Office of Digital Services & Technical Architecture (ODSTA)

SUMMARY:

The Federal Information Technology Acquisition Reform Act (FITARA), passed in 2014, sought to improve management of Federal information technology (IT) by centralizing key acquisition and review authorities with Federal Chief Information Officers (CIOs). The Environmental Protection Agency (EPA) has used this act as a foundational cornerstone since its inception to drive transformational changes across data, architecture, and investment management. In conjunction with the Foundations for Evidence-Based Policymaking Act of 2018 and Executive Order 14110 on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, the EPA CIO has further invested in data and technology to build on Agency mission IT capabilities, establishing both a Chief IT Architect, a Chief Data Officer (CDO) and a Chief Artificial Intelligence Officer (CAIO). These enhanced data, processes, and capabilities shed greater transparency on IT budgeting, investment, data, and architecture decisions during annual IT Portfolio Reviews (ITPRs) held with each program and Region, as well as help support mission level IT and data needs at scale. These investments allow the CIO to drive meaningful IT management discussions and result in:

- Greater transparency on management of and spending in smaller IT systems
- More detailed budget submissions to Office of Management and Budget (OMB)
- Increased ability to recognize potentially duplicative investments and opportunities to consolidate, modernize, or eliminate systems based on business needs
- Increased visibility into the architecture on IT systems with similar business objectives (e.g., permitting) so best practices can be leveraged on systems in different EPA mission areas
- Several successful large scale and complex IT modernizations for enterprise technology and programmatic systems
- Visibility into software loaded on IT equipment across the Agency and ability to confirm appropriate use
- The establishment of a Data Governance Council (DGC)
- Enhanced data literacy for the Agency
- An enterprise data catalogue
- The establishment of a Chief Artificial Intelligence (AI) Officer position and Senior level AI Governance Council

As a result of these improvements, the EPA's rating on the Congressional FITARA scorecard has improved over time and achieved a A for the most current rating period. Upcoming milestones include:

- **December 31, 2024** – Establish strategic objectives for fiscal year (FY) 2025 ITPRs
- **December 31, 2025** – Complete the ITPR preparation materials and schedule ITPR sessions
- **January 15, 2025** – Update the ITPR Dashboard

Moving forward, the EPA will build upon its IT accomplishments by:

- Establishing strategic objectives for the FY 2025 ITPR season and assess data sources and tools needed to achieve those objectives. For example, the EPA's Data Management and Analytics Platform (DMAP) expands upon the data visualization capabilities described above to include big data functionalities, machine learning, and geospatial visualization tools.

- Initiate a cross-Agency work group to develop a target architecture for programs with similar business needs (e.g., grants) to minimize system development or modernization costs and facilitate re-use of IT assets.
- Continuing to address legislated CDO responsibilities, including an inventory of the EPA's data assets, identifying key Agency data challenges and priorities, assessing needed data skill sets, and optimizing metadata management.

BACKGROUND:

ODSTA plans and manages the architecture and future directions of the EPA's IT infrastructure and identifies new technologies and technology support capabilities in response to Agency requirements. ODSTA leads and develops Agency-wide IT strategies and roadmaps and partners on effective implementation and governance. The office follows business processes from technology and data design through the software lifecycle to investment, helping understand customer needs, develop technological solutions, and review investments made in platforms and services for effectiveness and suitability. Likewise, the office serves as the agent for innovation and collaboration; connecting dots, in order to bridge gaps between technology, data, and business needs.

As mentioned in the section above, FITARA sought to improve the management of Federal IT by centralizing key acquisition and review authorities with Federal CIOs. In its implementation plan to OMB, the EPA cited several FITARA objectives, including driving down IT maintenance costs, facilitating migration from aging technology platforms, and avoiding development of duplicative IT systems. The other acts and guidance mention further bolster the role of IT and data in Agency decision making and programmatic success. Since implementation of these policies, the Agency has developed and is continuing to refine its data, architecture, and investment management practices to meet the objectives outlined in the guidance ad partner with regions and programs for improved efficacy in delivery of enterprise capabilities and mission delivery.

Key factors which will continue to drive these programs going forward include:

- **Greater desire for data-based decision making.** Across the Federal government there has been an increased emphasis on data-based decision-making. To that end, the EPA added over 50 key data assets from several programs to our enterprise data inventory. Additionally, the EPA developed and launched a new Enterprise Data Catalog (EDC) to provide more powerful search of our inventory. The new catalog also has governance functions to promote quality improvements across a range of quality components. Likewise, the CDO led a broad survey of EPA employees to understand their existing data skills, data culture and knowledge of data assets. The response rate was high for this type of survey with approximately 2,500 responses. The team then collected a series of training materials addressing the gaps identified from the survey. The training materials were organized by skill levels and published for all EPA staff to access in our FedTalent training system.

- **Building an AI-ready workforce.** Grounded in a foundation of data, the EPA has been working to expand its AI capabilities in line with Executive Order 14110 and OMB Memorandum M-24-10. The EPA Responsible AI Official and Chief AI Officer lead AI strategy, compliance, and governance for the Agency alongside mission and business partners. Their work, as well as that of the CIO Strategic Advisory Council (SAC) and DGC, is to harness AI in a manner that not only enhances our operational efficacy, but also aligns align with our mission to protect human health and the environment. Taking the view that AI and data are key strategic assets, the EPA has engaged in several activities to provide AI solutions to meet the needs of the business driving innovation, efficiency, and effectiveness. These activities include:

- *Advancing AI Training:* In furtherance of having an AI ready workforce, the Agency intends to grow its employees and provide them with training on this new technology. The EPA will provide video and written material to aid in understanding the forthcoming AI Rules of Behavior. This training will become a part of Mandatory Security Training in FY 2025. Further, the Agency will develop resources for employees to better understand and work with AI technologies.
- *Developing EPA managed AI solutions:* In FY 2025 Quarter 1 (Q1), the EPA intends to deploy Azure OpenAI servicers with an internal version of ChatGPT for EPA staff to use. This service safeguards EPA data while having an environment to explore generative AI use cases. In FY 2025, the EPA will continue enterprise efforts to deploy generative AI capabilities through enabling a chatbot for the EPA's intranet site. The EPA will steadily evolve its enterprise AI offerings through governance as well as business and mission requirements.
- *Building AI Use Cases:* In FY 2025, the EPA will continue to expand its AI Use Case inventory. Currently, the EPA has three publicly published use cases and over 40 internal AI use cases. Through the AI governance committees, the EPA expects to grow its AI inventory while being responsible in the areas of rights, safety, and integrity.
- *Creating an AI Challenge:* In the interest of fostering a culture of innovation aligned to mission success, the EPA is establishing its first AI challenge in FY 2025. This challenge is expected to bring AI technologies to bear on mission critical processes and business needs for the purpose of making them more productive and valuable.

- **Business-driven architecture.** As the EPA continues to modernize its programs, it demands IT architectures to meet business and mission requirements. The EPA has invested in early engagement in the System Lifecycle Management (SLCM) process to drive success. Examples of this include:
  - Drinking Water State-Federal-Tribal Information Exchange System (DW-SFTIES; formerly known as SDWIS) engaged in early SLCM which allowed for successful production releases of working software in the cloud.
  - Clean School Bus Program, a presidential priority, focused on business process capture, data, metadata, and business rules, which allowed the team to meet tight timelines for delivery on budget and within scope.
  - The EPA Facility Floorplan project focused on the business architecture, which allowed the team to design approaches leading to a single authoritative data source that is geo-enabled (i.e., adds geographical and locational information). This allowed for faster ways to deal with workforce changes, hoteling, and employee ticketing via enterprise tools like ServiceNow.

- **Improved insights into IT Investments and customer-centric governance.** The EPA placed considerable effort into better understanding its IT portfolios and delivering IT and data solutions to meet those needs. That effort starts with understanding customers and their pain points. ITPR meetings have continued to evolve and have stressed the need to understand business drivers as well as IT expenditures. This includes surveying our customers to understand areas where the Agency can better support their needs, as well as areas we are excelling in, and even unpacking Diversity, Equity, Inclusion, and Accessibility (DEIA) capabilities. These discussions and data serve as a metric for input into our strategic plan and budget cycle. To further meet customer needs, the Agency is investing in making governance easier. This includes building an automated FITARA tool (FY 2023) and maturing governance. Not only do the tools create process efficiencies, they also provide a wealth of data to support our IT investments and future IT capability development.

KEY EXTERNAL STAKEHOLDERS:

☒ Congress ☐ Industry ☒States ☒ Tribes ☐ Media ☐ Other Federal Agency
☐ NGO ☐ Local Government ☐ Other (name of stakeholder) _____