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PROJECT INFORMATION MANAGEMENT SYSTEM (PIMS)
FOR MILITARY CONSTRUCTION:

FUNCTIONAL DESCRIPTION

September 1980

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PREFACE

This functional description of the computer-based Project Information Management System (PIMS) was prepared for the Facilities Programming Directorate of the Office of the Secretary of Defense. The content and format follow the guidelines prescribed in "Automated Data System Documentation Standards," OASD(Comptroller), September 1977.

Throughout the preparation of the PIMS functional description, we benefited from the assistance and insights provided by DoD staff members. Mr. John F. Rollence provided guidance and direction to the overall effort; and Messrs. V. Bandjunis, E. Rogner, M. Marshall, O. Smiley and A. South, in particular, provided useful information and suggestions which influenced the overall PIMS design.

Within LMI, Mr. Thomas White deserves special recognition for his work on the June 1980 Progress Report, "Conceptual Design for Computerized Project Information Management System." It formed the basis of this functional description. Technical reviews were provided by Messrs. J. Lessig, D. Srull, Dr.J. Parr, R. Wood, and W. Appelle. Special acknowledgement is given to Mr. Evan Harrington who, as consultant, made significant contributions to the PIMS conceptual design.

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EXECUTIVE SUMMARY

THE NEED FOR PIMS

Each year, approximately 800 construction projects are proposed by the Military Departments and Defense Agencies for the military construction (MILCON) program. The annual cost of this program exceeds \$2 billion. The status of each proposed project must be tracked through reviews by the Office of the Secretary of Defense (OSD), the Office of Management and Budget (OMB), and four Congressional committees. Those approved for construction must continue to be tracked through design, contracting, acceptance by the government, and contract close-out--a period of about five years. At any one time, there are over 4,000 construction projects, in various stages of review, approval, and execution.

The Office of the Deputy Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (Installations and Housing) (MRA&L(I&H)) is responsible for the overall management of the MILCON program throughout this process. It assures the adequacy and balance of proposed programs during OSD reviews and provides evidence and supports the program at OMB and Congressional hearings. To meet these responsibilities, MRA&L(I&H) requires a broad base of information about individual construction projects and the entire MILCON program. The demand for this information has grown significantly in recent years due to increased Congressional requests and zero based budgeting requirements. Meeting these demands using traditional manual methods has become a monumental effort. Meaningful analysis of this information is almost impossible.

A functional description of a computer-based Project Information Management System (PIMS) for military construction that will overcome the existing difficulties has been developed. PIMS will provide the information and capability needed by MRA&L(I&H) to meet its management responsibilities.

WHAT PIMS WILL PROVIDE

PIMS will give MRA&L(I&H) access to accurate and timely data concerning all proposed and ongoing projects in the MILCON program. Data for individual projects will be divided into three major sections: 1) administrative, 2) planning and design, and 3) construction.

A key administrative data element in the proposed PIMS will be a Project Objective Code which will identify the purpose of, or need for, each project. Nine project objectives have been defined:

- to support a new program.
- to support the redeployment of a current program.
- to support the expansion of a current program.
- to improve the operational effectiveness of a current program.
- to implement a base closure or realignment.
- to reduce energy consumption.
- to improve pollution abatement.
- to improve health and/or safety.
- to improve quality of life.

Summaries of this information for proposed MILCON programs will be particularly useful during programming and budget reviews.

The planning and design section will contain data on estimated and actual design costs, contract award dates, and design completion dates; and the status of change orders, lost design cost, and design delays and/or design cancellations.

The construction section will provide data on programmed, authorized, appropriated, and actual total construction costs and scope; expected and actual contract award dates, completion dates, and contract amounts; and the status of change orders, contract claims, and construction delays and/or

cancellations. Most of these data are currently available in existing data systems within the Military Departments and Defense Agencies.

Equally important is the capability that PIMS will provide for processing project data and preparing a variety of management reports and analyses. PIMS will not only improve the capability of MRA&L(I&H) to meet current information requirements, but its processing and computational routines will also allow the staff to undertake analyses not now feasible. The time required to prepare ad hoc reports will be greatly reduced, since many requests now handled by the Military Departments and/or Defense Agencies will be handled directly by MRA&L(I&H), using PIMS.

HOW PIMS WILL FUNCTION

It is recommended that PIMS be operated and maintained by the Family Housing System Office (FHSO) of the Naval Facility Engineering Command. This office is currently installing a data base system for the DoD Family Housing Program for MRA&L(I&H) on a dedicated minicomputer, with an on-line terminal in the Facilities Programming Directorate. Collocating PIMS with the Family Housing system has the important advantage of easily and effectively integrating these two systems at a future date. A second option is to use the computer facilities of the Air Force Data Services Center (AFDSC) in the Pentagon.

PIMS operating procedures will be the same regardless of which computer system is selected. Inputs for updating the data base will be prepared on computer magnetic tape by the Military Departments and manually on data entry forms by the Defense Agencies for all new and existing projects. Three to five updates will be required each year. Three will be scheduled to meet major DoD Planning/Programming/Budgeting milestones--31 May for Program Objective Memoranda reviews, 30 September for OSD/OMB budget reviews, and 31

January for Congressional budget reviews. Two other updates will be prepared as needed after Congressional actions on the MILCON Authorization Bill and Appropriation Bill are completed.

Magnetic tape inputs will be sent directly to the computer system administrator, and manual inputs will be sent to the PIMS system manager in MRA&L(I&H), who will enter their data using on-line terminals. PIMS programs will provide data editing and validation.

After each PIMS update, standard (preformatted) reports will be prepared at the computer center on a high-speed printer. Ad hoc reports will be generated with either on-line terminals or the high-speed printer.

STATUS OF SYSTEM DEVELOPMENT

The definition and design stages of PIMS development have been completed. A functional description has been prepared to serve as a guide for the programming stage. It also summarizes the capabilities and impacts of the two computer system options.

Approval of the functional description and selection of a computer system are the next steps. Then the programming stage can begin. While the programs are being developed, procedures for submitting inputs to PIMS will have to be coordinated and/or integrated with existing MILCON reporting requirements. This will require review and possible revision of existing DoD directives, instructions, and/or report licensing procedures.

SECTION 1. GENERAL

This report is a functional description of a computer-based Project Information Management System (PIMS) for military construction (MILCON). The system is being developed for use by OASD(MRA&L) Installations and Housing (I&H) and other offices within the Department of Defense (DoD). Included in the description are the capabilities and costs of operating PIMS in two different facilities: 1) the Family Housing System Office (FHSO) in the Naval Facilities Engineering Command (NAVFAC), and 2) the Air Force Data Services Center (AFDSC) located in the Pentagon.

1.1 PURPOSE OF THE FUNCTIONAL DESCRIPTION

This functional description provides:

- An overview of the need for, and benefits of, a computerized MILCON project information system within MRA&L(I&H);
- A statement of the requirements to be satisfied by PIMS, which will be the basis of understanding between MRA&L(I&H) and the software developer;
- Definitions of the data elements included in the PIMS data base for use by the Military Departments and Defense Agencies, who will provide input data, and for use by the software developer.
- Specifications for the overall design of PIMS, its performance requirements, input and output formats, and report generating requirements to be used as a programming guide by the software developer.

1.2 PROJECT REFERENCES

The following official documents and reports were used or prepared by LMI while writing this report:

- OASD(MRA&L) FY 1980 Research and Studies Requirements: Military Construction and Related Programs Management Data System. (Internal Memorandum)
- Task Order to be Performed by Logistics Management Institute for OASD(MRA&L), Task Order No: ML012 (MDA0370-77), "Military Construction Program Management System," February 1980.
- Progress Report on Task ML012: "Conceptual Design for Computerized Project Information Management System," Logistics Management Institute, 6 June 1980.
- Letters dated 11 February 1980, describing goals and objectives of PIMS and need for support and assistance by Military Departments,

signed by Perry J. Fliakas, DASD (Installations and Housing) and addressed to:

Major General William Wray, USA
Assistant Chief of Engineers, Military Program Office,
Chief of Engineers

Rear Admiral D. G. Iselin, USN
Commander, Naval Facilities Engineering Command

Major General William D. Gilbert, USAF
Director, Air Force Engineering and Services

- "Automated Data Systems Documentation Standards," Department of Defense (OASD Comptroller 7935.1-S), September 1977.

1.3 TERMS AND ABBREVIATIONS

The following terms and acronyms have been used in this report.

1.3.1 Terms

Back-up Copy: A copy of a file or data set that is kept for reference in case the original file or set is destroyed.

Back-up Procedures: Procedures which allow systems to be restored and interrupted processing to resume while maintaining system integrity.

Batch Processing: Pertaining to the control technique of grouping computer programs or data for input to a computer system for handling at the same time.

Computer System Administrator: The person within the computer facility organization responsible for managing automated PIMS functions.

Data Base: The collection of computer-stored data which is accessed by a processing system and is fundamental to the performance of the capabilities of that system.

Data Base Administrator: The person responsible for the efficient organization and operation of the data base.

Data Element: A group of characters that specify an item, for instance, "project cost." A data element contains no subordinate items.

File: One or more records concerning places or things that are closely related and handled together for processing.

Function: One of several individual processes performed by a computer program, for instance, sorting a data base.

Interactive Processing: Pertaining to processing in which each entry elicits a response.

On-Line: (1) Pertaining to equipment or devices under control of the computer, (2) pertaining to a user's ability to give the computer instructions and receive output without delay. Interactive processing is one type of on-line activity.

Record: A set of data elements closely related in the sense that they pertain to the same place or thing. For PIMS, the most common record is a construction project.

Software: Computer programs or routines prepared by computer programmers to simplify and facilitate the use of the computer.

System: A coordinated organization of people, hardware, methods and procedures that operate together to achieve a predetermined set of objectives.

1.3.2 Abbreviations

AFDSC	- Air Force Data Services Center
BMAR	- Backlog of Maintenance and Repair
CSA	- Computer System Administrator
DBA	- Data Base Administrator
DBMS	- Data Base Management System
DoD	- Department of Defense
DQCM	- Data Quality Control Monitor
FHSO	- Family Housing Systems Office
MILCON	- Military Construction
NAVFAC	- Naval Facilities Engineering Command
MRA&L(I&H)	- Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) (Installations and Housing)
OMB	- Office of Management and Budget
OSD	- Office of the Secretary of Defense
PIMS	- Project Information Management System
POM	- Program Objective Memorandum

SECTION 2. SYSTEM SUMMARY

This section describes the DoD MILCON program and why MRA&L(I&H) needs an improved information system to manage it. The objectives of the proposed system are outlined and compared with current methods and procedures for providing information. Also summarized are what PIMS will do, how it will function, and the costs for its development and operation. Details of the functional description are presented in subsequent sections.

2.1 BACKGROUND

Each year, approximately 800 new construction projects costing over \$2 billion are proposed by the Military Departments and Defense Agencies as additions to the existing MILCON program. Each project passes through reviews by OSD, OMB, and four Congressional committees. Those projects approved for construction continue through design, contract award, construction acceptance by the government, and contract close-out. Approximately 4,000 projects are involved in this process at any one time.

Throughout the process, MRA&L(I&H) is responsible for top-level review, monitoring, and control of the MILCON program, involving the following management tasks:

- Policy planning and analysis.
- Programming and budget reviews.
- Program execution management.
- Assessment of policy compliance.
- Congressional reporting.
- Project status reporting.

To accomplish these tasks, MRA&L(I&H) must have available to it a broad base of information about the MILCON program and individual projects. Policy planning, for example, requires information about trends in construction costs, change orders, contractor claims, and design status. Programming and budget reviews need information to ensure that construction projects proposed by the Military Departments and Defense Agencies are balanced among DoD programs (Strategic Forces, General Purpose Forces, etc.), requirements for new defense systems and facility replacements, projects for reducing energy consumption and pollution, and facilities for improving health, safety, and quality of life for DoD personnel. Program execution management, on the other hand, requires such project status information as percent design complete, expected and/or actual contract award and construction completion dates, and expected and/or actual construction costs. Additional but somewhat different information is needed to accomplish the other management tasks.

The demand for MILCON program information has increased significantly in recent years. One reason for this is that the Congressional committees which authorize and appropriate funds for MILCON projects have been requesting more information. Their requests have tripled since 1977, as Congress has increased its participation in the details of the program and has augmented its staff for budget reviews. Manpower resources within MRA&L(I&H) have decreased about 10 percent yearly over this same period.

Another reason for increased demand for MILCON information is the zero-based budget techniques introduced in 1977. These require more detailed information on a wide variety of program elements during the POM review and budget review cycle.

The growing demand for MILCON information dictates a shift away from current manual methods and procedures if MRA&L(I&H) is to accomplish its management functions. Recent in-house assessments of two MRA&L(I&H) Directorates--Facilities Programming and Construction Operations and Facilities Management--have shown that a substantial portion of their professional engineering resources is spent extracting data from printed reports and conducting manual analysis for a wide variety of MILCON management issues.

The proposed computer-based project information system described in this report is designed to alleviate the current difficulties. PIMS will permit faster, more accurate, and more flexible responses to both current and future management information needs, and will do so more economically than the current manual procedures.

2.2 SYSTEM OBJECTIVES

The overall objective of PIMS is to improve the capability within MRA&L(I&H) for managing the MILCON program. Its specific objectives are:

- To provide accurate and timely data for all projects in the MILCON program, from the time they are proposed until construction is completed and contractor claims have been settled.
- To provide the capability for handling data for the more than 4,000 projects including: major MILCON, minor construction, Guard and Reserve Forces facilities, nonappropriated and privately funded projects, Secretary of Defense MILCON contingency projects, restoration-of-damage projects; and provide growth potential for NATO projects and other countries.
- To reduce the time and cost of developing useful management information and summary reports from project data and thereby improve the productivity of MRA&L(I&H) staff resources.
- To improve the capability of MRA&L(I&H) staff for conducting comprehensive and complex analyses of the MILCON program.
- To reduce and/or consolidate the number of standard, hard-copy reports prepared by the Military Departments and Defense Agencies for MRA&L(I&H).
- To reduce requirements for ad hoc reporting by these DoD components.
- To improve quality control and consistency of management information reports prepared by MRA&L(I&H), Military Departments, and Defense Agencies.

2.3 EXISTING METHODS AND PROCEDURES

The Military Departments and Defense Agencies currently have systems which track considerable data about their MILCON projects from the time planning and design begin until construction is complete and contract claims are settled. These project data systems are used to meet standard, recurring, and ad hoc reporting requirements of MRA&L(I&H) and Congress.

2.3.1 Standard Reports

Table 2-1 summarizes the standard forms and recurring reports currently submitted by the Military Departments and Defense Agencies.

The content and format of these reports are specified in official DoD instructions or directives issued by MRA&L(I&H). The reports are prepared both manually and with automated systems and are transmitted to MRA&L(I&H) as hard copy. Reformatting or restructuring their content normally requires changing the authorizing document. One-time changes can be requested with supplemental reports from the Military Departments or Defense Agencies, or the changes can be prepared manually by MRA&L(I&H) staff. Because of the difficulties of revision, the tendency is to specify reporting requirements so that whatever information may be needed will be presented.

2.3.2 Ad Hoc Reports

Throughout the MILCON programming and budgeting process, MRA&L and Congress often make one-time requests for information not included in the standard reports. Some requests are for simple revisions or changes to previously submitted summary reports, while others are for more detailed or more recent data on specific projects. Both types of ad hoc reporting requirements place heavy burdens on the Military Departments' and Defense Agencies' staff resources and can take several days to obtain.

2.4 PROPOSED METHODS AND PROCEDURES

The proposed computer-based project information system will eliminate many of the difficulties of the current system by providing MRA&L(I&H) with a current MILCON data base file from which it can prepare its own management reports and analyses. The functional design of PIMS contains three modules: 1) data collection, 2) data processing, and 3) report generation. The purpose and operation of these modules are summarized below.

Figure 2-1 is a diagram of the three modules in the PIMS functional design. It displays the data processing sequence for the major components of the system and their relationships. The first module consists of activities conducted by the Military Departments and other organizations not directly responsible for PIMS. The last two modules are integral components of the computerized PIMS.

2.4.1 Data Collection

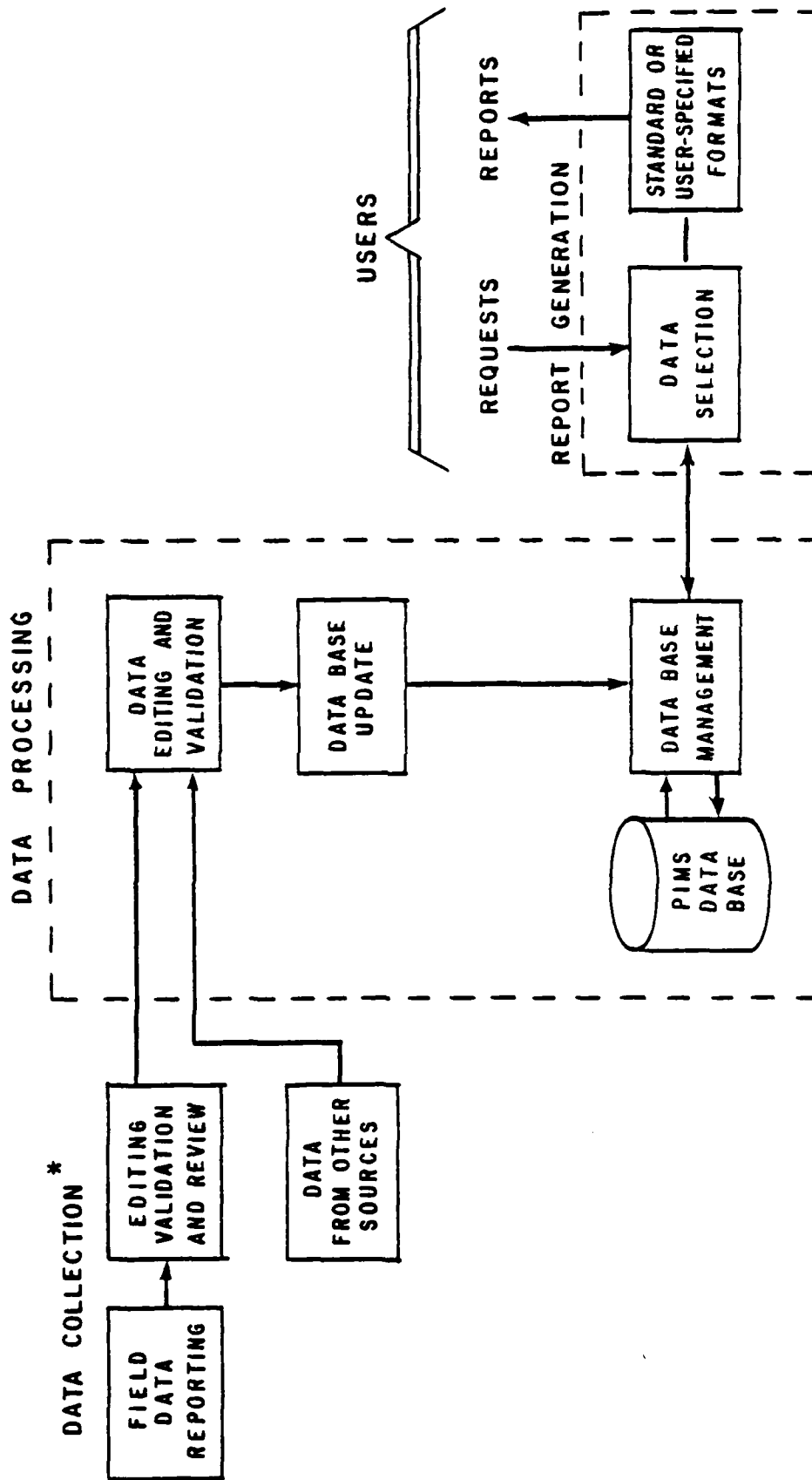
The data collection module will include activities by the Military Departments and other DoD components who will prepare input data for PIMS. Data inputs

TABLE 2-1

STANDARD FORMS AND RECURRING REPORTS
ON MILITARY CONSTRUCTION

Type Project	Reports on New Projects	Reports on Approved Projects
1. Major MILCON		
- Fully funded	DD Form 1391*	RCS M(A) 1533*
- Incrementally funded	DD Form 1391*	RCS M(A) 1532*
- Projects exceeding 10% of appropriated costs	-	RCS M(A) 1534*
2. Minor Construction	DD Form 1391	RCS M(A) 431
3. SecDef Contingency Construction	DD Form 1391	RCS M(SA) 1151
4. Reserve and Guard Forces Facilities (MilDeps only)	DD Form 1391	DD Form 1405 RCS M(SA) 802
5. Nonappropriated and Privately Funded Facilities		
- Less than \$300,000	-	RCS M(SA) 1167 Part I
- Over \$300,000	DD Form 1391* RCS M(SA) 1167 Part III	RCS M(SA) 1167 Part II
6. Advanced Planning and Design Contracts (over \$250,000)	DD Form 1391*	-
* Congressional requirement		

FIGURE 2-1. PIMS FUNCTIONAL DESIGN



* ACTIVITIES PERFORMED BY THE MILITARY DEPARTMENTS AND DEFENSE AGENCIES.

for new construction projects and updates to existing projects will be scheduled in May, September, and January to link them to key programming, budgeting, and Congressional reviews. Additional updates will be prepared after the MILCON Authorization Bill and after the MILCON Appropriation Bill, unless these Congressional actions occur within six weeks of each other or within six weeks of a scheduled update. Inputs for PIMS updates will be combined or eliminated in these latter situations. The data collection procedures will use existing manual and automated reporting systems and require two steps: 1) field data reporting, and 2) editing, validation, and review.

Most data for PIMS will originate at field-level organizations where project design and construction supervision are being conducted. Existing data collection and reporting procedures within the Military Departments and Defense Agencies will be used. No data prepared by these organizations will be input directly into PIMS; rather the information will be sent through Command Headquarters for manual editing, validation, and review.

Editing, validation, and review will be conducted by Headquarters organizations in the Chief of Engineers, USA, Naval Facilities Engineering Command, Air Force Engineering and Services, and the Defense Agencies. Existing organizational procedures for editing, validation, and review of the field-level data will be used. Corrections of data errors will be made by either the field organizations or Command Headquarters.

Certain inputs, for example, installation data on backlog maintenance and repair (BMAR) and backlog of Occupational Safety and Health Administration (OSHA) compliance costs, will be input from existing sources within OSD. This will reduce the Military Departments' reporting requirements and ensure consistency of these data within OSD. Other inputs, such as project data reported for budget guidance, will be collected from the OASD(Comptroller) if redundant reporting by the Military Departments is a problem. However, this should not be the case, since these data exist in automated systems in the Military Departments.

2.4.2 Data Processing

Data editing and validation, data base updating, and data base management will comprise the key functions of the PIMS central data processing system. PIMS will double-check the data editing and corrections done by the reporting agency by automatically screening the data for format and content. The system will generate an error report listing all unacceptable data entries and the reason for their rejection.

MRA&L(I&H) must designate a Data Quality Control Monitor (DQCM) to assume responsibility for correcting any errors detected by the PIMS system. Corrections can be made on-line if the number of corrections is small, or in a batch mode if the number is large. The reporting agencies should provide timely assistance to the DQCM as needed in determining the proper data format and content.

The data base update procedures will prepare the corrected data inputs for new projects and updates to existing projects for merging with the master data base file. The data base update program will provide computation of summary fields, location and update of the data base records, summary reports of update runs, and data base maintenance processes.

The data base management module will consist of 1) the data base management system (DBMS) software package available with the selected computer system, and 2) the PIMS project data base.

The DBMS will receive data from the data base update program and requests for data retrieval from the report generation module. The DBMS will perform the actual updating and retrieval of data to/from the PIMS data base. In addition, various utility programs will enable the PIMS operations staff to perform maintenance and recovery functions with the data base.

2.4.3 Report Generation

This final module will have two separate flows--one for generating standard (preformatted) reports and the other for user-specified reports. Samples of the standard output reports are described in Section 3.3.3. For the standard report option, all computation, sorts, and report formats will be preprogrammed to produce the most useful reports efficiently.

The user-specified option will produce almost limitless types of output reports from the available data. This option is designed for users who require unique and/or one-time reports. Regardless of the option chosen, all users' interactions with the data base will be limited to data retrieval only--no user updates to the data base will be permitted.

2.5 SUMMARY OF IMPROVEMENTS

PIMS will bring benefits to MRA&L(I&H) and the overall management of the MILCON program. A principal improvement will be the capability for direct access to accurate and timely project data. Equally important will be the capability to process these data and prepare a variety of management reports as requirements demand.

The PIMS report generation capability will reduce the time, clerical effort, and cost now being expended by MRA&L(I&H) to develop management information. PIMS will improve productivity for meeting current requirements and its enhanced processing and computational capabilities will also allow MRA&L(I&H) staff to undertake analyses not now feasible.

The primary time savings will be in the preparation of ad hoc reports, now prepared separately by the Military Departments and Defense Agencies and manually consolidated by MRA&L(I&H) into a DoD report. Many requests for project status information or special MILCON program summary reports will be prepared directly by MRA&L(I&H) using PIMS, with no further inputs from the Military Departments.

PIMS will also offer the prospect of eliminating and/or consolidating some of the recurring MILCON reports now prepared by the Military Departments. Congressional reporting requirements will not be affected, at least initially. It is possible that because of PIMS some of these reports could eventually be eliminated. RCS M(A) 1533, "Status Report on Execution of MILCON Program," is one possibility.

The last and somewhat related benefit will be improved quality control. Since the PIMS data base will be updated at the same time recurring reports are

submitted to Congress, all subsequent inquiries and program analyses prepared by MRA&L(I&H) from the PIMS data base will be consistent with the information in the Congressional reports. The automated data editing and data validation procedures incorporated into PIMS will provide a further check on the quality of the MILCON project data. Finally, the possibility of manual computational errors will be eliminated with the computer-based system.

2.6 SUMMARY OF IMPACTS

This section describes the anticipated impacts of PIMS on existing equipment, software, organizations, operational procedures, and system development.

2.6.1 Equipment Impacts

The recommended equipment option for PIMS is to use the computer system being installed by the Family Housing System Office (FHSO) in the Naval Facilities Engineering Command (NAVFAC) as executive agent for the Facilities Programming Directorate, MRA&L(I&H). No additional equipment will be required for the development of PIMS. When the system is operational, however, an additional low speed terminal will be needed for the Construction Operations and Facility Management Directorate, MRA&L(I&H). It is assumed that the CRT/printer terminal to be located in the Family Housing Programs Division can be used by the MILCON and Special Programs Division for PIMS development and system operation, at least in the immediate future. Eventually, a separate terminal may be required to serve this office, and perhaps other OSD offices, as use of PIMS increases. A dedicated disk drive for the PIMS data base and programs will eventually be required.

The other equipment option for PIMS is the Air Force Data Services Center (AFDSC). The impact of this option would be the installation of computer terminals in the Facilities Programming and Construction Operations and Facility Management Directorates, MRA&L(I&H).

2.6.2 Software Impacts

Software development will be required regardless of which equipment option is selected. The functional specification for the PIMS software is presented in this report. The software development costs are estimated at \$150,000 and should take about nine months to complete, if the effort is accomplished by a contractor.

Some new programming will be required by the Military Departments to modify their existing data systems for generating PIMS input data on magnetic tape.

2.6.3 Organizational Impacts

The primary organizational impacts will be within the Facilities Programming Directorate, MRA&L(I&H), which will be the PIMS System Manager. The duties and responsibilities of the System Manager will include:

- Supervision of PIMS software development.
- Selection of system hardware.
- Overall operational control of PIMS.
- Screening of user requests.

- Scheduling of workloads.
- Distribution of standard PIMS output reports.
- Establishment of operating procedures and standards.
- Development of PIMS usage statistics.

The Facilities Programming Directorate will also perform, or will delegate, the duties of the Data Base Administrator, including:

- Design of the data base.
- Development, installation and maintenance of data base software.
- Data base security and privacy.
- Data base reliability and integrity (including recovery and back-up procedures).

The Facilities Programming Directorate must also appoint a DQCM to manage the quarterly updates to the PIMS data base. The DQCM will notify and work with the Military Departments and Defense Agencies in identifying and correcting all input errors during the update process. The PIMS duties and responsibilities within the Facility Programming Directorate will be accomplished with existing staff.

A Computer System Administrator (CSA) must be appointed by whichever organization is selected executive agent for PIMS.

The CSA will be responsible for management of the automated PIMS functions including:

- Updates to PIMS data base.
- Notification of System Manager when preparation of update reports is complete.
- Maintenance of system hardware.
- Maintenance of system software.
- Production control.
- Restart/recovery and back-up procedures.
- System security and reliability.
- Training of operational personnel.

The Military Departments and Defense Agencies must appoint a PIMS Input Monitor to coordinate their inputs and updates with the DQCM and/or the PIMS System Manager.

2.6.4 Operational Impacts

PIMS will change current procedures for reporting MILCON data to MRA&L(I&H), for processing these data, and for generating and distributing reports. The Military Departments will be required to prepare tapes containing prescribed data for new projects and updates to all ongoing projects. The format for these data are described in Section 3.3.2. The Defense Agencies, because they have so few projects (usually less than 20), will submit project data manually on forms developed for this purpose. (See Section 3.3.1) All data required for PIMS, except project objective codes, are available from existing Military Department and Defense Agency files.

The PIMS data processing operation will peak in early June, October, and February, as new and updated project data are submitted for editing and validation, data base updating, and generating new reports. If FHSO is selected to be CSA for PIMS, the workload during the update process will cause a temporary shift in their operations. Fortunately, the workload peak can be planned for in advance and will not require additional staff. If AFDSC is selected to be CSA, the impact on their operations would be minimal, since they are an established data processing service center.

Procedures for requesting and generating MILCON reports will change dramatically with PIMS. Within MRA&L(I&H), on-line computer terminals with direct access to the PIMS data base will perform much of the work now done manually or requiring additional reports from the Military Departments and/or Defense Agencies. For users outside MRA&L(I&H), written or telephone requests for MILCON reports and project information will be sent to the Facilities Programming or Construction Operation and Facility Management Directorates, depending on the nature of the request. Staff personnel will determine the suitability of using PIMS, and, when appropriate, translate the request into proper PIMS input instructions. A memorandum report should be used to summarize and transmit PIMS results to users.

2.6.5 Development Impacts

Since current plans are for PIMS software development to be done by contractor personnel, the development impacts on MRA&L(I&H) staff will be limited to providing guidance and reviewing the software development effort. Involvement of the CSA staff will be needed during software development to ensure its compatibility with their system hardware and software capabilities. CSA involvement will facilitate transfer of the completed software to their facility for subsequent operation and maintenance. The Military Departments and Defense Agencies will need to supply test data in proper formats for development testing of PIMS.

2.7 ASSUMPTIONS AND CONSTRAINTS

The functional description presented in this report assumes that the Military Departments will develop the necessary software changes to their MILCON data systems for preparing PIMS data inputs on magnetic tape. It is also assumed that the new computer system at FHSO or AFDSC will be installed and available for use by Spring 1981. All commercial time-sharing options for PIMS, although technically feasible, were disregarded because of high costs.

SECTION 3. DETAILED CHARACTERISTICS

The overall requirement for PIMS is to provide the capability to store, update, and easily and accurately retrieve information on all MILCON projects so that project status and trends can be monitored easily and accurately. PIMS will provide access to MILCON data through on-line queries and standard (preformatted) reports.

3.1 SPECIFIC PERFORMANCE REQUIREMENTS

The PIMS data base will contain approximately 3 million characters of MILCON data when it reaches maturity (in 5 years). The software must be designed to accommodate the mature system even though the first year's data will be one-sixth that amount. It is planned that the PIMS data base be constructed by adding new projects (those in the programming stage) each year until all active projects are in the data base. However, the design of the system does not preclude accelerating this schedule so that at some point the data for all ongoing projects may be input.

Data retrieval for purposes other than the preformatted reports must be easily accomplished in a number of ways. Specifically, retrieval by project, by Military Department, by location, by date of initiation, authorization, award, or completion, by appropriation code, by authorized cost, contract award cost, by delay code, and by major command is required. Retrieval may be selective, such as a list of all projects whose Service is A for Army, and/or by range, such as a list of all projects whose contract award cost is over \$50,000.

Performance requirements for response time of queries will vary. Simple queries will have a response time of less than one minute. Response time for complicated ad hoc report queries that involve substantial summarization or sorting may be up to two hours.

The data base management software will offer query, arithmetical table generation and report-writing capabilities. It will also provide the means to maintain the integrity and security of PIMS by providing access and back-up/recovery controls.

PIMS will provide certain standard reports tri-annually and upon request. These reports are specified in greater detail in Section 3.3. The programs providing these reports may be written in a high-level language (such as COBOL or DBMS host/interface language/report writer) so that changes to report formats can be made quickly, if necessary.

3.1.1 Accuracy and Validity

Most of the data in PIMS will be received on magnetic tape from the Military Departments. Format (numeric, alphabetic, length) and value (content) editing, as specified in Appendix B, will be performed before data are entered into the data base. If a large number (more than 100) of records have errors, processing will terminate, and a new tape or a rerun of the existing tape will be read. All other data validation will be based on Military Department/Defense Agency reviews of the tri-annual reports.

All numeric data items in the data base are whole numbers. All cost data items are in thousands of dollars. Any totals will be accurate to the nearest whole number.

3.1.2 Timing

Table 3-1 gives the timing requirements for the PIMS system. As mentioned previously, simple on-line queries will have a response time of less than one minute, and more complicated ad hoc queries will have a response time of up to two hours. There may be multiple queries of the data base at one time, but only the system operator and the computer operator may initiate an update. Only the DQCM will be allowed to update the data base on-line.

3.2 SYSTEM FUNCTIONS

The automated functions provided by the PIMS are as follows:

- Edit data
- Update data base--new and corrected data
- Archive data base
- Generate preformatted reports
- Provide for queries and ad hoc reports

Figure 3-1 shows the flow of data through these PIMS automated functions.

The editing and updating functions will ensure the accuracy of data in the data base. These functions, along with the user's ability to verify and correct the data using the reports generated, will insure the validity of data in the data base.

Data retrieval will be accomplished through the generalized DBMS. This retrieval will be in the form of preformatted reports, ad hoc reports, and queries. In addition, the DBMS will have the capability to select and delete specified data for archival purposes. The archived data will be used for historical and data base back-up purposes.

3.2.1 Edit Data

This function will test input record items for format and content. Records with two or fewer items in error will be placed on the accepted records file as well as on the error file and error listing (except when there are no errors). Records with three or more items in error will be rejected completely, that is, only printed on the error listing and written on the error file. No part of these records will be placed on the accepted records file. The error listing will list the records in error and indicate the errors and the fields (record positions) in error. Edit criteria for each field are shown in Appendix B.

3.2.2 Update Data Base

Data from two sources will be used to update (add or change) records in the data base. Data items submitted by the Military Departments will replace dynamic data items in the data base for existing projects, unless the submitted data item is blank.

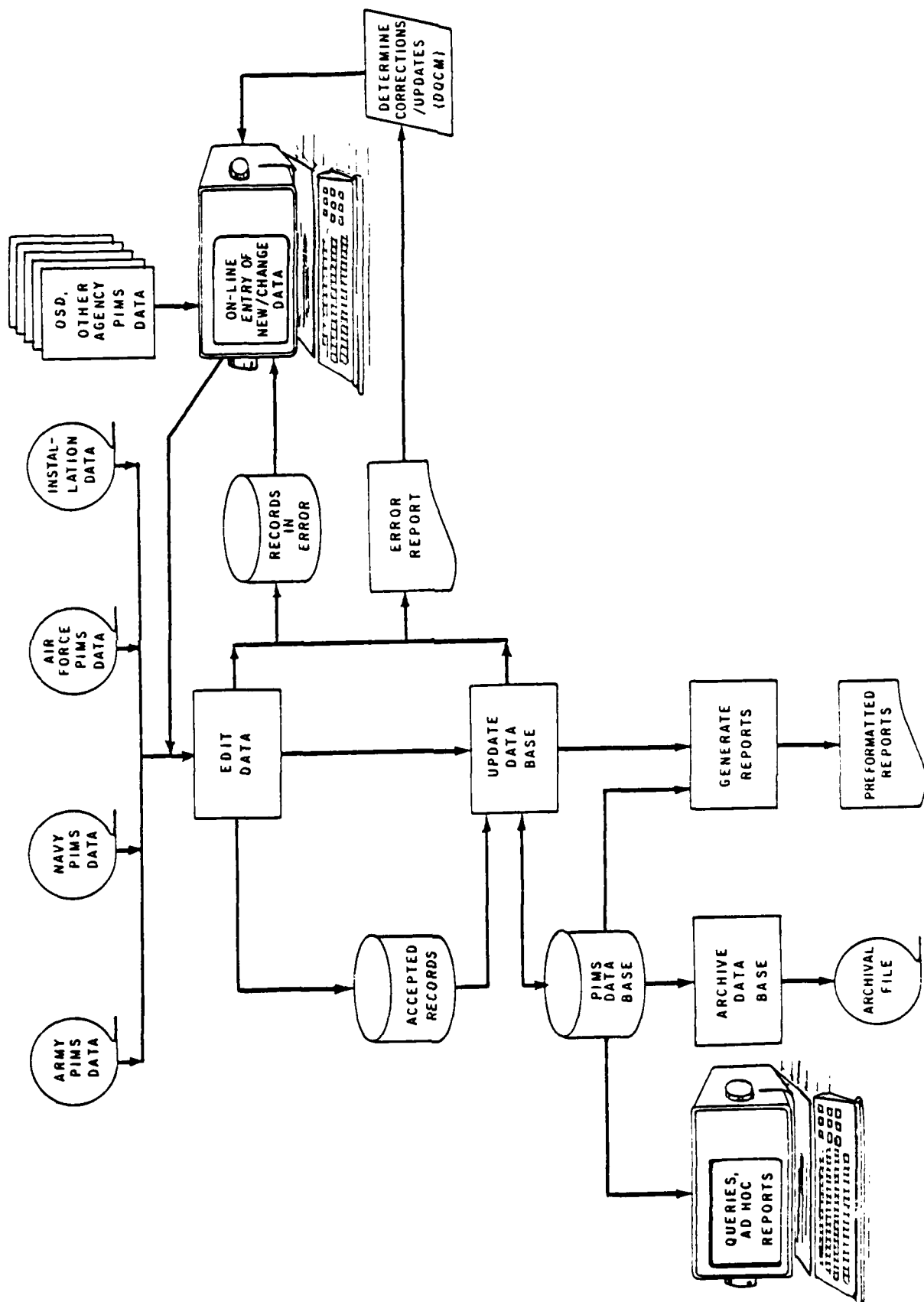
TABLE 3-1

PIMS PROCESSING CYCLE

<u>Time</u>	<u>Responsible Party</u>	<u>Actions Required</u>
May 31, September 30, January 31*	Military Departments/ Agencies	Submit data to PIMS System Operator
June, October, and February 1-4	CSA	Run initial editing and update, send list of errors to I&H
June, October, and February 4-6	I&H(DQCM)	Correct data
June, October, and February 7-8	CSA	Produce and distribute reports
June, October, and February 9-14	I&H(DQCM)	Correct any errors reported by MILDEPS/Agencies
June, October, and February 15	CSA	Archive data base
All other times	I&H(DQCM), CSA	Maintain and query data base, enter corrections

* This cycle will also be performed within two weeks after the MILCON bill authorizing funds has been passed.

FIGURE 3-1. PIMS SYSTEM FLOW



The dynamic data items in the data base will have a two-digit date (quarter, and last digit of year) associated with it that reflects the date of the last change in the item. Other data items (static) are not changed under normal circumstances. Static data items submitted from the Military Departments will be entered into the data base only if the item in the data base is blank, i.e., the data has not been submitted previously.

If a project identifier does not match one in the data base, a new record will be created in the data base. Any data which are not accepted by the data base at this stage will be written on the error file and printed on an error listing for examination and correction by the DQCM.

The second source of updates is the DQCM, who can update the data base in two ways. Those records on the error file can be corrected on-line and then processed in batch mode through the data editing function. Or if the DQCM receives a message that identifies an error in a data item for a given project, he/she may access the PIMS data base on-line, using the DBMS query/update capabilities, and change the data item without passing the data through the edit program.

3.2.3 Archive Data Base

After the time-sensitive processing of PIMS data is complete, data base maintenance in the form of archiving will be performed. This archiving entails copying the entire data base onto a tape in a format that facilitates restoration of the data base. Any projects that have been completed (Construction Percent Complete = 100) will be deleted from the on-line data base after the data base has been copied to tape. These back-up tapes will be saved for 5 years. So that trend analysis may be performed, summary records will be maintained in the on-line data base for all projects completed during a fiscal year. The summary record will contain, for each Military Department, the cumulative costs for design deficiency, condition change, criteria change, user change, miscellaneous, and total change cost. It will also contain cumulative funding authorized, appropriated, and actual cost, for each of the 10 facility categories and total funding for completed projects during the fiscal year. Before a project is deleted from the on-line data base, it will be incorporated into a summary record.

3.2.4 Generate Preformatted Reports

This function will produce all the regularly scheduled PIMS reports through host or command language interface with the DBMS. The actual reports produced are described in detail in 3.3.3.

3.2.5 Provide for Queries and Ad Hoc Reports

Queries to the PIMS data base will be of two types. One type of query will be simply to retrieve certain data items, based on user-specified selection criteria, and display the data. At times, simple arithmetic operations may be requested on the data. For example, the user may want the output formatted with headings and totals. For this type of ad hoc report, user routines (macros) will assign any files, invoke any processors, and assist the user in creating the query and formatting the output.

The second type of query will be to extract and store selected data items for further processing by a statistical analysis program. In particular, trend analysis and one-way analysis of variance procedures may be useful in analyzing selected PIMS data elements.

The output from both types of queries may be printed on the originating terminal, directed to the system (FHSO or AFDSC) printer, or saved in a file for further processing. In addition, at the user's option, the command language statements used to generate the query may be saved for future use and modification.

3.3 INPUTS-OUTPUTS

The following paragraphs explain and show examples of the various PIMS inputs and outputs. Although most of the inputs will be received from the Military Departments and OSD on magnetic tape, the originating input data (on forms) are also shown, since some manual inputs from the Defense Agencies will be necessary.

3.3.1 Manual Input Data

The basic manual documents from which the PIMS data base will be created will come from DD Forms 1391 and DD 1390. These forms are submitted to MRA&L (I&H) through the Defense Agencies in accordance with DoD Instruction 7040.4 (March 5, 1979). Samples of these forms indicating the data for PIMS are shown in Figures 3-2 and 3-3. Blank forms from DoD Instruction 7040.4 are provided in Appendix A.

The proposed format for submission of all PIMS supplemental data is shown in Figure 3-4. These input documents will be submitted at least tri-annually by the Defense Agencies for input into the data base by I&H.

3.3.2 Magnetic Tape Input Data

Each of the Military Departments will provide a 7-track, 800 BPI, unlabeled tape of projects that are new or updated (changed) since the last submission. The record length will be 750, and the blocking factor will be 5. The records will be fixed length, and blank fields will be ignored (not processed). All other fields, including those with a value of zero, will replace comparable fields in the data base. The entire record of both new and existing projects will be submitted to ease the burden for providing only updated data. If, however, there is no change whatsoever to a project, it need not be submitted on the tape. The proposed layout of this record is given in Table 3-2.

Installation data on BMAR and backlog of OSHA compliance costs will be received from Installation Management and Planning, MRA&L(I&H). They will provide a 7-track, 800 BPI unlabelled tape containing the Installation Code (UIC), total BMAR for the installation (data element number 64) and total OSHA backlog compliance costs for the installation (data element number 32). The record length will be 20 and the blocking factor will be 10. This data will be submitted annually and may be stored on a file separate from the project related data of PIMS.

FIGURE 3-2

1 COMPONENT		2 DATE	
NAVY		FY 19 <u>81</u> MILITARY CONSTRUCTION PROJECT DATA	
3 INSTALLATION AND LOCATION		4 PROJECT TITLE	
MARINE CORPS AIR STATION, CHERRY POINT, NORTH CAROLINA		AIRCRAFT DIRECT FUELING STATION MODERNIZATION	
5 PROGRAM ELEMENT	6 CATEGORY CODE	7 PROJECT NUMBER	8 PROJECT COST (\$000)
2 64 96 M	121.10	P-790	3,500
9. COST ESTIMATES			
ITEM	U/M	QUANTITY	COST (\$000)
AIRCRAFT DIRECT FUELING STATION MOD.....	LS	-	3,394
REFUELING SYSTEM & HARD STANDS.....	LS	-	1,753
TAXIWAY.....	LS	-	1,663
TANK FARM IMPROVEMENTS.....	LS	-	708
FUEL LINES.....	LS	-	1,750
SUPPORTING FACILITIES.....	-	-	1,472
UTILITIES.....	LS	-	1,295
SITE IMPROVEMENT.....	LS	-	137
SUBTOTAL.....	-	-	7,566
CONTINGENCY (10%).....	-	-	757
TOTAL CONTRACT COST.....	-	-	8,323
SUPERVISION, INSPECTION & OVERHEAD (5.5%).....	-	-	458
TOTAL REQUEST.....	-	-	8,781
TOTAL REQUEST (ROUNDED).....	-	-	8,500
EQUIPMENT PROVIDED FROM OTHER APPROPRIATIONS.....	-	-	(NON-ADD) ()
10. DESCRIPTION OF PROPOSED CONSTRUCTION			
Extend and modify aircraft fueling facilities, new hard stands, taxiway, new refueling lanes, upgrade truck loading stands, recirculation system, filter-separators, emergency power, controls and monitoring equipment, dispensing equipment, cathodic protection, new storage tanks.			
11. REQUIREMENT: N/A.			
PROJECT: Provides high-speed refueling capability for fighter and large jet aircraft.			
REQUIREMENT: Rapid refueling of C-141 and C-5 aircraft; bring fuel facilities current with latest state of the art. It is a continuing requirement to expeditiously and simultaneously refuel fighters and large air-lift type planes for routine missions, exercises, emergencies, and contingency plans.			
CURRENT SITUATION: Existing fueling facilities were constructed in 1942 and are deteriorated to the point that required fuel flows of 600 gpm at the outlets are now an average of less than 100 gpm due to the obsolescence of the equipment and condition of the distribution system. Additionally, these facilities were constructed for fighter aircraft and are not wide or large enough to handle landing gear of a large jet aircraft. Therefore, refueling is limited to one large plane at a time with fuel flow well below optimum values, resulting in an inordinately long refueling time.			
IMPACT IF NOT PROVIDED: Station cannot meet mission requirements, provide support for exercises and emergencies, or meet contingency plans.			
ADDITIONAL: An economic analysis has not been prepared as there is no alternative to satisfy the deficiency.			

DD FORM 1391
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FIGURE 3-3

1. COMPONENT NAVY		2. DATE FY 19 ⁸¹ MILITARY CONSTRUCTION PROGRAM								
3. INSTALLATION AND LOCATION MARINE CORPS AIR STATION, CHERRY POINT, NORTH CAROLINA		4. COMMAND MARINE CORPS								
5. AREA CONSTR COST NOEX 0.34										
6. PERSONNEL STRENGTH	PERMANENT		STUDENTS	SUPPORTED	TOTAL					
	OFFICER	ENLISTED	OFFICER	ENLISTED						
a. AS OF 9/30/79	191	1133	1328	40	298	0	781	6340	2967	13079
b. END FY 1985	192	1083	1856	40	350	0	736	6161	546	11156
7. INVENTORY DATA (\$000)										
a. TOTAL ACREAGE 16,585										
b. INVENTORY TOTAL AS OF 30 SEP 1979 158,970										
c. AUTHORIZATION NOT YET IN INVENTORY 12,065										
d. AUTHORIZATION REQUESTED IN THIS PROGRAM 16,700										
e. AUTHORIZATION INCLUDED IN FOLLOWING PROGRAM 1,700										
f. PLANNED IN NEXT THREE PROGRAM YEARS 24,200										
g. REMAINING DEFICIENCY 123,947										
h. GRAND TOTAL 372,582										
8. PROJECTS REQUESTED IN THIS PROGRAM:										
CATEGORY CODE	PROJECT TITLE		SCOPE	COST \$000	START	COMPLETE				
121.10	Aircraft Direct Fueling Station Mod		LS	3,500	9-79	10-80				
217.10	Electronic & Communication Maintenance Shop		29,977 SF	3,350	4-78	11-79				
322.22	Steam & Condensate Systems		LS	4,850	2-79	7-80				
Major Construction - Total for Cost Variation				16,700						
9. Future Projects:										
a. Included in following program (FY 82):										
113.20	Aircraft Parking Apron		62,000 SY	1,700						
b. Major planned next three years:										
171.35	Flight Simulator Building		9,000 SF	2,800						
214.51	MABS Facility		20,364 SF	1,900						
422.22	Relocate Ammunition Magazine		15,000 SF	5,400						
721.11	Unaccompanied Enlisted Personnel Housing		958 PN	12,600						
10. Mission or Major Functions: Maintain and operate facilities and provide services and materials to support the operations of a Marine Aircraft Wing, or units thereof, and other activities and units as designated by the Commandant of the Marine Corps in coordination with the Chief of Naval Operations.										
One Marine Aircraft Wing										
Naval Air Rework Facility										

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FIGURE 3-4. PIMS SUPPLEMENTAL DATA

1. Component		FY <u> </u> MILITARY CONSTRUCTION PIMS DATA		2. Date	
3. Major Command		4. Installation Code		5. State/Country Code	
6. Prop. Objective Code		7. Project Number		8. Authorization Year: FY <u> </u>	
9. First Funding Year: FY <u> </u>		10. Second Funding Year: FY <u> </u>		11. Appropriation	
12. Replacement/Modernization: Y <u> </u> N <u> </u>		13. Cost Type Code: A <u> </u> M <u> </u>		14. Action Document Code <u> </u>	
15. EIA Code <u> </u> , Date: Mo. <u> </u> Yr. <u> </u>		16. EIS Code <u> </u> , Date: Mo. <u> </u> Yr. <u> </u>			
<u>DESIGN INFORMATION</u>					
17. Design Contractor Name				18. % Complete	
19. Estimated/Actual Contract Cost (\$000)		20. CWE/Achieved Contract Cost (\$000) \$		21. In-House Cost: (\$000) Estimated \$ CWE \$	
22. Actual Award Date Mo. <u> </u> Yr. <u> </u>		23. Completion Date: Scheduled Mo. <u> </u> Yr. <u> </u>		24. CWE/Achieved Mo. <u> </u> Yr. <u> </u>	
25. Design Originality Code: S <u> </u> D <u> </u>		26. Design Delay Code <u> </u>		27. Cancellation Code <u> </u>	
28. Lost Design (\$000) \$					
29. Collateral Equipment Cost (\$000) Estimated \$		CWE/Achieved \$			
<u>CONSTRUCTION INFORMATION</u>					
30. Construction Contractor Name:				31. % Complete	
32. Contract Cost (\$000) Estimated \$ Actual \$		33. Construction Cost (\$000) Estimated \$		34. CWE/Achieved \$	
35. Award Date Mo., Yr. Expected <u> </u> , <u> </u> Actual <u> </u> , <u> </u>		36. Construction Completion Date Mo., Yr. Estimated <u> </u> , <u> </u> Scheduled <u> </u> , <u> </u>		37. CWE/Achieved <u> </u> , <u> </u>	
38. Aggregate Cost Contractor Submitted \$ Settled \$		39. Estimated Annual DEM Cost (\$000) \$		40. Delay Code	
41. Cancellation Code					
42. Aggregate Cost (\$000) of Change Orders Due to					
a. Design Deficiency \$		b. Condition Change \$		c. User Change \$	
d. Criteria Change \$		e. Misc. Reasons \$		f. Total \$	
43. Authorized Scope					
44. Authorized Cost (\$000) \$		45. Authorized Unit of Measure			
46. Appropriated Scope					
47. Appropriated Cost (\$000) \$		48. Appropriated Unit of Measure			
49. CWE of Scope					
50. CWE of Cost (\$000)		51. CEW Unit of Measure			

Note: Circled items must be submitted when the project is submitted initially, items 1, 2, 3, 4, 5, and 7 must be filled out each time this form is submitted.

TABLE 3-2
INPUT DATA LAYOUT

Data Element Number	Data Element Description	Record Position		Usage*	Comment
		From	To		
63	Project Number	1	10	AN	
37	DoP Component Code	11	12	AN	
52	Facility Category Code	13	18	N	
59	Program Element Code	19	24	AN	
58	Major Command	25	34	AN	
56	Installation Code	35	40	AN	UIC
57	Location Code	41	42	AN	State/Country
64	Project Objective	43	44	A	
15	Authorization FY	45	46	N	Last 2 Digits
54	First Funding Year	47	48	N	Last 2 Digits
55	Second Funding Year	49	50	N	Last 2 Digits
10	Appropriation Code	51	54	N	
65	Replace/Modern Code	55		A	Y or N
34	Cost Type Code	56		A	A or M
1	Action Document Code	57	58	AN	
50	EIA Code	59		AN	
47	EIA Date	60	63	N	
51	EIS Code	64		AN	
48	EIS Date	65	68	AN	
21	Design Contractor	69	88	AN	
41	Design Percent	89	91	N	
27	Estimated Design Con- tract Cost	92	98	N	In \$000
24	CWE Design Contract Cost	99	105	N	In \$000
29	Estimated In-House Cost	106	111	N	In \$000
	CWE In-house Cost	112	117	N	In \$000
43	Design Award Date	118	123	N	Day, Month, Year
53	Scheduled Design Com- pletion Date	124	127		Month, Year
44	CWE Design Completion Date	128	131	N	Month, Year
39	Originality Code	132		A	
40	Design Delay Code	133	134	N	
38	Design Cancellation	135	136	N	
26	Lost Design Cost	137	143	N	In \$000
28	Estimated Collateral Equipment	144	150	N	In \$000
31	CWE Collateral Equipment	151	157	N	In \$000
20	Construction Contractor	158	177	AN	
22	Construction Percent	178	180	N	

* N - Numeric Characters, AN - Alphanumeric Characters, A - Alphabetic Characters.

TABLE 3-2 (Continued)

Data Element Number	Data Element Description	Record Position		Usage*	Comment
		From	To		
19	Construction Contract Cost	181	187	N	In \$000
27	Estimated Construction Cost	188	194	N	In \$000
23	CWE Construction Cost	195	201	N	In \$000
45	Expected Construction Contract Award Date	202	205	N	Month, Year
42	Construction Contract Award Date	206	211	N	Day, Month, Year
46	Estimated Construction Completion Date	212	215	N	Month, Year
49	Scheduled Construction Completion Date	216	219	N	Month, Year
42a	CWE Construction Completion Date	220	223	N	Month, Year
6	Submitted Contractor Claims	224	230	N	In \$000
7	Settled Contractor Claims	231	237	N	In \$000
35	Construction Delay Code	244	245	N	
18	Construction Cancel Code	246	247	N	
2	Design Deficiency Cost	248	254	N	In \$000
3	Condition Change Cost	255	261	N	In \$000
8	User Change Cost	262	268	N	In \$000
4	Criteria Change Cost	269	275	N	In \$000
5	Miscellaneous Change Cost	276	282	N	In \$000
9	Total Change Cost	283	289	N	In \$000
61	Programmed Scope	290	389	AN	
60	Programmed Cost	390	396	N	In \$000
62	Programmed Unit	397	401	AN	
33	SLOH Cost	402	408	N	In \$000
16	Authorized Scope	409	508	AN	
14	Authorized Cost	509	515	N	In \$000
17	Authorized Unit	516	519	AN	
12	Appropriated Scope	520	619	AN	
11	Appropriated Cost	620	626	N	In \$000
13	Appropriated Unit	627	630	AN	
68	CWE Scope	631	730	AN	
67	CWE Cost	731	737	N	In \$000
69	CWE Unit	738	741	AN	

* N - Numeric Characters, AN - Alphanumeric Characters, A - Alphabetic Characters.

3.3.3 PIMS Standard Output Reports

Several standard reports have been developed through interviews with PIMS users. In addition, some of the reports now required by and submitted to Congress could be produced using the PIMS data base. The Congressional reports will continue to be generated by the Military Departments and sent to MRA&L(I&H) for consolidation and transmittal to Congress. Eventually, these reports could also be generated by the Facilities Programming Directorate using PIMS and transmitted to Congress.

The standard reports have been grouped into four types: summary, trend analysis, project listing, and system control reports. Descriptions and layouts for each of these reports are given in the following paragraphs.

3.3.3.1 Summary Reports

Nine standard summary reports have been identified by PIMS users. These reports will be generated within two weeks after each scheduled update of the PIMS data base. The first summary report is the MILCON current and previous fiscal year report shown in Figure 3-5. This shows the total MILCON funding requested in the current fiscal year and authorized/appropriated in the previous fiscal year. The percent change gives the increase/decrease in the current fiscal year as compared to that of the previous fiscal year.

The second summary report shows MILCON funding by program and DoD component for authorized, appropriated, and estimated levels of funding. The program categories are summarized, using the first character of program element code, called the Program. The Programs are shown in Figure 3-6, for instance. Program 1 is Strategic Forces, Program 2 is General Purpose Forces, Program 9 is Administration and Associated Activities, and finally, Program 0 is Support of Other Nations. A layout of this report is shown in Figure 3-6.

The third summary report gives MILCON funding by facility category and DoD component. As above, a separate table is produced for the authorized, appropriated, and estimated levels of funding. A layout of this report is shown in Figure 3-7.

The fourth summary report, shown in Figure 3-8, shows MILCON funding by project objective for each DoD component. The next three summary reports (Figures 3-9, 3-10, 3-11) are for each of the Military Departments and for all of DoD. These reports summarize MILCON funding by project objective and DoD program, by project objective and facility category, and by facility category and program.

The eighth summary report displays the breakout of design costs for each DoD component. A layout of this report is shown in Figure 3-12. The ninth summary report shows the breakout of construction change order costs for the current fiscal year for each component. These costs are shown both as total change costs and as percentages of total construction costs. The layout of this report is shown in Figure 3-13.

FIGURE 3-5. FYXX MILCON CURRENT AND PREVIOUS FISCAL YEAR REPORT

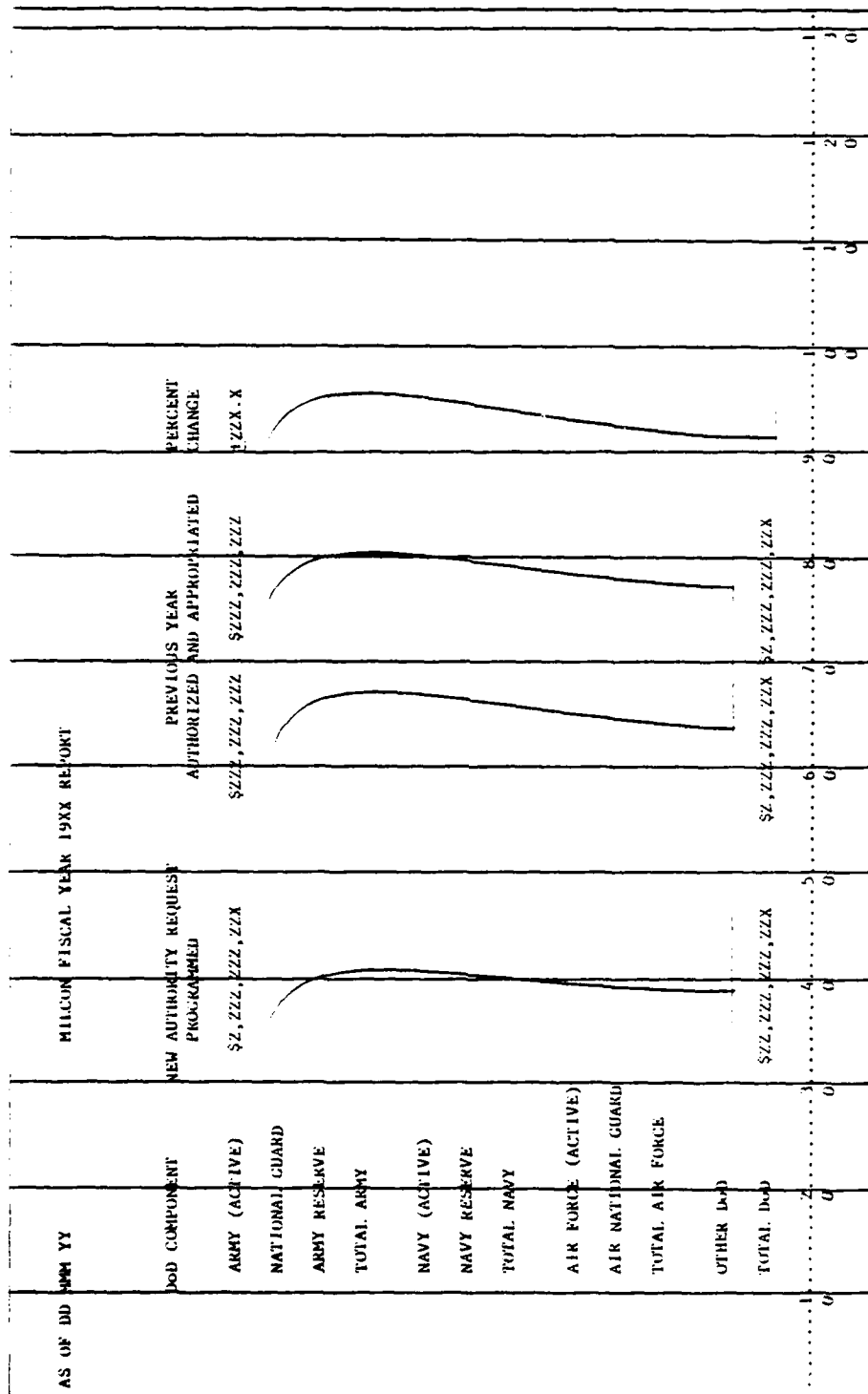


FIGURE 3-7. MILCON FUNDING BY FACILITY CATEGORY AND DoD COMPONENT

AS OF DD ~~MM~~ YY	MILCON FUNDING BY FACILITY CATEGORY										PAGE X
PROGRAMMED FUNDING IN THOUSANDS OF DOLLARS (\$000.)	OPERATIONAL	TRAINING	MAINTENANCE	RD&T	SUPPLY	HOSPITAL / MEDICAL	ADMINISTRATION	HOUSING & COMMUNITY	UTILITIES & GROUNDS	REAL ESTATE	TOTAL
ARMY	222,22X	222,22X	222,22X	222,22X	222,22X	222,22X	222,22X	222,22X	222,22X	222,22X	2,222,22X
NAVY											
AIR FORCE											
OTHER											
TOTAL	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X
AUTHORIZED FUNDING IN THOUSANDS OF DOLLARS (\$000.)	1	2	4	5	6	7	8	9	1	2	1
	0	0	0	0	0	0	0	0	0	0	0

* This table is also generated for Authorized (data element 14), Appropriated (11), and Current Estimate (67) funding. Programmed funding is data element 60.

FIGURE 3-8. MILCON FUNDING BY PROJECT OBJECTIVE AND DoD COMPONENT

AS OF DD MM YY	MILCON FUNDING IN THOUSANDS OF DOLLARS (\$000.)										MILCON FUNDING BY PROJECT OBJECTIVE FYXX		POLLUTION ABATEMENT				HEALTH, SAFETY	TOTAL	PAGE X
PROGRAMMED** FUNDING	NEW ACQUISITION	REDEPLOYMENT	AUGMENTATION	INCREASE EFFECTIVENESS							BASE CLOSURE	ENERGY CONSERVATION	POLLUTION ABATEMENT						
COMPONENT	A*	B	C	H							E	F	G		I				
ARMY	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX		
NAVY																			
AIR FORCE																			
OTHER																			
TOTAL	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX	Z,ZZZ,ZZX		
* PROJECT OBJECTIVE CODE KEY																			
A - SUPPORT ACQUISITION OR DEPLOYMENT OF MAJOR SYSTEM																			
B - SUPPORT REDEPLOYMENT OF CURRENT PROGRAM																			
C - SUPPORT AUGMENTATION OF CURRENT PROGRAM																			
D - INCREASED EFFECTIVENESS OF CURRENT PROGRAM																			
E - IMPLEMENT BASE CLOSURE OR REALIGNMENT																			
F - REDUCE ENERGY CONSUMPTION																			
G - IMPROVE POLLUTION ABATEMENT																			
H - IMPROVE HEALTH, SAFETY, OR QUALITY OF LIFE																			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

** This table is also generated for Authorized (data element 14), Appropriated (11), and Current Estimate (67) funding. Programmed funding is data element 60.

FIGURE 3-9. MILCON FUNDING BY PROJECT OBJECTIVE, PROGRAM AND DoD COMPONENT

AS OF DD MM YY	MILCON FUNDING FOR PROJECT OBJECTIVE AND PROGRAM FYXX X Service X	BASIC CLOSURE E	POLLUTION ABATEMENT I	HEALTH, SAFETY H	TOTAL
PROGRAM ***FUNDING IN THOUSANDS OF DOLLARS (\$000.)					
NEW ACQUISITION REDEPLOYMENT A* B					
STRATEGIC FORCES ZZZ ZZX	777,77X	777,77X	777,77X	777,77X	7,777,77X
GENERAL PURPOSE FORCES ZZZ ZZX					
INTELLIGENCE & COMMUNICATIONS ZZZ ZZX					
AIRLIFT SEALIFT ZZZ ZZX					
GUARD AND RESERVE FORCES ZZZ ZZX					
RESEARCH & DEVELOPMENT ZZZ ZZX					
CENTRAL SUPPLY & MAINTENANCE ZZZ ZZX					
TRAINING MEDICAL ZZZ ZZX					
ADMINISTRATION & ASSOC. ACT. ZZZ ZZX					
SUPPORT OF OTHER NATIONS ZZZ ZZX					
TOTAL	7,777,77X	7,777,77X	7,777,77X	7,777,77X	7,777,77X
* PROJECT OBJECTIVE CODE KEY					
A - SUPPORT ACQUISITION OR DEPLOYMENT OF MAJOR SYSTEM					
B - SUPPORT REDEPLOYMENT OF CURRENT PROGRAM					
C - SUPPORT ARGUMENTATION OF CURRENT PROGRAM					
D - INCREASED EFFECTIVENESS OF CURRENT PROGRAM					

** This table is also generated for Authorized (data element 14), Appropriated (11), and Current Estimate (67) funding. Programmed funding is data element 60.

FIGURE 3-11. MILCON FUNDING BY FACILITY CATEGORY, PROGRAM AND DoD COMPONENT

AS OF DD MM YY	MILCON FUNDING BY FACILITY CATEGORY AND PROGRAM FYXX										PAGE XX
	OPERATIONAL	TRAINING	MAINTENANCE	ROCK	SUPPLY	HOSPITAL / MEDICAL	ADMINISTRATION	HOUSING & COMMUNITY	UTILITIES & GROUND	REAL ESTATE	TOTAL
PROGRAM FUNDING IN THOUSANDS OF DOLLARS (\$000.)	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX
STRATEGIC FORCES											
GENERAL PURPOSE FORCES											
INTELLIGENCE & COMMUNICATION											
AIRLIFT / SEALIFT											
GUARD & RESERVE FORCES											
RESEARCH & DEVELOPMENT											
CENTRAL SUPPLY & MAINTENANCE											
TRAINING, MEDICAL, OTHER											
ADMIN & ASSOC. ACTIVITIES											
SUPPORT OF OTHER NATIONS											
TOTAL	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X	2,222,22X

** This table is also generated for Authorized (data element 14), Appropriated (11), and Current Estimate (67) funding. Programmed funding is data element 60.

FIGURE 3-12. DESIGN COST REPORT FOR MILCON PROJECTS BY DoD COMPONENT

AS OF DD MM YY	MILCON DESIGN COST REPORT FYXX						LOST COST	
COMPONENT	TOTAL DESIGN COST	DESIGN CONTRACT COST	IN-HOUSE DESIGN COST	CHANGE AGGREGATE COST	ORDERS PERCENT OF TOTAL DESIGN	AGGREGATE COST	LOST AGGREGATE COST	LOST PERCENT OF TOTAL DESIGN
ARMY	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	122X.X	\$22,222,22X	\$22,222,22X	122X.X
NAVY								
AIR FORCE								
OTHER								
TOTAL DoD	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	122X.X	\$222,222,22X	\$222,222,22X	122X.X
	1 0 2	4 0 5	6 0 7	8 0 9	1 0 0	1 0 1	1 0 2	1 0 3
	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

FIGURE 3-13. COST OF CONSTRUCTION CONTRACT CHANGE ORDERS

AS OF DD ~~MM~~ YY	MILCON CONSTRUCTION CONTRACT CHANGE ORDER COSTS FYXX					MILCON CONSTRUCTION CONTRACT CHANGE ORDER COSTS FYXX						
COMPONENT	DESIGN DEFICIENCY	CONDITION CHANGE	CRITERIA CHANGE	USER CHANGE	MISCELLANEOUS	TOTAL	DESIGN DEFICIENCY	CONDITION CHANGE	CRITERIA CHANGE	USER CHANGE	MISCELLANEOUS	TOTAL
ARMY	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X	\$22,222,22X
NAVY												
AIR FORCE												
OTHER												
TOTAL DoD	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X	\$222,222,22X
	1 0	2 0	3 0	4 0	5 0	6 0	7 0	8 0	9 0	1 0	2 0	3 0

3.3.3.2 Trend Analysis Reports

Two trend analysis reports have been identified for production at the end of each fiscal year. As experience with the PIMS data base expands and the types of ad hoc queries are examined, more reports may become necessary.

The first report, shown in Figure 3-14, lists the facility category funds by programming year. This report is produced for the programmed, authorized, appropriated and current-estimate of required funding. The second report shows the costs of construction changes over the years. A layout of this report is given in Figure 3-15. Both of these reports will contain separate tables for the Military Departments and one for all DoD. In addition, they will show the percent of projects completed for the fiscal year. As a project is completed and ready to be removed (deleted) from the on-line data base, a summary record will be created for each facility category, change order reason, Military Department, and program, as specified in 3.2.4.

3.3.3.3 Project Listing Reports

Four reports will provide information at the project level of detail. These reports will be produced after each scheduled update, with an asterisk next to projects which have changed since the last report. The first report lists MILCON funding, design, and construction data by state, Military Department, and installation. The layout of this report is shown in Figure 3-16. The cost columns will be totaled for each state and a grand total for all states will be given at the end of the report.

A layout of the second report is shown in Figure 3-17. This report provides a more detailed listing of data on projects, organized by Military Department within each state for each fiscal year. Only active (noncompleted) projects, or those completed in the most current fiscal year, are reported.

The third project report, Figure 3-18, lists the status of active projects and those completed in the current fiscal year, as well as cost data for these projects. As in the previous report, projects for each fiscal year are listed in Military Department order within each state. This report will be produced after each update.

The fourth project report is a detailed individual project report which will be produced the first time that a project is entered into the data base, and upon request. The layout for this report is shown in Figure 3-19. Only one project report will be printed per page.

3.3.3.4 System Control Reports

Three reports covering administrative, design, and construction information will be produced after each update for each Military Department. Figure 3-20 shows the layout for the administrative information report. Figure 3-21 shows the layout for the design information report. The construction information report is divided into two parts. The layouts for both parts of the report are shown in Figures 3-22 and 3-23.

FIGURE 3-15. COST OF CONSTRUCTION CONTRACT CHANGE ORDERS

[illegible]

FIGURE 3-19.

[illegible]

****Note:** All dollar amounts are in thousands of dollars (\$000.)**

FIGURE 3-21. DESIGN INFORMATION FOR MILCON PROJECTS

AS OF DD MM YY	EXPECTED DESIGN AWARD DATE	IN-HOUSE COSTS(\$000)	ACTUAL DESIGN AWARD DATE	ACTUAL COST (\$000)	MILCON DESIGN INFORMATION FYXX X Service*-X	S/D COMPL. DATE	ACTUAL COMPL. DATE	CONSTR. IN-HOUSE COSTS(\$000)	CHANGE ORDER COSTS(\$000)	LAST DESIGN DEL CAN CODES	PAGE XX
X XX,XX	ZZZ,ZZX	ZZZ,ZZX	XX,XX	XX,XX	X XX,XX	X	XX,XX	ZZZ,ZZX	ZZZ,ZZX	ZZZ,ZZX	XX
1	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0	0	0
73	0	0	0	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	0	0	0	0	0	0	0
82	0	0	0	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0

* New page for each Service.

FIGURE 3-23. CONSTRUCTION INFORMATION FOR MILCON PROJECTS (PART 2)

3.4 DATA CHARACTERISTICS

The PIMS data base will consist of up to 101 data elements for each active (uncompleted) MILCON project. For convenience, the data are placed in three major categories: (1) data on new projects, (2) data updating existing projects, and (3) data reflecting the clear text (uncoded) translation of coded information. New and update data can each be subcategorized into administrative information, planning and design information, and construction information.

3.4.1 Initial Project Information

Data for new projects will be input to the PIMS data base immediately after the project has been submitted to OSD by the Military Departments in the Program Objective Memorandum (POM). Table 3-3 shows the data elements (by subcategory) required for this initial submission of project information.

3.4.2 Project Update Information

Updates for existing projects include changes to selected elements of the initial project information, additional project information (unavailable during the initial project stage) and/or changes to any previously submitted data elements. As indicated in 3.3.2, the entire record will be submitted during an update. Each field will be compared to the corresponding field in the data base. If the two fields match exactly, or if the new field is blank, no action will be taken. If the data in the fields do not match exactly, the new data will replace the data in the data base, and the date of the change will be recorded. This change date will be of the quarter 1, 2, 3, 4 and year (last digit) and will be kept for most data elements in the data base (see Appendix B). Table 3-4 shows the data elements that typically will be changed during an update.

3.4.3 Coded Information

Codes for the DoD component, project objective, project location, and action document will be kept with the project data. These codes will be translated to make the report more readable. Table 3-5 gives the Service/Defense Agency codes and their translations for each of the DoD components. Table 3-6 gives the translations for the project objective codes, and Table 3-7 gives the translations for the action document codes. The location code is an abbreviation of the state or country of the project. The translations for these codes are given in Budget Guidance Manual (DoD 7110-1-M). Other codes, such as delay and cancellation codes, are not yet defined. If these codes are not clearly understandable in coded form, they will also be translated on the reports.

3.5 FAILURE CONTINGENCIES

The PIMS data base will be created primarily from data submitted on magnetic tape from the Military Departments. The most current tape will be kept until the next update tape has been processed. In addition, the data base will be backed up, as described in 3.2.3. Failure of the hardware or software could be tolerated unless PIMS becomes unavailable for more than a week. The data base would be recreated using the back-up data base and/or the applicable

TABLE 3-3

INITIAL PROJECT INFORMATION

	<u>Data Element Description</u>	<u>Data Element Number</u>
<u>Administrative</u>	Project Number	63
	Authorization Fiscal Year	15
	First Funding Year	54
	Second Funding Year	55
	DoD Component	37
	Location Code	57
	Major Command	58
	Facility Category Code	52
	Program Element	59
	Project Objective	64
	Replacement/Modernization Code	65
	Cost Type Code	34
	Appropriation Code	10
	EIA Code	50
	EIS Code	51
<u>Planning and Design</u>	Estimated In-House Cost	29
	Type of Design	39
	Design Percent Complete	41
	Estimated Contract Cost	36
	Contractor Name	21
	Design Award Date	43
	CWE Design Contract Cost	24
<u>Construction</u>	Scheduled Design Completion Date	53
	Programmed Cost	60
	Programmed Scope	61
	Programmed Unit of Measure	62
	Expected Contract Award Date	45
	Estimated Construction Cost	27
	Estimated Completion Date	46
	Estimated O&M Cost	30
	Estimated Collateral Equipment Cost	28
	SIOH Cost	33

TABLE 3-4

PROJECT UPDATE INFORMATION

	<u>Data Element Description</u>	<u>Data Element Number</u>
<u>Administrative</u>	Action Document Code	1
	EIA Code	50
	EIA Date	47
	EIS Code	51
	EIS Date	48
<u>Planning and Design</u>	Design Percent Complete	41
	Estimated Design Contract Cost	36
	Contractor Name	21
	Design Award Date	43
	Scheduled Design Completion Date	53
	Expected or Achieved Design Completion Date	44
	CWE or Achieved Design Contract Cost	24
	CWE or Achieved In-House Cost	25
	Aggregate Cost of Design Change Orders	9
	Lost Design Cost	26
	Design Delay Code	40
	Design Cancellation Code	38
<u>Construction</u>	Authorized Cost	14
	Authorized Scope	16
	Authorized Unit of Measure	17
	Appropriated Cost	11
	Appropriated Scope	12
	Appropriated Unit of Measure	13
	Current Working Estimate of Cost	67
	Current Working Estimate of Scope	68
	Current Working Unit of Measure	69
	Expected Contract Award Date	45
	Estimated Construction Cost	
	Estimated Completion Date	46
	Contractor Name	20
	Award Date	42
	Contract Amount	
	Scheduled Completion Date	49
	CWE or Achieved Completion Date	42a
	CWE or Achieved Contract Cost	23
	Cost of Change Orders Due to Design Deficiency	2
	Cost of Change Orders Due to Condition Change	3
	Cost of Change Orders Due to Criteria Change	4
	Cost of Change Orders Due to User Change	8
	Cost of Change Orders Due to Miscellaneous Reasons	5
	Cost of Contractor Claims Submitted	6
	Cost of Contractor Claims Settled	7
	Delay Code	35
	Cancellation Code	18
	Collateral Equipment Cost	31

TABLE 3-5

SERVICE/DEFENSE AGENCY CODES

<u>Code</u>	<u>DoD Component</u>
A	Army
G	Army National Guard
N	Navy/Marine Corps
F	Air Force
V	Air National Guard
DB	Defense Mapping Agency
C	Defense Civil Preparedness Agency
DD	Assistant Secretary of Defense for Administration
D1	Office of the Secretary of Defense
D3	AFIS--Armed Forces Information Service
D5	OODE--Office of Overseas Dependent Education
D6	DLA Administrative Support
D7	Civilian Health & Medical Program of the Uniformed Services
D8	Defense Manpower Data Center
D9	Tri-Service Medical Information System Program
DE	Defense Advanced Research Projects Agency
DG	National Security Agency
DH	Defense Nuclear Agency
DJ	Joint Chiefs of Staff
DK	Defense Communications Agency
DL	Defense Intelligence Agency
DR	Defense Contract Audit Agency
DS	Defense Logistics Agency (DLA)
DT (MAP)	Defense Security Assistance Agency
DV	Defense Investigative Service
DW	Uniformed Services University of the Health Services

TABLE 3-6
PROJECT OBJECTIVE CODES

<u>Code</u>	<u>Project Objective</u>
NP	To support a new program
RC	To support the redeployment of a current program
EC	To support the expansion of a current program
OE	To improve the operational effectiveness of a current program
BC	To implement a base closure or realignment
EC	To reduce energy consumption
PA	To improve pollution abatement
HS	To improve health and/or safety
QL	To improve quality of life

TABLE 3-7

ACTION DOCUMENT CODES

<u>Code</u>	<u>Document</u>
01	Program Change Decision
02	Decision Package Set
03	Reprogramming Action
04	Program Decision Memorandum
05	Project Deletion
06	Secretary of Defense Memorandum
16	Actuals for Prior Years
17	Budget Estimate Change, Repricing Below Threshold
blank	Project has <u>not</u> been cancelled

Military Department tapes. If the PIMS is expected to be unavailable for more than a week, reverting to manual manipulation and consolidation of the data may be appropriate. A back-up computer site should be identified so that the automated files could be accessed in case of a catastrophic hardware failure.

SECTION 4. ENVIRONMENT

4.1 EQUIPMENT ENVIRONMENT

PIMS will require minimal equipment support. Two systems have been examined, and their merits are reviewed in Section 5. The hardware available on these systems is shown in Table 4-1. The PIMS equipment will include the following:

- PIMS requires a mainframe processor large enough to accommodate the system software (including the DBMS) and COBOL programs of up to 100K.
- A disk unit (1) is required for storing the PIMS data base and programs. The data base is expected to grow to 3.2 characters within 5 years. The DBMS has overhead that may increase this amount by 50%. However, PIMS data and programs should fit on a 96MB disk.
- A tape unit (1) is required to read Military Department input tapes and create archival (back-up) tapes.
- Input for PIMS may originate at terminals. These devices will be asynchronous, teletype compatible ASCII terminals with a minimum speed of 300 baud. The number of terminals will increase as the system matures, but PIMS will initially require two to four terminals.
- Output for PIMS will be via the terminals used as input or a line printer. The line printer will provide a minimum of 600 lines per minute.
- Communication between the terminals and the mainframe can be over telephone lines. Both of the systems under consideration have communications channels that accommodate dial-up access to the mainframe. PIMS will make no additional requirements on the communications network.

4.2 SUPPORT SOFTWARE ENVIRONMENT

The DBMS, programming languages, and operating system of either the FHSO or AFDSC computer systems are appropriate for the development and operation of PIMS. Table 4-2 lists the software supported by these computer systems.

4.3 INTERFACES

PIMS will not interface directly with any other automated system or subsystem. As described in 3.3, data will be received on magnetic tape from the Military Departments.

4.4 SECURITY AND PRIVACY

PIMS will contain no classified information and no information on individuals and therefore will not have any specific privacy and security requirements.

TABLE 4-1

PIMS EQUIPMENT ALTERNATIVES

<u>AFDSC</u>	<u>FHSO</u>
IBM 3032 with 4 Megabytes (System K)	Data General C/350 with 1024 K bytes
3211 Impact Printer	600 lpm Printer
800 BPI 7-Track Magnetic Tape Drives (2)	800/1600 BPI Magnetic Tape Drive (1)
800/1600 BPI 9-Track Magnetic Tape Drives (2)	
1600 BPI Dual Density Magnetic Tape Drives (2)	
200 Million Character Disk (3330 mod 11) (16)	96 MB Disk (1)
3501/3521 Card Reader/Punch	285 cpm Card Reader
	DCU-200 Preprocessor
COM 10 Communications Controller	ALM-8 (8 line)
300 and 1200 Asynchronous Dial-up Lines	ALM-16 (16-line)
	20ma Interface
	Modem Cable (Asynchronous)
	SLM-2 (single-line)
	CRC (Communications)

TABLE 4-2

PIMS SOFTWARE ALTERNATIVES

	<u>AFDSC</u>	<u>FHSO</u>
Operating System	OS VS2 MVS	AOS
DBMS	INQUIRE	AOS INFOS Query Idea
Compilers	FORTRAN H Extended COBOL VS PL I Optimizing Compiler Assembler H	AOS FORTRAN V AOS COBOL
Graphics	GCS Calcomp Plotting	
Statistics	SPSS SAS TSP	
Utilities	CINCSORT	Sort/Merge

SECTION 5. COST FACTORS

Two systems within DoD have been identified as feasible equipment selections for PIMS: the NAVFAC FHSO Eclipse and the AFDSC System K. Because of the anticipated availability, low cost, and convenience of these systems, other (commercial) vendors were not evaluated. Also, it is clear that the requirements for system availability do not warrant dedicated computer hardware for PIMS.

Both the FHSO and AFDSC systems were examined relative to hardware, software, and managerial operational and technical factors. See Tables 5-1, 5-2 and 5-3. Although costs were included in the evaluations, a number of other considerations appeared equally relevant to the effectiveness of PIMS, and their impacts are also briefly assessed.

TABLE 5-1

PIMS HARDWARE OPERATIONAL AND TECHNICAL FACTORS

<u>Operational & Technical Factor</u>	<u>Impact of Type of System</u>
Cost	Probably use terminals in FH, Construction Operations needs to buy terminal. There is no pricing structure for FHSO yet. Buy two terminals if you use AFDSC. AFDSC chargeback may be as high as \$3,000 per quarter.
Technical Risk	Negligible, both systems are proven, off-the-shelf systems.
Maintenance	Negligible impact on I&H. Whoever owns/operates the equipment would be responsible for maintenance.
Equipment	Both mainframes can handle the expected program and data base sizes. The FHSO system has only one disk drive and since there would be at least two on-line applications, disk contention and storage may soon become problems.
Communications	Negligible impact on I&H. There eventually may be incremental hardware (ports, storage) required if the FHSO mini is used. The expected volume is too small to have any impact on the AFDSC system.
<u>Alternative Systems</u>	FHSO mini - Data General C/350 with INFOS, Idea, Query AFDSC System K - IBM 3032 type system with INQUIRE

TABLE 5-2

PIMS SOFTWARE OPERATIONAL AND TECHNICAL FACTORS

<u>Operational & Technical Factor</u>	<u>Impact of Type of System</u>
Cost	\$150,000 to produce software (by contract)
Using Application Software	In both cases, at least one person with some user training. For AFDSC more sophistication is needed, but more support is provided. User troubleshooting support may be thin with the mini.
Implementation	Fewer applications to schedule but also fewer resources with the mini. If the mini is used, only one system need be learned by L&H personnel.
System Software	In both cases there will be little control over system software changes. There is slightly more control if the mini is used, however, the mini's software may be less reliable. Both systems have the ability to retrieve data for trend analysis or comparative studies, AFDSC has statistical and graphics package to manipulate the data. Both systems have the ability to generate summary tables across all data records.
Development of Application Software	Contracting (to AFDSC, outside contractor) in both cases.
Maintenance of Application Software	If FHSO is to maintain the software, they want a person assigned to do liaison work and participate in the functional requirements, design, and programming. Otherwise a contract with the developer to maintain the system is needed.

TABLE 5-3

PIMS MANAGEMENT OPERATIONAL AND TECHNICAL FACTORS

<u>Operational & Technical Factor</u>	<u>Impact of Type of System</u>
Cost	Mini, AFDSC essentially free of computer operational/personnel costs.
Contracting	Contract for software development in both instances. Someone would be needed to monitor the contracts.
Personnel Requirements	In both systems someone familiar with the system is needed. User training is minimized if the same mini is used for both PIMS and the Family Housing system, but FHSO wants staff to maintain and operate PIMS in addition to current staff.
Control	If the mini is used, there should be more control over schedule and possible upgrades to enhance hardware capacity/capability. If AFDSC is used, there will be no need to upgrade hardware. Contractor support for software upgrade would be needed unless FHSO has a person assigned to PIMS.
Data Management & Data Security	The procedures at AFDSC are likely to be best designed to minimize any loss of data through frequent backups to the data base. The mini would be more vulnerable to loss of data.
System Performance	System availability is likely to be highest with AFDSC. The mini may be down for repairs more often (but not often).

SECTION 6. SYSTEM DEVELOPMENT PLAN

This functional description completes the definition and design stages in the development phase of PIMS. When it is decided that the project (as proposed or modified) should proceed, its further development will require management and coordination to ensure a timely, complete, and correct system. Figure 6-1 shows an estimated timetable for the remaining major tasks in the development phase.

The first tasks will be to choose the hardware and a software developer. Since, depending on the hardware, the software development staff may be contractor personnel, two months have been scheduled to arrange for assignment of the programming staff. Concurrently, the report licensing process and the formal request for incorporating the additional data into PIMS will be initiated. Assuming that the Military Departments have agreed to supply the additional data during the process of approving the functional description, they may use this time to schedule and perform any computer programming necessary to provide the data. Although this programming effort should be minimal, it should be scheduled well in advance.

The remainder of the tasks shown in Figure 6-1 will be performed by the software developer. The programming of PIMS should take two persons 7 to 8 months to complete. Concurrent with the programming effort, one person will spend half time developing and loading the test data base, and eventually seeing that the final data base is created correctly. This person (or persons) will also spend half time creating and documenting queries to the data base. The queries would be developed by working closely with the end users of the system until they are comfortable with PIMS query capabilities. Finally, PIMS will be tested and validated over a two-month period. Within a month of validation, final versions of the Users' Manual (UM), Computer Operation Manual (OM), and Program Maintenance Manual (MM) will be completed.

There are two major contingencies in this schedule. First, approval of the revised data reporting requirements must be well underway before any automated system development can begin. (During the process of obtaining the approval, data items may be added or deleted that would change PIMS significantly.) Second, the data base cannot be created and validated before the final data are submitted by the Military Departments and Defense Agencies. Assuming that this schedule can be followed, the entire project will take 1 year, with contractor activity taking place during the last 9 months of that year. The contractor effort should be approximately 24 person months for the PIMS specified in this functional description.

APPENDIX A

EXISTING MILCON FORMS

The following pages provide copies of forms used to collect MILCON project data. The instructions for completing these forms are in DoD Instruction 7040.4.

7040.4 Mar 5, 79
(Att 1 to Encl 2)

1. COMPONENT		FY 19__ MILITARY CONSTRUCTION PROJECT DATA			2. DATE	
3. INSTALLATION AND LOCATION			4. PROJECT TITLE			
5. PROGRAM ELEMENT		6. CATEGORY CODE	7. PROJECT NUMBER		8. PROJECT COST (\$000)	
9. COST ESTIMATES						
ITEM			U/M	QUANTITY	UNIT COST	COST (\$000)
10. DESCRIPTION OF PROPOSED CONSTRUCTION						

DD FORM 1391c, 1 MAR 59
Att 2 to Encl 2

1. COMPONENT	FY 19__ MILITARY CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION		
4. PROJECT TITLE		5. PROJECT NUMBER

7040.4 Mar 5, 79
(Att 1 to Encl 1)

1. COMPONENT		FY 19__ MILITARY CONSTRUCTION PROGRAM					2. DATE				
3. INSTALLATION AND LOCATION				4. COMMAND			5. AREA CONSTR COST INDEX				
6. PERSONNEL STRENGTH.		PERMANENT			STUDENTS			SUPPORTED			TOTAL
		OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	
7. AS OF											
8. END FY 19											
7. INVENTORY DATA (\$000)											
a. TOTAL ACREAGE											
b. INVENTORY TOTAL AS OF											
c. AUTHORIZATION NOT YET IN INVENTORY											
d. AUTHORIZATION REQUESTED IN THIS PROGRAM											
e. AUTHORIZATION INCLUDED IN FOLLOWING PROGRAM											
f. PLANNED IN NEXT THREE PROGRAM YEARS											
g. REMAINING DEFICIENCY											
h. GRAND TOTAL											
8. PROJECTS REQUESTED IN THIS PROGRAM:											
CATEGORY		PROJECT TITLE			SCOPE		COST (\$000)		DESIGN STATUS		
CODE									START	COMPLETE	

7040.4 Mar 5, 79
(APP 1 TO FORM 13)

1. COMPONENT	FY 19_ GUARD AND RESERVE MILITARY CONSTRUCTION				2. DATE	
3. INSTALLATION AND LOCATION						
11. PERSONNEL STRENGTH AS OF						
	<u>TOTAL</u>	<u>PERMANENT</u>			<u>GUARD RESERVE</u>	
		<u>OFFICER</u>	<u>ENLISTED</u>	<u>CIVILIAN</u>	<u>TOTAL</u>	<u>ENLISTED</u>
AUTHORIZED	_____	_____	_____	_____	_____	_____
ACTUAL	_____	_____	_____	_____	_____	_____
12. RESERVE UNIT DATA						
<u>UNIT DESIGNATION</u>				<u>STRENGTH</u>		
				<u>AUTHORIZED</u>	<u>ACTUAL</u>	
13. MAJOR EQUIPMENT AND AIRCRAFT						
<u>TYPE</u>		<u>AUTHORIZED</u>		<u>ASSIGNED</u>		

APPENDIX B

PIMS DATA ELEMENTS

The following table describes the PIMS data elements that will be stored in the data base. The elements are listed in alphabetical order. Format type, length (number of characters), source, update type (static or dynamic), definition and edit criteria are given for each data element.

Static data elements may not be changed once a value (non-blank) has been entered for the item. The PIMS edit routine will not update these data elements, although the DQCM may change them in an on-line change to the data base. Dynamic data elements may change throughout the life of the project.

Associated with the update type of a data element is a "use" classification of R or I. R indicates that the data element will be use in selecting ranges, such as listing all projects where AGCCDD is greater than \$50,000. I indicates that the data element will be used in selecting specific projects from the data base, such as a listing of all projects where ACTIONDC equals 01.

TABLE B-1

PIMS DATA ELEMENTS

Data Element Number	Element Name	Format		Source	Required	Update/Use	Edit Criteria	Description/Alias
		Type	Length					
1	ACTIONDC	AN	2	Supplemental Form	If project cancelled	Dynamic/I	01,02,03,04,05,06,16,17, or blank	Action Document Code
2	AGCCDD	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Change Orders Due to Design Deficiency
2a	AGCCDD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCDD
3	AGCCCD	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Change Orders Due to Condition Changes
3a	AGCCCD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCCD
4	AGCCCR	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Change Orders Due to Criteria Change
4a	AGCCCR	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCCR
5	AGCCMS	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Change Orders Due to Miscellaneous Reasons
5a	AGCCMS	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCMS
6	AGCCSB	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Contractor Claims Submitted
6a	AGCCSB	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCSB
7	AGCCST	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Contractor Claims Settled to Date
7a	AGCCST	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCST
8	AGCCUR	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Change Orders Due to User Changes
8a	AGCCUR	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCCUR
9	AGCPCD	N	7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	Aggregate Cost of Design Change Orders
9a	AGCPCD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AGCPCD

TABLE B-1

PIMS DATA ELEMENTS (Cont.)

Data Element Number	Element Name	Format Type Length	Source	Required	Update/Use	Edit Criteria	Description/Alias
10	APCODE	N 4	Supplemental Form	Yes	Static/I	Budget Guidance Manual (DoD 7110-1-M)	Appropriation Code
11	APCOST	N 7	Supplemental Form	Yes	Dynamic/R	Numeric, positive	Appropriated Cost
11a	APCOSTD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change of APCOST
12	APSCOP	AN 100	Supplemental Form	Yes	Dynamic		Appropriated Scope
12a	APSCOPD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to APSCOP
13	APUNIT	AN 2	Supplemental Form	Yes	Dynamic	Valid Code	Appropriated Unit of Measure
14	AUCOST	N 7	Supplemental Form	Yes	Dynamic/R	Numeric, positive	Authorized Cost
14a	AUCOSTD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AUCOST
15	AUFY	N 2	DD 1390, DD 1391	No	Static/I	Current Year + 1	Authorization Fiscal Year, FY from which Congress authorized funds to be spent for construc- tion of the project
16	AUSCOP	AN 100	Supplemental Form	Yes	Dynamic		Authorized Scope
16a	AUSCOPD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to AUSCOP
17	AUUNIT	AN 2	Supplemental Form	Yes	Dynamic	Valid Code	Authorized Unit of Measure
18	CANCEL	N 2	Supplemental Form	No	Static/I	TBD*	Cancellation Code giving reason for cancellation during con- struction
19	CONAMT	N 7	Supplemental Form	Yes	Static/R	Numeric	Construction Contract Cost-- amount awarded for construction
20	CONCC	AN 20	Supplemental Form	Yes	Static		Prime Construction Contractor Name
21	CONDC	AN 20	Supplemental Form	No	Static		Prime Design Contractor Name
22	CONP	N 3	Supplemental Form	Yes	Dynamic/R	Numeric, between 0 and 100	Construction Percent Complete
22a	CONPD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CONP

* To be determined

TABLE B-1

PIMS DATA ELEMENTS (Cont.)

Element Number	Element Name	Format Type Length	Source	Required	Update/Use	Edit Criteria	Description/Alias
23	CSTCOM	N 7	Supplemental Form	No	Dynamic/R	Numeric, positive, or blank	CWE or Achieved Construction Completion Cost
23a	CSTCOMD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTCOM
24	CSTDC	N 7	Supplemental Form	No	Dynamic/R	Numeric	CWE or Achieved Design Contract
24a	CSTDICD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTDC
25	CSTDID	N 6	Supplemental Form	No	Dynamic/R	Numeric	CWE or Achieved In-House Cost for Design
25a	CSTDID	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTDID
26	CSTDIL	N 7	Supplemental Form	Yes	Dynamic/R	Numeric	Lost Design Cost
26a	CSTDILD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTDIL
27	CSTEC	N 7	Supplemental Form	Yes	Static	Numeric	Estimated Construction Cost
28	CSTEQC	N 7	Supplemental Form	Yes	Static	Numeric, positive, or blank	Estimated Collateral Equipment Cost
29	CSTEND	N 6	Supplemental Form	Yes	Static	Numeric	Estimated In-House Design Cost
30	CSTEOM	N 6	Supplemental Form	Yes	Static/R	Numeric	Estimated Annual O&M Cost of Facility When Completed
31	CSTEQC	N 7	Supplemental Form	Yes	Dynamic/R	Numeric, positive, or blank	CWE or Actual Collateral Equipment Cost
31a	CSTEQCD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTEQC
32	CSTOSHIA	N 7	OSD	Yes	Dynamic/R	Numeric, positive	Total Backlog of Occupational Safety and Health Administration Compliance Costs
32a	CSTOSHIA	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTOSHIA
33	CSTSIOH	N 7	DD 1391	Yes	Dynamic/R	Numeric	Supervision, Inspection and Overhead Cost
33a	CSTSIOH	N 7	Generated	No	Dynamic	Quarter, year	Date of Last Change to CSTSIOH
34	SCTTYP	A 1	Supplemental Form	No	Static/I	A or H	Cost Type Code
35	DELAYC	N 2	Supplemental Form	No	Static/I	THD	Delay Code for Construction

TABLE B-1

PIMS DATA ELEMENTS (Cont.)

Data Element Number	Element Name	Format Type Length	Source	Required	Update/Use	Edit Criteria	Description/Alias
36	DCONANT	N 7	Supplemental Form	No	Static/R	Numeric, positive, or blank	Estimated or Actual Design Contract Cost
37	DORCOM	AN 2	DD 1390, DD 1391	Yes	Static/I	Valid Code	DoD Component Code
38	DSCNCC	N 2	Supplemental Form	No	Static/I	TBD	Design Cancellation Code
39	DSCNCK	A 1	Supplemental Form	Yes	Static/I	S or D	Classification for Design Originality
40	DSCNDC	N 2	Supplemental Form	No	Dynamic/I	TBD	Design Delay Code
40a	DSCNDCD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to DSCNDC
41	DSCNCP	N 3	Supplemental Form	Yes	Dynamic/R	Between 0 and 100	Design Percent Complete
41a	DSCNPD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to DSCNCP
42	DTEAWD	N 6	Supplemental Form	Yes	Static/R	Valid day, month, year	Construction Contract Award Date--day, month, year
42a	DTECON	N 4	Supplemental Form	No	Static	Valid month, year	CWE or Achieved Construction Completion Date
43	DTEDAW	N 6	Supplemental Form	No	Static/R	Valid day, month, year	Estimated or Actual Design Contract Award Date--day, month, year
44	DTEDC	N	Supplemental Form	Yes	Dynamic/R	Valid month, year	CWE or Achieved Design Completion Date
44a	DTEDCD	N	Generated	No	Dynamic	Quarter, year	Date of Last Change to DTEDC
45	DTECA	N	Supplemental Form	Yes	Static	Valid month, year	Estimated Construction Contract Award Date
46	DTECC	N 4	Supplemental Form	Yes	Static	Valid month, year	Estimated Construction Completion Date
47	DTEEIA	AN 4	Supplemental Form	No	Static	Numeric, positive, or blank	EIA Date
48	DTEELS	AN 4	Supplemental Form	No	Static	Numeric, positive, or blank	EIS Date
49	DTESCC	N 4	Supplemental Form	Yes	Static	Valid month, year	Scheduled Construction Completion Date, as scheduled in construction contract

TABLE B-1

PIMS DATA ELEMENTS (Cont.)

Data Element Number	Element Name	Format		Source	Required	Update/Use	Edit Criteria	Description/Alias
		Type	Length					
50	EIAC	AN	1	Supplemental Form	No	Static/I	1, 2, or blank	Environmental Impact Assessment Status Code
51a	EIACD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to EIAC
51	EISC	AN	1	Supplemental Form	No	Static/I	1, 2, 3, 4, or blank	Environmental Impact Statement Status Code
51a	EISCD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to EISC
52	FACODE	N	6	DD 1390, DD 1391	Yes	Static/I		Facility Category Code
52a	FLAG	A	7	1&H	No	Dynamic/I		A field that 1&H can use to enter codes designating projects they want to "flag" for some reason.
53	DTESDC	N	4	Supplemental Form	No	Static	Valid month, year	Scheduled Design Completion Date
54	FUNDY	N	2	Supplemental Form	Yes	Static/R	Numeric, positive	First Funding Fiscal Year
55	FUNDY	N	2	Supplemental Form	No	Static/R	Numeric, positive, or blank	Second Funding Fiscal Year
56	INSCOD	AN	6	Supplemental Form	Yes	Static		Installation Code, UIC
57	LOCCOD	AN	2	Supplemental Form	Yes	Static/I	Valid code from Budget Manual (Dob 7110-1-H)	Location Code - state/country
58	MAJCOM	AN	10	Supplemental Form	Yes	Static/I		Major Command
59	PROCEL	AN	6	DD 1391	Yes	Static	5 digits, one character	Program Element Code
60	PRCOST	N	7	DD 1390, DD 1391	Yes	Dynamic/R	Numeric, positive	Programmed Cost
60a	PRCOSTD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to PRCOST
61	PRSCOP	AN	100	DD 1390, DD 1391 (Project Description)	Yes	Dynamic		Programmed Scope
61a	PRSCOPD	N	2	Generated	No	Dynamic	Quarter, year	Date of Last Change to PRSCOP
62	PRUNIT	AN	4	DD 1390, DD 1391	Yes	Dynamic	Valid code	Programmed Unit of Measure

TABLE B-1

PIMS DATA ELEMENTS (Cont.)

Data Element Number	Element Name	Format Type Length	Source	Required	Update/Use	Edit Criteria	Description/Alias
63	PROJID	AN 10	DD 1391	Yes	Static		Project Number
64	PROJOB	A 2	Supplemental Form	Yes	Static/I		Project Objective
65	RNCOD	A 1	Supplemental Form	Yes	Static/I	Y or N (Yes or No)	Replacement/Modernization Code
66	TBMAR	N 7	OSD	Yes	Dynamic/I, changed annually	Numeric, positive	Total Backlog of Maintenance and Repair Activities
66a	TBMARD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to TBMAR
67	WECOST	N 7	Supplemental Form	Yes	Dynamic	Numeric, positive	Current Working Estimate of Cost
67a	WECOSTD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to WECOST
68	WESCOP	AN 100	Supplemental Form	Yes	Dynamic		Current Working Estimate of Scope
68a	WESCOPD	N 2	Generated	No	Dynamic	Quarter, year	Date of Last Change to WESCOP
69	WEUNIT	AN 2	Supplemental Form	Yes	Dynamic	Valid Code	Current Working Estimate of Unit of Measure

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
	AD-A164	281
4. TITLE (and Subtitle) Project Information Management System (PIMS) for Military Construction: Functional Description		5. TYPE OF REPORT & PERIOD COVERED Final Task Report
		6. PERFORMING ORG. REPORT NUMBER LMI Task ML012
7. AUTHOR(s) Paul F. Dienemann Joan E. Lengel		8. CONTRACT OR GRANT NUMBER(s) DoD MDA 903-77-C-037-0
9. PERFORMING ORGANIZATION NAME AND ADDRESS Logistics Management Institute 4701 Sangamore Road Washington, D. C. 20016		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS ML012
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Military Construction, Management Information System, Data Base, Management System, Facilities Programming, Construction Management		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
The functional description of a computerized Project Information Management System (PIMS) is presented. PIMS will track information on military construction (MILCON) projects from the time they are proposed by the Military Departments until construction is completed and contractor claims settled. Information for approximately 4,000 projects will be available on PIMS when the system is fully operational. Standard (preformatted) reports will be prepared after each update of the data base. <u>Ad hoc</u> reports will be generated with on-line computer terminals.		

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