

**United States Department of Agriculture  
and  
General Services Administration  
IT Modernization Centers of Excellence**

**Statement of Work  
for the  
Infrastructure Optimization Cloud Adoption BPA**

**July 30, 2018**

## SOW for Infrastructure Optimization Cloud Adoption BPA

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**Statement of Work (SOW)  
for the  
Cloud Migration BPA**

**1.0 General**

1.1 Services and Prices/Costs

The Contractor shall furnish all required personnel to support the services identified in the Request for Quote (RFQ). All contractor personnel must have the experience, education, and capability to perform required tasks. Below are the labor categories required under the Blanket Purchase Agreement (BPA). The Contractor shall propose firm, fixed-price hourly rates for the labor categories identified in this Schedule. Prices quoted shall be for new orders placed during the ordering period.

1.1.1 Contract Line Items

<b>CLIN</b>	<b>Category</b>	<b>Unit</b>	<b>Unit Price</b>
<b>0001</b>	<b>Program Management Support</b>		
0001A	Program Management Support - Senior	HR	\$
0001B	Product Manager Support - Professional	HR	\$
0001C	Project Management Support - Junior	HR	\$
0001D	Subject Matter Expert (SME) - Senior	HR	\$
<b>0002</b>	<b>Technical Development and Delivery</b>		
0002A	Solutions Architect - Senior	HR	\$
0002B	Security Engineer - Senior	HR	\$
0002C	Developer - Senior	HR	\$
0002D	DevSecOps Practitioner - Senior	HR	\$
0002E	Infrastructure Optimization Consultant - Senior	HR	\$
0002F	Administrator - Professional	HR	\$
0002G	Engineer - Junior	HR	\$
<b>0003</b>	<b>Design and Research Support</b>		
0003A	Designer - Senior	HR	\$
0003B	Researcher - Professional	HR	\$
0003C	Analyst - Junior	HR	\$
0003D	Learning Specialist - Professional	HR	\$

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0003E	Data Analyst - Professional	HR	\$
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### 2.0 LABOR CATEGORIES

2.1 Labor Category Definitions. The Labor Categories identified in Section 1.0, are associated with work described in the Statement of Work. Contractors proposing firm-fixed price rates for the above CLINs must propose personnel that meet the education and experience requirements for tasks 1 through 4 in the SOW.

The minimum experience is as follows:

#### CLIN 0001 - Program Management Support

- **CLIN 0001A – Program Management Support (Senior):** Personnel proposed must have a minimum of ten (10) years of relevant work experience and a Bachelor of Arts/Bachelor of Science (BA/BS) degree. Personnel in this category are responsible for planning and directing work and/or monitoring progress and taking corrective action when necessary. Individuals will be responsible for delivering on highly-visible and mission critical elements, be capable of performing duties independently, and be responsible for successful outcomes of the program. Personnel may oversee the efforts of less senior staff, be capable of briefing to more senior individuals, federal and contractor, and/or be responsible for the efforts of all staff assigned to specific jobs under their purview. They must be familiar with both traditional waterfall (e.g. PMP) and agile (e.g. SAFe) delivery methods in order to manage multiple project teams and milestones, although only one certification is required.
- **CLIN 0001B – Product Manager Support (Professional):** Personnel proposed must have a minimum of six (6) years of journey-level experience, hold one or more relevant certification, and have demonstrable experience in their field. Product managers will be in a client and user facing role to help government modernize an application. They will be responsible for creating short and long term milestones, as well as prioritizing tasks and stewarding the vision and strategy beyond a near-term migration. In addition, they will lead the delivery, ongoing success, and continuous improvement of one or more digital portfolios, products and/or platforms, through effective analysis of qualitative and quantitative data for diverse user groups. Individuals must be capable of managing one or more cross-functional team(s) to deliver the right product to the right audience, using the right technologies and processes, helping identify potential updates to policies and procedures. They must be familiar with both traditional waterfall (e.g. PMP) and agile (e.g. SAFe) delivery methods in order to manage multiple project teams and milestones, although both certifications are not required.
- **CLIN 0001C – Project Management Support (Junior):** Personnel proposed must have a minimum of four (4) years of experience, and have demonstrable experience in their field. They must be familiar with traditional waterfall (e.g. PMP) and/or agile (e.g. SAFe), though certifications are not required. Personnel in the Junior labor category are responsible for assisting more senior positions and/or performing functional duties

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under the oversight of more senior positions. They will also be responsible for collecting data, reporting progress, and ensuring the quality and accuracy of deliverables.

- **CLIN 0001D – Subject Matter Expert (SME) (Senior):** Personnel proposed under the SME category must be an individual whose qualifications and/or particular expertise are exceptional and/or highly unique. Subject Matter Experts must possess a minimum of 15 years of relevant experience with no less than five (5) years' experience in an executive-facing role. Experience and degree requirements must be in a field relevant to their functional contribution. SMEs are typically recognized for a given area of expertise and able to provide guidance on policies. Subject Matter Experts typically perform the following kinds of functions: Initiates, supervises, and/or develops requirements, helps arbitrate and advice on complex problems and opportunities; Provides strategic advice, technical guidance and expertise staff and leadership; Provides detailed analysis, evaluation and recommendations for improvements, identifies and develops optimization and/or maintenance efforts for client-specific or mission critical challenges/issues; Consults with client to define needs or supervises studies and leads surveys to collect and analyze data to provide advice and recommend solutions.

### CLIN 0002 - Technical Development and Delivery

- **CLIN 0002A – Solutions Architect (Senior):** Personnel must have engineering skills, knowledge, and experience designing, developing, testing, operating, and sustaining secure computing architectures to include: cloud, data centers, and overall infrastructure optimization activities. Individuals must be capable of collecting solution requirements, documenting requirements and performance objectives, detailing metrics and benchmarking measurements for evaluation in an independent fashion. Personnel develop and maintain technical expertise in cloud technologies. Individuals will hold relevant certifications and degrees as requires in their field and have demonstrated a minimum of eight (8) years experience and a Bachelor of Arts/Bachelor of Science (BA/BS) degree. Experience should include modern data processing environments, including cloud computing, DevSecOps patterns and individuals must be capable of leading the technical strategy for agile development teams. Individuals are responsible for ensuring strategic alignment of technical design and architecture to meet the agency's strategic direction and be capable of decomposing business and system architecture to support clean-interface multi-team development. Personnel will be responsible for ensuring product roadmaps, backlogs, and measurable success criteria, writing user stories (i.e., can establish a path to delivery for breaking down stories), are developed with input from the team, users, and stakeholders.
- **CLIN 0002B – Security Engineer (Senior):** Proposed personnel must have a minimum of eight (8) years of knowledge in federal information security policies, practices, and legal requirements including FISMA, FITARA, and FedRAMP. Individuals must be knowledgeable in National Institute of Standards and Technology (NIST) 800-53 Rev4 or higher and capable of reviewing, analyzing, and assessing systems configurations/architectures to identify security, safety, and mission-critical functions/components. Personnel may be tasked with the development and delivery of system security and information assurance documentation, consistent with federal

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standards to support system certification and accreditation. They must be willing to advocate for a modern, DevSecOps-style, approach for conducting testing and conveying control information, consistent with the NIST 800-53 Risk Management Framework (800-32 Rev 2 - DRAFT) and capable of devising policy recommendations to streamline and accelerate successful security outcomes. They must be capable of performing security audits, risk analysis, application-level vulnerability testing, and security code reviews as well as developing and implementing solutions to mitigate new attack vectors. Individuals must have experience serving as the security engineer of complex technology implementations in a product-centric environment. Comfortable with bridging the gap between legacy development or operations teams and working toward a shared culture and vision. Works tirelessly to ensure help developers create the most secure systems in the world while enhancing the privacy of all system users. Experience with white-hat hacking and fundamental computer science concepts strongly desired.

- **CLIN 0002C – Developer (*Senior*):** Proposed personnel must have and a Bachelor of Arts/Bachelor of Science (BA/BS) degree and the ability to author, review, test, and debug code and configuration for infrastructure components (e.g. Hardware, Software, Operating System, Middleware, etc), including for security risks and fixes. Expertise should include six (6) or more years of knowledge and experience with development and deployment processes and tools; software integration and testing experience to include continuous integration / continuous deployment or delivery (CI/CD) practices, and experience categorizing, tracking, and resolving problems at all levels of development, integration, and delivery; and experience with integration planning and vulnerability resolution. Individuals must have experience using modern, open source software to prototype and deploy backend web applications, including all aspects of server-side processing, data storage, and integration with frontend development. Personnel must have experience developing and consuming application programming interfaces (APIs); working in team environments that use agile methodologies (e.g., Scrum, Lean, SAFe); authoring developer-friendly documentation; practicing test-driven development; ensuring Section 508 Compliance; using version control systems, quickly researching and learning new programming tools and techniques; and developing with relational and non-relational database systems.. Additional experience using modern, front-end web development tools, techniques, and methods for the creation and deployment of user-facing interfaces, as well as front-end web development using modern techniques including modern JavaScript development, libraries, and frameworks (e.g., HTML5, CSS3, CSS frameworks like LESS and SASS, Responsive Design, Bootstrap) is desirable. Individuals must be capable of reviewing legacy application environments, analyzing appropriate implementation alternatives, designing development plans, documenting all components of existing and future environments, and communicating technical concepts to a non-technical audience. They will serve as a senior software architect/developer to oversee the efforts of less senior staff and/or be responsible for all development efforts of a particular project or product. Personnel are responsible for managing migration activities, developing documentation and

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automation to ensure repeatability and accuracy of delivery, using “infrastructure as code” practices.

- **CLIN 0002D – DevSecOps Practitioner (*Senior*):** Personnel must have a minimum of four (4) years automating infrastructure, service delivery, and engineering site reliability. Personnel in this category are responsible for maintaining a number of automation and orchestration technologies and will be responsible for creating and configuring flexible solutions for other development, delivery, security, operations, and oversight teams, ensuring system uptime, security, and performance. Experience is required, serving as an engineer for complex implementations in an agile, product-centric environment. Individuals must be comfortable bridging the gap between legacy development or operations teams and working toward a shared culture and vision of modern digital delivery. Works tirelessly to arm developers with the best tools and ensuring system uptime and performance. Personnel will be required to assess, deploy, and manage a number of infrastructure management tools including infrastructure optimization and orchestration solutions. Personnel must be capable of overseeing the efforts of less senior staff, briefing more senior individuals, federal and contractor, and/or be responsible for the efforts of staff assigned to specific jobs under their purview. Experience in agile and DevSecOps (DevOps) practices is a requirement and practitioners must be capable of designing and delivering dynamic capabilities, while clearly articulating and implementing a balanced approach to security and agility. The initial focus will be to design, build, and optimize cloud services, while considering the limitations imposed by practicality and compliance. Practitioners should be prepared to support the learning and cultural transformation by facilitating shared standards and participating in communities of practice as the organization matures and new capabilities are identified.
- **CLIN 0002E – Infrastructure Optimization Consultant (*Senior*):** Personnel proposed under this category must have a bachelor’s degree and 10 years of hands-on experience as an engineer performing IT assessments – providing guidance, feedback, and recommendations, serving as a senior escalation point for IT issues and presenting IT recommendations and action plans to clients. Personnel must be experienced with software / hardware virtualization tools such as Microsoft Hyper and VMware and with cloud solutions such as Microsoft Office 365, Azure, SharePoint and Amazon Web Services. Personnel must have hands-on experience with server operating systems, firewalls and switches (Cisco, SonicWall, etc.) and backup and disaster recovery solutions. Personnel should also have security software experience (anti-virus, anti-malware, firewall, encryption, etc.). Personnel must have hands-on experience with data center configuration and energy management practices. Personnel must have hands-on experience with major data center migration and consolidation management practices.
- **CLIN 0002F – Administrator (*Professional*):** Proposed personnel must have must have four (4) or more years of knowledge and experience with managing and maintaining systems and/or software solutions. Individuals should function as a journey-level proficiency and be able to operate semi-independently, reporting to a senior-level labor

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category when exceptions arise or milestones have been met. They must be capable of directing the work of less-senior engineers across a number of disciplines (cloud computing, networking, security, development, data, and databases) as well as conducting those same configuration, programming, and delivery activities should the need arise. Personnel are responsible for completing migration activities, delivering documentation and conducting validation and assurance activities.

- **CLIN 0002G – Engineer (*Junior*):** Personnel proposed under this category must have a minimum of three (3) years of relevant experience in their field. Individuals will be responsible for conducting research and planning activities, evaluating products and technical alternatives, as well as developing, deploying, and documenting technical solutions. Personnel in this category are responsible for assisting more senior positions and/or performing functional duties under the oversight of more senior positions.

### CLIN 0003 - Design and Research Support

- **CLIN 0003A – Designer (*Senior*):** Personnel proposed must have a minimum of six (6) years of relevant work experience and a Bachelor of Arts/Bachelor of Science (BA/BS) degree. Personnel in this category are responsible for capturing the goals of users and the agency as well as evaluating opportunities and constraints and providing strategic recommendations for enhancements. Individuals will be well-versed in current visual design standards and trends and will be responsible for managing project design reviews, developing guidance (such as style guides and usability testing) and coaching for team members and ensuring compliance of application release management, outage management and change control processes and standards. They will also have experience focusing on improving usability, user experience, and driving adoption and engagement by planning, recruiting, and facilitating the usability testing of a system. They are responsible for conducting user research, analysis/synthesis, to develop requirement specifications & experience goals, personas, storyboards, scenarios, flowcharts, design prototypes, and usability / design specifications to create products that meet the needs of users. Individuals will work on highly-visible stakeholder interviews, user requirements analysis, task analysis, conceptual modeling, information architecture, interaction design, and usability testing and must be effective at communicating research findings, conceptual ideas, detailed design, and design rationale and goals both verbally and visually. Senior Designers should have the ability to develop proof-of-concepts and prototypes of easy-to-navigate user interfaces (UIs) that consists of web pages with graphics, icons, and color schemes that are visually appealing. Personnel may oversee the efforts of less senior staff, be capable of briefing to more senior individuals, federal and contractor, and/or be responsible for the efforts of all staff assigned to specific jobs under their purview.
- **CLIN 0003B – Researcher (*Professional*):** Proposed personnel must have four (4) or more years experience specifying, collecting, and presenting key performance data and analysis for a given digital service and/or business process. Individuals support the team by generating new and useful information and translating it into actions that will allow them to iteratively improve their service for users. Personnel must possess analytical

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and problem-solving skills necessary for quickly developing recommendations based on the quantitative and qualitative evidence gathered via web analytics, financial data, and user feedback. Individuals must be capable of explaining technical concepts to senior officials with limited technological background, and comfortable working with data, from gathering and analysis through to design and presentation. At this professional level, they must be able to share examples of best practice in digital performance management and support the procurement of the necessary digital platforms, that support automation and near real-time collection and presentation of operational data, helping overcome delivery obstacles to improving policies, processes, and overall performance in agencies by collaboratively to overcome those obstacles

- **CLIN 0003C – Analyst (*Junior*):** Personnel proposed must be familiar with a range of digital/web services and solutions, ideally where open source and cloud technologies and agile development methodologies have been applied. An eye for detail, excellent communication skills, ability to rationalize complex information and to make it understandable for others to work, and ability to interrogate reported information and challenge sources where inconsistencies are found. Individuals are primarily responsible for; supporting agencies by analyzing propositions and assessing decision-making factors such as strategic alignment, cost/benefit, and risk; working closely with more senior leaders to define a product approach to meet user needs; defining required skills and processes, and mapping internal, agency, and external (partners/specialist contractors) resources. Personnel must be capable of independently analyzing and mapping the risks of an approach and propose mitigation solutions, and work with more senior managers to measure, analyze, and report progress.
- **CLIN 0003D – Learning Specialist (*Professional*):** Personnel proposed must have a minimum of four (4) years of relevant work experience developing the strategy and execution of knowledge sharing and content publishing across a number of outreach channels. Personnel in this category are responsible for creating and improving content and training efforts by leading the research & development of interactive and experiential learning for participants. Individuals must be able to advise how to improve the iteration of content and collaborate across the team to improve the quality and effectiveness of documentation and delivery. Personnel will participate, as needed, on an agile delivery teams and oversee the efforts of staff to document, using plain language guidelines, content to communicate technically sophisticated topics, such as cloud and DevSecOps. Individuals must be capable of producing and editing content as well as planning and facilitating learning and content workshops, brainstorming sessions, and directing the development of content and learning modules.
- **CLIN 0003E – Data Analyst (*Professional*):** Personnel proposed must have a minimum of four (4) years of relevant work experience and relevant a Bachelor of Arts/Bachelor of Science (BA/BS) degree in data science. Personnel in this category are responsible for collecting, analyzing, and presenting key data and analysis for a given service. Individuals support the team by generating new and useful information and insights, and translating it into actions that allow iterative service improve for users. Professional individuals must possess critical analytical and problem-solving skills for quickly

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developing recommendations based on the quantitative and qualitative evidence gathered. Personnel must be comfortable working with relational and non-relational data and processing systems, from gathering and analysis through to design and presentation. This includes being confident in explaining data-driven decision making concepts to senior officials with limited background. Personnel may oversee the efforts of less senior staff, be capable of briefing more senior individuals, federal and contractor and communicating performance against key indicators to stakeholders.

### **3.0 Background**

The mission of the United States Department of Agriculture (USDA) is to provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management.

USDA has a vision to provide economic opportunity through innovation, helping rural America to thrive; to promote agriculture production that better nourishes Americans while also helping feed others throughout the world; and to preserve our Nation's natural resources through conservation, restored forests, improved watersheds, and healthy private working lands.

As part of USDA's efforts to achieve these goals, the Department partnered with the Office of American Innovation (OAI) to serve as the lighthouse agency for GSA's IT Modernization Centers of Excellence (CoE). Working as one team, USDA and the CoEs are working to modernize IT across the Department. Phase 1 was a comprehensive Department-wide assessment and planning effort. The purpose of Phase 1 was to determine how to radically improve the way in which USDA designs services and interacts with the American citizens it serves. This transformation is supported by changes in the underlying technology to deliver increased operational efficiency. Phase 2, the implementation/execution phase, entails implementing the agreed approaches defined in Phase 1. This procurement is in support of Phase 2 of the CoE process at USDA.

As part of the efforts to optimize infrastructure and drive cloud adoption, USDA partnered with GSA's Centers of Excellence (CoE) to build a Cloud Platform Services (CPS) organization. CPS will serve as an enterprise-wide cloud center of excellence to orchestrate cloud adoption and infrastructure optimization (CA/IO). CPS exists to provide an agnostic advocate within the agency, one whose existence is not predicated on hosting an application in any particular provider. The organization's success is critical to future modernization and the team will serve as trusted partner to leverage scalable and repeatable processes - through a DevSecOps approach.

In addition, the Cloud Adoption (CA) and Infrastructure Optimization (IO) Centers of Excellence, are creating a pool of awardees with the capability and skills to migrate applications, to appropriate cloud environments as well as USDA's internal National Information Technology Center (NITC) enterprise data center. This acquisition will provide USDA with an enterprise-wide vehicle of expertise and capabilities for modernizing and migrating a

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portfolio of over 1,000 applications, across ~20 data centers, all by end of Fiscal Year 2019.

### **4.0 Objective**

The vision of USDA, and the COEs, is that the diverse needs of USDA's mission and users requires a true hybrid approach to infrastructure optimization and cloud adoption. Rather than enforce a single "landing zone" or assume that all applications can be fulfilled by a single provider, a catalogue of multiple services will makeup USDA's cloud and infrastructure portfolio.

USDA, and the COEs, have identified targets for migration and will work with contractors to review the candidates, and assume agreed upon milestones to ensure that timelines for migrations can be met. Based on industry feedback, this solicitation is organized around multiple categories of awardees to cover the breadth and depth of skills required, for the the diverse complexity of the existing application portfolio, user base, and technology stack.

Based on the previous COE assessments, ~50 applications are targeted for migration to the commercial cloud, with the remaining applications, support infrastructure, and services, being moved to NITC potentially as an intermediate stage before continuing to cloud.

### **5.0 Scope of Work**

The scope of this blanket purchase agreement is for multiple pools of support to assist USDA in cloud adoption, infrastructure optimization, data center consolidation, application migration, cloud portfolio management, and DevSecOps support - with the objective of consolidating down to two enterprise data centers by the end of Fiscal Year 2019, while drastically increasing the velocity of cloud adoption within the agency. The scope includes:

- a. Tactical and technical development and delivery activities to migrate targeted applications to appropriate cloud and enterprise data center landing zones via a rehosting strategy.
- b. Tactical and technical development and delivery activities to migrate targeted applications to appropriate cloud and enterprise data center landing zones via a replatforming strategy.
- c. On-call DevSecOps expertise to support USDA in creating a digital services culture, developing proof of concepts, maturing infrastructure in areas like continuous integration and deployment, assess complex legacy applications and develop refactoring strategies, and documenting repeatable patterns using infrastructure as code.
- d. Support USDA's Cloud Platform Services (CPS) organization, including program and project oversight, policy development, and strategic orchestration of migrations.

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This structure is designed to compartmentalize the complexity of migrations, and reduce uncertainty for both industry and the government; allowing for rapid adoption of routine or automatic, services - leveraging industry innovation and expertise - as well scaling contracts to support iterative delivery by building in research, discovery, and prototyping as outlined in the Digital Services Playbook.

Contractors for all Pools must supply a set of technical capabilities and skills within their own environments to support rapid development and prototyping, particularly aligned with the approved cloud landing zones. Successful work products must be represented by working “infrastructure as code” that can be deployed in an appropriate landing zone, depicted in the figure below, to the fullest extent.

Contractors must follow DevSecOps best practices, including delivering infrastructure as code and incorporating security, user-centered design, and agile / modular development.

### USDA GovCloud Solutions



#### Commercial GovCloud

##### IaaS

CB | Microsoft Azure (FedRAMP)  
CB | Amazon AWS (FedRAMP)

##### PaaS

CB | Microsoft Azure (FedRAMP)\*  
CB | Amazon AWS (FedRAMP)\*  
CB | USDA Microsoft Azure (coming soon)  
CB | USDA Amazon AWS (coming soon)

##### SaaS

DSC | Salesforce  
DSC | ServiceNow  
DSC | Akamai  
DSC | Business Intelligence (coming soon)  
DSC | Drupal (coming soon)

#### Private GovCloud

##### IaaS

NITC | IaaS VDC  
NITC | Colocation Hosting

##### PaaS

NITC | PaaS Services

##### SaaS

DSC | USDA Connections

#### Hybrid GovCloud

##### PaaS

CB | Microsoft Azure – (Agency Owned GSS)  
CB | Amazon AWS – (Agency Owned GSS)  
NITC | Cloud Access Security Platform (CASP)  
(coming soon)

## 6.0 Requirements/Tasks

### 6.1 Pool A: Application Rehosting

For each application migration task awarded to this Pool, the contractor must support rehosting a targeted application from a legacy environment onto a cloud environment, or to the USDA Enterprise Data Center.

The contractor must support, execute and complete the migration including the steps listed below and any additional steps required for success:

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### 6.1.1 Governance and Delivery

- (a) Participate in cross-functional communities of practice to coordinate and align mission IT over time, as common practices evolve, not as a top-down upfront mandate
- (b) Ensure every application has a modernization roadmap once a migration is complete, so new teams and subsequent stages can benefit from the existing work and insights, help ensuring apps don't stagnate. This includes identifying opportunities for APIs, open data, and business process reengineering
- (c) Leveraging an incremental approach, each project can select an individual sprint cadence, but will participate in 6 week planning increments to sync across teams
- (d) Timebox demos and work, focusing on proving repeatability, e.g. of deployments and security scans through "infrastructure as code" for all possible deliverables
- (e) Define all application costs and metrics according to a TBM-based reporting model
- (f) Coordinate migrations with all COEs (User Experience, Contact Center, Data Analytics) to incorporate user feedback and ensure contact centers are appropriately prepared for escalating inquiries, and data and analytics metrics are collected and updated
- (g) Document the application, including the user journey, inventorying business processes, and identifying data fields and information collected
- (h) Create iterative plans and future capabilities to allow continued modernization
- (i) Incorporate industry best practices around agile and DevSecOps management

### 6.1.2 Technical Execution

- (a) Develop assessment and support materials to outline the decisions made
- (b) Execute the skills necessary to rehost ("lift and shift") existing content and/or systems to cloud ready environments or the enterprise data center
- (c) Automate creation of architecture and data flow diagrams using code to support automated deployments and up to date application assessment materials
- (d) Deliver "infrastructure as code" for all possible deliverables and develop delivery methods that encourage industry innovation, don't constrain delivery models, and de-escalate risks
- (e) Increase security by isolating each application to the fullest extent possible, while ensuring all applications expose their data and functionality through common APIs that are designed to be utilized in a service-oriented fashion.
- (f) Develop code, data, and configuration to successfully perform the rehosting, and ensure the content can be automatically, and repeatedly, (re)deployed
- (g) Follow best practices including reducing operations and maintenance costs, updating websites to be mobile compliant, accessibility such as 508 compliance<sup>1</sup>, and responsive design via USWDS, utilizing GSA's analytics tool ([DAP](https://digital.gov/dap/))<sup>2</sup>
- (h) Use security best practices including, HTTPS for interfaces and participating in a vulnerability disclosure program
- (i) Develop and prototype initial solutions in a contractor cloud environment before eventually moving future development sprints into an enterprise environment

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<sup>1</sup> <https://accessibility.digital.gov>

<sup>2</sup> <https://digital.gov/dap/>

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- (j) Conduct effective quality assurance and quality control procedures, keeping documentation up-to-date and minimizing the risk of outdated documentation by favoring automated testing and self-updating materials
- (k) Ensure that applications meet FISMA security requirements, and leverage FedRAMP security standards and guidelines, and complete controls documentation for ATO

### 6.2 Pool B: Replatforming

For each application migration task awarded to this Pool, the contractor must support replatforming the application from a legacy environment onto a distributed cloud environment, or to the USDA Enterprise Data Center. The contractor must support, execute and complete the migration including the steps listed below and any additional steps required for success:

#### 6.2.1 All elements required for Pool A applications

#### 6.2.2 Governance and Delivery

- (a) Build operational cost estimates for capacity planning and business case models, including chargeback and TBM reporting
- (b) Outline future technology adoption opportunities (e.g. roadmaps) to ensure application architectures do not persist in a legacy state and can build from the work done to date
- (c) Deliver component analysis (e.g. operating systems, web servers, application servers) of software versions and opportunities for consolidation or migration to cloud services

#### 6.2.3 Technical Execution

- (a) Execute the skills necessary to replatform (“fix and shift”) applications as well as upgrading any underlying infrastructure, software, and system components as required
- (b) Define and utilize standard builds (e.g. operating system and software) per the Community of Practice and/or the DevOps teams
- (c) Decouple components (e.g. operating system, database, application, etc) to leverage capabilities of modern environments and meet enterprise security standards
- (d) Develop code, data, and configuration to successfully complete the replatforming, and ensure the application can be automatically, and repeatedly, (re)deployed
- (e) Create automated tests to ensure measurement and validation of operation, security, and capacity planning metrics, including automating configuration of budget and security alerts

### 6.3 Pool C: DevSecOps Resources to support a future Refactoring

The contractor must provide subject matter expertise in DevSecOps to support the USDA Cloud Platform Services organization in the development of a roadmap and strategy for infrastructure optimization and cloud adoption and support future refactoring and reengineering efforts.

The contractor must perform the tasks listed below:

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### 6.3.1 DevSecOps Culture

- (a) Review technical materials from practitioners across the enterprise, and elevate standards to help develop and share best practices and streamline similar approaches to security and change management
- (b) Document repeatable patterns and approved “landing zones” including security control implementation summaries to document responsibilities
- (c) Identify best practices of existing application teams, nurture shared standards, and create tools to support the enterprise through an open source approach
- (d) Establish standardized processes to support the entire application lifecycle and reveal opportunities to share processes
- (e) Ensure sustainability of the DevSecOps working model within USDA through training and knowledge transfer
- (f) Develop technical readiness assessments and modular modernization strategies to support USDA’s requirement to restructure, rewrite, and refactor some complex legacy applications
- (g) Serve as a USDA digital services team to accelerate workforce transformation and support the formulation of policy, technical preparation, architecture assessments, and prototyping
- (h) Conduct effective quality assurance and quality control procedures, keeping documentation up-to-date and minimizing the risk of outdated documentation by favoring automated testing and self-updating documentation
- (i) Participate in cross-functional communities of practice to coordinate and align mission IT over time, as common practices evolve, not as a top-down mandate

### 6.3.2 Solution Prototyping

- (a) Timebox demos and work, focusing on proving repeatability, e.g. of deployments and security scans through “infrastructure as code” for all possible deliverables
- (b) Conduct research, discovery, and prototyping activities to allow USDA to plan for complex technology modernization, user, and enterprise requirements
- (c) Create proof of concepts to help understand USDA OCIO’s cloud in infrastructure optimization capabilities and opportunities
- (d) Mature infrastructure in areas like continuous integration and deployment, reusable code and policies for enforcing agency-wide resource management
- (e) Create a migration maturity model to inform application iterations, for example perhaps having application teams first focus on automating deployment of the existing solution, then port to PaaS services (e.g. databases), then auto-scaling, APIs, etc.
- (f) Develop and prototype initial solutions in a contractor cloud environment before eventually moving future development sprints into an enterprise environment
- (g) Conduct effective quality assurance and quality control procedures, keeping documentation up-to-date and minimizing the risk of outdated documentation by favoring automated testing and self-updating documentation
- (h) Conduct security controls analysis of USDA’s security requirements, and implementation standards and guidelines, with a goal of streamlining and automating application team’s ability to implement

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- (i) Develop code, data, and configuration to ensure the solution can be automatically, and repeatedly, (re)deployed

### 6.4 Pool D: Cloud Platform Services Organization Support

The CPS organization is positioned to mature USDA's Infrastructure Optimization and Cloud Adoption capabilities, and to strengthen strategic IT Governance frameworks, through the development and refinement of processes for prototyping and technical development, leveraging "infrastructure as code" and DevSecOps best practices.

The contractor must supply capabilities and skills to complete the following tasks related to project management, governance, and standards coordination, promoting the alignment of USDA's cloud strategy with enterprise architecture, financial planning, and other practices.

#### 6.4.1 Operations and Management

Support effective orchestration and synchronization of over 800 applications that are slated for migration in year one of the contract. ~100 of those applications are expected to be migrated to the cloud. The remaining applications will be migrated to a USDA Enterprise Data Center.

##### (a) Project Management

- (i) Establish cloud adoption project plans with validated business, technical, cybersecurity, and reporting requirements
- (ii) Provide daily, weekly and monthly reporting deliverables as defined by Centers of Excellence Phase 2 Business Modernization Office
- (iii) Provide recommendations on the long-term sustainability of the CPS organization, to include the number and skill sets of staff members required. This recommended structure must allow USDA to leverage the flexibility and diverse capabilities required by a hybrid, multi-cloud, management and service organization including but not limited to prototyping infrastructure, data analysis, cost tracking and capacity estimation services as examples.

##### (b) Cloud Governance

- (i) Assess readiness of mission IT organizations, application owners, policy and process updates to support modern digital practices and cloud computing environments
- (ii) Assess the current state of cloud governance within USDA, and suggest to the CPS leadership alternative approaches from other successful cloud governing models in both commercial and governmental organizations.
- (iii) Establish and support communities of practice and/or working groups to foster a cultural environment that supports modern digital services and a DevSecOps organization

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- (iv) Develop application lifecycle cost models, based on Technology Business Management (TBM) practices
  - (v) Maintain an inventory of applications, landing zones and acquisition vehicles, including the necessary adoption information for teams to self-serve and self-secure
  - (vi) Create, and refine on a quarterly basis, a user-driven approach to cataloguing and managing applications, including migrations
  - (vii) Provide expertise for brokering multiple cloud platforms to prioritize, manage, and report on migration tasks
  - (viii) Ensure that applications meet FISMA security requirements, and leverage FedRAMP security standards and guidelines
  - (ix) Conduct quality control of migration activities, deliverables, and work products
- (c) Coordination and Knowledge Transfer
- (i) Develop, and refine on at least a quarterly basis, reference technical materials elevated from practitioners across the enterprise.
  - (ii) Conduct quarterly training for between 20 and 50 staff members designated by USDA, providing knowledge transfer to ensure that the Government can assume operational responsibility for the organization. Training must be offered using a format, timeframe and location agreed upon by the Government and the Contractor. Training must include leave-behind materials for future review and reuse.
  - (iii) Document best practices and streamline similar approaches to security and change management, and create deliberate, formal communications to share information across USDA to promote DevSecOps

### 6.4.2 Technical Development and Support

The contractor must supply technical capabilities and skills to fulfill the broader CPS organizational role, including but not limited to the following:

- (a) Solution Architecture Support
- (i) Review current USDA cloud architecture patterns including networking, approved services and identity related considerations. Suggest to CPS leadership new patterns and/or modifications to existing patterns.
  - (ii) Provide technical subject matter expertise to support the cloud environments managed on an enterprise basis by USDA.  
Revise the above list of cloud environments to reflect all services in use within USDA, as well as services not currently in use but desired by USDA, its mission areas and component agencies.
- (b) Security
- (i) Provide subject matter expertise in security and compliance requirements for federal cloud consumption, promoting and documenting a modular, iterative, enterprise approach to Authorities to Operate

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- (ii) Review agency security and architecture needs across several dimensions: shadow services, data governance, privacy and confidentiality, access, identity policies, and overall IT governance including FITARA
- (c) Infrastructure Optimization and Data Centers
  - (i) Provide subject matter expertise on strategic planning for all enterprise-level and agency-level IT infrastructure optimization, networking, and data center programs
  - (ii) Review and analyze related agency and government planning artifacts to provide subject-matter expertise on matters relating to efficiency, cost-modeling and cost-benefit-analyses
  - (iii) Integrate industry best practices into strategic planning, governance and knowledge transfer on on issues related to energy efficiency, data center management, infrastructure optimization, and capacity planning
- (d) Migration Orchestration Support
  - (i) Assist with acquisition strategies to develop Statements of Work, and other materials required to create task orders and other contracting activities
  - (ii) Develop comprehensive roadmaps with sequenced execution paths, migration strategies, and guardrails to minimize risk, cost, and time to completion.
  - (iii) Oversee and review migration activities conducted by third parties

### **7.0 Ordering Period**

The ordering period of this BPA is from the award date and continuing for 12 months, with one option period of up to 12 additional months.

### **8.0 Place of Performance**

The primary place of performance will be at Government facilities within the Washington, DC metropolitan area.

The USDA and COEs seek to leverage the best talent across the Nation, however a significant amount of the work will take place in the areas of Washington, DC, Kansas City, KS, and Fort Collins, CO. Particularly for CPS support, a staff of largely dedicated professionals will be expected to participate in the regular course of USDA work (multiple daily meetings, etc) within the Washington, DC metropolitan area, although the team will be managed by Federal staff in Fort Collins, CO.

For DevOps Support and the migration tasks, teams are encouraged to use distributed technologies to support delivery. However, regular physical briefings will require some portion of the team to be available in person.

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### **9.0 Normal Operating Hours**

Customer agency normal operating hours are 8:00 - 5:00.

### **10.0 Additional General Requirements**

Teams will serve as trusted partner to guide USDA organizations through the processes of adopting cloud computing by leveraging and defining scalable and repeatable processes. Teams will also support CPS in the formulation of policy, technical preparation, architecture assessments, and prototyping, and will require contractors can expect frequent interaction and collaboration with other teams, vendors and Government personnel.

Work defined to support these efforts will focus on frequent deliverables, not multi-month milestones, to maximize flexibility and prioritize adapting to change and identifying modular delivery to convert complex migrations into smaller, iterative, deployments, over following a plan.

The requirements of a proper invoice are as specified in the GSA Schedule contract.

The terms and conditions included in this BPA apply to all purchases made pursuant to it.

#### **10.1 Background check**

All Contractor personnel assigned to any task order under this BPA must have had a successfully adjudicated National Agency Check with (Written) Inquiries (NACI). All Contractor personnel must comply with the specific security requirements.

#### **10.2 Identification of non-disclosure requirements**

Due to the sensitive nature of the data and information being worked with on a daily basis, all Contractor personnel assigned to the task order are required to complete the Government provided non-disclosure statement within 10 calendar days after task order award and prior to performing any work.

### **11.0 Delivery or Deliverables**

Deliverables are to be transmitted electronically via email to designated Government officials, or as indicated on each task order.

#### **11.1 Deliverables and Data Rights**

All test materials, documents, notes, records, software tools acquired, and/or software modified or produced by the Contractor under this contract shall become the property of the U.S. Government, which shall have unlimited rights to all materials and determine

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the scope of publication and distribution. The Contractor shall be required to deliver electronic copies of all documents, notes, records and software to the Government quarterly and upon termination of the contract services or expiration of the contract period.

### **11.2 Monthly status report**

Monthly status reports for each task order must include status of work definition forms, schedules, deliverables, current and cumulative task funding status (direct labor and travel funding status to be reported separately as required), risks and risk mitigation techniques, outstanding issues, and proposed resolution approaches and actions to resolve any outstanding issues. The report must identify milestones and deliverables completed and progress towards major milestones and deliverables. The report must identify activities and deliverables planned but not completed including the government acknowledgement and approval of the incomplete work. Status of work definition forms shall include a summary description and schedule of all work definition forms completed during the reporting period, all work definition forms currently on-going during the reporting period and all known work definition forms assigned for future reporting periods. The monthly invoice must be submitted simultaneously with the monthly status report.

### **12.0 Past performance information**

In accordance with FAR 42.15 Contractor Performance Information, past performance evaluations shall be prepared for each task order that exceeds the simplified acquisition threshold placed against a Government-wide Acquisition Contract. For severable task orders, interim evaluations will be required prior to exercising any option periods. For non-severable task orders, evaluations must be collected, coordinated and reported upon completion of the task order.

The Government will provide and record Past Performance Information for acquisitions over \$150,000 utilizing the Contractor Performance Assessment Reporting System (CPARS). The CPARS allows Contractors to view and comment on the Government's evaluation of the Contractor's performance before it is finalized. Once the Contractor's past performance evaluation is finalized in CPARS it will be transmitted into the Past Performance Information Retrieval System (PPIRS).

Contractors are required to register in CPARS, so Contractors may review and comment on past performance reports submitted. Contractors must register at the following websites:

CPARS: <http://www.cpars.csd.disa.mil/>

PPIRS: <http://www.ppirs.gov/>

### **13.0 Meetings**

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### **13.1 Monthly Project Status Reviews**

Monthly status meetings to be conducted no later than the 15th day of each month. The Contractor is responsible for reporting the previous month's activities (including any risks, issues, or concerns, and actual or recommended actions for their mitigation), and projected activities for the following month.

### **13.2 Specific meetings**

The USDA and COEs seek to leverage the best talent across the Nation, however a significant amount of the work will take place in the areas of Washington, DC, Kansas City, KS, and Fort Collins, CO. Particularly for CPS support a staff of largely dedicated professionals will be expected to participate in the regular course of USDA work (multiple daily meetings, etc). For DevOps Support and the migration tasks, teams are encouraged to use distributed technologies to support delivery. However, regular physical briefings will require some portion of the team to be available in person.

## **14.0 Required Travel**

Commuting to/from work locations or moving between work locations is not travel and will not be reimbursed. Badged vendor employees will be able to make use of GSA provided ground transport (shuttles) to/from some locations, when available.

The Contractor may also perform travel between the primary places of performance and non-local facilities as required during the performance period of this task order. The COR must approve all non-local travel prior to costs being incurred. Travel requests, to include projected costs, must be submitted to COR approval no later than five work days prior to travel. Travel will be handled, to include the reimbursement of expenses, in accordance with the terms and conditions of the contract and the Federal Travel Regulation guidance. All non-local travel arrangements will be the responsibility of the contractor including, but not limited to, airline, hotel, and rental car reservations. The Contractor should make all efforts to schedule travel far enough in advance to take advantage of reduced airfares. The Contractor must stay in Government furnished lodging as available.

## **15.0 Government Furnished Property/Equipment/Information**

The government will provide the following resources to the Contractor for task performance:

- (1) The Government will provide workspace at a government facility for vendor personnel
- (2) The Government will provide all necessary normal office equipment (office work area, e-mail account, network access)
- (3) The Government will provide certain data processing ADP equipment and software, as it may determine necessary, to the Contractor for the exclusive purpose of performing the services as defined in the task order

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- (4) The Government will provide access to available technical information as required and upon Contractor request for the performance of this task order

All Government-provided products and facilities remain the property of the Government and shall be returned upon completion of the support services. Contractor personnel supporting this requirement shall return all items that were used during the performance of these requirements by the end of the performance period.

Contractors are expected to initially use their own development environments to support rapid development and prototyping, particularly with the approved cloud landing zones. Successful work products should be delivered, to the fullest extent possible, by working “infrastructure as code.” These solutions will be deployed in an appropriate landing zone for testing and production; much as commercial off the shelf products are initially built within a non-federal environment before being incorporated into the enterprise fabric of a particular agency..

All documented processes, procedures, tools and applications, developed under this SOW become the property of the Government. The Government shall have unlimited rights to these documents. Modification and distribution of end products for use at other installations will be at the discretion of the Government.

All text, electronic digital files, data, new capabilities or modification of existing applications, source code, documentation, and other products generated, modified or created under this contract shall become the property of the Government. The information shall be returned to the Government unless otherwise specified herein.

### **16.0 Key Personnel**

Key personnel, if required, will be indicated in the SOW for each task order. When specified, the following applies to task order key personnel.

#### **16.1 Key Personnel substitution**

In the event a Key Personnel member becomes unavailable during the course of the performance of the work, the Contractor must immediately notify the CO, COR and CoE lead.

In the event a Key Personnel member will be substituted during performance, the Contractor must provide complete CVs for proposed substitutes in the same level of detail as those submitted with the initial quote, and any additional information requested by the Contracting Officer no later than 10 business days after notifying the Government of the need for a substitution. Proposed substitutes should have comparable qualifications to those of the persons being replaced. The Contracting Officer will notify the Contractor within 15 business days after receipt of all required information of the consent on substitutes. No change in hourly rates may occur as a result of Key Personnel

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substitution. The value of any gaps in expected service as a result of changes in personnel will be deducted from the contractor's monthly invoice.

### **17.0 Additional clauses**

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) SOLICITATION CLAUSES  
([HTTP://WWW.ARNET.GOV/FAR/](http://www.arnet.gov/far/))

#### 52.217-9 Option to Extend the Term of the Contract (Mar 2000)

- (a) The Government may extend the term of this contract by written notice to the Contractor within the performance period of the order, including any extension; provided that the Government gives the Contractor a preliminary written notice of its intent to extend before the contract expires. The preliminary notice does not commit the Government to an extension.
- (b) If the Government exercises this option, the extended contract shall be considered to include this option clause.
- (c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 2 years and 6 months. (End of clause)