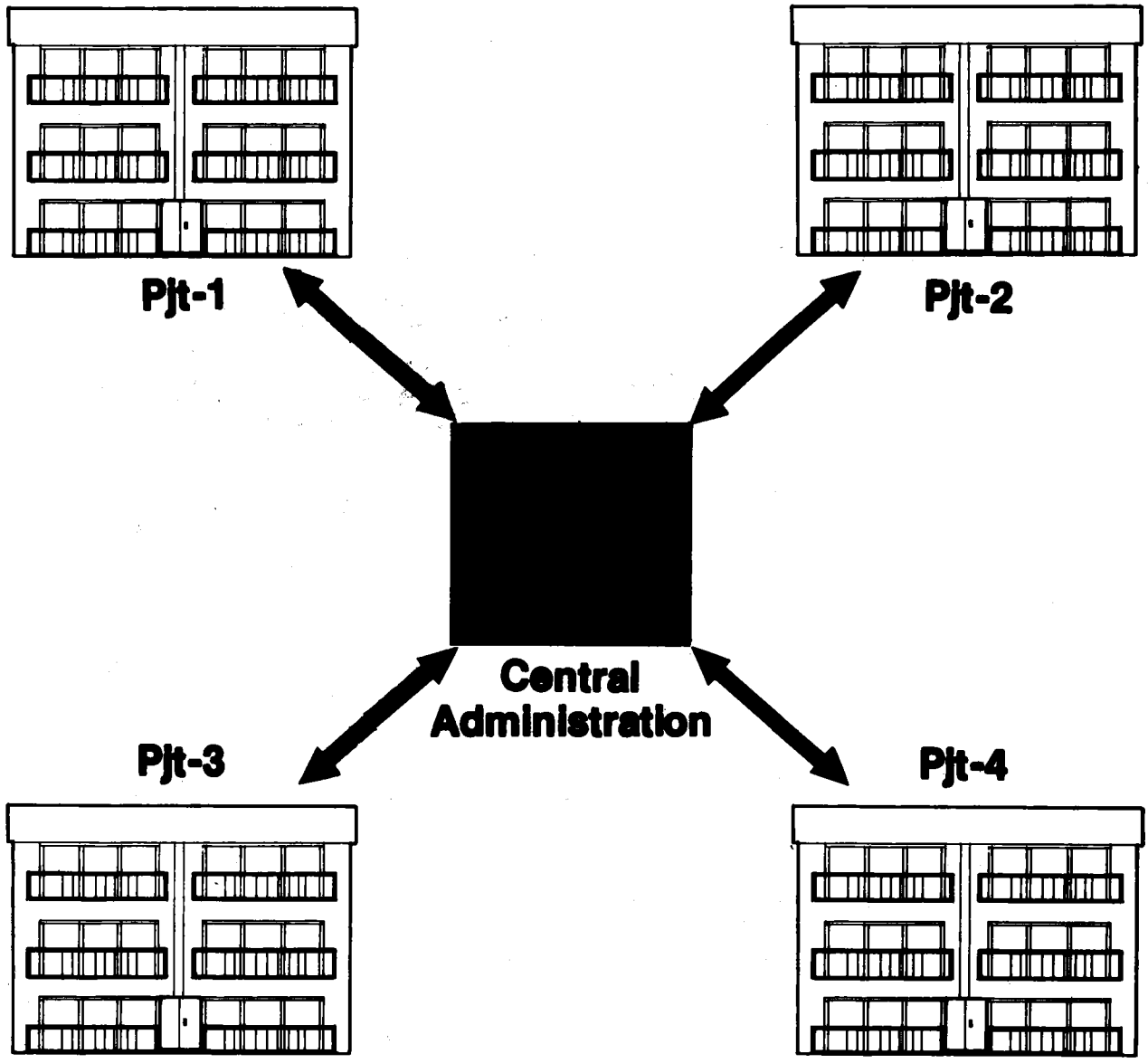
U.S. Department of Housing and Urban Development
Office of Housing

A HUD Guidebook

Project - Based Budgeting/Management and Supporting ADP Systems



A HUD GUIDEBOOK

ON PROJECT-BASED BUDGETING/MANAGEMENT

AND SUPPORTING ADP SYSTEMS

Office of Public Housing
U.S. Department of Housing and Urban Development
Washington, D.C. 20410

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FOREWORD

Over the last several years, the need for implementing improvements in the management of public housing agencies has intensified. Many PHAs have examined the utilization of a project-based budgeting process and the eventual decentralized control of expenditures. They have recognized that such improvements may bring about increases in operational efficiency and savings in administrative and project-related costs.

Additionally, some PHAs have found it beneficial to take advantage of various recently-developed automated data processing systems tailored to the public housing environment to augment their implementation of project based budgeting. Depending upon the size of the PHA, the structure of the accounting system, staff capability, and the availability of technical assistance, agencies have been able to substantially improve productivity and lower costs.

This guidebook is designed to provide a resource to those PHAs considering conversion to project-based budgeting, on a manual or ADP-supported basis. It can be used as a strategy planning tool, a conceptual framework for hardware or software selection, or a field-oriented technical assistance guide. It is based upon the experiences of more than thirty, various-sized PHAs which have undergone the process of conversion from consolidated to project-based budgeting.

Use of this guidebook will assist PHA Executive Directors in their efforts to strengthen their operations, and thereby improve the provision of services to their residents. On behalf of Secretary Pierce, I am pleased to make it available.

James E. Baugh
Deputy Assistant Secretary
for Public and Indian Housing

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1.0 INTRODUCTION

1.1 Definition of Project Based Budgeting (PBB)

Project-based budgeting (PBB) is a method of budget preparation that involves developing a separate budget for each project on an individual basis. It requires identifying the income and expense items for each project in the Public Housing Agency (PHA) to set the project's portion of PHA budget projections. The PBB process is in contrast to a consolidated budgeting system in which one budget is prepared encompassing all projects. The consolidated system is presently used by most PHAs.

A project-based budgeting system can be a manual or a computerized system. A PBB system which is maintained by computer would be appropriate for larger PHAs in which the amount of data being manipulated would strain the manual accounting procedures used in most PHAs. The conversion process in a particular PHA may involve changing from a consolidated accounting system to a project based accounting system as well as from a manual to an automated system (see Exhibit 1-1).

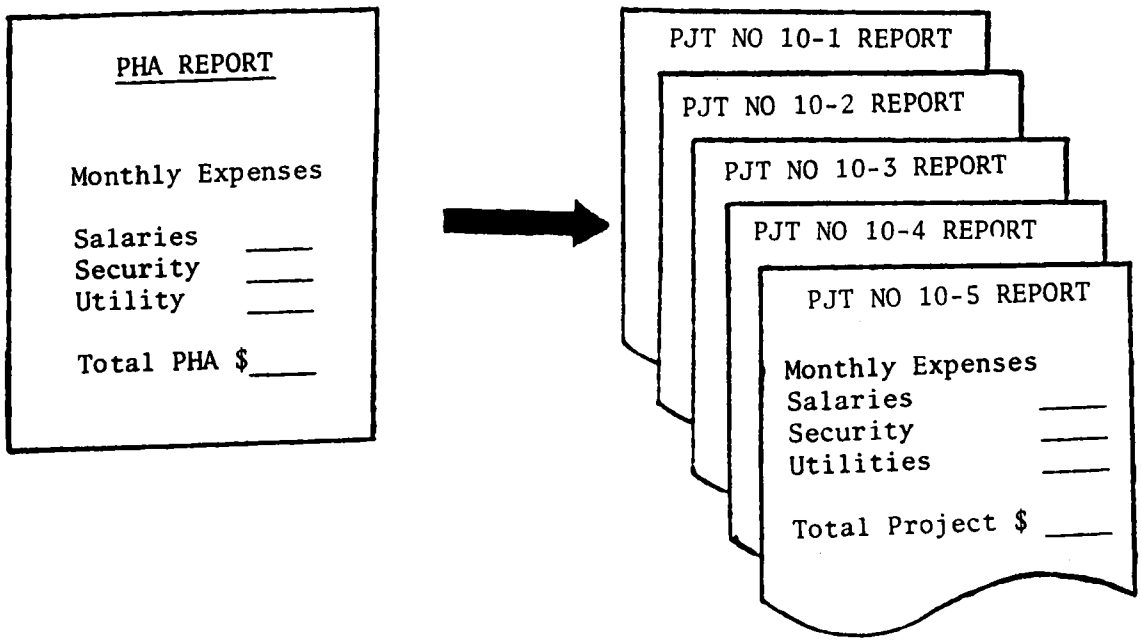
1.2 Purpose of the Guidebook

The guidance prepared and provided through this document outlines in general terms how a PBB system should be implemented by a Public Housing Agency.

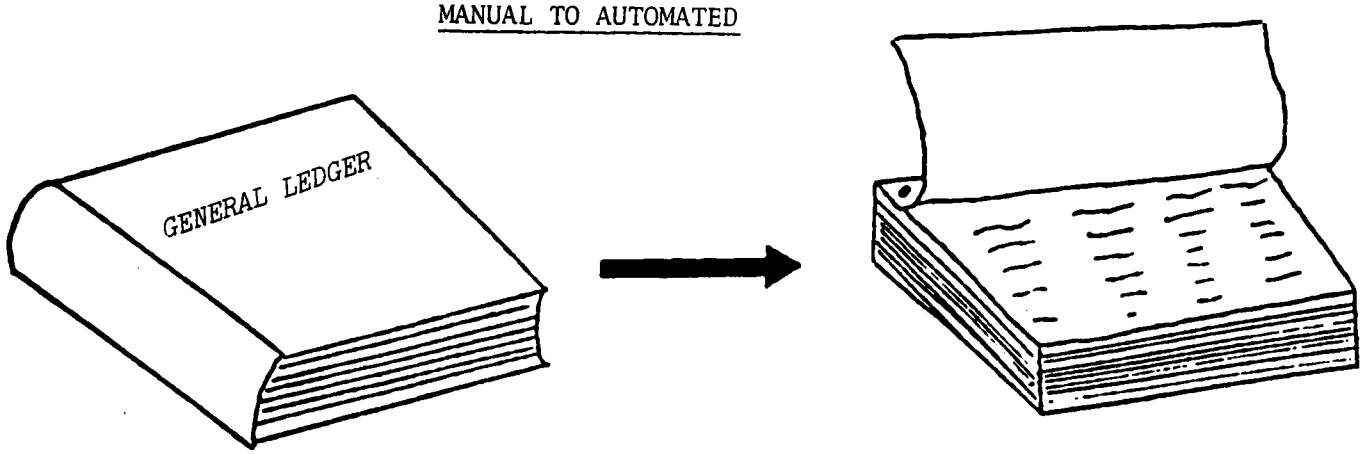
EXHIBIT 1-1

ACCOUNTING SYSTEM CONVERSIONS

CONSOLIDATED TO PROJECT-BASED



MANUAL TO AUTOMATED



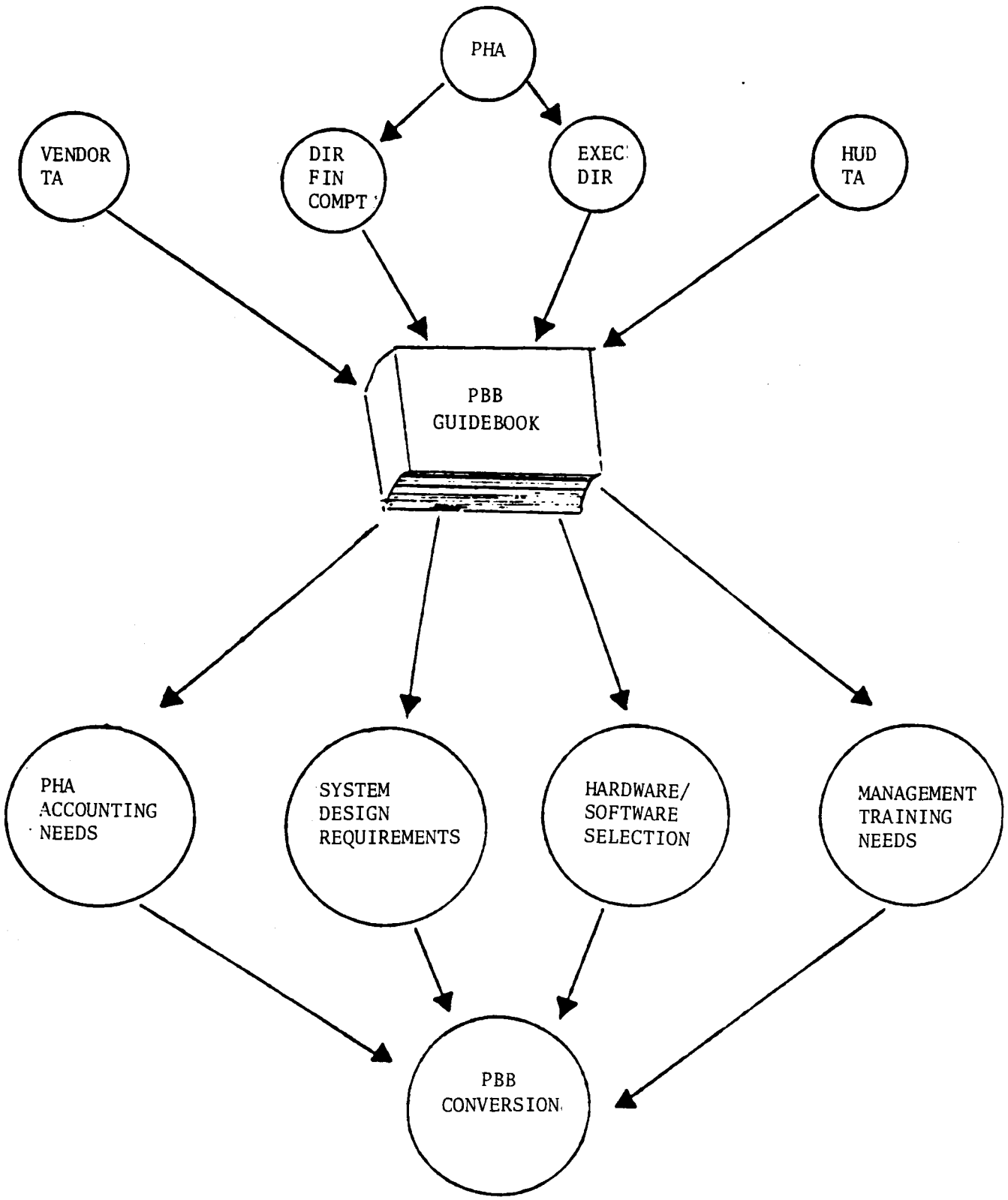
The guidebook is intended to be a beneficial resource: for the development of field oriented technical assistance programs, for PHA Executive Directors as a strategy planning tool, and as a conceptual frame of reference for hardware and software selection. These features should be quite beneficial to the typical PHA Executive Director. In these senses, it should be viewed as a comprehensive summary of the conversion process. Accordingly, it should not be treated as a definitive step-by-step cookbook for all the manual to automated PBB efforts likely to be undertaken. Special problems that have occurred in previous accounting system conversions are highlighted, with recommendations of alternative solutions that have been successful in prior applications.

The guidebook will assist in providing specialized technical assistance in the field to local PHAs adopting a project based budgeting system. Introductory experiences in the conversion from previous accounting methods in 34 selected PHAs indicated that more detailed information on project-based budgeting and automated systems would have been helpful to PHA employees. This guidebook will, therefore, be based on the experience of these PHAs.

The Executive Director of the PHA should find that, by using the guidebook, the task of preparing the office for conversion to PBB may be facilitated. The PHA Director of Finance, or Comptroller, should find that many implementation tasks may be assisted by using the guidebook (see Exhibit 1-2).

EXHIBIT 1-2

USE OF THE GUIDEBOOK



The "how to" guidebook will cover technical details such as determining accounting/budgeting needs, PBB system design requirements, and selection of hardware/software components. Further, the guidebook will highlight the use of PBB for management functions and identification of staff training needs. Other resources to be called upon for guidance are discussed, such as HUD central and regional office PBB program personnel, technical assistance vendors, and hardware and software vendors.

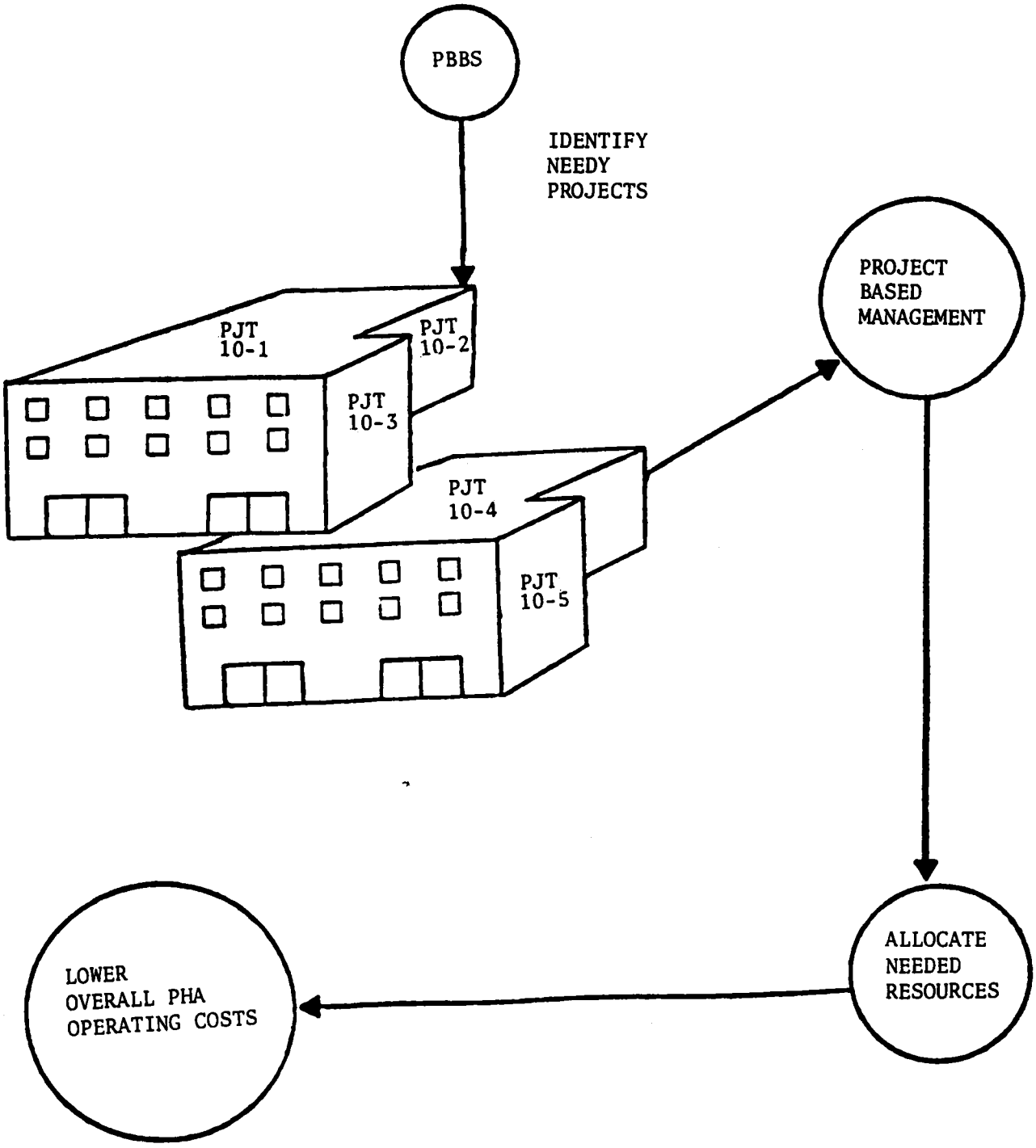
The use of this guidebook should make the conversion to a PBB system smoother and more useful to PHA personnel. Particularly, as each PHA builds a detailed plan for conversion, this guidebook can ensure that major pitfalls having long run cost and efficiency implications are avoided. Similarly, as PHAs consider the selection of appropriate technical assistance for PBB conversions, the guidebook should prove to be of considerable value.

1.3 Background of Project-Based Budgeting

As a system of keeping track of operating costs for individual projects, PBB was utilized until the early 1950's during which period many of the PHAs in the country were established. As the PHAs grew in size, however, the method of accounting was changed to parallel the consolidation of multiple project subsidies into a single Annual Contributions Contract (ACC). Consolidated accounting and reporting, therefore, have been required by HUD for many years.

EXHIBIT 1-3

PBBS/PBM PROCESS



projects and to improve the management and operation of such projects. Substantial weight is given by CIAP to the improvement of project management and operations as part of a comprehensive approach to project rehabilitation. It is believed that such improvements will help to sustain and institutionalize the physical improvements of individual projects.

Additionally, HUD has the need to evaluate the application for funds and monitor the implementation of CIAP work programs throughout the 3-5 year period of the physical improvements undertaken. The HUD application must include all costs allocated to the individual project. While the approved project is active, the PHA is required to monitor its expenditures at the project level in order to meet the approved budget.

PBBS development and implementation under the Urban Initiatives Program has provided the tools appropriate to meet most PHA operating and HUD monitoring needs. Following HUD approval of their plans for revamping previous consolidated accounting systems, the selected 34 PHAs were allowed thirty (30) months in which to put their PBB systems into full operation. Most PBB systems have been designed and initiated, and several have become fully operational to date. Early experiences with the system development and implementation effort have brought awareness of the need to learn from these PHAs how to deal with the problems of converting the accounting and management methods from consolidated to project-based, as well as from manual to automated.

1.4 HUD PBB Reporting Requirements

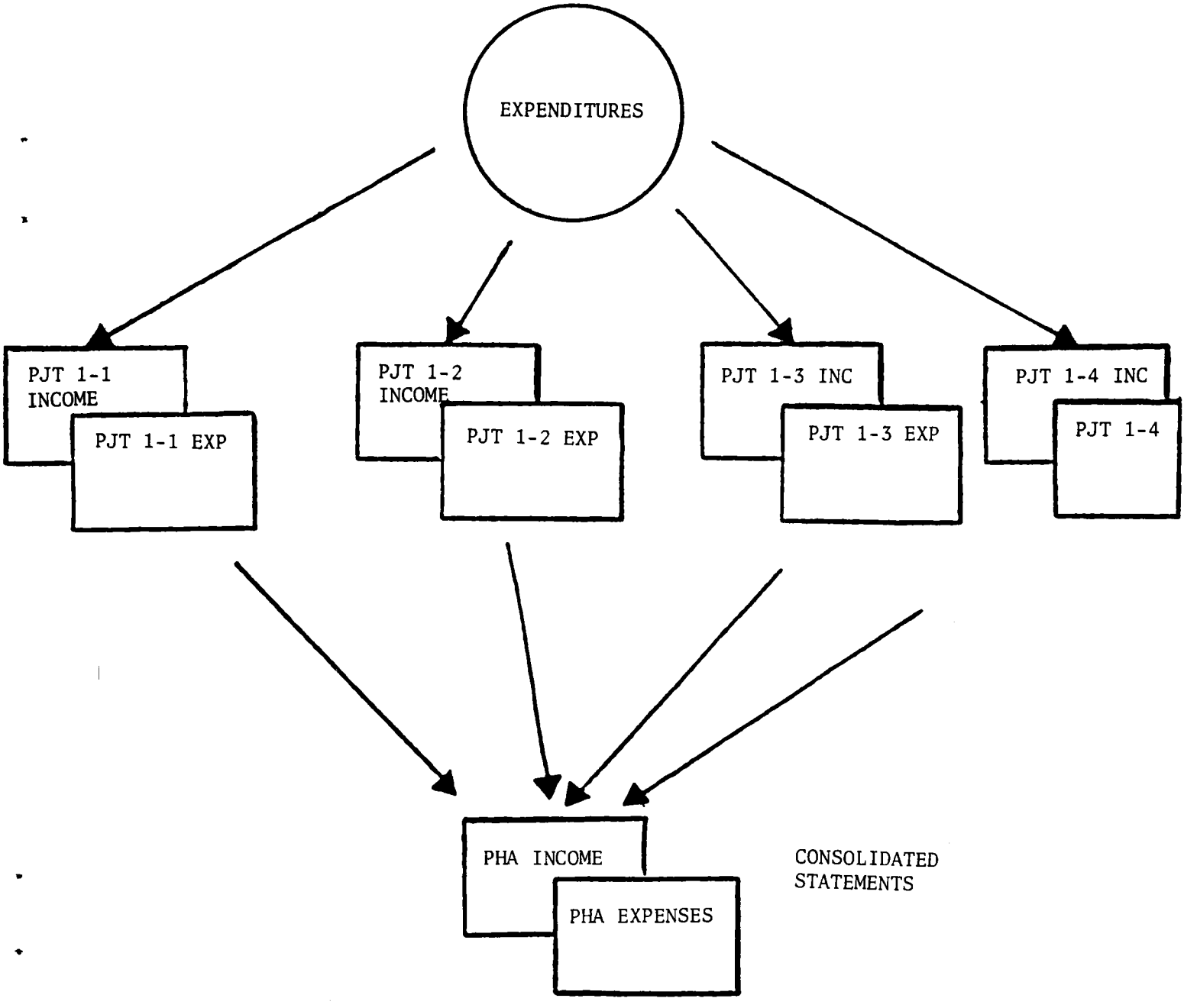
The goal of project based budgeting and accounting is to improve PHA financial management functions by identifying, allocating, and controlling all line item expenditures on a project-by-project basis. Presently, PHAs utilize a centralized accounting system consisting of a general ledger and subsidiary cost ledgers in sufficient detail to meet the standards mandated by HUD. However, expenditures are generally identified and monitored only at the total PHA level. The PBB system requires a detailed income and expense account for each project (see Exhibit 1-4).

Items to be addressed in the establishment of a project-based budget structure should adhere strictly to the specified chart of accounts as found in the HUD Low Rent Housing Accounting Guide. An example of such a chart follows:

- Income
  - Apartment rents
  - Other
- Administrative Expenses
  - Salaries
  - Telephone
  - Collection Fees/Court Costs
  - Supplies
  - Central Office Overhead
  - Other
- Operating Expenses
  - Utilities
    - Heating fuel
    - Electricity
    - Cooking gas
    - Water and sewer

EXHIBIT 1-4

PBBS COST ALLOCATION PROCESS



- General Maintenance

  .. Maintenance labor (permanent)
  .. Maintenance labor (central force)
  .. Maintenance labor (other)

- Materials and Supplies

- Contract Costs

o General Expenses

- Collection loss
- PILOT
- Insurances

  .. Blanket property
  .. Health and life
  .. Workmen's compensation
  .. Unemployment
  .. Pension benefits

o Equipment Replacement

o Capital Expenditures

- Equipment
- Structural

o Extraordinary Maintenance.

Project managers should ideally play a significant role in the preparation of these budgets, since the emphasis will be on controlling expenses at the project level.

The capability to generate a variety of additional reports that will provide PHA administrators and project managers with useful information on the financial and operating aspects of each project can be built into an automated system. One example is the automated printing of all key HUD financial reports in HUD report format, so that no manual transcription of data onto HUD forms is required. This feature should facilitate the task of complying with HUD report requirements.

Other unique design features that could be incorporated into an automated PBBS include:

- o A general ledger account coding and cost coding system which yields maximum flexibility and which identifies important elements of management information for later report purposes.
- o Generation of special reports on applicants and/or tenants based on selection criteria established by the PHA.
- o Projection of operating expenditure levels as changes are proposed in physical, design, residency, or other aspects of planned or current projects.
- o Accumulation of fiscal year-to-date and project-to-date costs.
- o Automatic printing of rent and other recurring charges for producing billing statements.

Individual PHAs may have unique reporting requirements in addition to HUD's mandatory financial reporting requirements. An automated system installed by the PHA should reflect these needs and incorporate sufficient capacity to handle more detailed information as PHA managers learn how to use the system to monitor the operations of their projects.

1.5 PHA Use of Project Based Budgeting/Management

The main goal of implementing a PBB system is to enable the PHA to carry out more effectively and cost-efficiently the financial and operating aspects of each individual PHA project. The detailed financial reports generated to achieve this goal can be used to assess the need for each expenditure and to develop appropriate budget levels to suit the requirements of the project. With accurate historical budget and expenditure information, the PHA Executive Director and project managers can more realistically

budget levels on a more detailed basis, the possibility of cost overruns can be anticipated and counteracted.

Hopefully, the introduction of a PBB system will improve management and financial reporting systems to the extent that PHA personnel and other resources could be more efficiently allocated to those areas of greatest need. Identification of disproportionate amounts being spent on repairs, maintenance and energy for particular projects, for example, is possible with the detailed information provided by PBB. This could result in targeting such projects for more efficient utilization of funds.

Additionally, the availability of detailed information on each project provided by the PBB system can lead to improved administrative efficiency. Decisions can be made quicker and with more data to support them.

PBB would also provide a basis for the evaluation and comparison of financial and operating characteristics of similar and different types of public housing projects. Factors taken into account might include vacancy and rent collection rates, tenant accounts receivable, vandalism costs, energy utilization, maintenance costs, and vacant unit turnaround time.

The effectiveness of a PBB system will be determined largely by the way the system is adopted and integrated into the PHA. As a result of the improvement in task and personnel allocation, monitoring and reporting functions possible under PBB, PHAs may decide to establish formally a project based management (PBM) system. PBM could allow greater control over accountability for expenditures and personnel. Project managers could be trained to

participate more fully in the expenditure as well as budget preparation process, and could also be evaluated on the basis of their individual costeffective performance.

1.6 PBB Benefits

The improvement of financial and management accountability brought about by PBB should result in more effective planning, budgeting, and operation of a project by the PHA, and more effective monitoring by HUD. Hopefully, it will also lead to a more efficient allocation of local and Federal resources, particularly when operating subsidies must be carefully conserved (see Exhibit 1-5). The information obtained from PBB could also help encourage tenant awareness of the operational expenses of a project and their direct impact upon available income.

Through the process of preparing budgets at the project-level, PHA managers may learn to handle additional responsibility and authority. An increased awareness of the budget and expenditure process could hopefully result in their being more cost effective in managing their units. It could be easier to discern which projects (and which managers) were performing well and which needed improvements in their operation.

With such detailed information on relative performance, the PHA could reallocate its resources more wisely. Projects with lesser needs could be budgeted more in line with known expenditure levels and projects with greater needs could be budgeted appropriately. Individual managers could be rewarded on the basis of their relative performance, which would hopefully provide even further incentives to be cost efficient.

together, the 6-member consortium represents 64,225 residents housed in 18,128 units in 106 projects. The consortium, therefore, would comprise the largest PHA in the sample, and would meet the HUD definition of an extra large PHA.

Programmatically, most of the PHAs are not combined with another function, such as community development. In only 2 of 23 respondents was there a combination, which generally did not affect the PBB implementation process.

2.2 Previous Accounting System Characteristics

The accounting system which the typical PHA had before developing and implementing a PBB system was a centralized, consolidated reporting system. Elements of the accounting records were standardized consistent with HMG 7511.1, Low-Rent Housing Accounting Guide. The accounting system was manually maintained, though some assistance may have been provided by an outside service bureau for payroll processing.

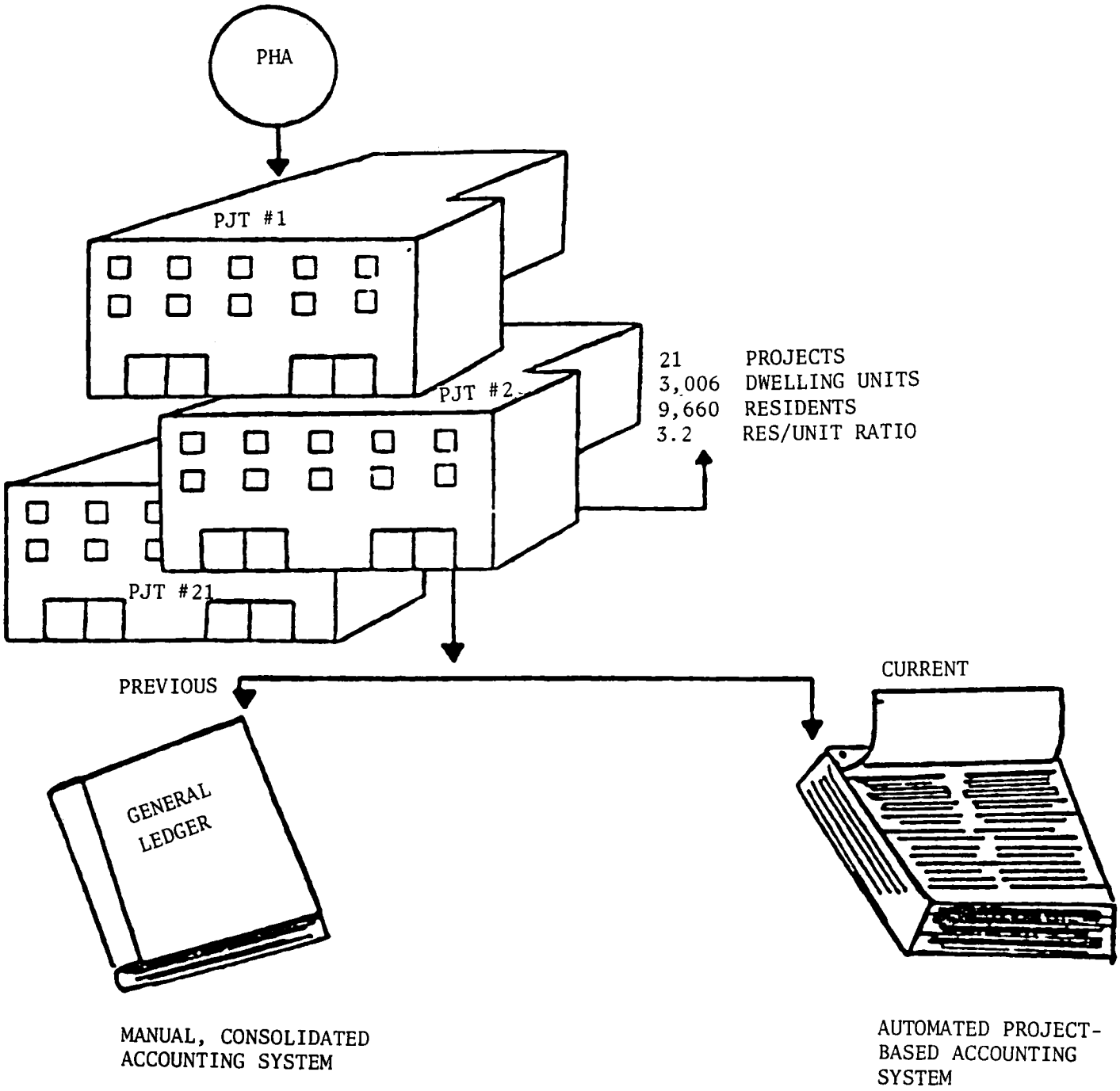
The previous accounting system was used almost exclusively for financial purposes. It was generally not used to support broader management functions, such as staff performance evaluations.

2.3 Design Characteristics of PBB System

The PBB system developed and implemented in the typical PHA participating in the PHUIP is an automated accounting system (see Exhibit 2-2). It is a system by which all budget requests as well as expenditure controls can be decentralized to the level of the individual PHA project. The system identifies each element of

EXHIBIT 2-2

TYPICAL PHA STRUCTURE



projected cost (within the budget) or actual cost (within monthly expenditures) in the appropriate account category and allocates (or "charges") each element to the responsible project. In this fashion, the monthly (or yearly) budget can be monitored at the project level rather than only at the consolidated PHA level.

Staff of the typical PHA may have had some previous experience with project based budgeting. A similar system was required by HUD during the period 1937 to 1956 and some current PHA staff had experience with the system used at that time. Other current PHA staff had been exposed to PBB through seminars on the subject or through demonstrations provided by other PHAs over the last several years. However, in most agencies, staff have not had previous PBB experience.

Consequently, in the typical PHA, some PBB training for staff is necessary. Because of the uniqueness of the structure of a PBB system, the complexities of hardware/software which must be installed, and the expanded data collection and dissemination tasks which are involved, new staff positions typically had to be classified to fit new skills which were required. Often, changes in work skills were made in the fiscal departments of the PHA. For example, former account clerks needed new skills to perform on-line financial data entry functions and fiscal managers needed to learn data retrieval functions.

While the typical PHA had been operating its PBB system for only 15 months at the time of the survey, most of the design characteristics had been implemented in that period. An essential element of PBB is the process used to allocate various cost

elements (see paragraph 3.6). PHAs incur some costs that are easily segregated and reported by project, such as materials and supplies or contracted maintenance services. In turn, those project level costs become the basis for project level budgeting and monitoring of expenditures in those respective categories.

At the same time, other major costs like utilities and administrative management are incurred at a PHA central level and likewise require allocation to a project level. In those cases, PHAs have elected on many occasions a permanent basis for allocating some expenses. Accordingly, PHAs will in appropriate instances choose tenant population, per-unit basis, building unit square footage, or the consumption rate of certain related services as a basis for project level allocation of centrally incurred costs.

When PHAs have allocated central costs to projects, it has been most frequently on a monthly basis. Thus, throughout the fiscal year, cost items allocated at a project level do not have to remain constant. The PBB system is designed so that adjustments can be made to allocation levels from month to month if a basis for any allocation changes to a significant degree.

2.4 Management Utilization of PBB System

An important aspect of the design of a PBB system is its impact on the management of the PHA. In that regard, the PBB system is only one of a number of management tools which the administration of the agency has at its disposal. In particular, the PBB system can provide information which could significantly

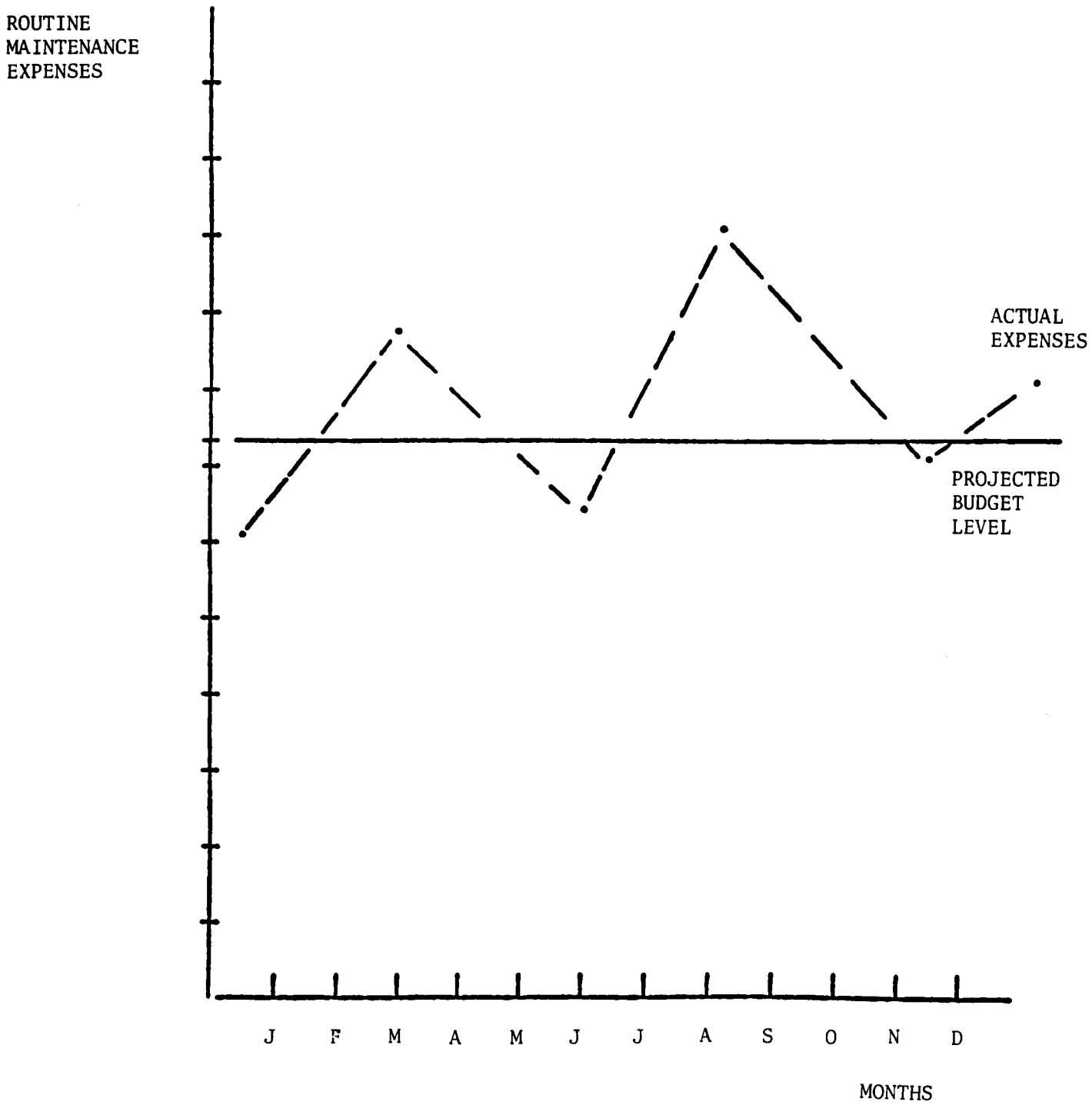
strengthen administrative control of various PHA functions. For example, the availability of data on the projected and actual expenditures of each project can provide a base with which to evaluate the performance of project managers.

The typical PHA, however, has not utilized PBB for that purpose, although it may be an appropriate application for subsequent implementations. Even so, PHAs are moving towards actual project based management by distributing more responsiblility for financial and administrative decision-making to the project manager level. In general, project managers are involved in the development of the budget for the fiscal year, but are not fully responsible for controlling all the elements of that budget. For example, a common element of the budget is security expenditures. That portion of security cost allocated to an individual project may depend upon the per unit calculation. In fact, the project manager may not have any control over the amount of security provided and subsequently charged to his project, since it is based on a factor not controlled at a project level, i.e., number of units.

In another example, a project manager may project the amount of routine maintenance he would require during the next fiscal year, and therefore budget a fixed amount each month. However, several functions, particularly maintenance and repair work, may be controlled centrally while actual expenditures depend largely upon the number of service calls received from each project (see Exhibit 2-3), which can be difficult to forecast.

EXHIBIT 2-3

PROJECTED VS ACTUAL EXPENSES



After many years of centralized expenditure control, however, the conversion to project-based management, even on a restricted basis, requires some redefinition of the manager's role and some training of affected staff. Project level staff cannot accept such new responsibilities without sufficiently detailed information on project expenditures. Such information generally was not provided to the managerial level under previous accounting systems. In the case of the typical PHA, with 21 individual projects, providing such information substantially multiplies the amount of paperwork which must be manipulated. Each type of report is duplicated for each project and distributed to the responsible manager.

The profusion of information has sparked changes in the management operations of a typical PHA. Project managers are more sensitive to expenditure levels within their projects, since under PBB they may receive monthly cost-to-date, year-to-date, and variance-from-projected-budget figures. As the PHA's experience with PBB grows, it may be expected that an individual manager's performance would be monitored through data from PBB. Some PHAs have established an evaluation system with rewards given to managers who come closest to meeting their yearly budgets. Other PHAs include consideration of budget performance in salary review procedures.

Another impact of the PBB system's capability to analyze and disseminate information is the utilization of reports generated by the system for purposes other than accounting and budgeting.

At the typical PHA, the system design requirements incorporate several additional management functions. These functions may include the following:

- o Section 8
- o Payroll
- o Resident/applicant information
- o Maintenance operations management
- o Energy management.

The design requirements address these broad functions within the system development process. As a result, software which was leased or purchased often incorporates substantially broader capabilities than required by the usual accounting functions. Reports generated for these broader functions represent a substantial portion of the information flow through the automated system.

2.5 Preparation of Form HUD 52599 (Statement of Operating Receipts and Expenditures)

The ability of the PBB system to generate data necessary for HUD-required reports is very important. At the typical PHA, HUD reports are produced by the PBB system on an automated basis, particularly the Form HUD 52599, Statement of Operating Receipts and Expenditures. The system generates actual versus budgeted expense reports for all accounts. As well, subaccount input items for the HUD 52599 can generally be extracted from the PBB system automatically. The account titles and code numbers should correspond to those on the form.

Monthly receipts and expenditure data are generally produced in a format which is consistent with the HUD Form 52599. However,

in some PHAs, the system has been designed so that required data is printed out not only in the format, but also on the form, so that no manual transfer of data is necessary. At other PHAs, the data are printed on computer ledger paper rather than on the form blanks. These capabilities are principally features of customized software packages developed by individual PHAs.

2.6 ADP Support System Characteristics

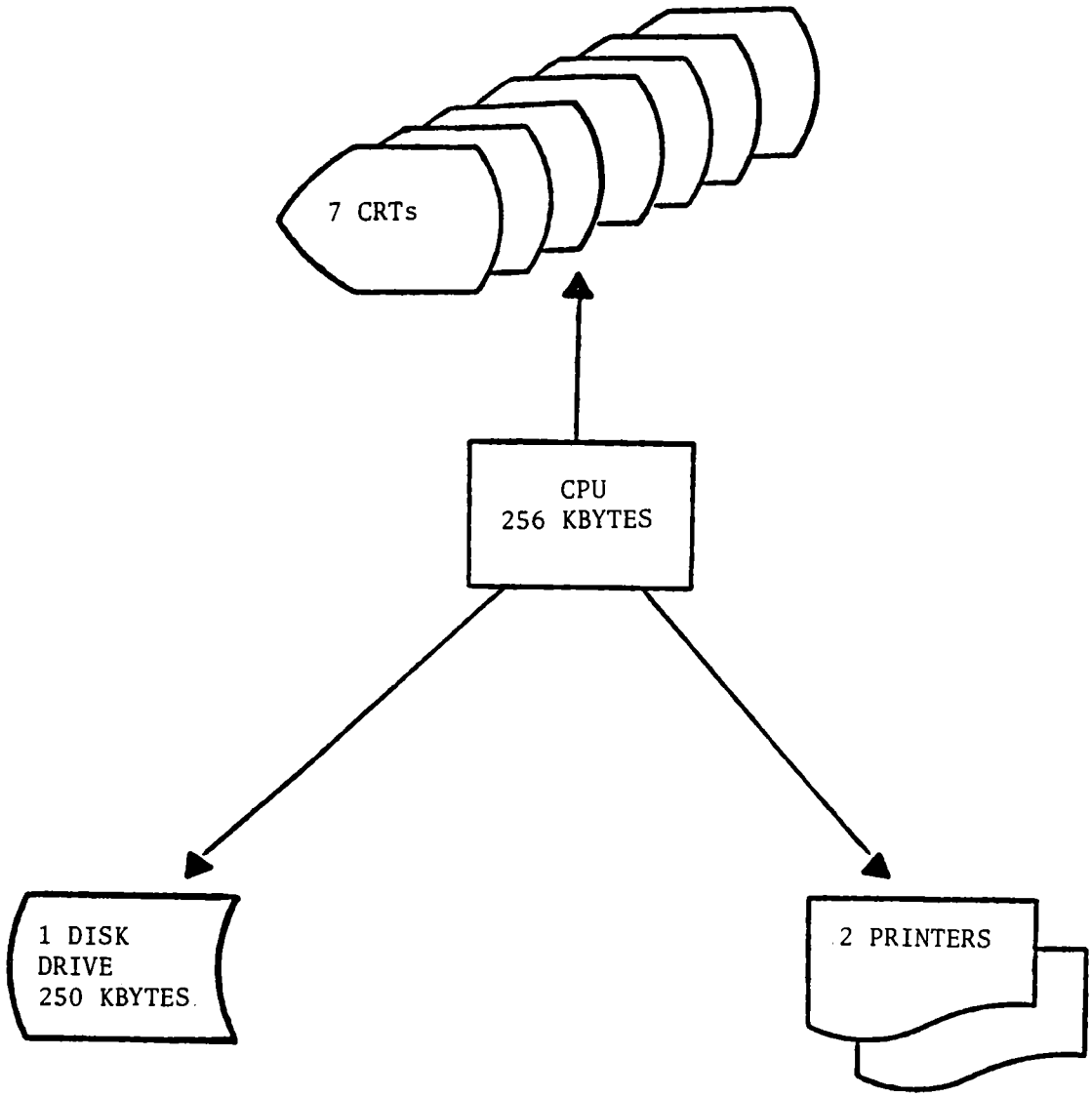
For any PHA which is automating its PBB system, the investment in hardware and software is the most crucial element. With the dizzying array of computers and the variety of vendors and software development firms, the acquisition of specific hardware and software is quite complex. Nonetheless, the PHAs in the sample seem to have accomplished this task with some success.

The typical PHA acquired a hardware environment based upon a minicomputer of modest proportions to address its needs (see Exhibit 2-4). CPU capacity averages slightly more than 200k bytes, most often a unit of 256k bytes core memory. A single disk drive, with approximately 250k bytes of memory, 7 CRTs, and 2 printers are included in the typical installation. The PHA chose to purchase, rather than lease, the hardware. This is probably a function of the availability of HUD funds for acquisition through the PHUIP program. Monthly equipment maintenance costs approximately $950.

In terms of software designed to the PHA's specifications, an outside contractor developed a new software package for the typical agency in a process which took more than 22 months from

EXHIBIT 2-4

TYPICAL PHA HARDWARE INSTALLATION



requirements definition to system implementation, and which cost nearly $80,000. Most often, the PHA purchased a software package from the contractor and paid approximately $770 a month in software maintenance costs. Even though the software was developed specifically for the PHA installation, it generally required some modification after implementation.

The typical PBB hardware/software environment required an additional expenditure in staff and supplies to support the system. Generally, one shift averaging 2.5 people was necessary, with a total personnel cost of $3703 per month. (The average staff person performing these functions cost approximately $16,600 per year.) Supplies cost another $520 per month.

The overall expenses of the typical agency did not change significantly, however. This indicates that agencies were able to meet their ongoing systems personnel needs largely from within their present staff. The agency did not generally share expenses or provide support to another PHA or local governmental program (except in the cases of consortium arrangements).

Major features of the PBB system should be noted. The software was generally well documented by the contractors, with the appropriate planning and operational guides provided to the PHA. This should facilitate the performance of necessary enhancements and routine maintenance activities. An online data inquiry capability was designed into the system utilizing user-friendly programming languages such as BASIC, Databus (a BASIC/COBOL mixture), COBOL, and RPG II. The number of programs resident on the PBB system averaged 130, but ranged quite broadly.

2.7 Acquisition and Operational Costs

The cost of acquiring and operating a fully featured PBB system with the additional capabilities generally desired by PHAs varies substantially. Major factors which influence the cost are the degree to which outside contractors are used as opposed to in-house systems staff, the length of the development effort, and the extent of applications the agency wants to address in the system.

Size of the PHA is also a major factor. Although similarly sized agencies may need a similarly structured system, overall costs can be lowered through sharing development and operational expenses with another agency. The consortium arrangement is an excellent vehicle for such a sharing process. Benefits of the arrangement include not only lowered development costs, but also improved service because the consortium can afford to implement a more comprehensive system than the PHA members individually.

The typical individual PHA encounters one-time costs of between $110-150,000 for the development and implementation of an automated PBB system, including hardware and software (see Exhibit 2-5). Reasonable equipment costs for the typical installation could be about $60-80,000, depending upon the specific equipment configuration, including peripherals, that is needed. Software costs could range between $50-70,000, depending on whether an existing package was being bought and customized or an entirely new package developed.

Operational costs vary as well. The typical installation would incur the following costs as an average:

EXHIBIT 2-5

TYPICAL PHA HARDWARE/SOFTWARE COSTS

System Acquisition			
Hardware	$ 60,000	to	$ 80,000
Software	50,000	to	70,000
Total Cost	$110,000	to	$150,000

System Operation	
Hardware Maintenance	$ 950/month
Software Maintenance	760
Fiscal/Systems Staff (3)	3,700
Supplies	500
Total Monthly Cost	$ 5,910
Total Yearly Cost	$71,000

- Hardware maintenance - $ 950/month
- Software maintenance - $ 760/month
- Fiscal/systems staff (3) - $3700/month
- Supplies - $ 500/month.

The total recurring operational cost would be $5910 per month, or approximately $71,000 per year, for all PBBS functions.

3.0 RECOMMENDED PBBS CONVERSION PROCESS

3.0 RECOMMENDED PBBS CONVERSION PROCESS

The process of converting from a consolidated accounting and budgeting system to a project based system is complex. It involves several distinct changes in management functions in addition to the changes in financial data compilation and dissemination levels. Consequently, it should be approached with care and caution.

The conversion from a manual to an automated accounting system, no matter the structure, involves substantial changes in information collection, processing, storage, and retrieval procedures. Staff skills necessary to operate the system are very different and the specialized hardware and software place certain technological requirements upon financial managers. These procedural changes should also be approached with care.

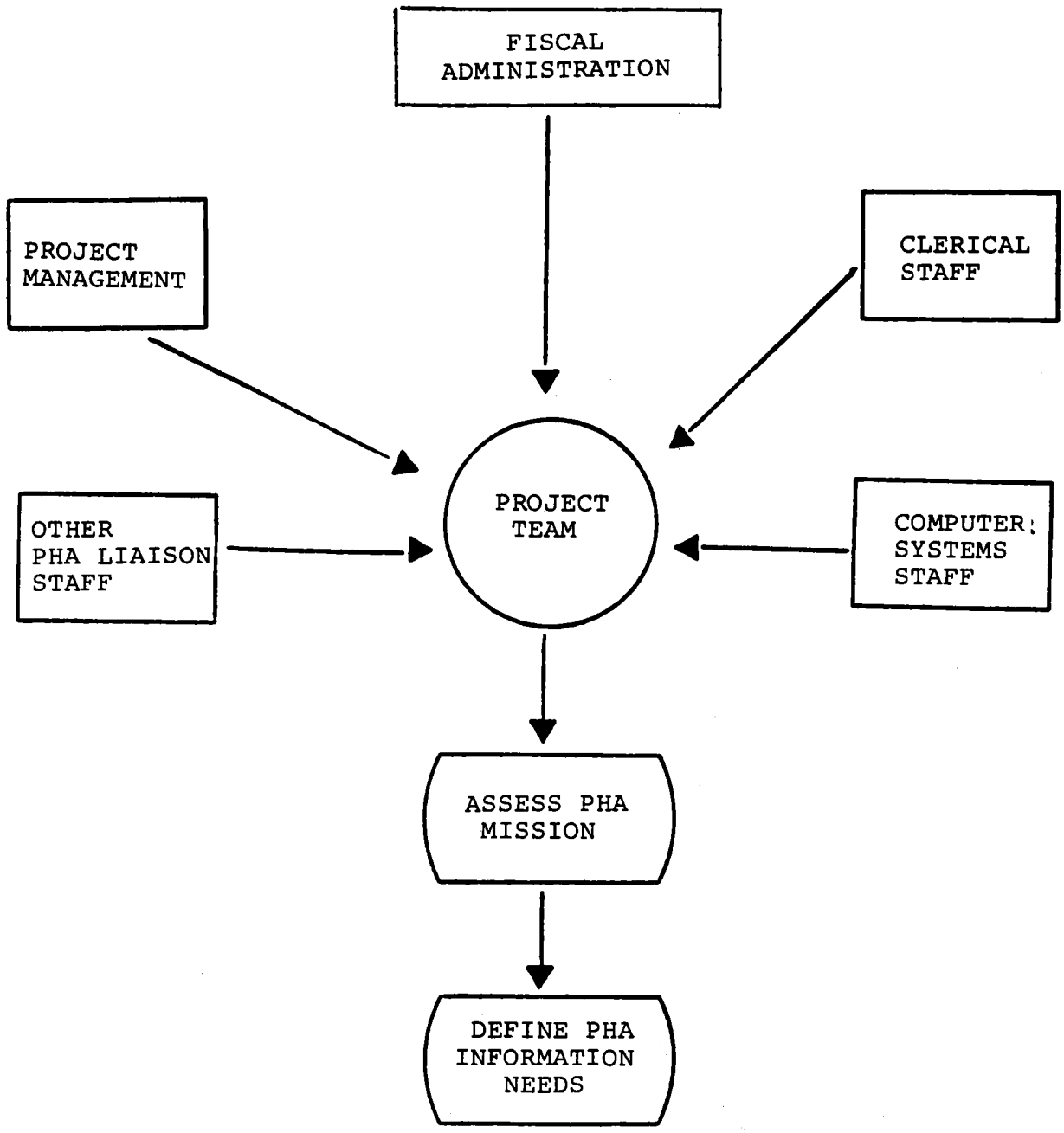
When an agency is attempting to develop and implement these two types of conversions described above at essentially the same time, the problems which may arise are multifaceted. While several different approaches may be proposed in resolving these problems and developing a full-featured system, the recommendations outlined in this section may be of significant value to PHAs.

3.1 Starting a PHA Conversion Process

The PHA should establish a firm foundation of goals and objectives for the conversion of its accounting and budgeting system. An internal PBB project team should be appointed to ensure that all necessary tasks are identified and performed throughout the conversion process (see Exhibit 3-1). The following personnel should be represented on the team:

EXHIBIT 3-1

PBB CONVERSION PROJECT TEAM



- o Fiscal administration
- o Project management
- o Clerical staff
- o Computer systems staff.

The project team should enhance its understanding of the PHA's mission, objectives, programs, and environment with respect to the information needs generated thereby. The team should also identify other PHA personnel who will provide information and liaison to the project team.

3.2 Determination of Management Needs

Because PBB will be used as a management tool, the PHAs should identify all user groups for the enhanced accounting and budgeting system, and the factors which are critical to the management of a PHA. Some of these factors may include the following:

- o The planning time-frame over which future needs are to be assessed
- o Major essential or desirable technical system features, including priorities
- o Major operational factors, such as maintenance or resident services problems
- o Personnel management concerns such as staff productivity or performance evaluation
- o Functional problems within PHAs, particularly those identified in federal or local audit findings and recommendations
- o Problems created by elements outside the control of the PHA
- o Interrelationships between maintenance, management, and accounting functions

- Real property and fixed asset management, and inventory control problems
- Concerns surrounding collection levels, security systems, timely notification to tenants of delinquencies and needs to flag delinquent accounts.

These management factors relate to five major program elements of a PHA's management information system:

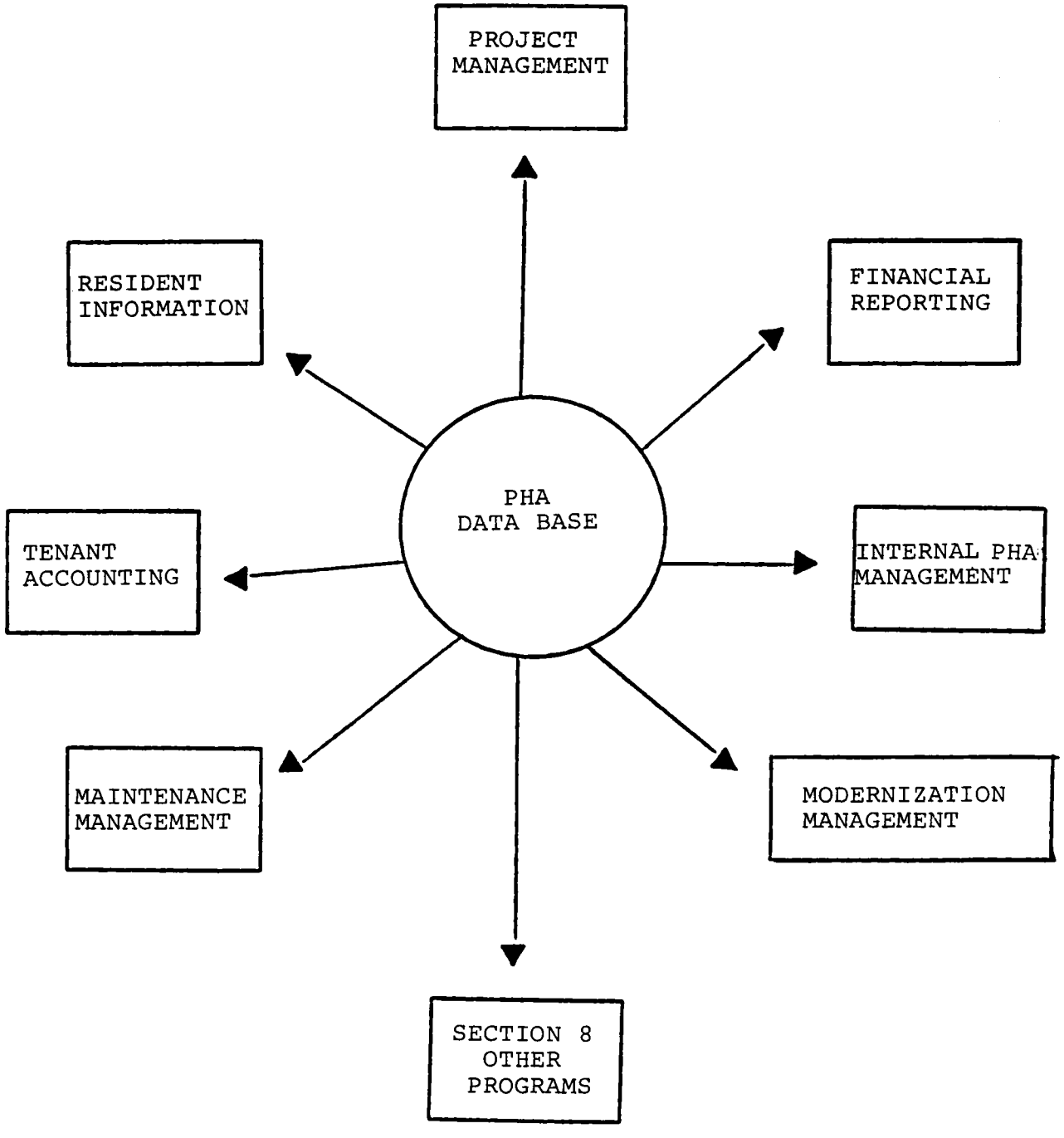
- Project management
- Financial reporting (local and Federal)
- Resident information/tenant accounting
- Internal organization management
- Development/modernization/maintenance management.

These functions comprise the bulk of the requirements for information flow at most PHAs and should be addressed by the PBB project team thoroughly (see Exhibit 3-2). Existing documentation of these functions should be reviewed, the current paper flow charted, the clerical work load estimated, and crucial timing requirements identified. Any information needs not fulfilled by current operations should be highlighted.

Close attention to the information flow to and from these five areas should allow PHAs to acheive measurable benefits, particularly in times of rapidly shifting expenditure priorities. These gains would stem from: highly informed project management, timely financial data for decision-making, frequent and accurate resident information, organizational performance reports, and capital expenditures monitoring data.

EXHIBIT 3-2

PHA INFORMATION DISSEMINATION SYSTEM



3.3 Functional Requirements Development

Based on an analysis of interviews with top administrators and review of current PHA documentation, a functional description document should be prepared summarizing the functions of the PHA at a top level of detail. The summary should provide information concerning issues such as organizational requirements, policy impacts, human implications, scheduling and adjustments. Also, technical information should be provided regarding basic processing centers, groups of data elements, basic data base structure, system environment requirements, and interfaces with other systems.

The main thrust of this analysis would be to identify major functions for each program area and break them down into their respective subfunctions. Each program area should then be broken down into its discrete processes (see Exhibit 3-3). Finally, a review of the functions and subfunctions should be made against PHA internal and external management requirements.

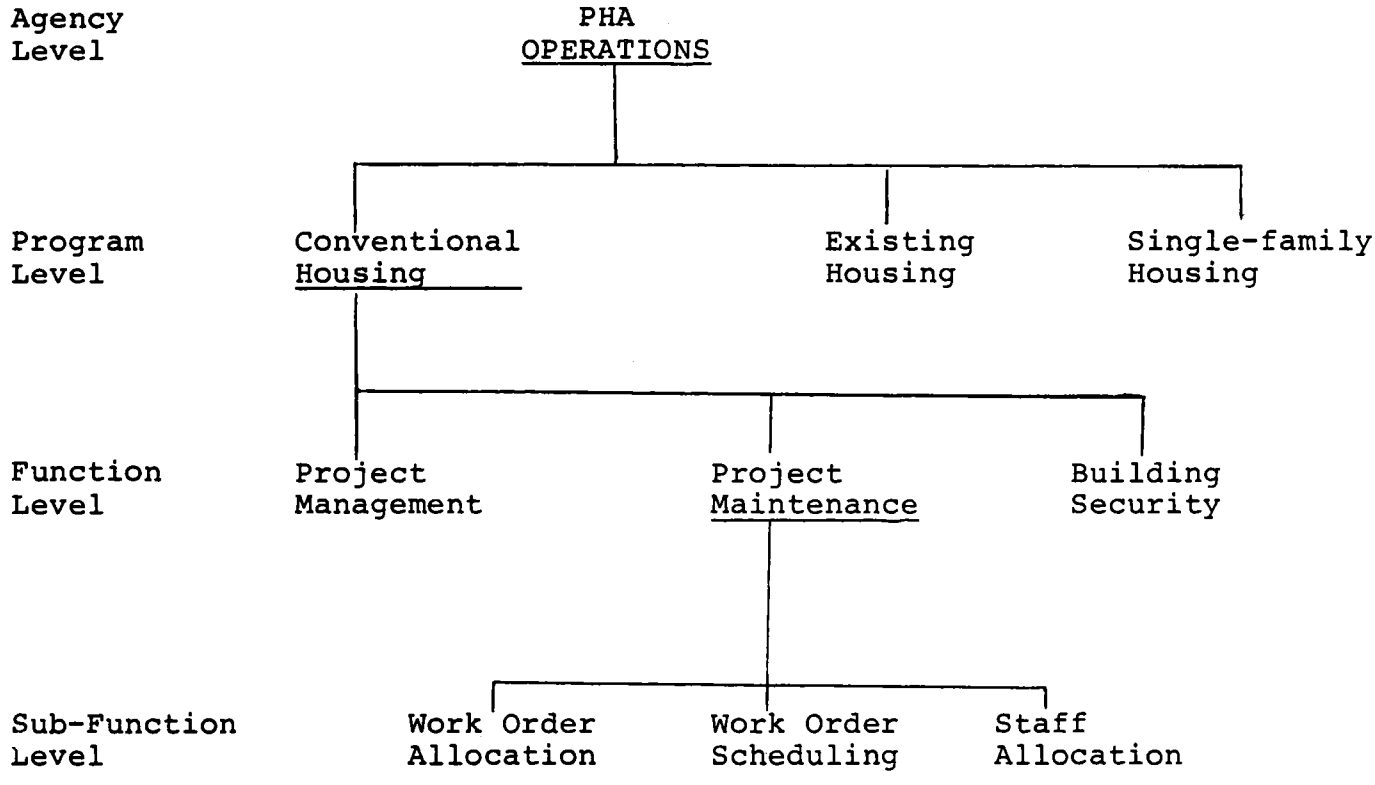
3.4 Decision on Automated versus Manual Processing

With a firm understanding of the functional requirements based upon management needs of the PHA, the project team should make a firm determination as to the processing mode necessary for system operation. If the volume and complexity of data manipulations required are not great, and the time frame for accomplishing such manipulations is not unduly restrictive, then an automated system may not be indicated.

Viable alternatives to automated system development should be explored, such as:

EXHIBIT 3-3

FUNCTIONAL ANALYSIS STRUCTURE



- Relying upon a manual PBB system
- Sharing the existing system of another local government agency
- Joining with another PHA or group of PHAs to form a consortium arrangement.

In general, if the PHA is under 500 dwelling units in size, it should consider strongly one of the alternatives to developing its own automated PBB system. The costs involved may substantially outweigh the benefits achievable. In particular, an agency of such size may find that its needs may well be met by a manual system.

If an agency is between 500 to 1250 dwelling units, it also should consider alternatives to developing its own automated system. Substantially lowered costs with similar results may be obtained by joining with another PHA or a group of PHAs in forming a consortium. This arrangement may be effective in meeting local needs while conserving scarce administrative resources.

If an agency is over 1250 dwelling units, it may benefit from establishing its own automated system. However, a specific determination should be deferred until the requirements analysis is performed in order to ascertain if an automated systems capacity would be fully used by the PHA.

3.5 Development of Requirements Analysis Report

The data developed during steps 3.2, 3.3 and 3.4 should be incorporated into a Requirements Analysis Document describing the major PHA data processes (see Exhibit 3-4). Financial and other data currently enter the system on various media and are manipulated, cross-verified against existing data, and stored

EXHIBIT 3-4

REQUIREMENTS ANALYSIS REPORT STRUCTURE

SECTION 1.0 INTRODUCTION

1.1 PURPOSE
1.2 SCOPE
1.3 APPLICABLE DOCUMENTS

SECTION 2.0 SYSTEM SUMMARY

2.1 BACKGROUND
2.2 OBJECTIVES
2.3 SYSTEM DEFINITION
2.4 SYSTEM DIAGRAMS
2.5 FUNCTIONAL CATEFORY DEFINITION
2.6 SYSTEM INTERFACES
2.7 ASSUMPTIONS AND CONSTRAINTS

SECTION 3.0 DETAILED CHARACTERISTICS & REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS
3.1.1 Identification of Functional Category No. 1
3.1.1.A Title of Function A
3.1.1.X Title of Function X
3.1.1.Y Special Requirements
3.1.N Identification of Functional Category No. N
3.2 SPECIFIC PERFORMANCE REQUIREMENTS
3.2.1 Accuracy
3.2.2 Timing
3.2.3 Flexibility
3.3 INPUTS-OUTPUTS
3.4 DATA CHARACTERISTICS
3.5 FAILURE CONTINGENCIES
3.6 DESIGN REQUIREMENTS
3.7 HUMAN PERFORMANCE REQUIREMENTS

SECTION 4.0 ENVIRONMENT

4.1 EQUIPMENT ENVIRONMENT
4.2 SUPPORT SOFTWARE ENVIRONMENT
4.3 INTERFACES
4.3.1 Interface Block Diagram
4.3.2 Detailed Interface Definition
4.4 SECURITY AND PRIVACY

SECTION 5.0 ACCEPTANCE AND EVALUATION CRITERIA

5.1 INTRODUCTION
5.2 ACCEPTANCE REQUIREMENTS AND CRITERIA
5.3 EVALUATION REQUIREMENTS AND CRITERIA
5.4 TEST RESULT DOCUMENTATION
5.5 QUALITY ASSURANCE REQUIREMENTS

in appropriate files. Thus, the objective of this step should be to describe the major groups of data and to relate these data groups to the major functions of each application area.

This step should include the identification of:

- System outputs
- Input forms and transactions
- File data
- Relationships between data groups and major functions.

In each case, all key groups of data should be specifically identified. For example, identification of system outputs should include:

- Output identification
- Frequency of output production
- Recipients of the outputs
- Purpose of the output
- Identification of key groups of data
- Identification of major relationships between groups.

The Requirement Analysis Document will discuss:

- Definition of the reporting universe
- Compliance monitoring and control requirements
- Data collection, reduction and automated requirements
- Data edit, validation and quality control requirements
- Audit trails and document controls
- Data reporting and statistical requirements
- System concepts and overviews.

3.6 Allocation of Direct and Indirect Cost Items

An extremely important aspect of the development of the requirements analysis is the determination as to the method of allocation of direct and indirect costs to various account categories. The analysis should specify the following:

- The direct cost elements which require no manipulation in order to be charged to the project level
- The direct cost elements which must be manipulated on a consistent formula basis, such as PUM, in order to be charged to the project level
- The indirect cost elements which require no anipulation in order to be charged to the project level
- The indirect cost elements which must be manipulated in order to be charged to the project level, on a formula basis

When an indirect or direct cost must be manipulated in order to determine the project level allocation, the formula basis used should be fully disclosed. Where a PUM calculation is indicated, the data elements involved and the accounts charged as a result should be identified. Where any other formula is used, such as a ratio of projects affected to total PHA projects, the description of the formula should be included in the requirements analysis. This would ensure that all appropriate manipulations are written into the system developed for the PHA.

3.7 Identification of Available Packages

The project team should ensure that a number of available packages and vendors are identified and should gather relevant general information on each package often distributed by vendors. The

project team could survey PHAs in other states as well as research information system trade publications, such as DATAPRO, Auerback, etc. The PHA could also draw upon the experience in automated systems of major PHAs such as Boston, Pittsburgh, Oakland, High Point, El Paso, Birmingham, Knoxville, and over 20 others (see Section 5.2).

In obtaining technical data from other agencies or from other sources, the project team should attempt to address the following issues:

- Overall level of satisfaction
- Length of time package is in use
- Identification of specific problems with implementation, support, maintenance, etc.
- Consistency of reporting with HUD and local report requirements
- The ease of learning to use the package and amount of staff training necessary
- The efficiency of the system in operation, including any changes in cost of administrative services attributable to the system
- The quality of the documentation left by the vendor after installation and debugging.

The information obtained should be reduced to a report which could be utilized by the PBB project team as background data for package screening.

3.8 Initial Package Screening

The PHA should narrow the field of prospective vendors and eliminate vendors that are not capable of meeting mandatory requirements. All vendors with appropriate packages should be contacted and requested to submit technical documentation describing

their systems. This documentation should be reviewed by the PHA project team and compared to the requirements identified earlier. Vendors with packages that meet these requirements should be requested to complete a full submission based upon a Request For Proposal (RFP). The RFP should meet the specific procurement policy requirements of the PHA and HUD.

The PHA should identify the criteria to be used for package evaluation and selection. The criteria should include:

- Ease of installation and use
- Ease of enhancement and modification
- Throughput/efficiency
- Modulization and expandability
- Vendor support
- Training
- Documentation
- Cost of acquisition and operation.

These criteria should be incorporated into a form which could be used by PBB team members for scoring various vendor proposals in the next step.

3.9 Vendor Proposal Analysis

The project team should conduct a comparative analysis of vendor proposals. The input to this analysis should include weighted points assigned to the evaluation criteria established previously, and a thorough review of all submitted proposals (see Exhibit 3-5). At the conclusion of this step, the PHA

project team should present a full report, including conclusions and recommendations concerning the selected package.

Several key questions need to be answered in the report:

- Will it accommodate present needs?
- Is it compatible with HUD reporting requirements in the proper format?
- Can it take care of future requirements?
- Will the system run on computer hardware and software available to the organization?
- Can the PHA get good support from the vendor?
- How much will the package cost to purchase, implement and run?
- Will the package be easy to use?
- Will it be reliable and trouble free?
- How will it impact the present cost of administrative and financial operations?

Answering these questions should insure the PHA that it will select a software package which best meets its requirements. In summary, the analysis and comparison of the systems being considered by the project team should be conducted in terms of their responsiveness to the information needs of the PHA.

3.10 Implementation Plan Development

Upon completion of the vendor analysis, a time-phased implementation plan should be developed to include:

- Actions required to satisfy system requirements
- A schedule for implementation of tasks necessary to meet all requirements

EXHIBIT 3-5

SAMPLE VENDOR PROPOSAL ANALYSIS FORM

Vendor / Criteria	A	B	C	D	E	Max Score	Avg Score
1. Ease of Installation						5	
2. Ease of Modification						15	
3. Throughput						5	
4. Modulization Capability						10	
5. Vendor Support						10	
6. Training Requirements						10	
7. Documentation Level Provided						5	
8. Cost of Acquisition						20	
9. Operational Cost						10	
10. Availability						10	
Total Score						100	
Rank							

- o Training requirements for line and middle level managers in the use of a new system
- o Traning requirements for clerical and fiscal staff in performing data input verification, inquiry and retrieval tasks
- o Definition of involvement of managers in implementation
- o Requirements for full documentation consistent with Federal Information Processing standards to assure easier enhancements to meet later requirements.

Additionally, the implementation plan should identify elements of vendor installation and PHA support such as:

- o Estimated time for delivery and installation
- o Vendor-provided support at installation
- o Back-up vendor support (the availability of other vendors servicing the same equipment or software)
- o Computer, fiscal staff and material resources required at installation
- o Availability of on-going hot-line problem resolution system
- o Parallel operation of manual and automated systems through several monthly cycles for debugging and baseline testing.

All key tasks should be tightly defined. The amount of PHA or vendor resources needed should be estimated in order to assure availability of needed staff and material assistance (see Exhibit 3-6).

3.11 Establishment of Contractual Terms

The purpose of this step is to identify elements of software package contracts which would be most favorable to the goals of the PHA. Such elements should include:

- o Components of a standard contract
- o Terms of warranty

EXHIBIT 3-6

SAMPLE TIME-PHASED IMPLEMENTATION PLAN

Task Required	Start Date	End Date	Product Expected	Performance Responsibility
1. Vendor Selection				
2. Vendor Notification				
3. Contract Negotiation				
4. Vendor Start				
5. Hardware Delivery				
6. Software Delivery				
7. Testing and Debugging				
8. Training Program Developed				
9. Parallel Operation				
10. Full PHA Operation				

- Terms of warranty
- Vendor acceptance of limited liability
- Limitations on right to use
- Training provided
- Term of license
- Support services provided
- Rights to modification of software.

Additionally, the contract terms should identify elements of package cost, such as:

- Pricing arrangements (lease, purchase, etc.)
- Maintenance cost
- Implementation cost
- Technical support cost
- Documentation cost.

All elements should be defined with as much specificity as possible, in order to eliminate confusion and avoid misunderstandings through the contract period.

3.12 Contract Execution and System Monitoring

Assuming that appropriate terms have been drawn up and agreed to between the PHA and the vendor, the PHA should execute the contract. Throughout the term of the contract, the PHA should maintain close contact with the vendor to ensure that all provisions of the agreement are met.

In particular, the PHA should not release the vendor at the end of the contract period until the PBB system has been brought up and kept running, trouble-free, for at least three monthly

cycles, or longer. The system should meet all performance specifications. The PHA should also ensure that all program and system documentation has been prepared, amended as system modifications are made by the vendor, and delivered to the PHA's documentation library for its reference.

3.13 Use of PBB for Management Functions

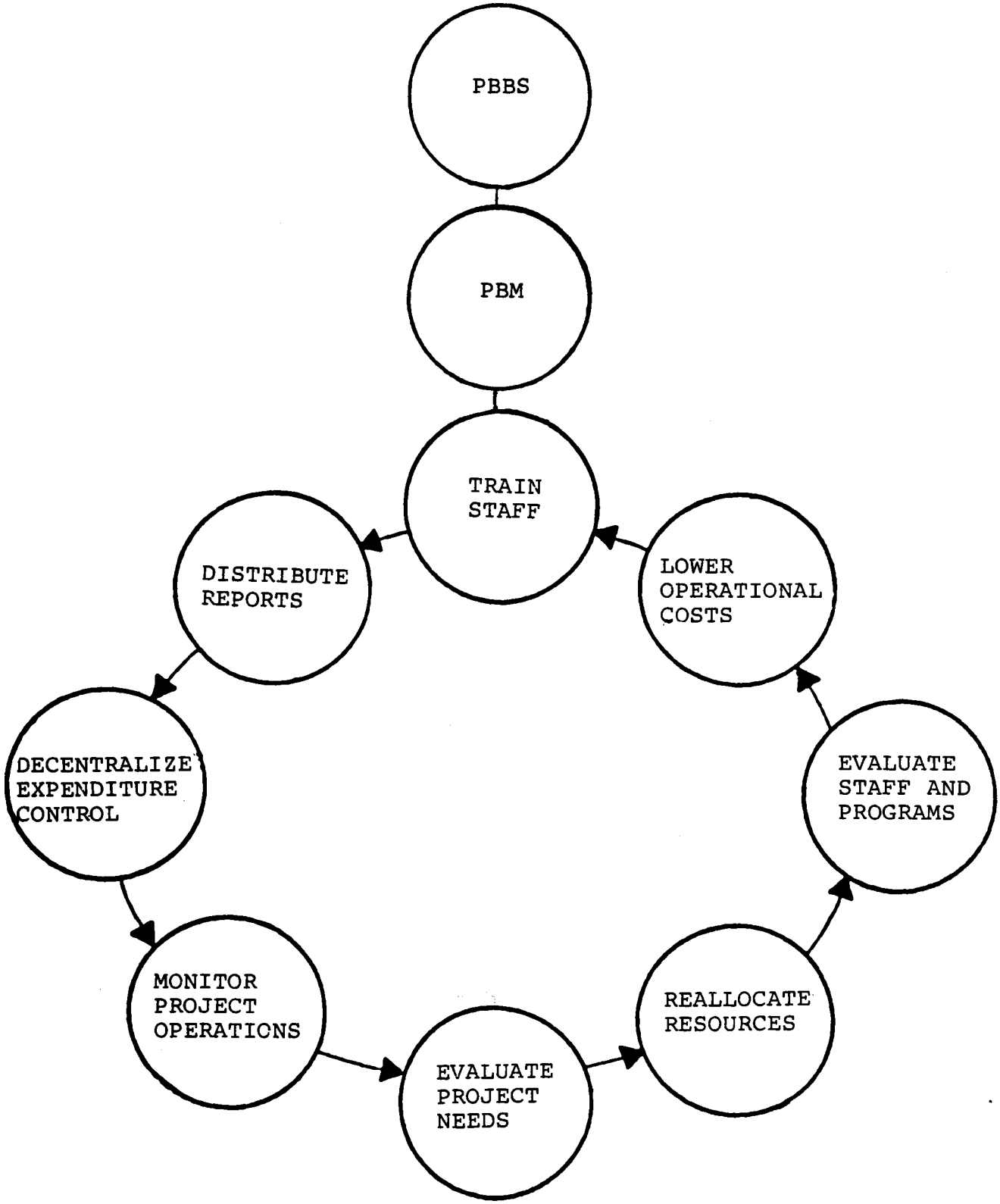
Following the development, initial implementation, debugging and transfer of the hardware/software system from the vendor to the PHA, the agency could broaden system use through project based management (see Exhibit 3-7). In particular, as project-level budget and expense information is developed and refined, the PHA could increase the participation of project managers in expenditure control.

Through training, managers should learn to utilize project-level expenditure data to more closely monitor their operations. Administrative and fiscal staff should learn to utilize such data to evaluate relative performance among the various projects, and to make timely decisions concerning the reallocation of PHA resources. The Executive Director could utilize the specific information available on project performance to evaluate staff and program efficiency.

The process of implementing project based management would be more gradual in PHAs where managers have had no involvement in developing their budgets or in handling the responsibility of controlling some expenditures. The process would progress faster where managers did have such experience and where PHA administrators

EXHIBIT 3-7

PROJECT BASED MANAGEMENT IMPLEMENTATION



had more confidence that expenditure controls could be safely decentralized.

3.14 Evaluation of System Operation

At the end of each month during the first six months, the PHA project team should meet to discuss and resolve any significant problems which arose during the month. Minor technical assistance which is needed could be provided by the project team, by the outside vendor, or by another consultant.

Major technical needs which might be pointed out during this initial period should be brought to the attention of the administration and the vendor, and should be addressed immediately.

After the first six months, the project team should meet regularly, perhaps once a quarter, to review the process of PBB implementation. The team should note the achievement or nonachievement of significant milestones in the implementation schedule, and make any changes in the schedule which may be indicated. In particular, the team should assess the extent of adjustment to the PBB system by various levels of staff, and determine if any further training or other assistance may be needed.

The team should also periodically evaluate the usefulness of the monthly reports which are produced and distributed by the system. The team should obtain feedback from PHA staff as part of its own analysis of the reports. Changes in the report content, format, or distribution process should be closely geared to improving system, as well as PHA, performance.

4.0 FURTHER RECOMMENDATIONS

One of the most difficult challenges during the '80s will be to manage information through the use of computer technology. As computer packages proliferate, it is becoming evident that the correct choice of software is vital to an organization's success in information processing. Making the software decision can be a more difficult process than selecting the hardware that will house it. As the choice of packages multiply, organizations such as PHAs have to be more careful than ever that they know how to specify exactly what they need to solve their processing problems.

The selection and implementation of a software package that will satisfy a PHA's requirements is a complex and comprehensive process.

The following are recommended tasks which may be of assistance to a PHA in the review, selection and implementation of appropriate hardware and software.

4.1 Hardware/Software Selection Process

Many PHAs have been assisted or motivated through the PHUIP or CIAP programs to develop automated information systems to meet their management needs. Other PHAs have developed such systems outside of these programs in responding to purely local priorities. Among the software packages which have been bought, leased or developed, some are proprietary products belonging to private contractors. Other packages are fully in the public domain, and many PHAs may not oppose sharing their technology. Some PHAs have

attempted, in fact, to market their systems to other nearby PHAs in very much the same fashion as private service bureaus.

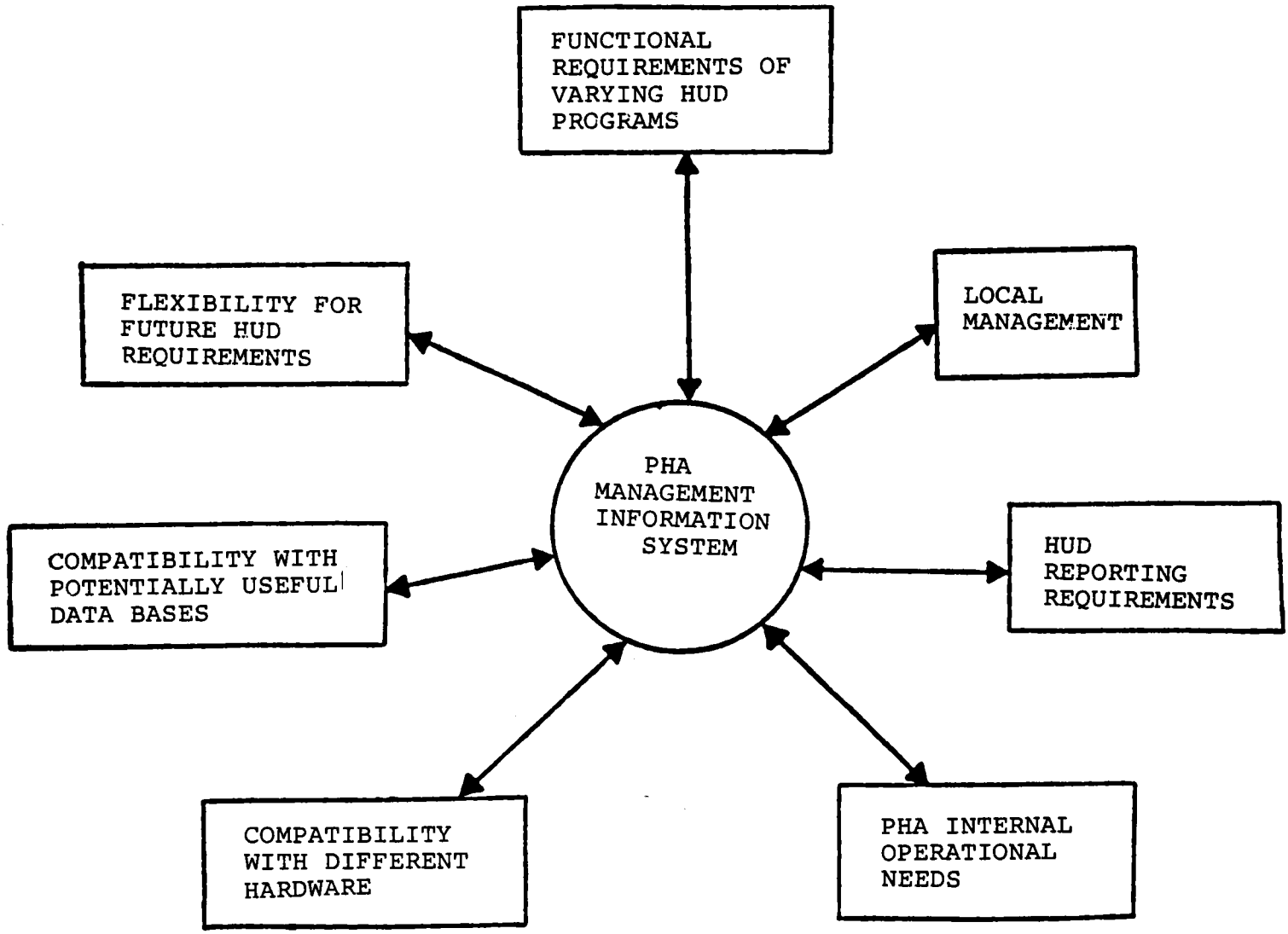
In view of the proliferation of various public housing software packages and an increasing awareness and demand for management improvements, the need to evaluate the structural and functional characteristics of such packages becomes pressing. It is important that the development of PHA automated management information systems be sensitive to the varying requirements of HUD programs as well as to local management needs. PHAs must respond to HUD reporting requirements, local administrative and legislative information requests, and internal operational requirements, as well as others (see Exhibit 4-1).

Key capabilities that any such system should possess, among others, include the following:

- Flexible general ledger account coding in order to meet local and HUD classification requirements
- Automatic preparation of HUD financial reports, such as, 52595 - Balance Sheet, 52599 - Statement of Operating Receipts and Expenditures, etc., in HUD report formats
- Automatic allocation of administrative, direct and indirect costs, whether on actual or PUM basis, to each project, within each program
- Maintenance cost reporting by unit for cost control purposes
- Automatic recurring charge billing statements
- Automatic general ledger posting from all subsidiary ledgers defining additional program accounts
- On-line data entry, file updating and data inquiry for major functions

EXHIBIT 4-1

MANAGEMENT INFORMATION SYSTEM CAPABILITIES



- o Accumulation of project-to-date and year-to-date costs, budgets, and variances
- o Flexible generation of special reports for HUD or local usage based on PHA selection criteria.

A major concern with respect to the selection of software for PHA purposes should also be the compatibility of the system with various hardware environments and with the information systems and data bases necessary or potentially useful to other units. In this respect, the sensitivity of various packages to these issues would be a major factor in the selection process.

Further, the hardware/software combination selected should have sufficient flexibility to meet possible future requirements from HUD. Regarding PBB and PBM, the detail necessary in the system, and the allocations of all costs must be directed to the individual project level.

The impact on hardware of such a system may include the need for additional printing capacity to handle the increased volume of paper flow. Additionally, the use of project-based management techniques may have significant impacts upon the overall system. Management information may have to be provided to a broader level of staff, timeframes may be tighter, and input received from more discrete points than previously required. These issues should be squarely addressed by the PHA during the process of package selection.

4.2 System Implementation Scheduling

The analysis of functional requirements which the PHA should perform will generally result in a list of necessary functions

which can be and are usually automated. Among the functions on the list may be the following:

- o Section 8
- o Tenant accounting
- o General ledger
- o Payroll
- o Accounts receivable
- o Resident/applicant information
- o Maintenance operations management
- o Development program management
- o Modernization program management
- o Budgeting development and control
- o Energy (utility) management
- o Inventory control.

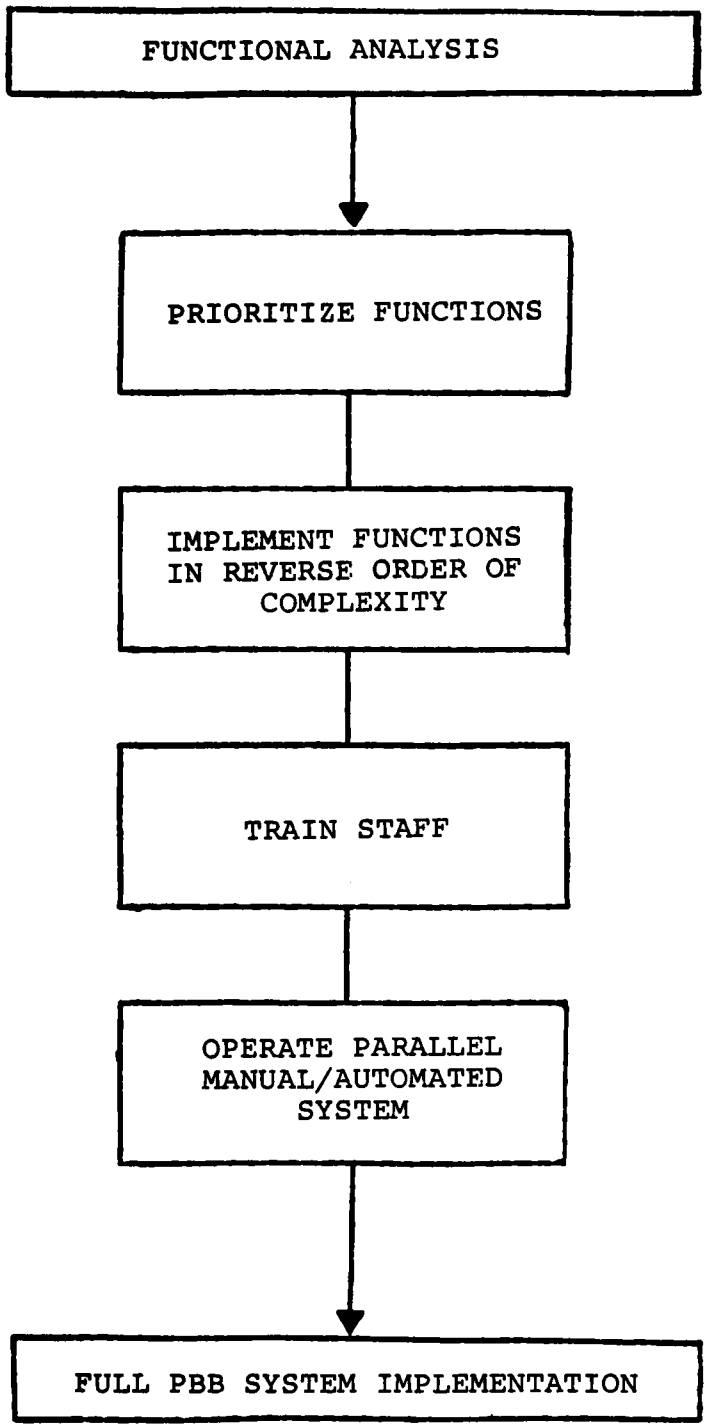
In the process of implementation, a determination has to be made as to the priority of the functions. While one function may be ranked higher in importance than another, the problems of bringing that function on-line may be more difficult and more timely to solve. Consequently, PHAs should attempt to lessen the impacts of bringing many functions simultaneously onto a new automated system.

The following recommendations may be of assistance (see Exhibit 4-2):

- o Prioritize all functions by order of complexity, not importance
- o Implement functions in reverse order of complexity, working out the technical problems on less urgent issues
- o Utilize early implementation for training purposes, thereby raising the responsibility and skill of staff at a rate which can be handled more easily

EXHIBIT 4-2

SYSTEM IMPLEMENTATION SCHEDULE



- Operate functions on a parallel (manual/automated) basis for several cycles before discontinuing the manual system, thereby maintaining a backup in the event of a substantial problem.

Finally, PHAs should attempt to convert present systems conceptually to PBB first. The concept development should include the "dummying" or drafting of all project-level management and financial reports. In this fashion, the PHA could assess the nature of the administrative changes and logistical requirements which may be involved in a PBB system.

In a separate and distinct phase of the effort, the PHA should convert from a manual to an automated PBB system. Accomplishing both conversions at once can be a very complex and possibly confusing process. Separating them can offer staff and managers the opportunity to properly identify and adjust at a reasonable pace to the necessary procedural changes.

The results of the entire process, when fully implemented, should provide substantial benefits to the PHA which would positively impact its management and financial functions for some time. Both the administration and the residents of public housing would be beneficiaries of more cost efficient and effective, as well as safe, sanitary and affordable dwellings.

5.0 AVAILABLE RESOURCES

5.0 AVAILABLE RESOURCES

In the event that additional technical assistance or information would be helpful to PHAs attempting to convert their present accounting systems to PBB, the following individuals, organizations, and agencies may be able to provide specialized aid.

5.1 HUD Central Office PBB Personnel

Mr. Landry Williams, Jr.
Housing Management Officer
Project Management Division
Office of Public Housing
Washington, D.C. 20410
202-472-4705

Ms. Janice Rattley
Director
Project Management Division
Office of Public Housing
Washington, D.C. 20410
202-755-1800

Mr. Kenneth R. Moul
Director
Fiscal Management Division
Office of Public Housing
Washington, D.C. 20410
202-755-8145

5.2 PHAs Implementing PBB

Mr. Albert H. Rohling
Executive Director
Housing Authority of the
Birmingham District
600 North 24th Street
Birmingham, AL 35203
205-324-0641
George Davis
Director of
Accounting

Mr. Robert C. Wilson
Executive Director
Housing Authority of the
City and County of Fresno
1833 "E" Street
Fresno, CA 93776
209-485-3340

Mr. Harold Davis Executive Director Oakland Housing Authority 1619 Harrison Street Oakland, CA 94612	415-874-1500 Stephen Knight Accounting Officer
Mr. William J. Ratzlaff Executive Director Housing Authority of the City of Denver P.O. Box 4226 Denver, CO 80204	303-534-0821
Mr. David R. Gonzalez Executive Director Housing Authority of the City of Bridgeport 376 East Washington Avenue Bridgeport, CT 06608	203-336-4431
Mr. Don W. Johnson Executive Director Rockford Housing Authority 330 15th Avenue Rockford, IL 61108	815-987-3843 Donna McMannis Director of Finance
Mr. Jack H. Davis Executive Director Kansas City, Kansas Housing Authority 1124 N. Ninth Street Kansas City, KS 66101	913-281-3300 Jim Kospelac Comptroller
Mr. Austin J. Simms Executive Director Lexington-Fayette Urban County Housing Authority 600 Blue Grass Park Drive Lexington, KY 40508	606-253-3441 James DeSpain Deputy Director of Administrative Services
Mr. Daniel J. Wuenschel Executive Director Cambridge Housing Authority 270 Green Street Cambridge, MA 02139	617-864-3020 Paul Johnson Assistant to the Director of Fiscal Affairs
Mr. John J. Barone Executive Director Worchester Housing Authority 40 Belmont Street Worchester, MA 10605	617-798-4500 Les Boucher Director of Administration and Finance

Mr. Willie J. Buie Acting Executive Director Greensboro Housing Authority 2000 N. Church street Greensboro, NC 27240	919-275-8501 Thomas B. Lankford Director of Planning, Research and Evaluation
Mr. H. K. Martin Executive Director Housing Authority of the City of High Point 500 E. Russel Avenue High Point, NC 27261	919-887-2661 Larry Raines Director of Management
Mr. Joseph F. Laden Executive Director Albany Housing Authority 20 Warren Street Albany, NY 12202	518-445-0711
Mr. Thomas F. McHugh Executive Director Rochester Housing Authority 140 West Avenue Rochester, NY 14611	716-328-6200
Mr. Claudell Overton Executive Director Housing Authority of the Chicksaw Nation P.O. Box 668 Ada, OK 74820	405-436-1560 Fred Engle Financial Director
Mr. George Thompson Executive Director Housing Authority of the Choctaw Nation of Oklahoma P.O. Box 6 Hugo, OK 74743	405-326-7521 Wayne Sims Deputy Director
Mr. Gene Thompson Executive Director Housing Authority of the Cherokee Nation of Oklahoma P.O. Box 1007 Tahlequah, OK 74464	918-456-8878 Ron Qualls Financial Director
Mr. J. Thomas Hares Executive Director Housing Authority of the City of Tulsa 415 East Independence P.O. Box 6369 Tulsa, OK 74106	918-582-0021 Ray Minor Director of Finance

Mr. W. E. Hunter Executive Director Housing Authority of Portland, Oregon 1605 N.E. 45th Avenue Portland, OR 97213	503-249-5511 Kenneth Russell Controller
Mr. William Phillips Executive Director Harrisburg Housing Authority 351 Chestnut Street Harrisburg, PA 17101	717-232-6781 Charles Smith Comptroller
Mr. William Colbert Chairman Western Pennsylvania Housing Consortium* c/o Housing Authority of Pittsburgh 200 Ross Street Pittsburgh, PA 15219	412-456-5022 Richard Cecchetti Comptroller
Mr. William R. Ballou Administrator Housing Authority of the City of Columbia 1505 Garden Plaza P.O. Box 4307 Columbia, SC 29240	803-254-3886
Mr. Gregory A. Kern Executive Director Knoxville Community Development Corporation 901 Broadway Knoxville, TN 37917	615-521-8606 Richard T. Dulaney Director of Finance and Administration
Mr. Sal Canchola Executive Director Housing Authority of the City of El Paso P.O. Box 9895 El Paso, TX 79989	915-532-5678 Joe Rocha Director of Finance

* Includes Allegeny County, Beaver County, Fayette County, and Westmoreland County Housing Agencies; Erie, Johnstown, McKeesport, and Pittsburgh Housing Agencies.

Mr. Michael F. Hanratty
Executive Director
Housing Authority of the
City of Fort Worth
P.O. Box 430
Fort Worth, TX 76101

817-336-2419
Jack Burk
Director of
Administrative
Services

Mr. David Rice
Executive Director
Norfolk Redevelopment and
Housing Authority
201 Granby Mall
Norfolk, VA 23510

804-623-1111

Mr. Roger F. Switzer
Executive Director
Housing Authority of the City
of Charleston
1809 Washington Street, West
Charleston, WV 25321

304-348-6940
George Dvorak
Deputy Director

5.3 PBBS Software Vendors

Mr. Kent Watkins
U.S. Systems Corporation
Suite 702
1901 N. Ft. Myer Drive
Arlington, VA 22209

703-841-1600

Mr. Jon R. Romnes
MDS, Inc.
2702 International Lane
P.O. Box 8098
Madison, WI 53708

608-249-2147

Creative Computer Solutions
2035 Landings Drive
Mountain View, CA 94043

415-964-3361

Admins, Inc.
P.O. Box 269
Cambridge, MA 02138

617-563-4218

C & S Systems
2116 Old Montgomery Highway
P.O. Box 20843
Vestavia, AL

205-987-8044

Johnson, Frazier and Wright
6890 Peachtree Industrial Blvd.
Suite 7
Atlanta, GA 30360

404-441-3330

5.4 HUD Field Office PBB Coordinators

Region I (Boston)

Stan Seigal	Boston	617-223-4208
Leo Salvaucci	Boston	617-223-4210
Doris L. Bentil	Hartford	203-244-2823

Region II (New York)

John Lollis	Buffalo	716-846-5755

Region III (Philadelphia)

May Chang	Philadelphia	215-597-2545
Robert Alberts	Pittsburgh	412-644-3421
Louistine Tuck	Richmond	804-782-2571
James Schwartz	Charleston, WV	301-343-1328

Region IV (Atlanta)

Sid McBee	Knoxville	615-637-1216
Arthur Wasson	Louisville	502-582-6164
J. Donald McMillan	Columbia, SC	803-765-5831
Michael Godwin	Greensboro	919-378-5358

Region V (Chicago)

Mary Blume	Chicago	312-353-9182

Region VI (Fort Worth)

Sonia Buss	Dallas	214-749-3283
Barney Mitchell	Oklahoma City	405-231-4857

Region VII (Kansas City)

Drew Thomas	Kansas City	816-374-4267

Region VIII (Denver)

George Geiser	Denver	303-837-4762

Region IX (San Francisco)

William Hong	San Francisco	415-556-2842
Mitchell Sperling	San Francisco	415-556-8394

Region X (Seattle)

Roberta Ando	Portland	503-221-2619

5.5 Technical Assistance Vendors

Ferguson•Bryan & Associates — 202-887-6100
2550 "M" Street, N.W.
Suite 699
Washington, D.C. 20037

June 1984
HUD-637-H (2)