# NEEDS STATEMENT

*Integrated Procurement System (Case Study)*

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

Month, Year

# Revision Sheet

| Release No. | Date | Revision Description |
|---|---|---|
| Rev. 0 | 1/31/00 | SEO&PMD Needs Statement |
| Rev. 1 | 5/9/00 | Needs Statement Template and Checklist |
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# Needs Statement Authorization Memorandum

I have carefully assessed the Needs Statement for the (System Name). This document has been completed in accordance with the requirements of the HUD System Development Methodology.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

_____ The document is accepted.

_____ The document is accepted pending the changes noted.

_____ The document is not accepted.

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We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

_____ _____
NAME DATE
Project Leader

_____ _____
NAME DATE
Operations Division Director

_____ _____
NAME DATE
Program Area/Sponsor Representative

_____ _____
NAME DATE
Program Area/Sponsor Director

# NEEDS STATEMENT

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# 1.0 GENERAL INFORMATION

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## 1.1 Purpose

In keeping with the Federal Acquisition Streamlining Act (FASA) (1994), the Office of Procurement and Contracts has instituted a formal streamlined procurement and acquisition process. This process is currently supported by a standalone system that automates data collection as well as user interaction and access at various points in the procurement process workflow. Recent updates to FASA, amendments to the Office Federal Procurement Policy Act (1988), and new Congressional reporting requirements advocate the need for cross-functional integration of procurement activities and an expansion in the scope of data reporting and retention requirements. The functional and technological limitations of the current procurement system articulate the need to replace it with a more technologically and functionally capable application in order to facilitate compliance. This Needs Statement presents the justification for funding the development and implementation of a proposed Integrated Procurement System (IPS).

## 1.2 Scope

This Needs Statement investigates the funding requirements appropriate to accomplishing the full lifecycle systems development and deployment of this proposed initiative—IPS. The functions, storage capabilities, overall design and technical architecture of the current procurement system is incapable of positioning the Department to comply with recently legislated procurement processing and reporting requirements. This proposed initiative aims at correcting the functional and technical deficiencies of the current 5-year-old system. The scope of the funding requirements for this initiative does not include post-implementation corrective/ adaptive maintenance and support activities. Full lifecycle systems development for project will be completed within a 9-month timeframe. Expenses associated with project planning and preparation will be accommodated utilizing funds available during this current fiscal year.

## 1.3 System Overview

The Procurement and Contracting Office at Headquarters and the Regional Administrative Offices are responsible for administering the Department's procurement and acquisition process and are the organizations that will share responsibility for the Integrated Procurement System (IPS). IPS will utilize client server architecture to integrate procurement workflow and will be designed to support web-enabled access. This system is a major application that is designed to support and integrate procurement and acquisition processing activities.

The IPS production environment is described below:

| Computing Requirements | Estimated Size | Basis |
|---|---|---|
| Personal desktop computer (PC) | CPU: Intel Pentium 133 MHz<br>O/S: Modified MS Windows 95<br>RAM: 32 MB<br>Local storage: 500 MB | One per User (HUD employee) |
| Access to SQL Server | 500 MB storage | Contractor Team Leader, developers, Procurement System users |
| Current Procurement System Software access | Icon; 100 bytes storage | Each Procurement System user |
| LAN Servers | 25 MB space on each; 20 MB for application; 5 MB for contingency | Procurement System on production server |

## 1.4 Project References

- Federal Acquisition Streamlining Act (FASA) of 1994
- Office of Federal Procurement Policy Act (OFPPA) of 1988
- Government Paperwork Elimination Act (GPEA) of 1998
- Office of Federal Procurement Policy Act Amendments of 1988 (Public Law 100-679)
- HUD System Development Methodology (SDM)
- The current procurement system's Software Quality Assurance Plan
- The current procurement system's Software Configuration Management Plan
- Procedure for Reviewing Project Commitments to External Individuals or Groups with Senior Management
- Procedure for Developing the Software Development Plan
- Procedure for Estimating the Size of the Project Software Work Products
- Procedure for Assessing the Project Critical Computer Resources
- Procedure for Deriving the Project Schedule
- Procedure for Revising the Software Development Plan
- Procedure for Reviewing External Project Commitments and Changes to Commitments with Senior Management
- Powerscript Coding Standards and Naming Conventions

## 1.5 Terms and Abbreviations

| Acronym/Abbreviation | Definition |
|---|---|
| CM | Configuration Management |
| OPC | The Office of Procurement and Contracts. |
| FAD | Field Accounting Division. |
| FOIA | Freedom of Information Act. |
| FPDC | The Federal Procurement Data Center. |
| FPDS | The Federal Procurement Data System maintained by the FPDC. |
| FRD | Functional Requirements Document. |
| GAO | General Accounting Office |
| Government | U. S. Government or Federal Government unless otherwise indicated. |
| GSA | General Services Administration |
| GTM | Government Technical Monitor. |
| GTR | Government Technical Representative. |
| IPS | Integrated Procurement System |
| JFMIP | Joint Financial Management Improvement Program |
| GUI | Graphical User Interface. |
| OFPP | Office of Federal Procurement Policy within OMB. |
| OIG | Office of Inspector General |
| OIT | Office of Information Technology. |
| OMB | Office of Management and Budget within the Executive Office of the President. |
| Program Office | The Office within the Department that initiates and has primary responsibility for, or interest in, a Procurement of property or services. |
| SQL | Structure Query Language. |
| QA | Quality Assurance |
| SDM | System Development Methodology. |
| RAD | Rapid Application Development. |
| WBS | Work breakdown structure. |

## 1.6 Points of Contact

### 1.6.1 Information

The following persons can be contacted with questions pertaining to this document:

- Linda Williams, Project Leader, Office of Procurement and Contracts
- Robert Hawley, Project Leader, Office of Procurement and Contracts
- John Moriani, Configuration Manager, Office of Procurement and Contracts

### 1.6.2 Coordination

The following organizations must perform the following activities to ensure the successful development and deployment of the new IPS system:

- Office of Procurement and Contracts (OPC) (Headquarters and 25 Field Offices)
- Office of Information Technology (OIT)
- OPC Contractors

| Organization | Coordination Activities | Associated Schedule |
|---|---|---|
| OPC | Planning, Project Management | 03/07/FY00 – 02/28/FY01 |
| OPC, OPC Contractors | Business Requirements Support, Systems Requirements Support | 06/10/FY00 – 07/10/FY00 |
| OPC Contractors | Systems Design and Analysis | 06/30/FY00 – 08/30/FY00 |
| OIT, OPC, OPC Contractors | Hardware/Software Acquisition and Integration | 06/30/FY00 – 08/15/FY00 |
| OPC Contractors | Development, Development Coordination | 08/15/FY00 – 12/31/FY01 |
| OIT, OPC Contractors | System Integration and Testing | 01/01/FY01 – 02/01/FY01 |
| OPC Contractors, OIT | Installation, Deployment and Training | 02/01/FY01 – 02/28/FY01 |

# 2.0 NEEDS DESCRIPTION

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## 2.1 Needs

The Procurement and Contracting Office is required to comply with internal and statutorily mandated reporting to the Office of Management and Budget (OMB), the Federal Procurement Center (FPDC), the business community, and respond to Freedom of Information Act (FOIA) Requests. Recent updates to Federal Acquisition Streamlining Act (1994) FASA requirements require new focus on modular contracting methods. In addition, new amendments to the Office of Federal Procurement Policy Act (1988) require that the Procurement and Contracting Office shift away from cost based, level of effort contract towards indefinite delivery contracts. In addition, new Congressional reporting mandates require procurement orders to be tracked and provide consolidated reports of total obligations, percent by orders and percent by contracts. This information must now be retained and reported over periods of 5 fiscal years. These changes are driving the need to streamline and integrate the procurement process. Moreover the Government Paper work Elimination Act (1998) and the Department's e-Government policy require that procurement systems now enable electronic public access to procurement information that are available to the public via FOIA.

The current procurement system was not designed to accommodate the above-mentioned new requirements. The system does not allow for the tracking and consolidation of reports while its data retention capability is limited to 1 gigabyte of storage capacity. This capacity is incapable of accommodating the new and mandated data storage and retention requirements. Moreover, the current procurement system is not designed to facilitate web-enabled access—a requirement that is stipulated by both GPRA and the Department's e-Government policy as stated above. To support the new legislative and procurement processing requirements the Department needs a new procurement system that can provide capabilities that will extend beyond current system's functions as follows:

- Provide access to Purchase Procurement information at all operational levels.
- Provide a uniform processing environment that maintains records of HUD's Procurement activities
- Establish a standard for User procedures throughout the HUD Procurement and Contracting offices
- Eliminate the overlapping systems used by the HUD Procurement Offices
- Reduce system operational and maintenance costs
- Improve the Small Purchase Procurement and Acquisition Process
- Incorporate Uniform Small Purchase and Acquisition Procedures

- Utilize a consolidated database to ensure data consistency and eliminate the duplication of data entry
- Interface with the HUD Procurement System (HPS) and the agency's centralized financial accounting and processing System
- Provide web-enabled user access

## 2.2 Benefits Expected

The proposed IPS is expected to provide the following benefits:

- Automation of the high volume, low-dollar value simplified acquisition business processes performed in all Headquarters and field offices with delegated procurement authority saving the agency over $700,000.00 in processing fees annually.
- Standardization of business processing for over 5,000 annual HUD purchase order transactions for the entire simplified acquisition business cycle of small purchase requisition, solicitation production, purchase order production, and management reporting.
- Dual entry of the small purchase transactions in procurement and financial systems is eliminated by the IPS interface to the Department's central accounting system
- Staff performing simplified acquisitions in more than 25 locations will have a standardized and fully automated system for purchase requisition, solicitation, award, administration, and reporting. This is expected to shorten the turnaround time for processing requisition by 50%, resulting in improved productivity and an annual saving of $325,000.00 in labor expenses.
- Program staff nationwide will be able to enter requests for contract services on-line as well as check status of submitted requests and generate reports.
- The Department will be better able to provide timely and accurate reports on Contracting activities to HUD management the Federal Procurement Data Center (FPDC), Office of Management and Budget within the Executive Office of the President (OMB), Congress, and the public.

In addition, the system is expected to deliver enhanced reporting capabilities with regard to the tracking and accounting for contract award and other procurement actions. IPS extensive 10-year archiving process will enable the production of reliable historical data point references.

## 2.3 Existing and Planned Capabilities

When deployed, release 1.0 of IPS will be fully functional web-enabled procurement system that will provide improve on the capabilities of the current procurement system as follows:

| Current Procurement Systems' Capabilities | Additional Capabilities of Release 1.0 of Proposed System—IPS |
|---|---|
| • Support user interaction in utilizing the | • Provide access to Procurement information |

| Current Procurement Systems' Capabilities | Additional Capabilities of Release 1.0 of Proposed System—IPS |
|---|---|
| Procurement Business Procedures and Procurement workflow<br>• Provide functional access, at logical points of the procurement process workflow (from origination to completion of an Action)<br>• Automate the collection of Procurement life-cycle data into Action workflow stages<br>• Provide processing screens for each Action stage<br>• Provide activity-tracking screens for collecting funding, Vendor, and FPDS data elements.<br>• Provide Action record assignment and ownership to a user by system default and routing assignment until the Action is closed or cancelled<br>• Provide a domain structure where Action records reside and distinguish access rights by Customer | at all operational levels<br>• Provide a uniform processing environment that maintains records of HUD's Procurement activities<br>• Establish a standard for User procedures throughout the HUD Procurement and Contracting offices<br>• Eliminate the overlapping systems used by the HUD Procurement Offices<br>• Reduce system operational and maintenance costs<br>• Incorporate Uniform Purchase and Acquisition Procedures<br>• Utilize a consolidated database to ensure data consistency and eliminate the duplication of data entry<br>• Interface with the HUD Procurement System (HPS) and the agency's centralized financial accounting and processing System<br>• Provide web-enabled user access |

## 2.4 Organizational Effects

The need and deficiencies addressed by the proposed system impact all organizations within the Department that procure or acquire goods and services from third party vendors on behalf of the Federal government. This includes all users of OPC's centralized Federal procurement process. The new/updated FASA, OFPPA and GPRA legislative requirements promote the need to tightly integrate and reconcile procurement and financial accounting data. In addition, the new requirements articulate the need to support full lifecycle tracking of procurement orders and consolidated reporting capabilities. Therefore, the Office of the Chief Financial Officer (OCFO) in particular, and all HUD organizations in general, will benefit from the proposed system's capabilities.

## 2.5 Assessment of Need

The following matrix provides a comparative cross walk of the capabilities in the existing system that are addressed or enhanced by the proposed system, and an associated assessment of the needs. The matrix also provides an assessment of the need of new capabilities introduced by the proposed system.

| Current Procurement Systems' Capabilities | Additional Capabilities of Release 1.0 of Proposed System—IPS | Assessment of Need |
|---|---|---|
| Support user interaction in utilizing the Procurement Business Procedures and Procurement workflow | Provide access to Procurement information at all operational levels | The new system will need to accommodate the requirement to provide cross-organizational access to both HQ and remote users. The functions and obsolete technology of the existing system do not support this requirement. |
| • Provide functional access, at logical points of the Purchase Procurement workflow (from origination to completion of an Action)<br>• Provide processing screens for each Action stage<br>• Provide activity-tracking screens for collecting funding and vendor data elements. | Provide a uniform processing environment that maintains records of HUD's Procurement activities | The new system will extend functional access capability to allow for data capture in a uniform processing environment. The proposed system will also streamline separate/redundant functions that exist in the current procurement system. |
| • Automate the collection of procurement life-cycle data into Action workflow stages<br>• Provide Action record assignment and ownership to a user by system default and routing assignment until the Action is closed or cancelled<br>• Provide a domain structure where Action records reside and distinguish access rights by customer | Utilize a consolidated database to ensure data consistency and eliminate the duplication of data entry | The collection and storage of data at various points in the procurement process workflow in the existing system creates opportunity for record duplication. Moreover, having a separate domain structure for user access records establishes security vulnerability in the existing system. The proposed system will provide a consolidated, secure database environment to minimize the above-mentioned risks. |
| | Interface with the HUD Procurement System (HPS) and the agency's centralized financial accounting and | Facilitates the reconciliation and accurate reporting of procurement actions and |

| Current Procurement Systems' Capabilities | Additional Capabilities of Release 1.0 of Proposed System—IPS | Assessment of Need |
|---|---|---|
| | processing System | obligations. This supports the new Congressional mandate requiring that the tracking and consolidated reporting of procurement orders. This feature does not exist in the current procurement system. |
| | Provide web-enabled user access | Supports GPEA policy that requires that procurement systems enable electronic public access to procurement information that are available to the public via FOIA. This feature does not exist in the current procurement system. |

## 2.6 Constraints

| Constraint Considerations | Assessment of Constraints |
|---|---|
| Potentially critical interdependencies or interfaces with other systems, new technology or development programs | IPS will be designed to interface both with the current HUD procurement system and centralized financial accounting systems. The implementing of this interface require the resolution of system, technological and data dependencies that may limit the scope of deploying this feature in the first release. |
| Relative priority within the functional areas | Two other infrastructure projects, sponsored by the Office of Procurement and Contracts are competing for funds from next year's budget dollars allocated to this program. This may impact the allocation of full funding to IPS. |
| Changing hardware, software, and operating environment | IPS deployed is dependent on the successful introduction of new web-enabling technology by an infrastructure project to be submitted for budget review by the Office of Procurement and Contracts. |
| Logistics and staffing considerations | The average tenure of current resources maintaining the current procurement is 3 years. The new features of the proposed system create a skills gap for the addition of at least 4 persons with specialized technical skills not available on the current team. In addition, the loss of intellectual capital of one contractor staff member who is resigning will have be accommodated in the short team. |

# 2.7 Estimated Costs

## 2.7.1 Total Estimated Cost

| | Cash | | Indirect Load | | |
|---|---|---|---|---|---|
| | **Staff** | **Non-Staff** | **Staff** | **Non-Staff** | **Total** |
| A. Project Initiation/Planning | $22,500 | $0 | $17,390 | $0 | $39,890 |
| B. Requirements Definition | $15,960 | $0 | $1,880 | $0 | $17,840 |
| C. System Design | $11,000 | $0 | $3,760 | $0 | $14,760 |
| D. Software Acquisition | $2,400 | $41,753 | $2,820 | $0 | $46,973 |
| E. Hardware/Infrastructure Acquisition | $6,600 | $0 | $940 | $0 | $7,540 |
| F. New Development/Perfective Maintenance | $141,600 | $0 | $42,300 | $0 | $183,900 |
| G. System Integration and Testing | $34,500 | $0 | $4,700 | $0 | $39,200 |
| H. Installation and Deployment and Training | $40,990 | $0 | $3,760 | $6,300 | $51,050 |
| I. System Operations | $44,750 | $0 | $0 | $0 | $44,750 |
| J. Corrective and Adaptive Maintenance | $0 | $0 | $0 | $0 | $0 |
| **TOTAL** | **$320,300** | **$41,753** | **$77,550** | **$6,300** | **$445,903** |

### 2.7.2 Phase Cost Estimate

| | | FTE | | | CTR | | |
|---|---|---|---|---|---|---|---|
| **A. Project Initiation/Planning** | | **Resources** | **Hours** | **Cost** | **Resources** | **Hours** | **Cost** |
| 1.1.1 | Schedule Project | 2.0 | 370.0 | $17,390 | 2.0 | 350.0 | $22,500 |
| **Subtotal A. Project Initiation/Planning** | | | **370.0** | **$17,390** | | **350.0** | **$22,500** |
| **B. Requirements Definition** | | | | | | | |
| 2.1.1 | Requirements Definition | 1.0 | 40.0 | $1,880 | 3.0 | 440.0 | $15,960.00 |
| **Subtotal B. Requirements Definition** | | | **40.0** | **$1,880** | | **440.0** | **$15,960.00** |
| **C. System Design** | | | | | | | |
| 3.1.1 | Identify, Analyze and Design Objects | | | $0 | 1.0 | 40.0 | $2,400 |
| 3.1.2 | Analyze Data | | | $0 | 1.0 | 40.0 | $3,000 |
| 3.1.3 | Design Database | | | $0 | 1.0 | 40.0 | $3,400 |
| 3.1.4 | Develop System Specification | 2.0 | 80.0 | $3.760 | 1.0 | 40.0 | $2,200 |
| **Subtotal C. System Design** | | | **80.0** | **$3,760** | | **240.0** | **$11,000** |
| **D. Software Acquisition** | | | | | | | |
| 4.1.1 | Purchase Customized Package | 2.0 | 30.0 | $1410 | 2.0 | 20.0 | $1200 |
| 4.1.2 | Purchase Licenses and Development Tools | 2.0 | 30.0 | $1410 | 2.0 | 20.0 | $1200 |
| **Subtotal D. Software Acquisition** | | | **60.0** | **$2,820** | | **40.0** | **$2400** |
| **E. Hardware/Infrastructure Acquisition** | | | | | | | |
| 5.1.1 | Purchase Development Servers | 2 | 20.0 | $940 | 2.0 | 80 | $6600 |
| **Subtotal E. Hardware/Infrastructure Acquisition** | | | **20.0** | **$940** | | **80.0** | **$6,600** |
| **F. New Development/Perfective Maintenance** | | | | | | | |
| 6.1.1 | Prototype System | 2.0 | 750.0 | $21,150 | 7.0 | 1500.0 | $70,800 |
| 6.1.2 | Develop System | 2.0 | 750.0 | $21,150 | 7.0 | 1500.0 | $70.800 |
| **Subtotal F. Development/Perfective Maintenance** | | | **1,500.0** | **$42,300** | | **3000.0** | **$141,600** |
| **G. System Integration and Testing** | | | | | | | |
| 7.1.1 | Conduct V&V Testing | 1.0 | 100.0 | $4700 | 4.0 | 500.0 | $34,500 |
| **Subtotal G. System Integration and Testing** | | | **100.0** | **$4700** | | **500.0** | **$34,500** |
| **H. Installation and Deployment** | | | | | | | |
| 8.1.1 | Document and Deploy System | 1.0 | 40.0 | $1880 | | 280.0 | $20,495 |
| 8.1.2 | Conduct Training | 1.0 | 40.0 | $1880 | | 280.0 | $20,495 |
| **Subtotal H. Installation and Deployment** | | | **80.0** | **$3,760** | | **560.0** | **$40,990** |
| **I. System Operations** | | | | | | | |
| 9.1.1 | Configure and Manage Production Environment | 0.0 | 0.0 | $0 | 4.0 | 625.0 | $44,750 |
| **Subtotal I. System Operations** | | | **0.0** | **$0** | **4.0** | **625.0** | **$44,750** |
| **J. Corrective and Adaptive Maintenance** | | | | | | | |
| 10.1.1 | Not in Current Scope | $.00 | 0.0 | $0 | $0 | 0.0 | $0 |
| **Subtotal J. Corrective and Adaptive Maintenance** | | | **0.0** | **$0** | | **0.0** | **$0** |
| **TOTAL** | | | **2,250.0** | **$77,550** | | **5,835.0** | **$320,300** |

## 2.8 Integration

IPS streamlining and integration objectives are consistent with the Department's strategic integration. The proposed system is aligned with the agency's strategy to streamline redundant processes and functions and capitalize on opportunities to consolidate cross cutting initiatives along similar lines of business. IPS will integrate with the following strategic integration plans and system:

- The Department's Change Control Board (CCB) configuration management policy and procedures
- The Web Access Security system. This system supports non-application specific security functions and will provide security access rights to IPS.
- The Department's Financial System Integration objectives and Data Management policy. IPS will interface with the agency's financial accounting system. In doing, IPS will support and promote the development of data standards for storing and reporting procurement actions that are consistent both with Department's data standardization requirements and the policies and requirements of Joint Financial Management Improvement Program (JFMIP).
- The timeframe for development and deploying IPS fits with department's five-year plan goal to streamline and consolidate duplicate functions and systems. Department is in second year of implementation. IPS will be complete within a 1 year timeframe in accordance with the department's current timeline.