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	Engineering and Design OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION MANUAL FOR PROJECTS AND SEPARABLE ELEMENTS MANAGED BY PROJECT SPONSORS	
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Regulation
No. 1110-2-401

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**Engineering and Design
OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION
MANUAL FOR PROJECTS AND SEPARABLE ELEMENTS MANAGED
BY PROJECT SPONSORS**

1. Purpose

This regulation provides instructions for the preparation of operation and maintenance manuals outlining the responsibilities of those local sponsors that have entered into binding agreements with the Secretary of the Army to be solely responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R), and to pay 100 percent of the associated project costs.

2. Applicability

This regulation applies to HQUSACE elements, major subordinate commands, districts, laboratories, and field operating activities having civil works responsibilities.

3. References

- a.* PL 99-662.
- b.* CFR Part 208, Flood Control Regulations, Section 208.10, Local Flood Protection Works; Maintenance and Operation of Structures and Facilities.
- c.* ER 5-7-1(FR), Project Management.
- d.* ER 1110-2-101, Reporting of Evidence of Distress of Civil Works Structures.
- e.* ER 1110-2-240, Water Control Management.
- f.* ER 1110-2-1405, Hydraulic Design for Local Flood Protection Projects.
- g.* ER 1110-2-1407, Hydraulic Design for Coastal Shore Protection Projects.

h. ER 1110-2-1457, Hydraulic Design of Small Boat Navigation.

i. ER 1110-2-1458, Hydraulic Design of Shallow Draft Navigation Projects.

j. ER 1110-2-2902, Prescribed Procedures for the Maintenance and Operation of Shore Protection Works.

k. ER 1130-2-303, Maintenance Guide.

l. ER 1130-2-339, Inspection of Local Flood Protection Projects.

4. Responsibilities

a. The district commander is responsible for developing an OMRR&R manual for each project and separable element constructed under a separate project cooperation agreement (PCA), or functional portion of a project or separable element, reporting the status of the manual through the project management system as required by ER 5-7-1(FR). Normally, the Engineering Division will be assigned the overall responsibility for preparing a draft OMRR&R manual with appropriate inputs from other disciplines and, in consultation with the project sponsor, furnishing the draft manual to the project manager for coordination with the project sponsor, and preparing the final OMRR&R manual for approval. For a functional portion, the OMRR&R manual is an interim manual pending completion of the entire project or separable element.

b. The major subordinate commander is responsible for review and approval of the manual.

c. The project sponsor, normally through a permanent committee consisting of or headed by an official usually called the "Superintendent," is

responsible for carrying out the provisions of the OMRR&R manual.

5. Policy

The OMRR&R manual will include coverage of all OMRR&R subjects required by the PCA and existing regulations, in detail sufficient to ensure proper OMRR&R accomplishment by the project sponsor. Project sponsors, subject to review and approval of the district commander, may prepare supplements to the manual. The following paragraphs discuss the sections of a suggested table of contents (see Appendix A). Modifications shall be made as necessary to accommodate requirements of differing projects.

a. Section 1, General. Provide a general description of the project and include its specifically authorized purpose, features, and functions.

b. Section 2, Authorization. Cite the authorizing legislation and provide a summary.

c. Section 3, Location. Describe the physical setting for the project. Give the relationship to political boundaries such as state, county, city, and town.

d. Section 4, Pertinent Information. Give the history of the area relative to the project purposes and summary information that would be pertinent to the OMRR&R of the project that was developed during planning and design studies, such as: for a flood control project, provide a summary of the climate, weather, hydrologic data to include norms and extremes, etc.; for a navigation project, provide information on currents, winds, waves, tides, navigation aids, hazards, etc.; for a shore protection project, provide erosion/accretion storm responses and annual volumes, wind and wave roses, tides, etc.

e. Section 5, Construction History. Furnish a historical summary of the project construction to include contracts (start and completion dates and costs) and names of contractors, contracting officers, and resident engineers. Reference a complete set of as-built plans, specifications, and drawings and include these as Appendix A to the manual.

f. Section 6, Project Performance. Describe the protection provided by the various reaches of a flood control or shore protection project; discuss the consequences of flow or other conditions exceeding the project design; or describe the authorized navigation project design fleet and benefits thereto as the case

may be. Discuss the mitigation and/or benefits of all other project functions such as cultural resources, environment, recreation, water supply, and hydropower. Indicate that protection of project benefits is a prime objective of OMRR&R.

g. Section 7, Project Cooperation Agreement. State: The (*signatory*) and (*signatory*) (provide official nomenclature) have entered into a PCA for this project on (*date*) as required by Public Law (99-662). A copy of the duly executed PCA is included as Appendix B of the manual.

h. Section 8, Operation. Cover in detail the operations of the project that are necessary for the safe and efficient functioning of the project to produce the benefits set forth in the project authorization. The operational requirements for nonreservoir projects are to be presented as operation plans covering essentially the who, what, where, when, and how of the various project operations. An outline of operation records to be maintained and available for inspection is to be provided. The operation of reservoirs, covered in water control manuals, in accordance with ER 1110-2-240, shall be separate from this operation and maintenance manual.

i. Section 9, Emergency Operations. Present the emergency operation plans that cover preparations for and responses to project emergency conditions. An outline of emergency operation records to be maintained and available for inspection is to be provided. Plans should cover, but not be limited to, such items as:

- (1) Chain of responsibility.
- (2) Emergency communications network including redundancies (internal and external).
- (3) Local emergency response assistance such as fire, police, medical, and Red Cross.
- (4) State and Federal emergency response agencies.
- (5) Flood fight or other plans that may have been part of design documentation.

j. Section 10, Maintenance and Inspection. Cover the maintenance and inspection details required for the proper care and efficient operation of the various project elements. These plans may be combined or separate as best suits the particular project. The guidance for the proper formulation and the contents of this section are contained in ER 1130-2-303.

Adaptations needed to satisfy conditions not covered in the ER are encouraged. Outlines of the maintenance and inspection records to be maintained and available for Government inspection are to be provided. Government inspections will be performed in consultation with the project's sponsor. Indicate that the district engineer may update the manual for changed conditions or if warranted to correct conditions discovered during inspections. Such updating will be performed in consultation with the project sponsor.

k. *Section 11, Surveillance.* Set forth a surveillance program covering appropriate measurements, observations, and other activities to be performed that will ensure project benefits are being obtained. An outline of surveillance records to be maintained and available for inspection is to be provided. This program should cover, but is not limited to, such activities as:

(1) Routine stage and discharge records to show continued satisfactory performance or provide timely notice that attention is required.

(2) Hydrographic and land surveys as required to indicate when periodic dredging, correction of bank erosion, correction of levee settlement, etc., are to be performed.

(3) Records of vessel traffic entering and leaving the harbor.

(4) Special surveillance as may be covered in the project design documents.

l. *Section 12, Repair, Replacement, and Rehabilitation (RR&R).* Include the following in this section: "Repair is considered to entail those activities of a routine nature that maintain the project in a well kept condition. Replacement covers those activities taken when a worn-out element or portion thereof is replaced. Rehabilitation refers to a set of activities as necessary to bring a deteriorated project back to its original condition. RR&R actions are to conform to

FOR THE COMMANDER:

1 Appendix
APP A - Operation and Maintenance
Manual Sections

the project as-built plans and specifications unless other arrangements are made with the district commander. These activities are the responsibility of the project sponsor." Cover in this section any RR&R activities not covered in previous sections that may require unusual treatment.


m. *Section 13, Notification of Distress.* Cover the requirements of ER 1110-2-101 so that district commanders may see that appropriate actions are taken.

6. Regulatory Requirements

Project sponsor maintenance of flood control projects may require an activity under the jurisdiction of the Corps' Regulatory Program. Although most activities which would normally be involved in maintenance of flood control projects are exempt from the statutory requirement for a Corps permit, or may be covered by a general permit, some maintenance activities may require specific authorization. Therefore, the project sponsor and the Corps will identify the operation and maintenance activities that will require a permit and those that are exempt. Permit requirements and exemptions identified before each project manual is written will be included in the project manual. Permit issues arising subsequent to the manual publication will be handled through the normal Corps regulatory process.

7. Approval

The original and any subsequent revisions to the OMRR&R manual require approval of the major subordinate commander. However, the major subordinate commander is hereby authorized to delegate the approval authority to district commanders. The original (signed document) shall be kept on file in the district.



R. L. VANANTWERP
Colonel, Corps of Engineers
Chief of Staff

APPENDIX A OPERATION AND MAINTENANCE MANUAL SECTIONS

- Section 1. General
- Section 2. Authorization
- Section 3. Location
- Section 4. Pertinent Information
- Section 5. Construction History
- Section 6. Project Performance
- Section 7. Project Cooperation Agreement
- Section 8. Operation
- Section 9. Emergency Operations
- Section 10. Maintenance and Inspection
- Section 11. Surveillance
- Section 12. Repair, Replacement, and Rehabilitation
- Section 13. Notification of Distress
- Appendix A. As-Built Information
- Appendix B. Project Cooperation Agreement