



# **Operations and Maintenance Manual**

## **PPM Version 2.0**

*<Project or Solution Name>*

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

*<Month, Year>*



## Solution Information #

	Information
Solution Name	<Solution Name>
Solution Acronym	<Solution Acronym>
Project Cost Accounting System (PCAS) Identifier	<PCAS Identifier>
Document Owner	<Owner Name>
Primary Segment Sponsor	<Sponsor Name>
Version/Release Number	<Version/Release Number>

## Document History#

<Provide information on how the development and distribution of the Operations and Maintenance Manual is controlled and tracked. Use the table below to provide the version number, date, author, and a brief description of the reason for creating the revised version.>

Version No.	Date	Author	Revision Description



## Contents

1.	Introduction .....	1
1.1	Solution Overview .....	1
1.2	Solution Organization .....	1
1.3	Security and the Privacy Act .....	1
1.4	Authorized Use Permission .....	1
1.5	Points of Contact.....	1
1.6	Coordination .....	1
1.7	Helpdesk Procedures .....	1
2.	Operating Environment Overview .....	2
2.1	Hardware Inventory .....	2
2.2	Software Inventory .....	2
2.3	Network Services .....	2
2.4	Communications Overview .....	2
2.5	Facilities.....	2
2.6	Information Inventory.....	2
2.6.1	Resource Inventory .....	2
2.6.2	Report Inventory .....	2
2.7	Interfaces with Other Solutions .....	3
2.8	Solution Restrictions .....	3
2.9	Waivers of Operational Standards.....	3
3.	Batch Job Inventory.....	4
3.1	<Run Identifier> .....	4
3.2	Run Interrupt Checkpoints.....	4
3.3	Set-Up and Diagnostic Procedures .....	4
3.4	Control Inputs .....	4
3.5	Primary User Contact .....	4
3.6	Data Inputs.....	5
3.7	Output Reports .....	5
3.8	Error Messages.....	5
3.9	Restart/Recovery Procedures .....	5
4.	Backup Procedures.....	6
5.	Personnel.....	7



6.	Performance Management and Capacity Planning.....	8
6.1	Capacity Planning.....	8
6.2	Performance Management.....	8
7.	Solution Maintenance Procedures.....	9
7.1	Conventions .....	9
7.2	Verification Procedures.....	9
7.3	Error Conditions.....	9
7.4	Maintenance Software.....	9
7.5	Maintenance Procedure .....	9
	Appendix A: References .....	10
	Appendix B: Key Terms .....	11



## **1. Introduction**

### **1.1 Solution Overview**

*<Provide a brief description of the purpose of the solution, the function(s) it performs, and the business processes that it supports. If the solution is a database or an information system, include a general description of the type of data maintained and the operational sources and uses of the data.>*

### **1.2 Solution Organization**

*<Provide a brief description of the solution's structure, major components, and the functions of each major component. Include charts, diagrams, and graphics as necessary.>*

### **1.3 Security and the Privacy Act**

*<Provide an overview of the solution's security controls and the need for security and protection of sensitive data. For example, include information regarding procedures to log on/off the solution, provisions for the use of special passwords, access verification, and access statuses as appropriate. If the solution handles sensitive or Privacy Act information, include information regarding labeling solution outputs as sensitive, or Privacy Act-related. In addition, if the solution is covered by the Privacy Act, include a warning of the Privacy Act's civil and criminal penalties for the unauthorized use and disclosure of solution data.>*

### **1.4 Authorized Use Permission**

*<Provide a warning regarding unauthorized usage of the solution and making unauthorized copies of data, software, reports, and documents, if applicable. Describe the process for requesting and obtaining waivers or copy permissions, if applicable.>*

### **1.5 Points of Contact**

*<Provide a list of the organizational points of contact (POCs) that the document user may contact for informational and troubleshooting purposes. Include type of contact, contact name, department, telephone number, and e-mail address. Points of contact may include, but are not limited to, development/maintenance personnel and operations personnel. Provide instructions for reporting problems to the POCs.>*

### **1.6 Coordination**

*<Provide a list of organizations that require coordination between the project and its specific support function (e.g. installation coordination, security). Include a schedule for coordination activities.>*

### **1.7 Helpdesk Procedures**

*<Provide helpdesk information, including phone numbers for emergency assistance.>*



## 2. Operating Environment Overview

This section describes the operating and support environment for the solution. It includes a discussion of the equipment, software, network and telecommunications services, special facilities, and personnel required to operate and maintain the solution.

### 2.1 Hardware Inventory

*<Discuss the computer configuration on which the solution is hosted and its general characteristics. Identify the specific computer equipment required to support software maintenance if that equipment differs from the host computer. For example, if software maintenance is performed on a platform that differs from the target host environment, describe both environments. Describe any miscellaneous required computer equipment, such as hardware probe boards that perform hardware-based monitoring and debugging of software. Include any telecommunications equipment.>*

### 2.2 Software Inventory

*<List all support software such as operating systems, transaction processing systems, and database management systems (DBMSs), as well as software used for the maintenance and testing of the solution. Include the appropriate version or release numbers, along with their documentation references, with the support software lists. Describe any security characteristics of the software. Identify those programs necessary to continue or resume operation of the solution in a degraded or emergency mode.>*

### 2.3 Network Services

*<Describe the network services necessary to operate the solution. Describe specific services such as service connectivity and fault management services.>*

### 2.4 Communications Overview

*<Describe or depict the communications network necessary to operate the solution.>*

### 2.5 Facilities

*<Describe the special facility requirements, if any, for solution maintenance.>*

### 2.6 Information Inventory

*<Provide an overview of the information included in the solution.>*

#### 2.6.1 Resource Inventory

*<List all permanent files and databases that the solution references, creates, or updates. Include the file names and database names, specific file identification, storage media, and required storage capacity, as well as security considerations. Identify those files and databases necessary to continue or resume operation of the solution in a degraded or emergency mode.>*

#### 2.6.2 Report Inventory

*<List all reports produced by the solution. Include the following information for each report listed:*

- *Security considerations*



- *Media (hard copy, electronic media)*
- *Frequency of reporting*
- *Typical report volume*
- *Software that produces the report, if applicable*>

## **2.7 Interfaces with Other Solutions**

*<Describe operational interfaces to other solutions (e.g. input data for this solution comes from the same source and on the same physical media shared by another solution).>*

## **2.8 Solution Restrictions**

*<Identify any restrictions imposed on this solution (e.g. times of day when solution goes off-line, or dependencies on the availability of other solution(s)).>*

## **2.9 Waivers of Operational Standards**

*<Describe any waivers that have been or will be filed to exempt the solution from HUD operational standards.>*



### 3. Batch Job Inventory

*<Use the subsections below to describe any solution batch jobs (runs). Capture information for use by operations and maintenance personnel in efficient scheduling of operations, assignment of equipment, the management of input and output data, and restart/recovery procedures.*

*Provide detailed information needed to execute and manage the runs. Organize the information in a manner most useful to the operations and maintenance IT personnel. Repeat sections 4.1 – 4.x for each batch job.>*

#### 3.1 <Run Identifier>

*<In the header above, provide a run identifier for reference in the remainder of the subsection. Describe the run, including at a minimum, the following:*

- Purpose of the run*
- Run listing and operation schedule*
- Job control statements for job initiation*
- Dependencies*
- Run management requirements*
- Descriptions of all related files and databases*
- Method of initiation (on request, initiation by another run, predetermined time)*
- Estimated run time*
- Required turnaround time*
- Requirements and procedure for report generation and reproduction>*

#### 3.2 Run Interrupt Checkpoints

*<Identify and describe the acceptable interrupt points within the solution to permit manual or semiautomatic verification of intermediate results, provide the user with intermediate results for other purposes, or permit a logical break if higher priority jobs are submitted.>*

#### 3.3 Set-Up and Diagnostic Procedures

*<Describe the procedures for set-up and execution of any software diagnostics. Relate to software units, if applicable. Include procedures for validation and troubleshooting. Explain all parameters (both input and output), codes, and range of values for diagnostic software.>*

#### 3.4 Control Inputs

*<Describe all operator job control inputs - for example, starting the run, selecting run execution options, activating an online or transaction-based solution, and running the solution through remote devices, if appropriate.>*

#### 3.5 Primary User Contact

*<Identify the user contact (and alternate if appropriate) for the solution, including the person's name, organization, address, and telephone number.>*



### **3.6 Data Inputs**

*<Describe the following if data input is required at production time:*

- *Entity responsible for the source data*
- *Format of data*
- *Data validation requirements*
- *Disposition of source and created data>*

### **3.7 Output Reports**

*<Identify the report names, distribution requirements, and any identifying numbers expected to be output from the run.>*

### **3.8 Error Messages**

*<List all error messages and the corresponding corrective procedure for each message. Relate to specific software units, if applicable.>*

### **3.9 Restart/Recovery Procedures**

*<Provide information regarding restart/recovery procedures to be followed in the event of solution failure.>*



## 4. Backup Procedures

*<Provide instructions by which the operator can initiate backup procedures. Cross-reference applicable instructions with procedures in the Contingency Plan.>*



## 5. Personnel

*<Describe the special skills required for maintenance personnel. These skills may include knowledge of specific versions of operating systems, transaction processing systems, high-level languages, screen and display generators, database management systems, testing tools, and computer-aided system engineering tools.>*



## **6. Performance Management and Capacity Planning**

*<Describe all solution hardware that require performance management and capacity planning. Describe all key functions and transactions to perform monitoring functionality. Categorize key functions and transactions into workloads/key processes.>*

### **6.1 Capacity Planning**

*<List the analytic modeling workload performance.>*

### **6.2 Performance Management**

*<Describe how the solution will be monitored and provide the performance information that will be maintained.>*



## 7. Solution Maintenance Procedures

This section contains information on the procedures necessary for programmers to maintain the solution.

### 7.1 Conventions

*<Describe all rules, schemes, and conventions used within the solution. Examples of this type of information include the following:*

- Solution-wide labeling, tagging, and naming conventions for programs, units, modules, procedures, routines, records, files, and data element fields*
- Procedures and standards for charts and listings*
- Standards for including comments in programs to annotate maintenance modifications and changes*
- Abbreviations and symbols used in charts, listings, and comments sections of programs*

*If the conventions follow standard programming practices and a standards document, reference that document, provided it is available to the maintenance team.>*

### 7.2 Verification Procedures

*<Include requirements and procedures necessary to check the performance of the solution following modification or maintenance of the solution's software components. Address the verification of the solution-wide correctness and performance.*

*Present, in detail, solution-wide testing procedures. Reference the original development test plan if the testing replicates development testing. Describe the types and source(s) of test data in detail.>*

### 7.3 Error Conditions

*<Describe all error conditions that may be encountered within the solution, including an explanation of the source(s) of each error and recommended corrective action(s). For each error condition, indicate if it applies to the solution as a whole or to a specific software unit.>*

### 7.4 Maintenance Software

*<Reference any special solution maintenance software and its supporting documentation.>*

### 7.5 Maintenance Procedure

*<Describe systematic, solution-wide maintenance procedures, such as procedures for setting up and sequencing inputs for testing. In addition, present standards for documenting modifications to the solution.>*



## Appendix A: References

*<Insert the name, version number, description, and physical location of any documents referenced in this document. Add rows to the table as necessary.>*

Table 1 below summarizes the documents referenced in this document.

Document Name	Description	Location
<i>&lt;Document name and version number&gt;</i>	<i>&lt;Document description&gt;</i>	<i>&lt;URL to where document is located&gt;</i>

**Table 1 - References**



## Appendix B: Key Terms

Table 2 below provides definitions and explanations for terms and acronyms relevant to the content presented within this document.

Term	Definition
<i>&lt;Insert Term&gt;</i>	<i>&lt;Provide definition of term and acronyms used in this document&gt;</i>

Table 2 - Key Terms