

**U.S. Environmental Protection Agency
Enterprise Architecture Program**

FY 2009 Enterprise Transition Plan

Version 1.4

June 11, 2009





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
ENVIRONMENTAL INFORMATION

I approve of EPA's FY 2009 Enterprise Transition Plan.

Linda A Travers Date: 6/10/09

Linda Travers
Acting Assistant Administrator and Chief Information Officer
Office of Environmental Information
Environmental Protection Agency



REVISION HISTORY

Version Number	Date	Description
0.01	3/25/2009	Began updates for FY09
0.02	5/1/2009	First draft of Transition Plan sections to EPA for review
1.0	5/13/2009	Internal Draft for PPC QA
1.1	5/13/2009	Final Draft for EPA Review, with EPA comments incorporated
1.2	5/13/2009	Final Draft Updated with Additional Segment Milestone Detail
1.3	6/1/2009	Final Draft Updated with EAWG, Segment Owners & Final EA Team comments
1.4	6/11/2009	Final Draft, including CIO Comments and Approval Memo

TABLE OF CONTENTS

1.	Introduction.....	1-1
1.1	Purpose and Benefit	1-1
1.2	Background and Strategy	1-1
1.3	Audience	1-3
1.4	Assumptions	1-3
1.5	Scope.....	1-4
2.	Segment Architecture at EPA	2-1
2.1	Segment Prioritization	2-4
2.2	Aligning of Transition Strategy Projects to Target Architecture	2-5
3.	EPA’s Target Architecture	3-1
4.	EPA’s Target Transition Activities.....	4-1
4.1	Enhancing EPA’s Target Performance Architecture	4-1
4.2	Moving Toward a Service-Oriented Architecture (SOA)	4-2
4.3	Enterprise Licensing.....	4-3
4.4	Integrating EPA’s EA with E-Government (e-Gov) and Line of Business (LoB) Initiatives..	4-3
4.5	Modernizing EPA’s Technology Infrastructure.....	4-5
4.6	Advancing EPA’s Target Data Architecture	4-6
4.7	Cross-Agency Information Sharing Initiatives	4-8
5.	Sequencing Plan	5-1



LIST OF TABLES

Table 1-1: Enterprise Transition Plan Intended Audience	1-3
Table 2-1: EPA Segment Descriptions.....	2-3
Table 2-2: Segment Prioritization Categories	2-5
Table 2-3: Alignment of Enterprise Transition Plan Projects to Target through EPA Segments and the Agency IT Portfolio	2-6
Table 4-1: Transition Goals and Supporting Activities.....	4-1
Table 4-2: EPA Enterprise Tools and Services and their Associated Services/Functions	4-1
Table 4-3: EPA Implementation of Federal E-Government and Line of Business Initiatives	4-4
Table 5-1: Segment Milestone Detail	5-2



LIST OF FIGURES

Figure 2-1: EPA Identified Segments	2-2
Figure 3-1: EPA Target Architecture Lines of Sight.....	3-2
Figure 4-1: EPA Planned SOA Activities	4-2
Figure 4-2: Services Layer Roadmap: Business Application Services by Segment	4-1
Figure 4-3: EPA Strategy for Expanding Enterprise Tools and Services.....	4-2
Figure 4-4: EPA's Enterprise Metadata Framework	4-7
Figure 5-1: Summary of 2009 Sequencing Plan Milestones by Segment	5-1



1. Introduction

1.1 Purpose and Benefit

The Enterprise Transition Plan (ETP) describes EPA's overarching strategy for modernizing the Agency's infrastructure and change processes in support of the business, as well as the specific IT projects and approach EPA will use to achieve its target architecture.¹ The ETP provides EPA stakeholders with the information needed to identify the line of sight between the Agency's business, performance, data, application/service, and technology projects; the investments that fund these projects; the segments they support and the processes necessary to facilitate change. This framework allows Agency decision-makers and senior executives to plan strategically from a holistic, enterprise perspective. As a result, EPA will be better informed during the investment decision-making process by allowing executives to set and pursue outcome driven business goals through enabling service-centric investment technologies aligned with both mission and Agency's target EA. The specific benefits of this ETP include:

- A strategic approach for the planning, execution, and measurement of performance for Agency activities needed to transition EPA toward its target EA
- Agile and less costly investments because of faster development and deployment cycles and greater interoperability driven by increased standardization, sharing and reuse of processes, services, and technology including those identified investments in the Agency's Sequencing Plan; Emphasis on enterprise-wide, rather than program-specific, planning and investment activities
- Improved portfolio decision-making through identified linkages of current and planned (where known) investments to major transition activities

1.2 Background and Strategy

The Clinger-Cohen Act of 1996 established a formal requirement for all executive branch agencies to develop enterprise architecture (EA) programs and to use the practice for planning investments in information technology (IT). The Environmental Protection Agency (EPA) defines a complete EA as a comprehensive series of principles, practices, guidelines, models, and standards that enable an organization to align the acquisition, development, and management of its IT assets with its business goals and functions.

EPA has continued to develop a comprehensive Enterprise Architecture (EA) program that seeks to provide Agency executives with the tools and information they need to ensure EPA's investment portfolio directly supports the mission and goals to protect human health and the environment. The EA Program is guided by the EPA Strategic Plan, which provides a framework for Agency annual planning, budgeting, and accountability by identifying the measurable environmental and human health outcomes that the public can expect over the next five years. EPA will issue a draft of the 2009-2014 Strategic Plan

¹ EPA's Target Architecture version 2.0, completed in 2002, is available at http://intranet.epa.gov/architec/archive/targetea_1216/index.html. EPA is currently revising the Target Architecture, which will be released as version 3.0 in 2009.



for public review and comment in the spring of 2009 and which will be finalized in fall of 2009. EPA's overarching framework of goals and objectives remains unchanged from the current 2006-2011 Strategic Plan.

The ongoing 2009-2014 Strategic Plan update focuses on a limited number of targeted areas where the Agency believes it can make the most significant improvements in advancing the Agency's mission of protecting human health and the environment. The Enterprise Transition Plan (ETP) will continue to be refreshed to align with the changing Strategic Plan.

This ETP supports and aligns with Presidential, Agency and the Office of Environmental Information (OEI) priorities and goals. Because EPA's information strategy involves many complimentary pieces – information technology, information collection, information management, information access, information collaboration, information training and information quality, the ETP is guided by the following principle: "readily available, high-quality information serves as a strategic resource for protecting the environment and human health."

In 2002, EPA defined a target architecture and continues to utilize it to drive business modernization. In 2009, the target is undergoing a major revision to address changes in technology, policy and priorities since the previous version. Because the target continues to undergo revision and agency wide institutionalization, the ETP will also be revised along with its changes. Chapter four of this ETP addresses the current state of the target. The target architecture includes, as an integral component, a suite of Enterprise Tools and Services to better facilitate the collection, storage, and sharing of data in a reliable and secure manner across the Agency. These tools provide a foundation on which common services can be reused across the Agency, thus allowing EPA to achieve potential cost-savings. The suite of Enterprise Tools and Services when combined with an increased reliance on Commercial off-the-Shelf (COTS) products, as well as both externally and federally-hosted solutions, offers EPA's business programs flexible options for reengineering their business.

In September 2005, EPA prepared a "Transition Strategy & Sequencing Plan" (TS&SP), which summarized progress towards the implementation of the Enterprise Tools and Services, as well as specified priorities for the migration of EPA's major investments to the data integration infrastructure services offered by these tools. Building on the fundamental strategies and practices to mature and institutionalize EA throughout EPA, in FY2009, the IT Strategic Planning Branch and the Chief Architect initiated a top-down program review and re-structuring effort to better align resources, budget, and activities with strategic goals and will result in organizational priorities. This re-alignment effort is driven by the OEI National Program Manager goals² to: "promote and facilitate transparency", "champion collaboration and participation", "maintain an agile and secure infrastructure", and "coordinate and deliver access to high quality information". Achieving these goals will serve in closing agency performance gaps (identified via agency performance improvement and strategic planning activities), providing for savings, cost avoidance, strengthening the quality of investments within the agency portfolios and improving program performance in terms of planning and management.

² These core priorities are summarized in the FY 2009 National Program Manager Priorities guidance.

1.3 Audience

The ETP is applicable to all EA stakeholders throughout the Agency. The benefits to the primary stakeholder groups are described below:

Table 1-1: Enterprise Transition Plan Intended Audience

Stakeholder	Benefit
EPA Senior Leadership and Quality Information Council (QIC)	Increased understanding and identification of the investments within the organization (including those outside their own program or regional offices), what investments are planned and which are needed in order to enable EPA reach its business priorities via the target EA, and determining project priority, as it relates to funding allocation.
Chief Architect and EA Team	Identification of gaps and overlaps in investment plans to move EPA towards its target EA and enhanced coordination of EPA IT planning activities via an authoritative plan.
Investment/System/Application Managers (Solution Architects)	Provide investment managers with an understanding of the planned and necessary changes for addressing the Agency-wide vision for information management and to help them identify changes and improvements needed in their own investments.
EA Working Group (EAWG)	Facilitates review board discussions and governance decision-making by formalizing the goals, priorities, and vision for EPA's transition to a target architecture environment.
Segment Architecture Leads (Segment Architects)	Provide segment leads with an understanding of the planned and necessary changes for addressing the Agency-wide vision for information management in order to better identify opportunities to leverage Agency-wide tools, fill gaps, and remove overlaps between and among systems in their segments and with related segments.
Chief Information Officer (CIO)	Increased understanding of the Agency's IT landscape, including the extent to which current IT resources and projects are supporting EPA strategic goals, gaps in operational performance, and business improvement opportunities that are in line with target EA concepts (e.g., service reuse, IT infrastructure consolidation).
Managers of Enterprise Tools and Services	Understanding of EPA's IT landscape (inclusive of ongoing and planned IT systems) in terms of where desired segment functionality and services could be fulfilled by existing or planned Enterprise Tools and Services.
Office of Management and Budget (OMB) and Other Federal Agencies	Communicate EPA strategic priorities and transition activities and collaborate across the Federal government on EA best practices.

1.4 Assumptions

For the purposes of this document, in addition to ensuring consistency with recommendations put forth by OMB in the *EA Assessment Framework Version 3.0*, the following are key assumptions regarding EPA's ETP:

- The foundation for analysis of this document centers on 'projects'. For the purposes of this document, EPA defines a 'project' as an information system contained in the Agency's architecture and investment portfolio. Multiple projects may be included in a single investment, and a single project may have components in multiple investments. Projects may also cross-cut multiple segments and dependencies may exist between projects in the same or different segments (e.g., a Water Quality Management project may impact a project in Land Quality Management).



- Projects have a primary assignment to one segment, but can have multiple secondary segment assignments as well. Segment reporting focuses on the projects with primary assignment to each segment. As EPA develops its segment architectures, more will be able to be said about the transition efforts by each segment.
- The term 'investment' in this document refers to an EPA IT-project that is slated to receive funding for current year 2009 (CY 2009). This document includes only those investments listed in EPA's Exhibit 53.

1.5 Scope

The scope of the ETP is focused on all CPIC Major and Non-Major IT projects receiving funding for CY 2009. In January 2009, EPA restructured their architecture segments to better align to the Agency's strategic goals. As segments mature, continue to develop their architectures, and are formally approved, the ETP will evolve to include segment maturity. These segments are further described in the next chapter.



2. Segment Architecture at EPA

EPA has segmented the Agency's functions into manageable conceptual groups in order to effectively conduct the enterprise target activities. The identification and development of segments at EPA is part of a strategic effort geared towards moving EPA from a traditional program office (federated) viewpoint to a more holistic view emphasizing segments whose focus is on identifying, consolidating, and reusing/sharing common processes, technology, and services across the Agency. EPA segments are generally aligned to the Agency's core mission, business, or enterprise services. Segments are comprised of highly interconnected business areas or a set of cross-cutting services/systems used throughout the Agency.

EPA's segments as defined in the 2008 TS&SP were revisited and, on the recommendation of EPA's CIO, were reorganized around the EPA Strategic Plan. Redundant segments were eliminated and a number of cross-cutting segments were identified. The new list of 14 segments was approved by the Information Investment Sub-Committee (IIS) and enables EPA to be consistent with cross-federal efforts.

The Agency is taking a structured approach to segment reporting through the use of segment templates. All segments are completing segment reports based on their maturity level (Notional, Planned, In-Progress, and Complete).

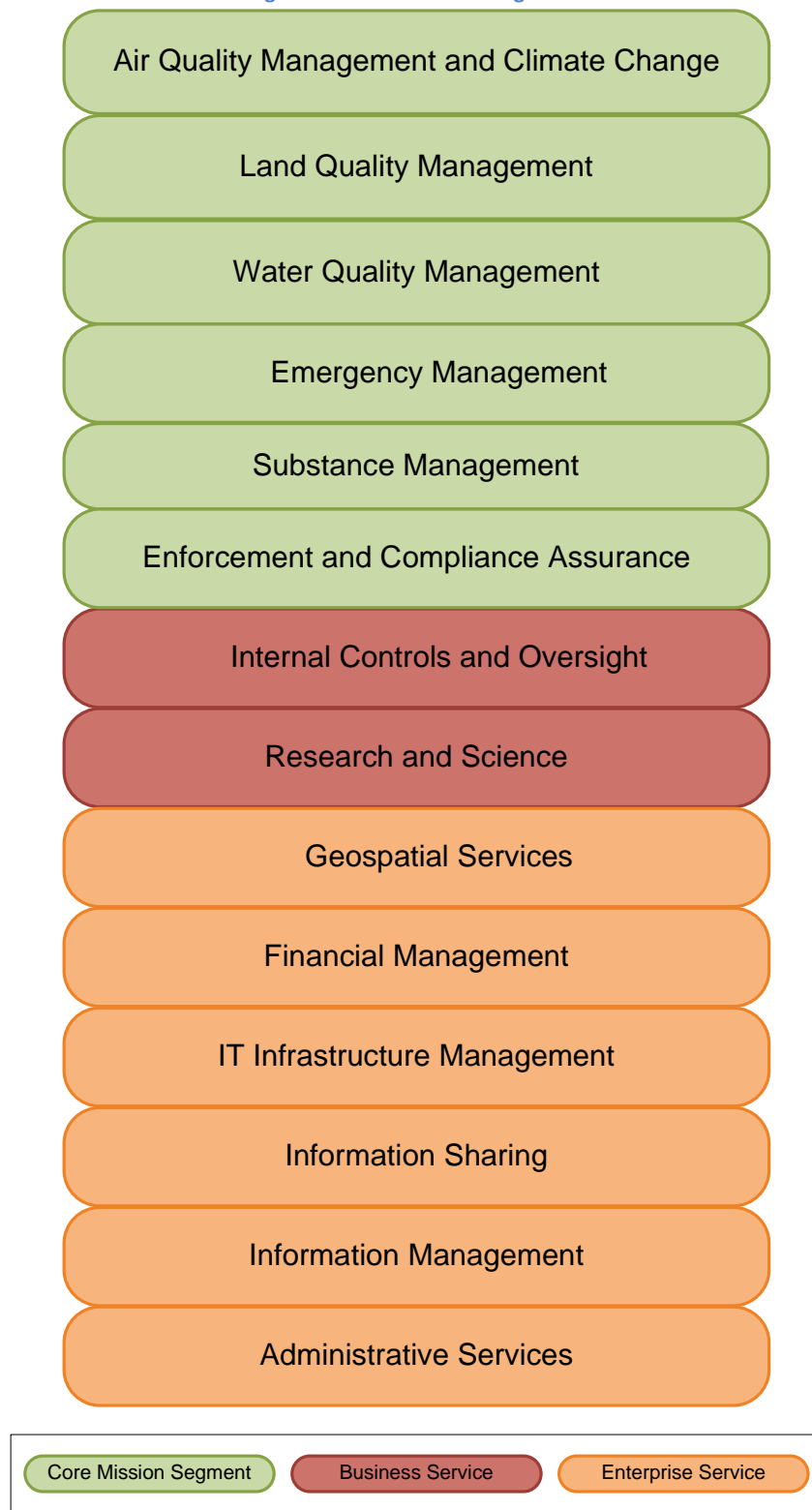
Based on OMB suggested guidance³, EPA has classified the segments into three main categories: Core Mission, Business Service, and Enterprise Service (Figure 2-1: EPA Identified Segments):

- **Core Mission Segments** - These segments represent the Agency's unique service areas defining the mission or purpose of EPA (environmental and health protection) and align to the FEA BRM (services for citizens).
- **Business Service Segments** - These segments define the common or shared business services supporting core mission segments at EPA, and align to the FEA BRM (mode of delivery, support delivery of services, management of government resources).
- **Enterprise Service Segments** - These segments define EPA's common or shared IT and administrative services supporting core mission and business service segments and align to the FEA SRM.

³ Source: *FEA Practice Guidance: "Value to the Mission"* November 2007



Figure 2-1: EPA Identified Segments





Definitions, categorization, and status for the identified segments are provided in Table 2-1 below.

Table 2-1: EPA Segment Descriptions

Segment Type	Segment Name	Current Status	Business Description
Core Mission	Water Quality Management	Planned	The Water Quality Management segment includes all activities that promote the effective use and management of the nation's water resources.
	Air Quality Management and Climate Change	Planned	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.
	Land Quality Management	In-Progress	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.
	Substance Management	Planned	The Substance Management segment is responsible for all activities that manage the risks of substances introduced into the environment as commercial products.
	Enforcement & Compliance Assurance	Planned	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 also is responsible for all activities to enforce compliance with Agency regulations through legal means, including criminal investigations and prosecutions.
	Emergency Management	Planned	The Emergency Management segment is responsible for all immediate actions taken to prepare for, prevent, and respond to disasters.
Business Service	Research & Science	Planned	The Research and Science segment is responsible for all environmental activities whose goal is the creation of new scientific and/or technological knowledge.
	Internal Controls and Oversight	Notional	The Internal Controls and Oversight Segment ensures that the operations and programs of EPA comply with applicable laws and regulations, and prevent and/or detect waste, fraud, and abuse. This segment conducts audits, investigations, and program evaluations which involve the analysis of internal and external program effectiveness and the determination of corrective actions, as appropriate.
Enterprise Service	Financial Management	In-Progress	The Financial Management segment pertains to the ability to measure, operate, and predict the level of effectiveness and efficiency of an entity's activities in relation to its objectives.
	IT Infrastructure Management	In-Progress	The IT Infrastructure Management segment is responsible for providing an efficient and effective IT infrastructure across EPA. It seeks to provide the interoperability of functions across the Agency to include optimization of the infrastructure to facilitate cross-Agency collaboration.
	Geospatial Services	In-Progress	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. Ties directly to Geo One-Stop business case. Supports Federal Geographic Data Committee (FGDC) framework activities.

Segment Type	Segment Name	Current Status	Business Description
	Information Sharing	In-Progress	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.
	Information Management	Notional	The Information Management segment addresses the management of information, system development and maintenance, information security, and records management. This segment participates and coordinates closely with the segments for Information Sharing, IT Infrastructure and Geospatial.
	Administrative Services	Planned	The Administrative Services segment involves the day-to-day management and maintenance of the Agency's internal administrative, financial, personnel, etc. systems.

2.1 Segment Prioritization

Starting in 2007, the EA Program began identifying criteria for prioritizing segments and began discussions with the IIS. In 2009, EPA gathered input from OMB feedback, internal discussions, and external drivers, which led to the reorganization of the segments. With 14 segments identified, the EA Program began developing a structured yet subjective process for prioritizing segment efforts.

Figure 2-2: Segment Prioritization Process



In order to define which segments should be deemed high priority, criteria were developed from a number of angles. Strategic concerns, interdependencies between segments, funding and their respective solutions, and investment portfolio impacts were all taken into account. Objective criteria were developed based on IIS feedback from the previous prioritization discussions, input from EAWG meetings, guidance from OMB, OEI enterprise priorities, EA Team insight, and availability of data to support the proposed criteria. Criteria were grouped into four main categories:

**Table 2-2: Segment Prioritization Categories**

Strategic Priorities	Presidential Priorities Receiving Recovery Act/Stimulus Funds EPA Administrator Priorities EPA Strategic Plan Goals (G1-5) OEI Priorities Mission Performance Gaps (PAR)
Enterprise Dependencies	Segment Interdependencies
Investment Priorities	Cumulative Investment Cost DME Investment Cost Number of Investments
External Priorities	GAO Reports IG Investigations OMB Assessment Feedback eGovernment/Lines of Business/Cross-cutting Relationships

The EA Team populated a matrix with the criteria findings for the 14 segments and sent it to key EA stakeholders. Several forums were established to gather stakeholder feedback on the prioritization matrix, including a briefing at the monthly EAWG session and an online discussion forum. In order to ensure that EA decisions and priorities are not imposed from a limited field of vision, consensus from the IIS, EAWG, OEI Management, and Segment Owners was established.

Following the feedback period, the team will identify the segments that appear to have more reasons for being priority and will present the criteria to the IIS to determine segment prioritization. The CIO will approve the segment's prioritization criteria and facilitate the decision making process.

Progress will continue on all segment fronts in the upcoming year. Development of the newly benchmarked IT Infrastructure Management, Information Sharing, and Financial Management segments will continue and the rest of the in-progress segments will continue to be actively developed, independent of the priorities that are discovered. Training will be held in September 2009 for all segment owners to focus on communicating effective use of the Federal Segment Architecture Methodology (FSAM).

2.2 Aligning of Transition Strategy Projects to Target Architecture

Table 2-3: Alignment of Enterprise Transition Plan Projects to Target through EPA Segments and the Agency IT Portfolio provides both a segment and investment portfolio view of all IT projects (within the TS&SP scope) currently ongoing that are moving EPA toward its target EA. A line of sight can be seen between these projects and the Agency's IT portfolio (via UPI codes from the Exhibit 53 in the table below).

**Table 2-3: Alignment of Enterprise Transition Plan Projects to Target through EPA Segments and the Agency IT Portfolio**

Investments	Segment Alignment	2010 UPI Code
EPA Acquisition System (EAS)	Administrative Services	020-00-01-16-01-0231-00
EPA Personnel Access and Security System (EPASS)	Administrative Services	020-00-01-16-01-6026-00
Ez-Hire	Administrative Services	020-00-01-16-02-1226-00
Integrated Contracts Management System (ICMS)	Administrative Services	020-00-01-16-01-6013-00
Integrated Grants Management System (IGMS)	Administrative Services	020-00-04-00-01-1306-00
OARM Data Mart	Administrative Services	020-00-01-16-02-6025-00
Office of Administrative Services Information Systems (OASIS)	Administrative Services	020-00-01-16-02-6023-00
People-Plus HR	Administrative Services	020-00-01-16-01-1227-00
Strategic Lease and Asset Tracking Enterprise (SLATE)	Administrative Services	020-00-01-16-02-6024-00
AIRNOW	Air Quality Management and Climate Change	020-00-01-11-02-1072-00
Air Quality Subsystem (AQS)	Air Quality Management and Climate Change	020-00-01-11-02-1020-00
AirQuest Data Warehouse	Air Quality Management and Climate Change	020-00-01-11-02-1067-00
AQS Data Mart	Air Quality Management and Climate Change	020-00-01-11-02-1081-00
Clean Air Markets Division Business System (CAMDBS)	Air Quality Management and Climate Change and Climate Change	020-00-01-11-01-1030-00
Emission Inventory System (EIS) Project	Air Quality Management and Climate Change	020-00-01-11-02-1077-00
Emissions Modeling Framework (EMF)	Air Quality Management and Climate Change	020-00-01-11-02-1076-00
Environmental Radiation Ambient Monitoring System (ERAMS/RadNET)	Air Quality Management and Climate Change	020-00-01-11-02-1060-00
EPA Moderated Transaction System (EMTS)	Air Quality Management and Climate Change	020-00-01-11-02-1083-00
Fuel Reporting System (DCFUEL)	Air Quality Management and Climate Change	020-00-01-11-02-1066-00
Greenhouse Gas – Mandatory Reporting Rule (GHG-MRR) Data System	Air Quality Management and Climate Change	020-00-01-11-02-1082-00
Integrated Strategic Tracking and Recruiting (iSTAR)	Air Quality Management and Climate Change	020-00-01-11-02-1061-00
Motor Vehicle Emission Simulator (MOVES)	Air Quality Management and Climate Change	020-00-01-11-02-1062-00
OAR Internet Support	Air Quality Management and Climate Change	020-00-01-11-02-1073-00
RACT/BACT/LAER Clearinghouse	Air Quality Management and Climate Change	020-00-01-11-02-1074-00
NVFEL Laboratory Data Management System	Air Quality Management and Climate Change	020-00-01-11-02-1063-00
Unix Computer System	Air Quality Management and Climate Change	020-00-01-11-02-1068-00
Vehicle and Engines System (VERIFY)	Air Quality Management and Climate Change	020-00-01-11-02-1078-00
Computer Aided Management of Emergency Operations (CAMEO)	Emergency Management	020-00-01-14-02-4010-00



Investments	Segment Alignment	2010 UPI Code
Emergency Management Portal	Emergency Management	020-00-01-13-01-3013-00
System for Risk Management Plans (SRMP)	Emergency Management	020-00-01-13-02-1030-00
Web Emergency Operations Center	Emergency Management	020-00-01-14-02-4014-00
Integrated Compliance Information System (ICIS)	Enforcement and Compliance	020-00-01-15-01-1010-00
Financial Replacement System (FinRS)	Financial Management	020-00-01-01-01-1126-00
Integrated Resource Management System (IRMS)	Financial Management	020-00-01-01-02-1065-0
Legacy Financial System (LFS)	Financial Management	020-00-01-01-01-1060-00
National Geospatial Program	Geospatial Services	020-00-01-16-01-0120-00
EPA Enterprise Architecture Development & Integration	Information Management	020-00-03-00-02-0301-00
ASSERT	Information Management	020-00-01-16-02-6019-00
EcoStat Performance Management System	Information Management	020-00-01-16-02-6035-00
Clinger-Cohen Act	Information Management	020-00-03-00-02-0302-00
Enterprise Content Management System (ECMS)	Information Management	020-00-01-16-01-0240-00
Environmental Indicators (EI) Gateway	Information Management	020-00-01-16-02-6043-00
Envirofacts Information Warehouse	Information Management	020-00-01-16-02-6003-00
eRulemaking	Information Management	020-00-01-16-01-0060-24
Extract, Transform, and Load Tool (ETL)	Information Management	020-00-01-16-02-6044-00
Facility Registration System (FRS)	Information Management	020-00-01-16-02-6030-00
FOIAXpress	Information Management	020-00-01-16-02-6001-00
Identity and Access Management (IAM)	Information Management	020-00-01-16-02-6037-00
Information Technology Governance Support System (ITGSS)	Information Management	020-00-01-16-02-6028-00
Internet Operations and Maintenance Enhancements (IOME)	Information Management	020-00-01-16-01-6008-00
System of Registries	Information Management	020-00-01-16-02-6006-00
Toxics Release Inventory Explorer (TRI Explorer)	Information Management	020-00-01-14-02-1090-00
Toxics Release Inventory Processing System (TRIPS)	Information Management	020-00-01-14-02-1081-00
Toxics Release Inventory Made Easy Web (TRI-MEweb)	Information Management	020-00-01-14-02-1079-00
Web 2.0 Applications Project – Infrastructure and Deployment Support	Information Management	020-00-01-16-02-6045-00
WebCMS	Information Management	020-00-01-16-02-6042-00



Investments	Segment Alignment	2010 UPI Code
WebForms	Information Management	020-00-01-16-02-6021-00
Central Data Exchange (CDX)	Information Sharing	020-00-01-16-01-6005-00
Inspector General Enterprise Management System (iGEMS)	Internal Controls and Oversight	020-00-01-16-02-6039-00
Inspector General Enterprise Resource System (TIGER)	Internal Controls and Oversight	020-00-01-16-02-6012-00
Tiger Security (TSEC) Project	Internal Controls and Oversight	020-00-01-16-02-6027-00
Technology Infrastructure Modernization (TIM)	IT Infrastructure Management	020-00-02-00-01-0201-00
Assessment Cleanup and Redevelopment Exchange System/Brownfields Management System (ACRES)	Land Quality Management	020-00-01-14-02-4012-00
Clean-Ups in My Community (CIMC)	Land Quality Management	020-00-01-13-02-3016-00
Comprehensive Environmental Response, Liability Information System (CERCLIS)	Land Quality Management	020-00-01-13-01-1010-00
eManifest	Land Quality Management	020-00-01-13-01-3014-00
OSTRI Web Applications	Land Quality Management	020-00-01-13-02-3002-00
OSWER Performance Assessment Tool (PAT)	Land Quality Management	020-00-01-13-02-3017-00
RCRAInfo	Land Quality Management	020-00-01-13-02-1060-00
Superfund Document Management System (SDMS)	Land Quality Management	020-00-01-13-01-1020-00
Superfund Electronic Facts (SeFacts)	Land Quality Management	020-00-01-13-02-3003-00
Superfund Enterprise Management System (SEMS)	Land Quality Management	020-00-01-13-01-3015-00
Environmental Information Management System (EIMS)	Research and Science	020-00-01-16-02-6007-00
Environmental Science Connector	Research and Science	020-00-01-16-02-6022-00
ORD Management Information System (OMIS)	Research and Science	020-00-01-16-02-6004-00
ORD Websites	Research and Science	020-00-01-16-02-6018-00
Pesticide Registration Information System (PRISM)	Substance Management	020-00-01-14-01-1030-00
Manage Toxic Substances (MTS)	Substance Management	020-00-01-14-02-4016-00
Federal Lead-Based Paint Program (FLPP)	Substance Management	020-00-01-14-02-4003-00
Better Assessment Science Integration Point and Nonpoint Sources (BASINS)	Water Quality Management	020-00-01-12-02-2007-00
Clean Watersheds Needs Survey	Water Quality Management	020-00-01-12-02-1050-00
eBeaches	Water Quality Management	020-00-01-12-02-2002-00
Electronic NPDES Online Permit Developer	Water Quality Management	020-00-01-12-02-2019-00
Hydrologic and Water Quality System	Water Quality Management	020-00-01-12-02-2015-00



Investments	Segment Alignment	2010 UPI Code
National Assessment and TMDL Tracking System (ATTAINS)	Water Quality Management	020-00-01-12-02-2018-00
National Hydrography Dataset	Water Quality Management	020-00-01-12-02-1010-00
PRAWN	Water Quality Management	020-00-01-12-02-2010-00
Safe Drinking Water Information System (SDWIS)	Water Quality Management	020-00-01-12-01-1030-00
Section 319 Grant Reporting and Tracking System	Water Quality Management	020-00-01-12-02-2020-00
Storage and Retrieval Information System (STORET)	Water Quality Management	020-00-01-12-01-1040-00
Tribal Information Management System	Water Quality Management	020-00-01-12-02-2006-00
Underground Injection Control (UIC)	Water Quality Management	020-00-01-12-02-2016-00
Water GeoServices	Water Quality Management	020-00-01-12-02-2008-00
Wetlands Information Layer (WIL)	Water Quality Management	020-00-01-12-02-2012-00



3. EPA's Target Architecture

In 2002, formal documentation of the Agency's target architecture was developed and in 2009, it has been refreshed and sharpened to provide a straightforward, tangible target towards which segment and solution owners should build.

EPA's Target Architecture is a strategic framework that enables EPA's enterprise processes, functions, and services to meet the demands of current and future business needs without sacrificing the Agency's position as a leader in environmental management. It establishes a target state vision for the enterprise that can be easily cascaded to the operational levels, such as defined segments and associated programs/investments. The overall target's vision will enable better alignment with high-level strategic objectives and programs/investments. In addition, the target architecture provides a common framework for business, segments, investments, and others to develop their architectures and be confident their work will help the Agency make progress toward its vision.

The key element of EPA's target architecture is a focus on identifying common processes, services, and technology that may have once been duplicated across multiple organizations. A major goal for EPA is to use the EA practice to identify segments within the organization which could serve as candidates for service sharing and reuse, thus allowing for the optimization of the Agency's IT infrastructure. As EPA seeks to modernize, ensuring that the IT directly supports the business in a cost-effective manner, is key to achieving cost-savings.

Figure 3-1: EPA Target Architecture Lines of Sight

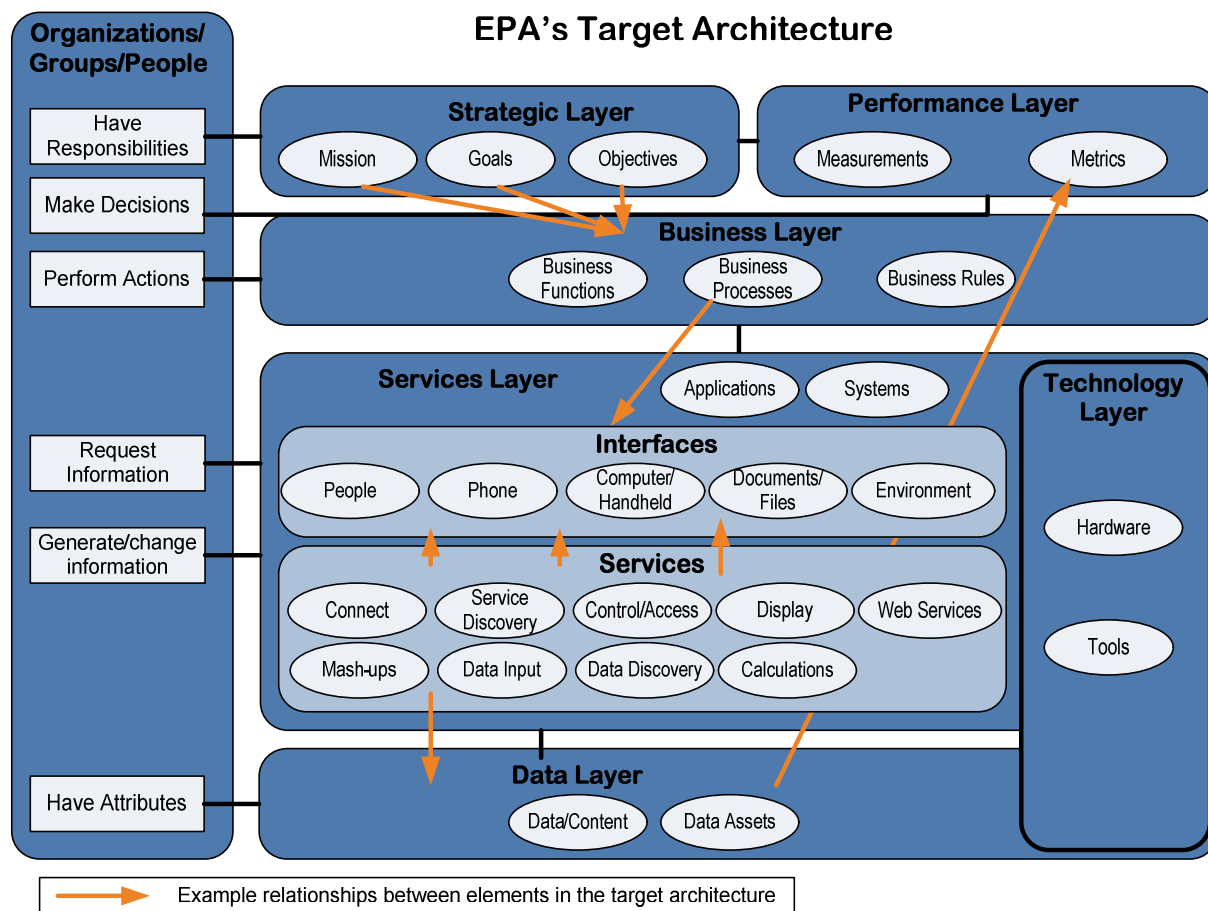


Figure 3-1 above illustrates the interrelationships between all the layers of EPA's target architecture: **Strategic, Performance, Business, Services, Technology, and Data**. The arrows in the diagram convey the relationships between the various elements of the target architecture; for example, metrics are used to measure performance but also serve as a type of data asset, services provide data through interfaces and both services and data are housed on technology platforms, and so on.

People (and groups and organizations) are the joining forces in EPA's Target Architecture and technology is shifting to put the person first⁴. Their needs and actions affect all layers and parts of the Agency's architectural framework. The line of sight from the people perspective communicates the complex interdependencies between people and the business areas, technical tools, and common services of the Agency. People, groups and organizations have goals (strategic layer), do work (business layer) and are measured (performance layer). They also request, generate and change information (data layer) that is enabled through common services (services layer) supported by technology (technology layer).

⁴ Key Consideration from FY 2009 National Program Manager Priorities, April 2009.



4. EPA's Target Transition Activities

EPA is making many strides in transitioning to its target architecture environment. As the Agency refreshes its target architecture to align with new strategic priorities, transition activities are also being refreshed to emphasize outcome-focused results. EPA aligned its transition goals with the priorities outlined in OMB's EA Assessment Framework v3.0. This section details the specific activities being taken to achieve EPA's transition goals, as depicted in Table 4-1 below.

Table 4-1: Transition Goals and Supporting Activities

Transition Goals	Transition Activities to Support Goals
Close Agency Performance Gaps	4.1 Enhancing EPA's Target Performance Architecture
Save Money and Avoid Cost	4.2 Moving Toward a Service-Oriented Architecture (SOA) 4.3 Enterprise Licensing 4.4 Integrating EPA's EA with E-Government (E-Gov) and Line of Business (LoB) Initiatives
Strengthen the Quality of Investments within Agency Portfolios	4.5 Modernizing EPA's Technology Infrastructure
Improve Quality, Validity, and Timeliness of Data and Information Regarding Program Performance	4.6 Advancing EPA's Target Data Architecture 4.7 Cross-Agency Information Sharing Initiatives

4.1 Enhancing EPA's Target Performance Architecture

An effective performance measurement architecture is critical to the implementation of an EPA outcome driven and service-IT centric target architecture. For example, EPA's target performance architecture can inform about what progress service oriented architecture initiatives are making towards building new projects, programs, and enterprise capabilities that solve real business problems agilely while helping EPA to migrate towards the desired target architecture. Also, if key EA performance indicators and measurable benefits are monitored / captured to inform EPA executives about critical performance improvement goals that are being met or missed, this would facilitate improved and informed decisions making. Towards this end, the EA Program will work with key partners to facilitate identification and leverage meaningful metrics that monitor progress and link performance driven outcomes back to the investment, data, service, business, program, and segment layers. Specifically, EPA will leverage ongoing efforts for maturing segments and for promoting development of clear segment-centric performance outcome milestones and outcome driven performance measures linked to IT enabling investments.

As of May 2009, EPA has updated its target performance architecture to better align with the Performance Reference Model, as well as to provide a more useful guide for segment owners in designing appropriate performance management strategies for their segment activities. In addition to refreshing the target performance architecture, EPA is undertaking several activities to further establish performance objectives. The Agency is currently updating its Strategic Plan, which includes strategic initiatives to improve performance management and align EPA goals with strategic outcomes to

measure performance. Segments are moving towards developing milestones that focus on performance and outcomes, which is expected to facilitate EPA alignment of performance goals at the Agency, segment, and investment level. In addition, all Planned and In-Progress segments completed a performance portion of their segment template which includes performance metrics that address strategic, segment, program and business performance. These segment templates are included in EPA's submission package.

4.2 Moving Toward a Service-Oriented Architecture (SOA)

As mission needs dictate change, one key strategy to move EPA towards the target EA is by enabling service reuse among IT systems across segments. Existing shared services are provided by a suite of Enterprise Tools and Services (Table 4-2 below) intended to reduce duplicative business functions and processes across the Agency's architecture, allow for more seamless, secure exchanges of data, and increase information sharing between EPA and its partners. EPA has defined an approach to leveraging service reuse throughout the Agency, which consists of 1) establishing an application/service component architecture of interdependent functions; 2) defining and deploying a suite of enterprise services; and 3) continuing to transition toward a service-oriented enabling Agency. *Table 4-1 EPA Planned SOA Activities* below provides a high-level overview of planned SOA activities at EPA.

Figure 4-1: EPA Planned SOA Activities

Features & Benefits	"Light and Fast" SOA Implementation Activities			
Use Service Orientation To Enhance The Value Of The EPA's Services	Focus Decision Making on Key Services	Profile Key Services to Inform Decision Making	Pragmatic Education And Outreach	Proactive Customer Solution Support
Use Modular Services To Spend Less Time And Money	Enterprise Service Catalog	Assemble New Processes And Systems Using Modular Services	Re-factor Legacy Processes And Systems Using Modular Services	
Use SOA Standards And Enabling Services To Do More	Standardize Services (Flexibility vs. Maintainability)	SOA Foundation Services (e.g., Enterprise Service Bus)	Enabling Services (e.g. Collaboration)	
Use Shared Services To Leverage EPA Strengths	Re-Use Available Services	"Top Down" SOA-Enablement via Management Processes (e.g., Strategy, EA, CPIC, SLCM)	"Bottom Up" SOA Enablement via Communities of Interest (e.g., SOA COI / WSWG, EAWG)	
Use Service Roadmaps To Optimize Processes And Applications	Service Roadmaps For Key Services	Agile Service Lifecycle Management	SOA Enablement Center	

EPA is progressing towards full SOA implementation with the creation of an enterprise service catalog intended to define and categorize services to achieve improved cost-savings and operational efficiency. The enterprise service catalog is contained in the Service Layer chapter of EPA's Target Architecture 3.0, which was developed using a bottoms-up approach to defining services both currently in use and needed to support the business needs of the Agency. Through this exercise, EPA has begun to identify common business application service areas used across segments as an initial step in achieving the goal of saving money and avoiding redundant costs.

Figure 4-2: Services Layer Roadmap: Business Application Services by Segment

Business Application Services (By Segment) – Page 1 of 2

Air Quality Management and Climate Change		Water Quality Management		Research & Science	
[AQ-AQDTCMGMT] Air Quality Data Collection & Management Source: READ Systems: AQS	[AQ-NVLABDM] NVFEL Lab Data Management Source: READ Systems: LDMS	[WQ-WTCONTAMIS] Water Contamination Information Sharing Source: READ Systems: WCIT	[WQ-ENVIROMWATER] Enviromapper for Water Source: READ Systems: EFW	[RS-RSINTCOM] Research Internal Communication Source: ASI portal and ORD tasking documentation Systems: AIRQUEST	[RS-ENVINFMS] Environmental Information Management Source: READ Systems: EIMS
[AQ-RADINFSTRPT] Radiation Information Storage & Reporting Source: READ Systems: RadNet	[AQ-FCDTCMGMT] Fuel Compliance Data Collection & Management Source: READ Systems: DCFUELS	[WQ-DWINFARCH] Drinking water information archive Source: READ Systems: Drinking Water Loading and Archiving System	[WQ-WTQUALTRK] Water quality tracking Source: READ Systems: WQSITS	[RS-RISKINFST] Risk Information Storage Source: ASI portal and ORD tasking documentation Systems: IRIS	[RS-ENVSCICON] Environmental Science Connector Source: READ Systems: Environmental Science Connector
[AQ-AQDATAMART] Air Quality Data Mart Source: READ Systems: AQSMart	[AQ-EMISMODEL] Emissions Modeling Source: READ Systems: EMF	[WQ-WTGRANTRPTRK] Section 319 Grants Management Source: READ Systems: GRTS	[WQ-ENVIRMETHIS] Environmental Methods Information Sharing Source: READ Systems: NEMI	[RS-PUBDATATRK] Public Data Request Tracking Source: ASI portal and ORD tasking documentation Systems: PIRTS	[RS-FACILTRK] Facility Tracking Source: ASI portal and ORD tasking documentation Systems: FTS
[AQ-EMISDTCMGMT] Emissions Data Collection & Management Source: READ Systems: EISys	[AQ-PUBAIRPOLSHR] Public Air Pollution Information Sharing Source: READ Systems: AIRNOW	[WQ-BASINS] Better Assessment Science Source: READ Systems: BASINS	[WQ-EBEACHES] Electronic Beach Assessment Source: READ Systems: eBeaches	[RS-WORKRQTRK] Work Request Tracking Source: ASI portal and ORD tasking documentation Systems: WRTS	[RS-INTACCMGMT] Integrated Accountability Management Source: ASI portal and ORD tasking documentation Systems: IAMS
[AQ-VEINFOMGMT] Vehicles and Engines Information Management Source: READ Systems: Verify	[AQ-PARTNTRK] Partnership Tracking Source: READ Systems: ISTAR	[WQ-HYDROWQS] Hydrologic and Water Quality Management Source: READ Systems: Hydrologic and Water Quality System	[WQ-NATMDLTRK] National Assessment & TMDL Tracking Source: READ Systems: ATTAINS	[RS-LABCATRK] Lab Corrective Action Tracking Source: ASI portal and ORD tasking documentation Systems: LCATS	[RS-RECMGMTTRK] Records Management Tracking Source: ASI portal and ORD tasking documentation Systems: RMD
[AQ-CAMDBS] Clean Air Markets Division Business Management Source: READ Systems: CAMDBS	[AQ-AQUESTDW] AirQuest Data Warehouse Source: READ Systems: AIRQUEST	[WQ-NATMDLTRK] Water Program Tracking Advisories Source: READ Systems: PRAWN	[WQ-SDWIS] Safe Drinking Water Information Management Source: READ Systems: SDWIS	[RS-INTRESMGMT] Integrated Resource Management Source: ASI portal and ORD tasking documentation Systems: IRMS	[RS-RSFINMGMT] Research Financial Management Source: ASI portal and ORD tasking documentation Systems: OMIS
	[AQ-MOTOESIM] Motor Vehicle Emission Simulation Source: READ Systems: MOVES	[WQ-UNDERGIC] Underground Injection Control Source: READ Systems: UIC	[WQ-STORET] Storage and Retrieval Information Management Source: READ Systems: STORET	[RS-ACQMGMT] Acquisition Management Source: ASI portal and ORD tasking documentation Systems: EPA Acquisitions Systems	[RS-TRAVMGMT] Travel Management Source: ASI portal and ORD tasking documentation Systems: GovTrip

Legend

Business Application Services with Existing Systems

Business Application Services with Major Planned Changes

Business Application Services (By Segment) – Page 2 of 2

Emergency Management	Internal Controls & Oversight	Enforcement & Compliance	Land Quality Management			Substance Management
[EM-EMPORTAL] Emergency Management Portal Source: READ Systems: EMP	[CO-IGAUDIT] IG Audit, Program Evaluation, and Investigation Tracking Source: READ Systems: IG Project/Program Management System	[EC-AIRFACTRK] Air Facility Tracking Source: READ Systems: AFS	[LO-ADMINTRK] Administrative Tracking Source: READ Systems: Admin	[LQ-CIMCPUB] Cleanups Information for Public (visual maps) Source: READ Systems: CIMC	[LQ-GRNTPERTRK] Grant Performance Tracking Source: READ Systems: TAG	[SM-TOXSUBINFMGMT] Toxic substance information management Source: READ Systems: MTS
[EM-EMNOTIFY] Emergency Notification Source: READ Systems: ERNS	[CO-IGENTMGMT] IG Enterprise Information Management Source: READ Systems: IGEMS	[EC-WATERPCINFO] Water Permit Compliance Information Sharing Source: READ Systems: PCS	[LQ-BRWNGRANPERTRK] Brownfields Grants Performance Information Collection/Management Source: READ Systems: ACRES	[LQ-CERCPAD] CERCLIS Public Access Data Mart Source: READ Systems: CPAD	[LQ-TRAINTRK] Training Tracking Source: READ Systems: Training	[SM-PESTINFMGMT] Pesticide Information Management Source: READ Systems: OPPIN
[EM-RISKMPDTCMGMT] Risk Management Plan Collection and Management Source: READ Systems: SRMP	[CO-IGTIGER] IG Enterprise Resource Management Source: READ Systems: TIGER	[EC-INTCOMPYRPT] Integrated Compliance Reporting Source: READ Systems: ICIS	[LQ-PERSONTRK] Personnel Tracking Source: READ Systems: PTS	[LQ-PUBARCHSITEINFO] Publishing Archived Site Information Source: READ Systems: Archived Sites	[LQ-STATEAUTHTRK] State Authorization Tracking Source: READ Systems: STATS	[SM-PESTREGINFMGMT] Pesticide Registration Information Management Source: READ Systems: PRISM
[EM-CAMEO] Computer Aided Management of Emergency Operations Source: READ Systems: CAMEO	[CO-AUDITTRACK] Audit Tracking Source: READ Systems: Autoaudit	[EC-WASTEINTRK] Waste International/Information tracking Source: READ Systems: WITSNET	[LQ-RCRADTCMGMT] RCRA Data Collection and Management Source: READ Systems: RCRAInfo	[LQ-OSTRIWA] OSRTI Web Applications Source: READ Systems: OSRTI Web Applications	[LQ-INFREQTRK] Information Request Tracking Source: READ Systems: IRTS	[SM-PERSAWRDTRK] Track personnel information and awards Source: READ Systems: HROB Portal
[EM-WEBEOC] Web Emergency Operation Source: READ Systems: WebEOC	[CO-IGOPSRPT] IG Operations and Reporting Source: READ Systems: IGOR	[EC-ENFDTWARE] Enforcement Data Warehouse Source: READ Systems: Enforcement Data Warehouse	[LQ-RCRACBITRK] RCRA CBI Information Tracking Source: READ Systems: RCRA CBI System	[LQ-ANALYTICSVTRK] Analytical Services Tracking Source: READ Systems: ANSETS	[LQ-DRUMWSTTRK] Drummed Waste Data Tracking Source: READ Systems: DrumTrak	[SM-TOXCONTRANS] Toxic Substances Control Act Data Transmittal System/Chemical Abstract Service Source: READ Systems: TDTS/CAS
		[EC-CRIMCASERPT] Criminal Case Reporting Source: READ Systems: CCRS	[LQ-SEDIREMTRK] Sediment Remedy Tracking Source: READ Systems: SRTT	[LQ-SFENTERMGMT] Superfund Enterprise Management Source: READ Systems: SEMS, CERCLIS, SDMS, ICTS	[LQ-SFEFACTS] Superfund Electronic Facts Sharing Source: READ Systems: SeFacts	[SM-SUBCBITRK] CBI Information Tracking Source: READ Systems: CBITS
		[EC-ENFCOMPRPT] Enforcement and Compliance Query Source: READ Systems: Enforcement and Compliance Query System	[LQ-OSWERPAT] OSWER Performance Assessment Source: READ Systems: PAT			[SM-TRIMGMT] Toxics Release Inventory Management Source: READ Systems: TRI Explorer, TRIPS, TRI-MEweb

Legend

Business Application Services with Existing Systems

Business Application Services with Major Planned Changes

EPA is also progressing toward a service-oriented target architecture using a suite of Enterprise Tools and Services. These Enterprise Tools and Services offer segments the benefits of streamlined data exchange and application integration without the need to develop and maintain costly, customized solutions. Enterprise Tools and Services are represented in the enterprise service catalog and form the foundation of EPA's target architecture.

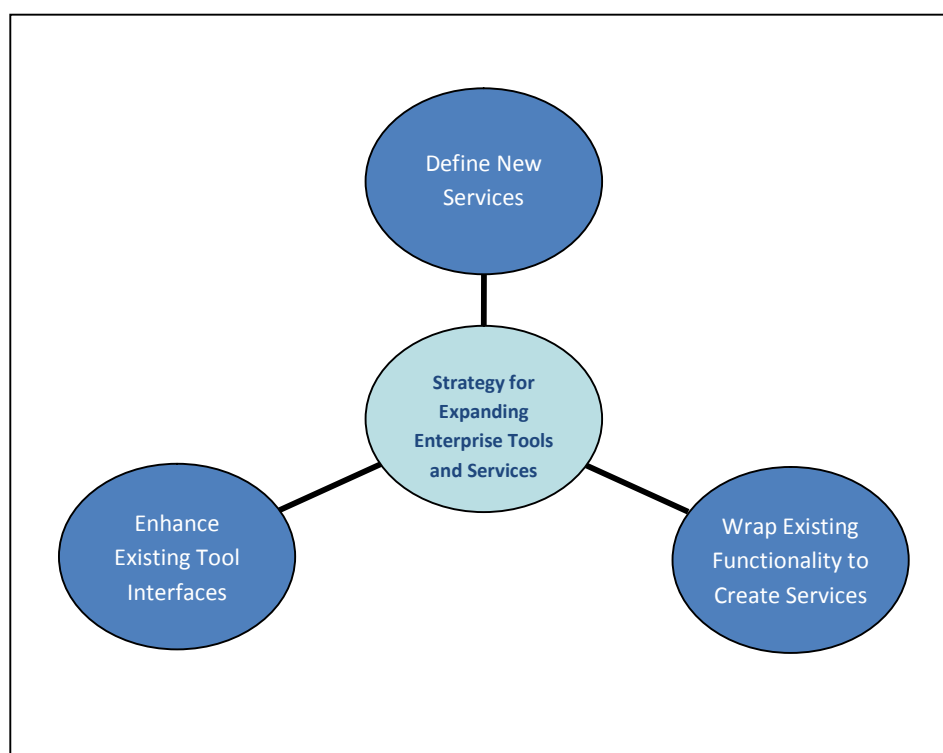
Table 4-2: EPA Enterprise Tools and Services and their Associated Services/Functions

Enterprise Tool	Definition
Central Data Exchange (CDX)	Enables fast, efficient and more accurate environmental data submissions from state and local governments, industry and tribes to participating Program Offices
Geospatial Technologies (GEO)	Facilitating enterprise access to Geospatial information
Identity and Access Management (IAM)	A single approach to a shared identity management strategy which ensures security, privacy, and information integrity
Electronic Content Management System (ECMS)	A shared document repository to manage unstructured data
Extract, Transform and Load tool (ETL)	A single solution for moving data from multiple sources
XML Registry	A tool for accessing information about XML schemas, data exchange templates (DETs), and supporting files for the Environmental Information Exchange Network
System of Registries (SoR)	<p>A gateway which provides search capability to several registries and repositories</p> <ul style="list-style-type: none"> • System Inventory Service: Authoritative source of information about EPA information resources • Data Registry Service: Supports the management and use of environmental data maintained in EPA and partner systems • Substance Registry Service: Centralized information on substances and how they are represented in EPA regulations and information systems • Reusable Component Service: Provides a central point of access to a broad range of components and services catalogued and stored in various registries and repositories. • Terminology Services: Repository of environmental terms for the creation and management of terminology resources and consists of Agency collaboration tools. • Facility Registry System: A single integrated source of comprehensive (air, water, and waste) environmental facilities, sites, or places
Web Registry	A centrally managed database used to collect metadata for EPA's priority web materials
EPA Portal	A central portal environment to customize the user experience and create communities of users with similar interests to display the data and tools relevant to users' business needs
Enterprise Collaboration Tools	<p>Universally accessible and available tools providing to EPA employees, business partners and affiliates</p> <ul style="list-style-type: none"> • Mutual visibility and instant connectivity • Immediate, multiple channel communication and information transfer capability • Interactive, virtual workspace environment.
Business Intelligence and Analytical Tools (BIA)	<p>A set of Agency standard tools designed to:</p> <ul style="list-style-type: none"> • Aggregate, analyze, and display business information • Facilitate sharing and reuse of information, knowledge, and experience in

Enterprise Tool	Definition
	<p>the adoption and management of BIA technology across the Agency</p> <ul style="list-style-type: none"> • Enhance the Agency's analytic and decision making capabilities • Achieve economies of scale in the implementation, maintenance, and use of BIA tools and applications

As EPA continues to transition to our target architecture, Enterprise Tools and Services will play a key role in implementing our transition plan. EPA will employ a three-pronged approach, depicted below in Figure 4-3, to enhance and enable Enterprise Tools and Services to further develop a service-oriented environment.

Figure 4-3: EPA Strategy for Expanding Enterprise Tools and Services



Using this approach, EPA's services architecture can be flexible and adapt to the changing business needs of the Agency. If new business needs emerge, or existing business needs dictate, EPA can define new Enterprise Tools and Services to meet changing demand. As appropriate, EPA will elevate functionality available in existing applications to the enterprise tool/service level to continue to eliminate redundant system development expenditures. EPA is also working to ensure existing Enterprise Tools and Services are easy for segments to access and interface with their business applications by enhancing enterprise service offerings.



4.3 Enterprise Licensing

EPA is also addressing the common needs of its important data consumers (e.g., the geospatial communities) by leveraging the benefits of enterprise licensing agreements (ELA). Through the use of these ELAs, EPA is experiencing the following:

- Reduced costs by establishing multi-year “Enterprise” contracts
- Reduced burden by consolidating procurements
- Enhanced service offerings
- One Stop Customer Service

In addition, ELAs are currently helping EPA’s business by enhancing analytical expertise, responding in emergencies, improving data quality, and enhancing enforcement. Currently, EPA maintains a variety of ELAs with several leading information software providers including those that directly support the implementation of several of its Enterprise Tools and Services.

4.4 Integrating EPA’s EA with E-Government (e-Gov) and Line of Business (LoB) Initiatives

The Federal Transition Framework (FTF) is a way for agencies to define and incorporate the numerous e-Gov/LoB cross-agency initiatives, shared services, and/or standards, defined by OMB, into their EA. In keeping with EPA’s target EA focus of service reuse, the Agency has incorporated relevant e-Gov and LoB initiatives into its EA, in an effort to adopt externally hosted, cost-effective solutions and services that can be leveraged Agency-wide.

In support of moving toward a federal shared service center/line of business environment, EPA, beginning in 2010, is preparing to undertake three significant moves. PeoplePlus, the Agency’s time and attendance system will be moving to an external system hosted at a shared service center in the Human Resources Line of Business (HRLoB). With this move, all of the Agency’s HR processing will be moving off-site. In addition, EPA will also be moving an internal grants management system to the Grants Management Line of Business (GMLoB), which is hosted at the Department of Health and Human Services. Finally, EPA is in the process to update its financial management system and the current system design plans have identify and contracted with external hosting provider. All of the activities discussed above are aimed at moving EPA toward a target environment where services (via applications) can be effectively reused across multiple segments, thus providing the desired functionality without the need for custom development and costly maintenance of IT solutions.

According to current plans, these projects and associated IT resources will be hosted and managed by three different service providers and organizations. As federal agencies migrate their mostly internal IT systems and resources to external, consolidated service providers through the various e-Gov and LoB initiatives, these agencies will continue to need access to their data and create reports to manage their financial, grant, and acquisition processes. Many of these management reports will require the integration of data between these three administrative areas. As the project plans exist today, federal



agencies would import data from each LoB or e-Gov provider and internally integrate the data to produce the necessary reports. As these government-wide initiatives mature, the e-Gov and LoB service providers could work together to integrate data and produce needed reports at the federal level, thereby reducing the workload of individual federal agencies to produce these reports themselves.

Table 4-3: EPA Implementation of Federal E-Government and Line of Business Initiatives provides a cross-walk between e-Gov/LoB initiatives and the primary investment(s) within the Agency's portfolio which supports these initiatives.

Table 4-3: EPA Implementation of Federal E-Government and Line of Business Initiatives

E-Gov/LoB Initiative	Administrative Services	Air Quality Management and Climate Change	Emergency Management	Enforcement and Compliance Assurance	Financial Management	Geospatial Services	Information Management	Information Sharing	IT Infrastructure Management	Land Quality Management	Research and Science	Substance Management	Water Quality Management
Budget Formulation and Execution Line of Business	X				X								
Disaster Management		X	X										
E-Authentication								X				X	
E-Clearance	X											X	
E=Payroll	X											X	
E-Records Management											X	X	
E-Rulemaking		X	X	X			X			X			X
E-Training	X												
E-Travel	X				X				X			X	
Enterprise HR Integration	X											X	
Federal Asset Sales	X												
Federal Funding Accountability and Transparency Act (FFATA)	X												
Financial Management Line of Business	X				X								
Geospatial Line of Business		X	X			X		X		X	X		X
Geospatial One-Stop		X	X			X		X		X	X		X
Geospatial Management Line of Business	X	X						X		X	X		
Grants.gov	X	X						X		X	X	X	
HSPD-12	X					X							
Human Resources Line of Business	X												

E-Gov/LoB Initiative	Administrative Services	Air Quality Management and Climate Change	Emergency Management	Enforcement and Compliance Assurance	Financial Management	Geospatial Services	Information Management	Information Sharing	IT Infrastructure Management	Land Quality Management	Research and Science	Substance Management	Water Quality Management
Information Sharing Environment						X				X		X	
Information Systems Security (ISS) Line of Business							X		X			X	
Integrated Acquisition Environment (IAE)	X												
Internet Protocol Version 6 (IPv6)									X			X	
ITDS			X										
IT Infrastructure Line of Business									X		X	X	
National Information Exchange Model (NIEM)			X									X	X
Recruitment One-Stop	X												
SAFECOM			X										
SmartBUY						X	X						

4.5 Modernizing EPA's Technology Infrastructure

The technology layer of EPA's next generation target architecture focuses on providing a reliable and highly-available technology infrastructure. Through the use of emerging technologies, our technology investment portfolio is creating a strong backbone for our infrastructure that supports EPA's main business functions.

Improvements in Infrastructure Efficiency

EPA continuously seeks to enhance its IT infrastructure to take advantage of the best in emerging technologies to support the needs of agency segments, investments, and user constituents while maintaining its enterprise approach to technology management. An efficiently managed IT infrastructure enables EPA's technology and business investments to improve cost and schedule performance and focus on outcome-based achievements to enhance the quality of the Agency's IT portfolio.

EPA's current focus is to reduce centralized application hosting costs and improve hosting agility and responsiveness through standardization, virtualization, and consolidation of servers and storage. EPA is also streamlining the management of desktop computing resources through enterprise desktop provisioning and management services, which allows the Agency to standardize desktop configurations and management practices to yield significant cost savings and resource efficiency.

Infrastructure Enhancements

EPA is focused on enhancing the Agency's IT infrastructure to improve both technology performance and security. The target technology architecture includes a significant increase in WAN capacity, acquired through the GSA Networkx contract. EPA will also leverage Trusted Internet Connection (TIC) compliant internet connectivity to improve WAN security. By June 2009, EPA will have implemented a second trusted internet connection for the Agency. This is the core milestone of EPA's TIC planning.

EPA's target technology architecture also includes plans to enhance infrastructure capability by leveraging emerging technologies in the areas of collaboration, communication, and content infrastructure. EPA's scientific and regulatory mission, its need to convey information on human health and the environment, and its commitment to transparency and openness in conducting its operations make excellent collaboration a high Agency priority.

Interoperability with Future Technologies

EPA is working diligently to meet all OMB mandated requirements to migrate to Internet Protocol version 6 (IPv6) and has developed a design that can bi-directionally pass traffic via the "core" (WAN). With this design, the Agency's IT infrastructure is being tested to take advantage of this emerging technology through the use of its National Computing Center (NCC) at Research Triangle Park, NC, its "Core WAN", and a regional office (Region 8 in Denver, CO).

For this IPv6 modernization, EPA has created and submitted to OMB its IPv6 Production Test Plan. This test plan documents 13 detailed tests that will be performed in order to verify the success of the IPv6 implementation. EPA has met its significant IPv6 milestones and is continuing its migration towards implementation of IPv6.

4.6 Advancing EPA's Target Data Architecture

Efforts to advance EPA's Target Data Architecture are built on the desired ability to answer three core questions:

- What data exists?
- What does the data mean?
- How/where can one access the data?

Focusing on implementing data management best practices to manage the Agency's core data is a critical component of transitioning to EPA's Target Data Architecture. Using enterprise data exchange approaches, EPA will focus on improving the accuracy and availability of data to critical users and processes to continue transitioning to the target data sharing environment. The goals of the target data architecture continue to complement the Enterprise Architecture by:

- Helping stakeholders to find data quickly and easily;
- Fostering consistent quantitative and qualitative information about the data;

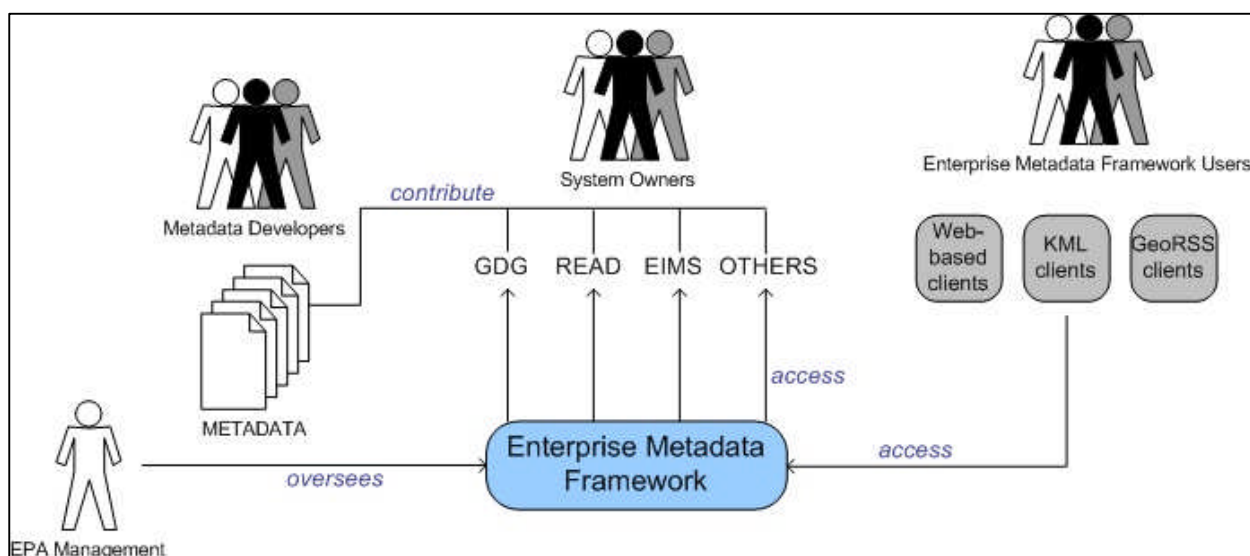
- Fostering a higher degree of collaboration between an organization and its constituents, and;
- Optimizing return on investment by managing data in an effective and transparent manner.

As data becomes an essential asset for EPA, it is essential that core data critical to the agency's mission is recorded and managed in a consistent way. This includes developing metadata records of the data asset so as to optimize the effectiveness of data discovery tools such as EPA's GeoData Gateway (GDG), and DataFinder search tools.

Specific activities in process and/or envisioned on the near horizon to support the transition to the Target Data Architecture include:

- The development and implementation of an Enterprise Metadata Framework.
- The acquisition and implementation of a data asset repository.
- The development of an Enterprise Data Policy.

Figure 4-4: EPA's Enterprise Metadata Framework



The development of an Enterprise Metadata Framework, paired with Agency technology resources, enable EPA's data sharing and management infrastructure to support the performance goals and outcomes of the Agency's enterprise target architecture as well as EPA's strategic goals and outcomes.

The acquisition and implementation of an enterprise data asset repository supports the vision of having a central registry to discover data assets. Work is currently underway in the Office of Information Collection evaluating tools specializing in asset repositories for use in the Reusable Component services registry.

The development and adoption of an enterprise data policy offers a governance mechanism to bind together many of the existing policies and procedures in place dealing with managing the Agency's data assets. In addition, the enterprise data policy would serve as a codifying tool to mainstream key requirements of the federal community such as the development of metadata records for Data.Gov.



Data.gov Involvement

EPA has taken a leadership role in the development and implementation of the Federal Data.Gov initiative,⁵ serving as a co-chair of the initiative. EPA is continually committed to innovation, collaboration, and transparency in data sharing, and our participation in this critical initiative illustrates our focus on information priorities.

4.7 Cross-Agency Information Sharing Initiatives

In addition to participating in all e-Gov/LoB initiatives, EPA has also focused significant resources on developing and managing three initiatives for which it serves as a federal service provider. EPA is a host of the Information Security Certification and Accreditation (C&A) initiative, as well as the e-Gov initiative and Federal Docket Management System, and the premier information sharing initiative, the National Environmental Information Exchange Network.

National Environmental Information Exchange Network (Exchange Network)

EPA has long been a champion of helping to develop and promote information sharing tools and solutions across the federal government. As far back as 1998, EPA was involved in developing information sharing capabilities, as the Agency formed the Information Management Work Group (IMWG), which created a design blueprint that demonstrated how a National Environmental Exchange Network could share and exchange environmental information in a more effective and efficient manner. This blueprint led to the Exchange Network becoming operational in 2003. The tool is an Internet-based approach for exchanging environmental data among partners (e.g., EPA, states, tribes and territories, federal agencies) and it is built on the principles of applying data standards; providing secure, real-time access; and electronically collecting and storing accurate information. The Exchange Network enables participants to control and manage their own data while making it available to partners via requests over a secure Internet connection. By facilitating the efficient exchange of environmental information among interested parties at all levels of government, the Exchange Network has begun to transform the way information is shared and has allowed EPA and its partners to save time and resources on environmental reporting by ensuring timely, high-quality data exchanges.

eRulemaking

EPA hosts the eRulemaking initiative, which mandates that agencies make their regulatory docket information accessible and searchable to the public using the Federal Docket Management System (FDMS) (second generation of Regulations.gov web site). This improves citizen access to, participation in, and understanding of the Federal rulemaking process, as well as improving the Agency's (Federal wide) efficiency and effectiveness in developing rulemakings. This project consolidates electronic rulemaking systems and paper-based processes across the various federal departments and agencies into a centrally managed Web-based application easily accessible by all users.

⁵ As stated in a Memorandum from Linda Travers, Acting Assistant Administrator in EPA's Office of Environmental Information, issued on May 5, 2009.

Regulations.gov serves as a trusted source of federal information providing the public with easy, one-stop access to all posted agency information. Through June 30, 2007, the Regulations.gov web site has received over 108 million hits, provided over 40 million page views, and accepted over 53,000 electronic public comments. Over 3,000 federal users representing 113 federal agencies have used FDMS to post Proposed Rules, Federal Register Notices, and supporting analysis documents. This access has revolutionized the way the federal government writes rules, solicits comments, and involves the public in its decision-making by moving from paper-based processes to new innovative processes leading to more efficient interactions between the federal government and the public it serves.

Automated System Security Evaluation and Remediation Tracking (ASSERT)

In February 2007, EPA was officially designated by the Department of Homeland Security and OMB as a Federal Shared Service Center to offer ASSERT as a FISMA Reporting Solution under the Information System Security Line of Business (ISSLOB). The following federal agencies have selected EPA as their FISMA Reporting Solution provider: General Services Administration (GSA), Social Security Administration (SSA), the U.S. Departments of Agriculture (USDA) and Housing and Urban Development (HUD), Small Business Administration (SBA), Export-Import Bank, and Pension Benefit Guarantee Corporation (PBGC).

EPA is a leading partner in offering reusable information security solutions to other federal agencies. In an effort to streamline the FISMA reporting process, EPA has developed the ASSERT system. ASSERT provides federal managers with the type of reports and information needed to help agencies protect their critical cyber infrastructure and promote protection of privacy information. It helps agencies better understand and assess their security risks, monitor corrective actions, and provide standardized and automated FISMA reports. Most importantly, ASSERT provides Agency senior managers the information they need, from an enterprise perspective, to make timely and informed decisions regarding the level of security implemented on their information resources. ASSERT is revolutionary because it builds the concept of "risk assessment" into the traditional system life cycle. It helps system owners and management officials better understand the risks systems face, the security controls necessary to address these risks, how systems interconnect, and current information on the status of any remediation activities being undertaken to strengthen the security on the information system. It should be noted that while EPA is a certification and accreditation host for the ISS LoB, the Agency participates in security and awareness training via services provided by the Department of State and USAID.

5. Sequencing Plan

Critical to the execution of EPA's target architecture is the commitment of segments and investments in continually progressing toward the shared target goal. To support this commitment, EPA projects routinely identify and update key milestones and activities being undertaken to move EPA towards its target architecture. These milestones and activities are consolidated into EPA's Sequencing Plan, a key component of the Enterprise Transition Plan, which lists planned milestone completion dates and critical dependencies in EPA's business transformation.

For 2009, EPA's Sequencing Plan is presented at the segment level. As inputs to this process, segments reported milestones and dependencies that focus on segment performance and strategic outcomes. These milestones are in addition to those reported at the investment level annually during the CPIC process; CPIC milestones are not included in this iteration of the Sequencing Plan. Figure 5-1 below presents a summary view of segment milestone timelines.

Figure 5-1: Summary of 2009 Sequencing Plan Milestones by Segment⁶

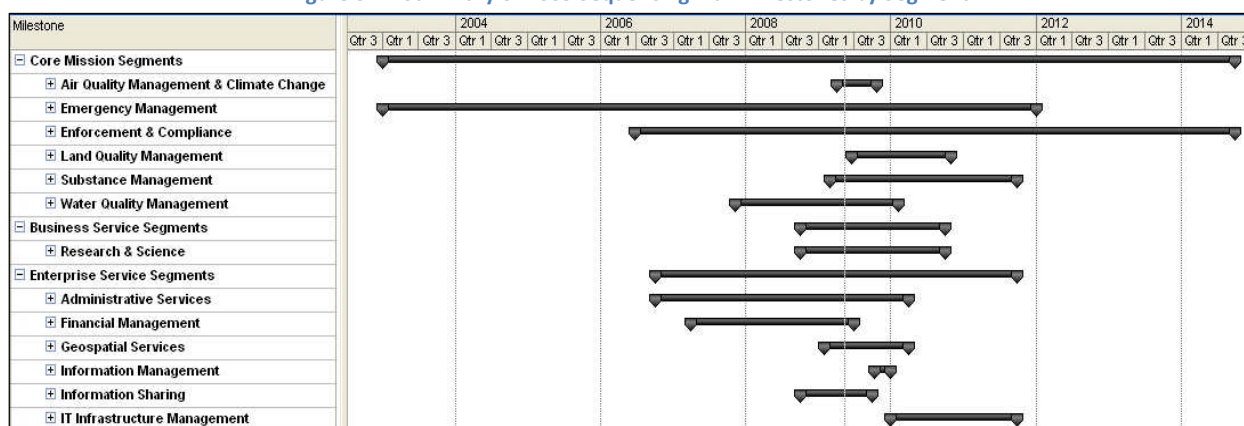


Table 5-1 below lists all milestone details reported by the segments, including dependencies between milestones, use of Enterprise Tools and Services, and potential constraints to achieving milestones on schedule.

⁶ Please note that no milestones were available for the Internal Controls & Oversight Segment at the time this Sequencing Plan was created.



Table 5-1: Segment Milestone Detail

Milestone ID	Segment	Milestone	Target/Actual Start Date	Target Completion Date	Actual Completion Date	Dependencies	Constraints
Core Mission Segments							
1	Air Quality Management & Climate Change	DATA ASSET METHODOLOGY AND FORMAT REVIEW: Validate the OAR Data Asset Inventory with EPA Architecture Program, Office of Information Collection, and other relevant groups. Generate methodology and draft specification for next level of detail in inventory, including metadata strategy.	30-Apr-09	15-Jun-09			Requires input from OEI EA Office and Information Exchange and Services Division.
2	Air Quality Management & Climate Change	DEVELOP NEXT LEVEL OF ASSET DETAIL: Revise and update Data Asset Inventory to next level of detail consistent with metadata strategy; develop appropriate metadata.	18-Jun-09	30-Sep-09		Milestone 1	Requires availability of staff support across OAR Offices and Regions.
3	Air Quality Management & Climate Change	USE ASSET LIST TO FACILITATE DESIGN of EPA SYSTEM: Use priority data assets and metadata as design input to EPA data asset management system.	1-Jun-09	30-Sept-09		Milestone 2	Requires coordination with OEI to designate and configure appropriate EPA data asset management system.
4	Air Quality Management & Climate Change	ASSESS OAR GEOSPATIAL DATA AND DEVELOP DRAFT OAR PROCEDURE: Assess OAR geospatial data across all offices and develop draft OAR Geospatial Data Procedure consistent with the EPA National Geospatial Data Policy (NGDP) for at least those geospatial data elements that are relevant to the EPA Facility Registry System. Provide overview assessment of findings to OEI Geospatial Information Officer (GIO).	1-Apr-09	30-May-09			Requires coordination with EPA GIO's office and review of 2005 NGDP.



Milestone ID	Segment	Milestone	Target/Actual Start Date	Target Completion Date	Actual Completion Date	Dependencies	Constraints
5	Air Quality Management & Climate Change	MANAGEMENT REVIEW OF PROCEDURE, FINALIZATION, PROMULGATION, and TRAINING: OAR management review of draft OAR Geospatial Data Procedure; complete scope of procedure and revise initial draft. Promulgate and provide implementation guidance across OAR Offices.	1-Jun-09	30-Nov-09		Milestone 3	Will require coordination with Regional Offices and S/L/T partners. This coordination may occur subsequent to completion of Procedure, but if not, may require extension of Milestone 4 to Spring 2010.
6	Emergency Management	Enable the tracking of national emergency response equipment readiness.		31-Dec-09			
7	Emergency Management	Enable the tracking of national responder readiness including professional responders and the volunteer Response Support Corps		31-Dec-10			
8	Emergency Management	Integrate data created in varied formats to allow seamless flow from the field to the public.		31-Dec-11			
9	Emergency Management	Software Modernization - Modernization of the mapping engine, and integration with other standard emergency tools.	31-Dec-08	30-Sept-10			
10	Emergency Management	Reduce data entry burden for the regulated community and improve data quality of risk management plan data.	30-Sept-08	31-Dec-2009			
11	Emergency Management	Improve data quality of spill report data by linking WebEOC and ERNS	31-Dec-06	30-Sept-10			
12	Enforcement & Compliance	Implement ICIS-NPDES (PCS Modernization) All Data Families	6/23/2006	6/30/2013			Availability of Funding, Selection of Technical Alternative for Full Batch Processing
13	Enforcement & Compliance	ICIS Phase III (AFS Modernization)	9/30/2008	9/30/2014		Milestone 12	Availability of Funding



Milestone ID	Segment	Milestone	Target/Actual Start Date	Target Completion Date	Actual Completion Date	Dependencies	Constraints
14	Enforcement & Compliance	Plan for IDEA Modernization	12/31/2009	9/30/2010			Availability of Funding
15	Land Quality Management	Update the LQM target, adding new projects per new requirements.	6/15/2009	12/31/2009			
16	Land Quality Management	Categorize the projects in the OSWER LQM Segment Architecture as being in the target or just recommended.	6/15/2009	3/31/2010		Milestone 15	
17	Land Quality Management	Complete a data assets inventory modeled on the one OAR did for the AQM segment.	6/15/2009	6/30/2010			
18	Substance Management	Phase 1a - ePMN Data Flow	3/1/2009	10/1/2009			RTP Architecture
19	Substance Management	Phase 1b - eIUR Data Flow	1/1/2010	FY2011			Business Model
20	Substance Management	Auto Work Flows - Market Res	3/24/2009	3Q - FY2009			
21	Substance Management	Auto Work Flows - Issue RFP	3Q - FY2009	9/1/2009		Milestone 20	
22	Substance Management	Initial Operational Capability	9/30/2009				
23	Substance Management	Retirement of Legacy System (OPPIN)	9/30/2009			Milestone 22	Retirement of legacy system (OPPIN) will not be executed until PRISM is initially operable.
24	Substance Management	Full Operational Capability	3/31/2011				
25	Water Quality Management	Create a position and hire an OW Enterprise Architect to manage and implement the EA program across the Water Quality Management Segment.	3/17/2008	11/12/2007	3/17/2008		
26	Water Quality Management	Document "as-is" business processes and conduct a detailed gap analysis across major OW programs to support the	3/17/2008	6/2/2008	10/1/2009	Milestone 25	Program/Business Owners overall EA understanding and participation.



Milestone ID	Segment	Milestone	Target/Actual Start Date	Target Completion Date	Actual Completion Date	Dependencies	Constraints
		development of a Target Architecture and IT portfolio management.					
27	Water Quality Management	Prioritize the 2008 OW EA Gap Analysis results by program office in support of IT investment decisions (CPIC).	4/11/2009	5/11/2009	5/22/2009		Program/Business Owners overall EA understanding and participation.
28	Water Quality Management	Utilize and leverage 2008 OW Gap Analysis results in support of OMB requirements to complete an alternatives analysis for the Safe Drinking Water Information System (SDWIS).	3/9/2009	5/29/2009	5/22/2009	Milestone 26	
29	Water Quality Management	Identify and incorporate EA as supporting criteria (business process maps and solution architectures) to assist with the CPIC investment review process.	3/13/2009	4/13/2009	4/13/2009		Program/Business Owners overall EA understanding and participation.
30	Water Quality Management	Develop a draft Target Architecture for the Water Quality Management Segment	9/1/2008	2/1/2009	6/1/2009	Milestones 25, 26, 27, 29	
31	Water Quality Management	Seek review and comment on the draft Target Architecture with OW business owners and external stakeholders (i.e., Chief Architect, Geographic Information Officer, National Computer Center, etc.).	6/1/2009	8/31/2009	8/31/2009	Milestone 30	Stakeholder internal program priorities and overall participation
32	Water Quality Management	Seek approval of the Target Architecture with the Office of Water Information Steering Committee (ISC) responsible for Information Management governance	8/31/2009	9/30/2009	9/30/2009	Milestone 31	Stakeholder internal program priorities and overall participation
33	Water Quality Management	OW ISC and PMO will evaluate the Target Architecture for potential transformation activities and begin to scope out a sequencing plan to transition to the TA.	11/1/2009	2/10/2010	TBD	Milestones 31, 32	OW ISC and OW business owner approval of the Target Architecture
Business Service Segments							
34	Research & Science	Implementation of Common User Interface	9/30/2008	9/30/2010			



Milestone ID	Segment	Milestone	Target/Actual Start Date	Target Completion Date	Actual Completion Date	Dependencies	Constraints
35	Research & Science	Development of Web 2.0 Features	11/30/2009				Agency Web 2.0 Application Project
Enterprise Service Segments							
36	Administrative Services	Implement new agency wide acquisition system	Q1 2007	Q2 2010			
37	Financial Management	Completion of baseline Account Code Structure	Q2 2007	Q3 2009			
38	Geospatial Services	Completion of version 3 of the geospatial Segment Architecture	3/1/2009	1/31/2010	3/1/2009		
39	Geospatial Services	Consolidated enterprise geospatial data warehouse/mart deployed to facilitate enterprise geospatial services	3/31/2009	3/31/2010			
40	Geospatial Services	Interagency GIS Enterprise License Vehicle implemented	Feb-09	Feb-09	6/1/2009		
41	Information Management	Outline of a strategy to move the Information Management Segment from a Notional Segment to a Planning Segment.	10/12/2009	12/31/2009			Management priorities
42	Information Sharing	Design and conduct testing for up to three data exchanges.	10/1/2008	9/30/2009			
43	IT Infrastructure Management	WAN 2010 (Next Generation EPA Wide Area Network) Implementation	Q1 FY2010	Q3 FY2010			Award of Networx task order through GSA
44	IT Infrastructure Management	Email Hosting Infrastructure Optimization	Q3 FY2010	Q4 FY2011		Milestone 43	

Business Application Services (By Segment) – Page 2 of 2

Emergency Management	Internal Controls & Oversight	Enforcement & Compliance	Land Quality Management			Substance Management
[EM-EMCPM] Emergency Management Portal Source: READ Systems: EMCP	[CO-ICAUDIT] IG Audit Program Evaluation, and Investigation Tracking Source: READ Systems: IG Project/Program Management System	[EC-AIRFACTRK] Air Facility Tracking Source: READ Systems: AFS	[LQ-ADMNTRK] Administrative Tracking Source: READ Systems: Admin	[LQ-CIMCPUB] Cleanup Information for Public (visual maps) Source: READ Systems: CIVIC	[LQ-GRNTPERTRK] Grants Performance Tracking Source: READ Systems: TAG	[SM-TOXSUBINFMGMT] Toxic substance information management Source: READ Systems: MTS
[EM-EMNOTIFY] Emergency Notification Source: READ Systems: ERNS	[CO-IGENTMGMT] IG Enterprise Information Management Source: READ Systems: IGEMS	[EC-WATERPCINFO] Water Permit Compliance Information Sharing Source: READ Systems: PCS	[LQ-BRMNGRANPERTRK] Brownfields Grants Performance Information Collection/Management Source: READ Systems: AGRES	[LQ-CERCPAD] CERCLIS Public Access Data Mart Source: READ Systems: CPAD	[LQ-TRAINTRK] Training Tracking Source: READ Systems: Training	[SM-PESTINFMGMT] Pesticide Information Management Source: READ Systems: GPPIN
[EM-RISKMPDTCMGMT] Risk Management Plan Collection and Management Source: READ Systems: SRMP	[CO-IGTIGER] IG Enterprise Resource Management Source: READ Systems: TIGER	[EC-INTCOMPYRPT] Integrated Compliance Reporting Source: READ Systems: IQIS	[LQ-PERSONTRK] Personnel Tracking Source: READ Systems: PIS	[LQ-PUBARCHSITEINFO] Publishing Archived Site Information Source: READ Systems: Archived Sites	[LQ-STATEAUTHTRK] State Authorization Tracking Source: READ Systems: STATS	[SM-PESTREGINFMGMT] Pesticide Registration Information Management Source: READ Systems: PRISM
[EM-CAMEO] Computer Aided Management of Emergency Operations Source: READ Systems: CAMEO	[CO-AUDITTRK] Audit Tracking Source: READ Systems: Autoaudit	[EC-WASTEINTRK] Waste International Information tracking Source: READ Systems: WITSNET	[LQ-RCRACMGMT] RCRA Data Collection and Management Source: READ Systems: RCRAInfo	[LQ-OSRTIWA] OSRTI Web Applications Source: READ Systems: OSRTIWeb Applications	[LQ-INFORMREQTRK] Information Request Tracking Source: READ Systems: IRIS	[SM-PERSAWRTRK] Track personnel information and awards Source: READ Systems: HR08 Portal
[EM-WEBOC] Web Emergency Operation Source: READ Systems: WebEOC	[CO-IGOPSRPT] IG Operations and Reporting Source: READ Systems: IGOR	[EC-ENFDWARE] Enforcement Data Warehouse Source: READ Systems: Enforcement Data Warehouse	[LQ-RCRACSTRK] RCRA CBI Information Tracking Source: READ Systems: RCRA CBI System	[LQ-ANALYTICSVRTRK] Analytical Services Tracking Source: READ Systems: ANSETS	[LQ-DRUMWSTTRK] Drum and Waste Data Tracking Source: READ Systems: DrumTak	[SM-TOXCOMTRANS] Toxic Substance Control Act Data Transmittal System/Chemical Abstract Service Source: READ Systems: TDTS/CAS
		[EC-CRIMCASERPT] Criminal Case Reporting Source: READ Systems: CCPS	[LQ-SEDIREMTRK] Sediment Remedy Tracking Source: READ Systems: SRTT	[LQ-OSWERTPAT] OSWER Performance Assessment Source: READ Systems: PAT	[LQ-SPEFACTS] Superfund Electronic Facts Sharing Source: READ Systems: SpFacts	[SM-SUBCSITRK] CBI Information Tracking Source: READ Systems: CBIS
		[EC-ENFCOMPRT] Enforcement and Compliance Query Source: READ Systems: Enforcement and Compliance Query System				[SM-TRMGMT] Toxic Release Inventory Management Source: READ Systems: TRIeXplory, TRIPS, TRIMWeb