EXHIBIT NO. _________

DPS INFORMATION TECHNOLOGY (IT) STANDARDS AND REQUIREMENTS

Solicitation (RFO, RFQ, IFB & PR) No. _______

Or

Contract No. _______

This Exhibit is the DPS Internal Key Information Standards and Requirements. Highlighted areas and comments will be removed for an official Solicitation or Contract using these Standards and Requirements.

Information required as part of a Response to a specific Solicitation or required for inclusion as part of a specific Contract (if no Solicitation) or required prior to beginning work is highlighted in turquoise.

Decision points by Procurement & Contract Services are highlighted in yellow.
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<td>Updated all references of DPS to DPS. Corrected grammatical errors. Emailed current version to Alfred &amp; Barbara (P&amp;CS)</td>
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<td>Merged Legal and SE docs in prep for meeting with OGC Updated doc based upon OGC meeting</td>
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<td>Add Severity Level info to X.6 section via QA feedback</td>
<td>Melanie W/Phoebe C</td>
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<td>Remove X.4.4 System Performance and Response Time Reports. Approved by OGC and P&amp;CS. P&amp;CS will move this section to the business reports section.</td>
<td>Melanie, Barbara K, Alfred R, Tina H, Jennifer W</td>
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<td>V11.0</td>
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<td>Clarify X.2.3 Change Control Participation language to identify change coordinator vendor duties.</td>
<td>Melanie, Shannon, Bridget B.</td>
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<td>V12.0</td>
<td>04/20/16</td>
<td>Include Definitions Section, address questions and inconsistent usage of terms, conforming changes.</td>
<td>OGC Feedback</td>
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<td>V13.0</td>
<td>04/26/16</td>
<td>Changed all references of “Vendor” to “Contractor” per OGC recommendation. Added follow up comments for P&amp;CS or OGC decisions. Accepted formatting and spelling chgs per OGC feedback. Added definitions for yellow highlighted terms.</td>
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<td>V14.0</td>
<td>05/10/2016</td>
<td>Revised doc per IT mgmt. review: X.2.1B Server, Workstation, Peripheral Documentation (chg workstation “recommendations” to “requirements” (BL) X.2.4 Correct misspelling (BL) X.3.2A Chg business days from 3 to 10 (BL) X.6D Add language about transitioning training materials (BL) Update Hardware Maintenance definition (JG) X.2.1C, update IE version from 8 to 11 X.3.3 Add DPS before CCB (JG)</td>
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<td>Correct typo in Definitions for RFP. Put RFO, RFP and RFQ definitions in alphabetical order.</td>
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<td>Added sentence about restoring and testing data/system backup in section X.5.4 Data Backups. Chg approved by Shannon Wallace and Bryan Lane</td>
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<td>Damon Maslon</td>
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X.1 DEFINITIONS

A. **API** means Application Programming Interface.

B. **AWS** means Amazon Web Services.

C. **Business Continuity and Disaster Recovery Plan** means a documented set of plans related to preparations and associated activities which are intended to ensure that an organization's critical business functions will either continue to operate despite serious incidents or disasters that might otherwise have interrupted them, or will be recovered to an operational state within a reasonably short period of time.

D. **Change Control Board** means the DPS work group responsible for coordinating any requested change to existing DPS systems.

E. **Change Order** means a document utilized to capture customer and job information summarizing any labor or materials used to complete the task.

F. **Change Request** means the formal process to initiate and manage the Change Order process.

G. **Cloud Hosted or Cloud Services** means a service available to users on demand via the Internet from a cloud provider's servers as opposed to an agency's on-premises servers.

H. **Contract File** means the official DPS set of documents pertaining to the Solicitation, award and monitoring of the awarded contract housed within DPS’s Procurement and Contract Services (P&CS) Bureau’s official contract repository.

I. **Contractor-Hosted** means a combination of traditional IT functions to be provided by the Contractor such as infrastructure, applications Software (including COTS Software Solution), security, monitoring, storage, and provider of Hardware and Hardware Maintenance.

J. **COTS** means Commercial off the Shelf Software.

K. **Hardware** means the physical elements of a computing system including the physical components thereof.

L. **Hardware Maintenance** means the Hardware is maintained to run efficiently, increase component lifespan, decrease the likelihood of Hardware failure and replace hardware, should it fail.

M. **Hardware Refresh Plan** means the implementation of hardware which has reached end of life and no longer supported that will be replaced.

N. **Information Technology (IT) Division** means the DPS’s Division which is responsible for agency technology innovation, maintenance, and support as applicable.

O. **Internet Service Provider (ISP)** means a company that provides Internet services, including personal and business access to the Internet.

P. **Maintenance** means the act of keeping the System in good condition by making repairs, applying updates or upgrades, addressing problems, etc. to ensure that the System continues to meet user requirements in their present operating context.

Q. **Mobile Device Management (MDM) Software** means a type of security Software used by an IT department to monitor, manage and secure employee's mobile devices that are used in the organization.

R. **Performance Standards** means a measurable threshold, requirement, expectation against which actual levels of performance are appraised to gauge efficiency and effectiveness.

S. **Preventive Maintenance** means the care and services by personnel for the purpose of maintaining equipment and facilities in satisfactory operating condition by providing for systematic inspection, detection, and correction of incipient failures either before they occur or before they develop into major defects.

T. **PR** means Pricing Request.

U. **Publicly owned** means desktop or laptop PCs and mobile devices, phones and tablets that are owned by other than DPS or the Contractor.

V. **Response Time** means the total amount of time it takes to respond to a request for service.
W. **Services** means the furnishing of labor, time, or effort by the Contractor, which may or may not involve the delivery of a specific end product other than reports.

X. **Service Level Agreement (SLA)** means an exhibit to the awarded contract that contains performance standards that govern the work under the contract.

Y. **Service Level Standards** means the Performance Standards that govern work under the contract which are interspersed within the contract document itself in the absence of an accompanying SLA Exhibit and include the Basic Service Level Standards as defined in Section X.4 of this Exhibit.

Z. **Severity Level** means a defining classification scheme for all issues with corresponding resolution times.

AA. **Software (SW)** means any application programs for the exclusive use with the System.

BB. **Software Maintenance** means modification of a Software product after it is operational to correct faults, to enhance capabilities, to improve performance or other attributes.

CC. **Software Refresh Plan** means the implementation of software that has either been deprecated, updated or replaced.

DD. **Solicitation** means Pricing Requests, Request for Proposals (RFP), Request for Offers (RFO), Invitation for Bids, or Requests for Qualifications (RFQ).

EE. **Solution** means a collection of information management techniques involving computer automation (Software/Hardware/database/network) to support and improve the quality and efficiency of business operations.

FF. **System** means a collection of information management techniques involving computer automation (Software/Hardware/database/network) to support and improve the quality and efficiency of business operations.

GG. **System Backups** means procedures utilized to backup data to protect against data loss in the event of a System outage. Backups will include cold (offline) and hot (online) backups.

HH. **System Component** means any individual unit of Hardware or Software which together with other system components make up the System as a whole.

II. **System Failure** means a breakdown of any System Hardware, operating system, or application Software which prevents the accomplishment of the System’s intended function.

JJ. **System Functionality and Operational Effectiveness** means that the System is performing at the levels specified within this Contract.

KK. **Test Cases** means a specific executable test that examines all aspects including inputs and outputs of a system and then provides a detailed description of the steps that will be taken, the results that will be achieved, and other elements that will be identified.

LL. **DPS-Hosted** means a combination of traditional IT functions to be provided the Department such as infrastructure, applications Software (including COTS Software Solution), security, monitoring, storage, provider of Hardware and Hardware Maintenance, and email, over the internet or other Wide Area Networks (WAN).

MM. **UAT** means User Acceptance Testing.

NN. **Unit Testing** means a Software testing method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures are tested to determine whether they meet specifications.

OO. **Utility or Utilities** means Software that performs a very specific task that provides an addition to the capabilities provided by the System. Utility Software is designed to help analyze, configure, optimize or maintain a computer or application but is not essential to the operation of the System.

### X.2 INFORMATION TECHNOLOGY (IT) STANDARDS and REQUIREMENTS
The Contractor must comply with the following DPS IT standards and requirements, as applicable to this Contract. The Contractor must also comply with any DPS or state amended standards and requirements throughout the term of this Contract, including any renewal or optional Contract periods.

The Contractor’s systems must comply with DPS standards and requirements when there is a need to migrate from a Contractor-hosted infrastructure to a DPS-hosted infrastructure.

All requests for documentation, narratives, diagrams, exceptions, etc., identified in the sections below, must be submitted with the Contractor’s Response.

X.2.1 Contractor-Hosted System or DPS-Provided Cloud-Hosted System

A. System and Architectural Documentation
   The Contractor must provide, within its Response, documentation for a Contractor-hosted system consisting of the following:
   
   • An overall narrative for any System which is hosted within the Contractor’s computing infrastructure or within the DPS provided cloud infrastructure;
   • Narratives and detailed diagrams for the following:
     o Product architectural diagram;
     o Security diagram(s) (including security diagrams for database, network, application, etc.);
     o Network diagram;
     o Communications port diagram; and
     o For cloud-hosted, provide an inventory of AWS products required to support the bulleted items above; and
   • An itemized list of any assumed capabilities of DPS IT systems required to access or support the Contractor’s product(s) or System(s).

B. Server, Workstation, Peripheral Documentation
   The Contractor must provide, within its Response, an inventory for a Contractor-hosted System for the components listed below.
   
   • Any applicable server Hardware will identify:
     o The processor requirements;
     o The memory requirements;
     o Operating system details and dependencies; and
     o Data storage requirements.
   
   • All workstation requirements will identify:
     o The processor requirements;
     o Display requirements;
     o The memory requirements;
     o Operating system details and dependencies;
     o Data storage requirements; and
Any support applications required such as Internet Explorer, Adobe PDF Reader, etc.

- Peripherals required will be identified, including:
  - Printers;
  - Scanners; and
  - Fax.

C. **Desktop, Laptop, Mobile Device Documentation**

The Contractor must provide, within its Response, how its System will support each of the following items. The Contractor must also document any exceptions.

- DPS issued desktop or laptop PCs
  - Windows 7 or Windows 8.1
  - Internet Explorer 11 or greater
  - Firefox 52.2

- DPS issued Mobile Devices
  - IOS Smart tablet (latest available for purchase)
  - IOS Smart phone (latest available for purchase)

- Publicly owned desktop or laptop PCs owned by other than DPS or the Contractor
  - Windows 7 or greater
  - Mac OS X 10.12 or greater
  - Internet Explorer 11 or greater
  - Safari 5.1 or greater
  - Firefox 52.2 or greater
  - Google Chrome 47 or greater

- Publicly owned mobile devices, phones, and tablets owned by other than DPS or the Contractor
  - Using IOS 10.2.1 or greater
  - Using Android 4.4 or greater

**X.2.2 DPS-Hosted System**

**A. System and Architectural Documentation**

The Contractor must provide, within its Response, documentation for a DPS-hosted System consisting of the following:

- An overall narrative for any System which is hosted within the DPS-provided infrastructure.
- Narratives and detailed diagrams for the following:
  - Product architectural diagram;
  - Security diagram(s) (including security diagrams for database, network, application, etc.);
  - Network diagram;
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o Communications port diagram; and
o For cloud-hosted, provide an inventory of AWS products required to support the bulleted items above.

• An itemized list of any assumed capabilities of DPS IT systems required to access or support the Contractor’s product or System.

B. DPS Standards and Requirements for Software/Hardware
The Contractor must follow the DPS standards and requirements for any Software or Hardware that are to be hosted within the DPS infrastructure. The existing DPS infrastructure framework supports several industry standard products and platforms. The Contractor must identify, within its Response, the products required to properly support the System in the DPS infrastructure.

The Contractor must provide, within its Response, an inventory for the DPS-hosted System consisting of the following.

• Required Hardware platforms and operating system to support the proposed System
  o The processor requirements
  o The memory requirements
  o Operating system details and dependencies
  o Data storage requirements
  o AWS product equivalent, if applicable

• Required application server platforms
  o The processor requirements
  o The memory requirements
  o Operating system details and dependencies
  o Data storage requirements
  o AWS product equivalent, if applicable

• Required web server platforms
  o The processor requirements
  o The memory requirements
  o Operating system details and dependencies
  o Data storage requirements
  o AWS product equivalent, if applicable

• Required support services such as email servers, etc.
  o The processor requirements
  o The memory requirements
  o Operating system details and dependencies
  o Data storage requirements
  o AWS product equivalent, if applicable
The Contractor must provide, within its Response, its ability to support each of the following DPS standards. The Contractor must also document any exceptions to our standards.

- DPS-provided infrastructure only allows the following database platforms
  - AIX DB2 9.7 on premise
  - SQL Server 2012 R2 on premise or AWS
  - AWS RDS services

- DPS-provided infrastructure report services utilize
  - Crystal Reports
  - Microsoft SQL Reporting Services
  - AWS reporting tools

- DPS-provided infrastructure platform services utilize
  - VMWare 5.5 or greater
  - AWS infrastructure products

X.2.3 Intersystem Communication Standards

The System will support integration with other applicable DPS systems utilizing standard web services, provide Application Programming Interface (API) tools that can be incorporated into DPS applications, or secure file transfer protocol with data encryption.

X.2.4 Network Topography

DPS utilizes a combination of public and private TCP/IP network resources. All internal communications between client resources, other systems, and system services will be through this network. The Contractor’s System will use standard TCP/IP network access ports. The System will be accessible on Port 80 for standard web browser access and Port 443 for secure web browser support.

The Contractor must provide, within its Response, documentation on each of the following, as applicable:

- An estimate on the amount of bandwidth or formulas to calculate usage required to support the number of expected internal DPS Users and volume of work.

- For a Contractor-hosted System, the Contractor must provide, within its Response, narrative on how adequate network capacity for DPS Users and External, non-DPS Users will be delivered.

X.2.5 Workstation Software Installation Packaging

The Contractor must provide, within its Response, its level of compliance with the Workstation Software Installation Packaging requirements listed below. The Contractor must also document any exceptions.
If a Software system is client-based and needs to be installed on each computer, the Contractor must provide the client Software in an .msi format, compatible with the current version of Windows Installer (and n-2), which allows for full control over the installer user interface, as defined by Microsoft for Windows-based systems. Any Contractor-supplied .msi will fully support distributed deployment via the system Center Configuration Manager (and n-1) Application Model. OS X applications will support Apple Application installation package standards. Any Software required for mobile devices will be available from the appropriate App store based on the device operating system. Mobile device Software will also be compatible with Mobile Device Management (MDM) Software distribution tools.

X.3 MAINTENANCE AND SUPPORT

The Contractor must, within its Response, indicate its level of compliance with each of the following Maintenance and Support standards. The Contractor must also document any exceptions.

The Contractor must provide a Software Maintenance system that includes the following.

Support for the System to include Software changes that the Contractor develops for DPS or makes available to DPS as managed in accordance with this Contract, including any Service Level Agreement (SLA) or Service Level Standards.

- Preventive scheduled and unscheduled System diagnosis and correction of faults as well as modification of the Software to maintain the SLA or Service Level Standards.
- A web-based support portal for DPS to report minor problems which will be available 24 hours per day, seven days per week, and 365 days a year with a searchable knowledge base for known issues. Response to reported problems will be managed as defined in the SLA or Service Level Standards.
- Maintenance services to resolve usability problems to include bugs, security issues, installation of Software updates, and major Software releases.
- New Software versions or releases occurring in the normal Maintenance yearly support as referenced in this Solicitation. These Software versions or releases will be provided to DPS at no additional cost.

For Contractor-Hosted Systems, in addition to the Maintenance and Support standards above, the Contractor must provide, within its Response, its compliance with each of the following requirements. If the proposed system is being hosted on a vendor provided commercial cloud or DPS provided cloud, the Contractor must document exceptions for the items below.

- All Hardware Maintenance and support as defined in the SLA or Service Level Standards.
- Upgrades to equipment to meet and maintain performance as defined in the SLA or Service Level Standards.
- Backup Hardware
X.3.1 Software Updates

The Contractor must provide periodic Software updates to incorporate corrections of any defects or implement enhancements to the System’s Software.

- Scheduled and unscheduled Software updates released by the Contractor will be installed during periods of the Maintenance window as mutually agreed upon by DPS and the Contractor
- Updates to documentation or manuals resulting from Software updates will be provided or made available upon DPS request

X.3.2 Hardware Maintenance

The Contractor must provide Maintenance services for Hardware equipment owned by the Contractor which is installed to support a Contractor’s Hosted System.

If the Contractor proposes to utilize the DPS provided cloud hosting option, this Hardware Maintenance section will not be applicable and should be so noted in the Contractor’s response.

A. Scheduled Hardware Maintenance Notification
The Contractor must provide notice to DPS a minimum of ten business days prior to scheduled Maintenance including length of anticipated downtime plus the description or purpose of scheduled Hardware Maintenance

B. Unscheduled Hardware Maintenance Notification
The Contractor must provide notice to DPS prior to unscheduled Hardware Maintenance including length of anticipated downtime plus the description or purpose of unscheduled Maintenance

C. Preventive Maintenance
The Contractor must provide Preventive Maintenance services in order to maintain the System in good condition and working order on a mutually agreed upon, scheduled basis. The Preventive Maintenance schedule is to be based on the Contractor’s and DPS’s mutual agreement of the particular service required for each System Component, it being understood that this schedule will be oriented to avoid periods when the System is expected to have the heaviest use

During the term of this Contract, DPS may, by providing five calendar days prior written notice, select any alternative period of Maintenance coverage whether or not such alternative represents an increase or decrease in service.

D. Remedial Maintenance
The Contractor must provide remedial Maintenance to the System on a 24 hours per day, seven days per week basis, with a Response Time of no more than two hours for each incident.
X.3.3 Change Control Participation

Changes to the System will be subject to the DPS Change Control Board (CCB) process. This requirement is mandatory for Contractor-hosted and DPS-hosted solutions. DPS will initiate and manage the Change Control process. A DPS change coordinator will be assigned as the DPS project representative who is responsible for coordinating and communicating any proposed changes to a production environment.

The purpose of DPS IT Change Management (CM) is to ensure that Change Requests (CRs) to DPS IT systems are properly reviewed, authorized, implemented, and tracked with minimum disruption to service levels. The purpose of the DPS change management policy is to ensure accountability, communication, transparency, and visibility. The Contractor must submit CR details to the DPS change coordinator detailing what is changing and where it is changing, along with test plans, test results, and communication processes for before and after a change. DPS reserves the right to delay implementation of a change, stop a change in progress and deny a change to systems. There are two types of change requests.

A. Standard CRs
Standard CRs follow the “normal” change request process. This means these changes will be approved by the DPS CCB prior to being released to a production environment.

B. Emergency CRs
Emergency CRs follow an abbreviated version of the DPS CCB process. The following are examples of what are considered Emergency CRs:

- Production system down
- Multiple users/sites affected
- Misprocessing data
- Security risk

X.3.4 Service Outage Escalation and Communication Plan

The Contractor must provide, within its Response, a draft Service Outage and Escalation Communication Plan. The draft Communication Plan will specify the service outage notification and escalation process including how DPS is expected to notify the Contractor. Upon contract award, DPS and the Contractor will finalize a Service Outage and Escalation Communication Plan.

X.4 BASIC SERVICE LEVEL STANDARDS

The purpose of these Basic Service Level Standards, Section X.4, is to ensure that the proper elements are in place to provide DPS with the optimal level of System performance. These Basic
Service Level Standards define the terms, conditions, requirements, responsibilities, and obligations of DPS and the Contractor. Additional standards are located throughout this Exhibit and Solicitation – if any, and include Section X.3, Maintenance and Support; Section X.5, System Performance; Section X.6, System Training Plan for Technical Staff; and Section X.7, Testing Requirements, Implementation and Acceptance.

X.4.1 System Production Control

The Contractor must schedule production management such as batch processing, job scheduling, automated import/exports, etc. at a minimum of once every 24 hours, seven days per week, and 365 days per year. The production control schedule will be mutually agreed upon by both the Contractor and DPS and will be oriented around periods when the System is expected to have the lightest use.

X.4.2 Customer Support

The Contractor must support all Software licensed to DPS for use during the term of this Contract. The Contractor must provide a toll-free telephone or email accessibility to DPS for the System, Monday through Friday, 7:00 a.m. to 8:00 p.m., Central Time, excluding state or federal holidays. A list of the DPS holiday schedule is available upon request. These days and times may change at the discretion of DPS. The Contractor must provide the capability for DPS to leave a message for occasions outside of that time period.

A. System support for DPS includes responsibilities such as:
   • DPS employee training
   • System configuration
   • System navigation
   • Data query or export procedures
   • Search criteria, best practices, parameters, etc.
   • Troubleshooting for System Hardware, System Software, network, etc.

B. System support for DPS excludes responsibilities such as:
   • Record content
   • Record quality
   • Record interpretation
   • Employee administration (including new accounts, password creation or resets)
   • Non-system Software owned, purchased, installed, developed or utilized by DPS or DPS’s Hardware
   • DPS’s/User’s Internet Service Provider (ISP) or other internal method of access

X.5 SYSTEM PERFORMANCE

X.5.1 Basic Requirements
The Contractor must maintain optimal System performance 24 hours per day, seven days per week, 365 days per year at a rate of 98% (the Rate) as calculated by Calculation of System Performance Rate below. The Contractor is cautioned to quickly resolve the source or sources of failure. Inability to meet or exceed the Rate in any 12-month period may, at DPS’s sole discretion, result in the following actions:

- **First Remedy**: Verbal warning.
- **Second Remedy**: Written warning added to the Contract File.
- **Continuing Remedy**: DPS may consider exercising Contract remedies.

### X.5.2 Calculation of System Performance Rate

The Contractor must measure the System performance rate by the amount of time the System is unavailable (downtime) during a calendar month. This metric gauges the System performance as a percentage of available hours tracked to the quarter of an hour (rounded). The rate of System performance will be measured and monitored as follows in this Section.

Available hours equal the total number of hours in a month (24 hours multiplied by the number of days in the month) minus the actual amount of time spent to the quarter of an hour for scheduled Maintenance for the application.

Downtime is the total number of hours (rounded to the quarter hour) during which the System is not in operation.

System Performance Rate equals downtime hours divided by available hours.

**Example for the month of January:**

Available time per month was 744 hours (31 days X 24 hours)
Downtime per month was 3.75 hours (start 1:00 am - end 4:40 am)

\[
744.00 - 15 = 729 \\
729 / 744 = 98\%
\]

### X.5.3 Response Time

The Contractor must maintain response times that fall within benchmarks set by industry standards. Response times for Government applications will be between 0.3 seconds and no longer than eight seconds. Response times will be reported as the average of the total response time for a quarterly period. Time period used in calculating the rate will be used to calculate the Response Time average. The Contractor must provide performance metrics based on the applications performance for the period specified.

For Contractor-hosted Systems, the Contractor must provide monitoring tools and reports that DPS can access to verify capacity and throughput.
X.5.4 Data Backups

The Contractor or the System must perform backups on all System records once every 24 hours, seven days per week, and 365 days per year to facilitate data and System restoration in the event of any failures. The data backup schedule will be mutually agreed upon by both the Contractor and DPS and will be oriented around periods when the System is expected to have the lightest use.

Data and System Backups will be scheduled so that no more than 24 hours of data are at risk.

The Contractor or the System must be able to restore to development or test environments and must demonstrate the operability of a backup during the testing phase of the project.

X.5.5 Recovery Points

The Contractor must, within its Response, provide Business Continuity Plan (BCP) documentation for each of the following:

A. System Crashes
   - System crashes will be resolved within four hours of initial notification.
   - Any exceptions to the four-hour resolution requirement will be documented and will require email notifications explaining the reason for any delays to the DPS IT Chief Information Officer (CIO) and the business sponsor.

B. DPS Physical Infrastructure
   - Catastrophic disasters where the DPS physical infrastructure is lost will require the implementation of the DPS Disaster Recovery Plan (DRP). The implementation of the DRP will be coordinated with the DPS Disaster Recovery team, IT and any affected Contractor(s), if any part of a Contractor’s Solution is hosted on DPS physical infrastructure.

C. Contractor Physical Infrastructure or Solution Storage
   - Catastrophic disasters where a Contractor hosted physical infrastructure or any Contractor hosted System’s physical storage is lost will require the implementation of the Contractor’s BCP. The implementation of the BCP will be coordinated with the DPS Disaster Recovery team and IT.

X.5.6 Hardware and Software Refresh Plans

Hardware Refresh Plans will not be applicable for cloud solutions; however, Software refresh plans will need to be addressed as documented below.

Contractor must provide, within its Response, documentation for the following.
a. Contractor-Hosted System

The Contractor must provide Hardware and Software Refresh Plans to address end-of-support or end-of-life products. The plan will address System and application patches and implementation methodology and schedule. Refresh of Hardware and Software will be at the sole discretion of DPS.

b. DPS-Hosted System or DPS-Provided Cloud-Hosted System

The Contractor must provide Software refresh plans to address end-of-support or end-of-life products. The plan will address System and application patches and implementation methodology and schedule. Refresh of Software will be at the sole discretion of DPS.

X.5.7 Contractor Business Continuity and Disaster Recovery Plan

The Contractor must provide, within its Response, a Business Continuity and Disaster Recovery Plan. The plan will address how the Contractor must meet the SLA or Service Level Standards for all Contractor-provided Services such as:

- Contractor help desk or customer support
- Maintenance services
- Support services (e.g., Software, Hardware)
- Hosting services, if applicable
- Network services, if applicable

X.6 SYSTEM TRAINING PLAN FOR TECHNICAL STAFF

The Contractor must provide, within its Response, a detailed training plan. The plan must explain how the Contractor will train DPS technical staff to support the System. All training will be made available through DPS facilities located in the State of Texas. Training will be interactive so that students have the ability ask the instructor questions during the sessions. The schedule of training sessions will be mutually coordinated and agreed upon by DPS and the Contractor. It is estimated that DPS will receive a negotiated number of training sessions to be conducted during the Base and Renewal Option periods. The requirements of the training plan will address the following.

A. System Administration Training (if applicable):

- Daily operation and Maintenance of the Software
- User administrative duties (e.g., add users, delete users, password administration)
- System configuration
- Monitoring System availability and System status
- System error diagnostics
- System performance monitoring
• Administrative System reports

B. Developer Training (if applicable):
• Skills needed to integrate new data into the Software and to program the Software to develop new capabilities
• How the Software architecture handles various data types
• How the platform scales with users and data
• How the Software features interact with the security model
• How to integrate with internal and external data sources
• Understanding System’s APIs to perform common tasks (e.g., exchanging information between the System and other applications)

C. Training Programs
• The Contractor training programs will allow DPS and Contractor to jointly alter the proportion of System Administration and Developer training programs so as to maximize the overall effectiveness of the training for DPS
• The Contractor must scale, detail, and tie training programs to match the System

D. Training Materials
• The Contractor must provide copies for each type of training consisting of the curricula and associated User Guides for acceptance by DPS no less than 15 business days prior to the first training program. The copies will be submitted to the DPS Contract Administrator.
• The Contractor must make available to DPS, video recorded training for each type of training program as a review/refresher resource for DPS personnel who previously completed the live training
• Contractor will transfer ownership of training material to DPS to use internally and with business partners that access Contractor’s provided solution.

X.7 TESTING REQUIREMENTS, IMPLEMENTATION AND ACCEPTANCE

All testing activities will include the following:

X.7.1 Implementation and Acceptance

DPS must work closely with the Contractor to ensure requirements are met and completed; however, completion of any one requirement does not constitute full completion and acceptance of the Contract’s requirements.

X.7.2 AWS Infrastructure Environment

DPS requires that all AWS Cloud implementations that are deployed solely for the support of this contract use AWS Cloud Formation templates to allocate AWS resources. The use of Cloud Formation templates are not required for SaaS products that include AWS resources as part of a standard deployment which is used for all customers of the Contractor’s SaaS product.
• All AWS applications deployments that are targeted for the AWS Gov Cloud must be built using the AWS CJIS QuickStart template as a basis.
• All AWS applications deployments that are targeted for the AWS Public Cloud must be built using the AWS NIST 800-53 QuickStart template as a basis.
• The AWS Cloud Formation template must be able to deploy Development, Test, UAT and Production environments from the same template by submitting multiple iterations with input parameters to specify the unique properties of each environment.
• The AWS Cloud Formation template must be kept in a DPS owned source repository.
• All AWS Cloud Formation templates must include all required components required for the proper operation and auditing of the application. This includes:
  o all VPC and network configurations for subnets, route tables and access control lists,
  o all compute resources and load balancers,
  o all applicable Security Groups,
  o any AWS database services such as RDS or DynamoDB,
  o all S3 storage resources and applicable security policies,
  o all applicable CloudWatch alerts and notifications,
  o all applicable AWS Config rules to monitor the account.

DPS will require verification and acceptance as identified in the items below for all AWS Cloud deployments that are specifically built by the Contractor to support the contract. This verification is not required for SaaS products that include AWS resources as part of a standard deployment that is used for all customers of the Contractor’s SaaS product.

• DPS IT resources will be provided all final versions of any Cloud Formation templates prior to deployment for Production AWS resources.
• All testing, verification and audit results documentation must be provided to DPS IT prior to the deployment of Production AWS resources.
• DPS resources will perform an audit of deployed production environment to ensure compliance with any applicable regulatory standards prior to loading DPS data.
• DPS resources will perform an audit of any associated AWS account associated with all environments used for Development, Test, UAT and Production to ensure compliance with any applicable regulatory standards prior to loading DPS data.
• Natural progression of the scripts. Dev, Test, UAT, PROD

DPS resources will provide written approval of acceptance of any required Cloud Formation templates and AWS accounts once the auditing and the review process has been completed.

X.7.3 Unit Testing

• The Contractor must provide a listing of Unit Test Cases based on the requirements of this Contract.
• The Contractor must develop automated unit tests in all of its code.
• The Contractor must also provide DPS with the results of the Unit Test Cases that were executed to completion.
• DPS will be the owner of all automated test cases developed as part of the project.
Based on the outcome of successful unit testing, the Contractor will advance to the next step of system testing. Successful unit testing will be defined as 100% pass rate of all defined Unit Test Cases with no outstanding issues/defects. The Contractor must perform all these tests in a development environment.

X.7.4 System Testing

- The Contractor must provide to DPS for review and approval by DPS Quality Assurance (QA) testing staff, documented Test Cases that will be performed during Contractor System testing to validate the successful migration and installation of the Software package before any System testing begins.
- The Contractor must perform System testing in the Contractor’s QA environment and provide test results to DPS.
- The Contractor must log all defects found during the System testing in the agreed upon defect tracking application.
- The Contractor must investigate any defects found during System testing and participate in defect triage meetings with DPS to determine defect outcome and resolution.
- The Contractor must provide defect fixes in the timeframe as defined in the SLA or Service Level Standards.
- The Contractor must demonstrate all components of the application Software are performing as defined in the System Test Cases and business requirements, including interfaces with other systems (baseline interfaces), in the specified System hardware, operating Software and network environment (system environment).
- Based on the successful outcome of System testing, DPS will advance to Performance Testing Performance Testing. Successful System testing will be defined in the Quality Assurance Test Plan as well as in the Entry and Exit Criteria document, Exhibit No. XX.
- System testing will not be considered successful if outstanding severity one or severity two defects pending resolution remain as defined in the agreed upon test plan. Severity levels are defined in the IT Quality Management Defect Handling Instructions.

X.7.5 Performance/Load Testing

Performance/Load Testing will be performed by DPS in coordination with the Contractor in instances where internal metrics (network load, etc.) cannot be captured by the Contractor. DPS will help coordinate internal resources to provide oversight and assistance when necessary.

- The Contractor must provide documented Test Cases to DPS that will be performed during Contractor performance and load testing to validate the successful performance of the Software package.
- The Contractor must capture the average data throughput for the System and the maximum number of concurrent users before service degradation to ensure user traffic does not have an adverse effect on the DPS network and will provide these results to DPS.
- The Contractor must be responsible for conducting performance and load testing that will demonstrate the Contractor’s System is capable of meeting metrics as defined by DPS.
- The Contractor must provide performance and load test results to DPS for review and approval.
Based on the outcome of successful performance and load testing, the Contractor will advance to the next step of System integration testing. Successful performance testing will be defined in the Performance/Load Test Plan documentation created by DPS. The Contractor must perform all these tests in a production-like environment.

Performance/Load testing will not be considered successful if outstanding severity one or severity two defects pending resolution remain as defined in the agreed upon test plan. Severity levels are defined in the IT Quality Management Defect Handling Instructions, Exhibit No. XX.

X.7.6 System Integration Testing

DPS will perform System integration testing independently or jointly with the Contractor following successful completion and documentation of Contractor and DPS System testing.

- The Contractor must provide assistance during the System integration testing process by providing technical and QA resources that will answer questions and will clarify or fix any issues encountered during the System integration testing cycle. This support can be performed remotely or in person at the DPS facility. Remote support will consist of remote server control mechanisms, WebEx review sessions, telephone conference calls and email exchanges. System integration testing will focus on the integration and interaction with other DPS systems, external systems, or third party components and will be based on DPS requirements as well as the Contractor’s System Design Specification.
- The Contractor must provide a User Acceptance Testing environment upon successful completion of System Integration Testing.
- DPS will log all defects found during the System integration testing in the agreed upon defect tracking application.
- The Contractor must investigate any defects and participate in defect triage meetings with DPS to determine defect outcome and resolution.
- The Contractor must provide a documented response to the documented defect in the agreed upon defect tracking application.
- The Contractor must provide defect fixes in the timeframe as defined in the SLA.
- The Contractor must provide release notes containing an open issues log for each test iteration.
- At DPS’s sole discretion, Test Cases may be modified or added to ensure completeness, accuracy and quality of the delivered Software package as defined in business and technical documentation.
- Based on the successful outcome of System integration testing, DPS will advance to User Acceptance Testing (UAT). Successful System integration testing will be defined in the Quality Assurance Test Plan as well as in the Entry and Exit Criteria document, Exhibit No. XX.
- System Integration testing will not be considered successful if outstanding severity one or severity two defects pending resolution remain as defined in the agreed upon test plan. Severity levels are defined in the IT Quality Management Defect Handling Instructions.

X.7.7 User Acceptance Testing (UAT)
Following successful completion of the System integration testing, or System test for Contractor Hosted Systems, DPS will coordinate and execute UAT in the Contractor’s (UAT) environment.

UAT will be performed by DPS end users based on UAT Test Cases created by DPS.

DPS will notify the Contractor of any defects found during UAT of the Software System.

The Contractor must investigate any defects and participate in defect triage meetings with DPS to determine defect outcome and resolution.

The Contractor must provide defect fixes in the timeframe as defined in the SLA or Service Level Standards.

If the number of defect failures prevents all systems from operating as described above, DPS may reject the entire final Software package.

If all criteria is not met as defined in the User Acceptance test plan documentation created by DPS, or the Contractor’s System does not meet the defined business requirements, DPS may reject the final Software System.

X.7.8 Final Acceptance

Final acceptance of the Software System or product will not occur until 90 business days after the review period, to include 30 consecutive days failure free operation of the System and delivery of all required documentation. Final acceptance will be documented in writing, on the Final Acceptance Form, Exhibit No. XX, and will be executed by DPS and the Contractor.

X.7.9 Failure Resolution

Upon failure of any test within the control of the Contractor, the Contractor must submit a report describing the nature of the failure and the actions to be taken to remedy the situation prior to any modification or replacement of the System, within ten business days. DPS will provide written approval or denial within five business days. If a System requires modification, the fault will be corrected and the test repeated until successfully completed.

- Major discrepancies that will substantially delay receipt and acceptance of the System will be sufficient cause for rejection of the System. Failure to satisfy the requirements of any test is considered a defect and the System will be subject to rejection by DPS. Any rejected Software package may be offered again for retest provided all noncompliance has been corrected.
- Resolution of System integration test failure. If the Software package fails the System integration test, Contractor will correct the fault and then DPS will repeat the Systems integration test until successfully completed.
- Resolution of final acceptance test failure. If a defect within the System is detected during the final acceptance test, DPS will document the failure. Contractor will be required to research, document and correct the source of failure. Once corrective measures are taken, DPS will monitor the point of failure until a consecutive 30 calendar day period free of defects is achieved.

X.7.10 Retest
Contractor and DPS will mutually agree to re-test per the Testing Requirements, Implementation, and Acceptance section, as determined by the environment where the issue is to be addressed. If the system downtime exceeds 72 hours or the System has not operated for 30 consecutive days free of defects within the 90 day period, DPS may extend the test period by an amount of time equal to the greater of the downtime in excess of 72 hours or the number of days required to complete the performance requirement of an individual point of failure.