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**U.S. Environmental Protection Agency
Office of the Chief Information Officer**

**FY 2013 - 2015
EPA Information Resources Management
Strategic Plan**

February 28, 2014

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1.0 Introduction

The *FY 2013 – 2015 EPA Information Resources Management Strategic Plan* (IRM Strategic Plan) summarizes the goals of EPA's information management (IM) and information technology (IT) activities, under the leadership of the Chief Information Officer (CIO), also the Assistant Administrator for the Office of Environmental Information (OEI). This Plan provides the strategic framework for planning, managing and delivering information for all aspects of EPA's work, from its mission programs to its operations.

The IRM Strategic Plan supports EPA's numerous federally mandated responsibilities for managing information technology investments¹. Consistent with EPA's Enterprise Architecture and the Capital Planning and Investment Control (CPIC) program, this Plan supports more efficient work processes to help deliver services more effectively, quickly and at lower cost.

At the highest level, the *FY 2011 – 2015 EPA Strategic Plan* lays out five major goals for protecting human health and the environment:

- Taking Action on Climate Change and Improving Air Quality
- Protecting America's Waters
- Cleaning Up Communities and Advancing Sustainable Development
- Ensuring the Safety of Chemicals and Preventing Pollution
- Enforcing Environmental Laws

Each of these goals requires dedicated IT systems to manage program data and oversee the Agency's delivery of its mission. Increasingly, IT and IM must also build bridges among these programs, aligning commonly used information and supporting EPA's ability to manage the environment more holistically and effectively.

EPA hosts many IT systems that support EPA mission requirements, including communicating with the public, protecting children's health, ensuring environmental justice and strengthening EPA's relationships with its partners domestically and internationally. Administrative systems manage Agency finances, human resources, training, procurement, grants, facilities and support services such as email and the staff's desktop working environment.

At EPA, OEI delivers innovative information technology and services that provide results to customers and advance the Agency's mission. Today's IM/IT tools offer new, more powerful ways to design and deliver innovative IT solutions. Web-enabled linked open data, the growth of data standards and the creation of common data registries make possible more powerful and useful applications. Cloud computing provides economies and efficiencies in hosting many types of government systems. Mobile computing promises greater performance in field operations and new types of technologies for conducting Agency business anywhere, at any time. Green IT practices are reducing the overall cost of running IT services and reducing the impact on the environment. Many of these key concepts of contemporary IT have arisen in just the last few years. This important period of IT change and transformation presents both opportunities and challenges.

¹ These include the Government Paperwork Elimination Act (GPEA) of 1988, the E-Government Act of 2002, the Clinger-Cohen Act of 1996, the Federal Information Security Management Act (FISMA), Office of Management and Budget (OMB) Circular A-130, The Government Performance Results Act of 1993, the Federal Enterprise Architecture and the Open Government Initiative.

1.1 Organization of this Plan

Section 2 of this Plan provides a framework for the overall IRM strategy—high level considerations and priorities of the CIO and EPA’s IRM management committee, the Quality and Information Council. The subsequent sections of the plan are organized to be consistent with Appendix A of the March 27 Memorandum, *Fiscal Year 2013 PortfolioStat Guidance: Strengthening Federal IT Portfolio Management*.

1.2 Relationship between the IRM Strategic Plan and the Enterprise Roadmap

At a high level, the IRM Strategic Plan is the statement of IRM long-term direction, goals and objectives. It is directly linked to the goals and objectives of the EPA Strategic Plan and keys to that Plan’s time horizon—2015.

The IRM Strategic Plan specifies the long-term direction, goals and objectives that the Office of Environmental Information has developed in support of EPA’s Strategic Plan. The Enterprise Architecture Strategic Plan provides a framework for the activities identified in the Enterprise Roadmap.

The Enterprise Roadmap documents EPA’s annual progress toward the objectives outlined in the IRM Strategic Plan and current and future business and technology environments from an architecture perspective. This is done by noting the implementation of new or updated business capabilities and enabling technologies in response to initiatives that support EPA’s strategic goals.

Appendix 5 shows the alignment of the IRM Strategic Plan, Enterprise Roadmap and Integrated Data Collection (IDC). This alignment provides the linkage from the strategy to the implementation of the IT capabilities that support EPA’s mission. EPA will use this alignment to track progress against the identified IT capabilities to support future reporting. This will include quarterly updates to the Enterprise Roadmap and IDC.

2.0 EPA's Strategic Information Management Framework

EPA's Strategic Information Management Framework is shown in Figure 2-1: EPA IRM Strategic Framework. This conceptual structure ensures that IRM not only supports all aspects of the *FY 2011 – 2015 EPA Strategic Plan*, but also satisfies the internal and external IT-specific drivers the CIO must address.



Figure 2-1: EPA IRM Strategic Framework

EPA's mission is to protect human health and the environment. OEI's mission is to lead EPA's information management and information technology (IM/IT) programs to provide the information, technology and services necessary to advance that protection. Program business processes and associated IT support must operate as a single integrated system. In this mission, OEI and the IRM staffs of the programs, regional offices and laboratories must operate as a unified team. EPA considers people, security and quality to be the Agency's foundational information management elements.

2.1 Drivers

EPA's IRM world is dynamic, influenced by a variety of internal and external drivers.

Federal Mandates: Federal mandates extend to the many mission and non-mission-related responsibilities for IT planning and management shared by all agencies: Enterprise Architecture and CPIC, System Development Life Cycle management, paperwork reduction, performance assessment, financial accountability, IT security and privacy protection.

Stakeholder Expectations: EPA's stakeholders demand efficient, simplified, integrated IT services that can access and exchange information freely across all levels of government. Federal requirements for information transparency apply with particular urgency to EPA.

Fiscal Responsibility: Responding to today's demanding fiscal constraints requires new levels of innovation and leadership across our organizations, programs and partnerships. We must find new ways in which IT can eliminate inefficiencies in the ways we conduct business. Success requires that business processes be integrated wherever possible across programs and offices.

External Factors: Science constantly identifies new risks and recalibrates known risks. Climate change is presenting new challenges for emergency management. National security threats may pose unforeseen risks of environmental damage. Programs and their supporting IT systems must adapt rapidly. We must remain agile to manage these unplanned demands in addition to our existing responsibilities.

2.2 Governing Principles

Five governing principles organize and structure the IRM Strategic Plan.

Focus on Quality: Quality is the sum of all links in the information management chain, from data collection, to systems development, to analysis and user support. Focusing on quality means optimizing all these elements, all the time. It requires OEI to work more closely than before with its client program offices to ensure that program business processes and supporting IT services evolve and transform together.

Run OEI Like a Business: To the extent possible, adopt private industry concepts and best practices into the delivery of IT/IM services, putting customer needs first and staying current with industry practice in areas such as cloud computing, mobile technology and workplace standards.

Strengthen Partnerships: EPA's network of partnerships spans government at the state and local levels, tribes, industry, academia and the non-profit sector. In this network, partners originate, exchange, analyze and use information to mutual advantage. Integrating this information, enhancing its quality and streamlining its management will require EPA to maintain and strengthen these partnerships at all levels.

Establish a Strategic Direction: OEI will provide strategic direction for all cross-cutting Agency IT/IM needs, fostering collaboration across offices, regions and laboratories toward common goals.

Invest in Talent Management: IM requires many types of talents. Customer-facing positions require skills different from those of database management or infrastructure planning. Investing in talent through continuous training, customized individual development plans, good working conditions and effective rewards is essential to attract and keep the quality of talent required for EPA's diverse IT portfolio and support of its IT modernization initiatives. We are committed to maintaining a diverse work force and addressing the needs of those with disabilities and special training requirements.

2.3 IT Management Vision

EPA's vision for IM/IT is to **Lead** the Agency to more effective uses of technology, **Innovate** to harness the power of information and **Transform** EPA IT resources and business processes to work together as a unified whole.

2.4 IRM Mission

The IRM mission is to securely deliver quality information, technology and services to advance the overall EPA mission to protect human health and the environment.

2.5 IRM Goals

The internal IRM goals discussed in this section are designed to complement and support the goals expressed in the Agency-level Strategic Plan, as listed in the Introduction. Internal IRM goals include the following:

2.5.1 Prepare employees for the future

OEI's primary goal is to prepare EPA employees for the future. This includes both IT and non-IT professionals because the future will be even more information and technology-centric than the present. OEI must complete the following:

- Recognize and support evolutionary changes in its workforce, including variations in skill and education sets, work preferences and career paths.
- Provide the tools needed for new patterns of work, especially group collaboration and problem solving.
- Provide on-going training and skills development that can be of value across the Agency.
- Extract knowledge from existing systems and information repositories so that institutional memory is not lost, but becomes transferrable.

Objective through 2015

1. Increase the use of training in IT and related fields, offering IT staff broad exposure to the technical and managerial aspects of successful IT.

2.5.2 Deliver customer-focused services and solutions

EPA ensures that the services and solutions it builds for its internal and external customers meet high standards of quality, customer-responsiveness and efficiency to address the following:

- Reduce burdens on external partners, the regulated community and internal operations for all aspects of EPA's mission.
- Meet all applicable federal requirements for capital planning and investment control, as well as shared service standards for Lines of Business in which EPA participates (e.g., HRLoB, GeoLoB).
- Meet shareholder expectations and, where possible, formalize service level agreements to specify performance requirements as objectively as possible.
- Meet increasingly stringent budgetary limitations by identifying savings across programs, offices and even agencies.

Objectives through 2015

1. Continue the E-Enterprise transformation of EPA's interfaces with external partners and the regulated community to complete the following:
 - Reduce regulatory burden through streamlined transactions and improved information discovery.
 - Optimize IT resources through shared services, components and data.
2. Support program-level services with the best available Agency tools, support registries to expedite the reuse of code and components, consolidate environmental terminology and integrate data dictionaries.
3. Continue to consolidate infrastructure and move services into the cloud wherever possible.

2.5.3 Enable business anytime, anywhere

The current IT trend is to support a distributed, mobile workforce, allowing for savings in transportation, consolidation of office space and services and increased worker satisfaction and productivity. Because EPA's mission is so strongly oriented toward distributed, localized problem solving, the Agency is a natural beneficiary of this trend. OEI must address the following:

- Meet all federal requirements to support distributed workforce initiatives.
- Maximize economies gained from this trend while ensuring continued information and system security.

Objectives through 2015

1. Support federal and EPA telecommuting initiatives.
2. Continue to support all internal EPA initiatives that directly or indirectly support anytime, anywhere business: mobile and cloud computing, data and software standardization, and enhanced mobile security initiatives.

2.5.4 Find, understand and use information for environmental protection

To ensure that its information is freely discoverable, accessible and reusable for internal and external users, OEI will address the following:

- Meet federal mandates for transparency, open government and digital government.
- Satisfy stakeholder needs for accessibility, documentation, distribution and data management services.
- Play a leadership role in the development, use and sharing of geospatial data within the Agency, across government and for the public.
- Support stewardship through the reuse of information for secondary purposes wherever possible, anticipating quality, structure and coverage needs for secondary uses to the extent practical and affordable in original data planning.
- Enhance fiscal responsibility by supporting the discovery of information across the government to maximize the public utility of all government data and reduce duplication and redundancy.

Objectives through 2015

1. Implement the vision for increasing access to EPA information, improving the electronic discovery process and enhancing its quality and relevance to stakeholder needs.
2. Support digital government and other open government initiatives to increase the quality and quantity of EPA data made available to the public and private industry for discovery, use and reuse.
3. Promote reuse of centralized information and services to improve data quality and enable integration across programs through the implementation of Facility Registry Services, Substance Registry Services and common code sets, such as the federally recognized tribal names.
4. Continue to conduct programs such as One EPA Web, EPA Dockets, eDiscovery and [Regulations.gov](http://www.regulations.gov) to improve the speed and quality of electronic searches of EPA materials for specialized purposes.
5. Maintain the security and integrity of data being searched and reused, protecting sensitive information pursuant to and consistent with appropriate laws, regulations and policy.

2.5.5 Collect, acquire, exchange and manage information

EPA will ensure that the information it collects, acquires, exchanges and manages is secure and available at sufficiently high quality to address the following:

- Meet statutory responsibilities and satisfy federal mandates.
- Meet shareholder expectations of quality, completeness and access.
- Satisfy environmental stewardship goals, including measuring environmental performance.
- Satisfy fiscal constraints in information collection and management budgets.

Objectives through 2015

1. Continue to collaborate with government partners using the Exchange Network to improve data quality, ensure better data integration, increase environmental data availability and leverage stakeholders' varying needs for mutual advantage.
2. Expand the use of technologies to enable fast, efficient and improved quality environmental data submissions from state and local governments, tribes and industry. Advance the ability of mobile

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- communications devices, remote sensing, GPS and other current advances to increase up-front quality, reduce data handling and cleansing, and drive down cost.
3. Ensure information quality and sound science through the implementation of EPA's national Quality Program, including lab certification.
 4. Build security considerations into every link in the data acquisition chain, from data planning and collection, to data processing and storage, including the conduits that connect them.

3.0 Supporting EPA's Strategic Goals and Objectives

EPA's mission of protecting human health and the environment is one of the most information-intensive functions of government. The Agency manages legal, administrative and scientific data through an array of IT systems that have evolved over more than 40 years.

Operating under more than 20 major enabling statutes and executive orders, EPA's workflows must conform to the definitions and procedural requirements created by law and interpreted through regulations. These workflows touch almost every U.S. industry and facility. Directly or indirectly, they also affect the public and every state, tribe, county and locality daily.

This section first discusses how EPA's IT systems currently support its mission goals, then takes up issues of modernization and improvement.

- Section 3.1 discusses how EPA's Enterprise Architecture maps to the goals and objectives of the *FY 2011–2015 EPA Strategic Plan*. Supported by Appendices 1 – 4, Section 3.1 addresses the following:
 1. Maps EPA's Enterprise Architecture and core IT systems to EPA's Strategic Goals.
 2. Describes the subset of IT systems that are most central to the core Agency mission functions.
 3. Illustrates how data flows between core IT systems and external systems at both the state and federal levels.
 4. Maps EPA strategic objectives to sources of performance information. While much of the performance data comes from EPA systems, much of the information dealing with mission outcomes (measurable improvements in human health or environmental quality) is drawn from outside EPA.
- Section 3.2 discusses key OEI-driven support initiatives that service cross-program mission operations with common reference information, analytic tools or workflows.

3.1 Mapping IRM Support to EPA'S Strategic Goals

The *FY 2011–2015 EPA Strategic Plan* provides a blueprint for accomplishing EPA's mission priorities. It presents five strategic goals for advancing environmental and human-health mission outcomes, accompanied by five cross-cutting fundamental strategies that focus EPA's work to meet today's growing human health and environmental protection needs.

Strategic Goals

- Taking Action on Climate Change and Improving Air Quality
- Protecting America's Waters
- Cleaning Up Communities and Advancing Sustainable Development
- Ensuring the Safety of Chemicals and Preventing Pollution
- Enforcing Environmental Laws

Cross-Cutting Fundamental Strategies

- Advancing Science, Research and Technological Innovation
- Expanding the Conversation on Environmentalism
- Working for Environmental Justice and Children's Health
- Strengthening State, Tribal and International Partnerships
- Strengthening the EPA Workforce and Capabilities

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This update of the IRM Strategic Plan covers the remainder of the *FY 2011–2015 EPA Strategic Plan’s* planning horizon: 2013 - 2015. Its support for EPA’s Strategic Goals and Objectives is mirrored and expanded in the structure of EPA’s Enterprise Architecture (EA), which is shown in Figure 3-1.

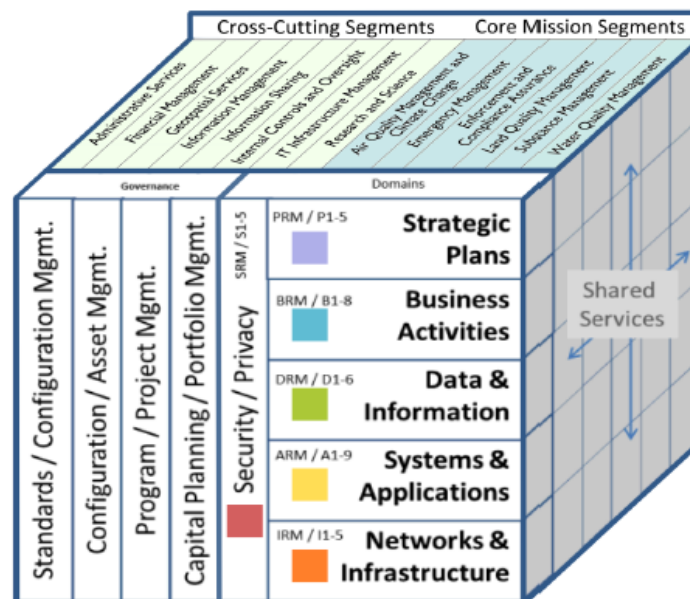


Figure 3-1: EPA Enterprise Architecture Structure

Strategic Goals: The EA predates the *2011 – 2015 EPA Strategic Plan*, but the plan’s goals nevertheless map closely with the EA. The first five strategic goals map directly to corresponding EA segment architectures. In addition, the EA includes Emergency Management as a separate EA Core Mission Segment to ensure that emergency management systems operate as a coherent whole even if they are managed by different core programs.

Cross-Cutting Fundamental Strategies: Because they are cross-cutting, the Fundamental Strategies are supported by IT in more complex ways. Some have direct IT support and others are supported indirectly by a number of systems dedicated to other primary purposes.

To document in detail how EPA’s IT systems support these multiple systems, Appendices 1 – 4 provide different views into the relationships between goals, objectives and the EA.

- Appendix 1: EPA Strategic Goals Mapped to the Enterprise Architecture**
 This appendix tabulates Strategic Goals and Fundamental Strategies against the EA Architecture Segments and the principal IT systems within each segment.
- Appendix 2: Descriptions of Principal IT Systems Supporting Core Mission Goals**
 EPA’s mission programs rely on many IT systems and capabilities, but the primary program data management systems are listed and described in this appendix. Only a few of these are “Major” systems under the Capital Planning and Investment Control (CPIC) Program. Most are categorized as “Medium” or “Lite” systems. This list is a subset of the complete system inventory presented in Appendix 1 of the Enterprise Roadmap.
- Appendix 3: EPA’s System Data Flows and Relationship to State and Other Federal Systems**
 This appendix illustrates in graphic form how EPA’s principal support systems relate to each other and to the principal mission segments of the EA for air quality, water quality, land quality, substance management and compliance. Emergency management systems are shown within the

land quality group because they are managed by the Office of Solid Waste and Emergency Response.

For reference, the top layer of EPA's Business Reference Model (BRM), Services to Citizens, is shown on the first row of the illustration. This area of the BRM reflects the functions of the Agency for administering environmental statutes. Regulatory requirements drive the flow of information between regulated entities, delegated state and tribal regulators and EPA. These requirements include reporting, permitting and various transactional activities. Other Agency functions, such as emergency management and scientific research, can also drive a need for information exchanges.

The layers below represent various internal and external data stores. In many cases, the flow of information is from states, tribes and regulated entities to EPA's internal data stores. In some cases, data is made available for reuse. Notably, EPA's Environmental Dataset Gateway and the EPA Geospatial Platform publish data both directly to external stakeholders and to the Federal Geospatial Platform and Data.gov. Data is also exchanged or reused between internal and external information systems.

External data owners who flow and integrate information with the EPA include the U.S. Department of Agriculture, the Department of the Interior, the National Oceanic and Atmospheric Administration, the Department of Energy, the Department of Health and Human Services, as well as the framework geospatial data themes of the Federal Spatial Data Infrastructure. The external sources depicted in Figure A-3 are those that most directly affect EPA daily operations or annual performance measurement. This underscores the need for streamlining relationships across programs and with outside partners to improve customer service, particularly with the regulated community. By updating the Agency's "Mode of Delivery" business area of the BRM and performing an analysis of overall enterprise architecture, the Agency can identify similar reporting and permitting requirements. This will provide a view into the overlapping and interconnected relationships between multiple Agency programs and individual customers, and the Agency can identify opportunities for shared services, components and datasets. This need is discussed below as part of the E-Enterprise Initiative (see Section 4.2.1).

- **Appendix 4: Mapping of Agency Performance Goals to Associated Data Sources**

The *FY 2012 – 2015 EPA Strategic Plan* lists many quantifiable performance objectives beneath each of the Strategic Goals. The data sources that provide documentation of this performance are listed for each objective in Appendix 1.

Not all of these sources are EPA-owned and operated IT systems. Many derive from other federal agencies, and some rely on state or other sources for documentation.

3.2 OEI-driven Initiatives that Service Cross-Program Mission Functions

The following initiatives, some new and others in progress, provide support for EPA's mission goals and objectives as discussed in the *FY 2012 – 2015 EPA Strategic Plan*. They provide more targeted support in areas such as common data services, regulatory process, federal requirements and environmental stewardship.

3.2.1 Geospatial Platform: Integrating Geospatial Data and Tools

Geospatial (place-based) analysis has been a growing field over the last two decades and it is especially applicable to agencies such as EPA, whose mission is strongly organized around location-specific physical conditions and events. EPA has, therefore, been a leader in the federal geospatial arena for many years, applying Geographic Information System (GIS) tools to environmental analysis, implementing the GeoData

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Gateway (GDG) for cataloging EPA’s geospatial data holdings² and, as of May 2012, launching an integrated EPA Geospatial Platform.³

EPA justified this initiative because it observed two important differences between geospatial IT management and conventional IT management:

- Geospatial data sets are often large and expensive to acquire and maintain. Centralizing data services avoids duplication, provides economies of scale in hosting and supports more reliable analysis and decision-making.
- Geographic Information System (GIS) software is rapidly advancing. The most powerful and cost-effective solutions are now cloud-based. The best way to take full advantage of the developments in GIS systems is through centralized procurement and management.

EPA’s Geospatial Platform combines geospatial data, services and applications in a single, centrally available platform dedicated to all aspects of the EPA mission (see the conceptual model in Figure 3-2). In addition to supporting the internal geospatial needs of the various programs, the Platform is particularly useful for addressing cross-cutting issues including the following:

- Environmental Justice (see Section 3.2.2).
- Emergency Response.
- Environmental Performance Indicators to evaluate program strategic results.

The Geospatial Platform allows EPA’s cross-cutting evaluations to always use authoritative data sources containing the best and most up to date Agency data, while eliminating the need to maintain copies of the same information.

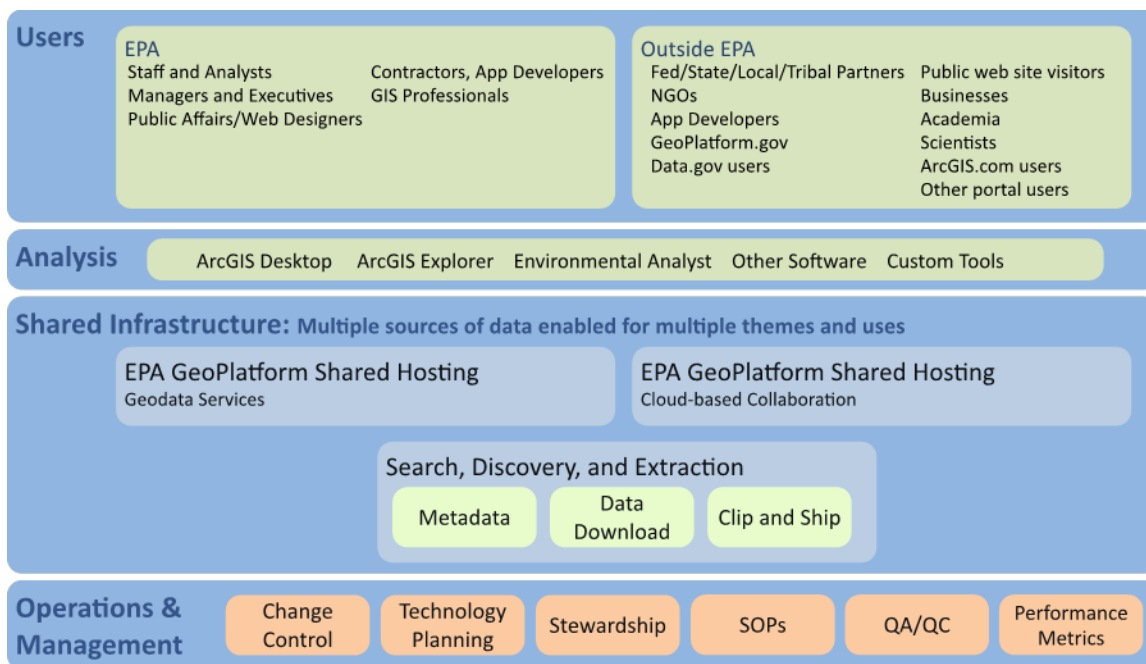


Figure 3-2: Conceptual Model of the EPA Geospatial Platform

² Success of the GDG led to its broadened form today as the Environmental Dataset Gateway, which catalogs all types of EPA data, not simply geospatial data, and feeds EPA data source records to the government-wide [Data.gov](https://data.gov) portal.

³ The EPA Executive Management Council authorized the platform in March 2011. The formal rollout was on May 15, 2012.

EPA Geospatial Platform Capabilities: Analytic tools and their supporting data needs are often context specific, but the platform's standardization of data sources and symbology⁴ assists both the casual user and the program analyst to understand the full set of EPA map products, regardless of context. Furthermore, creating a shared resource for map and tools development encourages collaborative design for both technical and programmatic needs.

Analytic contexts may vary, but programmatic functions for various Agency components often overlap. GIS tools created to address similar functions (such as for monitoring, permitting or compliance targeting) can be reused as building blocks for additional tools.

Lessons learned in the implementation of EPA's Geospatial Platform are being integrated into the development of the National Geospatial Platform managed by the U.S. Department of the Interior. EPA's Geospatial Platform continues to evolve in collaboration with the broader federal effort. EPA, along with other partners such as NOAA, USGS, DHS, NGA and NASA, will continue to contribute to the overall National Geospatial Platform.

Although currently limited to internal users, these agency-specific platforms are being used to provide powerful geospatial capabilities with appropriate mission-specific data and analytics for the public. In the future most agencies, including EPA, plan to adapt a federated approach to enable more seamless connections between agency-specific platforms and the Federal Geospatial Platform for all internal users. The long-term goal among collaborating agencies is to link them into a network of shared data and services, supporting federated search and mutual access to priority data application programming interfaces (APIs) across installations. EPA will also continue to work with its federal partners to establish a strong, cross-agency governance process for the National Geospatial Platform, including strong user participation. This process is critical to ensure mutually beneficial sharing of authoritative data sets, data services, shared infrastructure and analytical services across multiple user communities throughout the government and partner organizations.

EPA will also continue to work with its federal partners to establish a strong cross-agency governance process for the Federal Geospatial Platform, including strong user participation. This is critical to ensure mutually beneficial sharing of authoritative data sets, data services, shared infrastructure and analytical services across multiple user communities throughout the government and partner organizations.

Governance: Although EPA's Geospatial Platform is currently available to all internal customers, to date OEI has supported the vast majority of its costs. The goal going forward is to develop a joint funding strategy by FY 2015 to support core data development, analytical tools and technical services available to all users across the enterprise. A properly formulated joint funding model will encourage Agency-wide participation. Programs will be encouraged to use the Platform to develop, under joint funding, program specific applications that are flexible enough to be reused by others in the enterprise. Highly program-specific applications, not adaptable for re-use elsewhere, will be funded by the initiating program office.

Having such a joint funding approach for core services will require a strong internal governance structure to ensure that stakeholder requirements are identified, implementation decisions are vetted and transparent, and outcomes are tracked. The Quality and Information Council (QIC) has developed an Interim Geospatial Governance Process and recommended it to the CIO for approval (see Figure 3-3). The Change Control and Operational Management Board is already in place to manage day-to-day Geospatial Platform operations.

⁴ In GIS usage, "symbology" refers to the use of consistent icons and symbols across maps to indicate the same things, such as monitoring points, emission points or watershed boundaries. It becomes a major issue when integrating data from disparate sources.

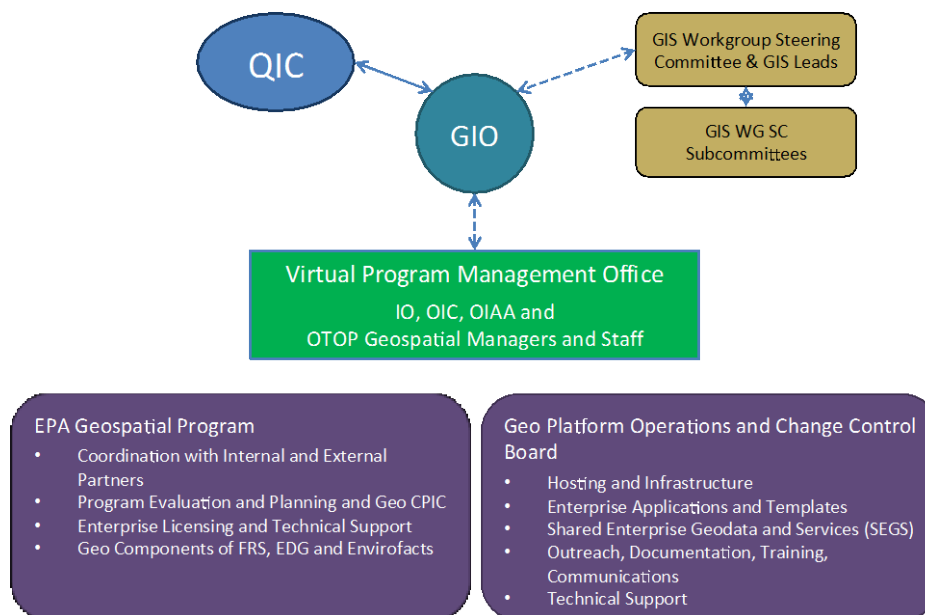


Figure 3-3: Recommended Interim Geospatial Governance Process

3.2.2 Environmental Justice Program: Addressing Environmental Inequities

Since 1994 when the White House issued Executive Order 12898, every federal agency has been required to identify and address any disproportionately high and adverse human health or environmental effects caused by its activities on minority, low-income or indigenous populations. EPA naturally plays a central role in this effort.

Over time, programs and regional offices have developed GIS-based screening tools and methodologies to support EJ analysis and decision making. Under Plan EJ 2014, a nationally consistent EJ screening tool, EJSCREEN, was developed within the EPA Geospatial Platform. The first iteration of EJSCREEN was released for internal evaluation in October 2012. As of April 1, 2013, *EJSCREEN* has replaced existing program EJ tools as the Agency standard. Programs are currently developing their program-specific applicability procedures and user guidance.

EJSCREEN combines environmental parameters with demographic information to produce 12 relevant EJ indicators. Examples include proximity of population to Superfund sites or water discharges, population exposures to particulate matter and other air quality measures and exposure to environmental lead (such as lead-based paint). EJSCREEN is currently being applied to a review of the impacts of Hurricane Sandy, looking at possible EJ issues among 160 communities impacted by the storm.

The principal benefits of EJSCREEN as an IT tool include the following:

- All areas of the country covered with consistent data.
- Nationally consistent scoring using scientifically sound data.
- Resolution to the Census Block Group level, a major improvement over previous tools that provided only Census Tract granularity. EJSCREEN supports a consistent screening tool across national, state and regional levels.

New features and functions, such as batch processing of analyses, are planned.

3.2.3 eRulemaking: Automating the Regulatory Process

Since 2002, EPA has served as the managing partner for bringing the federal regulatory process into the Internet age under the eRulemaking program. It developed the current [Regulations.gov](http://www.regulations.gov) portal, which

provides one-stop, online access to every open rule published by more than 150 federal agencies, including EPA. This represents over 90 percent of the federal regulations issued each year.

[Regulations.gov](http://www.regulations.gov)'s two principal functions are (1) to maintain the electronic collection of documents related to each rulemaking and (2) to automate the public comments process for each action. These functions are managed under the eRulemaking Major investment, which includes the [Regulations.gov](http://www.regulations.gov) portal and the supporting Federal Docket Management System (FDMS).

OEI is redesigning every aspect of the [Regulations.gov](http://www.regulations.gov) system. This effort started in 2012 and will continue through 2014. The goal is not only to improve usability and service, but to afford "the public a meaningful opportunity to comment through the Internet on any proposed regulation" and to base regulations on "the open exchange of information and perspectives" among affected stakeholders, including the public as a whole.⁵

- [Regulations.gov](http://www.regulations.gov) will have a new look and feel, its navigation will be more intuitive, its searches will be more accurate and it will offer richer tools for accessing regulatory data and public comments.
- Consistent with the Open Government and Digital Government initiatives, OEI will create an open API to allow other government and non-government sites to repackage and incorporate eRulemaking data into their own sites and applications.

3.2.4 eDiscovery: Automating the Legal Discovery and FOIA Processes

Like all federal agencies, EPA is responsible for answering Freedom of Information Act (FOIA) requests and other information management requests, including electronic discovery.⁶ EPA and regional offices receive approximately 10,000 FOIA requests annually. Electronically Stored Information (ESI) subject to information requests includes not only the electronic files themselves, but also the metadata that usually accompanies them. Electronic files can include images, videos, audio, email and any other unstructured or semi-structured electronic information.

Over the past several years, OEI led the development and implementation of the EPA eDiscovery Service in partnership with OECA, OGC and the regional offices. In August 2011, the Working Capital Fund (WCF)⁷ Board voted to implement an end-to-end eDiscovery Service that includes new procedures, processes and a supporting suite of commercial off-the-shelf (COTS) tools:

1. A cyber security and electronic discovery tool that provides search, collection, preservation and processing functions. The tool allows EPA to systematically identify people within the Agency who have ESI relevant to a litigation case, a FOIA request or a Congressional inquiry. The tool then collects the relevant information from their computers.
2. An electronic discovery tool that offers a user-friendly interface for collaborative review and processing of retrieved information, tagging and processing it to be submitted as evidence.
3. An electronic discovery tool that supports advanced de-duplication, threading and analysis of data.

⁵ Executive Order 13563, Section 2.

⁶ These obligations include the need in civil litigation to identify potentially relevant information in electronic format and place it on legal hold.

⁷ EPA's Working Capital Fund, one of six pilot franchise funds established in 1997, is a revolving fund authorized under the Government Management Reform Act to finance a variety of internal services on a fee-for-service basis, including IT and telecommunications (the majority of WCF activity), postage, financial management services and eRelocation, background investigations, travel and conference planning. Its goals are increased accountability, service efficiency, and customer service. The Working Capital Fund Board consists of senior executives from the Headquarters offices, the lead regional office for management, the backup regional office for management and two ad hoc regional representatives.

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These tools support a new national eDiscovery Service. The service will provide a consistent, repeatable process to collect and manage ESI-relevant information requests, including reviewing, de-duplicating and packaging it for delivery to courts or other recipients. Once the pilot is complete and the system is implemented, the Agency will begin a capacity building phase in which EPA personnel will be trained to use the eDiscovery Service's tools, standardized procedures and processes.

4.0 Improving Services to Customers

EPA information resources management must support a range of customers, from EPA employees, to regulatory partners (states, localities, tribes and industry), the academic and non-profit communities, and sectors of the general public.

- All customers need access to information on EPA's public facing website, EPA.gov.
- In addition, EPA employees need stronger tools to support anytime, anywhere access.
- The regulated community needs reporting and compliance burden reduction.

Section 4.1 discusses current processes for evaluating existing and planned customer-facing services in ongoing operations. Section 4.2 presents proactive initiatives and programs designed to increase customer service quality through innovation and IT modernization.

4.1 How EPA Evaluates Customer-facing Services

EPA evaluates customer-facing services in both its operational IT investments—whose customers may include EPA employees, external partners and the public—and the main EPA website.

4.1.1 Evaluating Quality of Customer Service in IT Systems Development

In September 2012, EPA approved an updated suite of System Life Cycle Management (SLCM) documents:

- **System Life Cycle Management (SLCM) Policy:** The Policy sets general objectives, roles and responsibilities for implementing a systematic and uniform methodology for information systems development and management. Its goal is to establish a consistent framework across the Agency to ensure that EPA IT systems and applications are properly planned and managed, controllable, cost-effective and that they support the Agency's mission and business goals.
- **System Life Cycle Management (SLCM) Procedure:** The Procedure defines the requirements and processes for implementing the Policy.
- **System Life Cycle Management (SLCM) Guidance:** The Guidance defines documents to be used by Project Managers and System Managers as they follow the Policy and Procedure.

As each system reaches the Operations and Maintenance (O&M) phase of its life cycle, the Procedures and Guidance specifically address the need for User Satisfaction Reviews as part of all Major and Non-Major systems subject to Capital Planning and Investment Control (CPIC) reviews:

***(Operations & Maintenance Phase)** The User Satisfaction Review is a tool to measure how well an investment meets customer needs. The Reviews often use customer satisfaction surveys to gather and analyze data to help determine an investment's accuracy and reliability.*

The User Satisfaction Review not only provides a routine avenue for investment managers to gauge system performance, but also provides users the opportunity to suggest changes or identify problems. The Review results should be used to guide future investment decisions and to inform the In-Process and Post-Implementation Reviews.

User Satisfaction Review components may include:

- User profile (i.e., who uses the system and for what purpose)
- Customer satisfaction survey results
- Customer satisfaction trends
- User satisfaction performance measures
- Qualitative feedback from users
- Recommendations and next steps

System Life Cycle Management (SLCM) Requirements Guidance, p. 30

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In 2013, EPA launched a review of the practical implementation and enforcement of the entire SLCM process. OEI formed a workgroup, including representatives from the SLCM, security, architecture and investment review staffs, to develop a governance structure that sharpens definitions of workflows, roles and responsibilities, business processes and project-specific SLCM tailoring. As part of this effort, the group will develop additional templates and guidance for all phases of SLCM, including customer satisfaction reviews.

At present, EPA's SLCM process does not uniformly apply specific customer use and satisfaction metrics or analytics, though such performance metrics are suggested as a part of the user satisfaction review. The workgroup may develop and implement related tools as part of their mission if appropriate.

In addition, the new investment review process evaluates the most significant EPA investments from a holistic viewpoint at least once every three years. It specifically addresses customer satisfaction as part of O&M Help Desk Ticket resolutions, calling for quarterly reporting of average customer satisfaction survey ratings. See Section 5.2: Investment Management Reviews .

4.1.2 Evaluating Quality of Service in the EPA Website

EPA's public access site, EPA.gov, is the Agency's main channel for public-facing information. The site's content providers constantly review and improve the site with the guidance and assistance of the OneEPA Web program in the OEI Office of Information Access and Analysis (OIAA).

The OneEPA Web team licenses all the tools needed to analyze site traffic, usage and customer satisfaction. It provides quantitative reports to the various programs to help them focus their resources on the pages that are most heavily used and provide the information most in demand.

Programs can track site usage in many ways: traffic volume to individual sections and pages; heat maps of usage across the site; logs of where users are coming from and where they go after viewing a page; usage by cities, states and countries; and patterns of use by domain (.com, .gov, .edu, .mil, etc.). Content providers across the Agency understand who their users are, what they are looking for and what they need when they arrive. Programs can focus their resources on updating, revising, improving and expanding the content that matters most to customers.

EPA uses Google Analytics, among other tools, to create usage statistics. This tool works in tandem with the Google Search Appliance that EPA licensed to provide the site's greatly upgraded internal search function in response to user requests.

Another measure is the American Customer Satisfaction Index (ACSI), which EPA uses to benchmark its site against other major public and private sites. ACSI is an economic indicator that measures the satisfaction of consumers across the United States. It is produced by the National Quality Research Center (NQRC) at the University of Michigan. EPA has added custom questions to analyze performance against a number of benchmarks:

- Demographics
- What customers were looking for
- The tools they used
- Complaints and recommended improvements, in customers' own words

Through its use, EPA has improved user satisfaction substantially. EPA.gov now outperforms most other federal sites in user satisfaction.

4.2 Proactive Initiatives for Improving Customer Service

This section describes a number of initiatives and programs designed to proactively improve and streamline EPA's customer relationships above and beyond standard practices. It begins with E-Enterprise, the most far-reaching of the IT initiatives planned for the next several years.

4.2.1 E-Enterprise: Streamlining Customer-facing Services

The goal of E-Enterprise is to integrate EPA's interfaces with the regulated community, partners (states, tribes and localities), the research community and the public, creating a single portal through which all transaction-based business can flow. Some elements of integration have been accomplished in the past (e.g., CDX, Cross-Media Electronic Reporting Regulation (CROMERR)) and others are underway now (E-Reporting), but the scope of E-Enterprise is holistic. It will build a unified framework of program planning, regulation, information sharing and compliance that will streamline EPA's interactions with its partners to an unprecedented extent.

For the regulated community, the primary benefit of E-Enterprise will be significantly reduced reporting burdens. Under Executive Order 13571, agencies must identify ways to use innovative technology to streamline delivery of services, shorten delivery times and improve the customer experience. Executive Order 13610 emphasizes quantifiable monetary savings and paperwork reductions, with an emphasis on reducing cumulative burdens. As EPA was one of eight agencies with the highest reporting burdens in 2010, OMB determined that EPA "should attempt to identify at least one initiative, or a combination of initiatives, that would eliminate two million hours or more in annual burden."⁸

Incremental, program-by-program optimizations would not be sufficient for such a task. Improvements at this scale require the fundamental changes to operations and workflow envisioned by E-Enterprise. Such improvements will also provide many ancillary benefits: significantly reduced transaction costs inside the Agency, more accurate environmental and administrative information for both primary and secondary uses, improved knowledge management, more cost-effective regulatory decisions and better environmental outcomes.

On September 16, 2013, the Environmental Council of States (ECOS) voted unanimously to endorse E-Enterprise and signed an agreement with EPA to establish the E-Enterprise Leadership Council, co-chaired by ECOS and the EPA Deputy Administrator. With e-Enterprise, ECOS anticipates seamless integration of state and federal information.

The Vision: E-Enterprise's outward presence will be a single, personalized portal through which industry, or any other affected or reporting entity, can conduct all its business with EPA in one federated identity. Information will be captured once and reused as necessary. Updates will propagate to all programs and uses. All a respondent's business dealings will be accessible at once and in context, with current status (including real-time monitoring), pending actions and upcoming obligations immediately visible for all affected facilities, processes or commercial activities.

To make these improvements, EPA must address differences among program IT systems at a deep level. Although the Agency's historically separate mission operations interact in similar ways with largely the same set of external stakeholders, each program's IT systems and digital data flows reflect key differences in their mission statements and legislative mandates. Each program has historically needed its own customer-facing transaction points. E-Enterprise will consolidate and integrate these transaction points using a variety of new technical tools and consolidated, streamlined workflows.

E-Enterprise is a practical possibility because of recent improvements in IT technologies, such as Service Oriented Architecture, semantic Web technology and open data architectures. E-Enterprise will be layered over modernized legal and program frameworks and combined with interoperability standards that will further converge information and regulatory structures over time. This will move EPA away from disconnected single-program systems and toward federated, networked solutions that integrate IT solutions across states, tribes, localities, industry and academia.

E-Enterprise is planned around five pillars of activity, as shown in Figure 4-1.

⁸ OMB memorandum, "Reducing Reporting and Paperwork Burdens," June 22, 2012, Cass R. Sunstein, Administrator, Office of Information and Regulatory Affairs.

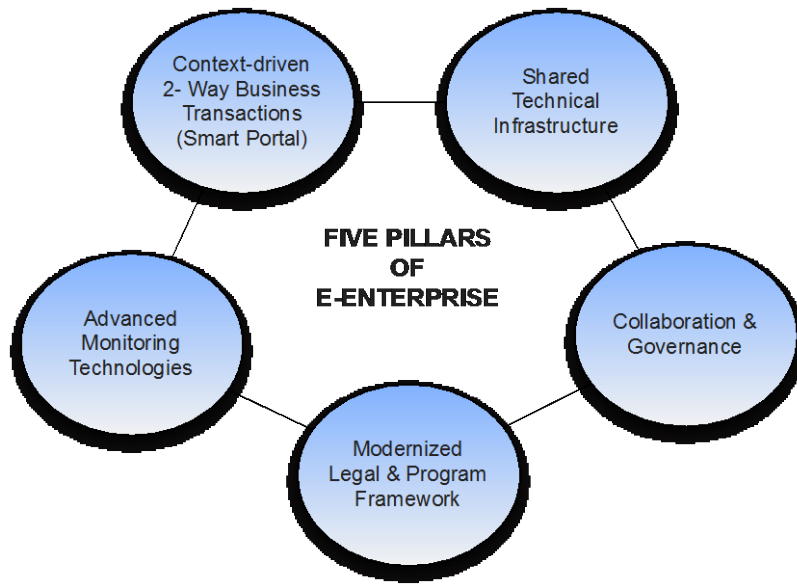


Figure 4-1: Five Pillars of E-Enterprise

Context-Driven Portal: E-Enterprise will create a model for implementing federated identities in linked EPA and state systems, thereby enabling the portal to provide context-driven information and transaction support keyed from the user's identity, role and needs, and eliminating the need to sift through large websites to find relevant information. Participation will be voluntary, but once an identity is established, the system will alert the user to relevant compliance requirements, upcoming regulatory actions and status reports for their organization's affected facilities.

Shared Technical Infrastructure: When complete, the infrastructure will include necessary data exchange services linking the portal to source systems, accompanying exchange schema, enhanced registries and other reference services, and re-engineered or new program and E-Reporting systems replacing today's single program systems at both the EPA and partner levels.

Collaboration and Governance: Currently, E-Enterprise is a joint effort of EPA and states under the new E-Enterprise Leadership Council to be co-chaired by ECOS and the EPA Deputy Administrator. Collaboration with tribes will begin in the near future. Within EPA, all programs will become closely involved in designing the initiative's IT and non-IT related components. At the state level, representation will include environmental commissioners or deputy commissioners.

Modernized Legal and Program Framework: E-Enterprise will look across the full 40 Code of Federal Regulations (CFR) to identify all paper reporting that needs to be converted by rulemaking to become electronic. Regulations and other governing documents must also be analyzed semantically to create cross-program dictionaries, vocabularies and ontologies to link equivalent business concepts and provide for context-driven search and discovery. EPA will apply this framework prospectively to all new regulations and program documents to conform to common terminology and logic for all participating programs.

Advanced Monitoring Technologies: To support real-time status evaluations and ongoing enforcement and compliance, new monitoring technologies will provide better information for all parties—industry, communities and government programs.

Governance and Sequencing: Internally, EPA will manage E-Enterprise as a partnership between OEI and the Office of Enforcement and Compliance Assurance (OECA). Senior Information Officials (SIO) from all offices will serve on the large governance group, along with regional representatives at the Deputy Regional Administrator level and others as necessary.

EPA will implement E-Enterprise in stages, with the initial scope limited as follows:

- **Office of Enforcement and Compliance Assistance (OECA):** Advanced monitoring programs will be addressed, including real-time monitoring where possible.
- **Office of Solid Waste and Emergency Response (OSWER):** E-Manifest will be the first program addressed by E-Enterprise.
- **Office of Water (OW):** Surface water discharge permitting and drinking water programs will both be part of the initial E-Enterprise scope.
- **Office of Air and Radiation (OAR):** The initial scope will include air quality management programs, with Title 5 National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and vehicle engine testing and fuels programs included.
- **Office of Chemical Safety and Pollution Prevention (OCSPP):** Both Pesticides Registration and the Pre-Manufacture Notification Program will be included in the initial scope.
- **Office of Environmental Information (OEI):** Central services will build on the success of the Central Data Exchange, the Exchange Network and existing registries. OEI will also be responsible for implementing the 2-Way Business Transactions Smart Portal.

4.2.2 Quality Program

To ensure that EPA customers at all levels—states, tribes, localities, industry, other federal agencies and the public—are served with, and have access to, high quality information at all times, EPA operates a mandatory, Agency-wide Quality Program. Its purpose is to manage the quality of environmental data collection, generation and use, and to ensure that data is created, maintained and stored commensurate with its value.⁹ All environmental data meet applicable standards for intended use and all environmental information produced by EPA or its partners must be of known quality and exist in sufficient quantity for its purpose. The origin of data used to support rules and regulations must always be traceable.

All EPA programs must develop and implement individual program-level Quality Management Plans. The Quality Program subjects these plans and their supporting programs, tools and documentation to periodic reviews through the Quality System Assessment process.

The program also maintains oversight of the Information Quality Guidelines, initially published in 2002 and updated in 2004 and 2005. The guidelines establish general performance goals for all information that EPA disseminates to the public, consistent with OMB requirements:

- Disseminated information should adhere to a basic standard of quality, including objectivity, utility and integrity.
- The principles of information quality should be integrated into each step of EPA's development of information, including creation, collection, maintenance and dissemination.
- Administrative mechanisms for correction should be flexible, appropriate to the nature and timeliness of the disseminated information, and incorporated into EPA's information resources management and administrative practices.

A key aspect of the process established here is that it enables the public to seek and obtain, where appropriate, correction of information disseminated by EPA that does not comply with guidelines.

EPA's sequence for evaluating data through its life cycle is shown in Figure 4-2.

⁹ Especially for scientific data sets, which can be extremely large, storage and maintenance of old data can be excessively costly. Information is not saved regardless of cost: EPA's policy is to store and maintain data only in relation to its value for existing and potential future uses.

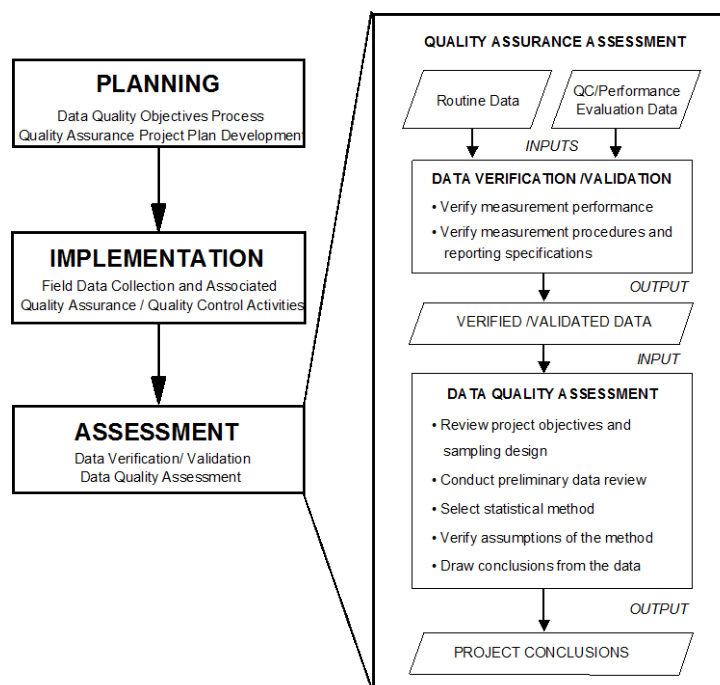


Figure 4-2: Quality Evaluation throughout the Data Life Cycle

OEI is updating and reinforcing the Quality Program’s policies and procedures. The existing Quality Program policy structure covers all data products and services originated throughout the EPA, including financial and administrative materials. The new structure will be limited to environmental data only, as financial and administrative data have their own quality assurance controls through other federal statutes, such as the Federal Managers Financial Integrity Act (FMFIA).

Figure 4-3 shows the new structure, including expected sub-elements.

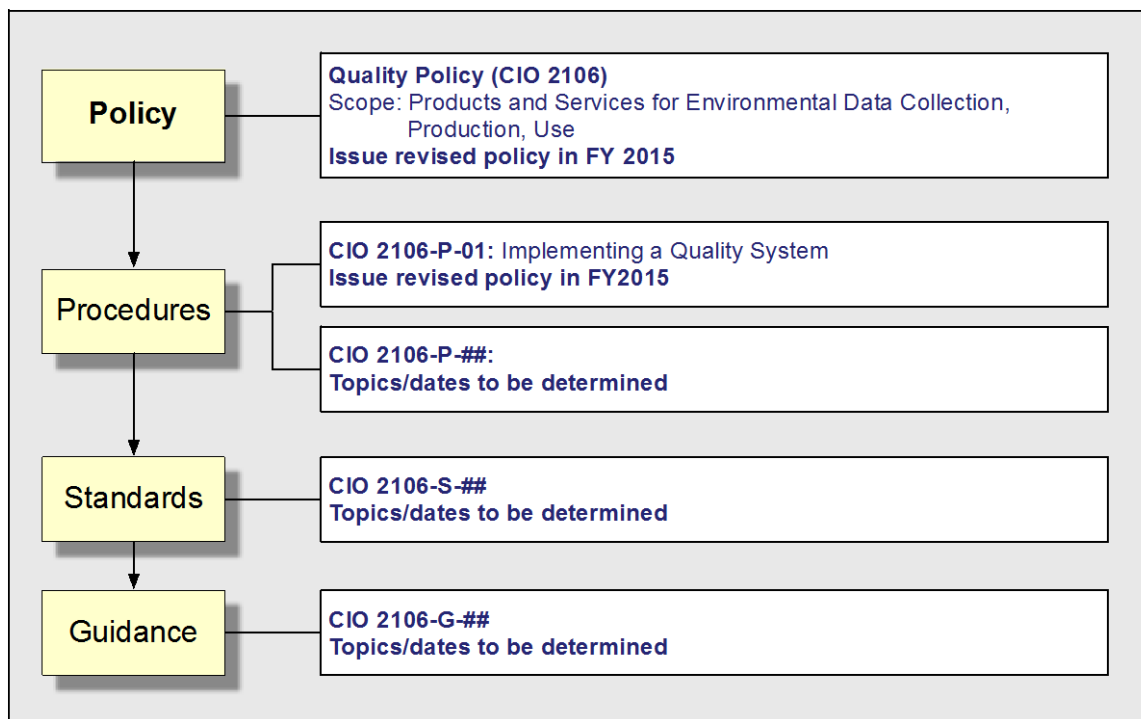


Figure 4-3: Structure of the Revised EPA Quality Program Framework

Like other EPA information policies, the Quality Policy structure is hierarchical. The overarching Policy establishes high-level goals, objectives, roles and responsibilities. It is reviewed and approved at the Agency level and is expected to be modified rarely. Procedures provide operational details and procedures. Standards address technical specifications. Guidance interprets Procedures and Standards and offers advice for their practical application. (See Section 5.4 for a more detailed discussion of EPA's IT/IM policy framework.)

In addition to limiting the scope of Quality Program operations to environmental data only, the new structure responds to the following Agency level trends:

- **Increased reliance on modeled data:** Previous quality policies focused on measured data. With rules and regulations increasingly being based on modeled and measured data, the Quality Program must expand its coverage to include modeling-related data quality issues.
- **Increase in use of data from external sources:** EPA relies increasingly on data developed by external sources. In particular, data used to measure the environmental performance of EPA programs come from a variety of health, scientific and natural resources agencies. Program responsibilities that were previously handled by EPA have been increasingly delegated to states, tribes and local governments. The Quality Program must therefore define additional procedures and standards to evaluate the proper use of externally-generated information.
- **Importance of field operations:** The Quality Program is putting more emphasis on the quality of information flowing from field operations, including those conducted by EPA regional offices as well as by partners at the state, tribal and local level. This calls for a more consistent, cross-program approach to maintaining data quality across these many disparate activities and partners.

4.2.3 My Workplace

In February 2013, EPA migrated from its previous Lotus Notes-based desktop environment to a cloud-based suite of email, communications and collaboration services. The Agency transitioned more than

20,000 employee email boxes and 5,000 Blackberry devices, most of them during a 3-day holiday weekend. The new My Workplace environment is powered by Microsoft Office 365 (MSO-365), a cloud-based solution rather than a traditional premise-based system. MSO-365 is an integrated offering for email, calendar, address book contacts, document sharing, instant messaging, video conferencing, workgroup sites and other collaboration tools.

My Workplace began as a challenge to transform how EPA employees collaborate. In an environment of distributed teams, telework and reduced travel budgets, EPA employees need state of the art tools that help them quickly find information and expertise within the Agency. They also need collaboration tools to help them work in real time in geographically dispersed teams. EPA switched users to new email, instant messaging and videoconferencing capabilities and is completing the rollout of the powerful collaboration and networking features of SharePoint Online 2013. Adopting SharePoint will provide EPA with a collaborative worksite that leverages the EPA community. EPA has identified teams of “trailblazers” who will conduct deep investigations of the tool’s capabilities for addressing collaboration challenges in specific Agency work processes. These trailblazers will then provide guidance to help all teams recognize and make use of those capabilities.

EPA is the first cabinet-level agency to use Microsoft’s government cloud community solution. Through this new solution, EPA is able to meet the intent of OMB’s Cloud First initiative and its secure government approach to adopting cloud products and services.

4.2.4 Support for Teleworking and Mobile Devices

Consistent with the Telework Enhancement Act of 2010, EPA developed a Mobile Computing Policy and supporting Mobile Device and Wireless Network Procedure. This initiative is based on recent recommendations from the CIO Council for implementing mobile computing policies at the federal level. Under the policy, EPA workers are expected to have access to a wider range of technical solutions—software applications, mobile devices and mobile device management—than they do currently. This initiative will interface with the My Workplace program (see Section 4.2.3) to support the goal of EPA staff working anytime, anywhere.

Governance: EPA’s Mobile Access Review Committee (MARC) evaluates and approves mobile application concepts and maintains the mobile applications look and feel requirements based on the latest technology, EPA requirements and best practices. Members include the National Content Managers and National Infrastructure Managers of the Web Council as well as representatives from the Office of Web Communications (OWC), the Office of Environmental Information (OEI), the lead regional office, a rotating program office and the Office of General Counsel (OGC). The committee works with subject matter experts as needed.

Web development: Another aspect of mobile device support is the responsive Web design approach used in the development of EPA’s Drupal-based Web content management system (see also Section 9.2.3: OneEPA Web Modernization Effort). Recognizing that an increasing percentage of the 20 million monthly views of EPA’s webpages come from mobile devices, EPA has adopted a “mobile first” approach using responsive design for its website. This approach presents content to the reader in the appropriate form and format for their viewing device, whether it is a mobile phone, tablet or computer screen. When the conversion to the automated Drupal CMS is complete, EPA will gradually phase out its interim mobile solution, m.EPA.gov, which currently provides key extracts of the full EPA.gov site in mobile formats.

4.2.5 EZ Tech

The EZ Tech initiative consolidates three customer service functions into one for EPA’s program offices:

1. **A central user Help Desk service:** All user requests are to be funneled through the central Help Desk service. These include ordinary help support for computer operations as well as pass-through requests for print services or hardware support.
2. **Managed Print services:** These include support for printer and fax servicing, toner replacement, paper and other supplies.

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3. **Hardware Blanket Purchasing Agreement (BPA):** Over the next two years, all EPA staff will receive replacement computers, which may be desktops, laptops or tablets. This service will include ordering, provisioning, servicing and remote use support of all computer hardware, including mobile phones.

EZ Tech started in October 2012, at which time the three services were consolidated under a single contract. EZ Tech replaces that single contract with dedicated procurements for each EZ Tech function. To design EZ Tech, OEI convened and led an advisory group involving all program offices. EZ Tech supports EPA Headquarters operations only, though it may be expanded in the future to include regional offices.

5.0 Implementing Governance and Management Processes

EPA's IT governance processes are implemented through the Quality and Information Council (QIC), which serves as the Agency's forum for senior level policy deliberation and coordination on information technology/information management and related policy issues. The QIC provides assistance to the Assistant Administrator (AA) for Office Environmental Information, who is EPA's CIO, in the development and implementation of the Agency's quality and information goals and policies. QIC meetings provide the mechanism through which senior Agency officials can raise and debate strategic information issues, such as enterprise architecture, offering the CIO direct access to those officials to obtain their counsel on and commitment to information quality, strategies and policies.

The QIC is composed of Senior Information Officials (SIOs) and is chaired by the CIO. Each member is able to speak on behalf of, and make commitments for, their respective Headquarters offices. SIOs are typically the Deputy Assistant Administrators of each Headquarters office and the Assistant Regional Administrator of each region. The SIO of the Office of Administration and Resources Management represents both the Chief Administrative Officer (CAO) and the Chief Human Capital Officer (CHCO) functions. All positions are filled at the SES level. The QIC meets every other month, and may meet more frequently if necessary, to address issues and recommendations made by the QIC Steering Committee or QIC subcommittees.

The QIC Steering Committee includes managers, senior staff or the Information Management Officers (IMOs) from Headquarters and some regions. It meets monthly.

The remainder of this section covers current governance and management issues relating to IT and IM governance enhancement and implementation:

- Section 5.1 addresses the QIC restructuring effort pursuant to the recent operational review.
- Section 5.2 introduces the CIO's Investment Management Review process.
- Section 5.3 covers strategic sourcing and enterprise licensing.
- Section 5.4 describes OEI's overall IT/IM Policy Program.

5.1 QIC Structure

Beginning in FY14, EPA embarked on an effort to restructure the QIC to strengthen governance operations.

Historically, the QIC has had three subcommittees:

- **Information Investment Subcommittee (IIS):** The Agency's investment review board, advising the CIO on the appropriateness of information investments.
- **Quality Technology Subcommittee (QTS):** The IT/IM strategic planning group, addressing mission needs, IT infrastructure and long-term planning and systems integration.
- **Exchange Network Subcommittee (ENS):** The oversight committee for the National Environmental Information Exchange Network, ensuring that it has broad political, strategic and resource support.

Over time, this core group of subcommittees has had to accommodate emerging issues and programs, including cybersecurity risks, Web content, mobile apps, the Quality Program, 508 Compliance and EPA's Geospatial Platform. To address this expansion of interests, the QIC reviewed its operations and is now restructuring to improve its processes and internal structure to achieve the following goals:

- Address issues at the appropriate subcommittee level.
- Design new processes to direct the flow of information and structure the Council's decision-

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making process.

- Incorporate senior management involvement earlier in the process and provide more effective means to follow up on decisions.
- Clarify the QIC's strategic role in setting IT/IM direction.
- Respond to emerging IT issues.
- Provide more oversight to IT/IM implementation.

The QIC's new structure establishes five standing subcommittees to replace the previous three:

Information Management & Exchange (IMEX): The IMEX is co-chaired by the Director, Office of Information Collection, and a senior staff member to be named. The Subcommittee is composed of senior staff appointed by the QIC member for each AA-ship and participating region. The scope of the IMEX is to advise and assist the QIC on all matters pertaining to the Agency's eDiscovery, records, Freedom of Information Act (FOIA) and privacy programs. In addition, the IMEX scope includes the Agency's data and metadata standards and architecture, and the Agency's Quality Standards and Programs. The primary mission of the Subcommittee is to advance the Agency's goals for information management.

Information Access & Use Subcommittee (IAUS): The IAUS is co-chaired by the Director, Office of Information Analysis & Access, and a senior staff member to be named. The Subcommittee is composed of the chair(s) of each reporting subgroup and others with specified program-specific information management requirements. The scope of the IAUS covers all EPA public online communications including websites and social media. The scope applies to all online communications, whether accessed by desktops, mobile devices or other methods.

IT Investment Review Board (IIRB): The IIRB is co-chaired by the Deputy Chief Information Officer and the Deputy Chief Financial Officer (CFO) or their appointed designees. The Subcommittee is composed of senior managers from Agency program offices, as well as the lead and back-up regions for Information Management. The IIRB membership is appointed by QIC members from all AA-ships and participating regions. Membership is limited to senior staff who have the necessary authority and knowledge to vote on the portfolio management issues defined in the IIRB charter. The primary mission of the Subcommittee is to advance the Agency's goals for investment planning and monitoring. The IIRB supports the QIC in making recommendations to the CIO on the suitability of information investments.

Quality Technology Subcommittee (QTS): The QTS is led by EPA's Chief Technology Officer. It includes senior IT officials from across EPA and is charged with addressing enterprise-wide issues regarding mission need, IT infrastructure solutions, long-term technology planning and systems integration. The QTS ensures senior management commitment to the initiatives and provides overall program management across the Agency. The QTS addresses enterprise-wide issues regarding the Agency's information technology infrastructure, including customer and mission needs that require technical solutions, long-term technology planning and systems integration.

Risk Executive Group (REG): The REG is chaired by a QIC member on a rotational basis. The Subcommittee is composed of experts from the areas of legal, privacy, finance, public affairs, homeland security and mission areas. The scope of the REG is to manage risks consistently across the Agency, appropriately balancing information security risks against other categories, such as financial, legal, mission and political risks. The REG helps to ensure that risk-related decisions for information and individual information systems, including authorization decisions, are viewed from an organization-wide perspective with regard to EPA's overall strategic goals and objectives in carrying out its core missions and business functions.

5.2 Investment Management Reviews

The new IIRB, replacing the IIS, oversees the Agency's CPIC resources. It advises and assists the QIC in all matters pertaining to information investment management as required under the Clinger-Cohen Act and in accordance with the Agency's EA Policy. The primary functions of the IIRB include the following:

- **Select** – Review potential business solutions that contain a major IT investment and approve or disapprove the need for the investment as it relates to the IT portfolio in alignment with EA.
- **Control** – Review progress of the Agency's major IT investments quarterly, including the review of earned value management (EVM) analysis and approve continuation of investments.
- **Evaluate** – Review major IT investment outcomes based on predetermined measures and identify lessons learned to improve management oversight.

To supplement the functions of the IIRB and the previous IIS, EPA now provides investment portfolio oversight through quarterly meetings called by the CIO and attended by the Chief Financial Officer, system owners and the Agency's Senior Security Officer. Modeled on the PortfolioStat process, these meetings address all the Major CPIC investments and selected smaller investments that the CIO considers programmatically or administratively significant.

Prior to a session, the system owner completes a questionnaire that documents any immediate decisions or changes in direction. The questionnaire treats each investment holistically, gathering information on all aspects of its performance: purpose and scope, budget and lifecycle, performance benefits, design and architecture, security risks and dependencies, and delivery milestones.

As an example, Figure 5-1 is taken from a review conducted in FY 2012. It shows EPA's enterprise services and solutions used by the Office of Air and Radiation's Verify system, which integrates engine emission reporting and automobile fuel economy compliance under the Clean Air Act (CAA) and the Energy Policy and Conservation Act (EPCA). During the review, participants discuss which services an application uses or does not use, and why.

	Service/Solution	Applicable? (check applicable box)		Adopted/ Will Adopt?	Projected Date for Adoption
Ex. 1	Application hosting services	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Will Adopt	Q2 FY 2013
Ex 2	Documentum for content/document mgmt	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Adopted	
1.	Application hosting services	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Will Adopt	Q4 FY 2012
2.	Documentum for content/document mgmt	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
3.	Documentum for workflow	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
4.	eDiscovery for identification, collection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
5.	eDiscovery for preservation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
6.	eDiscovery for processing for legal cases/FOIA	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
7.	CDX	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Adopted	
8.	BI Tools	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
9.	WAM	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Will Adopt	Q4 FY 2012
10.	ECMS Records Repository for content	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
11.	ECMS Records Repository for records management	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
12.	ECMS Records Repository for Other COTS	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		

Figure 5-1: Sample Table from Investment Management Review

As the process matures, the questionnaire template and the session designs may be refined and enhanced as necessary. The process will, over time, provide the CIO, CFO and Chief Architect with a coherent, joint overview of the system's evolution as a whole, touching on all dimensions of portfolio management.

5.3 Strategic Sourcing and Enterprise Licensing

Enterprise technology licenses are treated as EPA Technology Standards. The CIO has delegated the authority to approve IT Standards to the CTO, and the QIC Technology Subcommittee provides the CTO with recommendations on proposed IT standards.¹⁰ The QTS reviews and approves enterprise licenses prior to procurement. As it deems necessary, the QTS requires comparative evaluations, pilot testing and cost-effectiveness analyses before approval.

Once approved, enterprise licenses become technology standards and are incorporated into the EPA Technical Reference Model, IT Standards Profile and IT Technology Roadmap.

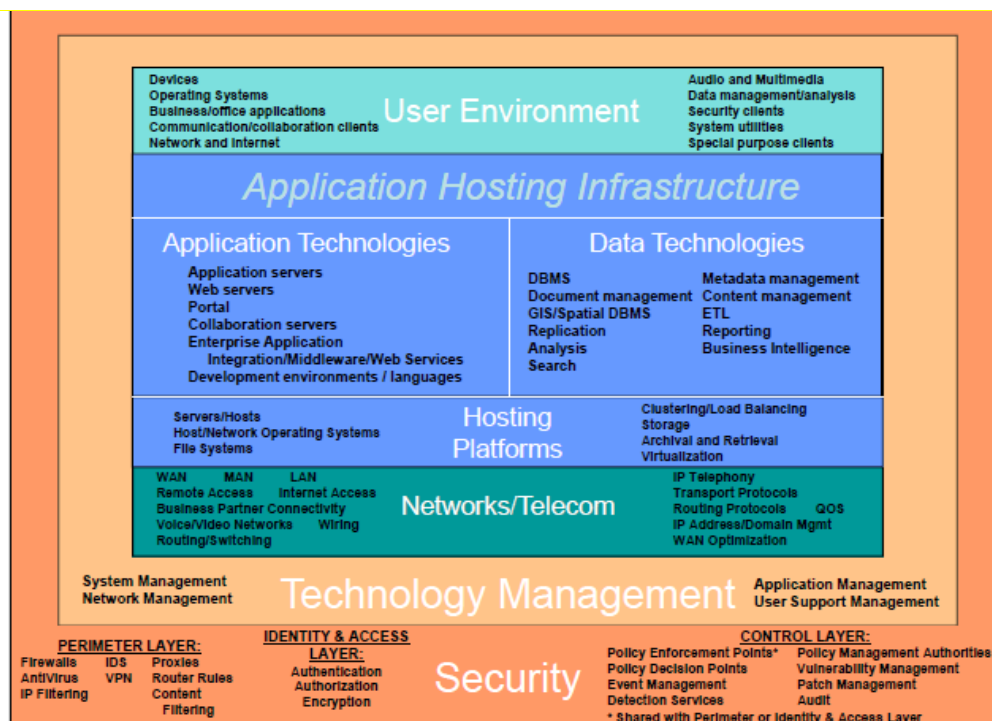


Figure 5-2: EPA Technical Reference Model

The IT Standards Profile is derived from the EPA Technical Reference Model and serves as the official guidance. It also provides direction to Agency offices in their selection of technologies and technology implementation alternatives used for deployment in Agency information systems and IT infrastructure and to perform particular functions. The standards provide a stable base for satisfying EPA's mission-based IT needs and to ensure efficient management of its resources. The IT Standards Profile guidance defines the potential costs, reviews and formally approves its IT Standards.

EPA's Information Technology (IT) Roadmap is an organized collection of products and technologies that define standards and guidelines supporting the technical design of Agency information systems. The IT Roadmap supports the Agency's future direction for information technology by enhancing integration of the overall technology architecture and serves as a primary reference in the formulation of the five-year target architecture.

¹⁰ In view of the dynamic nature of the technology marketplace and the evolving needs of the agency, this process allows OEI to make changes to the IT Standards Profile, as needed. The agency's IT infrastructure is the foundation for environmental and administrative information and inter-office communication.

5.4 Information Technology/Information Management Policy Program

EPA's Information Technology/Information Policy Program supplies essential structure and accountability to the coordination of investment decisions, portfolio management, enterprise architecture, procurement and software development.

OEI is currently undertaking a comprehensive review and update of all IT/IM and related policies, many of which implement current law (e.g., the Clinger Cohen Act) or policy (e.g., the Federal Enterprise Architecture) relating to planning, prioritizing, funding, executing and decommissioning IT investments.

Figure 5-3 illustrates the structure of OEI's IT/IM Policy Program. This framework creates a family of related documents for each policy action.¹¹

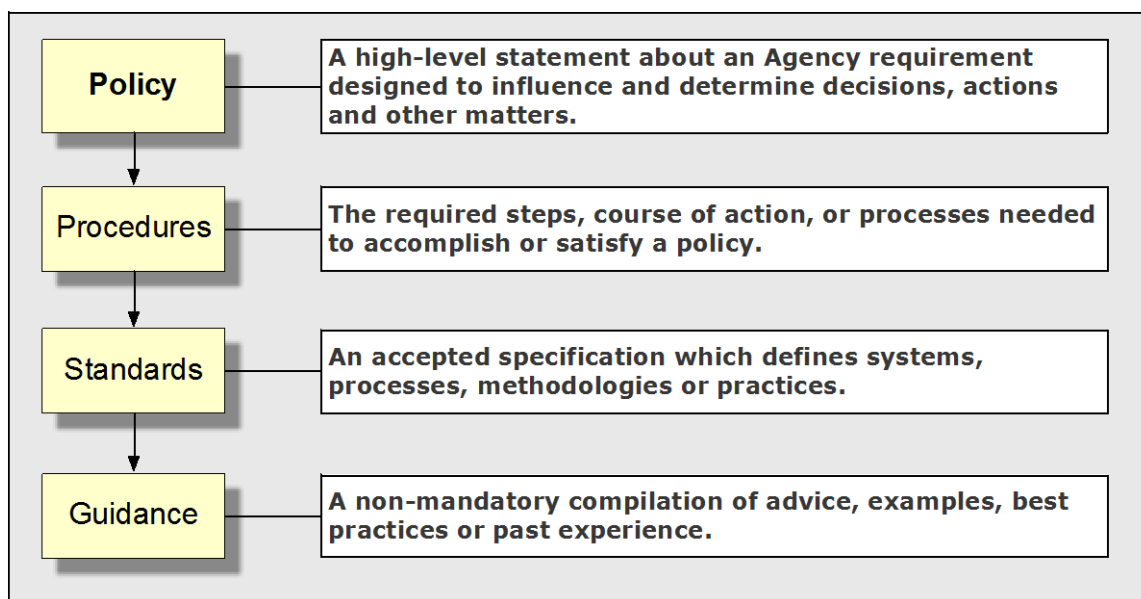


Figure 5-3: OEI's Policy Framework

This approach is flexible and designed to evolve efficiently over time:

- Policy:** A high-level statement about an Agency requirement designed to influence and determine decisions, actions and other matters. It is usually driven by statute, Executive Order, the mandate of an oversight agency or Congress or the head of the organization.
Policies are statements of high-level purpose, goals, objectives and structures of responsibility. They are subject to Agency-wide review and are reviewed periodically. All OEI policies are subject to review, but remain in effect even if their review dates, if any, have expired.
- Procedures:** The required steps, course of action or processes needed to accomplish or satisfy a policy. A policy may have one or more procedures.
Procedures are tactical statements of how a policy should be implemented. OEI can revise them as needed to respond to changing circumstances. Because procedures do not change a policy's agreed-upon purpose, goals and objectives, they do not require Agency-wide review. They can be updated at the discretion of the CIO to align with evolving best practices.
- Standards:** An accepted specification that defines systems, processes, methodologies or practices. It provides a basis for assuring consistent and acceptable minimum levels of quality,

¹¹ <http://www.epa.gov/irmpoli8/>

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performance, safety and reliability. Standards usually are included in or accompany procedures. Standards are often adopted from external authorities and adapted to EPA needs, though some standards may be entirely EPA-generated.

- **Guidance:** A non-mandatory compilation of advice, examples, best practices or past experience. Guidance supplements procedures.

Guidance interprets the other documents and can be updated or augmented over time as needed.

6.0 Aligning CIO Authorities

Since 1999, EPA has appointed a single individual to serve as Chief Information Officer and Assistant Administrator of Environmental Information. The laws, Executive Orders and regulations that give EPA its authority typically, but not always, indicate that “the Administrator shall” exercise certain authorities. Official delegations of authority represent the basic direction to senior Headquarters and regional office management officials to exercise these delegated authorities. It is EPA’s policy that authority granted by Congress or the Executive Branch must be delegated officially for other Agency management officials, including the Chief Information Officer and Assistant Administrator for Environmental Information, to act on behalf of the Administrator. This is accomplished through the Agency’s delegation process. EPA’s Delegations Manual serves as a record of the authority of an Agency employee or representative to act on behalf of the Administrator.

From December 2001 through the present, EPA’s Chief Information Officer (CIO) has been specifically delegated the following authorities from the Administrator: Information Resources Management, Freedom of Information Act responsibilities, the Mandatory Quality Assurance Program, Information System and Data Management Grants and Cooperative Agreements, among others. According to the specific delegation for information resources management, the Assistant Administrator for Environmental Information will exercise all responsibilities of the CIO, including but not limited to the following:

1. Serve as the CIO.
2. Serve as the Chair of the Quality and Information Council (QIC).
3. Approve the Agency’s Strategic IRM Plan, Five-Year IRM Implementation Plan, IRM investment portfolio and the IRM contracting strategy.
4. Establish policies and procedures for the management and security of records, files, data and information systems and technology.
5. Approve the establishment or amendment of an Agency Privacy Act System of Records.
6. Approve waivers to Federal Information Processing Standards under appropriate circumstances that meet the conditions defined by the National Institute of Standards and Technology.
7. Serve as Chair of the Agency’s Data Integrity Board.
8. Approve the acquisition of information technology resources.
9. Establish and maintain a continuing program for the management and security of records, files, data, and information systems and technology.
10. Establish a process that is sufficiently independent of program responsibility to evaluate fairly if proposed collections of information should be approved in accordance with 44 U.S.C. 3507.
11. Consistent with the process described in 1.a.(10), designate an official to review and approve information collection requests and to certify their compliance with the Paperwork Reduction Act as required by 44 U.S.C. 3506(c)(3).
12. Establish policies and procedures for the management of Section 508 Rehabilitation Act Amendments for the Agency.
13. Approve Section 508 undue burden justification requests for the Agency.
14. Certify that Electronic and Information Technology (EIT) items purchased are in compliance with the requirements of Section 508 of the Rehabilitation Act Amendments for the Agency.
15. Designate a senior Agency information security official who will report to the CIO on the implementation and maintenance of the Agency information security program and security policies.
16. Exercise all other responsibilities of the CIO not addressed above in 1.a.1 through 1.a.15.

These authorities are consistent with the following statutes and OMB policies:

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- The Paperwork Reduction Act, as amended (44 U.S.C. Chapter 35).
- Clinger -Cohen Act of 1996 (Division E of P.L. 104-106).
- Federal Acquisition Regulations (P.L. 103-3553).
- Government Performance and Results Act (31 U.S.C. 1101).
- Freedom of Information Act, as amended (5 U.S.C. 552).
- Privacy Act, as amended (5 U.S.C. 552a).
- Electronic Communications Privacy Act (18 U.S.C. 2701-2707).
- Computer Security Act, as amended (P.L. 100-235).
- Computer Matching and Privacy Protection Act, as amended (P.L.100-503).
- High-Performance Computing Act (15 U.S.C. 5501).
- Destruction of Records (18 U.S.C. 2071).
- Records Management by Federal Agencies (44 U.S.C. Chapter 31).
- Disposal of Records (44 U.S.C. Chapter 33).
- OMB Circular A-11, Preparation and Submission of Budget Estimates, as amended.
- OMB Circular A-16, Coordination of Surveying, Mapping, and Related Spatial Data Activities.
- OMB Circular A-76, Performance of Commercial Activities, as amended.
- OMB Circular A-123, Management Accountability and Control, as amended.
- OMB Circular A-127, Financial Management Systems, as amended.
- OMB Circular A-130, Management of Federal Information Resources.
- OMB Circular A-131, Value Engineering.
- 5 CFR Part 1320, Control of Paperwork Burdens on the Public.
- 36 CFR 1220-1238, Records Management.
- 40 CFR Part 16, EPA's Implementation of the Privacy Act of 1974.
- Executive Order 12656, Assignment of Emergency Preparedness Responsibilities, as amended by Executive Order 13074, Amendment to Executive Order 12656.
- Executive Order 12845, Requiring Agencies to Purchase Energy Efficient Computer Equipment.
- Executive Order 13011, Federal Information Technology.
- Section 508 of the Rehabilitation Act (29 U.S.C. 794d).
- Government Information Security Reform Act of 2000 (44 USC 3531 et seq.).

As described in OMB Memorandum M-11-29¹², “as the federal government implements the reform agenda, it is changing the role of the agency Chief Information Officers away from just policymaking and infrastructure maintenance, to encompass true portfolio management for all IT. This will enable CIOs to focus on delivering IT solutions that support the mission and business effectiveness of their agencies and overcome bureaucratic impediments to deliver enterprise-wide solutions.”

6.1 Governance

EPA's CIO has formed a close business partnership with the Chief Financial Officer and Chief Acquisition Officer to host quarterly IT Investment Review meetings for all designated “Major” CPIC investments, as well as other systems that have particular programmatic significance (see Section 5.2 for more detail).

¹² OMB Memorandum M-11-29, Chief Information Office Authorities, August 8, 2011.

These meetings are designed to provide a better understanding of EPA's system investments, ensure that EPA takes steps to maximize efficiencies and create a line-of-sight between system owners and Agency managers to strengthen the management of the Agency's investments. Much like TechStat sessions, these face-to-face reviews provided an evidence-based forum to review and discuss IT investment progress and performance. These reviews result in documented action items intended to share knowledge and improve investment health.

Launched in 2010, the CIO-led investment review process has successfully fostered a dialogue on investments, required a standardized and systematic review, and identified a series of opportunities and efficiencies for the Agency. The investment review process is undergoing review to determine additional ways to institute portfolio management and capture improvements.

6.2 *Commodity IT*

EPA's CIO continues to work to identify opportunities for eliminating duplication of resources in IT infrastructure, enterprise IT and business systems. EPA has experienced several past successes, including streamlining Agency telephone services through VoIP, identifying mobile service improvements through contract negotiations and launching an Agency-wide email and collaboration tools initiative using a private government cloud service (see Section 4.2.3). The CIO is working in collaboration with the Chief Financial Officer and Chief Acquisition Officer to streamline internal Agency timekeeping and human resources systems through the HR Line of Business (HRLob) project, expected to be launched through the Department of the Interior's National Business Center in 2014.

6.3 *Program Management*

In support of good program management practices, EPA's CIO conducts regular performance reviews of all Office Directors within the Office of Environmental Information. EPA has a single Chief Information Officer and no sub-agencies or bureaus. The CIO offers quarterly management training opportunities to all managers within OEI, an annual management training session for all managers to the branch chief level and quarterly business review sessions for its highest-level members of the senior leadership team.

6.4 *Information Security*

EPA's Senior Agency Information Security Officer (SAISO) reports directly to the CIO. The SAISO has the responsibility to implement an Agency-wide information security program. More detailed information about EPA's activities to support cybersecurity is provided in Section 7.0.

7.0 Managing Cybersecurity

EPA's Information Security Program Strategic Plan: FY2012 – 2017, establishes a comprehensive framework to enable the governance and improvement of EPA's information security program. It defines clear and comprehensive mission, vision, goals, objectives, tasks and performance measures.

The EPA Information Security Program Strategic Plan provides information security direction for EPA information resources planning and delineates the EPA Information Security Program Plan strategic direction. EPA's Senior Agency Information Security Officer (SAISO) directs all security operations under this plan. The SAISO reports directly to the Deputy Administrator, but works closely with the CIO and the CIO's immediate office.

The Information Security Program Strategic Plan ensures the strategies will be implemented by incorporating action plans that delineate specific functions and activities for the achievement of the EPA Information Security Program goals and objectives. Its stated goals and objectives provide a means to continuously monitor and improve information security performance, and ensure thoughtful and structured implementation to enable optimal communication with and greatest impact across EPA. The information security requirements delineated in the plan reflect Administration, Agency, legislative and regulatory priorities.

The six goals of EPA's Information Security Program Strategic Plan include the following:

- **Goal 1** – Improve the overall information security posture to adequately assure, based on risk, the confidentiality, integrity and availability of information and information resources.
- **Goal 2** – Create an environment where all employees' actions reflect the importance of information security.
- **Goal 3** – Establish and maintain consistent policy, procedures, standards and guides to protect information and information systems from abuse and inappropriate use.
- **Goal 4** – Update and implement an information security enterprise architecture.
- **Goal 5** – Support integration of information security into EPA lines of business.
- **Goal 6** – Establish program metrics to measure information security program performance.

The EPA Information Security Program uses program functions to accomplish its goals and objectives. Figure 7-1 depicts its implementation structure. Descriptions for each function are provided in the action plan appended to the strategy.¹³

¹³ *Information Security Program Strategic Plan: FY2012 – 2017: Appendix A, U.S. EPA, February 2013*

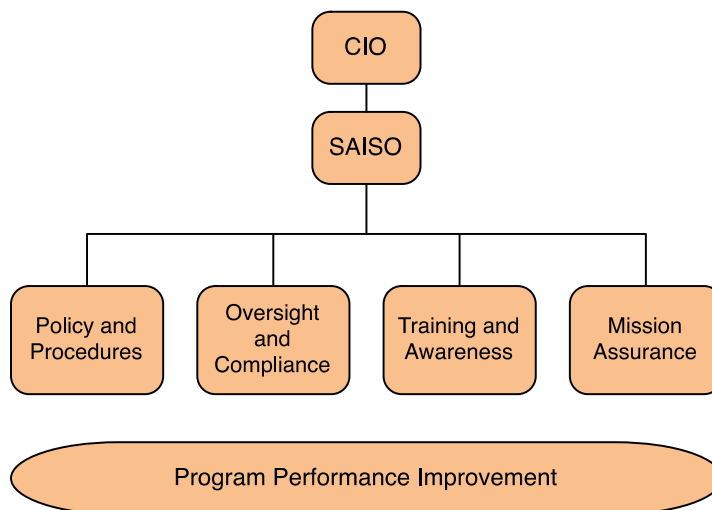


Figure 7-1: EPA Information Security Program Functional Chart

7.1 Aligning of Investments and Cybersecurity

The updated System Life Cycle Management Policy and Procedures approved in September 2012 (see Section 4.2.1) focus on both information and network security as central principles of IT management:

- *...The life cycle phases needed for an information system must be identified, planned for, and executed based on documented business requirements and federal IT security requirements.*
- *Information security considerations, activities, and documentation are performed at each phase of the SLC in accordance with Agency policies and applicable federal statutes, regulations, National Institute of Standards and Technology (NIST) guidance, and other applicable federal or agency requirements.*
- *Advancement from one SLCM phase to the next requires Enterprise Architecture, IT investment management, or information security reviews.*

EPA System Life Cycle Management (SLCM) Policy pp. 3, 4

The System Life Cycle Management (SLCM) Procedure that implements the policy similarly emphasizes security issues throughout the definition, acquisition/development, implementation, O&M and termination phases. Finally, the System Life Cycle Management (SLCM) Requirements Guidance defines numerous security-related documents, tests and risk evaluations to be conducted throughout the life cycle.

In addition, EPA's new Investment Management Reviews (see Section 5.2) focus specific attention on performance indicators of compliance with EPA security standards and on the information security issues associated with each project.

7.2 Meeting Cybersecurity Cross-Agency Priority Goals

The cross-agency goals for cybersecurity are to achieve 95 percent implementation of the Administration's priority cybersecurity capabilities by the end of FY 2014. These capabilities include strong authentication, Trusted Internet Connections (TIC) and Continuous Monitoring.

In the last two quarters of FY 2012, EPA achieved the percentage implementation shown in Figure 7-2.

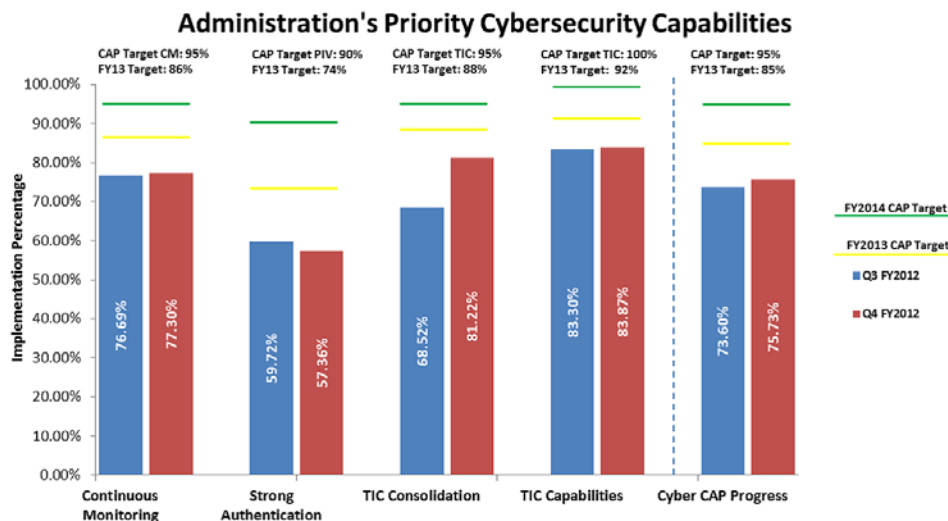


Figure 7-2: EPA FY 2012 Achievement of Cross-Agency Cybersecurity Goals

- Strong authentication: Ensure that only authorized employees have access to federal information systems by requiring a higher level of assurance through using multi-factor authentication, such as Personal Identity Verification (PIV) cards. EPA is accelerating its implementation of PIV cards to reach the 80 percent target in the fourth quarter of FY14.
- Trusted Internet Connection: Consolidate external Internet traffic and ensure a set of common security capabilities for situational awareness and enhanced monitoring. By the end of FY14, EPA expects to reach the scheduled capabilities target of 95 percent.
- Continuous Monitoring: Transform the historically static security control assessment and authorization process into an integral part of a dynamic, enterprise-wide risk management process. This change allows departments and agencies to maintain an ongoing near-real-time awareness and assessment of information security risk and rapidly respond to support organizational risk management decisions. EPA expects to obtain 60 percent to 70 percent implementation for the Cross Agency Priority (CAP) goal by the end of FY14, thereby improving its general information security posture.

7.3 COOP Plan

EPA's four primary data centers have the capability, process, procedures and capacity to efficiently store all production and development information and be able to quickly reconstitute all network IT operations in the event of a disaster. This will be achieved through data bunkering at off-site recovery services facilities. Mission critical systems can subscribe to the WCF service that will establish a separate fail-over site, establish service level agreements with the external providers and perform off-site nightly backups and bi-weekly transfer of backups to the off-site recovery services facility. This subscription service is a mature process, supported by a trained emergency response team.

The data centers also provide a non-subscription disaster recovery service that provides nightly data backup and semi-annual transfer of data to the off-site recovery services facility.

8.0 Supporting EPA's Workforce

Over the next several years, EPA will address a number of new or changing IT responsibilities, including the E-Enterprise initiative, the Geospatial Platform, continuing cyber-security responsibilities, cloud computing, mobile computing, Digital Government and response to new federal data policies that could have a direct impact to its strategic workforce planning. Any of these activities, in the current budget climate, could stress EPA's IRM management and development capabilities and workforce.

E-Enterprise alone will require a higher level of collaborative IT management and IT workforce planning than the Agency has previously undertaken. When combined, the pending initiatives will require the QIC to address comparative investment analysis, IT budget tradeoffs and project funding mechanisms across program lines. E-Enterprise and the other initiatives will require cross-program architectures for mission-related IT, inserting OEI into areas where programs traditionally have had maximum discretion. Workforce planning, retirements, hiring freezes and government salary structures all complicate EPA's ability to attract, hire and retain the IT skills these initiatives will demand.

To begin to address these needs, EPA has taken a number of actions for its employees:

- OEI has created a Talent Management Strategy to address workforce planning across its internal organization. It addresses career path development, diversity planning and workplace satisfaction. The Agency does not offer a specific approach to IT workforce development.
- EPA provides anytime, anywhere access to EPA email and collaboration tools so that staff can gain work efficiencies while working remotely, while on travel, and from any location. These services help regain previously lost staff utilization time while supporting the Agency's goal for workplace satisfaction.
- OEI has created a new employee portal, OneEPA Workplace, which replaces the Agency's intranet. OneEPA Workplace offers access to a range of employee-centric tools and information and is accessible from any location using authentication protocols.
- OEI has launched eLearning as a single training system for all employees' training needs. EPA's eLearning system is accessible from any location, 24 hours a day, and offers Agency-level required training (such as annual security awareness training), as well as a range of business efficiency training (such as how to use Microsoft Office), technical certification courses and other valuable educational opportunities.

9.0 Implementing Digital Government and Managing Information as an Asset

9.1 *Implementing the Digital Government Policy*

In 2012, EPA launched the [Digital Strategy](#) website to track progress in implementing EPA's Digital Strategy. As required, EPA has identified two existing major customer-facing services—[Regulations.gov](#) and Envirofacts—for which high-value data and content will be available to the public through Web application programming interfaces¹⁴ (API). Regulations.gov and Envirofacts are already available as APIs.

- **Regulations.gov:** [Regulations.gov](#) is the federal government-wide, online, public docket and comment system that provides public access to and the ability to comment on federal agency rulemakings (see Section 3.2.3). An API is currently available that allows government and non-government sites to more efficiently and accurately repackage and incorporate regulatory data and services from [Regulations.gov](#) into their sites. EPA is scheduled to release improvements to this API in late 2012, and a new API is in development. The new API will provide tools to feed comments into the system, giving partner agencies the ability to accept comments into eRulemaking's repository through their own websites and providing advocacy organizations with reliable tools for mass comment submission.
- **Envirofacts:** Envirofacts is EPA's premier Environmental Data Access (EF Web Tools) and Repository (EF Warehouse) Resource (see Section 9.2.5). The entire Envirofacts Warehouse has also been Service Enabled via its REST API, thus providing easily accessible and customizable Envirofacts data services for use by both EPA staff and the public for the creation of data mash-ups, application query interfaces, mobile apps and other applications uses.

EPA has met all OMB milestones in its implementation of the Digital Government Strategy and expects to continue its compliance efforts on schedule.

9.2 *Managing Information as an Asset*

9.2.1 The Strategic Data Action Plan

Following the Administration's Open Government (OpenGov) Initiative and the December 2009 OMB Open Government Directive, EPA undertook the creation of the Strategic Data Action Plan (SDAP) to establish and implement Agency processes to increase transparency and to more systematically manage and disseminate EPA information. The first iteration of the Plan was published in March 2011. Version 2.0 of the Plan is under development this year.

SDAP furthers the general goal of managing information as an asset. Its purposes include the following:

- Define EPA's plan for improving data management for transparency, collaboration and participation.
- Mature and foster consistency in the processes and procedures associated with publishing EPA data as introduced in the December 2010 Interim EPA [Data.gov](#) Guidance and Procedures.
- Identify and track the development of tools and processes to support expanded data access and usability; for example, creation of and access to EPA data in linked open data formats.

¹⁴ An application programming interface is a protocol that allows two software applications to communicate with each other. In the case of [Regulations.gov](#) and [Envirofacts](#), a public user is able to write a program that queries these systems directly, returning the information required for direct use or for use in another program, such as a mobile app.

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- Establish measures of success and the method to track and report on progress.
- Identify and explore areas of broader data management that need development or improvement.
- Pilot new approaches and address recommendations to improve standard practices.

9.2.2 EPA Enterprise Information Management Policy

EPA is developing an overarching EPA Enterprise Information Management Policy that will cover all types of EPA information, structured data (i.e., databases) and unstructured data (i.e., documents, Web, email). The Policy will be accompanied by supporting implementation procedures, consistent with EPA's IM/IT Policy Program (see Section 5.4). It will address the following:

- Treat information as a critical asset that supports the Agency's mission.
- Establish requirements for managing data over its entire life cycle.
- Establish a framework that addresses stakeholder interests in EPA information and ensures its suitability, availability and accessibility for intended use and reuse.
- Require appropriate cataloging of information and documentation with metadata.
- Ensure compliance with all applicable federal requirements.

EPA expects this Policy to be in place by the fourth quarter of FY 2014.

9.2.3 OneEPA Web Modernization Effort

Since the popularization of the Web in the mid-1990s, EPA has used public access to environmental information as a strategic asset in protecting public health and the environment. With a single point of Internet presence, centralized governance and distributed content development, EPA.gov has used templates to provide visitors a more consistent user experience. Now grown to over a million pages (HTML, PDF and other file types), EPA is transforming its Web presence to a topic-based site designed to facilitate visitors' top tasks.

In February 2010, the EPA Administrator issued a memorandum directing EPA to restructure EPA.gov to improve internal and external users' ability to locate information, avoid duplication of content, make its presentations more consistent and improve general accessibility and utility. The Administrator called for organizing information by topic or geographic area rather than by program organization, accelerating the site's treatment of emerging issues and involving the public and stakeholders in the environmental conversation.

Under the direction of the Office of External Affairs and Environmental Education and the Office of Environmental Information, content is being organized around a variety of priority topics and top audiences. EPA has published dozens of topic and geographic-based sites using the new concepts of resource directories and microsites. EPA's FY2013 Annual Web Plan identifies the almost 200 topics to be developed next. EPA's program offices collaborated to ensure coordination and non-duplication.

In early FY2013, EPA implemented a Drupal-based Web content management system (WebCMS) to support content transformation and standardize the publishing process. The system uses open source software and responsive Web design principles.

In FY 2011, EPA replaced its search engine with a Google search appliance, greatly increasing the quality of search results generated within the site and increasing user satisfaction substantially. The new WebCMS will ensure that quality metadata is associated with all Web content, further improving search results and providing the ability to create dynamically generated pages based on visitor requests.

As a part of the OneEPA Web project, EPA implemented a revised Web governance model in FY 2013 that established a Web Executive Board. The Web Executive Board is composed of senior managers and aligns with EPA's broader IT governance (see Section 5.1). A revised Web Council has representation from all EPA organizations and is the implementation body for Web policy and procedures.

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EPA continues its use of various social media tools and methods to engage audiences on environmental topics of interest. Usage statistics indicate a continuing growth of social media for public engagement.

Improvements in the Web Analytics program will provide an even better understanding of what information website visitors are looking for and using. In addition to existing traffic, quality assurance, search and customer satisfaction metrics, EPA is implementing Google Analytics across the entire website to more cost effectively assess usage patterns (see Section.4.1.2).

The goal is to fully transform the content of EPA's large website by the end of FY2014. Material that is of historic value but no longer actively maintained will reside in a searchable archive to be implemented in FY2014. The entire website will be published from the WebCMS, providing a consistent user experience and content that will be rendered appropriately regardless of the size of the viewing device.

Beginning in FY2015, EPA will explore leveraging the strengths of the Drupal-based WebCMS to support the conversion of content in legacy document repositories and Web publishing applications in technologies now in legacy status, including Lotus Notes. EPA.gov will continue to support continuity of operations and emergency response functions in addition to serving as the information access point for environmental information.

9.2.4 Integrating EPA's Data Catalogs with Their Federal Counterparts

The Environmental Dataset Gateway (EDG) is the central registry for EPA datasets and geodata. An expansion of the previous GeoData Gateway (GDG), EDG improves and simplifies how EPA creates and manages metadata for individual datasets and geospatial data. Currently the EDG and Data.gov Dataset Management System (DMS) create or provide metadata and publish resources for Data.gov and the Federal Geospatial Platform.

During the past year, EPA has updated EDG to manage collections of related datasets as a unit, facilitating search and providing substantially deeper metadata to users on the programmatic background of data collections, or "data assets", including process flow diagrams that document how the data is collected, processed, stored and made available to users.

9.2.5 Envirofacts

The Envirofacts Information Warehouse is the chief source of EPA program data available to the public, providing a textual and geographic interface into a variety of EPA programs, including air, water, Superfund and hazardous waste. Envirofacts supports 12 different EPA offices in providing reporting mechanisms and/or data resources for their applications. The Envirofacts Web-enabled search tools provide the public as well as EPA staff with a single point of access to EPA major information systems. In turn the Envirofacts Information Warehouse data repository, containing data from over 15 different environmental data system sources at EPA and beyond, supports not only the Envirofacts suite of Web tools, but also a host of other EPA applications like MyEnvironment, the suite of Enviromapper geospatial tools and mobile apps. The Envirofacts Information Warehouse data repository provides these front end applications with EPA program system data and reports. Envirofacts also offers Web services to facilitate the sharing of its functionality and information.

Envirofacts continues to focus on new opportunities to enhance its ability to provide the public and EPA staff with new information to support public access and the environmental decision making process. Envirofacts recently deployed the new Pollution Prevention (P2) tool to report on waste generation reduction as tracked by the TRI program, and has deployed Web tools and services to support Green House Gas (GHG) data dissemination in support of OAR's goal to more broadly disseminate their GHG data.

9.2.6 Library Strategy

The EPA National Library Network is composed of libraries and document repositories located in EPA's Headquarters, regional offices, field offices, research centers and specialized laboratories. In addition to professional library staff and physical collections, the Library Network supports and makes available

virtual library resources that provide Agency staff and the public with access to EPA information and library services. Using the Online Library System (OLS), EPA staff and the public can search the collections of EPA library holdings and can access full-text, digital EPA publications via the National Service Center for Environmental Publications (NSCEP) database. EPA staff has central, Intranet access to electronic journals and other premium information resources for research through the EPA Desktop Library. The Library Network supports other virtual services, including the Ask a Librarian live chat reference and desktop training opportunities delivered through the Network's National Training Program.

EPA published the *EPA National Library Network Strategic Plan FY2012-2014* in June 2011. Over the past three years EPA has made significant strides in completing the goals in the plan's four key areas—Library Network Governance; Library Services; Electronic and Physical Collections; and Communications, Outreach and Training. In FY2014 EPA will develop a follow-on strategic plan for the Library Network that will build upon these accomplishments to ensure the delivery of high quality information services and the sustainability of EPA's libraries.

9.2.7 Facility Registry Services Re-engineering

EPA's Facility Registry System (FRS) is the central repository for data relating to facilities and sites of interest to EPA. Integrating data from nearly 90 sources, it contains core reference information on locations of interest to all programs, including many state and federal partner programs:

- Regulated facilities with environmental permits.
- Cleanup areas, such as Superfund and Brownfields sites.
- Sites that emit pollution either as point sources or as area sources (e.g., animal feedlots).
- Environmental monitoring stations.

FRS also contains information on actions in progress in relation to facilities or sites, such as compliance or enforcement proceedings and inspections.

EPA is re-engineering FRS to develop APIs and automate data publishing. EPA is also improving the backend data stewardship tools and network to improve the quality and completeness of its data, eliminate data redundancy and integrate information, add the ability to identify and systematically track organizations (owners, operators, responsible parties, ultimate corporate parents, etc.), and include more complete information on the nature of environmental concerns at each location. This system is expected to be a core enterprise registry with customer services that assist with data collection, standardization and validation under the E-Enterprise initiative (see Section 4.2.1). FRS will continue to serve as a core integrator serving many Agency applications and services.

9.2.8 Promoting Reuse of EPA IT Services

EPA's Reusable Component Services (RCS) provides a centralized catalog of EPA's IT resources, including widgets, APIs, XML schemas and data flows. By registering the Agency's IT services in a centralized service, RCS promotes awareness of existing resources, thus fostering reuse for lower development cost, shorter development life cycles and higher quality of EPA systems. In addition, RCS facilitates data interoperability by making possible the discovery of data and the tools that access and exchange the data. RCS shows important associations, such as which datasets, catalogued in EDG, are associated with IT assets catalogued in RCS or systems catalogued in EPA's Registry of EPA Applications and Databases (READ).

During the next year, EPA will continue its outreach to state and tribal partners to register their IT services in RCS. The Ohio Environmental Protection Agency has already determined that all of its IT services will be catalogued in RCS as a way to promote reuse and sharing by other states and tribes.

9.2.9 Centralizing Discovery of Substances Information

EPA's Substance Registry Services (SRS) is the Agency's centralized resource for discovering information about substances that are tracked or regulated at EPA, as well as by partner organizations and other

federal agencies. It provides basic information about more than 100,000 substances, as well as which EPA program regulates each substance and the name that program uses for the substance.

EPA will redesign SRS user interface to make it more user friendly for the public, creating the Chemicals Resource Directory to support EPA's OneEPA Web. For example, one option is to provide, where available, basic health or risk information about the substance in high level, easy to understand language. A longer-term goal is for EPA programs to remove any Web pages that point to external sources for information about substances and redirect them to SRS.

9.2.10 Data Element Registry Services

The Data Element Registry Services (DERS) is EPA's catalog of data dictionaries and value lists. It enables comparison of data elements and pick-lists within and across EPA program offices, highlighting where systems collect common data elements. This comparison can occur between EPA, state and tribal systems as well. DERS includes definitions, sources, uses and valid values, and points to Data Standards that the referenced systems use.

As EPA programs transition from one contractor to another or as EPA staff change, it is important to have well-documented data dictionaries that include understandable names and definitions for data elements that can be linked to data sets. This system is expected to be a central reference for improving customer service under the E-Enterprise initiative (see Section 4.2.1).

As more system data dictionaries and value lists are added to DERS and mapped, DERS will show which data from different systems might be brought together or integrated. It encourages the adoption of common pick-lists and shows mappings across analogous pick lists. DERS's semantic mapping capabilities enable information assets to be more easily understood. EPA program offices can identify redundancies among their systems and direct modernization efforts accordingly.

9.2.11 Records Management

EPA's records management program and services operate under the authority of the Federal Records Act (44 U.S.C. 31), Management of Federal Information Resources (OMB Circular A-130), Managing Government Records Directive (OMB/NARA M-12-18) and EPA Records Management Policy (CIO 2155.1). They are a critical component of the Greening EPA effort to reduce the environmental impact of the Agency's operations.

The National Records Management Program provides leadership and direction for the Agency's records management activities, developing strategies, policies, procedures and standards, as well as training, guidance and best practices. Its core purpose is to use EPA's records and information assets to increase productivity, reduce costs and meet legal requirements in service to the Agency's mission and strategic goals.

9.3 Ensuring Information Privacy

EPA does not maintain any data that is subject to national security classification, but the EPA mission requires the Agency to manage a wide range of data subject to sensitivity restrictions. In addition to protecting the personally identifiable information (PII) of its staff and consultants, EPA manages a wide range of Controlled Unclassified Information (CUI) associated with its mission, examples of which are shown in Table 9-1 below.

Table 9-1: Examples of EPA Programmatic PII and CUI Information

PII	CUI
<ul style="list-style-type: none"> Personal information associated with sites subject to cleanup and reuse program (Superfund, Brownfields, underground tanks) Personal information associated with legal actions against individuals, including criminal proceedings 	<ul style="list-style-type: none"> Confidential Business Information (CBI) associated with a variety of programs, such as engine testing, chemical or pesticides registration and licensing, greenhouse gas emissions, or air or water permits. Deliberative Process Privilege information created

PII	CUI
<ul style="list-style-type: none"> • Person information associated with subjects of scientific research studies or exposure assessments • Personal information associated with emergency response actions affecting individuals' health, property, or environmental liabilities • Personal information associated with hiring procedures 	<p>during the Agency's internal decision-making process</p> <ul style="list-style-type: none"> • Law Enforcement Sensitive information related to an ongoing investigation or administrative judicial enforcement proceeding • Critical Infrastructure associated with physical assets or virtual systems • Attorney Privilege information related to proceedings in judicial or quasi-judicial settings

9.3.1 Protection of CUI

Following a request from the Deputy CIO, EPA has initiated the first stages of a consolidated program review and plan for managing the Controlled Unclassified Information (CUI), currently known as Sensitive but Unclassified (SBU) and For Official Use Only (FOUO) information. CUI is the broad umbrella that will encompass PII, CBI, FOUO and all other SBU designations. This effort will involve the Senior Agency Information Security Officer (SAISO), the Agency staff from the OEI Office of Technology Operations and Planning as well as program office IT staff and the Office of Policy.

Main areas of uncertainty include the following questions:

- What are the specific roles and responsibilities of various EPA parties in response to security breaches?
- How do these roles and responsibilities change if the exposure of CUI information is incidental to the breach, not the object of the breach?

Over the next two years, EPA will bring key parties together to answer such questions and establish a comprehensive program that organizes all current formal and ad hoc policies and procedures, interests and law enforcement considerations. EPA must then codify an approach to create new CUI procedures and SOPs and develop and manage supporting training for staff throughout the Agency.

9.3.2 Protection of PII

EPA complies with the requirements of NIST Special Publication 800-53 Appendix J. Required privacy controls are integrated into all systems that require them.

EPA's internal Privacy Policy was issued in September 2007. It requires EPA to gather PII only to the extent necessary to accomplish official EPA business, administrative functions, regulatory or statutory requirements, or OMB or Homeland Security Directives. The Agency imposes more separate and more stringent requirements for the management of Sensitive PII (SPII). SPII includes social security numbers, financial or medical information, and any other information that could lead to identity theft.

To carry out this policy, the Agency conducts a variety of training programs, including orientation training for all new employees, managers' training for matters of staff management and specialized training for staff engaged in specific functions such as Human Resources management or enforcement.

EPA also conducts proactive onsite reviews of all IT systems that contain PII to ensure that general policies are carried out at the application level. Through its 23 Liaison Privacy Officials (LPOs), appointed for all EPA Headquarters and regional offices, systems are evaluated to ensure that only essential PII information is gathered and stored and that PII is consolidated, combined and eliminated as necessary to ensure continued minimal compliance.

EPA is updating its Privacy Policy and its supporting Procedure to address emerging issues:

- **Bring Your Own Device (BYOD):** Considerations for allowing employees to use their own personal devices, generally mobile computing devices and smartphones, during the course of EPA business, such as through telework.

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- **Social media:** Privacy issues related to the use of social media in the conduct of Agency business. EPA already has a social media policy and extensive supporting Procedures and Guidance.
- **Cloud computing:** Privacy issue relating to hosting PII information in the cloud. EPA's current implementation of Microsoft Office 365 email services is an example.

These revisions are expected to be complete by the end of calendar year 2014.

10.0 Commodity IT and Shared Services

10.1 *Maturing the IT Portfolio*

10.1.1 Optimizing IT Infrastructure

EPA's IT infrastructure includes the following:

- User Environment.
- Application Technologies.
- Data Technologies.
- Hosting Platforms.
- Networks/Telecommunications.
- Technology Management.

The Agency has applied several strategies to enhance the management of this infrastructure:

- **Implement robust architecture:** EPA is transitioning its information technology infrastructure to a standards-based, open system environment.
- **Ensure compatibility with the Technical Reference Model:** Every project adheres to current and planned EPA information technology standards as defined in the IT Standards Profile. The EPA Technical Reference Model (TRM) defines a comprehensive set of information technology standards, services, interfaces, supporting data formats and protocols.
- **Implement robust system and network operations:** EPA has implemented automated system and network management operations, with effective backup and recovery mechanisms.
- **Implement a comprehensive end user computing support environment:** EPA provides a responsive Service Desk, highly capable desktop workstations, remote diagnosis and repair of software problems, quick resolution of hardware problems and reliable network service.
- **Implement appropriate infrastructure security mechanisms:** EPA provides infrastructure security services with responsibility for external and internal access, disaster recovery and incident responses.

In addition to the above approaches, EPA emphasizes the shift towards cloud computing, virtualization and service orientation. One of the most significant factors impacting the Agency's target architecture is the adoption of cloud computing. Cloud computing presents a paradigm shift that will alter how EPA plans, develops, acquires and delivers IT services. Consistent with OMB's cloud strategy, EPA emphasizes using commercial and private government cloud technologies where feasible as the primary platform for delivering IT services.

To further the optimization of the IT infrastructure across the National Computer Center (NCC), OEI has completed the following projects designed to optimize operations and promote effective resource utilization to maintain the IT infrastructure.

Table 10-1: Optimization Work-to-Date

Optimization Project	Description
Cloud Hosting Services	EPA's Office of Environmental Information (OEI) is leading the Agency's efforts to provide cloud computing and its benefits to EPA. The Office of Technology Operations and Planning (OTOP) will manage Agency efforts to establish enterprise cloud services to support custom-developed applications, collaboration and platforms environments.

Optimization Project	Description
Data Center Consolidation	Consolidated IT infrastructure from the program offices located in EPA's Research Triangle Park (RTP) campus into the Agency's primary data center at the NCC. Maximized reclaimed real estate from IT efficiencies implemented through virtualization and computer room decommissioning in 2012.
Server Virtualization	Virtualization is already used extensively to support database hosting, and EPA is expanding virtualization to support Web and application servers. The Agency completed a phased virtualization program across its primary data center that included optimizing the efficient use of floor space and turning off air handlers. EPA is hosting more than 200 individual Agency business applications in an innovative, shared hosting environment offering many of the features of private cloud services.
E-Enterprise	A significant component of the E-Enterprise proposal for FY 2014 is the use of centralized IT standards and services to streamline information transactions with regulated entities and delegated partners, reduce regulatory burden and save IT costs over time. The centralized services will have an impact across the Agency, and the planning and implementation of the services will require coordination throughout OEI.

10.1.2 Rationalize Applications

The Chief Architect (CA) launched a new architecture review initiative wherein Project Managers of CPIC Major and selected CPIC Medium IT investments were engaged to review and provide guidance regarding their application development, enhancement, deployment and/or retirement plans. These CA architecture reviews have provided valuable information about changing business needs, emerging technology requirements and potential performance gaps in EPA's target architecture. Several investment owners also identified specific unmet business needs that the EA Program and CA could help them address.

One of the CA's focus areas of interest is that the continued use of EPA's IT Investments are justified in terms of business value, costs, functionality and technology. The decision to replace, retire or re-platform an IT Investment is based on the cost, risk and value associated with the IT Investment. In support of this justification or rationalization effort, the CA collects the data required to determine the IT Investment's business value during the CA Review. The data needed to determine the business value of a CPIC Major IT Investment includes the following:

- Is this a redundant IT Investment?
- What does it costs to operate and maintain the IT Investment?
- Does the IT Investment conform to EPA's IT Standards Profile?
- Does the IT Investment continue to provide the capability and flexibility required by the program office?
- Are the users satisfied with the performance and benefits of the IT Investment?

In 2013, the CA aligned the EA review process with EPA's IRM Plan and OMB's current requirements. To accomplish this, the CA has broadened the IT Investment review process to include not just the CPIC Major investments but the entire IT Investment Portfolio of each program office. This change in focus of selecting IT Investments for CA review will help identify opportunities for synergy, increasing efficiency and reducing duplication of resources.

10.1.3 Service Oriented Architecture

EPA is modernizing its service delivery capability with the integration of a Service Oriented Architecture (SOA). The CA collaborates with the Investment Owners to review and provide guidance with the

adoption and implementation of SOA components. As an example, the Superfund Enterprise Management System (SEMS) IT Investment has integrated an Oracle Enterprise Service Bus into its computing platform.

The CA has worked to ensure that the IT Standards Profile is updated to reflect the Agency's move toward service orientation. EPA is implementing a complete, open, integrated SOA platform that is based on industry standards. This SOA suite of tools includes the following components:

- Enterprise Service Bus (ESB).
- Business Process Management (BPM) Suite.
- Rules Engine.
- Enterprise Repository and Service Registry.

The SOA Suite provides a comprehensive set of capabilities for an agile and flexible platform that allows EPA program offices to react quickly to new business requirements and improve productivity.

The CA will continue to promote the adoption of SOA across the mission-critical business segments.

10.1.4 Data Center Consolidation

Since 2007, EPA has led a series of successful initiatives embracing data center consolidation, industry best management practices and virtualization across its data centers. Between 2008 and 2011, EPA consolidated small data centers and server rooms in various locations across the country with plans to gain more efficiencies.

EPA is a physically decentralized organization with 25 major facilities, including EPA Headquarters (DC Metro Area), EPA Research Triangle Park (RTP) research center, 10 EPA regional offices and 13 major research centers. The remaining facilities are smaller field offices and continuity of operations (COOP) sites. When the data consolidation effort started, 78 data centers and server rooms were located in 66 buildings across 48 cities in 31 states and territories.

EPA's consolidation strategy, issued in September 2011, designated a goal of four data centers for hosting all enterprise applications: The primary the EPA National Computer Center (NCC) located in Research Triangle Park, NC, and centers in Washington, DC; Denver, CO; and Chicago, IL.

Other goals of the consolidation strategy included the following:

- Establish enterprise public cloud services for EPA applications using approved cloud providers under General Services Administration (GSA) contracts.
- Consolidate servers from 78 campus level server rooms to 53 rooms by 2015. EPA's major campuses will have a medium-sized server room and other locations will have at least one small server room.
- Standardize and maximize server virtualization across EPA data centers to reduce the number of physical servers by approximately 50 percent and achieve a target of 1,000 physical servers by 2015.
- Align server replacement with consolidation activities.
- Establish service level agreements, operating level agreements and performance standards to deliver server room and data center services reliably.
- Refine standards for backup and disaster recovery (DR) capabilities supporting continuity of operations and emergency response capabilities.
- Incorporate green IT approaches across Agency data centers and server rooms to maximize data center and server room energy efficiency.

10.2 Reinvestment of Savings

EPA's approach to savings is a total cost approach founded in a continuous effort to expand shared services and standardization across the EPA's IT infrastructure and operations activities. These activities span data center operations, end-user desktop and productivity tools, and FISMA compliance and are included in the EPA's OMB Exhibit 300 for Technology Infrastructure Modernization (TIM).

The EPA's approach is designed to meet the need for increased capacity and capability within a flat budget incremented only for standard inflation factors. This results in ongoing cost avoidance.

The Agency will seek additional efficiencies beyond those already achieved through implementing competitive multiple award contracting vehicles, IT infrastructure optimization activities and the strategic procurement of commodity IT across the enterprise, however some services will be reduced.

Reduction to the planned spending for the Technology Infrastructure Modernization investment is \$12M.

The projected reduction will be used for two new initiatives: E-Enterprise and E-Manifest.

- **E-Enterprise**

E-Enterprise is a partnership of environmental regulators (partners) committed to improving environmental protection and reducing burden on EPA's regulated community. This portion of the project will modernize the delivery of environmental services to industry and the public by creating an interactive set of shared services for use by Agency and state data systems. Reporting, data sharing and access to cloud computing will be improved, building on the Agency's successful network exchange model.

- **E-Manifest**

This newly legislated initiative aligns with the E-Enterprise model to modernize business processes and reduce burden on EPA's regulated community. This system will enable the regulated community to prepare, manage and submit manifests for hazardous waste transport electronically.

10.3 Maximizing the Use of Shared Services

EPA has identified 20 Commodity IT Shared Services in response to an EPA initiative to increase return on investment, eliminate waste and duplication, and improve the effectiveness of IT solutions.

The Shared Services plan was developed utilizing the guidance provided by OMB's IT Shared Services Strategy. All of the identified Shared Services are detailed further to provide status of the associated migration project, resource adjustments reflected in future architecture and resource adjustments reflected in Agency's Enterprise Architecture (EA) Transition Plan.

EPA has developed a Shared Services approach that supports the Agency's effort to promote and maximize the use of inter- and intra-agency shared services. This approach has three components—Define, Select and Implement—that are designed to identify and evaluate the Agency's IT investments for migration to a shared services model.

The first component of the strategy is the Define process. This process involves identifying and classifying the IT Investments that provide capabilities that can be better satisfied using a shared service. The second component of the strategy is the Select process. This involves selecting IT Investments for implementing as a shared service. It requires performing an alternatives analysis and a cost benefit analysis. The third component of the strategy is the Implement process. This process involves ensuring a funding strategy, putting in place cost recovery mechanisms and communicating the transition to the user community.

Using this approach, EPA has developed Inter- and Intra-agency Shared Services that continue to mature and increase in use across the Agency. EPA's Shared Services are categorized and listed in Table 10-2 below. These Shared Services are used across EPA's CPIC Majors, Non Major and Lite investments. EPA's Shared Services Strategy provides an approach to expand the use of these shared services. This allows EPA to achieve operational efficiencies and cost reduction across its IT portfolio.

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In response to requests from OMB, EPA has identified four areas to move to a Shared Services delivery model across the Agency. These four areas are described in detail in the Enterprise Roadmap.

Table 10-2: Categories of Inter- and Intra-Agency Shared Services

Shared Service Name	EPA IT Investment Name	Commodity IT Area	Current State	Future Plans (2013-2017)
Strategic Sourcing	N/A	Business Systems	The RFQ was submitted to GSA eBuy on February 13, 2013.	Vendor responses are due March 14, 2013. Award is expected by April 1, 2013.
Managed Print Services	Technology Infrastructure Modernization (TIM)	Business Systems	EPA has issued an RFQ for HQ printing, toners and maintenance services.	
Email	TIM	Enterprise IT Systems	Consolidated all Agency Emails into one under My Workplace project.	Roll-out additional features and training for users in FY13 and FY14.
Collaboration	TIM	Enterprise IT Systems	Consolidating all Agency Collaboration tools into one under My Workplace project.	Roll-out additional features and training for users in FY13 and FY14.
Identity and Access Management	TIM	Enterprise IT Systems	The Enterprise Identity and Access Management is Logical access control, the use of the card for authentication.	Phase I – Baseline Infrastructure (FY12) Phase II – Logical Access Implementation (FY 13-15) Phase III – Modernization (FY16-18)
IT Security	TIM	Enterprise IT Systems	The IT Security is provided under WCF services across the Agency.	Continue to optimize the tools and their services. Implement enhanced continuous monitoring capability per Agency and federal policy.
Web Hosting /Infrastructure	TIM	Enterprise IT Systems	EPA awarded a contract for enterprise cloud services under GSA's IaaS Bulk Purchase Agreement.	With this contract in place EPA is evaluating application hosted with EPA for cost effective migration to this cloud service.
Desktop Systems	TIM	IT Infrastructure	EPA is consolidating all Agency desktop systems under a new contract, EZ Tech.	The desktops will be rolled out to Headquarters in FY14.
Mobile Devices	TIM	IT Infrastructure	EPA buys all mobile devices through WCF and has one contract with each of it vendors.	EPA will evaluate the results of the pilots and develop a strategy to roll out standard Tablets.
Mainframe and Servers	TIM	IT Infrastructure	EPA has consolidated more than 200 individual Agency business applications to four primary data centers.	EPA plans to establish private cloud services for enterprise applications hosting within the four data centers.
Telecommunications	TIM	IT Infrastructure	EPA's wide area network and Internet connection services are managed centrally through the NCC,	EPA will continue to provide the WCF Service and respond to technology advances and user

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			utilizing GSA Networkx cloud services.	requirements.
Financial Management	Financial Replacement System (FinRS)	Business Systems	Core financial system completed.	Time & Attendance Payroll Migration
Grants Management	Integrated Grants Management System (IGMS)	Business Systems	EPA decided to maintain its Grants system until the Agency completed the upgrade of its financial and human resources systems.	EPA will explore options once migrations are completed in 2015.
Disaster Recovery	Working Capital Fund (WCF)	IT Infrastructure	Protection and recovery of critical applications is provided in the case of a disaster	Continue to provide this WCF Service and expand based on user requirements
Records Management	Content Management and Discovery Services (CMDS)	IT Infrastructure	CMDS is a WCF Service that comprises the technologies and tools to collect, process, maintain, preserve, search, retrieve, and access Agency records and other electronically stored information (ESI).	CMDS is developing a solution to capture electronic records from EPA's new email and collaboration systems; and will continue to provide eDiscovery services to the Agency.
CDX	Central Data Exchange	IT Infrastructure	The Central Data Exchange (CDX) enables fast, efficient and more accurate environmental data submissions.	CDX continually undergoes improvement to its various registration and submission services.
Geospatial	Geo Platform	Enterprise IT Systems	Provide enterprise capabilities to allow users to visualize and analyze environmental data to enhance decision making	Geo Platform is exploring cloud computing platforms
Registries	SoR	IT Infrastructure	The seven registries are a centralized service for improving data quality, increasing public discovery and access to EPA information, and enabling integration across programs	Improve integration of Facility Registry and Substance Registry into programmatic operations; increase reliance of Reusable Component Services (RCS) to reduce duplicative development
Regulations.gov	E-Rulemaking	Business Systems	EPA is the lead agency in the design, development and implementation of eRulemaking throughout the federal government.	Identify partner agencies which can/will benefit from expanded utilization of Regulations.gov APIs.
FOIAonline	FOIAXpress	Business Systems	FOIAonline allows the public to electronically submit FOIA requests, modify requests and follow all subsequent disposition of requests.	Identify best practices in storage and cloud hosting refresh.

11.0 Ensuring Accessibility

11.1 Supporting a Diverse Workforce

EPA is committed to providing equal employment opportunity for all employees and applicants for employment based on merit, without regard to race, sex, color, national origin, religion, age, sexual orientation, parental status or disability.

EPA's Office of Civil Rights (OCR) in the Office of the Administrator (AO) provides leadership, direction and guidance in carrying out the Agency's equal employment programs. OCR provides policy and technical assistance to EPA's Headquarters offices, regional offices and laboratories located throughout the country in carrying out their responsibilities related to civil rights and in complying with Equal Employment Opportunity (EEO) laws and regulations.

IT supports all employees in carrying out their duties and conducting their work. IT systems must therefore be accessible to all employees at all times. Since most EPA systems predate today's level of accessibility technology, not only must new systems be accessible, older systems must be upgraded over the system life cycle to achieve higher levels of accessibility compliant with EPA policies, procedures and standards.

The next two sections discuss key elements of this obligation: integrating accessibility considerations into the System Life Cycle Management (SLCM) process and integrating Section 508 requirements into all systems.

11.2 Integrating Accessibility into IT through Section 508

To ensure that all IT systems are accessible to all users, with and without disabilities, the Office of Environmental Information (OEI) and the Office of Civil Rights (OCR) formed the Section 508 Executive Council in 2012. The Council's mission is to improve Section 508 compliance across the Agency by fostering more executive management level involvement. The Council launched a general re-evaluation of its Section 508 responsibilities under the Rehabilitation Act of 1998 to create a more robust EPA policy.

In addition to the Executive Council, OEI serves as the overall lead for the Section 508 Program at EPA. The Section 508 Coordinator and Assistant Coordinator provide training and consultation on 508 for EPA employees, and provide support to the Executive Council.

The Council, composed of Senior Executives and managers from regional and program offices, formed five workgroups that focus on key areas of Agency 508 needs and support: Policy, Procurement and Grants, Testing, Program Assurance, and Training and Outreach. These workgroups are responsible for creating the policies, procedures and programs for integrating accessibility into IT and are discussed below.

11.2.1 Section 508 Executive Council

The Section 508 Executive Council meets monthly to discuss and resolve Section 508 issues at EPA. The Executive Council directs actions to the various workgroups for further investigation and development before making recommendations to the CIO.

11.2.2 Section 508 Policy Workgroup

The Section 508 Policy Workgroup is charged with revising the Agency's Section 508 policy and developing a governance charter for the Section 508 Executive Council. The Workgroup coordinates with all other 508 workgroups to make sure that their input and roles are included in the 508 policy.

The Policy Workgroup is currently reviewing and writing a new Agency Section 508 policy, which addresses the following:

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- Expands the roles and responsibilities across the Agency for Section 508 and codifies the Section 508 Executive Council and its workgroups.
- Sets forth the expectations and integral role of Section 508 in the Agency's activities, including testing, verification and a greater accountability for 508 compliance.
- Includes procedures for approval and testing of electronic and information technology (EIT).

Future/Planned Work: The Policy Workgroup will continue to shepherd the draft policy and procedures through the Agency's policy process.

11.2.3 Procurements and Grants Workgroup

The Procurements and Grants Workgroup has worked closely with the Office of Acquisition Management (OAM) to implement the following:

- EPA Acquisition Regulation (EPAAR) Clause 1552.211-79 Compliance with EPA Policies for Information Resource Management was updated to include additional language and guidance emphasizing accessibility.
- Clarification of EPA grants language to ensure that accessibility considerations are included in the grants process.

Future/Planned Work: OAM is working with OEI to develop more usable Section 508 training for contracting officers and contract specialists. Training modules will incorporate EPA-specific business processes. OAM has also appointed a dedicated Section 508 liaison to work with OEI. Activities will include serving on EPA's Section 508 Testing Workgroup, developing and delivering Section 508 training to the contracting community and writing requirements documents for testing agency-wide electronic and information technology for Section 508 compliance.

11.2.4 Testing Workgroup

The Testing Workgroup is developing a testing and approvals Procedure to accompany the draft 508 Policy. To help shape the Procedure, the workgroup conducted site visits with the U.S. Department of Education, the U.S. Department of Veterans Affairs, the U.S. Internal Revenue Service and the U.S. Department of Homeland Security to learn how these agencies test their electronic and information technology for Section 508 compliance.

Future/Planned Work: The Testing Workgroup will develop an agency-wide standard operating procedure that EPA employees can follow to approve and test electronic information technology for Section 508 compliance. The Testing Workgroup will also develop a form that information resource managers can use as a guide to determine when they should test software for Section 508 compliance.

11.2.5 Program Assurance Workgroup

In January 2013, the White House and OMB issued the Strategic Plan for Improving Management of Section 508 of the Rehabilitation Act. Within the Strategic Plan are requirements for each agency to complete Section 508 assessments. The Program Assurance Workgroup is developing the metrics and measures that EPA can use to assess the Section 508 Program.

Future/Planned Work: The Program Assurance Workgroup will continue to work on the planned assessments and complete the associated OMB Strategic Report requirements.

11.2.6 Training and Outreach Workgroup

The Training and Outreach Workgroup provides training and improves outreach efforts for the Section 508 Program and the Section 508 Executive Council's work. It has addressed the following:

- Expanded outreach materials and events including a new 508 Intranet site, outreach materials such as the "Think 508 First" brochure, and October Disability Employment Awareness Month activities.

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- Begun examining what trainings are or have been offered at EPA regarding Section 508 and is developing recommendations on trainings that may be required for EPA employees.

Future/Planned Work: This workgroup will explore required and recommended trainings for EPA employees. It will also work with Region 4 staff to develop a possible required Disability Awareness training that will cover a range of accessibility topics including Section 508.

11.2.7 Other Section 508 Program and Disability Work at the Agency

The Section 508 Coordinator and the Reasonable Accommodations Coordinator have partnered to provide a joint Section 508 and Reasonable Accommodations training for employees and a separate training for managers in all the regional offices during calendar year 2013. These trainings were announced in an Agency-wide Optical Character Recognition (OCR) memo.¹⁵

EPA is committed to building and sustaining a model EEO program. The [Management Directive 715 Report for 2011](#) is the most recent report on how EPA strives to eliminate any barriers to equal employment opportunity to accomplish its mission by attracting and retaining a highly qualified and diverse workforce.

¹⁵ Optical character recognition refers to software that can read hard copy documents and convert them into computer readable form, from which they can then be spoken out loud using text-to-speech software.

12.0 APPENDICES

Appendix 1: EPA Strategic Goals Mapped to the Enterprise Architecture

The following table provides a mapping of EPA Strategic Goals to the EPA Enterprise Architecture Segments illustrated in found in Section 3 of the text.

The five EPA Strategic Goals map to corresponding EA segment architectures; the EA Segment Architecture, however, also includes Emergency Management as a separate EA Core Mission Segment. This is to ensure that all emergency response systems are treated as a coherent, operational whole across programs and across the primary mission Strategic Goals.

The five cross-cutting fundamental strategies and the EA cross-cutting mission support segments are listed after the Core Mission Architecture Segments. Relationships between the EA and these cross-cutting strategies are more complex, with less direct overlap.

For each architecture segment, Table A-1 documents the principal IT systems included. Descriptions of specific systems are found in Appendix 2. The Enterprise Roadmap provides more details of the CPIC major systems supporting the EPA Strategic Goals.

EPA STRATEGIC GOAL	EA Segment Name	Business Description	IT Mission Systems (see Appendix 2 for descriptions)
	CORE MISSION ARCHITECTURE SEGMENTS		
1. Taking action on Climate Change and Improving Air Quality	Air Quality Management and Climate Change	The Air Quality Management and Climate Change segment is responsible for EPA activities that ensure that American communities and ecosystems will be safe from harmful levels of air pollution and the effects of climate change.	AQS, AQS DataMart, CAMDBS, EIS, EV-GHG, GHG-MRR, iStar, RadNet, Verify ----- Cross-Program----- CDX, SoR, FRS, GeoPlatform, Regulations.gov , eRegulations
2. Protecting America's Waters	Water Quality Management	The Water Quality Management segment includes all activities that promote the effective use and management of the nation's water resources.	ATTAINS, BASINS, CWNS, DWINS, eBEACHES, GRTS, GSIS CO2, PRAWN, RAD, SDWARS, SDWIS, SDWISNG, STORET, UIC ----- Cross-Program----- CDX, SoR, FRS, GeoPlatform, Regulations.gov , eDocket
3. Cleaning Up Communities and Advancing Sustainable Development	Land Quality Management	The Land Quality Management Segment includes all functions required to address land quality protection, monitoring and revitalization, and protect Americans from the harmful effects of land pollution.	ACRES, eManifest, EMP, SEMS, SRMP, WebEOC ----- Cross-Program----- CDX, SoR, FRS, GeoPlatform, Regulations.gov , eDocket

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EPA STRATEGIC GOAL	EA Segment Name	Business Description	IT Mission Systems (see Appendix 2 for descriptions)
4. Ensuring the Safety of Chemicals and Preventing Pollution	Substance Management	The Substance Management segment is responsible for all activities that manage the risks of substances introduced into the environment as commercial products.	AIRNOW, FLPP, MTS, PRISM, TRIPS ----- Cross-Program----- CDX, SoR, FRS, GeoPlatform, Regulations.gov , eDocket
5. Enforcing Environmental Laws	Enforcement & Compliance Assurance	The Enforcement and Compliance segment seeks to support regulated entities in voluntarily complying with environmental standards, permits, licenses, protocols or other requirements promulgated under EPA authority. It is also responsible for all activities to enforce compliance with Agency regulations through legal means, including criminal investigations and prosecutions.	AFS, DCFUEL, ICIS, IDEA, PCS ----- Cross-Program----- CDX, SoR, FRS, GeoPlatform, Regulations.gov , eDocket
Goals 1, 2, 3, 4, 5	Emergency Management <i>(Not called out separately in the FY 2012 – 2015 Strategic Plan)</i>	The Emergency Management segment is responsible for all immediate actions taken to prepare for, prevent, and respond to disasters.	EMP, SRMP, WebEOC, and EPA.gov ----- Cross-Program----- FRS, GeoPlatform
CROSS-CUTTING FUNDAMENTAL STRATEGIES	CROSS-CUTTING MISSION-SUPPORT-RELATED ARCHITECTURE SEGMENTS		
Advancing Science, Research, and Technological Innovation	Research & Science	The Research and Science segment is responsible for all environmental activities whose goal is the creation of new scientific and/or technological knowledge.	Science Connector (Portal), EIMS
Goals 1, 2, 3, 4, 5	Geospatial Service <i>(Not called out separately in the FY 2012 – 2015 Strategic Plan)</i>	The Geospatial Services segment includes all activities to support and enhance the use of geospatial data, services, strategic planning, enterprise policy development and tools to support decision-making. It ties directly to the federal-wide GeoPlatform business case managed by DOI, and supports Federal Geographic Data Committee (FGDC) framework activities.	GeoPlatform, FRS

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EPA STRATEGIC GOAL	EA Segment Name	Business Description	IT Mission Systems (see Appendix 2 for descriptions)
Goals 1, 2, 3, 4, 5	Information Sharing <i>(Not called out separately in the FY 2012 – 2015 Strategic Plan)</i>	The Information Sharing segment refers to any method or function, for a given business area, facilitating: data being received in a usable medium by one or more departments or agencies as provided by a separate department or agency or other entity; and data being provided, disseminated, or otherwise made available or accessible by one department or agency for use by one or more separate departments or agencies, or other entities, as appropriate.	CDX, SoR, FRS, Envirofacts, OneEPA Web
Expanding the Conversation on Environmentalism	<i>(Not an EA segment architecture)</i>	Supported by: <ul style="list-style-type: none"> • Information Sharing EA Segment • OneEPAWeb initiative • eRegulation, eDockets initiatives 	OneEPA Web, eRegulation, eDiscovery, FOIA online
Working for Environmental Justice and Children's Health	<i>(Not an EA segment architecture)</i>	Supported by: <ul style="list-style-type: none"> • OEI Environmental Justice Program (p.) • Administrator's Children's Health Initiative 	GeoPlatform, EJ analytic tools, Children's Health Air Toxics Network, eDiscovery
Strengthening State, Tribal and International Partnerships	<i>(Not an EA segment architecture)</i>	Supported by: <ul style="list-style-type: none"> • Information Sharing EA Segment 	CDX, OneEPA Web, EPA Portal
Strengthening the EPA's Work Force and Capabilities	<i>(Not an EA segment architecture)</i>	Supported by: <ul style="list-style-type: none"> • OEI Talent Management Strategy 	EZ Tech, My Workplace

Appendix 2: Descriptions of Principal IT Systems Supporting Core Mission Goals

Program / Program Office	CPIC investment name (investments included in BY13 Exhibit 53)	Description
Goal 1: Taking Action on Climate Change and Improving Air Quality		
Clean Air Markets/ OAR	Clean Air Markets Division Business System (CAMDBS)	Manages the market-based emissions trading program.
Ambient Air Quality/OAR	Air Quality Subsystem (AQS)	Contains ambient air quality measurements of criteria and toxic air pollutants and descriptive information about the locations where the ambient air quality data are collected.
Ambient Air Quality/OAR	AQS DataMart	Provides external access to the most commonly used air quality measurements collected by EPA.
National Mission Inventory/OAR	Emission Inventory System (EIS)	Being developed to replace the current National Emissions Inventory (NEI) system. EIS will be the sole national-level repository for data about sources that emit criteria air pollutants and their precursors, and hazardous air pollutants.
Radiation Program/OAR	RadNet	RadNet was previously known as the Environmental Radiation Ambient Monitoring System (ERAMS), which was also operated by EPA's Office of Radiation and Indoor Air (ORIA). RadNet has been in continuous operation since its inception at EPA in 1973.
Green House Gas Reporting Program/OAR	EV-GHG	EV-GHG will be a web database application system that will support new reporting requirements for mobile source Greenhouse Gas Implementation for engines and vehicles.
Green House Gas Reporting Program/OAR	Greenhouse Gas - Mandatory Reporting Rule (GHG-MRR) Data System	The GHG-MRR Data System will support the reporting of greenhouse gas emissions to the U.S. EPA under a rulemaking funded by the FY08 Omnibus Appropriations, signed December 26, 2007. In the Act, Congress directed the EPA to develop and publish a final rule not later than 18 months after the date of enactment, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy.
Energy Star/ OAR	Integrated Strategic Tracking and Recruiting (iStar)	Tracks and monitors overall progress of participants in voluntary climate programs; evaluates energy saving upgrades for energy savings and pollution prevention.
Mobile Source Program/OAR	Verify - Vehicles and Engines Information System	Verify is a consolidated database application system to support the vehicle and engines emissions and fuel economy activities.
FRS/OEI	Facility Registry Service (FRS)	FRS directly supports Climate Change initiatives by providing a mechanism for registering, tracking and managing locational data on GHG reporter facilities under the Mandatory Reporting Rule, as well as other air-emissions facilities, via REST API for front-end lookup as well as back-end cross-program integration of air emissions facilities. Additionally, FRS directly supports Air Quality Improvement initiatives by integrating and improving locational data for air monitors and facilities impacting air quality across a number of Office of Air and OECA programs. High quality locational data helps toward improving analysis and assessment.

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Program / Program Office	CPIC investment name (investments included in BY13 Exhibit 53)	Description
Goal 2: Protecting America's Waters		
Water Quality Management Program/OW	Storage Retrieval Information System (STORET)	EPA's repository for water quality monitoring data in support of Clean Water Act and Safe Drinking Water Act regulations. This data is generated nationwide and sent to EPA by other federal agencies (e.g., Department of Interior's National Park Service and the U.S. Geological Survey).
Water Quality Management Program/OW	Better Assessment Science Integration Point and Nonpoint Sources (BASINS)	BASINS provides desktop GIS capabilities for analysis of water quality issues and TMDL development.
Water Quality Management Program/OW	Clean Watersheds Needs Survey (CWNS)	Stores information about Publicly Owned Treatment Works (POTWs), Storm Water (SW) management programs, and Nonpoint Source (NPS) pollution control programs and projects that are eligible for funding under Clean Water State Revolving Funds.
Water Quality Management Program/OW	Assessment Total Maximum Daily Loads Tracking And Implementation System (ATTAINS)	OW/HQ and EPA Regions use this management reporting tool for TMDL status and overall production. It provides a national picture of many aspects of the TMDL program and stores and tracks water assessment decisions.
Water Quality Management Program/OW	Electronic Beaches Environmental Assessment and Coastal Health (eBEACHES)	eBeaches is the electronic data transmission system that allows EPA to instantaneously and securely receive and display state beach water quality and swimming advisory data as soon as state and local agencies send the data.
Water Quality Management Program/OW	National Hydrography Dataset (NHD)/Reach Address Database (RAD)	A geographic database that interconnects and uniquely identifies the stream segments or "reaches" that comprise the nation's surface water drainage system serving as a framework for integrating water databases.
Water Quality Management Program/OW	Program tracking, Advisories, Water quality standards, and Nutrients (PRAWN)	PRAWN is the OST Program Tracking database designed to store information on beaches, water quality standards, and nutrients. PRAWN specifically supports EPA Beach Program by storing national information on beach advisories and closings.
Water Quality Management Program/OW	Grants Reporting and Tracking System (GRTS)	The Grants Reporting and Tracking System (GRTS) is the primary tool for management and oversight of the national Nonpoint Source (NPS) Pollution Control Program. GRTS enables EPA and States to report on the accomplishments achieved with NPS grants funds.
Safe Drinking Water Program/OW	Drinking Water Infrastructure Needs Survey (DWINS)	DWINS is a database used to house and analyze responses from the quadrennial Drinking Water Infrastructure Needs Survey mandated by the Safe Drinking Water Act. The data are used to develop the formula for allocating grants to public water systems.
Safe Drinking Water Program/OW	Safe Drinking Water Information System (SDWIS)	SDWIS supports the implementation of the Safe Drinking Water Act's Public Water System Supervision program and EPA's mission of protecting public health. SDWIS includes data collection, data analysis and data reporting to support national decision making.

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Program / Program Office	CPIC investment name (investments included in BY13 Exhibit 53)	Description
Safe Drinking Water Program/OW	SDWISNG- Safe Drinking Water Information System Next Generation	SDWIS NextGen will be the singular, authoritative source of data for water compliance monitoring and enforcement information. This new system will provide a uniform, secure, processing and storage mechanism for managing public water system information.
Safe Drinking Water Program/OW	Safe Drinking Water Accession and Review System (SDWARS)	SDWARS is used to support collection of data under the Unregulated Contaminant Monitoring Rule (UCMR). The UCMR is used to identify the occurrence of contaminants of concern that are not yet regulated under the Safe Drinking Water Act (SDWA).
Underground Injection Program/OW	CO2 Geologic Sequestration Information System (GSIS)	Data system to collect, hold, and analyze information submitted from prospective UIC Well owner/operators and the UIC program State primacy Agency required under the Carbon Dioxide Geologic Sequestration regulation.
Underground Injection Program/OW	Underground Injection Control (UIC)	The UIC National Database will support a single UIC data flow from the state and Regional DI programs to support national environmental programs requiring UIC data. It also supports Agency business drivers to align Agency data collection efforts.
FRS/OEI	Facility Registry Service (FRS)	FRS is directly supporting activities to protect America's waters in a number of ways: a. working with OECA on ways to perform spatial analysis and identify facilities impacting watersheds and key airsheds associated with areas of interest such as the Chesapeake Bay (as well as an approach for similar types of applications in other areas, such as the Puget Sound and Great Lakes.) b. coordinating with the Toxic Release Inventory toward data quality improvements, which includes integration with Office of Water web services and tools toward performing lookups against NHD and GNIS data to improve quality of information captured on receiving waters.
Goal 3: Cleaning Up Communities and Advancing Sustainable Development		
Hazardous Waste Management Program/OSWER	Resource Conservation and Recovery Act Information (RCRAInfo)	RCRAInfo provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and Hazardous and Solid Waste Amendments of 1984. (This system manages the national hazardous waste program information)
Superfund Program/OSWER	Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	CERCLIS is EPA's "official record" for tracking all hazardous waste site assessment and remediation activities performed in support of the Superfund Program, (Comprehensive Environmental Response, Compensation and Liability Act 1986 (CERCLA) as amended).
Superfund Program/OSWER	Superfund Enterprise Management System (SEMS)	SEMS will modernize CERCLIS and integrate it with SDMS. ICTS and SDMS have been integrated with SDMS as part of the SEMS integration strategy. These actions combine in one place several Superfund primary data collection, reporting, and tracking systems.
Brownfields Program/OSWER	Assessment Cleanup and Redevelopment Exchange System (ACRES)	The ACRES database tracks environmental information at brownfields properties including the type, status of environmental assessment, cleanup activities, and the presence and remediation of contaminants.

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Program / Program Office	CPIC investment name (investments included in BY13 Exhibit 53)	Description
Emergency Management /OSWER	Emergency Management Portal (EMP)	The EMP is an overarching system of tools and central data management that will integrate existing data and applications used by the community. It will also allow for secure transactional and archival data storage and make analysis quick and accurate.
Emergency Management /OSWER	System for Risk Management Plans (SRMP)	SRMP provides risk management information about chemical facilities with regulated quantities of extremely hazardous substances. SRMP is an electronic reporting and access tool that reduces regulatory reporting.
Emergency Management /OSWER	Web Emergency Operations Center (WebEOC)	WebEOC is a web-based information management system providing real-time access to emergency information that can be simultaneously shared among emergency response teams, decision makers and supporting organizations during an emergency.
FRS/OEI	Facility Registry Service (FRS)	High quality locational data is core to cleaning up communities. FRS supports a broad variety of community-oriented applications by providing locational information about facilities impacting communities. These include Superfund, Brownfields and other activities. FRS also supports coordination and locational data improvement activities with OSWER and Cleanups In My Community. Additionally, FRS is supporting the Emergency Management community by supporting targeted data quality initiatives to improve key datasets needed in ER, Emergency Support Function (ESF) 10 facilities such as Oil and Hazardous Waste facilities along with ESF 3 infrastructure data such as water and wastewater treatment facilities.
Goal 4: Ensuring the Safety of Chemicals and Preventing Pollution		
Pesticides Program/ OCSP	Pesticide Registration Information System (PRISM)	PRISM provides e-government capabilities to share pesticide information with OPP's stakeholders. PRISM will also support OPP's responsibilities under Registration Review and the Pesticide Registration Improvement Renewal Act (PRIA II).
Lead based Paint Program/ OCSP	Federal Lead-Based Paint Program (FLPP)	Process and tracks applications for lead certification and accreditation for the Federal Lead-Based Paint Program.
Toxics Substances Management Program/ OCSP	Manage Toxic Substances (MTS)	This system will ultimately house all OPPT data and document holdings. This operational data store is being built incrementally.
Toxics Release Inventory Program/OEI	Toxics Release Inventory Processing System (TRIPS)	TRIPS manages the collection, processing, storage, and public reporting of the 100,000 plus chemical reports that facilities submit each year. It contains reportable information defined by two Acts: EPCRA of 1986 and the PPA of 1990.
Goal 5: Enforcing Environmental Laws		
Enforcement Program/OECA	Integrated Compliance Information System (ICIS)	Re-engineering of multiple legacy systems to meet new program needs not covered by outdated systems.
Enforcement Program/OECA	AIRS Facility System (AFS)	AIRS Facility System (AFS) captures compliance monitoring and enforcement data for major stationary sources of air pollution component in OECA's Legacy Systems Support (LEGS).

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Program / Program Office	CPIC investment name (investments included in BY13 Exhibit 53)	Description
Enforcement Program/OECA	Integrated Data for Enforcement Analysis (IDEA)	The Integrated Data for Enforcement Analysis (IDEA) system provides cross media (air, water and waste) integrated view of EPA regulated facilities by integrating data from Agency enforcement databases.
Enforcement Program/OECA	Permit Compliance System (PCS)	Permit Compliance System (PCS) supports the information management requirements of the Clean Water Act (CWA) National Pollution Discharge Elimination System (NPDES) program in OECA's Legacy Systems Support (LEGS).
Program-related Support Capabilities		
Central Data Exchange/OEI	Central Data Exchange (CDX)	CDX is the electronic gateway for environmental data entering the Agency and serves as EPA's Node on the Environmental Information Exchange Network.
Common Registry Information /OEI	System of Registries (SoR)	The registries provide identification information for objects of interest to EPA, states, public. It is the webbing that connects EPA data across silos. It is central to a Service Oriented Architecture (SOA).
Common Registry Information for Programs/OEI	Facility Registry Services (FRS)	FRS is a centrally managed database that identifies facilities either subject to environmental regulations or of environmental interest. FRS supports facility level data integration and accurate identification values.
Public Information Program/OEI	Envirofacts Information Warehouse (EF)	Envirofacts Information Warehouse provides the public with a textual and geographic interface into Envirofacts data. Envirofacts includes information from a variety of EPA programs, including air, water, Superfund, and hazardous waste.
Geospatial Program/OEI	GeoPlatform	The EPA Geospatial Platform provides users with a set of cloud-based GIS services that enable them to easily create web-based maps, perform environmental analyses, and share their work using online tools.

Appendix 3: EPA's System Data Flows and Relationship to State and other Federal Systems

Figure A-3: Conceptual EPA Data and System Map below shows how EPA's principal support systems relate to each other and to the principal mission segments of the EA for air quality, water quality, land quality, substance management, and compliance. Emergency management systems are shown within the land quality group because they are managed by the Office of Solid Waste and Emergency Response.

For reference, the top layer of EPA's Business Reference Model is shown on the first row of the illustration. Below it are a number of data sources external to EPA—the U.S. Dept. of Agriculture, the Dept. of Interior, the National Oceanic and Atmospheric Administration, the Dept. of Energy, the Dept. of Health and Human Services—as well as the framework geospatial data themes of the Federal Spatial Data Infrastructure. These external sources are those that most directly affect EPA daily operations or annual performance measurement. Note particularly the recent addition of the Federal Geospatial Platform and Data.gov, whose combined data catalog will link directly to counterparts within EPA (the EPA Environmental Dataset Gateway and the EPA Geospatial Platform).

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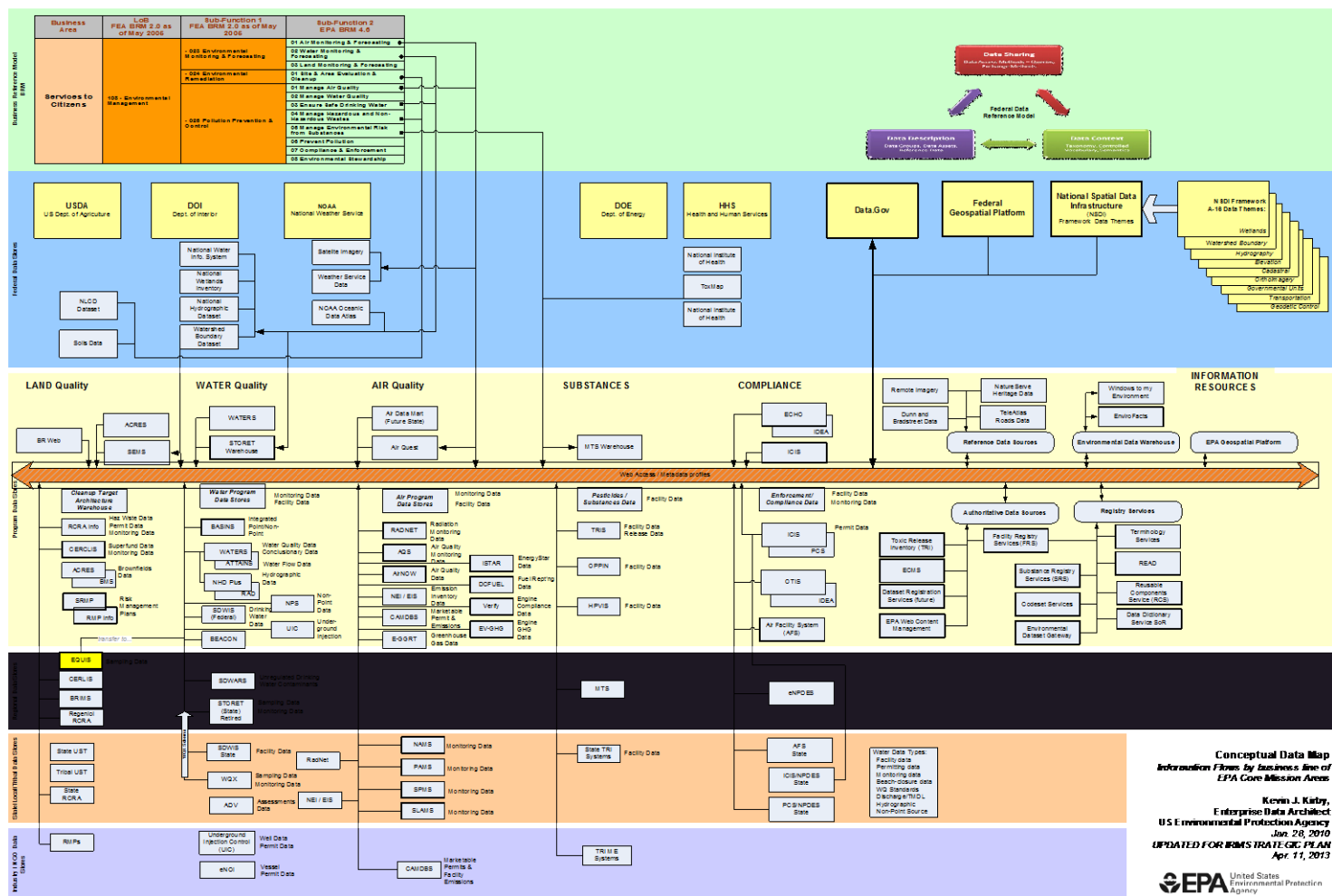


Figure A-3: Conceptual EPA Data and System Map

Appendix 4: Mapping of Agency Performance Goals to Associated Data Sources

The EPA Strategic Plan lists numerous quantifiable performance objectives beneath each of the Strategic Goals. The data sources that provide documentation of this performance are listed for each objective in Appendix 1.

Not all of these sources are EPA-owned and operated IT systems. Many derive from other federal agencies, and some rely on state or other sources for documentation.

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
Goal 1: Taking Action on Climate Change and Improving Air Quality				
	Objective 1.1: Address Climate Change			
	Address Climate Change			
	Light-duty GHG reductions	GHG emissions from all light-duty vehicles	GHG Reporting Program	GHG database
	Promote energy saving and conservation	Trends in product performance	Energy Star Industry Programs	iSTAR
			Smartway Partnership	OAR
			Pollution Prevention Programs	OCSPP
			Sustainable Materials Management	OSWER
			WaterSense	OW
			EO 13514	OARM
	Integrate climate change trend/scenario info into 5 models	Status of IT integration	Model 1	SLCM program
	Integrate climate change trend/scenario info into 5 rulemaking processes	Status of program integration	Program 1	Program milestones
			Program 2	Program milestones

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
			Program 3	Program milestones
			Program 4	Program milestones
			Program 5	Program milestones
	Integrate climate change impacts and adaptive change measures into five major grant, loan, contract, or technical assistance programs.	Status of program integration	Program 1	Program milestones
			Program 2	Program milestones
			Program 3	Program milestones
			Program 4	Program milestones
			Program 5	Program milestones
Objective 1.2 Improve Air Quality				
Reduce Criteria Pollutants and Regional Haze				
	Reduce population-weighted concentrations of inhalable fine particulates in all monitoring counties by specific amount.	Air Quality	Ambient Air Quality Program	AQS, AQS Data Mart
	Reduce population-weighted concentrations of ozone in all monitoring counties by specific amount.	Air Quality	Ambient Air Quality Program	AQS, AQS Data Mart
	Reduce emissions of nitrogen oxides (NOx) to 14.7 million tons per year.	Air Emissions	National Emission Inventory	EIS
	Reduce emissions of sulfur dioxide (SO ₂) to 7.4 million tons per year.	Air Emissions	National Emission Inventory	EIS
	By 2015, reduce emissions of direct particulate matter (PM) to 3.9 million tons per year compared to the 2009 level of 4.2 million tons emitted.	Air Emissions	National Emission Inventory	EIS
	Increase visibility in scenic parks and wilderness areas by 15 percent in the East and 5 percent in the West,	Air Emissions	National Park Service visibility monitoring program	AQS, AQS Data Mart

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	15 additional tribes will possess the expertise and capability to implement the Clean Air Act in Indian country (as demonstrated by successful completion of an eligibility determination under the Tribal Authority Rule), for a cumulative total of 62 from the 2009 baseline of 47 tribes.	Successful completion of an eligibility determination under the Tribal Authority Rule		OAR
	Reduce Air Toxics			
	By 2015, reduce emissions of air toxics (toxicity- weighted for cancer) to 4.2 million tons from the 1993 toxicity-weighted baseline of 7.2 million tons.	Air Emissions	National Emission Inventory	EIS
	Reduce the Adverse Ecological Effects of Acid Deposition			
	Reduce the number of chronically acidic water bodies and improve associated ecosystem health by approximately 10 percent	Air Emissions	Clean Air Markets Trading Program	OW
	Reduce exposure to Indoor Air Pollution			
	Prevent an additional 1,460 premature lung cancer cases from the 2008 baseline.	Radon Remediation	Radon Program	ORIA
	Increase the number of people taking all essential actions to reduce exposure to indoor environmental asthma triggers to 7.6 million from the 2003 baseline of 3.0 million.			ORIA
	Objective 1.3: Restore the Ozone Layer			
	Reduce Consumption of Ozone-depleting substances			
	Reduce U.S. consumption of hydrochlorofluorocarbons (HCFCs), chemicals that deplete the Earth's protective ozone layer, to 1,520 tons per year of ozone depletion potential from the 2009 baseline of 9,900 tons per year.	Tons per year of O3 depleting potential		OAP
	Objective 1.4: Reduce Unnecessary Exposure to Radiation			
	Continue to maintain a 90 percent level of readiness of radiation program personnel and assets to support federal radiological emergency response and recovery operations.	Maintain 90% readiness of personnel and assets		ORIA

Goal 2: Protecting America's Waters**Objective 2.1: Protect Human Health**

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
Water Safe to Drink				
	90 percent of community water systems will provide drinking water that meets all applicable health-based drinking water standards.	Systems in compliance	Safe Drinking Water Program	SDWIS
	88 percent of the population in Indian country will receive drinking water that meets all applicable health-based drinking water standards.	Systems in compliance	Safe Drinking Water Program	SDWIS
	Provide access to safe drinking water for 136,100 American Indian and Alaska Native homes.	Homes with access	Safe Drinking Water Program & other agencies	SDWIS
Fish and Shellfish Safe to Eat				
	Reduce the percentage of women of childbearing age having mercury levels in blood above the level of concern to 4.6 percent.	Blood mercury levels	National Health and Nutrition Examination Survey	National Health and Nutrition Examination Survey
Water Safe for Swimming				
	Maintain the percentage of days of the beach season that coastal and Great Lakes beaches monitored by state beach safety programs are open and safe for swimming at 95 percent.	Beach open days		PRAWN
Objective 2.2: Protect and Restore Watersheds and Aquatic Ecosystems				
Improve Water Quality on a Watershed Basis				
	Attain water quality standards for all pollutants and impairments in more than 3,360 water bodies identified in 2002 as not attaining standards. Status as of FY 2009: 2,505 water bodies attained standards.)	Multiple pollutant measurements at monitoring stations		STORET
	By 2015, improve water quality conditions in 330 impaired watersheds nationwide using the watershed approach (cumulative).	Reduction of 1 or more impairment causes		ATTAINS
	Ensure that the condition of the Nation's streams and lakes does not degrade (i.e., there is no statistically significant increase in the percent rated "poor" and no statistically significant decrease rated "good.")	Statistically significant change of percent of streams rated "poor"		ATTAINS
	Improve water quality in Indian country at 50 or more baseline monitoring stations in tribal waters (cumulative) and identify monitoring stations on tribal lands that are showing no degradation in water quality (meaning the waters are meeting uses).	Measurement of 7 indicators at monitoring stations		ATTAINS

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	Provide access to basic sanitation for 67,900 American Indian and Alaska Native homes.	Homes with access to basic sanitation		
	Improve Coastal and Ocean Waters			
	Improve regional coastal aquatic ecosystem health, as measured on the “good/fair/poor” scale of the National Coastal Condition Report.	Good/Fair/Poor scale of National Coastal Condition Report		
	95 percent of active dredged material ocean dumping sites, as determined by 3-year average, will have achieved environmentally acceptable conditions.	Sites meeting acceptable standards (self-defined)		Onsite monitoring plans
	Protect or restore an additional 600,000 acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program.	Acres of habitat restored	National Estuary Program	
	Increase Wetlands			
	By 2015, working with partners, achieve a net increase of wetlands nationwide, with additional focus on coastal wetlands, and biological and functional measures and assessment of wetland condition. (2004 baseline: 32,000 acres annual net national wetland gain.)	Wetland acres in existence	National Wetlands Inventory	
	Improve the Health of Specific Areas			
	Prevent water pollution and protect aquatic systems so that the overall ecosystem health of the Great Lakes is at least 24.7 points on a 40-point scale.			
	Achieve 50 percent (92,500 acres) of the 185,000 acres of submerged aquatic vegetation necessary to achieve Chesapeake Bay water quality standards.			
	Reduce releases of nutrients throughout the Mississippi River Basin to reduce the size of the hypoxic zone in the Gulf of Mexico to less than 5,000 km ² .	5-year running average of the size of the zone.		
	Reduce the maximum area of hypoxia in Long Island Sound by 15 percent from the pre- TMDL average of 208 square miles.	5-year running average of the size of the zone.		
	Improve water quality and enable the lifting of harvest restrictions in 4,300 acres of shellfish bed growing areas impacted by degraded or declining water quality in the Puget Sound.			

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	Provide safe drinking water or adequate wastewater sanitation to 75 percent of the homes in the U.S.–Mexico Border area that lacked access to either service in 2003.			
Goal 3: Cleaning Up Communities and Advancing Sustainable Development				
Objective 3.1: Promote Sustainable and Livable Communities.				
Promote Sustainable Communities				
	Attain water quality standards for all pollutants and impairments in more than 3,360 water bodies identified in 2002 as not attaining standards.	Multiple pollutant measurements at monitoring stations		BASINS
Assess and Cleanup Brownfields				ACRES
	Conduct environmental assessments at 20,600 (cumulative) brownfield properties.			
	Make an additional 17,800 acres of brownfield properties ready for reuse from the 2009 baseline.			
Reduce Chemical Risks at Facilities and in Communities				
	Continue to maintain the Risk Management Plan (RMP) prevention program and further reduce by 10 percent the number of accidents at RMP facilities.			
Objective 3.2: Preserve Land.				
Waste Generation and Recycling				
	Increase the amount of municipal solid waste reduced, reused, or recycled by 2.5 billion pounds.			
	Increase beneficial use of coal combustion ash to 50 percent from 40 percent in 2008.			
	Increase by 78 the number of tribes covered by an integrated waste management plan compared to FY 2009.			
	Close, clean up, or upgrade 281 open dumps in Indian country and on other tribal lands compared to FY 2009.			
Minimize Releases of Hazardous Waste and Petroleum Products				

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	Prevent releases at 500 hazardous waste management facilities with initial approved controls or updated controls.			
	Each year through 2015, increase the percentage of underground storage tank (UST) facilities that are in significant operational compliance (SOC) by 0.5 percent.			
	Each year through 2015, reduce the number of confirmed releases at UST facilities to 5 percent fewer than the prior year's target.			
Objective 3.3: Restore Land				
Deepwater Horizon BP Oil Spill: Oil Spill Program Review				
	In response to the Deepwater Horizon BP oil spill, conduct a thorough assessment to ensure that the Agency has the appropriate tools to respond to environmental disasters of this scale.			
Emergency Preparedness and Response				
	Achieve and maintain at least 80 percent of the maximum score on the Core National Approach to Response (NAR) evaluation criteria.			
	Complete an additional 1,700 Superfund removals.	Completed removals	Superfund	SEMS
	By 2015, no more than 1.5 million gallons will be spilled annually at Facility Response Plan (FRP) facilities.	Spill reports recorded in FRP Facilities	Superfund	SEMS
Cleanup Contaminated Land				
	Complete 93,400 assessments at potential hazardous waste sites to determine if they warrant cleanup activities.	Number of assessment completed	Superfund	SEMS
	Increase to 84 percent the number of Superfund final and deleted NPL sites and RCRA facilities where human exposures to toxins are under control.			
	By 2015, increase to 78 percent the number of RCRA facilities with migration of contaminated groundwater under control.	Sites reporting human exposures under control	Superfund	SEMS
	Increase to 56 percent the number of RCRA facilities with final remedies constructed.	Number/percent of RCRA facilities with final remedies	Hazardous Waste Program	RCRAInfo
	Reduce the backlog of LUST cleanups that do not meet standards for human exposure and groundwater migration by 1 percent.	Confirmed releases without cleanup	State LUST programs	State under-ground tank mgt systems

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	Each year through 2015, reduce the backlog of LUST cleanups in Indian country that do not meet applicable standards for human exposure and groundwater migration by 1 percent.	Confirmed releases without cleanup	Indian LUST programs	Indian under-ground tank mgt systems
	Ensure that 799 Superfund NPL sites are "sitewide ready for anticipated use."	NPL Sites ready for anticipated use	Superfund	SEMS
Objective 3.4: Strengthen Human Health and Environmental Protection				
Improve Human Health and the Environment in Indian Country				
	Increase the percent of tribes implementing federal regulatory environmental programs in Indian country to 18 percent.			
	Increase the percent of tribes conducting EPA-approved environmental monitoring and assessment activities in Indian country to 50 percent.			
Goal 4: Ensuring the Safety of Chemicals and Preventing Pollution				
Objective 4.1: Ensure Chemical Safety				
Protect Human Health from Chemical Risks				
	Reduce by 40 percent the number of moderate to severe exposure incidents associated with organophosphates and carbamate insecticides in the general population.			
	By 2014, reduce the percentage of children with blood lead levels above 5 µg/dl to 1.0 percent or less. (Baseline is 3.0 percent in the 2005–2008 sampling period.)			
	By 2014, reduce the percent difference in the geometric mean blood lead level in low-income children 1 to 5 years old as compared to the geometric mean for other children 1 to 5 years old to 10.0 percent.			
	By 2014, reduce the concentration in the general population for the following chemicals: non-specific organophosphate metabolites by 75 percent; chlorpyrifos metabolite (TCPy) by 75 percent; and perfluoro-octanoic acid (PFOA) in serum by 2 percent.			
	By 2014, reduce concentration for the following chemicals in children: non-specific organophosphate metabolites by 75 percent and chlorpyrifos metabolite (TCPy) by 75 percent.			

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	By 2015, complete endocrine disruptor screening program (EDSP) decisions for 100 percent of chemicals for which complete EDSP information is expected to be available by the end of 2014.			
	Protect Ecosystems from Chemical Risks			
	By 2015, no watersheds will exceed aquatic life benchmarks for targeted pesticides.			
	Ensure Transparency of Chemical health and Safety Information			
	Through 2015, make all health and safety studies available to the public for chemicals in commerce, to the extent allowed by law.			
	Objective 4.2: Promote Pollution Prevention			
	Prevent Pollution and Promote Environmental Stewardship			
	By 2015, reduce 15 billion pounds of hazardous materials cumulatively through pollution prevention.			
	By 2015, reduce 9 million metric tons of carbon dioxide equivalent (MMTCO ₂ Eq.) cumulatively through pollution prevention.			
	By 2015, reduce water use by an additional 24 billion gallons cumulatively through pollution prevention.			
	By 2015, save \$1.2 billion through pollution prevention improvements in business, institutional, and government costs cumulatively.			
	Through 2015, increase the use of safer chemicals cumulatively by 40 percent.			
Goal 5: Enforcing Environmental Laws				
	Objective 5.1: Enforce Environmental Laws			
	Maintain Enforcement Presence			
	By 2015, conduct 105,000 federal inspections and evaluations (5-year cumulative). (FY 2005–2009 baseline: 21,000 annually)			
	By 2015, initiate 19,500 civil judicial and administrative enforcement cases (5-year cumulative).			

Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	By 2015, conclude 19,000 civil judicial and administrative enforcement cases (5-year cumulative).			
	By 2015, maintain review of the overall compliance status of 100 percent of the open consent decrees.			
	Each year, support cleanups and save federal dollars for sites where there are no alternatives by: (1) reaching a settlement or taking an enforcement action before the start of a remedial action at 99 percent of Superfund sites having viable responsible parties other than the federal government; and (2) addressing all cost recovery statute of limitation cases with total past costs greater than or equal to \$200,000.			
	By 2015, increase the percentage of criminal cases with charges filed to 45 percent.			
	By 2015, maintain an 85 percent conviction rate for criminal defendants.			
	Support Taking Action on Climate Change and Improving Air Quality			
	By 2015, reduce, treat, or eliminate 2,400 million estimated pounds of air pollutants as a result of concluded enforcement actions (5-year cumulative).			
	Support Protecting America's Waters			
	By 2015, reduce, treat, or eliminate 1,600 million estimated pounds of water pollutants as a result of concluded enforcement actions (5-year cumulative).			
	Support Cleaning Up Communities and Advancing Sustainable Development			
	By 2015, reduce, treat, or eliminate 32,000 million estimated pounds of hazardous waste as a result of concluded enforcement actions (5-year cumulative).			
	By 2015, obtain commitments to clean up 1,500 million cubic yards of contaminated soil and groundwater media ¹ as a result of concluded CERCLA and RCRA corrective action enforcement actions (5-year cumulative).			
	Support Ensuring the Safety of Chemicals and Preventing Pollution			

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Goal	Objective (Abbreviated)	Measurement	Program	Data Source
	By 2015, reduce, treat, or eliminate 19.0 million estimated pounds of toxic and pesticide pollutants as a result of concluded enforcement actions (5-year cumulative).			
	Enhance Strategic Deterrence through Criminal Enforcement			
	By 2015, increase the percentage of criminal cases having the most significant health, environmental, and deterrence impacts to 50 percent.			
	By 2015, maintain 75 percent of criminal cases with an individual defendant.			

Appendix 5: Alignment of IRM Strategic Plan, Enterprise Roadmap and Integrated Data Collection

IRM Section #	IRM Section Name	Linkage	Roadmap Section #	Roadmap Section Name	Integrated Data Collection
1.0	Introduction				
1.1	Organization of this Plan		1.1	Purpose and Benefit	
1.2	Relationship between the IRM Strategic Plan and the Enterprise Roadmap		1.5	Linkage between Enterprise Roadmap and Information Resource Management Strategic Plan	
2.0	EPA's Strategic Information Management Framework				
2.1	IT Management Vision		2.0	EA Program Management	
2.2	IRM Mission				
2.3	IRM Goals				
2.3.1	Prepare employees for the future	Strengthening EPA's Workforce and Capabilities	4.1.1	Executive/Government-wide Initiatives and Mandates	
2.3.2	Deliver customer-focused services and solutions	E-Enterprise	4.1.2	Agency-Wide Transformational Initiatives	
2.3.3	Enable business anytime, anywhere	Security and Privacy, Digital Government Strategy Cloud Computing	3.5 4.1.2 4.1.1	Security and Privacy Agency-Wide Transformational Initiatives Executive/Government-wide Initiatives and Mandates	Security and Privacy Metrics
2.3.4	Find, understand, and use information for environmental protection	Digital Government Strategy OneEPA Web	4.1.2 4.1.2 3.1.2	Agency-Wide Transformational Initiatives Agency-Wide Transformational Initiatives EPA Cross-Cutting Strategic Initiatives	
2.3.5	Collect, exchange, and manage information	Exchange Network	4.1.2	Agency-Wide Transformational Initiatives	

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IRM Section #	IRM Section Name	Linkage	Roadmap Section #	Roadmap Section Name	Integrated Data Collection
2.4	Drivers				
2.5	Governing Principles		2.12	IT Investment Reviews	
3.0	Supporting EPA Strategic Goals and Objectives				
3.1	Mapping IRM Support to EPA'S Strategic Goals				
3.1.1	Geospatial Platform: Integrating Geospatial Data and Tools	Geo Platform	4.1.2	Agency-Wide Transformational Initiatives	
3.1.2	Environmental Justice Program: Addressing Environmental Inequities				
3.1.3	Regulations.gov : Automating the Regulatory Process	Regulations.gov	3.1.2	EPA Cross-Cutting Strategic Initiatives	
3.1.4	eDiscovery: Automating the Legal Discovery and FOIA Processes	eDiscovery	4.1.2	Agency-Wide Transformational Initiatives	
4.0	Improving Services to Customers				
4.1	How EPA Evaluates Customer-facing Services				
4.2	Delivering Customer Focused Services and Solutions				
4.2.1	E-Enterprise: Streamlining Customer-facing Services				
4.2.2	Quality Program	EPA Quality Program	4.1.3	4.1.3 Ongoing Activities Needing Agency Support	
4.2.3	My Workplace	My Workplace	5.2.2	Email Migration/Consolidation (My Workplace)	
4.2.4	Support for Teleworking and Mobile Devices				
4.2.5	EZ Tech				
4.2.6	Data Center Consolidation	Data Center Consolidation	4.1.1	Executive/Government-wide Initiatives and Mandates	Data Center Inventory
4.2.7	EPA "Mobile First" Policy for Web Development		3.4.4	Collaboration Tools	Mobile Contracts Inventory Update
5.0	Implementing Governance and Management Processes				

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IRM Section #	IRM Section Name	Linkage	Roadmap Section #	Roadmap Section Name	Integrated Data Collection
5.1	QIC Restructuring Initiative	Governance	2.1	Governance and Use	
5.2	Investment Management Reviews	IT Investment Reviews CA Reviews	2.1.2 2.2.2	IT Investment Reviews 12.1.1 Changing Business Needs and Technology Requirements	
5.3	Strategic Sourcing and Enterprise Licensing	Strategic Sourcing	5.2.2	Strategic Sourcing of End User Computing	
6.0	Aligning CIO Authorities				
7.0	Managing Cybersecurity				
7.1	Aligning of Investments and Cybersecurity				
7.2	Meeting Cybersecurity Cross Agency Priority Goals				
7.3	COOP Plan	COOP	Table 10	IT Infrastructure Projects	
8.0	Supporting EPA's Workforce				
9.0	Implementing Digital Government and Managing Information as an Asset				Digital Government
9.1	Implementing the Digital Government Policy				
9.2	Managing Information as an Asset				
9.2.1	The Strategic Data Action Plan	SDAP	4.1.1	Executive/Government-Wide Initiatives and Mandates	
9.2.2	EPA Enterprise Information Management Policy				
9.2.3	OneEPA Web Modernization Effort	OneEPA Web	3.1.2	EPA Cross-Cutting Strategic Initiatives	
9.2.4	Integrating EPA's Data Catalogs with their Federal Counterparts				
9.2.5	Envirofacts				
9.2.6	Library Strategy	National Library Network	4.1.3	Ongoing Activities Needing Agency Support	
9.2.7	FRS re-engineering	FRS	4.1.3	Ongoing Activities Needing Agency Support	
9.3	Ensuring Information Privacy	Privacy	3.5 4.1.2	<i>Security and Privacy,</i> Agency-Wide Transformational Initiatives	

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IRM Section #	IRM Section Name	Linkage	Roadmap Section #	Roadmap Section Name	Integrated Data Collection
9.3.1	Protection of PII	Privacy	3.5	<i>Security and Privacy</i>	
9.3.2	Protection of CUI	Information Security	4.1.2	Agency-Wide Transformational Initiatives	
10.0	Commodity IT and Shared Services				Commodity IT baseline Updates
10.1	Maturing the IT Portfolio				
10.1.1	Optimizing IT Infrastructure	Hosting Platform	4.1.1	Executive/Government-Wide Initiatives and Mandates	FedRAMP Key Metrics
10.1.2	Rationalize Applications				
10.1.3	Service Oriented Architecture				
10.2	Reinvestment of Savings				
10.3	Maximizing the Use of Shared Services	Shared Services	5.2	<i>Shared Services</i>	<i>Cost Savings/Avoidance Decisions</i>
11.0	Ensuring Accessibility		N/A		
11.1	Supporting a Diverse Workforce				
11.2	Integrating accessibility into IT through Section 508				
11.2.1	Section 508 Executive Council				
11.2.2	Policy Workgroup				
11.2.3	Procurements and Grants Workgroup				
11.2.4	Testing Workgroup				
11.2.5	Program Assurance Workgroup				
11.2.6	Training and Outreach Workgroup				
11.2.7	Other Section 508 Program and Disability Work at the Agency				
12.0	APPENDICES				
	Appendix 1: EPA Strategic Goals Mapped to the Enterprise Architecture		3.1.1	Strategic Goals and Initiatives	
	Appendix 2: Descriptions of IT Systems Supporting Core Mission Goals		3.2.2	EPA Information Flows	
	Appendix 3: EPA's System Data Flows and Relationship to State and other Federal Systems		3.2.1	EPA Mission Sectors	

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IRM Section #	IRM Section Name	Linkage	Roadmap Section #	Roadmap Section Name	Integrated Data Collection
	Appendix 4: Mapping of Agency Performance Goals to Associated Data Sources				