



U.S. DEPARTMENT OF AGRICULTURE


INFORMATION TECHNOLOGY STRATEGIC PLAN

FY 2022–2026



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Jewel Bronaugh
Deputy Secretary
U.S. Department of Agriculture



“Advanced technologies and improved data and analytics are foundational to everything we do at USDA. From providing **economic opportunity** and helping **rural America** to **thrive**, to promoting agriculture production that **better nourishes Americans**, while also helping feed others throughout the world.”

Thomas J. Vilsack
Secretary
U.S. Department of Agriculture

“USDA seeks to be the federal lead in *customer-centered, data-driven* service delivery. In doing so, we will *accelerate* the use of *modern technology* and *digital tools* that our customers have come to expect in every other aspect of their lives.”

Gary Washington
Chief Information Officer
U.S. Department of Agriculture



Empowering USDA's Future

IT Mission

Enable USDA mission through innovative, secure, and cost-effective IT solutions and services.

IT Vision

Implement a customer first model leveraging technologies that provide for simple, seamless, and secure digital services and offers a world class experience for the American public.

Our Values

Supporting the implementation of USDA's IT vision are the following organizational core values:

- **Customer-First Experience** - Design and deliver IT solutions around a Digital Enterprise Model that puts the needs of customers at the forefront of innovation, security, and modernization.
- **Innovation** - Foster innovation and adoption of new technologies.
- **Quality and Availability of Data and Information** - Enhance the quality, availability, and delivery of data and information through curation and stewardship throughout the life cycle.
- **Efficiency** - Increase efficiency, transparency, and accountability of IT.
- **Value** - Provide business value to all users and stakeholders.



USDA Mission

To serve all Americans by providing effective, innovative, science-based public policy leadership in agriculture, food and nutrition, natural resources protection and management, rural development, and related issues with a commitment to deliverable equitable and climate-smart opportunities that inspire and help America thrive.

USDA Vision

An equitable and climate-smart food and agriculture economy that protects and improves the health, nutrition, and quality of life of all Americans; yields healthy land, forests, and clean water; helps rural America thrive; and feeds the world.

USDA Core Values

- Respect and Dignity
- Equity and Inclusion
- Trust and Integrity
- Service and Results
- Science Leadership

USDA IT Strategic Framework

USDA STRATEGIC PLAN

IT MISSION

IT VISION

CORE VALUES

STRATEGIC GOALS

Accelerate Digital Transformation

Drive Innovation in Support of USDA Mission

Improve IT Organizational Agility with a Skilled Workforce

Build Resilience Into Everything We Do

Enable Data-Driven Decision-Making

STRATEGIC OBJECTIVES

Design Customer-Centric IT Solutions to Dramatically Improve Customer Experiences

Aid in Transition to Electronic Operations

Apply Modern Solution and Service Delivery Across the Department

Be an Innovation Incubator

Build an Innovation Organization and Culture

Improve the Efficiency and Effectiveness of IT Governance

Build the IT Workforce of the Future

Continuously Improve USDA's Cybersecurity Posture

Incorporate Data Strategy, Management, and Governance into All IT Modernization Efforts

Accelerate Data-Driven Decision-Making Capabilities

STRATEGIES / EXPECTED OUTCOMES



Our Strategic Approach



Accelerate Digital Transformation

Our commitment is to scale, modernize, and create innovative technology solutions that are based on customer needs.

OBJECTIVE 1: Design Customer-Centric IT Solutions to Dramatically Improve Customer Experiences (Milestone FY2023)

Strategy 1:

Integrate human-centered design approaches into all aspects of IT design and solutioning.

Strategy 2:

Provide responsive online services using multi-disciplinary teams composed of experts in customer experience, data analysis, digital tool development, deployment, and program management.

Strategy 3:

Employ continuous improvement methods for work products to create a seamless integration of the physical and digital customer experience by utilizing feedback from customers.

Strategy 4:

Conduct pilot projects to fully modernize and digitize three to four priority programs, providing end-to-end responsive online services.

TECHNOLOGY HIGHLIGHT
USDA will utilize modern mobile augmented-reality systems to transform the process of detecting and monitoring physical characteristics of an area. This enables farmers to plan optimal cropping patterns, monitor for pest infestation, train new farmers, and interact with their operational equipment while helping them to streamline crop management processes to maximize return on investment.

Expected Outcomes:

Fully adopted approaches for co-creating with our customer, improved customer experiences on par with the best of the commercial sector, and leveraged advanced technologies to transform citizen services and internal operations. Institutionalized approaches to continuously improving the customer experiences as expectations and capabilities evolve.

Goal 1

Accelerate Digital Transformation

Our commitment is to scale, modernize, and create innovative technology solutions that are based on customer needs.

TECHNOLOGY HIGHLIGHT

The Animal and Plant Health Inspection Service (APHIS) organization is creating a scanning tool that leverages Artificial Intelligence to digitize files at the Plum Island, NY Research Facility thereby alleviating the need to remove them from the bio-containment area. The files will then be used for scientific purposes at the new National Bio and Agro-Defense Facility (NBAF), the first Biological Safety Level 4 (BSL4) facility in the country.

OBJECTIVE 2: Aid in Transition to Electronic Operations (Milestone FY2026)

Strategy 1:

Prioritize the use of digital signatures, enhanced collaboration tools, and document and storage capabilities.

Strategy 2:

Identify opportunities to reduce manual processes and enhance automation so staff can focus on more strategic work.

Expected Outcomes:

More efficiently, reliably, expeditiously and cost effectively ingest, store, organize and maintain digital artifacts. Customers will have access to USDA information and services via their channel of choice through a single “front door”, while the workforce and peripheral organizations will be able to sort through paperless databases quickly and easily.



Accelerate Digital Transformation

Our commitment is to scale, modernize, and create innovative technology solutions that are based on customer needs.

OBJECTIVE 3: Apply Modern Solution and Service Delivery Across the Department (Milestone FY2024)

Strategy 1:

Optimize cloud computing by fully leveraging Cloud Service Provider innovations to establish a target digital architecture. This will help to reduce cloud sprawl and complexity, while improving the ability to manage costs.

Strategy 2:

Enhance and accelerate application migration to the cloud to leverage improved data and analytics and security, enhanced customer services, and advanced technologies such as Artificial Intelligence (AI).

Strategy 3:

Mature software development processes and apply unified tool sets across the Department to automate solution delivery processes.

Strategy 4:

Streamline service delivery by adopting Continuous Authority to Operate approaches.

Strategy 5:

Apply Artificial Intelligence for IT Operations (AIOPs) to predict and remediate performance issues across applications, services, and infrastructure.

TECHNOLOGY HIGHLIGHT

The USDA's Agricultural Marketing Services' (AMS) Specialty Crop Inspection Operating Network (SCION) provides a one-stop-shop for Specialty Crops Inspection (SCI) customers to request services and access key information, which allows AMS employees to become more productive, efficient, and cost-effective.

Expected Outcomes:

USDA will have achieved a modern solution service delivery model enabling support anywhere, be device agnostic, and provide easily accessible information to meet user's needs.

Goal 2

Drive Innovation in Support of USDA Mission

Advanced technologies are changing rapidly and increasing complexity. USDA will continue to drive innovation as it leverages advanced technologies to deliver services including drones, driverless tractors, remote sensing, augmented reality, and climate smart agriculture and forestry.

OBJECTIVE 1: Be an Innovation Incubator (Milestone FY2025)

Strategy 1:

Modernize and formalize the technology evaluation processes to stay current with newer technologies that are matched to USDA mission.

Strategy 2:

Develop mission-specific use cases for emerging or advanced technologies, such as Edge Computing, AI, and Robotic Process Automation (RPA), which can be leveraged across USDA.

Strategy 3:

Develop Innovation Labs to enable testing of new technologies and the rapid deployment of applicable technologies.

Strategy 4:

Facilitate use of IT modernization capabilities (e.g., digital platforms and low code approaches, RPA) that can be easily adopted to advance digital transformation projects across the Department.


Expected Outcomes:

USDA will have effectively and innovatively implemented an application rationalization program that modernizes and deploys digital tools, new solutions, and agile and lean deployment methodologies while minimizing risks to decision-making processes.



TECHNOLOGY HIGHLIGHT

The Forest Services is modernizing their wildland fire management system with the use of advanced technologies including Unmanned Aerial Vehicles (UAV's). Through the rapid capture of visual damage and tracking of wildfire patterns, UAVs enable the development of better computer models to track and predict wildfires.



Genetic information on the **Asian Giant Hornet** was released in record time by the Agricultural Research Service (ARS) via a new technology that will become the USDA Scientific and Research Platform.

Drive Innovation in Support of USDA Mission

Advanced technologies are changing rapidly and increasing complexity. USDA will continue to drive innovation as it leverages advanced technologies to deliver services including drones, driverless tractors, remote sensing, augmented reality, and climate smart agriculture and forestry.

OBJECTIVE 2: Build an Innovation Organization and Culture (Milestone FY2026)

Strategy 1:

Conduct policy, plan, and procedure reviews to identify and remove unnecessary barriers to innovation.

Strategy 2:

Develop an innovation strategy tied to modernization plans and IT portfolio management.

Strategy 3:

Create an experiential culture by increasing the use of prizes, challenges, ideation, hackathons, and other employee engagement techniques.

Strategy 4:

Identify innovation success stories, elevate, and share them across the Department to promote broader adoption.

TECHNOLOGY HIGHLIGHT

The Research, Education, and Economics (REE) mission area is working in partnership with Natural Resource and Environment (NRE) and Market and Regulatory Program (MRP) mission areas to enhance the existing REE high-capacity computing environment which will enable Artificial Intelligence and other advanced technology solutions to become the shared Scientific and Research Platform for USDA. This will enable the continued and future success of science and research in USDA.

Expected Outcomes:

Innovation will be integrated into the fabric of our operations, leading to the delivery of transformation services to citizens and improved operations internally.

Goal 3

Improve IT Organizational Agility with a Skilled Workforce

USDA is focused on building an agile organization to improve customer satisfaction. We will achieve this through a skilled and agile workforce that delivers results quickly, as well as through our processes for encouraging continuous feedback from customers and staff.

OBJECTIVE 1: Improve the Efficiency and Effectiveness of IT Governance (Milestone FY2023)

Strategy 1:

Streamline, automate, and enhance IT governance processes to support IT decision frameworks.

Strategy 2:

Adopt an agile operating model that manages programs, lowers costs, delivers expected customer outcomes, and increases return on investments.

Strategy 3:

Develop fast track IT procurement approaches that incorporate an IT governance framework along with equity and green IT / sustainability requirements.

Strategy 4:

Establish IT Working Capital Fund accounts for IT modernization and innovation managed by the CIO to facilitate rapid funding of IT modernization.

Expected Outcomes:

USDA will be able to adapt quickly to changes with a more agile workforce and streamline the delivery of services in a manner that is highly responsive to customer needs.

TECHNOLOGY HIGHLIGHT
The Department's Enterprise Architecture Vision Environment (EAVE) System facilitates application rationalization. EAVE identified over 160 applications that provide varying levels of geospatial capability. USDA can now analyze these systems for potential retirement, consolidation, cost savings, and enhanced customer experiences.

Goal 3

Improve IT Organizational Agility with a Skilled Workforce

USDA is focused on building an agile organization to improve customer satisfaction. We will achieve this through a skilled and agile workforce that delivers results quickly, as well as through our processes for encouraging continuous feedback from customers and staff.

OBJECTIVE 2: Build the IT Workforce of the Future (Milestone FY2023)

Strategy 1:

Develop a Workforce Operational Plan focused on competency gap assessment, recruitment, hiring, succession planning, retention, and training programs.

Strategy 2:

Apply human-centered design approaches to co-create with IT staff a re-imagined work life experience.

Strategy 3:

Continue the IT Fellows Program and execute a new IT Career Development Program.

Strategy 4:

Leverage hiring authorities and new programs like the U.S. Digital Corps to target candidates with desired technology skills.

Expected Outcomes:

USDA will have an improved and efficient IT workforce that will have an enhanced capacity for customer service across the IT landscape.

TECHNOLOGY HIGHLIGHT

Within the Forest Service, increased last-mile network connectivity to rural and urban field units increases business capacity and supports new collaboration technologies for a hybrid workforce.

Goal 4

Build Resilience Into Everything We Do

USDA will apply the concept of cyber resiliency, “the ability to anticipate, withstand, recover from, and adapt to adverse conditions, stresses, attacks, or compromises on systems that use or are enabled by cyber resources” to its operations, and cybersecurity capabilities.

OBJECTIVE 1: Continuously Improve USDA’s Cybersecurity Posture (Milestone FY2025)

Strategy 1:

Respond effectively to cybersecurity incidents to minimize consequences through coordinated department-wide response efforts that prioritize risk management activities.

Strategy 2:

Strengthen cybersecurity policies and processes to ensure risk-based control measures are effective, redundancies are eliminated, costs are minimized, and user experience is continually improved.

Strategy 3:

Reduce reliance of on-premises legacy systems that are vulnerable to cyber-attacks.

Strategy 4:

Adopt department-wide zero trust architectures.

Strategy 5:

Integrate security requirements in a “baked in, not bolted on” approach for all phases of the system development life cycle.

Expected Outcomes:

USDA will have a secure IT environment across the department that enables it to prepare for, respond to, and recover from cyber threats. USDA’s cyber resilience allows for the department to adapt to known and unknown crises, threats, and challenges. This will be possible through adoption of zero-trust architecture, modernizing legacy applications, and continued protection of cyber infrastructure.

TECHNOLOGY HIGHLIGHT
USDA’s Security Information and Event Management solution (SIEM) provides near real-time and archival views for monitoring systems, initiates troubleshooting efforts, and conducts investigations USDA infrastructure and application systems. Leveraging the SIEM’s integrated AI capabilities, USDA will have predictive and preventative capabilities to bolster our cybersecurity resilience.



Enable Data-Driven Decision-Making

USDA is committed to building a culture that values data and promotes public data use through effective governance processes and robust data management practices that promote efficient and appropriate data use.

OBJECTIVE 1: Incorporate Data Strategy, Management, and Governance into All IT Modernization Efforts (Milestone FY2024)

Strategy 1:

Execute the Chief Data Officer's (CDO) Data Modernization Data Strategy Plan.

Strategy 2:

Apply modern, future-ready solutions to facilitate improved data access and management including open, modular, decoupled, and cloud-based architectures.

Strategy 3:

Identify and actively develop the in-house data competencies needed to be a world class data and analytics organization, as part of the IT Workforce of the Future Strategy (Goal 3, Objective 2, Strategy 1).

Strategy 4:

Execute the Enterprise Geospatial Management Office Modernization Plan.

TECHNOLOGY HIGHLIGHT

Launched in FY21, the Enterprise Data Analytics Platform and Toolset (EDAPT) enables users to discover data and data products. With access to over 532,000+ data assets EDAPT offers a single, common platform that eliminates technology as a barrier to sharing data and analytic products across USDA.

Expected Outcomes:

USDA will be a "data-first" Department with improved data stewardship processes, and modernized workflows for users to access, transform, and publish data. Enhanced data management capability for cradle-to-grave data lifecycle approaches will provide USDA with authoritative / certified sources of data with normalized processes, and definitions that are clearly articulated. Our approach to IT modernization and future systems development will "unlock" data from legacy systems and promote data sharing.

Goal 5

Enable Data-Driven Decision-Making

USDA is committed to building a culture that values data and promotes public data use through effective governance processes and robust data management practices that promote efficient and appropriate data use.

OBJECTIVE 2: Accelerate Data-Driven Decision-Making Capabilities (Milestone FY2025)

Strategy 1:

Demonstrate the value of improved data access through pilot projects to build data management competency and build the Department's data catalog.

Strategy 2:

Identify, elevate, and share data and analytics best practices across USDA.

Expected Outcomes:

The analytic capability across USDA mission areas will be significantly improved, leading to better decision-making on behalf of our customers. USDA will have authorized users that are able to discover the existence of data, obtain the data they need, and have it automatically available as needed.

TECHNOLOGY HIGHLIGHT

Automated detection and analysis technologies, such as hyperspectral imaging and 3D laser scanning, will substantially increase the precision and volume of data collected. Access to more accurate data will improve farmers' ability to produce diagnostic information on crop health and make more informed decisions.

Alignment to USDA Strategic Goals

USDA Mission Areas and Agencies achieve their strategic priorities through Information Technology.

Goal 1: Combat Climate Change to Support Americas Working Lands, Natural Resources and Communities

Goal 2: Ensure America’s Agricultural System is Equitable, Resilient, and Prosperous

Goal 3: Foster an Equitable & Competitive Marketplace for All Agricultural Producers

Goal 4: Provide All Americans, Safe, Nutritious Food

Goal 5: Expand Opportunities for Economic Development and Improve Quality of Life in Rural and Tribal Communities

Goal 6: Attract, Inspire, and Retain an Engaged & Motivated Workforce that’s Proud to Represent USDA

USDA IT Strategic Plan	USDA Strategic Goals					
IT Objectives	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Objective 1.1: Design Customer-Centric IT solutions to Dramatically Improve Customer Experiences	★	★			★	★
Objective 1.2: Aid in transition to Electronic Operations	★				★	★
Objective 1.3: Modern Solution and Service Delivery	★	★			★	★
Objective 2.1: Be an Innovation Incubator	★		★	★		★
Objective 2.2: Build an Innovation Organization and Culture	★		★	★		★
Objective 3.1: Improve Efficiency and Effectiveness of IT Governance		★				★
Objective 3.2: Build the IT Workforce of the Future						★
Objective 4.1: Continuously Improve Cybersecurity Posture	★				★	★
Objective 5.1: Data Strategy, Management, and Governance	★			★		★
Objective 5.2: Accelerate Data-Driven Decision-Making Capabilities						★

Implementing the USDA IT Strategic Plan

The strategic framework presented in this document is another step towards achieving our vision of delivering simple, seamless, and secure solutions the American public has come to expect in every other aspect of their lives.

In the coming months USDA will translate these goals, objectives, and strategies into specific targets, and incorporate them into all aspects of our on-going management efforts. We will also implement a monitoring program so that designated leaders will be accountable for delivery, and drive USDA towards measurable outcomes.

Throughout this process we will ensure on-going alignment with the USDA Strategic Plan, monitor broader Federal, USDA, and technology environments, and adjust where needed to ensure we stay on track.

USDA's Commitment to the IT Strategic Plan

Our commitment is to work *collaboratively* to invest in and implement the strategies in this plan in a manner that *improves* the delivery of our mission and *enhances customer experiences* with the Department.



Gary Washington
USDA Chief Information Officer



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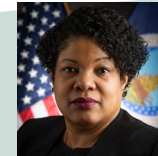
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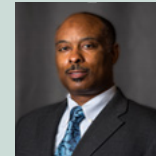
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*Chief Technology Officer is not pictured as that position was vacant during the development of this plan.



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Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at **(202) 720-2600** (voice and TTY) or contact USDA through the Federal Relay Service at **(800) 877-8339**.