilities and associated connections, structures, roads, sidewalks, and parking areas with spaces.
- b. Floor plan or plans (with equipment layouts and major dimensions) indicating new and existing conditions.
- c. Building sections and/or elevations.
- d. Plans, equipment and fixture schedules and flow diagrams of mechanical systems indicating new and existing conditions.
- e. Plans and one-line diagrams of electrical systems indicating new and existing conditions.
- f. A brief description of the architectural and/or engineering system design proposed for the project, and the intended materials. For example, describe any proposed work involving buildings architecture, structural systems, mechanical and electrical systems. Provide similar descriptions for any proposed waterfront work, utilities, or site work involved.
- g. A brief description the energy conservation related impacts of the project. For buildings, give the existing and the proposed energy budget. If applicable, discuss alternative and/or supplemental energy sources considered.
- h. Results of the value engineering (VE) screening for those projects requiring a VE analysis per Chapter 14.

EXHIBIT 3-1. PDS COVER LETTER FORMAT

[INCLUDE THE FOLLOWING INFORMATION IN THE COVER LETTER]

- a. Project name, location, number and funding source. This information is normally included in the subject line.
- b. Indicate requested action.
- c. Indicate critical project dates. (design development approval, design completion, issuance of IFB, contract award, contract completion).
- d. Cite status of applicable environmental documentation (Environmental Assessment, Categorical Exclusion, Finding of No Significant Impact or Environmental Impact Statement). Provide justification if no written determination is required. Provide description of proposed solution to environmental and pollution abatement issues and any asbestos demolition and/or removal. Specifically describe proposed design considerations for all above ground or underground tanks associated with project. Include all costs in cost estimate.
- e. Cite project scope compliance with the unit Master or Facility Plan. Provide an explanation with justification if project scope varies from the Plan.
- f. Indicate point of contact and phone number.

Civil Engineering OE Project Certification

RCS-G-ECV-3300A

<b>PREPARED BY:</b>	<b>CIVIL ENGINEERING OE PROJECT CERTIFICATION</b>			<b>DATE:</b>	
<b>PROJECT TITLE:</b>			<b>PROJECT SERIAL NUMBER:</b>		
<b>UNIT NAME:</b>					
<b>LOCATION:</b>		<b>OPFAC NUMBER:</b>		<b>RPF NUMBER:</b>	
<b>RIMD SUMMARY:</b>					
<b>RPF NUMBER</b>	<b>R (\$000)</b>	<b>I (\$000)</b>	<b>M (\$000)</b>	<b>D (\$000)</b>	<b>TOTAL (\$000)</b>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
<b>TOTAL</b>	_____	_____	_____	_____	_____
A COST ESTIMATE SUMMARY FROM EACH REAL PROPERTY FACILITY AFFECTED BY THIS PROJECT IS ATTACHED.					
<b>RENEWAL PERCENTAGE SUMMARY FOR AFFECTED RPF(S):</b>					
<b>RPF NUMBER</b>	<b>RPF PROJECT COST (\$000) (C1)</b>	<b>RPF REPLACEMENT COST (\$000) (C2)</b>	<b>% OF RPF RENEWED (C1/C2) x 100</b>		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
<b>COMMENTS/EXPLANATION OF ASSUMPTIONS:</b>					
<b>CERTIFIED:</b>					
THIS PROJECT IS PROPERLY FUNDED BY THE OE APPROPRIATION IN ACCORDANCE WITH THE DEFINITIONS PROVIDED IN THE PLANNING AND PROGRAMMING MANUAL (COMDTINST M16010.1B) AND THE CIVIL ENGINEERING MANUAL (COMDTINST M11000.11A)					
_____			_____		
<b>SIGNATURE</b>			<b>TITLE</b>		

Dept. of Transp., USCG, CG-5520A (6-89)  
Local Repro.

Exhibit 3-2  
3-7

CH-4

Cost Estimate Summary Form Civil Engineering OE Project

RCS-G-ECV-3300

PREPARED BY:		<b>COST ESTIMATE SUMMARY FORM CIVIL ENGINEERING OE PROJECT</b>			DATE:			
PROJECT TITLE:				PROJECT SERIAL NUMBER:				
UNIT NAME:								
LOCATION:			OPFAC NUMBER:		RPF NUMBER:			
PROJECT ELEMENT	UNIT	QUANTITY	COST/ UNIT \$	RMD DISTRIBUTION (\$000)				TOTAL R+I+M+D
				R	I	M	D	
TOTAL (RPF PROJECT COST)								
SHEET OF								

Dept. of Transp., USCG, CG-5520 (6-89)  
Local Repro.

Exhibit 3-3

**PROJECT APPROVAL DECISION TREE**

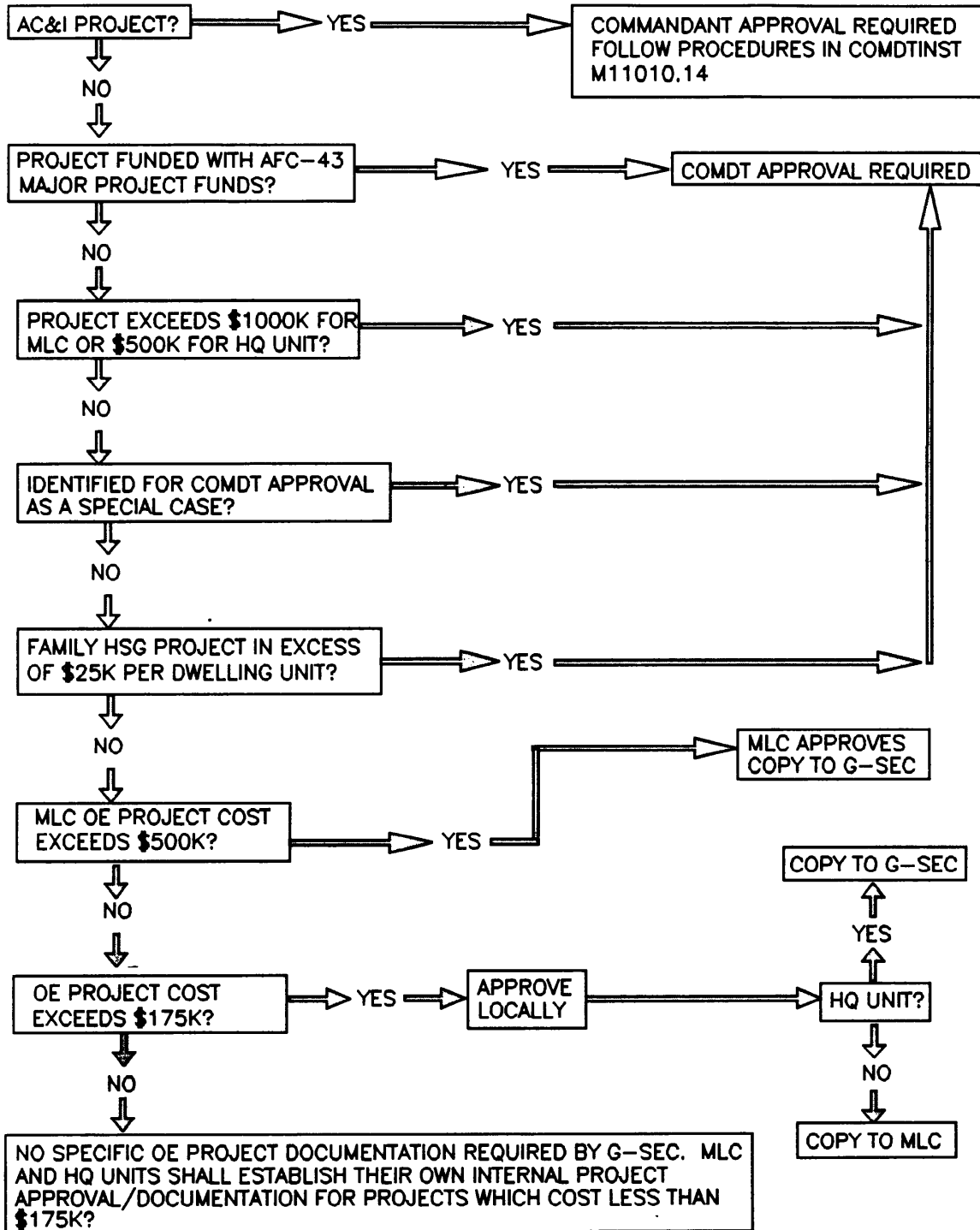


Exhibit 3-4

## CHAPTER 4. AC&I DETERMINATION

### A. General.

1. The Coast Guard is required by Congress to establish administrative procedures that will define the manner in which it expends its annual appropriation. Congress does not specify these procedures in detail, but only requires that they be reasonable and provide a full disclosure of the agency's financial activities.
2. This chapter establishes the procedures to determine which shore facility projects should be funded from the Coast Guard's Acquisition, Construction and Improvements (AC&I) Appropriation. Shore facility projects may be funded from several other sources such as Operating Expense (OE), Coast Guard Exchange System (CGES), other governmental agencies, and private concerns such as the Coast Guard Foundation. Guidance to determine which shore facility projects should be funded from these sources may be found in their respective program-specific publications.
3. Information in this chapter supplements the guidance provided in the Planning and Programming Manual, COMDTINST M16010.1 (series), and the Shore Facilities Project Development Manual, COMDTINST M11010.4. Requests for additional guidance concerning the AC&I determination for shore facility projects should be directed to Commandant (G-ECV).

### B. Funding Determination.

1. All aspects of a project must be considered in making the AC&I determination regardless of the nature of the work or method of execution (i.e., contract, work order, self help, off-duty labor).
2. AC&I funding must be used for shore facility projects under the following conditions:
  - a. Condition 1. The project's improvement component for any real property facility (RPF) or family housing unit exceeds \$200,000. See paragraph D.7. for the definition of "improvement."
  - b. Condition 2. The total of all improvement costs exceeds \$200,000 for multiple RPFs affected by a project that is in response to a single new or significantly changed mission. See Exhibit 4-1 for an example of this condition.
  - c. Condition 3. The project cost for an RPF or family housing unit exceeds \$200,000, and over 75% of the



- B. 2. c. (cont) RPF or housing unit is replaced. See paragraph D.8. for a definition of "rebuilding."
- d. Condition 4. The total initial cost to acquire new real property facilities (RPF) and/or to rehabilitate newly acquired real property facilities to bring the facilities to Coast Guard standards or to provide a complete and usable facility exceeds \$200,000.  
Example: DOD facilities are transferred to the Coast Guard at no cost, but more than \$200,000 is required to make the facility complete and usable.
- e. Condition 5. The project is a family housing purchase.
- f. Condition 6. The project is to purchase land or land with improvements such as buildings, structures, roads, etc.
- g. Condition 7. The project involves the acquisition or establishment of a new aids to navigation facility or structure with a cost over \$10K.

3. All other projects may qualify for OE funding.

C. Combination of AC&I and OE Expenditures.

- 1. A Waiver from Commandant (G-SEC-1) is required for any of the following:
  - a. To start OE funded improvements to a RPF within a twelve month period following the completion of a related AC&I project at the same RPF.
  - b. To combine OE and AC&I funds on a single contract.
  - c. To use OE and AC&I funds on concurrent contracts at one RFP.  
A waiver request must be submitted to G-SEC-1 as early as possible to avoid problems resulting from redesign or IFB changes should a waiver not be approved. G-SEC-1 will notify G-CRC when concurrent use of AC&I and OE funds is requested.
- 2. OE and AC&I funded project elements may be combined in a single construction contract. The IFB and contract documents for combined contract funding must be structured to permit a clear delineation between the expenditure of OE and AC&I funds. Separate accountability of obligations, change orders, and progress payments must be maintained. Use of this practice must be limited only to those projects where it is clearly advantageous, practical, and cost effective to

| the Coast Guard. Care must be taken to ensure that even  
| the perception of incrementalism or improper mixing of  
| appropriations is avoided.

D. Definitions. The following definitions are presented from  
| the viewpoint of the Commandant (G-SEC). See the chapter on  
AC&I Program Funds Management and Execution in this manual  
for definitions of other terms connected with the AC&I  
Program.

1. AC&I Program. Portion of the Coast Guard's annual budget which is concerned with the acquisition, construction, and improvement of facilities.
2. Project. A planned undertaking which modifies or improves one or more real property facilities in order to achieve a Coast Guard program goal.
3. AC&I Project. A project which is funded from the Acquisition, Construction, and Improvements (AC&I) program.
4. OE Project. A project which is funded from the Coast Guard's annual Operating Expense (OE) appropriation.
5. Shore Facilities. Items of real or personal property which are provided and maintained by the Civil Engineering organization.
6. Real Property Facility (RPF). A building physically separate from other buildings, including all systems within the five foot line; utility mains outside of the five foot line of all buildings, including mains which run over, under, or through buildings; major structures or mechanical systems servicing utility mains (e.g. pumping stations, storage tanks); a pier, wharf, or dock, not including any buildings or structures built on it, but including any integral utility system back to the mains; an antenna system, including as many towers, anchors, etc., at the same site necessary to form a functional antenna; a paved or landscaped area which tends to serve a single purpose such as an access road, parking lot, or playground; a boat launching facility, including the haulout mechanism; fixed ATON structures.
7. Improvement (I). An increase (permanent or temporary) in capacity or capability of an existing real property facility, or acquisition/construction of a new real property facility. The difference in cost between an "improved" alternative and that of the "replacement-in-kind" alternative for increased capability or capacity is considered an improvement. Examples of improvements are:
  - a. Increasing the length or width of piers; increasing the length, width, or height of buildings; adding

habitable square footage by finishing attic spaces, warehouses, mezzanines, unfinished basements, porches, or by adding space to an existing real property facility.

- b. Increasing the length or capacity of a utility distribution system.
  - c. Installing a central air conditioning system for the first time or extending an existing system to other parts of the real property facility.
  - d. Fire code upgrade work required to convert an existing office space into a watchstander's berthing area.
  - e. The replacement of a gravel road with a paved road. The improvement cost is the difference between the cost of the paved road alternative and the cost of rebuilding with gravel.
8. Rebuilding (R). Replacement of an element of the shore plant with an element of comparable capacity or capability. Examples of rebuilding are:
- a. Replacement of the timber decking on a pier.
  - b. Replacement of an existing pipe, conduit, or ducts with components larger than the original size when the original size is no longer available.
  - c. Replacement of existing components with more energy efficient components to serve the same function such as doors, windows, walls/partitions, roofs and thermostats.
  - d. Replacement of 40 year old "industry-standard" components with new higher quality "industry-standard" components. Quality is not a consideration. Any renovation will provide components of higher quality.
  - e. Replacement of an obsolete fire alarm system.
  - f. Replacement of an existing pier. The replacement pier has the same length, width and loading capacity as the existing pier being replaced.

9. Maintenance (M). The routine recurring work that is required to minimize the effects of deterioration. The purpose of maintenance is to ensure that the facility can continue to be used for its intended purpose at its original or designed capacity or capability. Examples of maintenance are:

- a. Exterior and interior painting.
  - b. Seal coating/patching a built-up roof.
  - c. Dredging of a boat basin.
  - d. Adjustment or calibration of mechanical equipment.
  - e. Tree pruning or topping.
10. Deterioration. The reduction in usefulness and/or serviceability of a RPF due to normal use, weathering, aging, attack by insects or marine organisms, etc.
11. Demolition (D). The physical destruction and removal from the site of a portion or all of a RPF.
12. Incrementation. Incrementation is the subdivision of a project to circumvent the intent of project documentation or AC&I funding criteria. Projects for the same real property facility may not be segregated if either of the following conditions are true:
- a. The projects are "concurrent requirements" - requirements existing on the backlog at the same time. Backlogged AFC-43 work at an RPF should be coordinated with any planned AC&I project at an RPF, in lieu of being initiated within 12 months of the AC&I project's start or completion.
  - b. All of the projects are needed to produce a complete and usable facility. For example, a project to construct a building must include all items to make the individual facility totally functional (provide utilities, interior finishing, equipment, etc. ).
13. Change In Mission. An addition, expansion or decrease in Coast Guard missions (SAR, A/N, R/A, ELT, etc.).
14. Obsolescence. The inability to service a facility or facility component due to advancing technology and loss of industry support. Replacement of an obsolete facility or component requires the disposal of the original facility or component. See COMDTINST M11010.6 (series), Shore Facilities Planning Manual, for a full discussion of physical, technological, and programmatic obsolescence.
15. Outfitting. Equipment and components which are not permanently installed as part of the real property facility, such as furniture and portable equipment, that are needed to make a facility usable for it's designated purpose.

16. Replacement Value. The estimated cost in current year dollars to replace an existing RPF in-kind for the particular site in question.
  - | 17. Percentage Of An RPF That Is Renewed. The percentage of  
| an RPF that is renewed is the ratio of the project construction cost for the RPF in question to the replacement value of the RPF. Project cost for this calculation should not include outfitting.
  18. Capacity/Capability. The physical and functional ability of a facility to support current and future Coast Guard Missions. This definition does not consider design life.
  19. Family Housing Unit. Any facility or portion of a facility dedicated to providing living accommodations to active duty personnel and their families.
- E. Calculation Of On-Duty, Off-Duty Labor and "Free" Material Costs. Costs associated with self-help (off duty), non-industrial (on duty) labor, material from "free" sources (surplus, residuals, excess property, etc.) must be included in the total project cost when making the AC&I determination. Use "Hourly Standard Rates For Personnel Services" from the current COMDTNOTE 7300 series for calculating the cost of personnel services. Assume a work year of 2080 hours.

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**EXHIBIT 4-1. EXAMPLE OF PROJECT IMPROVEMENTS EXCEEDING \$200,000**

**Example:** Homeport a new vessel. This is a project at a single shore unit which includes construction of a new RPF plus demolition, maintenance and improvements at other RPFs:

**RPF #1 Build new pier including services:  
I= \$75K**

**RPF #2 Rebuild building (add HVAC):  
I= \$50K R= \$30K M= \$20K D= \$10K**

**RPF #3 Electrical distribution:  
I= \$90K R= \$25K**

The work at RPF #2 and #3 supports the same new mission as the new pier (RPF #1). Improvements are interrelated. Since the total cost of all improvements (\$75K + \$50K + \$90K = \$215K) exceeds \$200,000, all work including rebuilding, maintenance and demolition should be AC&I funded.

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**EXHIBIT 4-2. EXAMPLE OF PROJECT COST EXCEEDING \$200,000 AND OVER  
75% RENEWED**

Example: The project work includes: rehabilitating an existing pier, a building on the pier, and modifications to the existing utility mains which service the pier in support of the work in RPF #1 and #2. The project includes improvements, rebuilding, maintenance, and demolition in the three separate RPFs:

RPF #1 Rehabilitate pier:

R= \$800K I= \$40K M= \$65K D= \$50K

RPF #2 Rehabilitate the building on the pier:

R= \$400K I= \$120K M= \$70K D= \$10K

RPF #3 Modify the existing main utility systems:

R= \$200K I= \$10K M= \$30K D=\$5K

RIMD Summary:

RPF#	R	I	M	D	TOTAL
#1	\$800K	\$30K	\$65K	\$50K	\$945K
#2	\$400K	\$120K	\$70K	\$10K	\$600K
#3	\$200K	\$10K	\$30K	\$5K	\$245K
<b>TOTAL</b>	<b>\$1400K</b>	<b>\$160K</b>	<b>\$165K</b>	<b>\$65K</b>	<b>\$1790K</b>

Percentage Of RPF Renew Summary:

RPF #	PROJECT COST (C1)	REPLACEMENT VALUE (C2)	% RENEWED (C1/C2) x 100
#1	\$945K	\$1180K	80%
#2	\$600K	\$1000K	60%
#3	\$245K	\$600K	41%

For RPF #1, the project improvement component is less than \$200K. However, the project cost for RPF #1 exceeds \$200K (\$945K) and more than 75% of the RPF is renewed. Per paragraph B.2.c., Condition #3 governs, hence, the RPF #1 project must be funded from the AC&I program.

## CHAPTER 5. AC&I PROGRAM FUNDS MANAGEMENT AND EXECUTION

### A. AC&I PROGRAM FUNDING.

1. Appropriation Structure. Funding for Coast Guard shore construction is provided annually through our Acquisition, Construction, and Improvements (AC&I) appropriation. The AC&I appropriation is multi-year, with funds available for obligation for three fiscal years from the beginning (1 October) of the fiscal year appropriated. All projects and subprograms (Survey & Design, Minor AC&I, ATON, etc.) are separate and distinct budget line items in the Coast Guard Budget. Financial management and execution of the AC&I Shore Construction Program, including reprogramming of funds, is governed by Financial Resource Management Manual, COMDTINST M7100.3 (series). The Appropriation Manager for AC&I Shore Construction is Commandant (G-CRC). The Project Target Officer for Shore Construction is Commandant (G-ECV).
  
2. Types of Funding.
  - a. Major AC&I Projects. Most major AC&I projects are identified separately in the Coast Guard budget submission to Congress. The project justification, scope, description and cost are detailed on the budget sheet. The project budget must include all requirements for a complete and operational facility including demolition, construction, outfitting (furnishings and equipment), and electronics. Within the guidance of the Financial Resources Management Manual, COMDTINST M7100.3 (series), funds are transferred from projects with savings to cover unexpected shortages in others.
  
  - b. Minor AC&I Projects. The purpose of this program is to provide funding for relatively small, but necessary AC&I projects. These projects are less complex, require less advance planning and are easier to execute than their major shore construction counterparts. There is a maximum ceiling that can be spent on an individual project. This may vary by fiscal year. The actual limits are published separately. Overall program funding is managed by Commandant (G-ECV). To minimize carryover of funds and ensure continuous execution, the total dollar value of projects selected is greater than available funds. The Minor AC&I funding limit includes all project elements (construction, outfitting, electronics, etc.).



- c. AC&I Administrative Funds (AC&I Admin). AC&I Admin provides funding for salaries, travel, and support of personnel in the planning, design, management, and execution of the AC&I Program. The salary account for employees funded under the AC&I appropriation is centrally managed in Headquarters by Commandant (G-CRC). Only expenses attributable to planning and execution of AC&I projects or programs should be charged to this account. AC&I Admin funds to support the Shore Construction Program are provided annually to the field (primarily to MLCs and FDCCs). Commandant (G-ECV) will request field estimates annually approximately three to four months prior to the start of a new fiscal year. Field estimates will normally be based on projects included in the Congressional Stage Budget and submitted to arrive in Headquarters no later than 15 August. Actual funds provided will be based on overall availability and program priorities.
- d. Survey & Design Funds (S&D). The S&D Program provides funding for expenses associated with planning, real property acquisition, design, and execution of AC&I construction projects, excluding administrative expenses described above. This also includes services after construction contract award associated with surveillance/inspection, submittal reviews, and field support. Commandant (G-ECV) manages the overall S&D Shore account and will request field requirements prior to the start of each fiscal year. This information is requested for planning purposes only. See the chapter on Professional Services Contracts for information and guidance on requests for authority to procure A-E services.
- e. Waterways Aids To Navigation (ATON). This program improves aids-to-navigation which have become inadequate because of changes in waterway usage or due to US Army Corps of Engineers projects which extend or improve the navigable waters of the United States. Projects are based on Corps of Engineers designs or on deficiencies identified by the Waterways Analysis and Management System (WAMS). Projects are selected for this annually funded program by Commandant (G-N). Funds are managed by Commandant (G-ECV).
- f. Reimbursable Projects. Funding provided to or from other governmental agencies is classified as reimbursable funding. These projects are not included in the Coast Guard budget, unless the Coast Guard is providing the funds. Normally all project expenses, including administrative, planning, design,

and overhead costs are included in the reimbursable accounts. Guidance pertaining to reimbursement funding is contained in Financial Resource Management Manual, COMDTINST M7100.3 (series).

3. Project Funding Elements. Project funding elements listed below are for project execution purposes only and should not be confused with project elements or point accounts as listed in Financial Resource Management Manual, COMDTINST M7100.3 (series).
  - a. Construction. The costs to accomplish the construction or improvement of the facility. These costs include such items as demolition, sitework, exterior utilities, waterfront/marine construction, and building construction.
  - b. Contingency. Construction contingency funding will normally be provided upon request with the construction funds at time of contract award. Construction contingency will allow funding of necessary change orders without project delay. The amount of construction contingency provided is governed by such factors as size and type of project, bid results, available funds, and reprogramming limitations. To ensure balance and flexibility among project accounts, remaining construction contingency balances (if any remain after the initial allotment) will be maintained by Headquarters. This will enable quick response to unforeseen service-wide requirements without the need to seek additional funds elsewhere which could unnecessarily delay contract completion. Requests for additional contingency funds should be fully justified.
  - c. Furnishings/Equipment (F&E). Funding is normally included in each AC&I Shore Construction project for furnishings and portable, non-stationary outfitting required to make the facility usable for its intended purpose. As a general rule, only F&E required as a direct result of the AC&I project (e.g. construction of additional berthing) and to make the facility operational will be provided with AC&I funds. Replacement F&E (including tools, maintenance and office equipment, etc.) for those spaces not affected by the AC&I project will be procured with Operating Expense (OE) funds, as necessary. An itemized list of F&E to be procured for each project will be prepared and forwarded to Commandant (G-ECV) prior to requesting outfitting funds. This list need not be specific as to item identity (model, color, brand, etc.) but should include type of item, cost, and use or location (e.g. galley, mess, administrative office, recreation room, etc.). When procuring

outfitting, consideration must be given to the following:

- (1) Maximum reuse of existing outfitting.
- (2) Funding of only the highest priority items with AC&I funds.
- (3) Procurement of replacement items with Operating Expense (OE) funds.
- (4) Guidelines established for F&E contained in the Cost Estimating chapter of this manual.
- (5) In the event of cost overruns, the list shall be categorized into Priority I and II items.

d. Electronics. These costs cover the installation and acquisition of all electronic equipment necessary to fulfill the communications and electronic maintenance requirements of the facility (if not included in the construction contract). Electronic costs include those associated with communication and navigational equipment, and telephone systems, etc. The electronics required for a shore project will be estimated in the PPR(B) and included as a line item in the cost estimate. Funding provided for electronics will be based on actual need as requirements are refined and actual costs further developed.

e. Other. These costs include, for example, demolition, relocation, and establishment of temporary facilities (if not included in the construction contract) which will ensure continuous operation of the unit while construction is underway.

4. Carryover. The size of the unobligated balance and our execution schedule weigh heavily in decisions at all levels concerning Coast Guard budget allowances and funding levels. Our goal should always be to ensure that AC&I funds are obligated in the year in which they are appropriated.

## B. AC&I PROGRAM EXECUTION

### 1. Invitation for Bids (IFBs) and Negotiated Contracts

a. Authority to issue the Invitation for Bid (IFB) or negotiate a contract must be requested from Commandant (G-ECV). The purpose of this requirement is to provide final certification of the availability of funds and verify total project funding requirements which are within the approved project

scope. The intent is not to authorize the procurement method or details, such as sealed bids, small business set-aside, or SBA 8(a) negotiation. For the purpose of this manual, soliciting bids is defined as release of the IFB or negotiation package. The project design must be complete and the current cost estimate (independent, if applicable) must be forwarded before requesting authority to procure a construction contract from Commandant (G-ECV). If circumstances dictate, (e.g. project cost is close to the Minor AC&I limit, exceeds project budget, or for use in SBA 8(a) negotiations), an independent estimate is recommended.

- b. Requests for authority to issue the IFB or negotiate a contract must include the following:
- (1) Description and cost of the base bid and each additive bid item. All requests containing additive bid items must include a statement that the base bid contains all the work necessary to achieve a functionally complete and usable facility. Additive bid items shall be limited to work already approved in the planning document scope. Requests for funds to award additive bid items in excess of approved budgets shall be fully developed per paragraph B.2.b. below.
  - (2) Date PPR(B) was approved.
  - (3) Expected bid opening date, or for negotiated contracts, anticipated receipt of contractor's best and final offer.
  - (4) All approved remaining requirements not included in the IFB which are to be funded with project funds, such as Furnishings/Equipment, Electronics, Other costs, and contingency.
  - (5) All remaining items to be funded with Survey and Design, such as construction surveillance and submittal review, shall be identified for separate S&D funding.
- c. New authority to solicit bids or negotiate must be requested for projects that have been redesigned and/or rebid because of high bids or failure of SBA 8a negotiations. A copy of the revised procurement package must be provided to Commandant (G-ECV).
- d. Subsequent to obtaining IFB or contract negotiation authority, one copy of each IFB package for competitively bid contracts (or plans and

specifications for negotiated contracts), and all subsequent contract amendments, must be forwarded to Commandant (G-ECV-4). A copy of the final government estimate with comparisons, as a minimum, by category (construction, outfitting, electronics, demolition, etc.) to the approved PPR(B), and the IFB independent cost estimates if obtained must also be forwarded to Commandant (G-ECV-4). See the chapter on cost estimating contained in this manual for format.

## 2. Construction Contract Awards and Funding Requests

- a. To expedite funding transfers and, if necessary, solutions to funding problems, results of bid opening will be reported to Commandant (G-ECV) as soon as possible after bid opening. Telephonic or electronic mail reports to Commandant (G-ECV) are recommended with follow-up information in the actual funds request message. The following minimum information shall be provided:
  - (1) Number of bids received.
  - (2) Low, second low, and high bids or negotiated prices for each base bid and additive item.
  - (3) Name, city and state of low bidder.
  - (4) Final Government cost estimate for all items.
  - (5) Remaining approved funding requirements not included in the contract.
  - (6) Total estimated project cost based on bid results, remaining requirements, and previously funded items. Project elements previously funded with Survey and Design funds such as design costs shall not be included. Items to be funded with Survey and Design, such as construction surveillance and submittal review, shall be identified for separate S&D funding.
- b. When requesting funds to award a contract, include an obligation schedule of all remaining approved project items (e.g. electronics, furnishings/equipment) for which funds will be required at a later date. When overall project funds required exceed the total approved budget by 10 percent, include a detailed explanation of the overrun and an impact analysis if redesigned and/or rebid. As a general rule, additive items will not be awarded unless sufficient funds are available within the approved budget. If funds are requested for additive items and the project will exceed the budgeted amount, include a detailed

justification. Information provided must be of sufficient detail to support reprogramming of funds at approval levels above Commandant (G-ECV), if necessary.

- c. Report the award of contracts to Commandant (G-ECV) via message within 24 hours. RCS G-ECV-3079 applies. The following information must be provided:

- (1) Name of project.
- (2) DOT contract number.
- (3) Date awarded.
- (4) Name and address of contractor.
- (5) Contract amount.
- (6) Planned contract completion date.

### 3. AC&I Project Cost Overruns

- a. The following steps shall be taken during project design and development to control cost on projects that exceed the estimate or budget for such projects:

- (1) Apply Value Engineering.
- (2) Obtain an independent, detailed cost estimate for construction projects based on completed plans and specifications.
- (3) Ensure that unit commanders, program managers, and other interested parties do not increase or change the scope of the project without obtaining a funding increase commensurate with the increased project cost or reducing the cost of other project elements (Furnishings/ Equipment, Electronics, etc.).
- (4) Structure the IFB so that all items are included in the base bid and ensure that the base bid cost estimate is at least 5% less than construction funds available. Include additive bid items as appropriate for lower priority construction features that were included in the approved PPR(B) (see paragraph B.1.b.(1) for guidance on additive bid items).

- b. If, because of bids received or price negotiated, funding of the approved project will exceed the budget, provide recommendations for reductions to stay within approved budget. These recommendations shall be coordinated with the affected unit.

4. Project Financial Close Out. Financial Resource Management Manual, COMDTINST M7100.3 (series), includes guidance on project financial closeout. Closeout must be accomplished in a timely manner to ensure excess funds are returned to Headquarters for use on other AC&I Shore Construction projects and to preclude lapsing of funds. Projects should be financially closed out as soon as possible after the construction contract completion, but no later than 180 days after the beneficial occupancy. Unobligated project balances are subject to withdrawal by Commandant at this time to cover shortages in other AC&I projects.
5. Capitalization of Projects. No later than thirty days after the Construction Contract is completed and the facility is accepted by the Coast Guard, the applicable MLC, CEU or Headquarters unit will capitalize the project in accordance with COMDTINST M11011.9 (series), Real Property Management Manual.

### C. AC&I WORK PROGRESS REPORTING

1. AC&I Work Progress Report. The AC&I Work Progress Report is the primary document used by Headquarters staff elements to track and monitor the progress of ongoing AC&I projects at various stages of planning, design and construction. It ensures that such items as OE follow-on, personnel allowance changes, vessel relocations, aircraft deliveries, and responses to Congressional queries are coordinated with current project schedules.
2. Timely Submission to Headquarters. Submission of timely and accurate Work Progress Reports to Headquarters is critical. Prompt Headquarters action in solving problems relating to AC&I planning and execution depends heavily on the availability of up-to-date project data from the field. Late receipt of this data may result in project delays. Work Progress Reports must be prepared and forwarded to arrive in Commandant (G-ECV-4) no later than ten days after the end of the month for which the report is compiled. Electronic WPR submissions to Commandant (G-ECV-4) are preferred and may be forwarded via E-mail to WPR/G-ECV. The E-mail should contain the statement "Work Progress Report approved and signed by \_\_\_\_\_ (name) \_\_\_\_\_, Commanding Officer, on \_\_\_\_\_ (date) \_\_\_\_\_".
3. Requirements.
  - a. AC&I Work Progress Reports will be submitted by the Facilities Design and Construction Centers (FD&CC) or Civil Engineering Unit (CEU) as appropriate and will include the current status of all AC&I projects which have been assigned for planning, design, or execution. AC&I Work Progress Reports shall include

all approved AC&I Waterways projects. Projects will be removed from the Work Progress Report upon submission of the Final Data Form to Commandant.

- b. The AC&I Work Progress Report will be submitted to Commandant (G-ECV) using the report available in the Civil Engineering Data System (CEDs). Information will be reported as of the last day of the month for which the report is prepared.

4. Instructions for Preparation. (Refer to Exhibit 5-1, Sample AC&I Work Progress Report).

- a. Column (1), "Project Data": AC&I Projects in this column will be listed by fiscal year in chronological order and sorted by Allotment Target Unit (ATU). For example, the entire FY88 Program will be listed in ascending order by Districts, then Area Units, then MLC units, then HQ units, followed by the FY89 Program, etc. The following information will be included for each project:

- (1) ATU of the benefiting OPFAC.
- (2) Shore Facilities Requirements List (SFRL) number.
- (3) The AC&I project financial number assigned by G-CBU. These numbers are provided just prior to the fiscal year in which funds are appropriated.
- (4) Design Method consisting of either A/E, IDC, or I/H.
- (5) Construction Method consisting of either 8A or CN (ie non-8A construction).
- (6) Unit Name of benefiting OPFAC.
- (7) Project Title as listed in the SFRL or current stage of the Coast Guard Budget.
- (8) Fiscal Year. Either the planned or actual year of funding based on the latest available information.
- (9) Budgeted Funds indicating the total amount approved or budgeted for in the current budget stage.
- (10) Funding Source consisting of either MAJ, MIN, HSG, WW, CGES, or OTH.

- b. Column (2), "Project Proposal Report - Part A"



(PPR(A)) status. Indicate the following estimated or actual dates for each project:

- (1) Start: Date PPR(A) preparation began.
- (2) Complete: Date PPR(A) submitted for approval.
- (3) Approve: Date of approval.

c. Column (3), "Architect-Engineer (A/E) Selection". Indicate the following estimated or actual dates for projects that will be designed by an A/E contractor:

- (1) Start: Date of A/E synopsis in Commerce Business Daily.
- (2) Complete: Date of A/E selection board's final decision.
- (3) Award Contract: Date of A/E contract award.

d. Column (4), "Project Proposal Report - Part B" (PPR(B)) status. Indicate the following estimated or actual dates for each project:

- (1) Start: Date PPR(B) preparation began.
- (2) Complete: Date PPR(B) submitted for approval.
- (3) Approve: Date of approval.

e. Column (5), "Submit Design". Indicate the following estimated or actual dates:

- (1) "60%": Date of 60% design completion.
- (2) "100%": Date of 100% design completion.
- (3) "% to date": Percentage of design completion for either A/E or in-house projects as of the report closing date.

f. Column (6), "Invitation for Bids (IFB)". Indicate the following estimated or actual dates:

- (1) "Request Authority": Date of request to Headquarters for authority to issue the IFB package.

- (2) "Issue IFB": Date the contracting officer releases the IFB.
  - (3) "Open Bids": Date of bid opening.
- g. Column (7), "Construction". Indicate the following, estimated or actual:
- (1) Award Contract: Date the construction contract awarded and funds obligated.
  - (2) "Complete Construction": The current contract completion date. If expected completion date differs, indicate this date in the remarks.
  - (3) "% to date": The physical percentage complete as of the close of the report period. Previous month's percentage should be indicated in parenthesis. Projects will be reported as 100% complete when the facility is placed in an operational status or when the Coast Guard assumes beneficial occupancy under the contract, if such an event occurs.
- h. Column (8), "Remarks". Use the "Remarks" column to briefly explain delays and problems affecting key project events such as design completion, bid opening, contract award, and construction completion. Also use the "Remarks" column to indicate problems with site acquisition or environmental documentation if completion will delay project execution. Remarks requiring detailed comment should be attached as an addendum to the report.
- i. General Instructions:
- (1) All dates should be indicated by month, day and year. For example: 11/01/93.
  - (2) Changes or slippages from the previous report will be indicated by placing the old date in parenthesis after the new date.
  - (3) Slippages or delays that affect completion of key project events must be explained in the "Remarks" column and, if required, as an attachment (see paragraph C.4.h. above).
  - (4) All project data must be supplied on the Work Progress Report with the most current dates/percentages available. This includes all future year projects in various budget stages. If a project is on hold pending specific action such as site acquisition, PPR approval, etc.,

indicate the latest date that the event must be completed to ensure timely execution and provide necessary details in the "Remarks" column. Entries should be based on the best information in regard to scheduling that is available during the current Work Progress Report period. Under no circumstances should columns be left blank.

AC & I WORK PROGRESS REPORT

1	2	3	4	5	6	7	8
PROJECT DATA	PPR(A)	SELECT A/E	PPR(B)	SUBMIT DESIGN	IFB	CONSTRUCTION	REMARKS
ATU-PROJ - ACRI - DSGN - CONST	START:	START:	START:	60%:	REQUEST AUTH:	CONT. AWARD:	AS REQ
LOCATION	COMPLETE:	COMPLETE:	COMPLETE:	100%:	ISSUE IFB:	FINISH CONST:	
DESCRIPTION	APPROVE:	CONT. AWARD:	APPROVE:	% TO DATE:	OPEN BIDS:	% TO DATE:	
FISCAL YR - BUDGET EST - FUNDS							
01-X3758 - A/E - CN	05/01/92	11/01/94	06/01/95	02/01/96	10/01/97	01/02/98	ON HOLD PENDING PP AMENDMENT
CG STA ROCKAWAY							
REHAB STATION	10/01/92	02/01/95	12/01/95	09/01/96	11/01/97	02/02/99	APPROVAL
1998 - \$10.700K - MAJ	11/01/92	05/01/95	02/01/96	0%	12/01/97	0%	
S A M P L E							
05-X3355 - I/H - CN	10/01/92		10/12/93	10/06/94	10/01/97	01/07/98	
CG SUPRTCEN ELIZ CITY							
EXPAND AIRCRAFT RAMP	03/01/93		05/05/94	04/13/95	11/05/97	02/04/99	
1998 - \$3.000K - MAJ	05/05/93		07/07/94	5%	12/10/97	0%	
S A M P L E							
07-X4007 - A/E - CN		09/01/90	03/01/89	02/01/93	10/01/97	02/04/98	
CG AIRSTA MIAMI							
REHAB HU25 HANGAR		12/01/91	04/17/92	04/12/94	11/12/97	02/04/99	
1998 - \$5.600K - MAJ		07/07/92	12/04/92	(03/30/94) 95%	12/17/97	0%	
S A M P L E							
09-X3566 - IDC - 8A	11/01/91		06/01/95	11/01/96	10/01/97	01/01/98	ON HOLD PENDING PP
CG STA ST IGNACE							
CONST BOAT MAINTENANCE FAC	07/01/92	02/01/95	12/01/95	09/01/97	11/01/97	02/01/99	WAIVER
1998 - \$1.100K - MAJ	09/01/92	05/01/95	02/01/96	0%	12/01/97	0%	
S A M P L E							

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## CHAPTER 6 AC&I PROJECT DOCUMENTATION

A. Purpose. This chapter establishes Commandant (G-ECV) policy for documentation of shore facility projects funded by the Coast Guard AC&I program, including Major, Minor, Waterways and Family Housing. Coast Guard Exchange System (CGES) projects exceeding \$200K shall also be documented using these same procedures. The detailed format and procedures for preparation of these documents shall be in accordance with M11010.14, Shore Facilities Project Development Manual.

### B. Problem Statement (PS).

1. Purpose. The Problem Statement (PS) is usually the first step in the documentation of an AC&I project. It identifies a problem which is expected to require an AC&I project. It is used to add, update, or delete a project on the Shore Facilities Requirements List (SFRL).
2. Basis of Submittal. A Problem Statement is prepared whenever it is necessary to update the Shore Facility Requirements List (SFRL).
3. Prepared by. Any unit.
4. Submitted by.
  - a. District Commanders for district projects.
  - b. MLC(m) for Support Center projects.
  - c. Headquarters unit Commanding Officer for Headquarters unit projects.
5. Submitted to/Approved by. G-ECV

### C. Planning Proposal (PP).

1. Purpose. Planning Proposals (PPs) document an operational or support need and evaluate alternative operational solutions for proposed shore facility projects.
2. Basis of Submittal. Planning Proposals are prepared based on a priority screening of the potential projects identified on the Shore Facility Requirements List (SFRL), and other available planning factors. See the Planning and Programming Manual - Volume II (Field Planning Manual), COMDINST M16010.6 for submittal requirements and content. PPs are not required for Waterways AC&I projects. In addition, PPs are not required for Minor AC&I projects if the project meets the conditions described in the Shore Facilities Project Development Manual, COMDTINST M11010.14.

3. Prepared by.

- a. District (dpl) for District units, with technical assistance from the MLC/CEU organizations.
- b. Support Center facility engineers for Support Center projects, with technical assistance from the MLC/CEU organizations.
- c. Headquarters unit facility engineers for Headquarters units, with technical assistance as required from the MLC organization.

4. Submitted by.

- a. District Commanders for district projects.
- b. MLC(m) for Support Center projects.
- c. Headquarters unit Commanding Officer for Headquarters unit projects.

5. Submitted to/Approved by. G-CPP/G-CCS

D. Project Proposal Report - Part A (PPR(A)).

1. Purpose. The Project Proposal Report - Part A (PPR(A)) is the Architectural Program stage of project documentation. It documents the facility requirements necessary to meet operational or support needs. The PPR(A), when approved, is the program used to direct the designer (in-house or private) in the project design effort.

2. Basis of Submittal. PPR(A)s will be prepared once the PPs, if required, have been approved. PPR(A)s are not required for Waterways AC&I projects.

3. Prepared by.

- a. MLC organization for District and S/C projects.
- b. HQ unit for HQ unit projects with technical assistance from the MLC organization as required.

4. Submitted by:

- a. District Commanders for district projects
- b. MLC(m) for Support Center projects
- c. Headquarters unit Commanding Officer for Headquarters unit projects

| 5. Submitted to/Approved by: Commandant (G-SEC/G-S)

E. Project Proposal Report - Part B (PPR(B)).

1. Purpose. The Project Proposal Report - Part B (PPR(B)) is the design development (ie 35%) phase of project development. Its purpose is to:
  - a. Develop alternate engineering design solutions and select one which satisfies the requirements of the approved PPR(A).
  - b. Finalize the project scope and cost for budget submittal.
2. Basis of Submittal PPR(B)s will be prepared once the PPR(A)s have been approved. PPR(B)s are not required for Waterways AC&I projects.
3. Prepared by: FDCC
4. Submitted by:
  - a. District Chief of Staff for District projects
  - b. MLC(md) for Support Center projects
  - c. Headquarters unit Commanding Officer for Headquarters unit projects

| 5. Submitted to/Approved by: Commandant (G-SEC)

F. Construction Contract Solicitation.

1. Purpose. To provide final certification of the availability of funds and verify that total project funding requirements are within the approved project scope.
2. Basis of Submittal. Authority to issue an Invitation for Bid (IFB) or negotiate a contract must be requested from Commandant (G-SEC).

|
3. Content.
  - a. Requests for authority to issue the IFB or negotiate a contract must include the information discussed in the chapter in this manual titled AC&I PROGRAM FUNDS MANAGEMENT AND EXECUTION.
  - b. A comparison by major line item between the Space Allocations List at the Contract Solicitation stage and the approved PPR(B) Space Allocations List. Any spreadsheet format is acceptable.



- c. A comparison by major line item between the Cost Estimate at the Contract Solicitation stage and the approved PPR(B) Cost Estimate. Any spreadsheet format is acceptable.
  
- G. Project Close Out. Not more than six months after the physical completion of the project, a completed AC&I Final Data Form, CG-5517, RCS-G-ECV-3100, (Exhibit 6-1) shall be submitted to Commandant (G-SEC).
  
- H. Special Documentation Requirements for Acquisition of Existing Facilities. Existing facilities to be acquired by means other than construction (e.g. obtained from another Government agency, purchased on open market, etc.) and which require no renovation, require a Planning Proposal (PP) which includes all appropriate NEPA documentation. Family housing units purchased on the open market shall not be more than 5 years old. The following documentation shall be submitted for approval to Commandant (G-SEC) in lieu of a PPR(A) and PPR(B):
  - 1. Floor plans of all building levels, including basement.
  - 2. Site plans, including unattached garages and storage buildings.
  - 3. A description of the construction materials used for the exterior envelope and roofing.
  - 4. Photographs showing exterior and siting.
  - 5. A gross square foot total by floor of all building levels, including basements and finished attic spaces.
  - 6. A net square foot breakdown for each space with a comparison to the sizes published in COMDTINST M11012.9, Shore Facility Standards Manual.
  - 7. A total project cost including the cost of transfer or purchase and any cost required to bring the unit up to Coast Guard standards. See the family housing chapter contained in this manual for specifics.
  - 8. All transfer documents required by COMDTINST M11011.9B, Real Property Management Manual.
  
- I. AC&I Waterways Projects. AC&I Waterways projects require only a 35% Design as documentation. Because these projects cover a wide variety of projects from a single structure to a series of buoys or ranges, the 35% Design should contain detailed information tailored to the particular project and should also include the approved Operational Change Request (CG-3213).

AC&I FINAL DATA FORM - CIVIL ENGINEERING PROJECT

CG-5517 (Rev. 6-89)

Form Archive Name:

Date

Prepared by  
Place Name

Project Title

Fiscal Year of Project

Unit Name

Location

OPFAC Number

SFRL Location

PPR Number

PP Number

AC&I Project Number

Brief Project Description

Est IFB Stage Const. Time

Contract Award Amount \$

Construction Start Date

Number of Change Order #

Construction Compl. Date

Net Cost Charge Order \$

Actual Construction Time

Final Project Cost \$

Category Code

Gross Sq. Ft.

Net Sq. Ft.

Other Comments

EXHIBIT 6-1

AC&I FINAL DATA FORM (CONT'D) - CIVIL ENGINEERING PROJECT

Page 2 of CG-5517 (Rev. 6-89)

Form Archive Name:

Date

Prepared by  
Place Name

Project Title:

Fiscal Year of Project

Unit Name:

Location:

OPFAC Number:

SFRL Number:

PPR Number:

PP Number:

AC&I Project Number

**LIST COST/SCOPE OF ALL MAJOR CONTRACT CHANGE ORDERS**

A-Design omission; B-Value Eng. incentive; C-CQG; D-Change in Operational/Funct. Req.

Indicate in which cost item the change order should be accounted

1-Demolition; 2-Site work; 3-Exterior Utilities; 4-Waterfront/Marine Const.

5-Building Const.; 6-Outfitting/Furnishings/Equipment; 7-Electronics; 8-Other

Attach additional sheets if necessary

Ch. Order #	Reason	Cost Item	Cost	Scope

EXHIBIT 6-1

## CHAPTER 7. COST ESTIMATING

A. Purpose. This chapter establishes Commandant (G-ECV) policy for cost estimating.

B. Cost Estimating Format.

1. A standard cost estimating summary format (Exhibit 7-1), and optional Cost Estimate Summary Form (Exhibit 7-2) available in Forms Plus, have been created to provide consistency throughout the project preparation and review process. With adaptation of the standard format at all stages of the project, the project documentation and review process will be a uniform procedure. The cost estimates for all submittals must use the standard cost estimating format.
2. The standard cost estimating format has been broken down into nine major cost categories as follows:
  - a. Demolition
  - b. Sitework
  - c. Exterior Utilities
  - d. Waterfront/Marine Construction
  - e. Building Construction
  - f. Furnishings/Equipment
  - g. Electronics
  - h. Other
  - i. Cost Amplifiers
3. Each cost estimate shall contain cost summaries broken out by line item within the nine major cost categories as applicable. When additional information is available on significant cost elements within the major categories, it should be identified separately under the appropriate major cost category.
4. Cost amplifiers to account for geographic location, project size, escalation, phasing, and contingency must be included in the estimate. Escalation and contingency costs must be identified and listed as separate line items in the major cost category "Cost Amplifiers". Project size factors and geographic location must be included in each line item within the "Building Construction" cost category and/or where applicable.

5. Final square foot costs should be rounded to the nearest dollar. All category dollar figures should be rounded to the nearest \$1,000, with the total project cost rounded to the nearest \$10,000 for projects costing less than \$1,000,000 and the nearest \$50,000 for projects over \$1,000,000.

6. The nine major cost categories are subdivided into numerous specific line items. Specific line items are categorized to eliminate inconsistencies in the cost estimate submittals.

a. Demolition. Facilities to be demolished shall be identified by Real Property Facility Number (RPFN), and the extent of demolition shall be quantified by appropriate units of measure (gross square feet, linear feet, etc.). The line items for demolition are, but are not limited to the following:

- (1) Buildings/Rooms
- (2) Piers/Launchways
- (3) Utility Systems
- (4) Paving, roads, curbing

b. Sitework. The appropriate units of measure and information are to be provided with each item. The line items for sitework are, but are not limited to the following:

- (1) Fencing
  - (a) fences
  - (b) gates
- (2) Flag Poles
- (3) Irrigation
- (4) Landscaping
  - (a) groundcover
  - (b) sod
  - (c) seed
  - (d) shrubbery
  - (e) trees
- (5) Paving
  - (a) parking
  - (b) service access pathways
  - (c) sidewalks
- (6) Pile Foundation
- (7) Recreation Areas
  - (a) tennis courts
  - (b) tot lots
- (8) Roads
- (9) Signage
  - (a) traffic signaling/signage
  - (b) signs/logos
- (10) Site Furnishings
  - (a) benches

- (b) bike racks
- (c) waste baskets
- (11) Soil Work
  - (a) excavating
  - (b) fill
  - (c) grading
- (12) Structures
  - (a) retaining walls
  - (b) dams
  - (c) ponds
  - (d) retention ponds
- (13) Towers

c. Exterior Utilities. The appropriate units of measure and information are to be provided with each item. The line items for exterior utilities are, but are not limited to the following:

- (1) Communication System (telephone, etc)
- (2) Compressed Air System
- (3) Electrical Power
- (4) Exterior Lighting
- (5) Fire Detection
- (6) Fuel Service/Storage
- (7) Gas
- (8) Oily Waste Tank/System
- (9) Septic Tank/System
- (10) Sewerage
- (11) Steam
- (12) Water

d. Waterfront/Marine Construction. The appropriate units of measure and information are to be provided with each item. The line items for waterfront/marine construction are, but are not limited to the following:

- (1) Boat Lifts/Hoists
- (2) Cathodic Protection
- (3) Covered Moorings/Boathouse
- (4) Decking
- (5) Dredging
- (6) Fender Systems
- (7) Pier/Wharf
- (8) Protective Shore Structures
  - (a) Bulkheads
  - (b) Seawalls
  - (c) Quaywalls
- (9) Protective Waterfront Structures
  - (a) Breakwaters
  - (b) Jetties
  - (c) Groins
  - (d) Levees
- (10) Ramps

(11) Shore Ties

- e. Building Construction. This category includes all costs within the five-foot line. Quantities and costs include built-in equipment such as serving lines for dining facilities, etc. Other outfitting items, like desks, tables, etc. are to be covered in the furnishings/equipment category. Estimates shall be based on the standards for new or renovated facilities contained in COMDTINST M11012.9 (Shore Facility Standards Manual).
- f. Furnishings/Equipment. This category includes all furnishings and equipment not included in the construction contract that are needed to make the facility usable for its intended purpose as defined in 5.A.3.c. Furnishings/equipment must be broken down into identifiable categories. When furnishings/equipment are requested for units with existing property, the estimate must include a specific line item indicating estimated percentage of reuse of existing equipment.
- (1) Line items for furnishings/equipment include, but are not limited to the following:
- (a) Administrative. Includes desks, chairs, tables, portable equipment, computers, etc.
  - (b) Bachelor Housing. Includes beds, desks, chairs, lounge furniture, etc., in accordance with the Coast Guard Housing Manual, COMDTINST M1101.13.
  - (c) Family Housing. Includes ranges, refrigerators, dishwashers, garbage disposal, etc, in accordance with Chapter 8 of the Coast Guard Housing Manual, COMDTINST M1101.13.
  - (d) Dining. Includes tables, chairs, portable cooking equipment (not built-in equipment as described in Paragraph 2 of this section), etc.
  - (e) Educational. Includes desks, chairs, portable equipment, training aids, work benches, specialized built-in training aids such as engines, generators, electronic equipment, simulators, mock-ups, etc.
  - (f) Health Care. Includes chairs, tables, lounge furniture, beds, portable medical equipment, etc. Note: major built-in

medical equipment should be included in the building square foot cost.

- (g) Maintenance. Includes portable tools and equipment, boat hoists, yellow gear, test stands, etc.
  - (h) Operational. Includes equipment and furnishings (not built-in) required to support the operational mission.
  - (i) Window Treatments. Includes blinds, drapes, curtains, etc.
  - (j) Reuse of Existing Equipment. Includes an estimate of the percentage of reuse of existing equipment.
- (2) The following items are specifically excluded from inclusion in furnishings/equipment:
- (a) Floor Coverings. Should be included as part of Building Construction cost, as detailed above.
  - (b) Built-In Equipment. Major built-in equipment, such as equipment installed in galleys and medical facilities, should be included as part of Building Construction cost, as detailed above.
  - (c) Electronics. Electronics outfitting should be included as a separate line item, as detailed below.
  - (d) Morale Equipment. Only items essential to make the facility usable for its intended purpose are allowed. For example, pool tables, pinball/video games, etc., are not allowed unless required to furnish a new recreation room. Exercise equipment is not allowed unless required to furnish a new exercise room. Check-out items such as balls, rackets, towels, etc. are not allowed.
  - (e) Other. Items such as artwork, banners, etc., which are not essential to make the facility usable are not allowed.
- g. Electronics. This item includes costs associated with the installation and acquisition of all electronic equipment not included in the construction contract necessary to fulfill the communications and



electronic maintenance requirements of the facility. Major electronics equipment such as transmitters, receivers, antennas, etc. should be included as separate line items. The line items for electronics include, but are not limited to the following:

- (1) Communication equipment.
- (2) Navigation equipment.
- (3) Telephone systems.

h. Other. This category is a collection of items (if not included in the construction contract) infrequently included in projects. The appropriate units of measure and information are to be provided with each item. The line items for other are, but are not limited to, the following:

- (1) Design Services (when the project is funded with CGES, Coast Guard Exchange System, funds or design occurs in the project budget year)
- (2) Land Acquisitions
- (3) Temporary Facilities (trailers, etc.)
- (4) Relocation/Moving Services
- (5) Major Mechanical/Maintenance Equipment (e.g. boat hoists)

i. Cost Amplifiers. The line items for cost amplifiers are, but are not limited to the following:

- (1) Contingency: A contingency factor shall be applied to all estimates to ensure the project remains within budget. The factor shall consist of the following two parts: Design/Bid Contingency which varies based on the level of the engineering design and changes in market conditions by the time of bid opening, and a Construction Contingency which ensures the project remains within budget by considering the effects of construction change orders. The range of factors listed in Table 7-1 shall be used. The lower range of values shall be used on the majority of projects. The upper range of values shall be used on higher risk projects involving extensive rehabilitation, special sequencing/ phasing, small size, etc. A weighted average shall be used where some portions of the project have more risk than others. The overall contingency shall be within the ranges indicated.

TABLE 7-1  
CONTINGENCY FACTORS

AC&I	OE	Design	Design/Bid	Construct'n	Total
<u>Doc</u>	<u>Doc</u>	<u>Stage</u>	<u>Contingency</u>	<u>Contingency</u>	<u>Contingency</u>
PS	SSMR	0	40-45%	5%	45-50%
PP		0	15-20%	5%	20-25%
PPR(A)		0	10-15%	5%	15-20%
PPR(B)	PDS	35%	2-5%	5%	7-10%
		60%	1-2%	5%	6-7%
IFB	IFB	100%	0%	5%	5%

- (2) Escalation: Estimated construction costs shall be escalated to the mid-point of construction. A recommended source is the NAVFAC Construction Cost Escalation Index, as published in MIL-HDBK-1010, Cost Estimating: Policy and Procedures.

C. Operating Expense Follow-On Cost Estimates.

1. Introduction. An Operating Expense (OE) follow-on cost estimate is the approximated operating expense requirements of a completed AC&I Shore Construction project. OE funds are obtained through the budget process based on these cost estimates. Since OE costs often represent a significant portion of the life cycle cost of proposed projects, as well as provide the means to operate a new facility, follow-on cost estimates should be prepared carefully. The quality of design is reflected not only by the quality of the constructed facility, but also by the facility operating and maintenance costs years later. Factors to be considered when evaluating OE follow-on requirements include AFC-30 Operating and Maintenance Costs, AFC-42 Electronics Maintenance and Repair, AFC-43 Shore Unit Major Maintenance and Repair, and personnel requirements. Almost all AC&I project proposals will cause a change in these Allotment Fund Code (AFC) funding requirements. The rationale for changes in projected OE requirements shall be provided in the AC&I Project Proposal Report - Parts A and B.
2. Types of Follow-on Funding.
  - a. AFC-30 Operating and Maintenance Costs. AFC-30 funds provide for recurring, day-to-day operation and maintenance costs of shore facilities. These costs consist of wageboard, travel, vehicle costs, fuel, communications, utility services, routine repairs and maintenance, maintenance supplies and material, housekeeping supplies and materials, and equipment not capitalized. Where maintenance service contracts will be utilized in lieu of CG personnel (military or

civilian) at some units, the cost of that maintenance service contract should be included in the calculation of AFC-30 shore facility cost.

b. AFC-42 Electronics Maintenance and Repair. AFC-42 funds provide for the materials and services necessary for the acquisition, installation, maintenance and changes to shore electronics equipment.

c. AFC-43 Shore Unit Major Maintenance and Repair.

(1) AFC-43 funds provide for the materials and services necessary for the major repair, rebuilding, construction, improvement, alteration, rehabilitation and replacement of shore structures, equipment, and facilities. Equipment includes all vehicles except aircraft refuelers which are procured with AFC-41 funds. If AFC-43 is used for improvements which result in an increase in follow-on costs, the increase in cost will have to be absorbed by the unit. Some AFC-43 projects result in OE savings. Ordinarily these savings are retained and would be used to offset any additional OE funding requirements.

(2) Major maintenance and repair costs for equipment or facilities are generally a function of age. As the equipment or facility increases in age, costs associated with maintenance and repair increase. Near the end of the facility's life, extensive and costly repairs are frequently necessary to extend its useful life. It is impossible to predict with accuracy the year to year maintenance and repair costs for each facility. Instead, estimates for AFC-43 follow-on are based on average requirements. AFC-43 funds for new facilities are added to a recurring AFC-43 base which provides for maintenance and repair of all Coast Guard shore facilities. The AFC-43 funds distribution process is discussed in the chapter on resource management.

(3) When estimating AFC-43 follow-on requirements, historical AFC-43 costs for a facility have to be viewed with a long term perspective in which average costs are considered.

3. Methods Of Calculating. Different cost estimating methods for determining follow-on shore facility costs are available. The preferred method is to identify specific OE requirements as separate line items. Other

methods are based on a macro view of OE requirements using unit cost per square foot statistics or percentage of construction costs. In preparing follow-on cost estimates for a given AC&I project proposal, it may be necessary to use two or more of these methods. Follow-on cost estimates shall be compared with average funding requirements at other similar units. Regardless of which method is used, all demolition and/or renovation of existing structures must be taken into account since the CG unit is receiving money to operate existing structures.

- a. Separate Line Item Method. Estimates for AFC-30 follow-on costs should be based on specific requirements where possible. The estimator should provide rationale for line item costs as appropriate.
- b. Cost Per Square Foot. Whenever specific requirements cannot be identified, follow-on cost estimates can be made using estimating factors developed from historical costs. These costs should be available from unit comptroller reports by OPFAC number, allotment fund code, and object account. In order to estimate follow-on requirements using historical cost data, prior year costs must be escalated to current year dollars. When analyzing follow-on requirements, a common sense approach should "rule." In addition to applying a cost per square foot, the estimator shall also consider the "quality" of the square footage when estimating follow-on requirements. Whenever follow-on cost estimates for a particular AC&I project differ from projected MLC/HQ unit averages, documentation is required.
- c. Percentage of Construction Cost Method.
  - (1) In the absence of other methods, follow-on cost estimates may be expressed as a percentage of the estimated AC&I project construction costs. This method assumes that follow-on requirements are in direct proportion to the project construction costs. These percentages are based on government and industry operating and maintenance costs. Thus, this method applies national averages to local situations. However, this method of estimating follow-on is sensitive to geographic location and construction complexity because the construction cost estimates reflect these factors. Still, judgements should be made regarding the appropriateness of these percentages at the local level.
  - (2) Table 7-2 provides general guidance for using percentages of construction cost as the basis

for estimating shore facility follow-on requirements. The specifics of each project line item should be evaluated before assigning a percentage. Cost amplifiers to account for geographic location, project size, escalation and contingency must be included in each major cost category before calculating follow-on costs.

TABLE 7-2  
PERCENTAGES OF CONSTRUCTION COSTS

	<u>AFC-30</u>	<u>AFC-43</u>
Demolition *	(4)-(6)%	(1)-(1 1/2)%
Site work	0-2%	0-1%
Exterior Utilities	0-2%	1-1 1/2%
Waterfront Construction	0-2%	1-1 1/2%
Building Construction	4-6%	1-1 1/2%
Furnishings/Equipment	3-5%	0-1 1/2%

\* Use the construction cost, in current dollars, of the facility or portion thereof, which is being demolished to determine the AFC-30 and AFC-43 for demolition. The AFC-30 and AFC-43 for demolition should be a negative number ( ).

**SAMPLE COST ESTIMATE SUMMARY**

Item No.	Construction Contract Items	Unit of Measure	Qty	\$/Unit	Total Cost (\$000)
1.0	DEMOLITION				49
1.1	Station Building	LS			28
1.2	Piers, Railway, Catwalks	LS			<u>3</u>
1.3	Fuel Tank	LS			80
				Subtotal	
2.0	SITWORK				8
2.1	Fencing & Gates	LS			3
2.2	Clearing	LS			2
2.3	Concrete Walks	LS			3
2.4	Landscaping	LS			16
2.5	Roadway, Curb & Gutter	LS			48
2.6	Parking (32 Spaces)	LS			<u>0</u>
2.7	Soil Remediation	LS			80
				Subtotal	
3.0	EXTERIOR UTILITIES				114
3.1	Electrical Power	LS			34
3.2	Exterior Lighting	LS			10
3.3	Telephone	LS			16
3.4	Water	LS			28
3.5	Storm Sewer	LS			22
3.6	Sanitary Sewer	LS			<u>26</u>
3.7	Fuel Storage/Dispensing	LS			250
				Subtotal	
4.0	WATERFRONT/MARINE CONSTRUCTION				15
4.1	Jib Crane/Bulkhead Repair	LS			250
4.2	Piers	LS			<u>60</u>
4.3	Shore Ties	LS			325
				Subtotal	
5.0	BUILDING CONSTRUCTION				
5.1	Station Building	GSF	13,670	132	1,800
5.2	Boathouse & Garage	LS			<u>75</u>
				Subtotal	1,875
				SUBTOTAL:	2,610
	ESCALATION FROM JUN91 to JUN94 (See Note 2)			16%:	<u>391</u>
	<b>ESTIMATED CONSTRUCTION COST:</b>				<b>\$3,002</b>

EXHIBIT 7-1

Item No.	Non-Construction Contract Items	Unit of Measure	Qty	\$/Unit	Total Cost (\$000)
6.0	FURNISHINGS/EQUIPMENT				
6.1	Furnishings	LS			175
6.2	Computers	LS			25
				Subtotal	200
7.0	ELECTRONICS OUTFITTING				
7.1	Telephone System	LS			15
7.2	Command Center Console	LS			6
7.3	Radio Antennas & Cables	LS			4
7.4	Circuit Relocation	LS			5
				Subtotal	30
8.0	OTHER				
8.1	Temporary Moorings	LS			3
8.2	Relocation Expenses	LS			0
				Subtotal	3
				SUBTOTAL:	233
	ESCALATION FROM JUN91 to JUN94 (See Note 2)			16%:	37
				SUBTOTAL:	270
	ESTIMATED CONSTRUCTION COST (from previous page)				3,002
				GRAND SUBTOTAL:	3,272
	CONTINGENCY (See Note 3)			17%:	556
				PROJECT TOTAL:	\$3,828
	ESTIMATED PROJECT COST:				\$3,800

**OTHER COSTS**

0-10% Design	\$84K
10-100% Design	\$178K
Construct'n Surveillance	\$75K
Submittal Review	\$18K
As-Built Drawings	\$6K
Outfitting Services	\$28K
Land Acquisition	\$200K

**FOLLOW-ON COSTS (See Note 4)**

AFC 30 (Non-Energy)	\$90K
AFC 30 (Energy)	\$26K
AFC 42	\$1K
AFC 43	\$30K

EXHIBIT 7-1

**COST ESTIMATE NOTES**

1. Line items include a geographic cost factor and are in June 1991 dollars.
2. Costs are escalated from June 1991 to the mid-point of construction of June 1994 at a rate of 5%/year, which equals 16% after compounding. Rate was obtained using NAVFAC Construction Cost Escalation Index, as published in MIL-HDBK-1010, Cost Estimating: Policy and Procedures.
3. A 12% design contingency and 5% construction contingency are added to the estimate in accordance with Table 7-1 of the Civil Engineering Manual, COMDTINST 11000.11. The design contingency of 12% is a weighted average obtained by applying a 10% contingency to Building Construction and 15% contingency to all other items. The scope of the Building Construction is fairly well known, while the remaining items are relatively uncertain since a detailed investigation of existing conditions such as topographic, geologic, hydrographic, and utility surveys has not been performed to date.
4. Follow-on costs for AFC 30 (non-energy) and AFC 43 were calculated in accordance with Table 7-2 of the Civil Engineering Manual, COMDTINST 11000.11, as follows:

Replacement Cost of Demolished Facilities

Station Building	6,500 GSF x \$90.00/SF =	\$585K
Wetroom/Locker Space	780 GSF x \$55.00/SF =	<u>\$42K</u>
	Replacement Costs	\$627K

Percentages of Construction Cost

	<u>Const Cost</u>	<u>AFC-30</u>	<u>AFC-43</u>
Demolition	\$627K	(5%) (\$31K)	(1%) (\$6K)
Sitework	\$80K	1% \$1K	.5% \$1K
Ext Utilities	\$250K	1% \$3K	1% \$3K
Waterfront	\$325K	1% \$3K	1% \$3K
Building	\$1,875K	5% \$94K	1% \$19K
Furnishings/Equip	\$200K	4% + \$8K	1% + \$2K
Sub-Total		\$78K	\$22K
Escalation from Jun91 to Jun94		16% + \$12K	16% + \$4K
Total		\$90K	\$26K

EXHIBIT 7-1



Follow-on cost for AFC 30 (Energy) was calculated as follows:

Existing Station Building:

$\$/\text{yr} = 6,500 \text{ GSF} \times 65 \text{ kBtu/GSF/yr}^* \times 0.293 \text{ KWH/kBtu} \times \$0.80/\text{KWH}\#$

$\$/\text{yr} = \$99\text{K}$

New Station Building:

$\$/\text{yr} = 13,670 \text{ GSF} \times 42 \text{ kBtu/GSF/yr}^* \times 0.293 \text{ KWH/kBtu} \times \$0.80/\text{KWH}\#$

$\$/\text{yr} = \$135\text{K}$

Net change in AFC 30 (Energy):

$\$135\text{K} - \$99\text{K} = +\$36\text{K}$

\* Energy budget obtained from Chapter 8 of the Shore Facilities Energy Management Manual, COMDTINST M11000.6.

# Local energy costs obtained from utility company

Follow-on costs for AFC 42 were obtained from MLC(t) Electronics Input.

EXHIBIT 7-1



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## CHAPTER 8. PROPERTY MANAGEMENT

### A. Introduction.

1. The Personal Property Manual, COMDTINST M4400.13, and the Real Property Management Manual, COMDTINST M11011.13, are the basic references for property management. These publications outline the types of management exercised by Commandant (G-ECV), maintenance and logistics commands (MLCs), Civil Engineering Units (CEUs), Headquarters units, and users. This chapter summarizes the property descriptions given in these manuals.
2. The manuals distinguish between property categories as follows:
  - a. Real Property - consists of land, buildings, bridges, structures and appurtenances, machinery, and fixtures permanently placed in or attached to real property both inside and outside the continental United States.
  - b. Personal Property - consists of vessels, aircraft, general purpose property, small boats, small arms, vehicles, electronics equipment, and aids to navigation (see COMDTINST M4400.13).
  - c. General Purpose Property - is defined as including all tangible property except (1) real property and (2) fixed assets capitalized in other general ledger accounts in the 35XX series (see COMDTINST M4400.13).

B. Personal Property Management. Management of personal property is discussed in COMDTINST M4400.13, Personal Property Manual.

### C. Real Property Management.

1. Reference. COMDTINST M11011.13, Real Property Management Manual, sets forth policy, guidance, procedures and delineates responsibilities for processing of real property acquisition, utilization, surveys, outleasing, and disposal actions, as well as, workspace management.
2. Management Responsibility. Maintenance and logistics commands and HQ units shall designate elements of their organizations to be responsible for real property management.

CHAPTER 9. ENVIRONMENTAL COMPLIANCE AND RESTORATION (EC&R)

- | A. Purpose. This chapter prescribes policy and procedures for  
| Coast Guard compliance with Federal environmental policy and  
| the Coast Guard Environmental Compliance and Restoration  
| (EC&R) program.
- | B. EC&R Appropriation. EC&R funds are appropriated on an annual  
| basis, and are 'no-year' funds. EC&R budget submissions are  
| zero-based, and must be compiled and justified each year.  
| Even though EC&R funds do not expire at the end of any  
| designated fiscal year, it is the USCG's policy to manage  
| their execution as though they were 1-year funds.
- | C. Applicable Directives.
- | 14 U.S.C. 690-693 requires the Coast Guard to carry out a  
| program of environmental compliance and restoration at  
| current and former Coast Guard facilities. It also  
| established the EC&R appropriation and the EC&R account to  
| carry out this program.
- | Executive Order (EO) 12088 is the general policy on  
| environmental compliance for Federal facilities and requires  
| all facilities owned by, leased to, or leased from Federal  
| agencies to be designed, operated, and maintained per all  
| legally applicable statutory requirements and to comply with  
| all other environmental requirements to the maximum extent  
| practicable.
- | DOT Order 5640.1C establishes Coast Guard responsibilities  
| and procedures for implementation of Executive Order 12088.
- | COMDTINST M5090.2, USCG Environmental Management Manual,  
| provides USCG policy, identifies key statutory and regulatory  
| requirements, and assigns responsibility for management of  
| USCG environmental programs.
- | COMDTINST M7100.3A, Financial Resources Management Manual  
| (FRMM) outlines EC&R-eligible environmental expenses as well  
| as those environmental expenses which are to be funded from  
| other appropriations.
- | D. Funds Management.
- | The EC&R Appropriation Manager is Commandant (G-S). The EC&R  
| funds manager for shore activities is Commandant (G-SEC).  
| The EC&R account is divided into five funding categories to  
| facilitate the planning, programming, execution, and  
| reporting requirements of the appropriation. Use the  
| associated fund source code (FS) when entering EC&R project  
| information in CEDS.
- | 1. Category 1 (FS = EC1) - Environmental Restoration  
| Activities at Shore Facilities. Category 1 provides  
| funding for site investigations, remedial

investigations/feasibility studies, site characterizations, (and equivalent RCRA or state regulatory activities) and remedial designs at current or former Coast Guard sites. Funding for post closure site monitoring is included in this category.

2. Category 2 (FS = EC2) - Environmental Compliance Activities at Shore Facilities. Category 2 provides funding for attaining and/or maintaining compliance with environmental laws and regulations. Included are administrative expenses (i.e., travel, EC&R training, etc.).
3. Category 3 (Reserved)
4. Category 4 (FS = EC4) - Coast Guard Vessel Compliance. This category provides funding for attaining and/or maintaining compliance with environmental laws and regulations on Coast Guard vessels.
5. Category 5 (FS = EC5) - Personnel. This category provides separate funding for the dedicated personnel resources that are used to administer and execute the EC&R program. Funds for Category 5 costs are managed by Commandant (G-SEC).

Non-discretionary Projects. Non-discretionary projects are defined as projects mandated in writing by: permit requirements, compliance agreements, correction of compliance violations, consent orders, state orders, or similar legally binding instruments. Non-discretionary projects also include those which pose an imminent threat to human health or the general environment where an emergency cleanup action is required.

Discretionary Projects. Discretionary projects are those environmentally related projects that do not qualify as a non-discretionary project as defined above.

Unobligated Balances. ATUs managing EC&R funds should strive to obligate all funds as early as possible in the fiscal year in which they have been made available. The ATU's proposed execution schedules and size of year-end unobligated balances weigh heavily in funds allocation decisions at all levels. High unobligated balances (and especially end-of-year carryover) adversely affect the Coast Guard's ability to obtain additional funds in subsequent years through the budget process. Unobligated balances residing at ATUs are subject to withdrawal and reprogramming by Commandant at any time during the fiscal year.

EC&R Project Cost Overruns. Project cost overruns shall be accommodated by reprogramming existing EC&R funds locally from other funding categories. Other Coast Guard appropriations shall not be used to supplement EC&R program activities. Conversely, EC&R funds shall not be used to supplement other Coast Guard appropriations.

E. EC&R Funded Positions and Billets. Annual salaries and support costs for EC&R personnel are funded centrally from the HQ EC&R account. Field units shall request authority from Commandant (G-S), via G-CPA, to re-describe EC&R funded positions where the personnel action would result in a grade level change. This will ensure G-S reserves sufficient funds each fiscal year to fund EC&R personnel costs. Funds for overtime pay are not included in the annual EC&R salary apportionment; therefore, ATUs shall ensure that any overtime as authorized locally is used to address essential EC&R-related priorities.

F. CEDS Data Entry. Project data shall be input for every Category 1 or 2 project undertaken or contemplated for any fiscal year or over a range of fiscal years. Data should be input into CEDS as soon as the project is substantially defined. Particular attention shall be paid to updating the FEDPLAN (A-106) fields which form the basis of the USCG's annual FEDPLAN submission. ATU's shall also periodically update out-year project funding requirements to reflect annual funds distributions.

To meet EC&R budget build and external reporting requirements, it is essential that EC&R project data fields in CEDS be updated periodically, so as to be captured in the quarterly uploads to G-SEC:

1. 1st Quarter Upload: Project cost data for Category 1 and 2 projects contained in this upload is used to build the EC&R budget for FY+2 (i.e., if the current year is FY96, FY+2 equates to FY98). For this upload, all FY+2 cost data should be as accurate and complete as possible. This will enable G-SEC-3 to reflect all Category 1 and 2 funding requirements in the FY+2 Resource Change Proposals (RCP). Because the RCPs must also reflect FY+3 and FY+4 funding requirements, FY+3 and FY+4 cost data for all Category 1 and 2 requirements should be updated for this upload.

2. 3rd Quarter Upload: Project data of this upload is used to prepare the USCG's annual FEDPLAN submission (formerly referred to as the A-106 submission) to OST and EPA. Note that FEDPLAN data is not automatically generated in CEDS. Instead, most of the EPA-mandated data is transferred from the Project Information data fields to the FEDPLAN

| fields only after the 'Environment' and 'A-  
| 106' options are selected while working in the  
| Project Information mode. The remaining  
| FEDPLAN data is then entered while working in  
| the A-106 screen.  
|

- | 3. 4th Quarter Upload: Project data of this  
| upload (specifically, Category 1 project  
| description and cost data) is used to prepare  
| the annual EC&R Report to Congress. Of  
| particular importance is Category 1 project  
| cost data for the year just ending, as well as  
| Category 1 cost data for all out-years through  
| project completion and closeout.  
|



CHAPTER 10. DESIGN POLICY

- A. Purpose. This chapter provides policy and criteria to be followed in the design of Coast Guard shore facilities. Policies stated herein are intended for use in the planning and design of new construction and rehabilitation projects. It is not the intent of this chapter to require existing facilities to be altered or improved to meet the standards or criteria outlined herein. Existing facilities shall be altered or improved for compliance during major renovation.
- B. Applicable Building Codes. Except where more stringent requirements are noted below, Coast Guard shore facilities designs shall be in conformance with the current edition of one of three national model building codes and all of its associated codes. Exhibit 10-1 shall be used to indicate which model code is in effect for a particular state. These "national" codes are as follows:

BASIC/NATIONAL BUILDING CODE - As published by Building Officials and Code Administrators (BOCA) International, Inc.

STANDARD BUILDING CODE - As published by Southern Building Code Congress (SBCC) International, Inc.

UNIFORM BUILDING CODE - As published by International Conference of Building Officials (ICBO).

1. Exceptions.

- a. Life Safety and Fire Codes. The National Fire Protection Association (NFPA) Codes # 101 (Life Safety Code) shall take precedence over any conflicting requirements of the National Model Building Code in effect for the facility location.
- b. Electrical Codes. The National Fire Protection Association (NFPA) Code # 70 (National Electric Code) shall take precedence over any conflicting requirements of the National Model Building Code in effect for the facility location. The use of aluminum conductors in building interior power distribution wiring is prohibited.
- c. Barrier-Free Access. The uniform Federal Accessibility Standards (UFAS) shall take precedence over any conflicting requirements of the National Model Building Code in effect for the facility location. See the chapter in this manual titled BARRIER-FREE ACCESS FOR SHORE FACILITIES for further discussion of requirements.
- d. Earthquake Protection. In earthquake zones #3 and higher, all fuel gas building service lines shall

- B. 1. d. (cont'd) have earthquake shut-off valves installed before building entry.
2. Facilities and Occupancies. The specific facility and occupancy requirements covered in the section entitled "Special Facility and Occupancy Requirements" of this chapter, shall be in addition to and/or take precedence over any conflicting requirements imposed by the National Model Building Code in effect for the facility location.
  3. Local Codes & Standards. Many states, and some subordinate localities, have their own building codes and standards. These codes are usually adapted from or patterned after the national model building code in effect for that area of the nation. While adherence to local building codes is not required, adherence to those requirements of local codes which are more restrictive than the national model building code in effect for the area should be evaluated and followed where it is considered in the best interest of the government.
  4. Department of Defense Facilities. In situations where a USCG facility is a tenant on a DOD site, the host facility may require conformance with DOD design standards which conflict, in some areas, with the national model building code in effect at that location. In these situations, DOD standards shall be used.
  5. Locations Outside the United States. Coast Guard shore facility designs that are to be built outside the United States shall be in conformance with the Uniform Building Code, except that where the host nation uses a code which contains additional or more restrictive requirements, those requirements may be followed.
  6. Waivers. Any requested waivers to the building codes policy stated in this section, may be granted only on a case by case basis, and only where sufficient justification exists. Waiver requests should be submitted to G-SEC in writing, along with any required justification. See the chapter in this manual titled BARRIER-FREE ACCESS FOR SHORE FACILITIES for further discussion of waiver requirements or handicapped accessibility.
- C. Special Facilities and Occupancies. The following specific facility and occupancy requirements are in addition to, and in case of conflict, shall take precedence over, those imposed by the national model building code in effect for the location (see section "B" of this chapter) and any of the other standards cited in this chapter.
1. Bachelor Enlisted and Officer Quarters. Automatic smoke detection and alarm systems shall be installed in all

- C. 1. (cont'd) bachelor enlisted and officer quarters. All non-BEQ/BOQ areas of multi-use facilities which include berthing areas shall be protected by automatic detection and alarm systems, and/or automatic extinguishing systems.
2. Family Housing. Fire protection and life safety criteria shall conform to the current edition of the Council of American Building Officials (CABO) "One and Two Family Dwelling Code."
3. Aircraft Hangars. All new aircraft hangars shall be equipped with a foam-water deluge system in the main hangar area, designed in accordance with NFPA Standard # 409 Aircraft Hangar Fire Protection, except that closed head discharge sprinkler heads shall be required. Hangar lean-to areas shall be separated from the main hangar area by one hour fire walls. Curbs, ramps, or drains shall be provided at all openings which penetrate the separating wall. Automatic sprinkler systems shall be provided in all lean-to areas.
4. Electronic Equipment Installations. New facilities to house electronic equipment installations shall be fire-resistive or noncombustible construction and separated from other occupancies by fire-rated walls or partitions. Standard wet pipe or preaction automatic sprinkler systems shall be provided in electronic equipment areas where combustible materials of construction are present or where combustible materials, including cards, paper, and plastics are processed or stored (excluding cards, paper, disks, and tapes within machines). In areas such as electronic shops and avionics shops, automatic power shut-downs shall be installed to cut power to work benches in the event the sprinkler systems are activated.
5. Major Electronic/Computer Installations. Facilities containing major computer or electronics equipment installations shall conform to NFPA 75 for construction and fire protection requirements. Halon 1301 flooding systems shall be in conformance to NFPA 12A. For Halon use restrictions, see the "Halon Policy" paragraph listed under the section of this chapter entitled "Special Design Considerations".
6. Remote Operating Systems (ROS). For LORAN stations utilizing solid state transmitters equipped with self-contained halon suppression systems, the transmitter room, operations room, and other work spaces shall be protected by dry pipe sprinkler systems in lieu of room flooding halon systems. In the event water availability is severely limited, an economic analysis shall be performed to select the building protection system. Activation of the building fire protection system shall

- C. 6. (cont'd) shut down all power to the transmitter and operations room, as well as all heating, cooling, and ventilation systems. Building spaces shall be monitored using ionization and photoelectric detectors, and the system shall be designed to alarm locally and remotely as required.
- 7. Aircraft Crashfire and Rescue Equipment. All air stations and heliports shall have the types and numbers of protection equipment specified in the Department of Transportation's Fire Protection Manual section entitled, "Aircraft Crashfire and Rescue Facilities".
- | 8. Child Development Centers. All child development centers  
| shall be designed to be in compliance with COMDTINST  
| M1754.15, Child Development Centers.
- | 9. Unstaffed/Unattended Remote Operations. Remotely  
| monitored fire and intrusion alarm systems shall be  
| provided for remotely located unstaffed and/or unattended  
| operational buildings, where economically feasible.
- D. Special Design Considerations.
- 1. Operational Mission Requirements. The operational mission requirements of a facility have a higher priority than any other requirements of the design. The facility must be designed to fully meet the requirements of the mission.
- 2. Shore Facility Standards.
  - a. COMDTINST M11012.7, Space Component Standards Manual, provides approved sizing criteria for individual spaces typically found in coast Guard shore facilities. The Space Component Standards shall be used in project documentation when there is no standard design program or floor plan in the COMDTINST M11012.9, Shore Facility Standards Manual.
  - b. COMDTINST M11012.9, Shore Facility Standards Manual, establishes standards design programs and standards floor plans for Coast Guard shore facilities.
  - | c. COMDTINST M11012.6, Unaccompanied Personnel Housing Design Guide, is intended to be used as an aid in the decision making process necessary for the planning and design of UPH facilities.
  - d. The Civil Engineering Manual chapters titled BARRIER-FREE ACCESS FOR SHORE FACILITIES, FAMILY HOUSING,  
| COST ESTIMATING, and VALUE ENGINEERING provide  
| information concerning shore facility standards.

- D. 2. e. COMDTINST M11000.6, Shore Facilities Energy Management Manual, establishes shore facility energy policy and establishes the target energy goals for new construction.
- | f. Shore Facilities Standards Review Board (SFSRB). The SFSRB is established to review and to provide guidance in the development of standards for Coast Guard shore facilities. The SFSRB is comprised of five members, one each from the following civil engineering organizations: G-SEC, MLC LANT, MLC PAC, FDCC LANT, and FDCC PAC. The SFSRB shall meet a minimum of twice a year.
3. Occupational Safety and Health Act (OSHA). Designs for all new and rehabilitated facilities, including all site layouts, buildings and Government furnished equipment, shall comply with the requirements of appropriate parts of the Occupational Safety and Health Act of 1970.
4. Access for the Physically Handicapped. Coast Guard shore facilities shall be designed and constructed to insure access to the physically handicapped, in accordance with the chapter entitled BARRIER-FREE ACCESS FOR SHORE FACILITIES, of this manual.
5. Value Engineering. Value Engineering is considered an integral part of the project design. See the chapter entitled VALUE ENGINEERING, of this manual for Coast Guard policy on Value Engineering.
- | 6. Physical Security. For a description of security requirements see COMDTINST M5530.1A, Physical Security Program, and COMDTINST M5510.21, Information Security Program.
7. Exterior Utilities
- a. Potable Water Supply and Wastewater Treatment. Shall be in accordance with COMDINST M11300.2, Water Supply and Wastewater Disposal Manual.
- b. Energy Related Utilities. In addition to the main facility meters provided by the gas and/or electric company, additional individual metering shall be provided as follows:
- (1) Shore ties for all vessels having OPFAC numbers.  
(2) All new buildings.  
(3) Individual family housing units.  
(4) CGES facilities.

- D. 8. Female Personnel Considerations. Designs for shore facilities shall include considerations for their use and/or occupancy by female personnel. These considerations should include:
- a. Berthing. In the calculation of the number of berthing modules required to house the personnel authorized permanent party berthing at a unit, one additional module shall be added to the total to insure enough berthing modules for all personnel and to insure male/female separation. Facilities such as designated UPH buildings or where the expected occupancy is 50 or more are exempt from this requirement.
  - b. Toilets. In cases where the total number of expected users does not exceed 15, a single uni-sex, 2-fixture toilet, with a lockable door, may be provided. All other facilities requiring public/staff/shop/crew toilets shall provide separate toilets for female use.
  - c. Shower and/or Locker Facilities. Where facilities require shower, locker, or wetrooms, separate facilities shall always be provided for male and female personnel.
9. Flood Level Elevation. Designs for all shore facilities shall ensure that finish ground floor elevations are such that flooding would occur no more frequently than once every 100 years based on best available local historical high-water data.
10. Asbestos. Asbestos and materials that contain asbestos shall not be used in new construction, rehabilitation or maintenance of shore facilities. For asbestos removal, exposure and disposal regulations and requirements, see the "Asbestos" section of COMDTINST M16478.1, Hazardous Waste Management Manual and COMDTINST 6260.16A, Asbestos Exposure Control Manual.
11. Service Life. Coast Guard shore facilities may be divided into two construction classes which are based on expected service life. They are: (1) Permanent, and (2) Temporary.
- a. Permanent. Permanent class construction will incorporate the quality of materials, equipment, details, and methods of construction to produce a facility that will serve a specific purpose for at least 30 years. Permanent buildings should be designed to include a high degree of internal flexibility, as well as a possibility for expansion so that new and/or revised mission requirements can

- D. 11. a. (cont'd) be accommodated. Permanent class buildings will account for the majority of shore facilities in the Coast Guard.
- b. Temporary. Temporary class construction will incorporate the quality of materials, equipment, details, and methods of construction to produce a building or facility suitable to provide minimum accommodations at low first cost to serve a specific purpose for five years or less. Temporary buildings should only be built when it appears that the mission to be supported will be of short duration, or when it is required to house special equipment which will become obsolete within a few years.
- | 12. Energy Conservation. The design of heating, ventilation  
| and air conditioning systems for shore facilities shall  
| adhere to the facility energy budgets and air eligibility  
| requirements of COMDTINST M11000.6, Shore Facilities  
| Energy Management Manual.
13. Facilities Constructed on U.S. Navy or Marine Corps Bases. For AC&I funded shore facility projects at these bases, the Naval Facilities Engineering Command will provide all required design and construction related services for the Coast Guard through its appropriate Engineering Field Division. Exceptions may be granted on a case by case basis by the appropriate NAVFAC Engineering Field Division. Design and construction related services for projects that are Operating Expense funded shall be furnished by the Coast Guard. Such projects shall be coordinated by the base Public Works Officer.
14. Underground Fuel Storage.
- a. The 1984 amendments to the .1976 Resource Conservation Recovery Act (RCRA) mandated new requirements for the use of underground storage tanks for petroleum products. Any such tank installed after December 1998 must conform to four basic requirements.
- (1) Installation must be by a qualified installer and conform with industry standards such as API publication # 1615 (1987) "Installation of Underground Petroleum Storage Systems", Recommended Practice.
  - (2) Spill and overflow devices must be provided.
  - (3) Metallic tanks and piping must be protected from corrosion by use of a corrosion-resistant coating and cathodic protection. See API publication # 1632 (1987) "Cathodic Protection

- D. 14. a. (3) (cont'd) of Underground Petroleum Storage Tanks and Piping System," Recommended Practice.
- (4) The tank must be 360 degrees double walled with interstitial monitoring. Distribution piping must have leak detection devices and a secondary containment system independent of the storage tank.
- b. For additional technical, monitoring and reporting requirements see COMDINST M16478 series, Hazardous Waste Management.
15. Preservation and Restoration of Historical Shore Facilities. Section 106 of the National Historic Preservation Act requires that a Federal agency consider the effects of its actions on historic properties and seek comments from an independent reviewing agency, the State Historic Preservation Officer. The purpose of Section 106 is to avoid unnecessary harm to historic properties from Federal actions. The procedure for meeting Section 106 requirements is defined in regulations of the Advisory Council on Historic Preservation, "Protection of Historic Properties" (36 CFR Part 800). Other historic preservation requirements are in 36 CFR Parts 60, 62, 63, 65, and 68. The Civil Engineering Technical Report CG-ECV-2-82, Guide for Restoring and Preserving Old and Historic Properties, contains specific guidance on preservation and restoration of historic properties.
16. Halon Policy. Use of Halon Fire Suppression Systems in new construction at shore facilities is prohibited. Mission critical waiver requests to this prohibition should be submitted to the Director of Finance and Procurement (G-CFP) with justification. In February, 1992, the President established a policy to accelerate the phase out of halon production to January 1, 1994. Simply put, halon is becoming unavailable and alternative fire suppression systems must be designed.
17. Chlorofluorocarbon (CFC) Policy. Knowingly venting Class I refrigerant gasses or liquids containing CFCs, freons, carbon tetrachloride, or methyl chloroform (1,1,1-trichloroethane) when servicing, maintaining, repairing or disposing of appliances and industrial process refrigeration and cooling units at Coast Guard facilities is prohibited (see Section 608 (c), Clean Air Act Amendments of 1990 as amended August 31, 1995). Shore units are expected to satisfy these requirements via standard servicing contracts, however, purchase of recycling equipment may be necessary in special situations. This requirement is permanent, not temporary, and applies to affected equipment throughout



- D. 17. (cont'd) the remainder of its service life. A ban on production of Class I CFCs presently used by the Coast Guard was effective January 1, 1996. These materials will become prohibitively expensive and eventually unavailable causing the design of substitute systems.
18. Controls for Motorized Hangar Doors (Horizontal Rolling Type). The following control devices should be included in the control system for every main hangar door of this type.
- a. "Open" and "Close" Switches. These switches should be push button, constant pressure (Dead-Man) type with oil filled, mushroom pressure heads. They should be mounted on the indoor face of the hangar door at a height of 1219 mm (4 feet) above the floor, and between 914 and 1219 mm (3 and 4 feet) from the leading edge of the door. Each switch shall be enclosed and/or recessed in a protective device that will prevent accidental activation of the switch. The design of the protective enclosure shall preclude the possibility of defeating the constant pressure safety feature of the operating switches. Each switch shall be connected to an audible alarm which shall sound as long as the switch is depressed. A time delay device shall be provided for each switch to allow a five second delay between depression of the switch and motor activation.
  - b. Safety Edge. The leading edge(s) of the hangar door shall be equipped with pneumatic safety bumpers for the full height of the door. The bumpers shall contain pressure sensors and switches that will turn off the door motor when either the bumper is forced against an object or moderate pressure is applied by hand.
  - c. Travel Limit Switches. These are switches designed to turn off the door motor when activated by the top leading edge of the closing or opening hangar door. They shall be mounted and adjusted so that they stop the door just as the leading edge contacts the jamb.
19. Personal Office Toilets. Private, personal toilets shall not be provided for administrative offices; for example, commanding officers or officers in charge shall not have personal toilet facilities connected with their private office.
20. Sprinkler Policy. Sprinkler protection shall be provided in certain Coast Guard facilities in accordance with the Fire Administration Authorization Act of 1992.
- a. New Construction and Acquisition. An Automatic sprinkler system (or equivalent level of safety)

|D.20. a. (cont'd) shall be provided in multifamily housing  
| units having three or more residential units under  
| one roof and office buildings having 25 or more  
| employees and exceeding five stories in height. NFPA  
| 13 or 13R shall be followed for multifamily housing.

- | (1) This policy does not apply to single family or  
| duplex housing units.
- | (2) Townhouse style multifamily housing units are  
| exempted from this policy and do not need to be  
| sprinklered if each unit is separated by a fire  
| separation wall designed in accordance with the  
| applicable model building code and constructed  
| in compliance with the most current edition of  
| the Life Safety Code.

| b. Renovations.

- | (1) Projects to renovate existing multifamily  
| housing units having three or more residential  
| units under one roof except townhouse units  
| exempted by paragraph D.20.a.(2) above will  
| include an automatic sprinkler system (or  
| equivalent level of safety) if the value of the  
| renovation is 70% or more of the building's  
| value excluding land. NFPA 13R and 13D may be  
| followed to allow sprinklers to be installed at  
| a much lower cost.
- | (2) Projects to renovate existing office buildings  
| having 25 or more employees and exceeding five  
| stories in height will include an automatic  
| sprinkler system (or equivalent level of safety).  
| protection if the value of the renovation is 50%  
| or more of the building's value excluding land.

| c. Leasing.




- | (1) An automatic sprinkler system (or equivalent  
| level of safety) shall be provided in Coast  
| Guard leased multifamily housing complexes  
| having three or more residential units under one  
| roof except townhouse units exempted by  
| paragraph D.20.a.(2) above. This requirement  
| does not apply to singly leased units in a  
| multi-family complex.
- | (2) An automatic sprinkler system (or equivalent  
| level of safety) shall be provided in leased  
| office buildings having 25 or more employees,  
| exceeding five stories in height, and leasing at  
| least 3,251.61 m<sup>2</sup> (35,000 square feet) on the  
| sixth floor or above.

- D.21. Alternative Fire Fighting Water Supplies. Where appropriate natural water supplies exist, alternative means to supply fire fighting water shall be provided when community water supplies are unavailable or the local fire response organization cannot provide adequate protection, if economically feasible.
22. Air Emissions. The Clean Air Act requires federal facilities to conform with certain emission requirements during construction and operation of shore facilities. All affected facilities located in nonattainment areas throughout the country are required to be in compliance with these requirements. Paragraphs 16 and 17 above discuss ozone-depleting substance (ODS) requirements and paragraph 10 discusses asbestos requirements. Other Clean Air Act requirements are included in COMDTPUB 5090.1, Commanding Officer's Environmental Guide.
23. Landscaping. The practices of the "Guidance for Presidential Memorandum on Environmentally and Economically Beneficial Landscape Practices on Federal Landscaped Grounds", 10 August 1995 Federal Register, are encouraged to be implemented when landscaping Coast Guard property. The goal of this guidance is to promote sustainable landscape design which minimizes the impact on the environment while maximizing cost effectiveness. Major goals of sustainable design include use of regionally native plants; design, use, and promotion of construction techniques that have minimal adverse impacts on habitat; pollution prevention; implementation of water/energy efficient practices; and creation of outdoor demonstration presentations on federal lands. The replacement of existing landscapes is not advocated unless it is cost effective.
24. Environmental Justice. It is the policy of the Coast Guard to ensure that all of its programs, policies, and activities comply with Executive Order 12898, dated February 11, 1994, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.
25. Aircraft Hangaring Policy. For planning and design purposes, aircraft hangar decks should be sized to hangar all rotary wing aircraft and all assigned RU-38's. For all other fixed wing aircraft, one assigned, hangar one; two to four assigned, hangar two; five or six assigned, hangar three; more than six assigned, hangar four. Deviations will be considered on a case by case basis.
26. Aircraft Runway Requirements. When determining aviation facility requirements, consideration must be given to the airport environment and to the capability of the runway and taxiway systems. Takeoff and landing requirements

| must be determined using current aircraft flight manuals,  
| performance charts, safety regulations and the Air  
| Operations Manual. Once performance capability is  
| determined, the runway environment should be evaluated to  
| ensure and adequate safety margin exists for all  
| operating profiles in which specific aircraft will be  
| required to operate.

|E. Design Guidance. Coast Guard design professionals are  
| available at the FDCC's and the CEU's who are capable of  
| deciding the best engineering and architectural technical  
| solutions based on the latest industry standards, building  
| codes, and their professional experience. Whenever design  
| guidance is sought for the design of Coast Guard shore  
| facilities, utilization of the guidance and criteria found in  
| the appropriate Naval Facilities Engineering Command (NAVFAC)  
| Design Manual (DM) is recommended. For each specific design  
| speciality, such as sitework, architectural, structural,  
| mechanical, electrical, and fire protection, there are  
| relevant design manuals. As a NAVFAC DM is revised, the  
| nomenclature will be changed to "Military Handbook" (MIL  
| HDBK), and issued under the Department of Defense Seal.

**RECOMMENDED BUILDING CODES**

-  BASIC / NATIONAL (BOCA)
-  STANDARD (SBCC)
-  UNIFORM (ICBO)

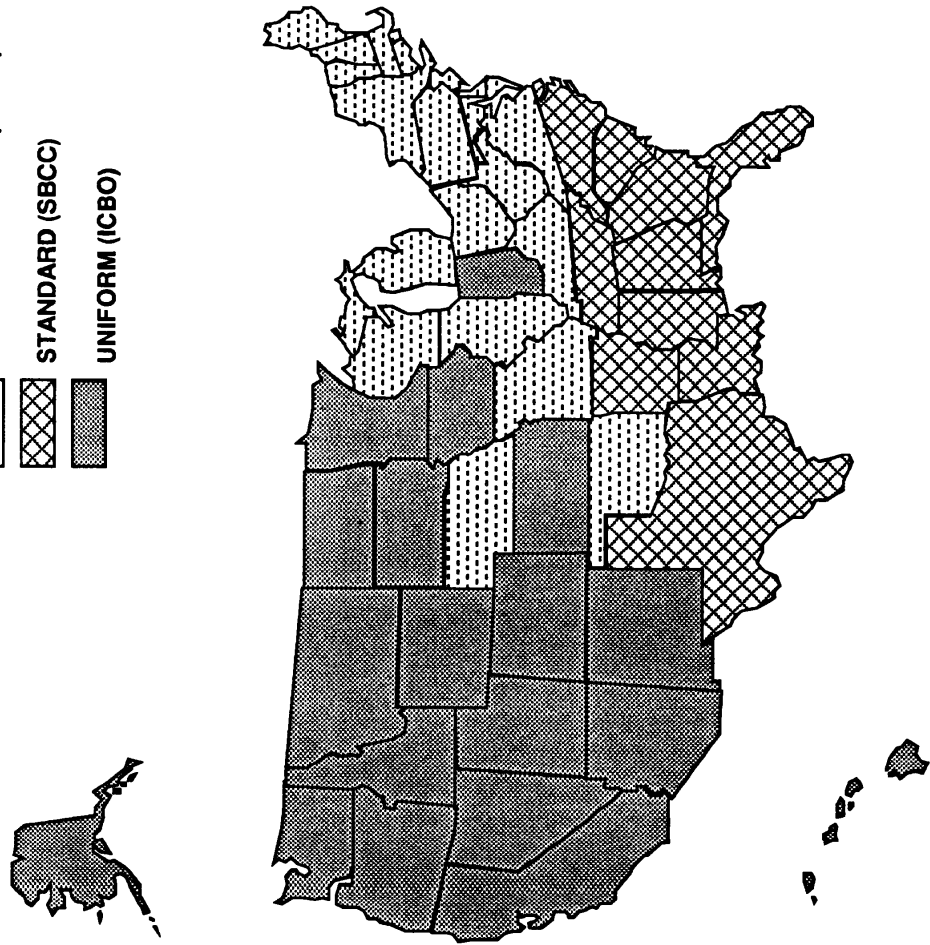


EXHIBIT 10-1

CHAPTER 11. FAMILY HOUSING

- A. Purpose. This chapter provides policy to be followed in the acquisition, construction, and improvement of Coast Guard family housing.
- B. Sizing Standards. Subject to the exceptions noted below, Exhibit 11-1 is derived from OMB Circular No. A-45 and specifies the maximum net floor areas that are permitted in the acquisition, construction, and improvement of Coast Guard family housing units. Waivers to the space standards shall be approved by Commandant (G-S).
1. The applicable net floor areas in Exhibit 11-1 may be increased by 10 percent for the housing unit of an officer holding a special command position where the occupant will have official entertainment responsibilities.
  2. The applicable net floor areas in Exhibit 11-1 may be increased by 10 percent under conditions of extreme isolation where the family may be confined to the home for long periods due to weather or lack of community facilities within reasonable distance.
  3. The maximum net floor areas in Exhibit 11-1 may be increased in any case by 5 percent if the increase is in the best interest of the Government: (a) to permit award of a turnkey construction contract, or (b) to permit purchase, lease, or conversion of housing units.
  4. An increase in the maximum net floor area of a housing unit under any of the exceptions noted above may not exceed 10 percent of the otherwise applicable space allowance prescribed in Exhibit 11-1.
- C. Definition of Net Area. Net area for family housing is defined as space inside exterior or party walls, excluding only vertical circulation, unfinished attic, unfinished basement (or bulk storage space, laundry space, and utility space in lieu of basement), and garage. Unfinished attic or basement spaces and garages shall not be converted into finished living spaces without the prior approval of Commandant (G-SEC). Likewise, open porches or patios shall not be enclosed without the prior approval of Commandant (G-SEC).
- D. Authorized Spaces. In addition to the authorized net floor areas in Exhibit 11-1, the following spaces are authorized:
1. Basements. Unfinished basements are authorized for all housing units, except where soil conditions or cost prohibit.

D. 2. Bulk Storage. In houses without basements or accessible usable attic space, general storage space is authorized for the storage of household items and personal articles. The storage space provided may be divided between the interior and exterior of the unit and the combined total net floor area will conform to the following:

No. Bedrooms	Net Floor Area
2 BR	8 net m2 (80 nsf)
3 BR	9 net m2 (90 nsf)
4 BR	10 net m2 (100 nsf)

3. Car Shelters. A single carport not to exceed 26 gross m2 (275 gross square feet) is authorized for each 2 and 3 bedroom house. A double carport not to exceed 49 gross m2 (525 gross square feet) is authorized for 4 bedroom units. Garages are authorized in lieu of carports where the construction of garages is the prevailing construction practice in the area.

4. Patio. For each house which opens to the exterior at ground level an unenclosed concrete patio with a minimum area of 12 gross m2 (120 gross square feet) and a minimum dimension of 2400 mm (8 feet) is authorized. An unenclosed raised deck or an open or screened porch of the same size is an acceptable alternative to a concrete patio when warranted because of finish grade conditions or climatic conditions.

5. Laundry. In houses without basements, laundry space is authorized for the washing and drying of household and personal articles. A laundry closet not to exceed 3 net m2 (30 net square feet) is authorized for each 2 and 3 bedroom house. A laundry room not to exceed 8 net m2 (80 net square feet) is authorized for 4 bedroom units.

6. Utility Space. In houses without basements, utility space is authorized for mechanical (hvac and plumbing) and electrical equipment. The size of the utility space shall not exceed 5% of the authorized net floor areas as shown in Exhibit 11-1.

7. Vertical Circulation. In 2 story houses, vertical circulation space is authorized for stairs and landings. The size of the vertical circulation space shall not exceed 7 net m2 (75 net square feet) for stairs and 4 net m2 (35 net square feet) for landings.

8. Weather Vestibule. A weather vestibule sheltering the main entry is authorized where climatic conditions justify its use. The size of the weather vestibule shall not exceed 3 net m2 (25 net square feet).

| D. 9. Barrier-Free Access. Additional space is authorized to  
| meet the handicapped accessibility standards for family  
| housing units as outlined in the BARRIER-FREE ACCESS FOR  
| SHORE FACILITIES chapter of this manual. Generally, an  
| additional 10 net m<sup>2</sup> (100 net square feet) should be  
| sufficient to increase room sizes or circulation space to  
| meet this requirement.

E. Design Criteria. The following criteria applies to the  
acquisition, construction, and improvement of Coast Guard  
family housing units.

1. Bathroom Requirements.

- a. Two bedroom single story units shall have a maximum of one full bathroom.
- b. Three and four bedroom single story units shall have a maximum of two full bathrooms. One full bathroom and two half bathrooms may be provided in lieu of two full bathrooms.
- c. Two story living units are authorized a half bathroom on the ground floor in addition to the requirements noted above for single story units.
- d. A full bath contains a water closet, lavatory, and tub with shower fitting, or shower stall. A half bath contains a water closet and a lavatory. Each housing unit must have at least one tub with shower fitting.

| 2. Smoke Detectors. All family housing units shall have at  
| least one hard-wired smoke detector with battery back-up  
| on each living level and in the basement to comply with  
| the Fire Administration Authorization Act of 1992.

3. Telephone Jacks. Each housing unit shall be provided with a minimum of two pre-wired telephone jacks. Recommended locations are the kitchen and master bedroom.

4. Television Antenna System. Each housing unit shall be provided with a minimum of two pre-wired television antenna outlets.

5. Laundry Area. Each housing unit shall be provided with a laundry area, complete with necessary plumbing and electrical connections for a clothes washer and dryer.

6. Utility Metering. Each housing unit shall be individually metered for all incoming utility services except water.



- E. 7. Handicapped Access. Handicapped accessibility standards for family housing units are covered in the Barrier Free Access chapter of this manual.
8. Authorized Equipment. Authorized equipment for family housing is contained in the Coast Guard Housing Manual, COMDTINST M11101.13 (series).
9. Air Conditioning. Air conditioning is authorized for family housing units where the provision of air conditioning is the prevailing practice in the area.
10. Thermostats. Thermostats shall be setback types which automatically control the temperature setting at pre-selected times in a 24 hour cycle.
11. Parking. Off street parking, at the rate of 2 spaces per housing unit is authorized. Count carports/garage spaces and driveways in satisfying the off-street parking requirements.
12. Playground Facilities. Playground facilities are authorized for each family housing project unless adequate community facilities exist.
13. Maintenance Facilities. Facilities are authorized, if justified based on need, for paint locker and storage space to support housing maintenance. Office and shop space are also authorized, if justified based on need, for larger housing developments for a full-time housing office and staff. The Space Component Standards Manual, COMDTINST M11012.7, shall be used in sizing these spaces.
14. Sprinklers. Multifamily housing units having three or more residential units under one roof shall comply with the Fire Administration Authorization Act of 1992. See the DESIGN POLICY chapter of this manual for additional information.

EXHIBIT 11-1. FAMILY HOUSING MAXIMUM NET FLOOR AREAS

Occupant's Rank/Rate	2 Bedroom		3 Bedroom		4 Bedroom	
	m2	(sf)	m2	(sf)	m2	(sf)
O-7 and above					196	(2100)
O-6					186	(2000)
O-4 and O-5			149	(1600)	177	(1900)
O-1 thru O-3, W-1 thru W-4, and E-7 thru E-9	112	(1200)	140	(1500)	168	(1800)
E-1 thru E-6	93	(1000)	131	(1400)	154	(1650)

Notes: For allowable exceptions to the net floor areas, see paragraph B of this chapter.

For definition of net floor area, see paragraph C of this chapter.

The maximum net floor areas prescribed in Exhibit 11-1 also apply to family housing provided to civilian personnel based on civilian pay scale comparability with military pay grades.

For flag officers quarters or in unusual circumstances, larger net floor areas may be considered by the OMB based upon special justification.

CHAPTER 12. BARRIER-FREE ACCESS FOR SHORE FACILITIES

- A. Purpose. This chapter provides policy and standards to be used for providing barrier-free access to Coast Guard shore facilities.
- B. Policy. The Uniform Federal Accessibility Standards (UFAS) shall be used for all Coast Guard shore facility design and construction.
  - 1. Military Exclusions. The UFAS states that the following facilities should not be designed to be accessible unless the intended use of the facility may change with time:
    - a. Facility Occupancy. Unaccompanied personnel housing, closed messes, vehicle and aircraft maintenance facilities, where all work is performed by able-bodied military personnel, and, in general, all facilities which are intended for use or occupancy by able-bodied military personnel only.
    - b. Public Use. Those portions of military facilities which are designed and constructed primarily for use by able-bodied military personnel. This exclusion does not apply to those portions of a building or facility which may be open to the public or which may be used by the public during the conduct of normal business or which may be used by physically handicapped persons employed or seeking employment at such building or facility. These portions of the building or facility shall be accessible.
    - c. Accessible Spaces. When determining the number of accessible spaces required (such as parking or assembly areas), it is not necessary to count the number of able-bodied military persons as part of the design capacity of a facility.
  - 2. Coast Guard Compliance. There are a number of Coast Guard structures in which accessibility by the physically handicapped is appropriate and compliance with the law is mandatory. These structures are divided into the following four categories:
    - a. Civilian Business. Buildings or parts of buildings to which the civilian public is invited or must enter to conduct normal business.
    - b. Civilian Employment. Buildings or parts of buildings in which handicapped civilians may find employment.
    - c. Dependents. Facilities which service or benefit the dependents of Coast Guard personnel.

B. 2. d. Family Housing.

- (1) New Family Housing. All new family housing shall include 5 units per 100 which are designed with all of the permanent type features required for future retrofit to make the houses accessible to the handicapped (i.e., wider main entrances, corridors, doorway widths, and larger baths). If there are less than 20 housing units, then at least one shall be designed to be easily modified to accommodate the handicapped. Common areas such as walks, streets, parking and play areas for all new family housing projects regardless of size shall be designed and built to be accessible by the handicapped.
- (2) Existing Family Housing. Units shall be made accessible by retrofit only. Modifications will be made upon identification of a physical handicap requirement on a high priority basis, providing that retrofit modifications are structurally practical, and appropriate leased quarters are not available for eligible, qualified members.

3. Coast Guard Applications. A typical example would be a UPH (Unaccompanied Personnel Housing) facility, where the public lobby, including public toilets and entrance, must comply with provisions of the UFAS. The remainder of the UPH facility is exempt. The same interpretation may be applied to a Multi-Mission Station, where the station's main reception area, including public toilets and entrance, must comply with the UFAS, while the remainder of the station is exempt. Dining facilities at major bases, Support Centers, or Training Centers which may regularly be visited by non-military persons should meet the provisions of the UFAS. Certain areas of a dining facility, such as the food preparation area, which may employ civilians must meet the provisions of the UFAS.

4. Renovations. When adding to existing buildings which comply with the provisions of the UFAS, essential features required in the program, such as entrances and toilet facilities, must be accessible from the addition.

5. Waivers. The Coast Guard does not have the authority to grant waivers to the UFAS. General issues shall be referred to the Architectural and Transportation Barriers Compliance Board (ATBCB) for resolution. Specific waivers for office buildings (category code 610) shall be referred to the General Services Administration (GSA) for approval; specific waivers for family housing (category code 711) shall be referred to the Department of Housing and Urban Development (HUD).

|C. Americans with Disabilities Act (ADA) of 1990. The ADA provides protection for people with disabilities, parallel to laws established by the federal government to protect women and minorities from discrimination. The ADA does not cover the executive branch of the Federal Government. The executive branch continues to be covered by Title V of the Rehabilitation Act of 1973, which prohibits discrimination in services and employment on the basis of handicap and which is a model for the requirements of the ADA. The standards the federal government uses to meet accessibility requirements for the design, construction, and alteration of buildings are the Uniform Federal Accessibility Standards (UFAS). Coast Guard barrier-free access policy is as stated in this chapter, i.e. to be in compliance with the UFAS.

|D. Section 504 Reviews. Section 504 of the Rehabilitation Act of 1973 requires the Coast Guard to ensure that individuals with disabilities, both civilian employees and members of the public, are not excluded from or discriminated against under any program or activity because the facilities are inaccessible. All Coast Guard owned, Coast Guard leased, and GSA leased office buildings occupied by the Coast Guard shall be surveyed to ensure program compliance with Section 504. The UFAS provides the technical standards to evaluate this compliance. The results of the surveys shall be recorded in the CEDS database using the codes of Exhibit 12-1.

EXHIBIT 12-1

MASTER TABLE LIST  
MT\_ HANDICAP\_ CODE

CODE VALUE	LONG DESCRIPTION	SHORT DESCRIPTION
C	Complies with UFAS	Comply
D	Does not comply with UFAS	NonComply
DP	Does not comply/Program change required	ChangeProg
DS	Does not comply/Structural change req'd	ChangeStruc
DT97	Transition plan approved/Comply in 1997	Comply 1997
DT98	Transition plan approved/Comply in 1998	Comply 1998
DT99	Transition plan approved/Comply in 1999	Comply 1999
DT00	Transition plan approved/Comply in 2000	Comply 2000
DT01	Transition plan approved/Comply in 2001	Comply 2001
DT02	Transition plan approved/Comply in 2002	Comply 2002
DT03	Transition plan approved/Comply in 2003	Comply 2003
DT04	Transition plan approved/Comply in 2004	Comply 2004
DT05	Transition plan approved/Comply in 2005	Comply 2005
DT06	Transition plan approved/Comply in 2006	Comply 2006
DTB	Transition plan started	TPlan Start
DTF	Transition plan completed	TPlan Done
DW	Does not comply/ATBCB waiver granted	Waived
DWHP	Waiver granted/Historic property	HistProperty
EC	Exempted--military use only/Complies	Exempt Com
ED	Exempted--military use only/Non-complies	Exempt NCom
FHA	Family housing unit handicap accessible	FamHsg Acc
FHNA	Family housing unit non-accessible	FamHsg NAcc
FHRA	Family housing unit readily made access	FamHsg RAcc
S	Facility being surveyed for compliance	Surveying
U	Facility unsurveyed for compliance	Unsurveyed

EXHIBIT 12-1

EXPLANATION MASTER TABLE LIST

MT\_ HANDICAP\_ CODE

C	Complies with UFAS	Comply
	The building has been surveyed and is in compliance with the UFAS.	
D	Does not comply with UFAS	NonComply
	The building has been surveyed and is not in compliance with the UFAS.	
DP	Does not comply/Program change required	ChangeProg
	The building has been surveyed; is not in compliance with the UFAS; and a program change will cause the building to come into compliance.	
DS	Does not comply/Structural change req'd	ChangeStruc
	The building has been surveyed; is not in compliance with the UFAS; and a structural change is required to bring the building into compliance.	
DT97	Transition plan approved/Comply in 1997	Comply 1997
	The building has been surveyed; is not in compliance with the UFAS; a structural change is required to bring the building into compliance; a transition plan has been completed and approved; and the date established for compliance as stated in the transition plan is 1997.	
DT98	Transition plan approved/Comply in 1998	Comply 1998
	The building has been surveyed; is not in compliance with the DFAS; a structural change is required to bring the building into compliance; a transition plan has been completed and approved; and the date established for compliance as stated in the transition plan is 1998.	
DT99	Transition plan approved/Comply in 1999	Comply 1999
	The building has been surveyed; is not in compliance with the UFAS; a structural change is required to bring the building into compliance; a transition plan has been completed and approved; and the date established for compliance as stated in the transition plan is 1999.	
DT00	Transition plan approved/Comply in 2000	Comply 2000
	The building has been surveyed; is not in compliance with the UFAS; a structural change is required to bring the building into compliance; a transition plan has been completed and approved; and the date established for compliance as stated in the transition plan is 2000.	

EXHIBIT 12-1

|DT01 Transition plan approved/Comply in 2001 Comply 2001  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2001.

|DT02 Transition plan approved/Comply in 2002 Comply 2002  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2002.

|DT03 Transition plan approved/Comply in 2003 Comply 2003  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2003.

|DT04 Transition plan approved/Comply in 2004 Comply 2004  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2004.

|DT05 Transition plan approved/Comply in 2005 Comply 2005  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2005.

|DT06 Transition plan approved/Comply in 2006 Comply 2006  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; a transition plan has been completed and  
| approved; and the date established for compliance as stated  
| in the transition plan is 2006.

|DTB Transition plan started TPlan Start  
| The building has been surveyed; is not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; and a transition plan has been started.

|DTF Transition plan completed TPlan Done  
| The building has been surveyed; is, not in compliance with the  
| UFAS; a structural change is required to bring the building  
| into compliance; and a transition plan has been completed.



EXHIBIT 12-1

|DW Does not comply/ATBCB waiver granted Waived  
| The building has been surveyed; is not in compliance with the  
| UFAS; a waiver has been granted by the Architectural and  
| Transportation Barriers Compliance Board.  
|  
|DWHP Waiver granted/Historic property HistProperty  
| The building has been surveyed; is not in compliance with the  
| UFAS; a waiver has been granted by the Architectural and  
| transportation Barriers Compliance Board because of the  
| historic significance of the building.  
|  
|EC Exempted--military use only/Complies Exempt Com  
| The building is exempted from compliance with the UFAS  
| because of the military use only clause; has been surveyed;  
| and is in compliance with the UFAS.  
|  
|ED Exempted--military use only/Non-complies Exempt NCom  
| The building is exempted from compliance with the UFAS  
| because of the military use only clause; has been surveyed  
| and is not in compliance with the UFAS or has not been  
| surveyed.  
|  
|FHA Family housing unit handicap accessible FamHsg Acc  
| The family housing unit has been surveyed; and is in  
| compliance with the technical requirements of the UFAS for an  
| accessible unit.  
|  
|FHNA Family housing unit non-accessible FamHsg NAcc  
| The family housing unit has been surveyed; and is not in  
| compliance with the technical requirements of the UFAS for an  
| accessible unit.  
|  
|FHRA Family housing unit readily made access FamHsg RAcc  
| The family housing unit has been surveyed; and is not in  
| compliance with the technical requirements of the UFAS for an  
| accessible unit but can be readily changed to be made  
| accessible.  
|  
|S Facility being surveyed for compliance Surveying  
| The building is being surveyed for compliance with the UFAS.  
|  
|U Facility unsurveyed for compliance Unsurveyed  
| The building has not been surveyed for compliance with the  
| UFAS.

## CHAPTER 13. PROFESSIONAL SERVICES CONTRACTS

- A. Purpose. This chapter provides policy and procedure for the procurement of professional services contracts. Included are procedures for funding of AC&I project designs and Indefinite Delivery Contracts (IDC), and fee limitation policy.
- B. Basic Policy Reference. Federal Acquisition Regulations (FAR Subpart 36.6), Transportation Acquisition Regulations (TAR), and COMDTINST M4200.19A, Comptroller Manual Vol. 8 - CG Acquisition Procedures (CGAP), give the policies, responsibilities, and procedures for selecting, negotiating and formalizing A/E contracts.
- C. Authority to Procure Professional Services.
1. AC&I Funded Services. Professional service contracts for design and related services for AC&I Shore Construction projects are normally funded from Survey & Design accounts managed by Commandant (G-ECV). To ensure efficient utilization of the overall S&D Shore account and funding availability for service-wide priority requirements, Commandant (G-ECV) will annually request from the field a list of AC&I Shore Construction projects which are planned for A/E design and those planned for in-house design. This information will normally be provided in 4th Quarter BY-2. (For example, information to develop the FY-93 Survey & Design funding requirements will be requested in July or August 1991.) The requirements for S&D funding will be reviewed and evaluated for funding availability and Commandant (G-ECV) will advise the field which projects can be supported within the S&D budget level. At this point, the A/E selection process may begin at the option of the Command. It is the Command's responsibility to ensure that the project is at the appropriate stage to start the AE solicitation process. Commandant (G-ECV) will provide revisions and updates to the Program as the budget process develops. Close coordination with Headquarters must be maintained to ensure resources are efficiently used. Authorization to procure A/E services that do not relate to specific AC&I projects (e.g. master planning) that will exceed \$100,000 must be requested from Commandant (G-ECV). Request must contain the following information:
    - a. A complete description of the type and scope of services to be furnished, justification for them, and period of performance.
    - b. Estimated cost of the services involved.

c. A brief, factual statement explaining why performance of the services by commercial concerns will be advantageous to the Government as opposed to performance by Coast Guard personnel.

2. OE Funded Services. The authority to procure professional services for OE funded projects for Atlantic and Pacific Area units lies with the MLC(s) organizations. Headquarters units must obtain approval from Commandant (G-ECV) for individual contracts that will exceed \$100,000.

D. Fee Limitation. For professional services contracts, the amounts of fees paid to the contractor shall be in accordance with FAR 15.903 requirements.

## CHAPTER 14. VALUE ENGINEERING

- A. Purpose. This chapter establishes policies and responsibilities for the use of Value Engineering (VE) in Coast Guard shore facility projects for new construction and major rehabilitation.
- B. Policy. Each project authorized for new construction or major rehabilitation with an estimated cost exceeding \$750,000 shall use VE in its planning and design phase when the VE criteria established by this chapter can be applied. Each project in excess of \$100,000 shall use VE in its construction phase through the use of a VE incentive clause.
- C. Planning and Design Phase VE.
1. Value Engineering Screening. Each project authorized for new construction or major rehabilitation, with an estimated cost exceeding \$750,000, shall be subject to a Value Engineering Screening to determine the magnitude of the ratio of potential savings to the cost of a VE Study. This VE Screening should take into account the overall complexity of the project, its estimated cost and other relevant design and construction factors. A full VE Study shall be undertaken when the projected savings to cost ratio exceeds 10:1. Each such VE analysis shall be fully documented in the project records.
  2. Value Engineering Study. Value Engineering Studies shall be conducted by Value Engineering Task Teams consisting of multi-disciplinary experienced architects and engineers and trained VE practitioners. Appropriate measures should be undertaken to insure that no potential conflict of interest arises by the participation of a number of the project design team.
    - a. Independent VE Consultant. The use of an independent VE consultant, either on an individual contract basis or through a VE Task Order Contract, is highly encouraged.
    - b. Submittal Requirements. The VE Study shall be completed prior to the submittal of the Design Development Submittal (DDS) for AC&I projects or the Project Development Submittal for AFC-43 funded projects. The results of the VE Study shall be incorporated into the DDS and PDS. The study shall be retained in the project record at the organization executing the project design.
- D. Construction Phase VE.
1. Incentive clauses in contracts shall allow the contractor to share in any savings resulting from contractor

- D. 1. (cont'd) initiated and accepted proposals. The Federal Acquisition Regulations require a VE incentive clause to be included in all construction contracts over \$100,000. The submission of Value Engineering Change Proposals (VECP) by the contractor should be encouraged.
2. The contractors should be made aware of the Value Engineering incentive contract clause in the Bid Information package and in preconstruction conferences.
- E. Training. Appropriate training shall be provided by each Facilities Design and Construction Center and Shore Maintenance Detachment for employees assigned to VE Task Teams and for those employees who will manage a VE review conducted by private contractors.
- F. Reports.
1. The annual VE Report (RCS-G-ECV-3118), Exhibit 14-1, shall be submitted by 1 November following the close of the fiscal year to Commandant (G-ECV).
2. VE Summary Sheets (RCS-G-ECV-3118), Exhibit 14-2, shall be prepared for all projects with an estimated construction cost over \$750,000. These shall be kept on file at the unit and reviewed periodically for application to similar projects.
3. For all savings exceeding \$10,000, forward VE Summary Sheets together with the annual VE report to Commandant (G-ECV).

FISCAL YEAR \_\_\_\_\_

REPORTING UNIT: \_\_\_\_\_

LOCATION: \_\_\_\_\_

POINT OF CONTACT: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

## A. DESIGN PHASE SUMMARY

1. List of projects with an estimated value of \$750,000 or more. Include project name, Project Proposal Report (PPR) number, and estimated costs. Give results of VE screening and rationale for non-selections.
2. For each project selected for VE, note if VE was done "in-house" or by an independent consultant. If by a consultant, give the name of firm and cost of contract.
3. For each project selected, also give the following information:
  - a. Total number and value of VE proposals identified.
  - b. Total number and value of VE proposals accepted.

## B. CONSTRUCTION PHASE SUMMARY

1. Total number and value of construction contracts in excess of \$100,000 each that were completed this fiscal year.
2. For these projects, the total number and value of VE Change Proposals (VECPS) submitted.
3. Total number and value of VECPS accepted.

## C. VALUE ENGINEERING TRAINING

1. Total US DOT VE-related training costs
2. Number of DOT and non-DOT employees trained in VE techniques.

EXHIBIT 14-2. VALUE ENGINEERING PROPOSAL SUMMARY SHEET  
(RCS-G-ECV-3118)

UNIT: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT: \_\_\_\_\_

SYSTEM: \_\_\_\_\_

VE TEAM LEADER: \_\_\_\_\_ No. On Team: \_\_\_\_\_

DESCRIPTION OF SYSTEM AS DESIGNED:

DESCRIPTION OF SYSTEM AS PROPOSED:

TOTAL POTENTIAL SAVINGS:

THIS PROPOSAL WAS:	ACCEPTED AS PROPOSED	_____
	PARTIALLY ACCEPTED	_____
	REJECTED	_____

TOTAL SAVINGS ACTUALLY EXECUTED \$ \_\_\_\_\_

APPROVED:

\_\_\_\_\_  
STAFF VALUE ENGINEER

Date \_\_\_\_\_

## CHAPTER 15. POST OCCUPANCY REVIEWS

- A. Purpose. This chapter provides policy and criteria for a shore facility Post Occupancy Evaluation Program, to be implemented by Civil Engineering personnel, as part of the overall shore facility planning, design, and construction process.
- B. Definitions. A Post Occupancy Evaluation (POE) is an on site formal review of a recently completed construction project. For the purposes of the Civil Engineering program, POEs consist of two parts.
1. Standards & Policy Evaluation. Post Occupancy Evaluations are conducted by Headquarters personnel to provide feedback to improve the Civil Engineering policies and standards used in the planning, design, and construction of a project. Specifically, the headquarters POEs are conducted to:
    - a. Determine how well the project achieves the intent of the project planning documentation that guided its design.
    - b. Evaluate design quality and conformance to established policy and standards.
    - c. Judge the performance and validity of established policy and standards, and to identify improvements in such policy and standards.
    - d. Gain a better understanding of buildings and their occupants in order to develop new policy and standards where required.
  2. Design & Construction Evaluations. Post Occupancy Evaluations are conducted by the MLC/FD&CC organizations to provide a record of accomplishments and shortcomings in the design under review that will benefit future designers of similar projects. These evaluations deal specifically with technical issues as opposed to program, policy and standards issues which the Headquarters evaluations will address. The combination of both evaluations should provide a comprehensive record of accomplishments and shortcomings in the planning, design and construction of future projects. The evaluations can be carried out independently of each other. Specifically the MLC/FD&CC evaluations are being conducted to:
    - a. Evaluate the physical performance of the building and related facilities.
    - b. Evaluate material selection and usage.



- B. 2. c. Evaluate the effectiveness of the Architectural Program which guided the design.
- d. Evaluate the effectiveness of the design documents.
- C. Scheduling. POEs shall be held after a facility has been operational for one year following "beneficial occupancy".
- D. Procedures.
1. Standards and Policy POEs will be held on all major AC&I, and selected minor AC&I projects, by the Headquarters Civil Engineering staff. MLCs and FD&CCs will be advised, in advance, of the POE, and may participate at their option. For certain projects, MLC and/or FD&CC participation may be considered necessary to the successful completion of a POE. In those cases, their participation shall be solicited.
  2. Design and Construction POEs will be performed by MLC and/or FD&CC personnel on all major and selected minor projects independently of the Headquarters (G-ECV) effort. MLC and/or FD&CC POEs will normally be conducted by MLC/FD&CC personnel. Commandant (G-ECV) must be advised in advance and may participate. Results of any MLC and/or FD&CC POEs shall be published and maintained by the conducting office. A copy will be provided to Commandant (G-ECV).

CHAPTER 16. SHORE STATION MAINTENANCE PROGRAM

- A. Purpose. This chapter provides policy and responsibilities for the Shore Station Maintenance Program (SSMP), to be implemented as a part of the life-cycle management of shore facilities.
- B. Policy.
1. All Coast Guard shore facilities and aids to navigation structures shall have a system of controlled maintenance, i.e., the SSMP. The program is designed to:
    - a. Assure that the various facilities meet their functional requirements.
    - b. Take corrective action before advanced deterioration necessitates major repairs.
    - c. Perform maintenance on a scheduled, planned basis rather than on an intermittent basis.
    - d. Guard against and eliminate over-maintenance and under-maintenance.
- C. Program Elements.
1. Maintenance Through Design. Maintainability of the facility must be considered during the planning and design of a new facility, or the alteration of an existing facility. All shore facility designs shall consider life cycle costs and the maintainability of the construction materials and methods proposed in the design.
  2. Unit Level Inspection And Maintenance. The unit has the primary responsibility for the operational readiness, appearance, and habitability of its shore facilities. A dedicated, self-reliant program of self-inspection, preventive maintenance and repair is required.
    - a. Maintenance and Logistics Commands (MLCs) shall develop and publish guidance for unit level inspections and maintenance, and assist districts, groups and units in organizing the unit level program.
    - b. Each Headquarters unit shall develop a maintenance and inspection program for its facilities.
    - c. The manufacturer's recommendations shall form the basis for the preventive maintenance program.
- C. 2. d. The unit shall document all deficiencies identified by unit level inspection and

maintenance beyond their capability and shall communicate this information to the servicing Civil Engineering Unit (CEU).

3. Shore Station Maintenance Record (SSMR). The SSMR is the primary method for communicating shore facility needs. It is a standard Coast Guard five-part form, CG-4094, available from Coast Guard Supply Center Baltimore.
  - a. MLCs shall develop and publish guidance for the preparation, submittal and processing of SSMRs.
  - b. The use of message SSMRs for emergent projects is authorized.
  - c. Exhibit 16-1 is a sample SSMR form.
4. AFC-43 Self Help (Unit Accomplished Work) Program. Use of the AFC-43 self help program is encouraged for simple or emergency projects. Under this program shore units must have documented a valid AFC-43 need to the CEU and have volunteered to accomplish it. The CEU will then evaluate the project and provide AFC-43 funding support, only if they concur that a unit accomplished project is an appropriate solution. The unit will then be responsible for completing the work satisfactorily and providing as-built information to the CEU. All Self Help expenditures of AFC-43 must be directly reflected on the responsible CEU's CEDS data; the responsible CEU must ensure that "Self Help" AFC-43 is expended in support of the goals of the AFC-43 program.
5. Casualty Reports (CASREPs). Shore CASREPs are authorized for failures of shore facilities or shore equipment that impair the capability to execute operational missions. The shore CASREP should be submitted according to local guidance.
6. Project Close-out. MLCs shall develop and publish guidance for providing maintenance data to shore units as part-of construction project close-out. Guidance shall include provision and disposition of as-built drawings, maintenance manuals, extended warranties, shop drawings/submittals, maintenance instructions and sample service contracts.

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-4094 (Rev. 5-67)		<b>SHORE STATION MAINTENANCE RECORD</b> <i>(May be filled in with ball point pen or pencil)</i>		REPORT NUMBER
DISTRICT		UNIT		
PRIORITY		PREVIOUSLY SUBMITTED BY <i>(Identify, i.e., letter, message, inspection report, etc.)</i>		
DESCRIPTION OF WORK: <i>(Attach additional sheets if required)</i>				
MATERIAL STATUS: <input type="checkbox"/> ORDERED, DELIVERY BY		RECOMMEND ACCOMPLISHMENT BY <input type="checkbox"/> UNIT <input type="checkbox"/> GROUP		
<input type="checkbox"/> ON BOARD <input type="checkbox"/> TO BE ORDERED BY		<input type="checkbox"/> BASE <input type="checkbox"/> CONTRACT <input type="checkbox"/> WORK ORDER		
DATE	SIGNATURE <i>(Unit Commander)</i>	ENCLOSURE		
GROUP COMMENTS:				
GROUP		<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> RECOMMEND APPROVAL	DATE	SIGNATURE <i>(Group level)</i>
BASE COMMENTS:				
<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> RECOMMEND APPROVAL		<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		
DATE	SIGNATURE <i>(Base level)</i>	DATE	SIGNATURE <i>(District level)</i>	
DATE COMPLETED	COMPLETED BY: <input type="checkbox"/> UNIT <input type="checkbox"/> GROUP	<input type="checkbox"/> BASE <input type="checkbox"/> CONTRACT		
<input type="checkbox"/> WORK ORDER NO.				

EXHIBIT 16-1

16-3

## CHAPTER 17 SHORE FACILITY INSPECTIONS

A. Purpose. This chapter contains policy and procedures for:

1. The execution of required engineering evaluation inspections for all shore facilities.
2. The safety inspections of load bearing structures, weight handling equipment, and pressure vessels and motorized hangar door controls.

B. Facility Evaluation Inspections. The engineering evaluation of existing facilities is an integral part of shore facility management. The assessment of their condition and adequacy is required to identify shore plant deficiencies, to allocate future maintenance resources, to support budget requests, and to evaluate the success of Civil Engineering maintenance efforts. This evaluation can only be accomplished through periodic inspections. Inspection dates shall be entered into CEDS for each RFPN inspected (see 2b below).

1. Policy. Each Coast Guard shore facility, including manned and unmanned lighthouse structures, shall be given a walk-through evaluation inspection by Civil Engineering personnel at least once every two years.

2. Procedures.

- a. Responsible Office. Headquarters units are responsible for facility engineering inspections at their commands. MLCs are responsible for facility inspections at MLC and District units.
- b. Inspection Requirements. All physical components of the shore unit from waterfront facilities to building roof systems shall be inspected for physical condition and adequacy. In addition, project data in the Shore Facilities Inspections (SFI) Table in CEDS must be verified for accuracy and completeness. A copy of the updated project record from CEDS is to be attached to the inspection sheet and placed in the real property file. Development of an individualized check list for each shore unit is recommended to facilitate inspections.
- c. Inspection Results. The inspecting office shall provide an evaluation report, including a list of any discrepancies, which will be forwarded via the command structure to the unit commander for appropriate action. A copy of the report shall be retained by the inspection office.

C. Safety Inspections. Certain types of structures and equipment exist such as load bearing structures, weight

C. (cont'd) handling equipment, pressure vessels, and motorized hangar doors that if not maintained or operated properly, can result in failure and/or personal injury. Most failures and related injuries can be eliminated by a program of periodic inspection combined with the performance of required maintenance. This section addresses the inspection portion of that program. Included are criteria for procedures and frequency of those inspections.

1. References.

- a. COMDTINST M 5100.29 - "Safety and Occupational Health Manual."
- b. ANSI/ASME B 30 - "Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks and Slings".
- c. OSHA Standards 1910 (various)
- d. ASME Boiler and Pressure Vessel Code, Section V.

2. Procedures.

- a. Responsible Office. District units, Headquarters units, and MLC units are responsible for the safety inspection of load bearing structures, weight handling equipment, and pressure vessels at their units.
- b. Technical Support. MLCs shall include inspection and scheduling requirements for load bearing structures, weight handling equipment, and pressure vessels at district units as a part of their standard operating procedures, and shall provide the technical support for the required inspections.
- c. Inspection Results. Any deficiencies discovered as a result of the inspection shall be brought to the attention of the responsible command immediately, with appropriate recommendations covering any emergency action required as well as steps needed for correction of the deficiencies.

3. Inspection of Load Bearing Structures.

- a. The following types of load bearing structures require formal periodic structural inspections.
  - (1) Piers, docks, and wharves, including docks serving vessels with loads in the form of large trucks, cranes, forklifts, buoys, piling and sinkers.
  - (2) Structures which exist for primary or secondary support of lifting devices or equipment. This includes boat haulouts, marine railways, ferry

- C. 3. a. (2) (cont'd) slips, and building frames or trusses which support overhead cranes, gantries, etc.
- (3) Building structural components, including pole buildings, elevated floor storage structures, long span roof structures in snow zones, and offshore towers with helicopter landing capability.
- (4) Warehouse storage structures, including any structures inside a warehouse, such as racks or shelving, that are used for storage.
- b. Excluded from formal periodic structural inspection requirements are small boat and WPB docks and piers, all non-warehouse structures, aids to navigation structures subjected only to personnel loadings, minor elevated storage spaces and lofts typical of most stations, and towers. This category, while excluded from inspection by a structural engineer, would remain subject to biennial civil engineering inspections and all required tower inspections. Inspection of towers shall be in accordance with COMDTINST M11000.4, Tower Manual.
- c. All load bearing structures which meet the above qualification, shall be inspected by a licensed structural engineer at least once every two years and when modified by construction or damage. The inspector shall determine:
- (1) Whether changes have occurred in loading, which may require a new determination of safe load limits.
- (2) Whether load limit signs are conspicuously posted.
- (3) Whether the posted limits are being exceeded, or there is any evidence of structural deterioration. Frequently, a change in operating procedures may result in the imposition of a heavier load. A typical example is the procurement of larger capacity load-lifting equipment. Therefore, procurement of mobile weight-handling equipment should always be preceded by an analysis of the structure's ability to withstand safely the maximum load the equipment can impose. In this connection, it must be remembered that in the case of a mobile crane, it is possible to develop a single-wheel load of two or four times the crane's rated capacity.
- d. Safe working loads of all load-bearing structures shall be determined and posted in conspicuous locations on all such structures.

- C. 3. d. (1) The safe working load shall be determined by a licensed structural engineer. The method used shall be appropriate for the type and condition of the particular structure.
- (2) When the inspection discloses any change in physical condition, function, or usage that affects the safe load-bearing capacity, a new determination shall be made and new signs posted.
- (3) Operators of mobile load-lifting equipment shall be provided with the load limits of the various structures on which the equipment normally operates. This information shall be suitably displayed in the cab of the vehicle, within easy view of the operator.

4. Inspection and Testing of Weight-Handling Equipment The term "weight-handling equipment" shall refer to all devices used for lifting or moving weights, whether operated by power or manually, which provide a mechanical advantage for lifting, moving, excavating, or placing materials or objects. Included are cranes of all types, derricks, hoists, gin poles, elevators of all types, winch trucks, capstans, winches, and straddle carriers. Excluded are motor vehicles, hand trucks, and similar devices. The term "rigging gear" shall refer to all devices used in conjunction with weight-handling equipment for guying or for attaching or securing loads. Included are pallets, slings, ropes, spreaders, strongbacks and other equalizing devices, blocks, cables, hooks, chokers, shackles, clips, wedges, and chains. Excluded are hand tools such as bars, wrenches, spuds, punches, and hammers. See OSHA 1910, Subpart N, 176 thru 184.

a. Inspection Policy. All weight handling equipment and related rigging shall be inspected as follows:

- (1) Structural Components. Check for loose parts and defects each day of use. Correct defects before use.
- (2) Parts Subject to Wear. Inspect wire ropes, bearings, gears, friction clutches, chain drives, and other parts subject to wear at least monthly.
- (a) Brakes. Check mechanical brake action in accordance with manufacturer's instructions. Make all needed adjustments. Inspect electrically operated brakes in accordance with manufacturer's instructions. Give special attention to maintaining proper adjustment and air gaps.



- C. 4. a. (1) (a) (cont'd) If manufacturer's instructions cannot be obtained, determine frequency of inspection by experience and degree of use.
- (b) Chain Drives. Inspect chain drives periodically to ensure the chain does not become so loose that it climbs the sprocket teeth.
- (c) Chains. Inspect each link of the chain for wear. If the chain is worn or stretched to a length exceeding the original length by 5 percent, discard it. Discard distorted links which interfere with the chain functioning properly in the sheave. Do not allow wear on individual links to exceed one-quarter the thickness of the metal.
- (d) Sheaves and Drums. Prior to load test, remove sheave pins or plain bearing sheaves and examine, along with the sheave grooves, for wear. Whenever the difference in diameters of the pin reaches 1/16 inch, replace the pin and/or bushing to give a proper fit. If the parts are worn so the sheave has a pronounced wobble, replace parts even if the difference in measurements is less than 1/16 inch. Replace sheaves with worn grooves where the rope or cable ride entirely on the bottom without any support from the sides. Whenever you inspect the rope or cable, also inspect the sheaves and rims for burrs, scores, and cracked or broken flanges, rims, spokes, or hubs. File burrs and scores smooth. Replace cracked or broken sheaves.
- (3) Rigging Gear. All rigging gear shall be inspected for defects each time it is used.
- (a) Wire Rope. Make a thorough examination of wire ropes. Ensure the end fastenings are tight. Replace the rope if it shows excessive wear, starts to stretch, or the individual wires show a tendency to break.
- (b) Hooks and Rings. Inspect hooks and rings. Replace if they have permanent deformation from original shape as the result of overloading, show cracks, deep gouges or a 20 percent reduction of area in the critical section from wear.
- b. Testing. All weight handling equipment and related rigging gear shall be tested as follows:

- C. 4. b. (1) Weight Handling Equipment. Weight handling equipment shall be load tested prior to initial use, at least once every two years, and prior to use after any alteration or repair to the equipment which affects the ability of the equipment to lift. Examine all portions practicable before, during and after the test and correct all defects noted. Do not exceed safe "design load" during test. Note that safe working load is always less than "design load". When the load raising ability of the equipment is tested, also test the brakes by holding the load stationary for at least one minute.
- (2) Rigging Gear - Proof test all rigging gear to 1 1/2 times its safe working load once each year. Maintain a record of such proof tests.

5. Inspection of Boilers and Unfired Pressure Vessels

- a. Purpose. All vessels containing liquid or gas under pressure constitute a potential hazard to lives and property. Therefore, boilers and unfired pressure vessels must be installed, maintained, and inspected regularly in order to reduce the hazards to a minimum. This section sets forth uniform boiler and unfired pressure vessel inspection schedules and procedures.
- b. Definitions.
- (1) Power Boiler. A boiler which operates at a vapor pressure greater than 15 psig or a water pressure greater than 160 psig and a temperature higher than 250 degrees Fahrenheit.
- (2) Heating Boiler. A boiler which operates at a vapor pressure which does not exceed 15 psig or a water pressure which does not exceed 160 psig and a temperature which does not exceed 250 degrees Fahrenheit.
- (3) Unfired Pressure Vessel. A tank which contains vapor or liquid under pressure, but which is not exposed to the products of combustion. See OSHA 1910, Subpart M, 166 thru 171.
- c. Exceptions. The requirements of this section do not apply to:
- (1) Cylinders for shipment of compressed or liquefied gas.
- (2) Air tanks for vehicle brakes.

- C. 5. c. (3) Unfired pressure vessels which have a volume of 5 cubic feet or less.
- (4) Unfired pressure vessels whose working pressure does not exceed 15 psig.
- (5) Unfired pressure vessels which contain only water for domestic supply purposes (including those which contain air, if the air serves only as cushion).
- (6) Unfired pressure vessels which are used as refrigerant receivers in refrigerating and air conditioning equipment.
- (7) Unit heaters (gas, electric, or steam).
- (8) Domestic hot water heaters which operate at temperatures which do not exceed 211 degrees Fahrenheit.
- (9) Boilers with less than 350,000 BTU/hr net heat output.

d. Inspection Schedule. All boilers and unfired pressure vessels shall be inspected and tested in accordance with an established schedule. The interval between inspections and tests shall not exceed the intervals stated in Exhibit 17-1.

e. Inspection and Testing Procedures. Boilers and unfired pressure vessels shall be inspected by a licensed mechanical engineer inspector or qualified Marine Safety inspector and tested in accordance with the procedures set forth in the ASME Boiler and Pressure Vessel code, Section V, Subsection "A" (Non-destructive methods of examination), article 9 and 10.

f. Inspection Reports. Inspection reports shall be recorded on the form attached as Exhibit 17-2. The report should be submitted to the commanding officer of the unit whose equipment was inspected.

6. Inspection of Motorized Hangar Door Controls. The following inspection and corrective action procedures shall be followed for motorized hangar door control devices. This shall be in addition to the normal periodic inspection and maintenance of rails, tracks, rollers, gears, cables, and motors.

a. Inspection. The subject control devices shall be inspected and tested weekly by the facility engineer or designated alternate to ensure that they are functioning as required and that no attempt has been made to defeat or alter their purpose.

C. 6. b. Corrective Action Procedures. Any deficiencies noted in the above inspection are to be reported to the facility safety officer and are to be given the highest priority for repair by the facilities engineer. Pending corrective action, the door is to be posted as an "unsafe" condition by the safety officer. Any required operation of the door while in this state is to be done under the direction of the safety officer or his designated alternate. After completion of required repairs, the door shall be reinspected by the safety officer and, if found to be operating as required, the "unsafe" posting shall be removed and normal operations resumed.

EXHIBIT 17-1. INSPECTION SCHEDULE FOR BOILERS AND UNFIRED PRESSURE VESSELS

Item	Exterior and Interior Inspection	Pressure Test	Operational Inspection
Heating Boilers	1. At least once annually for steam boilers.	1. At least once every 6 years.	1. At least once annually.
	2. At least every 3 years for hot water boilers .	2. After repair of pressure parts.	2. After any major modification to boiler, controls, or auxiliary equipment.
	3. After repair of pressure parts.	3. At least once every 3 years for boilers over 20 years.	
Power Boilers	1. At least once annually.	1. At least once every 3 years.	1. At least once annually.
	2. After repair of pressure parts.	2. After repair of pressure parts.	2. After any major modification to boiler, controls, or auxiliary equipment.
		3. At least once annually for boilers over 20 years old.	
		4. At the discretion of the inspector.	
Unfired Pressure Vessels	1. At least once every 2 years.	1. After repairs of pressure parts.	
	2. After any major modification or repair.	2. At the discretion of the inspector.	

Inspection of Boiler or Pressure Vessel		1. Inspection conducted by:	2. Date
4. Manufactured by:		5. Manufacturer's number.	
6. Type.		7. Plant number.	
8. Date installed.		9. Manufacturer's rating ( <i>Hp.</i> ).	
10. Safe working pressure designated by manufacturer.		11. State service ( <i>lighting, pumping, sawmill, etc.</i> ).	
12. Does boiler contain grease or scale?		13. If so, is the quantity of same considered serious?	
14. Was pitting or corrosion apparent?		15. If so, to what extent.	
16. What hydrostatic pressure was applied?		17. Were signs of weakness apparent under this pressure?	
18. If so, where and to what extent.		19. State maximum safe working pressure (lbs.).	
20. State present working pressure (lbs.).		21. State number, length, and size of tubes in boiler.	
22. State condition.		23. Are all tubes tight?	
24. State number and size of safety valves.		25. State conditions of safety valves.	
26. Safety valves set to open at pressure of (lbs.):			
27. What variation in pressure existed between pressure gage and inspector's test gage at working pressure?		28. Was Gage Corrected?	
		29. Were Fusible Plugs Renewed?	
30. What is the general condition of the boiler or pressure vessel ( <i>internally</i> ) ( <i>externally</i> )?		31. What is the general condition of the mountings, attachments, settings, etc?	
32. What additions or repairs are considered necessary?		33. Were steam leaks repaired?	
34. Memoranda:			

# BOILER OR PRESSURE VESSEL INSPECTION FORM (CONT'D)

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35. Remarks and recommendations by inspector (*Enumerate deficiencies to be corrected in order that the boiler or pressure vessel may be operated with safety at the working pressure allowed.*)

Signature of inspector.

Official title of inspector.

36. Remarks and recommendations by the local officer (*enumerate deficiencies to be corrected in order that the boiler or pressure vessel may be operated with safety at the working pressure allowed.*)

I certify that the above inspection was completed on (*date*).

Signature of Officer In Charge.

Official title of Officer In Charge.

EXHIBIT 17-2

17-11

A. Introduction.

1. Purpose. This chapter discusses the organization and management of the facilities engineering functions at Support Centers and large units with Civil Engineering Officers (OBC 55000) assigned. The guidance contained in this chapter is based upon the study and experience of the Coast Guard and other military services in the management of facility maintenance organizations. This information has broad application to all facilities engineering organizations, but is not intended to restrict local initiative.

2. Facility-Intensive Units.

- a. Over the years, the shore facility resources of the Coast Guard have become increasingly concentrated at a relatively small number of Coast Guard units. Using square footage of buildings as a parameter, over 55% of the facilities are located at only 19 Coast Guard units. The Commandant has recognized the large facility management responsibility thrust upon the commanding officer of these units and has assigned civil engineering officers to provide professional support services and advice.
- b. Professionally staffed facilities engineering organizations are at the following locations:

	Air Station Cape Cod	ISC Portsmouth
	ISC San Juan	ISC Honolulu
	Air Station Borinquen	ISC Kodiak
	ATC Mobile	Academy
	ISC Alameda	TRACEN Cape May
	ISC Seattle	RTC Yorktown
	ISC San Pedro	TRACEN Petaluma
	ISC New Orleans	Yard
	ISC Boston	TISCOM
		SUPRTCEN Elizabeth City

c. Although the authorized complement of personnel varies considerably among the units, the functions and responsibilities are fairly standard. (See paragraph B. for a discussion of organizational responsibilities.) Functions are related to the placement of the unit in the overall Coast Guard organization (e.g., district, maintenance and logistics command, or Headquarters unit), and its reliance on outside sources for given services (e.g., commercial, GSA, consultants, etc.).



B. Responsibilities.

1. Command Responsibility. The commanding officer of a unit is responsible for the readiness of his/her command. Manpower, money and well-maintained and functionally adequate facilities are the primary resources available to the commanding officer to perform the missions.
2. Responsibilities of the Facilities Engineer. Ultimate responsibility for management of a unit's facilities rests with the commanding officer. It is the facilities engineer's responsibility to provide professionally sound advice to the commanding officer. The facilities engineer is tasked with the management of assigned resources (manpower, money, facilities). Services the facilities engineer provides may include:
  - a. Shore facility planning including the development of master plans and individual project documentation.
  - b. AFC-30 level facility maintenance and repair and administration of AFC-43 Zero-Based Management System.
  - c. Project execution (AFC-43, NAFA, and AFC-30) including construction, material procurement, and contract administration.
  - d. Engineering services including technical evaluation/studies, engineering inspections and design services.
  - e. Utility generation/procurement including electrical power, water and sewage, central heating and air conditioning, and solid waste disposal.
  - f. Administering the unit energy conservation program.
  - g. Transportation services and administration including: motor pool operation, vehicle maintenance and repair.
  - h. Management input to labor-management negotiations.
  - i. Technical development and administration of maintenance services contracts.
  - j. Administration of the unit hazardous materials and environmental compliance programs.
  - k. Facility adequacy and utilization surveys.

- C. Management Premise. Certain management principles should be considered in the management of the facilities engineering function.

- C. 1. Management Emphasis. The facilities engineer (and the commanding officer) should systemize the orderly and routine flow of work and services and identify where special management emphasis or action is needed.
2. Service-Oriented Management. Facilities engineering functions are primarily service-oriented. The goal should be to anticipate and respond with timely and competent services "to customers."
3. Separation of Authority. There should be a clear distinction between the authorization of work and the execution of work. At small units, it may be impossible to assign approval authority and execution responsibility to separate individuals, but the two should still be separate management actions.
4. First Line Supervision. The main responsibility of first line supervisors is supervision of assigned personnel. First line supervisors should not be burdened with excessive planning, estimating, budgeting and procurement. The best use of the technical, administrative talents, and experience of first line supervisors is: shop level scheduling, quality control, responding to the needs of the work force by providing technical direction and on-the-job training, and ensuring efficient work execution.
5. Use of In-House Work Force.
- a. In-house work efforts should be kept within the intended bounds of ordinary and recurring AFC-30 maintenance. Maintenance work beyond this level (funded by AFC-43) requires some investment in specialized capability, e.g., facilities, equipment, manpower, specialized technical, trade or managerial skills.
- b. COMDTINST M7300.4, Comptroller's Manual, Volume 1 (Accounting), gives further information on costs properly charged to AFC-30 and AFC-43. Maintenance and logistics commands and Headquarters units have established additional guidelines to distinguish between AFC-30 and AFC-43 funded work. These vary with wage rates and local real buying power of the dollar.
- c. For units located in remote areas, there may be a requirement to perform a higher level of AFC-43 maintenance in-house. In-house AFC-43 maintenance should be performed when the following criteria are met:
- (1) The work does not detract from AFC-30 level maintenance.

- C. 5. c. (2) Enhanced response time is critical to mission performance.
- (3) The real cost (labor, material, and direct overhead) is less than commercial sources.
- (4) The activity is consistent with the intent of OMB Circular A-76, "Policies for Acquiring Commercial or Industrial Products and Services for Government Use."

D. Unit Maintenance Management.

1. Objectives of maintenance management by units are to optimize the use of manpower, equipment, material and money by:
  - Preserving physical and functional adequacy of all shore facilities;
  - Optimum scheduling;
  - Resource leveling;
  - Continuous training;
  - Feedback reporting and quality control;
  - Supervision;
  - Preventive maintenance for equipment and facilities;
  - Maintaining equipment and facilities to minimize life-cycle operating expenses.
2. Management should be able to view and analyze the maintenance effort after the fact, both in terms of individual job accomplishment, and in terms of the productivity of the entire maintenance effort.
3. Basic guidelines for maintenance management are in the Navy Maintenance Management System (see Navy Public Works Manual and NAVFAC MO-321).
4. In order to standardize within the Coast Guard, maintenance work is categorized as shown in Exhibit 18-1.
5. Each local unit maintenance management system shall be established and documented by unit instructions. The policies governing maintenance work must be recognized as command policy, and communicated to all customers. Include a description of the unit maintenance management system, with its key elements (e.g., work generation, classification, reception, control, etc.), and provide command guidance on the following:
  - a. Assignment and custody of space.
  - b. Housekeeping responsibilities.
  - c. Material inspections (command/zone and division).

EXHIBIT 18-1. CATEGORIES OF MAINTENANCE WORK(1)

SIZE/TYPE	PRIORITY	METHOD OF CONTROL
<u>AFC-43 Work</u> (2) - exceeds AFC-30 limitations established by the unit.	<u>Emergency-</u> Generally, takes precedence and must be undertaken immediately to correct and eliminate a hazardous situation, restore vital services, or prevent system damage.	<u>Scheduled Work-</u> work assigned in a systematic manner with the time of start, end, and estimated effort specified.
<u>Major AFC-30 Work</u> - exceeds \$3000 total direct cost (including labor (3) and materials). Not "Standing Work"		<u>Unscheduled Work</u> - work accomplished in less than (or equal to) three days from time of request.
<u>Minor AFC-30 Work</u> - does not exceed \$3000 total cost (including labor (3) and materials). Not "Standing Work"		
<u>Standing Work</u> - Work of determined need, scope, method, and estimated effort accomplished without specific user identification. (e.g. routine maintenance, housekeeping, etc.).	<u>Non-Emergency-</u> Non-emergency work may be broken down into other categories at the discretion of the unit.	

- (1) Each project is categorized by all three categories: size/type, priority and method of control.
- (2) This category of work should normally be accomplished by contract or industrial work order (refer to section C.5).
- (3) Labor cost is determined using average manhour cost (from report use G5 Salary / (G5 onboard strength X 2080 hours).

- D. 5. d. Job approval authority and limitations.
  - e. Special bills (e.g., snow removal, heavy weather).
  - f. Special maintenance responsibilities (e.g., electronics, training aids, aviation ground support equipment, etc.).
  - g. Identification of vital services and special response criteria.
6. Command guidance should ensure that all facilities usage is identified and maintenance responsibility assigned to the appropriate organizational entity.
7. Exhibit 18-2 is a guide to applying the elements of the Navy Maintenance Management System to a Coast Guard unit.

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<u>EXHIBIT 18-2. ELEMENTS OF MAINTENANCE MANAGEMENT</u>		
<u>ELEMENT</u>	<u>PURPOSE</u>	<u>COMMENT/COAST GUARD APPLICATION</u>
Inventory	To know what you have to maintain. listed in preventive maintenance program (standing work order).	Real property records cover structures; equipment can be
Maintenance Standards	To predetermine limits on maintenance effort.	Ensures a consistent maintenance effort; maintenance standards are also a guide and tool to provide a basis for arriving at priorities and delineating work approval authority.
Work Classification	To categorize the effort.	Categorize by size/type, priority, and method of control.
Numerical Identification	To record and track.	This should be the simplest possible method to identify item, track, and recover basic management information.
Work Generation	To know the condition of the facilities and equipment. Identify new problems.	See the Facility Adequacy Scoring Technique (FAST) Manual, COMDTINST M11011.12.

EXHIBIT 18-2 (cont'd)

ELEMENTS OF MAINTENANCE MANAGEMENT

<u>ELEMENT</u>	<u>PURPOSE</u>	<u>COMMENT/CG APPLICATION</u>
Work Reception	A common hopper for all work items. To ensure nothing drops through the crack.	Basic starting point. Essential.
Work Input Control	Preparation before execution. Ordering of equipment.	This step should only be as detailed as the scope and size of the facility demands.
Planning & Estimating	To tell work force what you want to do. Deciding in concrete terms each step in work.	Not an end in itself. An aid to execution; an input to the approval decision. Should be sized commensurate with the anticipated work load of jobs which require planning. Standing work should not be neglected.
Job Authorization	To verify authority and priorities.	Necessary in determining urgency of work and in maintaining balanced work load for each source of accomplishment.
Material Coordination	To provide the resources to the tradesman.	Unlikely to be a problem at most units; key is that it is not a shop level function.
Shop Scheduling	To match work load to manpower and time.	Need for master scheduling not envisioned. Participation of shop supervisors is essential. At smaller units this function can be assigned to first level supervisors.
Reports	For feedback.	Discussed in Section F.

E. Facilities Planning.

1. Facilities planning is an essential element in the shore facilities cycle. Direct responsibility for the unit planning function varies among units with a facilities engineering division. The role of the facilities engineer is to translate planning criteria and programmatic needs into resource requirements. The facilities engineer shall have strong input to the unit planning process.
2. In recent years, comprehensive planning guidance has been developed to assist field planning efforts. The facilities engineer should be familiar with the Planning and Programming Manual, COMDTINST M16010.1 (series), and the Shore Facilities Planning Manual, COMDTINST M11010.6 (series).

F. Management Information and Reports.

1. Purpose. Management at all levels requires periodic feedback or reports to monitor and evaluate the performance of the organization and to support resource change actions. Data collection and reporting requirements is usually warranted in the areas listed below. Data collection should be limited to only those items necessary to serve management:
  - Facility adequacy/utilization
  - Facility investments
  - Facility planning
  - Customer satisfaction
  - Preventive maintenance
  - Facility inventory
  - Training
  - Maintenance backlog
  - Maintenance scheduling
  - Class of work
  - Manpower productivity
  - Manpower requirements
  - Material accounting
  - Facility energy utilization
2. Facilities Engineering Management Report. The annual Facilities Engineering Management Report (FEMR)(RCS-G-ECV-3092), as shown in Exhibit 18-11, should be used by local management as a means to monitor and evaluate the effectiveness of local maintenance management procedures. Program managers at higher levels in the Coast Guard organization also use this information to assess the overall effectiveness of the facilities maintenance program, document resource change proposals, and to provide input for refinement of staffing criteria and facilities engineering management guidance.
  - a. The report must be submitted to Commandant (G-ECV) in letter form by the commanding officer of the units identified in Section A.2. of this chapter. Reports shall be submitted via the chain of command to Commandant (G-ECV) by 1 November of each year. Each report will provide information relating to accomplishments of the previous fiscal year.

F. 2. b. The report gathers information in four general areas:

- (1) unit facilities and demographics.
- (2) organization and staffing of facilities engineering division.
- (3) financial information relating to facilities engineering.
- (4) work load and productivity.

c. The data should be compiled at least quarterly. Where practical, the work load and productivity information should be incorporated into a computerized maintenance management system that provides real time management information.

G. Facilities Engineering Organization and Staffing. No facilities engineering organization functions within a totally unique environment. Over the years, general similarities have developed in organizational structure, size of work force relative to size of the facility, operating methods, and management approaches. Within these similarities, some local variation must be taken into account.

1. Variation Among Units. Most variation of the facilities engineering function is related to size, however, other factors such as the type of unit and its service environment:

a. Size. Square footage of building area has been found to be the best parameter available in the Coast Guard to indicate "size" of a given facility. For purposes of classification all units are divided into one of two categories:

Large - 500,000 or more sq. ft. building area

Small - less than 500,000 sq. ft. of building area.

While this factor has some impact on determining the size, billet/grade level, and capabilities of the professional staff, its primary influence is on the size of the blue collar work force. The size of the unit also influences the scope of the maintenance management and control function.

b. Type of Unit (Location of unit within Coast Guard chain of command). This factor predominantly influences whether or not the unit has direct responsibility for preparation of project oriented planning documents, master planning, and the AFC-43 maintenance program.



- G. 1. c. Service Environment. This factor considers the outside sources for professional and maintenance services available to the facilities engineer. The primary influence of this factor is on the capabilities which must be maintained at the unit. This ensures that proper maintenance and repair is performed and indicates scope of work to be performed by the unit work force.
2. Organization.
- a. A standard facilities engineering organization is not imposed. Ultimate design of the proper organization is the responsibility of the unit commanding officer. Three Navy publications, "Organization and Functions for Public Works Departments," NAVFAC P-318, "Maintenance Management of Public Works and Public Utilities," NAVFAC MO-321 and "Public Works Manual," can be used as guides in developing the organization for a Facilities Engineering Division. Although counterpart Navy organizations emphasize fiscal accounting beyond Coast Guard needs, the basic concepts of separation of authority, control, and workflow are sound organizational concepts for Coast guard applications. The functional responsibilities of a standard Facilities Engineering Division is shown in Exhibit 18-3.
- b. Some of the functions are shown in more than one place in Exhibit 18-3. This shows an active interest and participation from different organizational viewpoints. For instance, the Engineering Services Branch may be in the best position to administer the overall energy conservation program for the unit, but the Utilities Branch is a prime contributor to the program and can provide better information and advice on specific areas of energy consumption.
- c. At smaller units, for purposes of efficiency and economy, some managerial functions are also assigned to the Facilities Engineering Division. At large units where the complete range of divisional functions exist, the following functions are more appropriately assigned to other divisions:
- Fire Protection
  - Housing Administration
  - Security
  - Telecommunications
  - Waterfront Operations and Administration
  - Overall Unit AFC-30 Administration

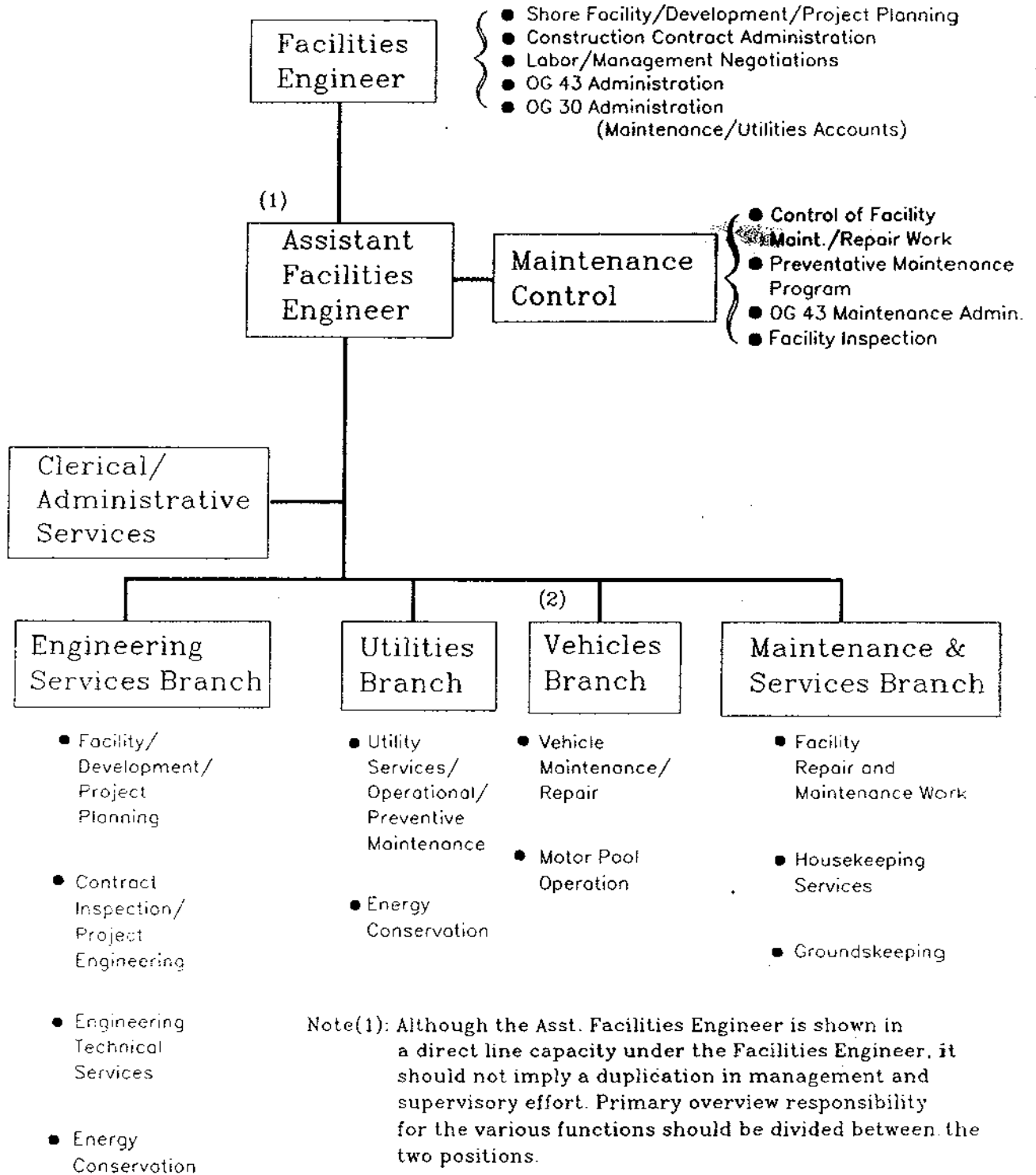


Exhibit 18-3

G. 3. Staffing Criteria.

- a. These requirements are based on an organization consisting of four separate components:

Professional Staff Component	Division Officer & Assist. Clerical Engineering Branch Maintenance Control
Utilities Component	Utilities Generation Water/Sewage Treatment Central Heating Electrical Power
Vehicles Component	Motor Pool Vehicle/Equipment Maintenance
Maintenance Component	Maintenance Shops Grounds Maintenance Service Teams

Exhibit 18-4 shows the relationship between the four components and the descriptive factors if a "building block" approach to staffing were used. Essentially the staffing required in the Utilities and Vehicles Components depends on the method in which the service is provided (e.g., commercial, in-house). Staffing of the Maintenance Component is predominantly determined by the size of the unit and the availability and/or accessibility of external support.

b. Professional Staff.

- (1) Exhibit 18-5 is a guide to facilities engineering professional staffing similar to the Navy's module concept outlined in NAVFAC P-318. The difference is in the determinants (descriptive factors). This guide does not imply that alternative means of professional staffing should not be considered. On the contrary, where the function can be effectively arranged without establishing in-house billets, serious evaluation of that alternative should be made. For instance, where Headquarters units have convenient access to NAVFAC or COE design staffs, engineering and design services might be obtained from those sources. This would allow for the unit engineering personnel to focus on shop support, facility planning and contract inspection and administration. A commensurate reduction in unit staff could be made. Exhibit 18-5 provides guidance for six functional elements which taken together comprise the division "professional" staff.

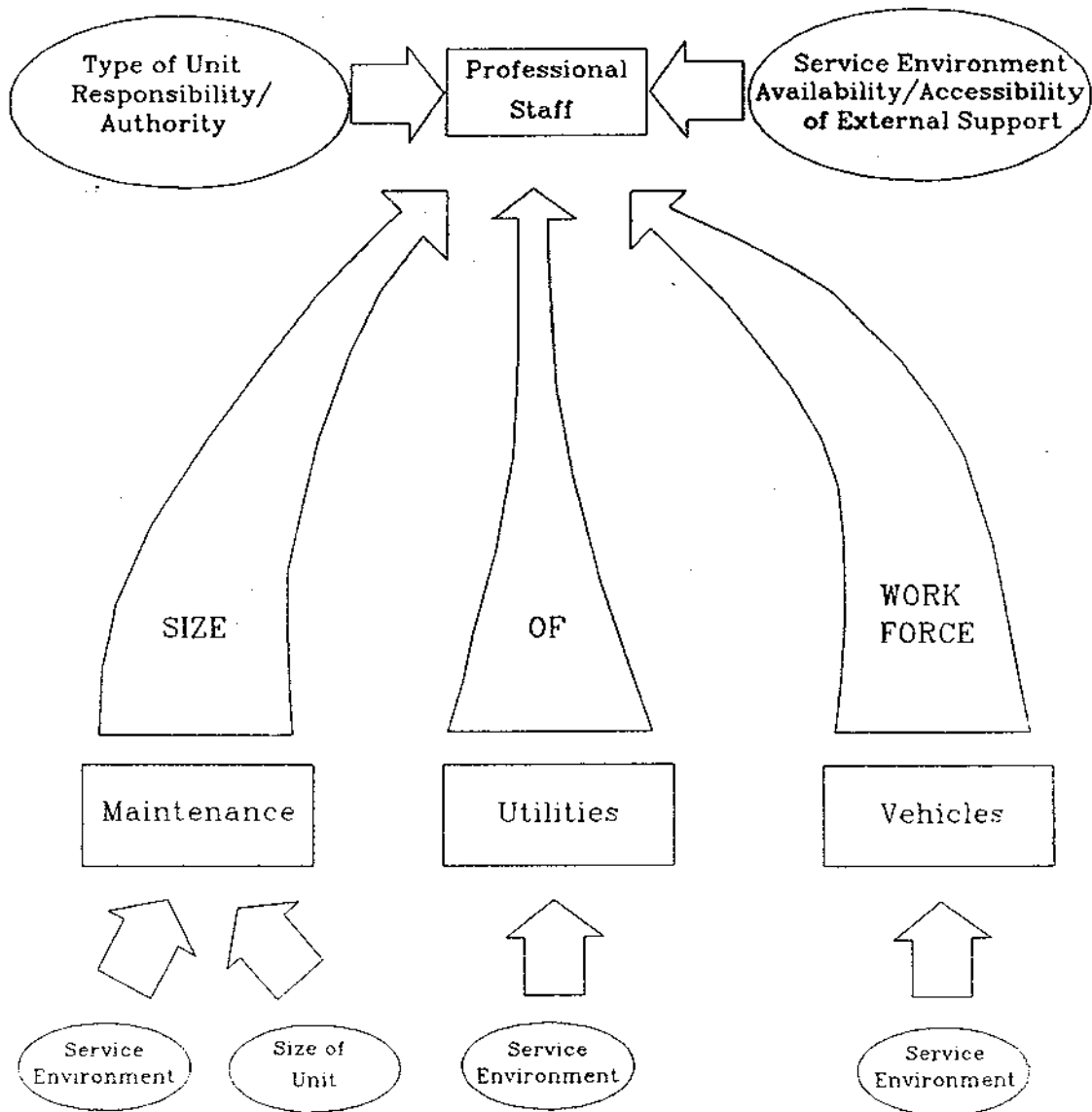


Exhibit 18-4

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EXHIBIT 18-5

SIZE	Divison Officer	Asst. Div Officer	Engineer. Branch	Maint. Control	Branch Lvl. Sup.	Clerical Section
Large	CDR/LCDR	LCDR/LT	GS	LT/GS	WS/CWO	GS
Small	LCDR/LT	LT/CWO	GS/None	LT/GS	CWO/None	YN/GS

=====

G. 3. b. (2) Exhibit 18-5 does not:

- Prescribe the total size of the staff assigned to an functional element; or
- Indicate the specific skills or mix of skills for assigned personnel below the individual in charge of the function; or
- Account for certain local conditions which might bea on billet/grade decisions (e.g., seniority of peers, extra command relationships, etc.).

Such decisions are best made logically to fit the existing work load and functional requirements. At a large Headquarters unit with on-going construction, full service professional engineering staff covering several engineering disciplines may be required based on the size and nature of the work load. On the other hand, at a district unit a technically oriented engineering branch geared to shop level support is mor appropriate. Exhibit 18-6 shows the recommended relationship between the maintenance control staff and the size of the maintenance work force.

c. Utilities Component Staffing.

- (1) The staff of the Utilities Branch is directly keyed to the method in which utilities are provided. Analysis to consider local conditions is necessary to determine requirements. A unit where all services are provided by public utilities has no need for a Utilities Branch per se. In most such cases, repair and maintenance of distribution systems and load centers can be handled by the maintenance branch or arranged for through the utility company or commercial sources. In instances where utilities are provided by the unit (e.g., central heating plants, electric power generation, sewage treatment, etc.), staffing will generally be dictated by watchstanding requirements.

EXHIBIT 18-6. SIZE OF MAINTENANCE CONTROL STAFF

Maintenance Workers (Maintenance Component)	Maintenance (Production) Controller (GS/OFF)	Planner/ Estimators (WD/ENL)	Work Receptionist Data Clerk (GS/ENL)
less than 20	1		*
20-35	1	1	*
35-55	1	2	1
55-75	1	3	1
over 75	1	3 + 1 for every add'l 35 Maintenance Workers	1

\*Collateral duty of division clerk/typist.

- G. 3. c. (2) Providing for appropriate watch rotation will normally ensure a sufficient work force to handle routine maintenance within the plant(s). Some additional personnel may be required for day working on routine and preventive maintenance beyond operator capabilities and for first level supervision. Although not a hard and fast rule, utility branch maintenance responsibility ends at utility generation. Distribution or collection system maintenance responsibility is normally charged to the maintenance branch.
- (3) In situations where large individual heating boilers are used, the maintenance responsibility can be subject to debate. In general, if the boiler requires operator type checks on a periodic basis, maintenance responsibility rests with the utilities branch. Otherwise the maintenance branch can be charged with responsibility for this equipment.

G. 3. d. Vehicles Component Staffing.

- (1) Quantified staffing criteria for the vehicles component has yet to be developed. Generally, the staff required in the Vehicles Branch is dependent on how the service is provided and the accessibility or availability of outside support. Most Coast Guard units use GSA vehicles for general purpose transportation. A few units employ large numbers of Coast Guard-owned vehicles. In most cases, specialized equipment is Coast Guard-owned.
- (2) In nearly all cases of units large enough to warrant professional facilities engineering organizations, a motor pool should be established and staffed to handle dispatching duties, monitor and control usage, ensure proper operator maintenance and arrange for cyclic preventive maintenance. Where a small number of GSA-owned vehicles (5 to 15) are involved, the motor pool staff may consist of petty officer and possibly a non-rated helper. In this case, "branch" status is not warranted.
- (3) At a maximum, where large numbers of Coast Guard vehicles are owned and maintained, a completely staffed branch may be indicated. The size of the vehicle maintenance force would be derived from the numbers and types of vehicles maintained. Preventive maintenance and repair are generally predictable for most vehicles subject to local usage conditions. Manufacturer's recommended maintenance schedules and flat rate tables can be used to relate the required work force to the work load. Spare parts control should be considered for special staffing at large full service vehicle shops. Sufficient supervisory and administrative personnel should be assigned to control the maintenance operations, and ensure that vehicle maintenance and history records are kept current.

e. Maintenance Component Staffing.

- (1) Analysis of maintenance work forces of the existing facilities engineering organizations has shown a relationship between numbers of tradespeople, square footage of buildings maintained, and total number of personnel supported. The ultimate makeup of the required maintenance component work force must be tailored to the actual situation at hand, and be left

- G. 3. e. (1) (cont'd) flexible to respond to changing conditions within the physical plant. Exhibit 18-7 can be used to:
- (a) Identify units with potential gross personnel deficiencies or excesses;
  - (b) Provide, along with specific field justification, an initial staffing for new organization; and
  - (c) Evaluate resource change requests when specific field justification is given.
- (2) The basic equation for maintenance component staffing (G.5. on the Facilities Engineering Management Report, Exhibit 18-11), derived through regression analysis, has been solved for the valid range of the variables and transformed into a nomogram for convenient application (see Exhibit 18-7).
- (3) The nomogram is used by entering the left scale with total number of personnel supported (the sum of Sections A and B on the Facilities Engineering Management Report) and the right scale with the total square footage of buildings in ksf maintained by facilities engineering.

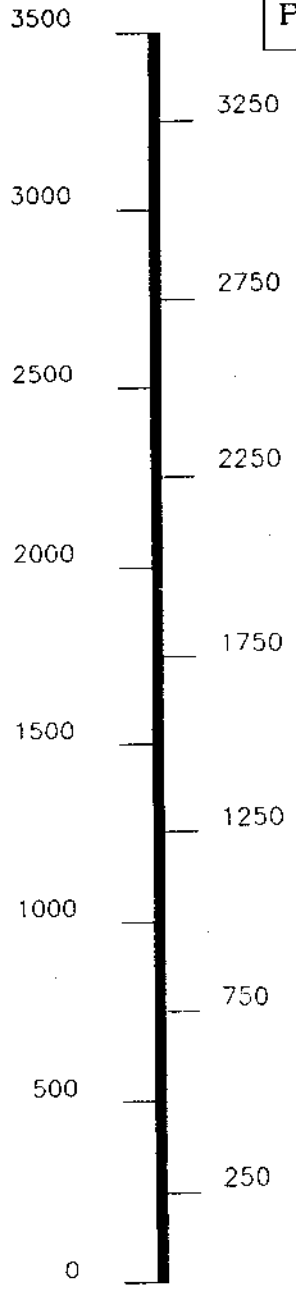
[Note: The total number of personnel supported is the sum of the authorized officer, enlisted, and civilian complement of the unit and tenants (ashore and afloat) plus the average daily transient/student population (if significant). NAFA employees and dependents occupying family housing are not included in this number.]

The point on the middle scale where the line connecting the two outer scales crosses represents the number of personnel required to perform maintenance.

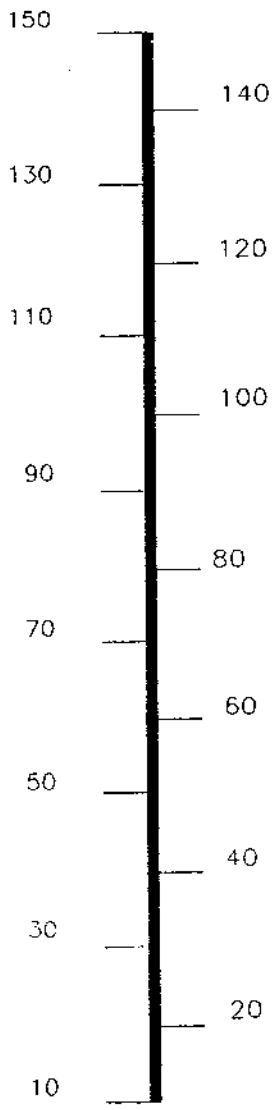
- (4) Alternatives to in-house manpower resources (e.g., service contracts, temporary labor, public services, etc.) should always be explored. In general, the money resource provides greater flexibility than manpower resources.
- (5) See Exhibits 18-8, 18-9, and 18-10 for examples of facilities engineering staffing decisions.



TOTAL # OF PER. SUPPORTED



# PERSONNEL REQUIRED TO PERFORM MAINTENANCE



KSF MAINTAINED BY FACILITIES ENG.

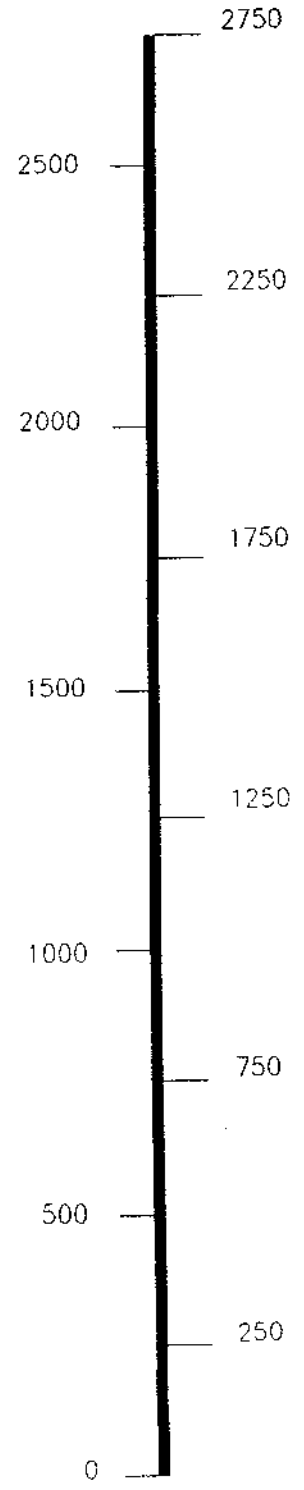


Exhibit 18-7

EXHIBIT 18-8. STAFFING DECISION FOR LARGE, HEADQUARTERS UNIT,  
REMOTE SERVICE ENVIRONMENT

This category of a unit at the top of the scale is a likely example of the most difficult management situation with heavy responsibilities to satisfy maintenance, service and utility requirements. The following criteria probably would apply:

- (1) Lines of authority directly from unit Headquarters program manager without intermediate review.
- (2) AFC-43 allotment unit.
- (3) Large maintenance work force.
- (4) Skills and capability of work force adequate to ensure high degree of maintenance self-sufficiency.
- (5) Self-sufficiency in utility production.
- (6) AC&I work in progress, unit planned and FD&CC executed.
- (7) Large number of structures and systems requiring continuous facility planning effort.

This unit would require the experience and professional skills of a CDR as division officer, with a LCDR as assistant. The scope of the operation would probably require maximum independent effort from these officers. There should be minimum duplication of function except to ensure the assistant could act in the absence of the division officer.

The engineering branch should be staffed to provide the full range of services discussed in Section B. Extensive engineering assistance to the maintenance and utilities branches could be required. Project planning documents would likely be prepared in-house as well as the bulk of AFC-43 design.

A separate maintenance control function should be established and staffed to provide for the essential control, planning and information feedback elements of the maintenance management system. A LT or GS position would be in charge and this individual should be skilled in industrial or production management.

The size of the work force and the likelihood that all typical branches (e.g., vehicles, maintenance, utilities) would exist indicates a need for experienced second level supervision at the branch level. General foremen (WS) or CWOs would likely be required.

EXHIBIT 18-9. STAFFING DECISION FOR LARGE, DISTRICT UNIT,  
COMMERCIAL/INDUSTRIAL ENVIRONMENT

The size of this unit would indicate large facilities maintenance responsibilities. The position of the unit in command echelon, and a favorable service environment for alternative sources for services and maintenance work, allows for some decrease in staffing. The following criteria are likely to apply:

- (1) District review of major facilities and resource actions;
- (2) AFC-43 program administered and executed by MLC/SMD;
- (3) Large maintenance work force;
- (4) Skills and capabilities commensurate with ordinary and recurring maintenance requirements;
- (5) Utilities provided from public/commercial sources;
- (6) Some services from commercial/other government agencies;
- (7) AC&I work in progress, district planned and FD&CC executed;
- (8) Formalized facility and project planning conducted by district. Unit input required.

Grade level for division officer and assistant would be LCDR and LT respectively. The assistant could be a first/second tour civil engineer. This unit is a good training ground for the assistant to gain facilities engineering experience.

The primary functions of the engineering branch would center around shop support, facilities planning and contract administration and inspection. The staff should be sized to provide a nucleus of technical talent. This will insure that adequate engineering input is available to the division officer and unit commander to properly manage the unit facilities and provide sound planning input to initiate and support district action. Design work and preparation of project planning documents should only be undertaken as work load leveling devices.

The basic maintenance control functions would be required, but the volume of work would probably require a smaller staff. This would permit one individual to perform more than one element of the control functions. Standing work and preventive maintenance would likely comprise the bulk of the maintenance effort.

A vehicle branch would probably not be necessary and utilities alone may not qualify for branch status. On the other hand, the size of the work force may dictate formation of two maintenance branches along trade lines. CWOs or WS general foremen as branch chiefs are appropriate.

EXHIBIT 18-10. SMALL, MLC, UNIT, COMMERCIAL/INDUSTRIAL  
ENVIRONMENT

On the bottom of the scale, this category of unit is likely to be the least complex and represent the simplest management situation. The following criteria are likely to apply:

- (1) District review of facilities and resource actions;
- (2) AFC-43 program administered and executed by the MLC;
- (3) Small maintenance work force;
- (4) Skills and capabilities work force commensurate with AFC-30 level maintenance requirements;
- (5) Utilities and bulk of routine services obtained from public/commercial sources;
- (6) AC&I work in progress unlikely; MLC and FD&CC administered and executed;
- (7) Facilities and project planning conducted by MLC with basic input from unit.

Management of the facilities engineering division at this type of unit would essentially be a one or two person show. The basic principles of sound facilities management would still apply but the scope of operations would be reduced to the extent that the Division Officer and the assistant should be capable of effectively managing the functions. Because the Division Officer does not have the diversity of talents within the division to draw on, this should not be a "starter" assignment. A second tour civil engineer and senior warrant officer as assistant is recommended.

The Division Officer performs the Engineering Branch functions. Second level supervision of the maintenance work force falls to the assistant.

EXHIBIT 18-11

FACILITIES ENGINEERING MANAGEMENT REPORT

Unit Facilities and Demographic Information

A. Authorized complement of unit and tenant commands.

	<u>Officer</u>	<u>Enlisted</u>	<u>Civilian</u>	<u>Total</u>
1. Unit				
2. Tenant Commands Ashore				
3. Other agency activities(1)				
4. Tenants Commands Afloat				

B. Annualized transient/student population  $\frac{(\# \times \text{length of stay})}{365} =$

C. Total square footage (maintained by Facilities Engineering)  
 Estimated replacement value of unit shore facilities  
 (not including land cost, should match CEDS data)

Organization and Staffing of Facilities Engineering Division

D. Attach a copy of the Division organization chart for Facilities Engineering Division.

E. Total authorized complement of Facilities Engineering Division.

<u>Military</u>			<u>Civilian</u>		
Officer	Warrant	Enlisted	General Schedule	Wage Grade	Total

Note (1): Include all Activities supported by the FE  
 (DOD, NOAA, FAA, ETC...)

F. Functional assignment of Facilities Engineering Division complement (actual) (1) (Distribute proportionally where individual assignments encompass more than one function.) Organizations utilizing service contracts to perform the functions identified may also provide annual cost breakdown by contract line item.

<u>Function</u>	Salaries * (Note 2)	# of personnel assigned* and/or contract cost
1. Performing services (refuse removal, pest control, vehicle dispatch, janitorial, etc.).		
2. Assigned to prime production and plant maintenance of utilities		
3. Assigned to functions not integral to facilities engineering operations (mess cooks, duty driving, barracks housekeeping, housing administration, fire protection, etc.)		
4. Performing C.G. Vehicle maintenance.		
5. Performing all other maintenance and repair work (Exclude supervision and overhead.)		
6. Direct (first & second level) Gov't oversight of contracts by personnel in G5		

Note:

- (1) For items G1, G2, G3, and G4 include supervisory and overhead functions.
- (2) Include HOLA, COLA, VHA and VHA Offset.
- (3) Do not include distribution system maintenance personnel.

\* If done by CG employees

\* \* List # of CG employees that performed the function and all contract costs dedicated toward the function.

Function	Salaries * (Note 2)	# of personnel assigned* and/or contract cost
7. Performing in overhead capacity for work identified in G5 (maintenance-control, procurement, inventory control, clerical in support of direct maintenance).		
8. Division management and administration (FEO, Asst. FEO, Division clerical and timekeepers, AFC-43/AC&I design and administration). For HQ units: Report AFC-43 and AC&I design and admin separately	_____	(AC&I) (AFC-43)
9. Totals.		
H. Distribution of effort based on authorized staff levels: (add salary costs to contract costs for each "sum" G\$ item below...e.g. sum G6\$ = G6 salaries + G6 contract costs)		
1. Worker/Supervisor (sum) G5\$ = _____ Workers/   Ratio for (sum) G6\$ Super. Maintenance Work		
2. Maintenance Overhead (sum) G7\$ = _____ %   (sum) G5\$ + G6\$		
3. Organizational Overhead (sum) G7\$ + G8\$ = _____ %   (sum) G9\$		
4. Formal Preventative Maintenance Program in place? (yes/no) Preventative Maintenance performed _____ %		
* If done by CG employees		
** List # of CG employees that performed function and, after backslash, list any contract costs dedicated toward the function.		

Financial Information of Interest to Facilities Engineering

I. Total Facilities Engineering Division salaries (from G9)

J. Obligations for entire unit for fiscal year of report:

	<u>AFC</u>	<u>Description</u>	<u>Amount - KS</u>
1.	43	All spent*	
2.	30	All	
3.	30	Non-energy utilities (e.g. water, sewer)	
4.	30	Energy utilities	
5.	30	Repair & maintenance service contracts	
6.	30	Housekeeping supplies, materials & janitorial service contracts	
7.	30	Repair & Maintenance supplies & materials (FE only)	
8.		Special Projects contracts funded by others (note source of funds).	
9.	30	Other FE service contracts (list)	
10.	EC&R	All	

K. AFC43 Backlog (KS)

|Work Load, Performance and Productivity Data\*\*

The information to be provided in this section should be limited to the maintenance component of the facilities engineering organization. (See item G.5).

L. Staffhours

1. Staffhours assigned: G5 \_\_\_\_\_ x 2080 hrs/yr =
2. Augmented (reserves, temporaries, overbilletts, transients, overtime, etc.). Include military watchstanding staffhours devoted to actual routine/preventive checks and inspections and corrective maintenance work. Do not include staff hours devoted to standby or "security" type services. Any compensatory time granted is to be deducted. List each category of augmentation including military hours in excess of 40 per week.
3. Total (L1 + L2)

|\* Report all AFC-43 spent on unit (regardless of who executed).  
 | Non-HQ units should add a backslash and report how much of the  
 | total AFC-43 was done via unit-executed non-industrial work  
 | order or AFC-43 self-help.

\*\*Sections L through O only apply to the G5 function. Sect L only applies to employees of the CG, not contractor employees.



4. Staffhours available - On board staffhours assigned, minus authorized nonproductive staffhours - e.g., leave, illness, training, administrative affairs, inspections, special liberty, compensatory time, etc.).

M. To be developed.

N. Repair and Maintenance Work Performed (see Exhibit 18-1)

	Actual Staffhours	Cost of Materials	Contract Costs
1. AFC-43*			
2. Minor AFC-30 ( > \$3K)			
3. Service AFC-30 ( < \$3K)			
4. Standing (Includes performing services)			
5. Total Work			
6. Emergency			
7. Non-emergency			
8. Unscheduled			
9. Scheduled			
10. Special projects funded by others (note source of funds)			

|Note: The following relationships should be true:

| (N1 + N2 + N3 + N4) = (N5) = (N6 + N7) = (N8 + N9)

N5 (staffhours) + N10 (Special Projects) = L4 (staffhours available)

0. For those jobs estimated before job commences (excluding standing work ) provide:

1. Total estimated staffhours for all work performed in-house.
2. Total actual staffhours required for all work performed in-house.

|\* Staffhours: Report only those G5 (CG employee) staffhours used to execute AFC-43 projects.

|Materials: Report material costs for Aft-43 materials used by G5 (CG employees) in executing AFC-43.

|Contracts: Report contract costs for AFC-43-type work done by an A-76 maintenance contractor.

P. Average Continuous (AFC-30) Backlog  
 | (Report dollar amount; not crew-weeks.  
 | Apply G5 salary rate -- G5 salary/L3 staff-  
 | hours assigned -- for that part of backlog  
 | anticipated to be completed by inhouse  
 | [non-contract] forces.)  
 |

Q. Miscellaneous

| 1. Average Housing Turnaround Time (days) \_\_\_\_\_ days  
 |

| 2. Ave. Minor AFC-30 Service Ticket Time (days) \_\_\_\_\_ days  
 |

| 3. Customer Comments =  $\frac{\# \text{ of Comments}}{\# \text{ of Work Orders}}$   
 |

R. Supplemental Family Housing Maintenance Data

- | 1. Number of Family Housing Units maintained.
- | 2. AFC-43 expended for family housing units including infrastructure work executed exclusively or primarily to support family housing.
- | 3. All AFC-30 (not including inhouse Wage Grade Salaries) expended for maintenance of housing units and the associated housing infrastructure.
- | 4. FTE and Salary total of G5 component used to maintain family housing units.

S. Remarks or comments (situational).  
 Should address type of MIS system, data quality, relationship to industrial pgm, A76 contract status, or other applicable info. Suggestions for improvement of this report or Chapter 18 are also appropriate here.

Prepared by \_\_\_\_\_ Phone No.

STANDARDIZED SALARY COSTS FOR  
USE IN PREPARATION OF  
FACILITIES ENGINEERING MANAGEMENT REPORT

<u>GRADE LEVEL</u>	<u>TIME IN SERVICE</u>
0-5	Over 16
0-4	Over 10
0-3	Over 6
0-2	Over 2
0-1	Under 2
CWO-4	Over 22
CWO-3	Over 18
CWO-2	Over 14
E-9	Over 16
E-8	Over 12
E-7	Over 8
E-6	Over 4
E-4	Over 2
E-3, E-2, E-1	Under 2
GS-ALL	Step 4
WG, WL, WS, ETC.	Step 4

Military "salaries" includes BAS and BAQ w/dependents whether the member actually draws them or not.

Military and GS salaries from federal pay scales. WG, WL, WS salaries from local scale; use 2080 hrs times hourly wage.

Include HOLA, COLA, or VHA as appropriate.

CHAPTER 19. CIVIL ENGINEERING AUTOMATED INFORMATION SYSTEMS

|A. General. The Civil Engineering program makes significant use of Automated Information Systems (AIS). The Civil Engineering Program Guidance Team (CEPGT) has established the Civil Engineering Technology Program (CETP) as the forum for addressing AIS issues for the Program.

|B. Civil Engineering TechnoloGy Program (CEPT). An explanation of the CETP is fully developed COMDTINST 11000.1. An excerpt from that INST showing organizational relationships is shown in Exhibit 19-1.

|C. Guiding Principles.

~

- | 1. All current and future information systems will be developed, procured and maintained in accordance with the appropriate Commandant Instructions.
- | 2. COMDT(G-SEC-1D) will serve as the headquarters coordinator for all program wide software procurement or development. COMDT(G-SEC-1D) will coordinate program AIS training requirements, budget / resource initiatives and policy coordination and approval with the Information & Technology Directorate - COMDT(G-SI).
- | 3. All AIS will be developed as standardized and easily supported systems. Use of Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) software will be used whenever they are the most cost effective solution.

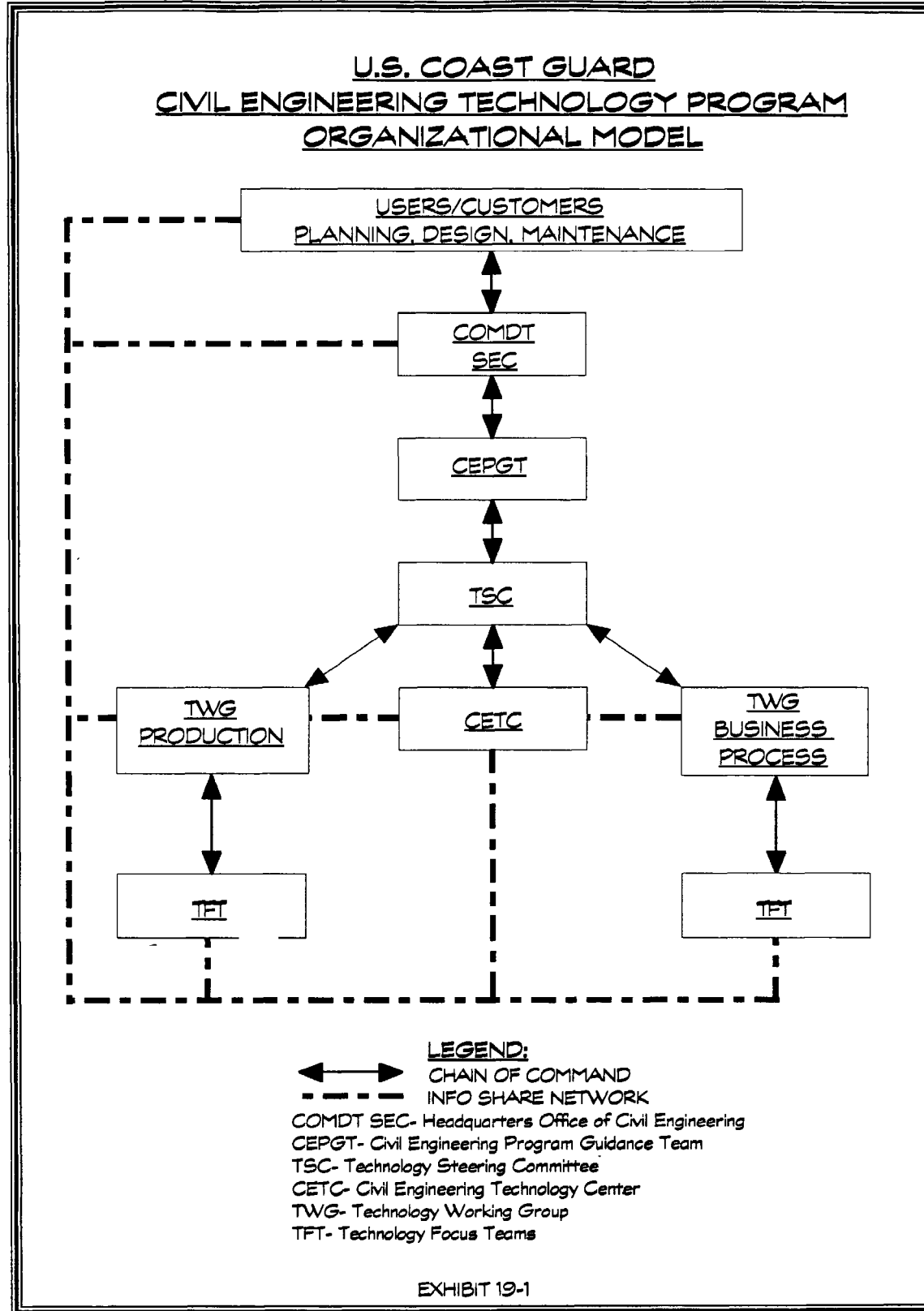
|D. Program AIS Initiatives.

- | 1. Civil Engineering Data System (CEDS)
  - | a. The system sponsor for CEDS is the Technology Steering Committee (TSC) and the Business Process Technology Working Group (B-TWG). The TSC/B-TWG defines data requirements and application functionality for CEDS. Operation & Maintenance (O&M)-support for CEDS is provided by the Civil Engineering Technology Center (CETC).
  - | b. All units that collect and manage shore facility information, including real property information, as well as AFC-43, AC&I, and EC&R project information will use CEDS. Specific detailed policy requirements for each area of responsibility will be covered separately in each programs policy documentation.

- c. CEDS collects and manages the core set of shore facility, real property, and project information for the Program.
- d. CEDS data shall be submitted electronically on a quarterly basis to COMDT(G-SEC-ID) by the fifteenth day after the completion of a fiscal quarter. A data utilization exception report has been provided to review the accuracy of the information within CEDS before submitting the quarterly data transfer.

2. Civil Engineering - Computer Aided Design and Drafting (CE-CADD) standards.

- a. The system sponsor for CE-CADD is the TSC and the Production Technology Working Group (P-TWG). The TSC/P-TWG defines data requirements and application functionality for CE-CADD. O&M support for CE-CADD is provided by the CETC.
- b. All Civil Engineering Program elements that use engineering information technology, shall use CE-CADD.
- c. CE-CADD is the most cost effective data collection and deliverable method for use of engineering computing technology for the Program. The use of CE-CADD will maximize long term gains by maximizing downstream reusability of data. In addition CE-CADD will ensure engineering data is stored and collected consistently and will conform to industry, national, and international standards as they become available.



CHAPTER 20. CIVIL ENGINEERING PUBLICATIONS/PROFESSIONAL DEVELOPMENT

A. Civil Engineering Directives and Publications. Exhibit 20-1 contains a listing of directives and publications pertaining to the civil engineering program. This information is provided as a quick reference source, but may not necessarily be as current as similar information provided in COMDTNOTE 5600, Directives, Publications, and Reports Index. Refer to that manual for the most up-to-date information.

B. Professional Development.

1. Definition. A professional engineer or architect is defined as a person who meets the educational and technical requirements established by the National Society of Professional Engineers (NSPE) or the American Institute of Architects (AIA) or the American Society of Landscape Architects (ASLA).

2. Registration.

a. Registration as a professional engineer or architect is a significant achievement for an individual and also enhances the image of the Coast Guard. Registration is sometimes essential to gaining the respect and confidence necessary to ensure the cooperation of others on sensitive engineering issues.

b. Each registered professional engineer and architect is authorized and encouraged to use the letters denoting his registration, i.e., "P.E.", "R.A.", or "R.L.A.", as appropriate, after his or her name on drawings and on all engineering-related correspondence sent to commercial firms and other agencies.

c. Engineers and architects are encouraged to sit for the Engineer-in-Training (EIT) exam, Architectural Licensing (NCARB) exam, or the Landscape Architectural (CLARB) exam as soon as possible after graduation, and then for the Professional Engineer's Exam (P.E.) as soon as experience requirements are met. Architects and engineers should write to the applicable organizations or to the state board to obtain an application and information.

- B. 2. d. Engineering technicians are encouraged to obtain an application and information by writing to:

National Institute for the Certification of  
Engineering Technologies (NICET)  
1420 King Street  
Alexandria, VA 22314-2715

- e. The use of permissive orders for military personnel and authorized administrative leave for civilian personnel for obtaining professional registration is encouraged.

3. Professional Societies and Organizations. Coast Guard engineers and architects are also encouraged to seek membership in professional societies and participate in them. Membership in one or more professional societies can help maintain close association with other professionals, keeps members abreast of the latest developments in the engineering and architectural disciplines, and gives other benefits which enhance professionalism. Some of the more prominent societies are:

American Institute of Architects (AIA)  
1735 New York Avenue  
Washington, D.C. 20006

American Institute of Certified Planners  
1776 Massachusetts Avenue  
Washington, D.C. 20036

American Society of Civil Engineers (ASCE)  
345 East 47th Street  
New York, New York 10017

American Society of Heating, Refrigerating and  
Air Conditioning Engineers, Inc. (ASHRAE)  
1791 Tulie Circle, NE  
Atlanta, GA 30329

American Society of Landscape Architects (ASLA)  
1733 Connecticut Avenue, N.W.  
Washington, D.C. 20009

American Society of Mechanical Engineers (ASME)  
1825 K Street N.W.  
Washington, D.C. 20006

Construction Specifications Institute (CSI)  
601 Madison Street  
Alexandria, VA 22314



3. Professional Societies and Organizations (cont'd)

Institute of Electrical and Electronic Engineers  
(IEEE)  
1111 19th Street N.W.  
Washington, D.C. 20036  
National Council of Architectural Registration Board  
(NCARB)  
1735 New York Avenue N.W.  
Washington, D.C. 20006  
National Society of Professional Engineers (NSPE)  
1420 King Street  
Alexandria, VA 22314  
The Society of American Military Engineers (SAME)  
607 Prince Street, P.O. Box 21289  
Alexandria, VA 22320-2289

C. Society of American Military Engineers Coast Guard Awards

1. Purpose. This section describes the procedures for the nominations and selection of the Society of American Military Engineers Coast Guard Awards.
2. Discussion.
  - a. Each year, the Society of American Military Engineers (S.A.M.E.) presents awards to the Coast Guard for engineering achievement. These awards, two to individuals and one to an engineering organization, promote and recognize exceptional performance and achievement within the civil engineering community.
  - b. The awards and their eligibility requirements are as follows:
    - (1) Cowart Plaque. The Cowart Plaque is awarded to a Coast Guard civil engineering or facilities engineering organization which has made the most outstanding contribution to the Coast Guard civil engineering program. All civil engineering and facilities engineering organizations are eligible with the exception of Commandant (G-SEC) and the shore maintenance and logistics commands. The contributions or achievements must have occurred during the fiscal year preceding the award. The nomination may also be based on the completion during that year of a multiyear activity.

- C. 2. b. (2) Oren Medal. The Oren Medal is awarded to an individual member of the Coast Guard civil engineering organization in recognition of the most outstanding contribution to the civil engineering program. The member may be a regular or reserve Coast Guard officer in an active, inactive, or retired status; or a Coast Guard civilian employee or retiree of equivalent grade. The achievement must have occurred during the calendar year preceding the nomination. The nomination may also be based on the completion during that year of a multiyear activity.
- (3) Sargent Medal. The Sargent Medal is awarded to an individual member in recognition of the most outstanding contribution to Coast Guard civil engineering or facilities engineering. The recipient may be an active duty Coast Guard warrant officer, chief petty officer, or petty officer; or a Coast Guard civilian employee of equivalent Grade. The achievement must have occurred during the calendar year preceding the nomination. The nomination may also be based on the completion during that year of a multiyear activity.
- c. Contributions or achievements may be in any discipline of the Coast Guard civil engineering program (e.g., ocean engineering, engineering physics, environmental engineering, design and construction procurement, real property, etc.) or in any facet of the program such as planning, design, construction, maintenance, management, administration, and research and development.
- d. An awards selection board will be convened each year by Commandant (G-SEC), The board chairman and its members will be assigned by precept from senior positions within the civil engineering community.

### 3. Procedures.

- a. All civil engineering organizations and units having facility engineering divisions are encouraged to submit directly to Commandant (G-S) information supporting their own nomination for the Cowart Plaque award. Such documentation should not exceed two letter-sized pages.
- b. Nominations for individual medals are also encouraged and should be submitted directly to Commandant (G-S). Supporting information for individual nominations should not exceed two letter-sized pages.

- C. 3. c. Nominations for achievements during a calendar year will be due by 1 February of the following year.
  - d. Award selection results will be announced by message. The Oren Medal is normally presented at the annual awards ceremony sponsored by the Society. The Cowart Plaque and the Sargent Medal are normally presented at a Coast Guard ceremony at the receiving unit.
- D. Civil Engineering Program Standards. Historically, the civil engineering program prepared officers for senior program assignments through a foundation of technical education coupled with increasingly responsible assignments. While program assignment decisions were based on experience and opportunity for job diversity within the program, training and professional development pursuits were primarily the responsibility of the individual officer.

The establishment of program standards (Exhibit 20-2) for civil engineering officers will define a gradual change in this approach. Our role as the Shore Facility Manager has become much more complex than the traditional civil and ocean engineering work. Now we must be equally proficient in contracting procedures, real property management, and a wide assortment of environmental compliance activities. Our program needs experienced and well-trained civil engineering officers to manage large organizations dealing with these and other issues. In the future, training and professional development accomplishments will be a consideration for assignment decisions just as job diversity and experience are today.

EXHIBIT 20-1. CIVIL ENGINEERING DIRECTIVES AND PUBLICATIONS

1. Manuals

<u>Title</u>	<u>Doc. No.</u>	<u>Originator</u>
<u>Aids to Navigation Manual (Technical)</u>	M16500.3	G-ECV-3
General hardware selection guide with installation and maintenance requirements and General Description Data Sheets.		
<u>Aircraft Maintenance Potential Hazardous Waste Items</u>	M16478.4	G-ECV-2
Reviews materials used in maintenance of Coast Guard aircraft and provides guidance on which materials are considered a hazardous waste for disposal purposes. Allows the selection of non-hazardous waste producing materials.		
<u>Automation Technical Guidelines</u>	M16500.8	G-ECV-3
Signal, power, and remote control and monitor system design and installation requirements for lighthouses.		
<u>Buoy Mooring Selection Guide for Chain Moorings</u>	M16511.1	G-ECV-3
<u>CERCLA Response Authority and Associated Coast Guard Policies</u>	M16465.29	
<u>Civil Engineering Manual</u>	M11000.11A	G-ECV-2
<u>Coating and Color Manual</u>	M10360.3	G-ENE
<u>Design Guide Series.</u> For planning expansion or renovation of existing facilities and construction of new facilities.		
Multi-Mission Station Design Guide	M11012.3	G-ECV-2
UPH Design Guide	M11012.6	G-ECV-2
<u>Energy Conservation Retrofit Handbook</u>	M11000.5	G-ECV-2
Publishes guidelines for identifying energy conservation retrofit options for shore facilities.		
<u>Facility Adequacy Scoring Technique (FAST)</u>	M11011.12	G-ECV-2
For making periodic assessments of the condition and adequacy of Coast Guard shore facilities.		

EXHIBIT 20-1 (cont'd)

<u>Title</u>	<u>Doc No.</u>	<u>Originator</u>
<u>Facility Category Codes</u>	M11010.11	G-ECV-2
Establishes standardized category codes, nomenclature, and required units of measure for identifying and cataloging Civil Engineering shore facility assets by functional uses.		
<u>Hazardous Waste Management</u>	M16478.1B	G-ECV-1
Procedures for compliance with Federal regulations for hazardous waste generation, transportation, treatment, storage and disposal by facilities/ships.		
<u>How to be Considered for A/E Contracts</u>	Brochure	G-ECV-2
Describes policies and procedures for the procurement of professional services related to the planning, design, and construction of Coast Guard shore facilities. Explains procedures Architect/Engineer firms must follow to obtain consideration for contracts, as well as the general methods used to evaluate and select A/E firms for specific projects.		
<u>Lighthouse Maintenance Management System Manual</u>	M16500.6	G-ECV-3
Defines the Coast Guard lighthouse maintenance organization within the framework of the multi-mission organization.		
<u>Lighthouse Preventive Maintenance Manual</u>	M16500.10	G-ECV-3
Includes equipment-specific PMS cards for PM of standard lighthouse equipment.		
<u>Lighthouse Systems Theory Handbook</u>	M16500.5	G-ECV-3
A handbook for use by field technicians assigned to maintain lighthouses.		
<u>Luminous Intensities of Aids to Navigation Lights</u>	M16510.2	G-ECV-3
Includes tabulated photometric data for all optical equipment and light characteristics. Aids in selection of lighting equipment to meet operational requirements.		
<u>Motor Vehicle Manual</u>	M11240.9	G-ECV-4
Prescribes policies, responsibilities, and standards for the administration of the Motor Vehicle Program.		

EXHIBIT 20-1 (cont'd)

EXHIBIT 20-1 (cont'd)

<u>Title</u>	<u>Doc No.</u>	<u>Originator</u>
<u>National Environmental Policy Act (NEPA) Implementing Procedures</u> Implementing procedures for compliance with NEPA.	M16475.1B	G-ECV-1
<u>Polychlorinated Biphenyls Use and Disposal</u> Requirements for use and disposal of equipment containing PCBs.	M16478.2	G-ECV-1
<u>Prime Power Checkout Procedure for Automated Lighthouses</u>	M10500.38	G-ECV-3
<u>Range Design Computer Program Manual</u> Describes use of Range Design Computer Program.	M16500.4A	G-ECV-3
<u>Real Property Management Manual</u> Establishes policy, responsibilities and procedures for administration of the Real Property Program.	M11011.9B	G-ECV-4
<u>Shore Facilities Energy Management</u> Updates, summarizes, and consolidates energy management guidance.	M11000.6	G-ECV-2
<u>Shore Facilities Planning Manual</u> Defines the shore facilities planning system for the AC&I Shore Construction Program. Compatible with and complements the Planning and Programming Manual, COMDTINST M16010.1A. Includes guidelines for master plans, AC&I data sheets, and the Shore Facility Requirements List.	M11010.6	G-ECV-2
<u>Space Component Standards</u> Provides space standards for AC&I Shore Construction Program. Has three sections: square foot criteria for 12 major building uses, individual space criteria, and net to gross multipliers.	M11012.7	G-ECV-2
<u>Tower Manual</u> Provides policy, procedures, and technical guidance for inspection, maintenance, and repair of towers.	M11000.4	G-ECV-3

EXHIBIT 20-1 (cont'd)

<u>Title</u>	<u>Doc No.</u>	<u>Originator</u>
<u>Water Supply and Waste Water Disposal Manual</u>	M11300.2	G-ECV-2
Establishes basic Coast Guard policy and instruction for design, operation and maintenance of water supply and waste water disposal systems.		
<u>2. Commandant Instructions (4 year life)</u>		
AC&I Project Proposal Report Documentation	11012.8	G-ECV-1
Design and Inspection Requirements; Control Devices for Motorized Hangar Doors of the Horizontal Sliding/Rolling Type.	11011.13	G-ECV-2
Enhanced Fire Protection in Coast Guard-Owned Housing, RCS-G-PS-5170	11101.18	G-PS
Hazardous Waste Management-Underground Storage Tanks	11162.1	G-ECV-2
Shore Facilities Planning and Consulting Team (PACT)	11010.10A	G-ECV-2
Society of American Military Engineers Coast Guard Awards	11000.15	G-ECV-3
<u>3. Technical Reports</u>		
Design Review of Loran-C Stations	CG-ECV-1-80	G-ECV-2
Guide for Restoring and Preserving Old and Historic Properties	CG-ECV-2-82	G-ECV-1
Interim Guidelines for Maintenance of an Energized SLT Antenna System	CG-600-4	G-ECV-3
Marine Borers	CG-600-2	G-ECV-2
Protective Coating Systems for Steel Towers	CG-ECV-1-82	G-ECV-3

EXHIBIT 20-1 (cont'd)

Verification of USCG Guyed #Tower Computer Program	CG-ECV-3-82	G-ECV-3
Value Engineering Study of CG Construction - Multi-Mission Stations	CG-600-1	G-ECV-2
Visual Signaling; Theory and Application to Aids to Navigation	CG-250-37	G-ECV-3



CIVIL ENGINEERING PROGRAM STANDARDS FOR EDUCATION, TRAINING, PROFESSIONAL DEVELOPMENT AND EXPERIENCE	EDUCATION				TRAINING										PROF. DEV		EXPERIENCE													
	BSC/BSARCH	MSC/MSARCH	/MSE	MGMT. DEGREE (ME/MSEM/MBA)	CONTINUING EDUC. (40 HOURS/YEAR)	ENVIRONMENTAL MANAGEMENT	PUBLIC WORKS MANAGEMENT	CONST. CONTRACT MANAGEMENT	CIVILIAN PERS. MANAGEMENT	FINANCIAL MANAGEMENT	REAL PROPERTY MANAGEMENT	PROGRAM MANAGEMENT	LEADERSHIP (JOLAM)	LEVEL ONE KO WARRANT TRNG	LEVEL TWO KO WARRANT TRNG	LEVEL THREE KO WARRANT TRNG	ENGINEER IN TRNG OR EQUIVALENT	PROFESSIONAL ENGR/ARCHITECT	COMDT DUTY	MLC(S) DIV. CHF.	FD&CC CO	CEU CO	MLC(SHORE) DUTY	FD&CC DUTY	CEU XO	CEU DUTY	FACILITY ENGINEER	FAC. ENG. ASST.	FAC. ENG. DUTY	
<b>BILLET DESCRIPTORS</b>																														
<b>CAPTAINS</b>																														
COMMANDANT (G-ECV)	R	H	H			H	D	D	R	H	H	R																		
MLC (SHORE DIVISION)	R	H	H			H	D	D	R	H	H	R																		
FD&CC (COMMANDING OFFICER)	R	H	H			H	D	D	R	H	H	R																		
<b>COMMANDERS</b>																														
COMMANDANT (G-ECV)	R	H	H			H	D	D	R	H	H	R																		
MLC (SHORE DIVISION)	R	H	H			H	D	D	R	H	H	R																		
FD&CC (DIVISION CHIEF)	R	H	H			H	D	D	R	H	H	R																		
CEU (CO)	R	H	H			H	D	D	R	H	H	R																		
FACILITY ENGINEERING	R	D	H			R	R	R	R	D	R	D																		
<b>LIEUTENANT COMMANDERS</b>																														
COMMANDANT (G-ECV)	R	D	D			D	D	D		H																				
MLC (SHORE DIVISION)	R	D	D			D	D	D		H																				
FD&CC	R	D	D			D	D	D		H																				
CEU XO/STAFF	R	D	D			D	D	D		H																				
FACILITY ENGINEER	R	D	D			D	D	D		H																				
ASSISTANT F.E.	R	D	D			D	D	D		H																				
<b>LIEUTENANTS</b>																														
COMMANDANT (G-ECV)	H	D																												
MLC (SHORE DIVISION)	H	D																												
FD&CC	R	D				D																								
CEU DUTY	R	D				D																								
FACILITY ENGINEER	R	D				D																								
FACILITY ENGINEER ASST.	R	D				D																								
F.E. DUTY / STAFF	H	D				D																								
<b>LIEUTENANT (J.G.)S</b>																														
COMMANDANT (G-ECV)	H																													
MLC (SHORE DIVISION)	H																													
CEU DUTY	H																													
FACILITY ENGINEER ASST.	H																													
F.E. DUTY / STAFF	H																													

D = DESIRED H = HIGHLY DESIRED R = REQUIRED

## CHAPTER 21. FORMS/REPORTS

- A. Forms/Reports. The effective management of the civil engineering program requires a timely and accurate system of reports and project documentation. Exhibit 21-1 provides a summary listing of forms, reports, due dates and the receiving organizations.

EXHIBIT 21-1 SUMMARY LISTING OF CIVIL ENGINEERING  
FORMS/REPORTS

<u>Form Number/Title</u>	<u>Due Date</u>	<u>Submit To</u>
Message Format <u>AC&amp;I Construction Contracts</u> <u>Notice of Award</u> RCS G-ECV-3079	As Required via message	G-ECV-4
CG-5517 (6-89) <u>AC&amp;I Final Data Form</u> RCS G-ECV-3100	6 Mos. After Project Completion	G-ECV-4
Letter Format <u>Civil Engineering</u> <u>Management Data Letter</u> RCS G-ECV-3085	30 Nov. Annually	G-ECV-4
CG-5518 (6-89) <u>Cost Estimate Summary Form</u> <u>AC&amp;I Project</u> RCS G-ECV-3301	As Required	G-ECV
CG-5520 (6-89) <u>Cost Estimate Summary Form</u> <u>OE Project</u> RCS G-ECV-3300	As Required	G-ECV-4
Letter Format <u>Facilities Engineering</u> <u>Management Report</u> RCS G-ECV-3092	1 Nov. Annually	G-ECV-4
Message <u>Fire Casualty Reports</u>	As Required	G-ECV-2
EPA 3500-7 (Rev. 8-85) <u>Federal Agency Pollution</u> <u>Abatement Plan-Project Report</u> RCS G-ECV-3103	1 May and 1 Nov. Annually	G-ECV-2
CG-5520A (6-89) <u>Operating Expense (OE)</u> <u>Project Certification</u> RCS G-ECV-3300A	As Required	G-ECV-4
CG-5521 (6-89) <u>Operating Guide 43 Project</u> <u>Funds Status Report</u> RCS G-ECV-3081	15 Days After Each Quarter	G-ECV-4

EXHIBIT 21-1 (CONT'D) SUMMARY LISTING OF CIVIL ENGINEERING  
FORMS/REPORTS

<u>Form Number/Title</u>	<u>Due Date</u>	<u>Submit To</u>
Letter Format <u>Value Engineering Summary</u> RCS G-ECV-3118	1 Nov. Annually	G-ECV-2
GSA Form 1166 (REV. 3-89) <u>Annual Report of Real Property</u> <u>Owned By or Leased to the</u> <u>United States</u> 0315-GSA-AN	1 Sep. Annually	G-ECV-4
EC&R Cat. 1A, 1B, 2A Project Summary Forms <u>Annual EC&amp;R Reports</u>	15 Aug. Annually	G-ECV-1
EC&R Cat. 1 (A&B) Work Progress Forms & Funds Status Form <u>Quarterly EC&amp;R Reports</u>	15 Days After Each Quarter	G-ECV-1

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CHAPTER 22. PROGRAMMETRIC POLICY FOR THE SHORE FACILITY CONSTRUCTION

- A. Purpose. This chapter provides policy and guidelines to aid in and promote the Shore Facility Construction Program's transition to the metric (SI) system of measurement.
- B. Applicable Directives. The metrication program for the Coast Guard is based on the following directives:
1. Executive Order 12770 of July 25, 1991, "Metric Usage in the Federal Government" states that "to the extent economically feasible by September 30, 1992 or by such other dates established by the Department or Agency the metric system of measurement shall be used."
  2. DOT Order "Department of Transportation Transition to the Metric System" 1020.1D of March 23, 1992 establishes department policy and procedures for transition to the metric system.
  3. COMDTINST 5411.2 "Coast Guard Transition to the Metric System" of October 9, 1990 establishes policies and assigns responsibilities for implementing the metric system of measurement within the Coast Guard.
- C. Policy. This policy becomes effective as the FY2001 AC&I Construction Program is developed. This means that the entire construction program will be in metric by the year 2001.
1. To effectively transition to the metric system, the AC&I Shore Construction Strategic Calendar, Figures 1-2 and 1-3 of COMDTINST M11010.14 Shore Facilities Project Development Manual, shall be used. Project documentation and construction will be in metric beginning with the FY2001 AC&I program. This means that all Planning Proposals submitted in January 1997 will be in metric.
  2. New construction and additions shall be in hard metric.
  3. Renovations shall be in hard metric or soft metric.
  4. Planning documentation [Planning Proposals, Project Proposal Reports Part (A), and Project Proposal Reports Part (B)] for the FY2001-2004 AC&I program shall be done using dual units with the metric units being the preferred units and the English units in parentheses except all dimensions on drawings will only be done in metric units. Beginning with the FY2005 AC&I program only metric units will be used.
  5. The use of dual units on contract documents (working drawings and specifications) is prohibited except in

- C. 5. (cont'd) certain instances in specifications where the construction industry is using dual units.
  - 6. The Metric Guide For Federal Construction provides guidance on SI and shall be used as a reference so that the program gains consistency in use of the metric system.
- D. Pilot Projects. The Facilities Design and Construction Centers are encouraged to continue their development of projects for the Pilot Metric Project Program. The experience gained from using metric units will aid in the transition and implementation of this policy.
- E. Training. Appropriate training shall be provided by each Maintenance and Logistics Command, Facilities Design and Construction Center, Civil Engineering Unit, Headquarter's Unit, and District Office for employees involved with the Shore Facilities Planning and Management System (SFPMS). The SFPMS is discussed in COMDTINST M11010.14 Shore Facilities Project Development Manual.

## CHAPTER 23. AC&I WATERWAYS

- A. Purpose. This chapter describes the AC&I Waterways approval process and provides policy and guidelines for the execution of AC&I Waterways projects.
- B. Applicable Directives.
1. COMDTINST M7100.3A, Financial Resource Management Manual
  2. COMDTINST M16500.3A, Aids to Navigation Manual - Technical
  3. COMDTINST M16500.7, Aids to Navigation Manual - Administration
  4. COMDTINST M16500.8A, Automation Technical Guidelines
- C. General Overview of the Waterways Program. The Coast Guard manages the most extensive and sophisticated system of aids to navigation (ATON) in the world. The Waterways program allows the Coast Guard to expand and improve this ATON infrastructure, and to carry out significant repair and replacement projects for existing aids. The need for Waterways projects arises from changes in waterway usage, the establishment or extension of waterways by the Army Corps of Engineers, or the identification of inadequacies in the existing ATON system. Many Waterways projects are generated by the Waterways Analysis and Management System (WAMS), which the Coast Guard uses to periodically review every waterway in the United States to validate the adequacy of its ATON system and identify opportunities for improvement. Waterways projects can be as simple as the purchase of a few buoys to mark a new channel, or as complex as the design and construction of multi-pile offshore range structures.
1. Roles and Responsibilities. There are several Coast Guard activities involved in carrying out the Waterways process. A brief description of their roles and responsibilities is given below. In addition, numerous stakeholders and customers external to the Coast Guard have an input in the process, such as private and commercial mariners, pilots associations, and local governments. For the Waterways process to function smoothly, it is essential that all parties communicate with each other on a regular basis.
    - a. Commandant (G-OPN). Commandant (G-OPN) approves Waterways projects and maintains the Waterways backlog list. In addition, Commandant (G-OPN) works with the Districts to develop the prioritized list of Waterways projects to be executed each fiscal year.
    - b. Commandant (G-SEC-2). Commandant (G-SEC-2) oversees the execution of Waterways projects and provides AC&I Waterways funding to Districts and CEUs.



- c. Commandant (G-SRM). Commandant (G-SRM) manages the AC&I Waterways account and coordinates the transfer of funds.
  - d. Districts. Districts identify the need for Waterways projects. In addition, they are responsible for preparing and submitting the documentation required to have the projects approved by Commandant (G-OPN). District ATON units (construction tenders, buoy tenders, and Aids to Navigation Teams) are often involved in the construction of Waterways projects and the deployment of Waterways buoys.
  - e. Civil Engineering Units. CEUs provide engineering support and contract administration for the execution of Waterways projects. They also assist the Districts in preparing the documentation required to have Waterways projects approved by Commandant (G-OPN).
2. Funding. Funding for the Waterways program comes from the overall Coast Guard AC&I appropriation, and is a subset of the shore AC&I account. Commandant (G-SEC-2) oversees the Waterways AC&I account, and provides funding for project execution. The general criteria for the use of AC&I funds for Waterways projects is given in COMDTINST M7100.3A. For a project to qualify for Waterways funding, it must be over \$10,000 for the establishment of a new aid to navigation; over \$200,000 for the improvement of an existing aid to navigation; or over \$200,000 and more than 75% renewed for the renewal of an existing aid to navigation.
- a. Purpose of Funds. Waterways funding is provided to cover a wide range of activities required for project execution. The most common of these include geotechnical and hydrographic surveys, A/E design services, construction contracts, quality assurance inspection, buoy procurement, and outfitting hardware for buoys and structures.
  - b. Administrative Funds. Commandant (G-SEC-2) provides funding to the CEUs each year to cover administrative expenses (such as travel) relating to their Waterways projects. An estimate of these expenses with a line item for each project must be listed separately when the CEU's overall request for AC&I administrative funding is submitted to Commandant (G-SEC) each year.
  - c. Method of Funds Transfer. Requests for funding must come to Commandant (G-SEC-2) via message. Commandant (G-SEC-2) will reply with a message approving or disapproving the request. If the request is approved, the funds will be transferred via a Financial Transfer Authorization (FTA). The FTA is initiated by Commandant (G-SEC-2), processed by Commandant (G-SRM), and the funds are transferred by Commandant (G-CFM). More information on message traffic is given in section C.3.g of this chapter.

3. Required Submittals. The Waterways process requires the submission of a number of documents by the District and the CEU to Commandant (G-OPN) and Commandant (G-SEC-2). These are summarized below, and are discussed in detail in various sections of this chapter.
  - a. Aids to Navigation Operation Request (CG-3213). This form is used to obtain approval for a Waterways project. It is prepared by the District (with assistance by the CEU as required), and submitted to Commandant (G-OPN) along with the PDS described below. (See sections D.1.a and D.2)
  - b. Project Development Submittal (PDS). The PDS is submitted with the CG-3213 to obtain approval for a Waterways project, if the project will involve a commercial contract, participation of an ISC, or is beyond the normal capabilities of an ATON unit. Developing the PDS is usually a joint effort between the District and the CEU, and includes a scope of work, cost estimate, and other technical information. (See sections D.1.b and D.2)
  - c. Design Development Submittal (DDS). The CEU forwards this package to Commandant (G-SEC-2) for review. This is required for all Waterways construction projects. The DDS includes specifications, drawings, cost estimates, and other applicable project documentation. (See section E.2.b.(3))
  - d. Bid Package. The CEU forwards a copy of the project bid package to Commandant (G SEC-2) when the bids are sent out to prospective contractors. (See section E.2.c.(2) (a))
  - e. AC&I Work Progress Report. This report is used to describe the progress of Waterways project execution. The CEU prepares this monthly report and submits it as an e-mail attachment in accordance with chapter 5 of this manual, with copy to Commandant (G-SEC-2). (See section E.3)
  - f. Final Data Form (CG-5517). When the project is completed, the CEU prepares this close-out form and forwards it to Commandant (G-SEC-2). (See section E.4)
  - g. Message Traffic. A wide variety of message traffic must be submitted to Commandant (G-SEC-2) during the Waterways project execution phase (see section E of this chapter). Copies of the messages must also be transmitted to Commandant (G-OPN) and Commandant (G-SRM) (i.e., the "TO" line of the message should be "COMDT COGARD WASHINGTON DC//G-SEC-2/G-OPN/G-SRM//"). The most common messages are listed below.

- (1) Request for authority to negotiate for geotechnical and hydrographic survey services.
- (2) Request for funding for geotechnical and hydrographic surveying.
- (3) Request for authority to negotiate for A/E design services.
- (4) Request for funding for A/E design services.
- (5) Request for IFB authority to solicit a construction contract.
- (6) Request for funding to award a construction contract.
- (7) Report of contract award.
- (8) Request for outfitting funds.

4. Phases of the Waterways Process. The Waterways process has two distinct phases, as described below. Sections D and E of this chapter will outline these phases in more detail.

- a. Project Approval and Prioritization. Commandant (G-OPN) and the Districts work closely together in this phase, with input from Commandant (G-SEC-2) and the CEUs as required. This phase begins when the District determines the need for a project, and ends when Commandant (G-OPN) develops a prioritized list of projects to be executed in a given fiscal year.
- b. Project Execution. Commandant (G-SEC-2) and the CEUs work closely together in this phase, with input from Commandant (G-OPN) and the Districts as required. This phase begins with the publication of Commandant (G-OPN)'s prioritized project list, and ends with a completed project.

D. Project Approval and Prioritization. This section describes the process by which Districts obtain Commandant (G-OPN) approval for Waterways projects, and by which a prioritized list of projects is developed for execution.

1. Required Documentation. The District must submit the documents listed below to Commandant (G-OPN) to obtain approval for a project and to have it added to the Waterways backlog list.

- a. Aids to Navigation Operation Request (CG-3213) and Aids to Navigation Operation Request Supplement (CG-3213A). These forms are used to describe, justify, and authorize proposed changes to the ATON system, and are required to obtain Commandant (G-OPN) approval for a Waterways project. These forms are discussed in more detail in COMDTINST M16500.7 and COMDTINST M16500.8A.
  - b. Project Development Submittal (PDS). The PDS includes the items listed below, and is discussed in more detail in COMDTINST M16500.8A. For a standard buoy project or a minor structure project that will be accomplished with a District resource, a PDS is not required. However, the information listed below should be included on the CG-3213 or CG-3213A.
    - (1) Scope of Work. This should give an overview and conceptual design of the project, including the location, number, and type of ATON involved. Note any historical property considerations associated with the project.
    - (2) Cost Estimate. The cost estimate should be as accurate and detailed as possible at this stage, since it will form the basis of future funding and prioritization decisions for the project. At a minimum, it should include the items listed below (as applicable), each shown separately.
      - (a) Geotechnical/hydrographic surveying.
      - (b) A/E design services.
      - (c) Individual construction cost for each structure.
      - (d) Inspection services.
      - (e) HQ-furnished hardware.
      - (f) CEU-furnished outfitting.
      - (g) Buoy and buoy outfitting cost. (Current buoy contract prices and outfitting costs are available from Commandant (G-SEC-2)).
    - (3) Aid Configuration. This includes the signal and power requirements, solar design, and range design.
2. Document Preparation and Submittal. The District lists the operational requirements for the project on the CG-3213 and CG-3213A. The District will often request the CEU's assistance in preparing the technical portions of the CG-3213 and CG-3213A and the PDS. Additional information on the preparation and submittal of these documents can be found in COMDTINST M16500.7 and COMDTINST M16500.8A.

- a. Technical Guidance. Technical information relating to ATON hardware and systems can be found in COMDTINST M16500.3A and COMDTINST M16500.8A.
  - b. Preliminary Site Survey. The CEU may request authority from Commandant (G-SEC-2) (via message traffic) to negotiate with an A/E for a preliminary site survey. This should be done on a case-by-case basis, if the CEU is uncertain about the site conditions and feels a survey is warranted in order to prepare an accurate cost estimate. Commandant (G-SEC-2) will provide the authority to negotiate via a reply message. When the CEU has reached a firm negotiated price with the A/E, the CEU must forward this price with a request for funds via message traffic to Commandant (G-SEC-2). Commandant (G-SEC-2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA.
  - c. Submission of Documents to Commandant (G-OPN). When the required documents have been prepared, the complete package must be submitted to Commandant (G-OPN) to obtain approval for the project and have it added to the Waterways backlog list.
3. Project Approval. Approval of Waterways projects and their addition to the Waterways backlog list are the responsibility of Commandant (G-OPN). Information on this process is available in COMDTINST M16500.7.
    - a. Technical Review by Commandant (G-SEC-2). When the required documents have been received by Commandant (G-OPN), they will often be forwarded to Commandant (G-SEC-2) for technical review and comment prior to project approval. Commandant (G-SEC-2) will return the package to Commandant (G-OPN) with any comments on the design. Commandant (G-OPN) in turn will forward these comments back to the District along with their approval (or disapproval) of the project. The comments (if any) must be incorporated in the design when the project is approved for execution.
    - b. Approval "In Principle". In most cases, Commandant (G- OPN) will approve Waterways projects and add them to the Waterways backlog list. At this stage, the projects are only approved "in principle." This means that Commandant (G-OPN) has agreed they are valid Waterways projects, but has not yet approved them for funding and execution.
  4. Project Prioritization. The Waterways backlog list maintained by Commandant (G-OPN) normally contains about five times more projects (in total dollar value) than the funds available for

project execution in any given fiscal year. It is Commandant (G-OPN)'s responsibility to prioritize these projects and develop a final list of projects for execution each year, based on the expected level of funding. Commandant (G-OPN) takes a number of factors into account in prioritizing the projects, and works closely with the Districts to ensure their input is fully considered in this process. Additional information on this process is available in COMDTINST M16500.7.

- a. The Waterways "POP" List. The prioritized list of projects developed by Commandant (G-OPN) is known as the Planned Obligation Prioritization ("POP") list. This list is normally prepared at the start of the fiscal year. It includes those projects that are approved for funding and execution in the current fiscal year, and a tentative list of projects for the following fiscal year. Commandant (G-OPN) distributes this list to the Districts, with a copy to Commandant (G-SEC-2). Commandant (G-SEC-2) in turn forwards the list to the cognizant CEUs.

E. Project Execution. This section describes the process by which Waterways projects are executed. Waterways projects are approved for funding in a given fiscal year, and it is imperative that the funds be obligated that same fiscal year. It is therefore incumbent upon the CEUs to execute their projects in a timely manner. However, two basic criteria must be satisfied before Commandant (G-SEC-2) will transfer funds for Waterways project execution: 1) a CG-3213 for the project must have been signed by Commandant (G-OPN); and 2) the project must be on Commandant (G-OPN)'s POP list.

1. Buoy Projects. Some Waterways projects only involve the establishment of new buoys stations, while others include buoys along with a construction component. Commandant (G-OPN) provides Commandant (G-SEC-2) with a list of Waterways buoys to be procured in a given fiscal year, along with the POP list. Commandant (G-SEC-2) purchases the buoys from a Headquarters-administered buoy fabrication contract, and has them shipped directly to the Coast Guard delivery destinations.

- a. Outfitting. When the buoys are ordered, Commandant (G- SEC-2) will furnish buoy outfitting funds to the Districts via an FTA. This Waterways AC&I funding is on a per-buoy basis, and the amount is derived from a standard "menu" of typical outfitting hardware for lighted and unlighted buoys. The District must execute these funds to purchase ATON hardware within 90 days of receipt, or the funds will be retrieved and distributed elsewhere.

2. Structure Projects. Waterways projects include the design and construction of ATON structures ranging from simple daybeacons to multi-pile offshore range structures. The design work is done in-house by the CEUs, and through CEU-administered A/E design services contracts. Construction is carried out by Coast Guard construction tenders and commercial marine contractors.
  - a. Site Survey. If geotechnical and hydrographic surveys are required for the design effort, the CEU must request authority to negotiate with an A/E for these services via message to Commandant (G-SEC-2). Commandant (G-SEC-2) will provide the authority to negotiate via a reply message. When the CEU has reached a firm negotiated price with the A/E, the CEU must forward this price with a request for funds via message to Commandant (G-SEC-2). Commandant (G-SEC-2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA.
  - b. Project Design.
    - (1) In-House Design. In-house design of Waterways projects is an option for the CEUs, depending on the complexity of the projects, types of expertise required, and staff availability and workload level.
    - (2) A/E Design Services. The CEU must request authority to negotiate with an A/E for these services via message to Commandant (G-SEC-2). Commandant (G-SEC-2) will provide the authority to negotiate via a reply message. When the CEU has reached a firm negotiated price with the A/E, the CEU must forward this price with a request for funds via message to Commandant (G-SEC-2). Commandant (G-SEC-2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA. For extensive projects requiring a major design effort that would likely span the fiscal year, Commandant (G-OPN) will put the design portion on the POP list one year, and the construction portion on the POP list the following year.
    - (3) Design Development Submittal (DDS). A DDS must be submitted for all projects, regardless of their relative simplicity or complexity, before Commandant (G-SEC-2) will provide IFB authority (see section E.2.c.(2)(a) of this chapter) or approve any further funds transfers for the project. For all A/E designs, and for in-house designs of sufficient complexity that an interim review is warranted, the DDS must be submitted at the 35% stage. For routine in-house designs, the DDS may be submitted up to the 95% stage. The DDS must be submitted to Commandant (G-SEC-2) for technical review and comment,

and to the District for review and comment from an operational perspective. Concurrent review is recommended so as not to delay the design effort. The DDS must include the information listed below.

- (a) Cover Letter. The cover letter must note the project title and number, the stage of design that the submittal represents, and any other pertinent information that would assist the reviewer in evaluating the design. In addition, the cover letter must explain how the design addresses the Commandant (G-SEC-2) comments (if any) that were generated by the review of the CG-3213 (see section D.3.a of this chapter).
- (b) Chartlet. A chartlet or other site plan must identify the location of the project and show specifically where the structures are to be built.
- (c) Drawings. Design drawings must be included with the DDS. For routine projects, submittal of a sketch or standard design drawing is acceptable.
- (d) Specification. A detailed specification or statement of work must be included.
- (e) Cost Estimate. A thorough, detailed, and accurate cost estimate must be included. It must contain the same information listed for the PDS submittal in section D.1.b.(2) of this chapter. If there is a major deviation in the estimated project cost at this stage compared with the earlier estimate (a 30% or greater difference), the DDS must include an explanation for the deviation.

c. Project Construction.

- (1) In-House. For projects that will be carried out by District resources (i.e., construction tenders), a message requesting funds for materials and outfitting hardware must be forwarded by the District to Commandant (G-SEC-2). Commandant (G-SEC-2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA.
- (2) Commercial.
  - (a) Invitation for Bids (IFB). Commercial construction normally requires the issuance of an Invitation for Bids (IFB) to solicit a contractor to perform the work. The CEU must request IFB authority via message to Commandant (G-SEC-2). Commandant



(G-SEC-2) will provide IFB authority via a reply message. The CEU must also furnish a copy of the bid package to Commandant (G-SEC-2) when the packages are sent out to the prospective bidders. The bid package submitted to Commandant (G-SEC-2) must include a cover letter explaining how the final design incorporates any reviewer comments generated during the DDS review (see section E.2.b.(3) of this chapter). Submittal of the bid package is required before Commandant (G-SEC-2) will transfer funds for contract award.

- (b) Request for Contract Award Funding. After bids have been received, and the CEU has determined that the low bidder is responsive and responsible, the CEU must submit a message to Commandant (G-SEC-2) listing the high and low bidders, their bids, and the Government estimate. The CEU must also fax or mail a copy of the bid abstract to Commandant (G-SEC-2) at this time. The message must request the funds to award the contract, and may also request funds for inspection services, contingencies, and outfitting. Commandant (G-SEC-2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA.
- (c) Report of Award. Upon award of the contract, the CEU must forward a message to Commandant (G-SEC-2) listing the contractor, award amount, and date of award.

- (3) Term Pile Contract. If a CEU has a contract in place for commercial pile driving, and they use it to carry out construction of a project, a request for IFB authority is not necessary. In such a case, the CEU need only submit the contract line item price for the project along with any materials or outfitting required and a request for funding via message to Commandant (G-SEC-2). Commandant (G-SEC- 2) will indicate approval in a reply message and will initiate a transfer of funds via an FTA.

- d. Structure Outfitting. Funds for structure outfitting hardware must be requested from Commandant (G-SEC-2) via message. Commandant (G-SEC-2) will indicate approval via a reply message, and will initiate a funds transfer via an FTA. The funds will be transferred to the CEU if the CEU intends to procure the hardware, or to the District if the District intends to furnish the hardware to the CEU.

- (1) HQ-furnished Equipment. There are a few unique equipment items, primarily for larger installations, that are furnished directly by Commandant (G-SEC-2). These will be provided on a case-by-case basis upon request via message to Commandant (G-SEC-2).

3. AC&I Work Progress Reporting. The AC&I Work Progress Report is discussed in detail in chapter 5 of this manual. All Waterways projects on which the CEU is working must be included in the report. The CEU should forward this report via e-mail as described in chapter 5. In addition, a copy of the report must be forwarded via e-mail directly to Commandant (G-SEC-2).
4. Project Close-out. A final data form CG-5517 must be submitted to Commandant (G-SEC-2) in accordance with chapter 6 of this manual when the Waterways project is complete. Because this form is designed for shore construction projects, not every item will be applicable to a Waterways project. However, certain items are applicable and must be included: description of the project, construction start and completion dates, contract award amount, and final project cost. In addition, a separate itemized list of AC&I funds expended on the project and their purpose must be submitted.