

CHAPTER 8

AUTOMATED DESIGN AND MANAGEMENT PROCEDURES

8-1. Need for Automated Procedures.

a. In many of the analyses described in this manual, tedious repetitive calculations for alternative designs and analysis of the design sensitivity to various parameters are required to answer the many "what if" questions which arise. These repetitive calculations are naturally conducive to computerization to allow the evaluation of more alternatives and more detailed sensitivity analyses.

b. The blending of the engineering techniques for dredging design and management with the computerized approach resulted in a computer program called the Automated Dredging and Disposal Activities Management System (ADDAMS). This is a centralized program containing different computerized modules and an associated data management system. In creating ADDAMS, the developers agreed that the program must be easy-to-use, easy-to-modify, internally consistent, and well documented.

c. ADDAMS is set up so that users do not need to be computer experts to run the program. Logging into the computer is the most sophisticated step in using the program. Once inside ADDAMS, the user is led through the program with the aid of keywords and menus. ADDAMS has a data-base management system that can save and update a user's data from one run to the next, but in ADDAMS the system is essentially transparent to the user. All the user needs to do is assign a file name to the data file.

8-2. Current Status.

a. The ADDAMS program now performs a large number of different functions. The program, however, is modular in that the user need learn only that portion of the program needed to accomplish a given task. Current modules now available in ADDAMS include those related to short-term sizing (Chapters 3 and 4), long-term sizing (Chapter 5), a disposal area sequencing model, and other modules related to disposal area design and cost-estimating. Figure 8-1 is a schematic showing how the modules are related through an executive program that controls the overall program and manages the data. Another benefit of the modular nature of the program is that it is fairly easy to add new features or upgrade old modules. It is even possible to maintain old and new versions of a given module data-base update. Since ADDAMS will continually be improved and upgraded, as any often-used computer program, it is highly desirable to upgrade the program in one aspect without affecting other program features.

b. The ADDAMS program is currently running and available for CE users on the CDC Cybernet system. The user's guide and documentation are available in draft form (item 19). When these documents have been published, the program will be made available to the public through the Engineer Computer Program Library at WES. The program is being updated regularly. As it is applied to various studies, those using the program are identifying areas that can be

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upgraded, and the developers are incorporating these suggestions into the program. This should make the program more flexible as well as more relevant to real world problems.

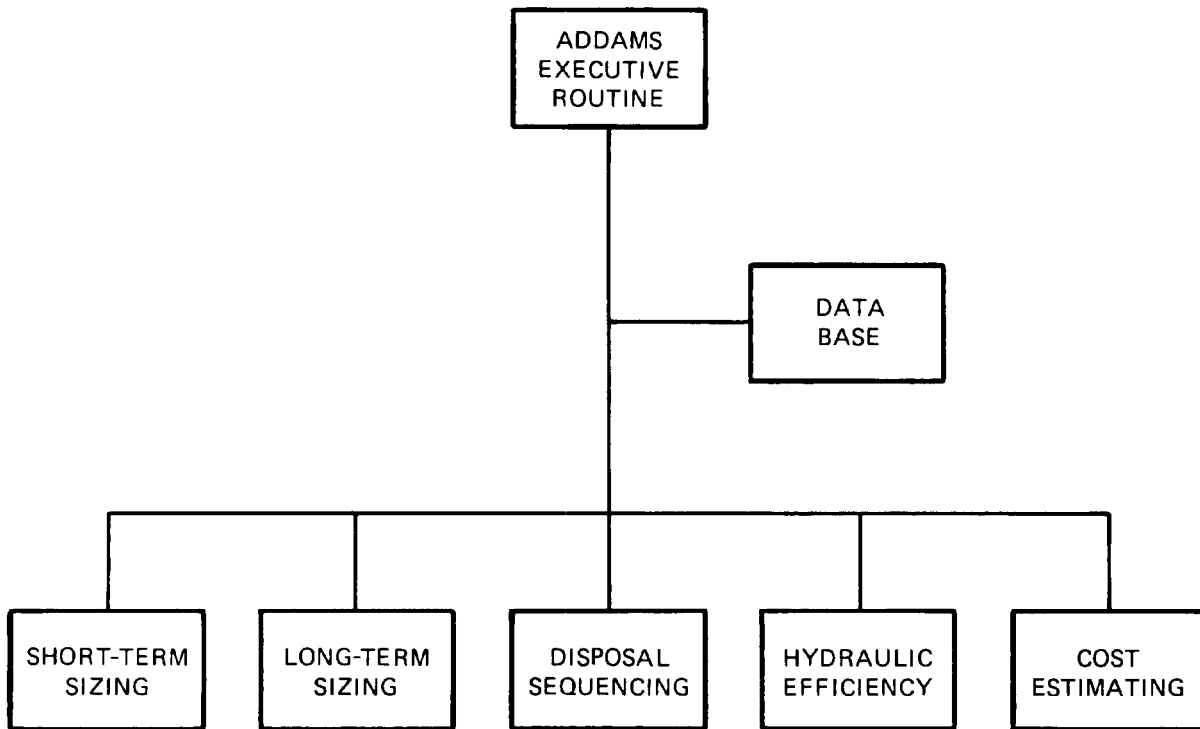


Figure 8-1. Schematic of current ADDAMS program