United States
Department of Transportation

Enterprise Architecture and Business Transformation Office

# Enterprise Transition Plan

June 15, 2009

## Revision History

| Version | Overview | Author | Publish Date |
|---|---|---|---|
| 2.0 | Complete re-write from v1.0, incorporates segment architecture and details Grants segment | DOT EABTO | February 2007 |
| 2.1 | Update based on feedback from OAs and other stakeholders<br><br>Added Traffic Control Segment information | DOT EABTO | August 2007 |
| 2.2 | Added Aviation Safety sub-segment and updated Traffic Safety Segment | DOT EABTO | September 2007 |
| 3.0 | Update prepared for February 2008 OMB EAAF Submission | DOT EABTO | February 2008 |
| 4.0 | Update prepared for May 2009 OMB EAAF Submission | DOT EABTO | June 2009 |

# Executive Summary

The Department of Transportation (DOT) performs a mission every bit as important today as it has been throughout the Department's 40-year history. It is responsible for "ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future[1]." It is the primary agency in the federal government with the responsibility for shaping and administering policies and programs to protect and enhance the safety, adequacy, and efficiency of the transportation system and services.

The Enterprise Transition (ETP) Plan, developed by the Enterprise Architecture and Business Transformation Office (EABTO) within the Office of the Chief Information Officer (OCIO), in close collaboration with DOT's Operating Administrations (OA), lays out a plan for migrating the Department to its Target Architecture through a cohesive collection of transition activities. The specific benefits of the plan include:

- Priority-driven approach to planning and executing the activities needed to transition from the Baseline Architecture to the Target Architecture
- Improved Departmental strategic decision-making and communication relative to achieving the desired transition
- Increased sharing, reuse, and collaboration through greater emphasis on enterprise-wide, rather than program-specific, planning and investment control
- Increased program participation in, and ownership of, enterprise-wide or cross-program initiatives through collaborative segment architecture
- Improved portfolio evaluation through linkage of planned investments to major transition activities

DOT is engaged in a variety of mission critical projects where IT plays a key enabling and often unique role in managing advanced information technologies across the enterprise. The primary goal of enterprise architecture and business transformation activities at DOT is to be the authoritative decision-making source for improving mission performance and optimizing the use of DOT assets.

Further, maintaining the security of the IT systems is vital to the agency mission. DOT is committed to an IT security program that protects the confidentiality, integrity, and availability of critical systems and data. An organization must understand the business requirements for IT to identify threats and associated vulnerabilities and implement cost-effective countermeasures to mitigate the risk.

DOT has improved management planning and decision-making processes by integrating EA with key Departmental management processes as well as ensuring compliance and enforcement through a governance process that is measured and managed. The transformation process includes developing a target direction and transition strategy for the agency that meets mission goals and strategic priorities. This is accomplished through coordinated processes, integrated project teams, and shared system data, resulting in a business-driven EA that drives the capital planning process and improves executive decision making.

The resulting ETP for DOT is a high-level strategic roadmap for modernizing the Department's business and its enabling information technology (IT) over a three- to five-year period. It is a plan for moving toward the DOT Target Architecture, which defines the desired future state of DOT's strategy and performance, business, data, applications and services, technology and security.

[1] DOT Strategic Plan 2006-2011

The Department has made significant and steady progress towards business transformation over the last year. The following DOT activities were accomplished during Fiscal Year 2008/2009:

- Finalized creation and definition of all (22) DOT Segments, including validation of DOT investment mappings (all major and non-major), working directly with stakeholders.
- Kicked-off the Financial Management Business Transformation effort as part of the Financial Management segment, which seeks to improve financial management reporting and information sharing strategy by developing a standardized reporting strategy and adopting a streamlined and efficient way of sharing financial information across the Department.
- Initiated the Hazardous Intelligence Portal which pinpoints the locations of hazardous materials around the country. The portal, involving collaboration between DOT and other agencies that oversee hazardous materials, draws from 26 different sources, providing a central hub where information from all agencies can be viewed.
- Kicked-off the Transportation Enterprise Architecture Management System (TEAMS) Focus Group (FG) to expedite implementation, establish priorities, define issues and solutions, identify data, develop prototype reports, and to demonstrate EA value.
- Developed the DOT Segment Prioritization Methodology to identify high priority segments for potential transformation and/or modernization within the Department and to facilitate enterprise IT planning.
- Launched the EABTO SharePoint intranet collaboration website to serve as the main source of communications between the EABTO and EA community, providing support to both EA Practitioners and others requiring knowledge of the DOT environment to perform their daily work.
- Initiated the Services-Database Architecture Group (S-DAG) which serves as the principal forum to address, discuss, and resolve data-related topics within the Department. The S-DAG helps implement an effective data management strategy to support the Department's mission.
- Continued the Web Management Working Group (WMWG) to support the development of a DOT-wide web management strategy. Released a new public-facing DOT website (www.dot.gov)
- Identified the Top 20 Business Questions from the DOT CIO Community, which will be the focus of the TEAMS FG throughout 2009.

DOT is working to improve its ability to begin penetrating organizational stove-pipes with visibility into up-to-date, standardized information using its automated EA tool, referred to as TEAMS. As the phased implementation evolves, senior executives and DOT stakeholders will be provided an enterprise-wide view of all DOT programs and investments.

Overall, the EABTO provides the structure and associated governance processes to foster collaboration across the enterprise to identify integration and shared service opportunities among common DOT mission elements. Toward this goal, the DOT ETP demonstrates the next iteration of the key target direction and transition activities to extend the practicality and usefulness of strategic innovations in business and technology transformation to support the DOT mission.

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# 1. Introduction

The ETP, developed by the Enterprise Architecture and Business Transformation Office (EABTO) within the Office of the Chief Information Officer (OCIO), in close collaboration with DOT's Operating Administrations (OAs), lays out a strategy and plan for migrating the Department from its current (as-is) architectural environment to its target (to-be) architectural environment.

Segment architecture has been adopted by DOT as the strategy for building out its enterprise architecture (EA). According to the Office of Management and Budget (OMB), segment architecture is a business-driven, results-oriented representation of the strategy, process, and data for a specific portion or "segment" of an enterprise.[2] It is a scalable and repeatable process for architects to engage business stakeholders and deliver value to business areas. It helps establish clear relationships between strategic goals, detailed business and information management requirements, and measurable performance improvements.

Segments are common functions of the enterprise describing core mission areas, common or shared business services, and enterprise IT services. They provide business-driven orientation for defining organizational processes, and help identify opportunities for investment management, data sharing, collaboration, reuse, and informed decision-making. The segment approach promotes the incremental development of architecture segments within a structured enterprise architecture framework. Focusing on segments reduces the complexity of the effort and can enable EA investment results to be delivered and realized quickly, similar to how an incremental build approach can deliver more rapid results in software development initiatives. Segments can be addressed in priority order or in parallel, given sufficient resources. DOT has adopted the Federal Segment Architecture Methodology (FSAM)**,** which is further explained in Section 1.5, to develop the segment architecture at the department.

Segment architecture allows critical aspects of the DOT information technology landscape to be developed individually, while each segment as a whole is integrated into the larger DOT enterprise architecture. The architecture serves as a reference to facilitate the coordination and integration of business processes, information flows, systems, and investments at DOT.

Architecture segments consist of focused architecture efforts, such as a common architecture for administrative systems or the architecture for a major program area. Segments enable collaboration. As segments become socialized, collaboration between business and technical organizations in support of business operations is expected to increase. Segments cross organizational, functional, and technical boundaries by creating an interlocking perspective for business processes, work and data flow, investment and budget, and technical solutions. Business owners, enterprise architects, IT developers, and executives will come together as entities, such as integrated project teams (IPTs), to create an optimized segment solution.

Segments are part of an integrated enterprise. Other disciplines, such as CPIC, Security, and Performance, are enhanced by segments, as is Enterprise Architecture. Segment perspectives provide greater opportunities for investment management, data sharing, collaboration, reuse, and informed decision-making.

Each segment comprises one or more major initiatives that the Department will execute to reach its Target Architecture. The specific benefits of DOT's segment architecture approach discussed in this ETP include:

[2] FEA Practice Guidance, 2007

- Priority-driven approach to planning and executing the activities needed to transition from the Baseline Architecture to the Target Architecture
- Improved Departmental strategic decision-making and communication relative to achieving the desired transition
- Increased sharing, reuse, and collaboration through greater emphasis on enterprise-wide, rather than program-specific, planning and investment
- Increased program participation in, and ownership of, enterprise-wide or cross-program initiatives through collaborative segment architecture IPTs
- Improved portfolio evaluation through linkage of planned investments to major transition activities
- Optimized resource allocations and information across enterprise to achieve common strategic goals

DOT is engaged in a variety of mission critical projects where IT plays a key enabling and often unique role in managing advanced information technologies across the enterprise.
The purpose of the EA process is to inform, guide, and constrain the decisions for the enterprise, especially those related to IT investments. Figure 1 illustrates the inter-relationships between EA and the elements of strategic planning, program management, capital planning, and budget at DOT.

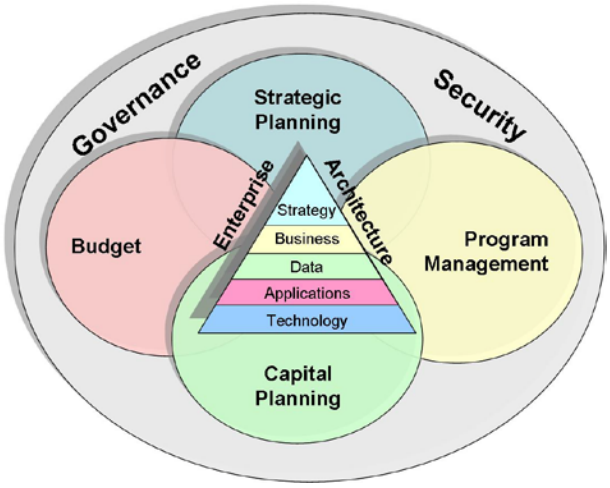



Figure 1: Enterprise Architecture at DOT

The Department's ETP has been updated to incorporate OMB's FY2008 assessment feedback. As a result, this ETP represents a practical roadmap for the Department to use for (1) funding decisions, (2) milestone and performance tracking, (3) monitoring program/project dependencies, and (4) anticipating risks and facilitate mitigation strategies.

## 1.1. Background

This revised version of DOT's EA ETP reflects the many changes and considerable progress made by the EA program during FY 2008/2009. While the scope of the document has remained consistent with the last version submitted, the content now provides a more succinct overview of the enterprise architecture program at DOT. In order to encourage ease of reference for stakeholders, summary descriptions of the segment areas have been provided within the main

body of the document, while detailed segment architecture descriptions can be found on both the EABTO website[3] and OMB MAX.

Changing external factors have also driven many of the updates to the document, including the OMB EA Assessment Framework v3.1, recent OMB guidelines, and other federal initiatives. All of these factors combined have resulted in an ETP that builds on the previous version, but offers greater ease of reference and encourages even more frequent use by internal DOT decision-makers.

The Enterprise Architecture and Business Transformation Office (EABTO) is working in close collaboration with DOT to migrate to the Department's Target Architecture. As illustrated in Figure 2, DOT consists of the Office of the Secretary (OST), the Office of the Inspector General (OIG), the Surface Transportation Board (STB), and ten individual Operating Administrations (OAs):

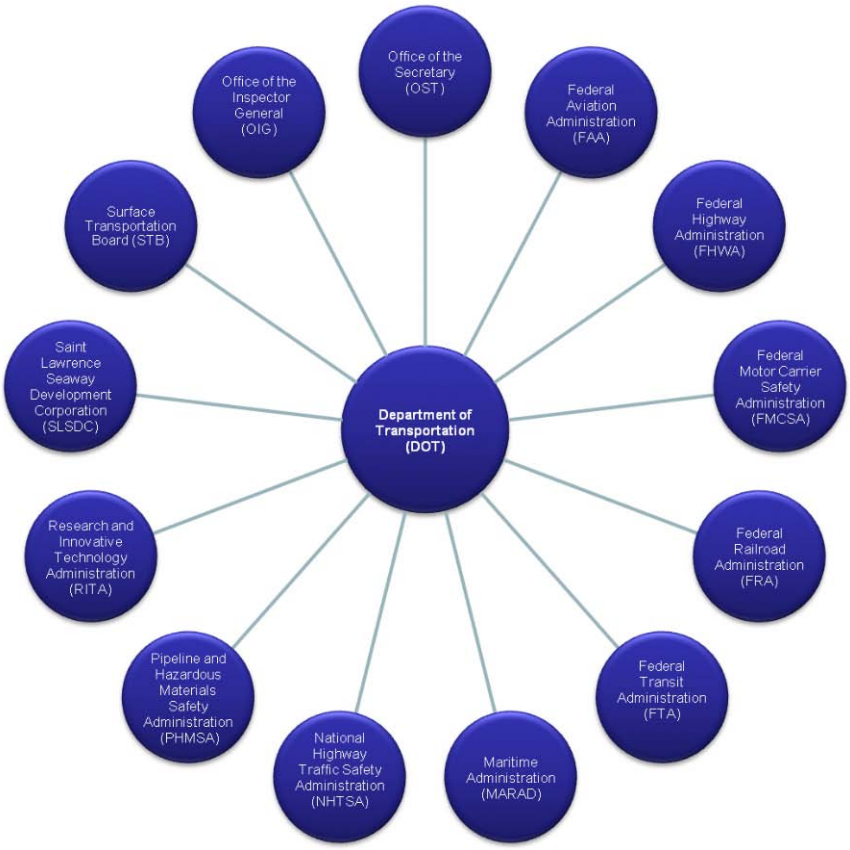



Figure 2: DOT Operating Administrations

[3] EABTO website, http://onedot.gov/ost/s80/s81/EA_Business_Transformation/default.aspx

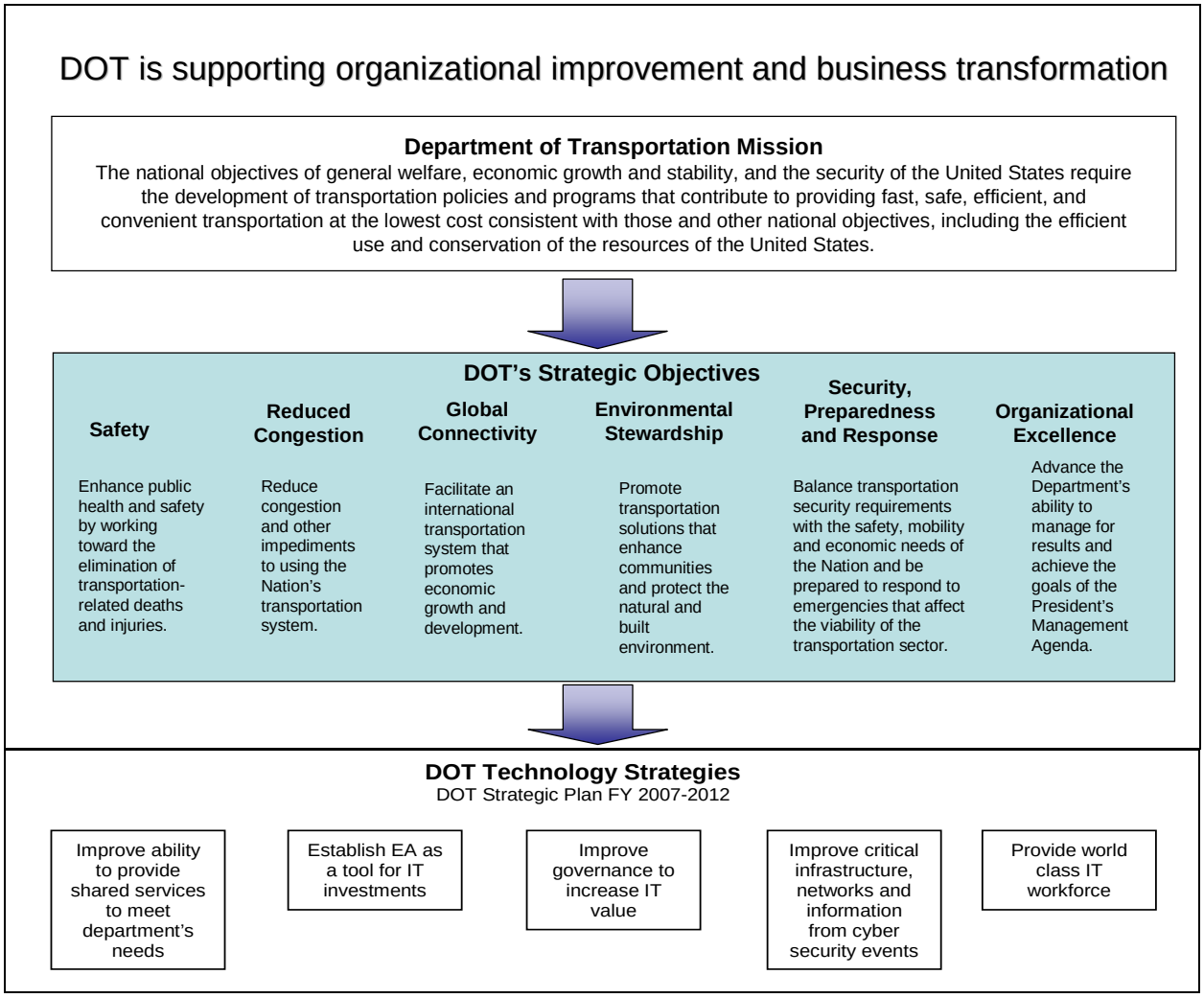



Figure 3: Strategic Alignment

In 2006, DOT produced an updated Strategic Plan to cover fiscal years 2007-2012, as shown in Figure 3. Those updates that required realignment of DOT's EA activities have been included in this version of the ETP. Detailed descriptions of the six strategic goals/objectives for DOT in 2007-2012 can found in Table 1 below.

| Goal | Description |
|---|---|
| **Safety** | Improving safety throughout the transportation network remains DOT's premier goal. DOT has made significant strides to reduce transportation-related fatalities and injuries, despite increasing exposure to safety risk from demographics, globalization and economic activity. |
| **Reduced Congestion** | In May 2006, the Department announced an innovative National Strategy to Reduce Congestion on America's Transportation Network. This initiative signals a new era of Federal leadership in the transportation sector and, for the first time in DOT's history, makes congestion reduction a strategic goal. DOT's National Strategy to Reduce Congestion provides a framework for dramatically improving the performance of America's transportation system, and introduces new approaches to fund and manage the system in the years ahead. |

| Goal | Description |
|---|---|
| **Global Connectivity** | DOT's Global Connectivity goal addresses international transportation issues with two synergistic strategies. One strategy is directed toward opening international transportation markets; the other is directed toward improving essential, intermodal transportation linkages. Both are needed to achieve outcomes that will yield better global connectivity and a more competitive and efficient global marketplace. |
| **Environmental Stewardship** | DOT's Environmental Stewardship goal describes how DOT will reduce pollution and other adverse effects from transportation to protect the environment. DOT will continue to work toward a balance between environmental challenges and the need for a safe and efficient transportation network. |
| **Security, Preparedness and Response** | DOT recognizes that the first element of facing a challenge is to prepare for it, and preparing involves many different activities: policymaking, reviewing and validating intelligence, planning, building capabilities, training, and exercising scenarios. The Security, Preparedness and Response goal puts those elements in place to prepare us to deal with both expected and unexpected future emergencies. |
| **Organizational Excellence** | DOT cannot achieve strategic goals without vision, leadership and a culture of teamwork, collaboration and continuous improvement. DOT resolves to be leaders in pursuing best practices and achieving results that benefit taxpayers and the Nation. DOT's central management strategy for achieving organizational improvement will be delivering the results described in this Strategic Plan and full implementation of the President's Management Agenda (PMA). |

Table 1: DOT Strategic Goals

## 1.3. Transition Framework

The DOT EA program has leveraged the OMB Federal EA Framework (FEAF) and Federal Enterprise Architecture (FEA) Reference Models to categorize the different views and components of EA into a common taxonomy that should be consistent with both internal DOT nomenclature and that of the greater federal EA and IT community. The FEAF, illustrated in Figure 4, is a framework and high-level process for achieving transformation and modernization. It is neither prescriptive nor detailed, but provides a method for federal organizations to implement EA in a uniform way and provide a federal taxonomy in the federal EA space.

The FEAF components consist of those requirements that drive the need to change, such as business needs (new mission or assumption of large plans as an example) or technical needs (unsupported platform or obsolesce as examples). There is also a current, as-is architecture that represents the current environment, and a target, to-be architecture that represents the environment as it is desired to be. Finally, there are transitional processes and standards that help the organization move from the current to the target environments.

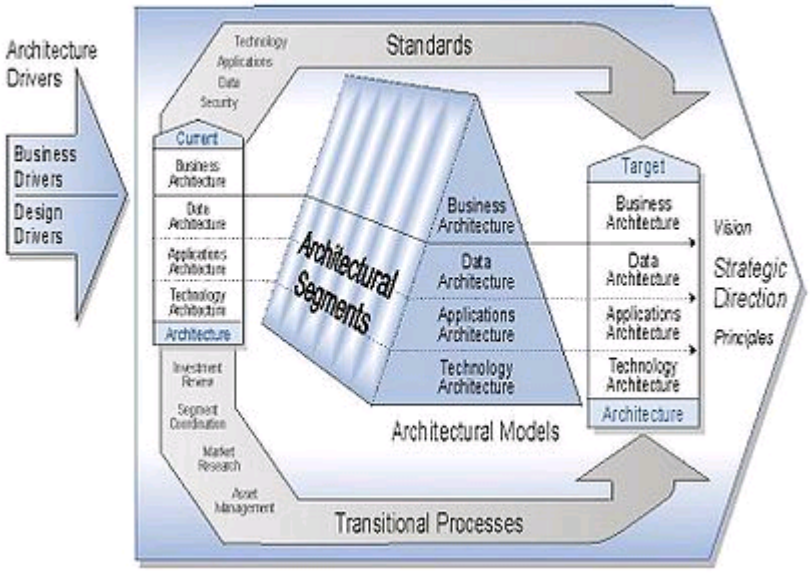



Figure 4: FEAF Framework

## 1.4. Integrating with Federal Initiatives

In the fall of 2001, OMB and Federal agencies identified 24 e-Government initiatives. Operated and supported by agencies, the initiatives provide high-quality and well-managed solutions that leverage economies of scale, reduce redundancies across the government and facilitate business process and data standardization. In the spring of 2004, OMB announced the formation of five Line of Business (LOB) task forces. A sixth line of business was added in spring of 2005. OMB also instituted a separate SmartBUY initiative focused on acquisition of software products. Most recently, OMB released its Federal Transition Framework (FTF) Catalog of Cross Agency Initiatives, which provides a comprehensive list of all active cross-agency initiatives. The objective of the FTF is to create a common framework within which to categorize and promote federal initiatives, which will in turn speed up the rate of adoption and improve the effectiveness and efficiency of such programs.

During FY 2008/2009, DOT held individual meetings with each of the OAs and other sponsors of DOT segments, in order to obtain an accurate understanding of DOT's involvement in FTF initiatives. These discussions also provided an opportunity to revise program descriptions, validated segment alignment, and updated alignment of investments to the FTF. Of the 42 initiatives identified in the FTF Catalog, DOT is participating in 33. The table below identifies the FTF initiatives aligned with DOT Target Investments. It should be noted that all segments are participating in at least one FTF initiative.

| DOT Segments | FTF Initiatives: Recreation One-Stop | GovBenefits.gov | E-Loans | USA Services | IRS Free File | Disaster Assistance Improvement Plan | E-Rulemaking | Expanding Electronic Tax Products for Businesses | Federal Asset Sales | International Trade Process Streamlining | Business Gateway | Case Management LoB | Consolidated Health Informatics/Federal Health Architecture | Geospatial One-Stop | Disaster Management | SAFECOM | E-Vital | Grants.gov | Grants Management LoB | Geospatial LoB | E-Training | Recruitment One-Stop | Enterprise HR Integration | E-Clearance | E-Payroll | E-Travel | Integrated Acquisition Environment | E-Records Management | Financial Management LoB | Human Resources LoB | Budget Formulation/Execution LoB | IT Infrastructure LoB | Information Systems Security LoB | E-Authentication | SmartBUY | ITDS | IPv6 | HSPD-12 | Information Sharing Environment | National Information Exchange Model (NIEM) | Next Generation Air Transportation System (NGATS) | Federal Funding Accountability and Transparency Act (FFATA) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hazardous Materials Management | | | | | | | | | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Traffic Control | | | | | | | | | | | | | | ✓ | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | |
| Transportation Infrastructure | | | | | | | | | | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | |
| Transportation Safety | | | | | | | | | | | | | | | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | |
| Transportation Security | | | | | | | | | | | | | | | ✓ | | | | | | | | | ✓ | | | | | | | | | | | | | | ✓ | | | | |
| Transportation Training | | | | | | | | | | | | | | | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | |
| Acquisition | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | | | ✓ | | | | ✓ | | | | | | | | |
| Asset and Property Management | | | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Budget | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | | | | | | | | | | |
| Emergency and Disaster Planning & Response | | | | | | ✓ | | | | | | ✓ | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental and Weather Services | | | | | | | | | | | | | | ✓ | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| Financial Management | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | | | ✓ | | | | | | | | | | | | | |
| Grants | | | | | | | | | | | | | | | | | | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | |
| Human Resources | | ✓ | | | | | | | | | | | | | | | | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | | | | | | | | | | | |
| Legal | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Planning | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | ✓ | | ✓ | | | ✓ | | | | | | | | |
| Outreach and Public Information | | | | ✓ | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | ✓ | | ✓ |
| Public Affairs | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | ✓ | | | | | | | | |
| Rulemaking | | | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | | | | | | |
| Statistics & Research | | | | | | | | | | | | | | | | | ✓ | | | | | | | | | | | | | | | | | | ✓ | | | | | | |
| Enterprise Information Management | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | | | | ✓ | | ✓ | | | | | ✓ | | | |
| Information Technology Infrastructure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | | | | |

Table 2: Federal e-Government Initiatives Mapped to DOT Segments

## 1.5. DOT Segment Architecture Methodology

DOT has adopted the Federal Segment Architecture Methodology (FSAM)[4] to develop and architect DOT EA segments. The FSAM is a step-by-step process for developing and using segment architecture that leverages existing "best practice" analysis techniques and easy to use templates to expedite architecture development.

The FSAM was created and released under the authority of OMB and the Federal CIO Council as a solution to facilitate and mature the use of segment architecture within the federal space. The Federal Segment Architecture Working Group (FSAWG), a cooperative effort with the federal architecture community, was formed in January 2008 as a sub-team to the Architecture and Infrastructure Committee (AIC) to develop the FSAM. DOT is well positioned to implement this methodology and sees value in the processes and artifacts that FSAM prescribes. These processes and artifacts provide the structure, repeatability, information exchange, and buy-in that are recognized as essential to successful leverage an EA program.

The FSAM consists of five process steps that help architects identify and validate the business need and scope of the architecture, define the performance improvement opportunities within the segment, and to define the target business, data, services, and technology architecture layers required to achieve the performance improvement opportunities. The FSAM process steps conclude with the creation of a modernization blueprint document that includes a transition sequencing plan for using and implementing the segment architecture. The top level FSAM process steps are shown in Figure 5.

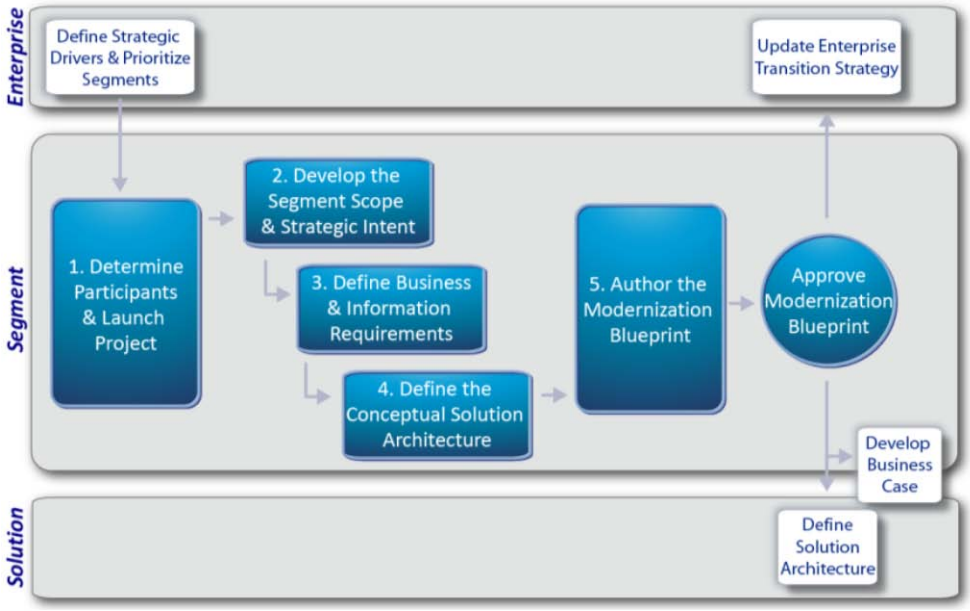



Figure 5: FSAM High Level Overview

## 1.6. Department-Wide EA Repository

The DOT EABTO creates and maintains the Transportation Enterprise Architecture Management System (TEAMS), a department-wide EA repository for enterprise information to support EA and CPIC processes, analysis, and planning activities. TEAMS is used for the collection and reporting of agency strategic, business, application, data, and technology information. The TEAMS meta-model is compatible with the FEA Reference Models as well as the DOT Business Architecture, which functions as the basis for the DOT Strategic Portfolio Review activities.

[4] Federal Segment Architecture Methodology, www.fsam.gov

Typically, EA artifacts are stored on a common drive, and organization of those artifacts was limited to the flexibility of the existing file structure. Through the implementation of TEAMS, DOT will significantly increase its ability to collect, store, analyze, and report enterprise data, affording decision makers a level of insight into its investments previously unthinkable.

## 1.7. Enterprise Architecture Intranet Website

The EABTO maintains the EABTO SharePoint intranet website as a communication source and collaboration tool. The site's purpose is to:

- Provide DOT users centralized access to Federal and DOT EA information for increased awareness
- Facilitate communication and collaboration among business and IT stakeholders; and
- Ultimately serve as a key resource for agency IT planning and decision-making.

Currently, users can access information such as:

- Frequently asked EA-related questions
- DOT IT investments (major and non-major) aligned to DOT segments
- DOT segment summaries, including OA participation and status
- Current EA announcement, training, and presentations
- EA requirements from OMB and DOT
- Governance processes (e.g., Business Needs Process (CFA forms, etc.))
- Methodologies (e.g., FSAM)

Figure 6 provides a snapshot view of the EABTO SharePoint intranet website.

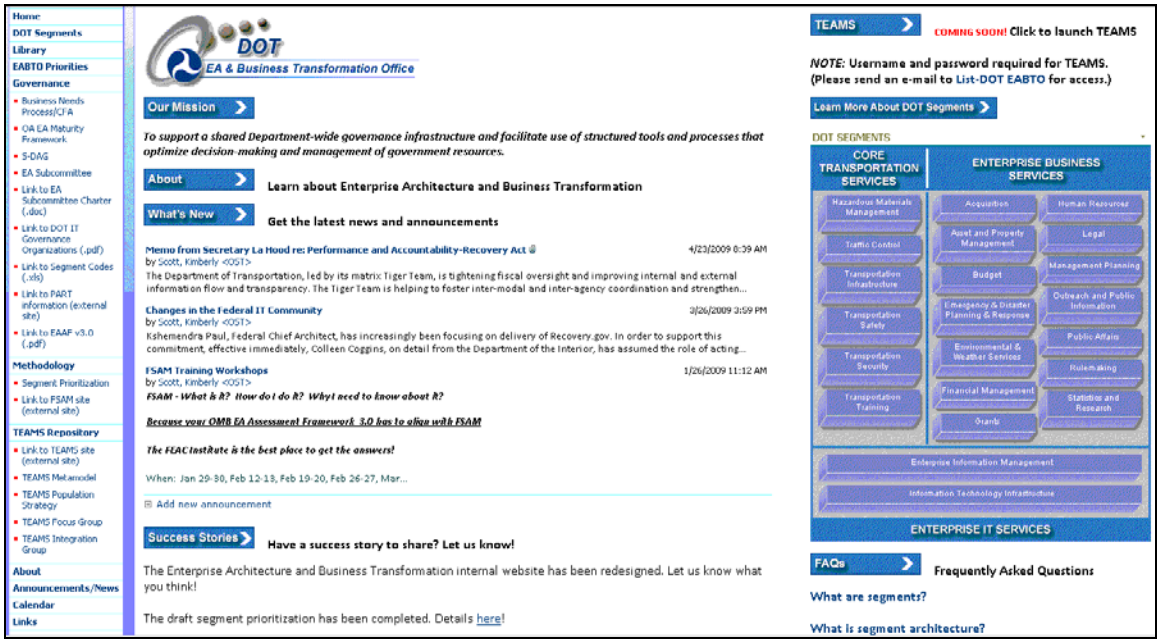



Figure 6: EABTO Intranet Home Page

# 2. Baseline and Target Architecture Overview

The DOT Baseline (as-is) Enterprise Architecture provides a snapshot of the existing DOT business and information technology (IT) architectures, while the DOT Target (to-be) Enterprise Architecture is intended to describe the future state of DOT's business processes. For the purposes of this document, the Target Architecture focuses on a five year planning horizon.

The EABTO will perform an annual evaluation of the measured progress in transitioning from the baseline to the target DOT Enterprise Architecture. This evaluation will be based on an analysis of the execution of DOT's Enterprise Architecture sequencing plan. The evaluation will document progress made, adherence to budget, and effective alignment with DOT strategic goals and objectives.

## 2.1. Baseline Enterprise Architecture

DOT is comprised of several Operating Administrations (OAs) or "modes" organized to address each of the major modes of transportation used in the United States today. While this model has been effective in meeting the needs of the Department to date, and ensuring adequate attention and resources for all major modes of U.S. transportation, DOT recognizes that such a structure can limit the efficiency and communications throughout the enterprise, by encouraging stove-piping and independence at the expense of information-sharing and resource reuse. While this ETP does not call for a realignment of DOT's organization per se, it does address ways in which the work of the enterprise can be matrixed and transcend organizational boundaries by leveraging best practices, sharing services across OAs, and providing tools and standard processes that support investment decisions.

In an effort to better define the current architecture at DOT, the EABTO developed a conceptual model of the different business areas carried out by the Department. A business area is a high level grouping of functions that are performed to carry out the DOT mission. Business areas are core, management, or enabling in nature. Business areas provide structure and facilitate the understanding of what DOT does. The DOT baseline business areas are highlighted in Figure 7.

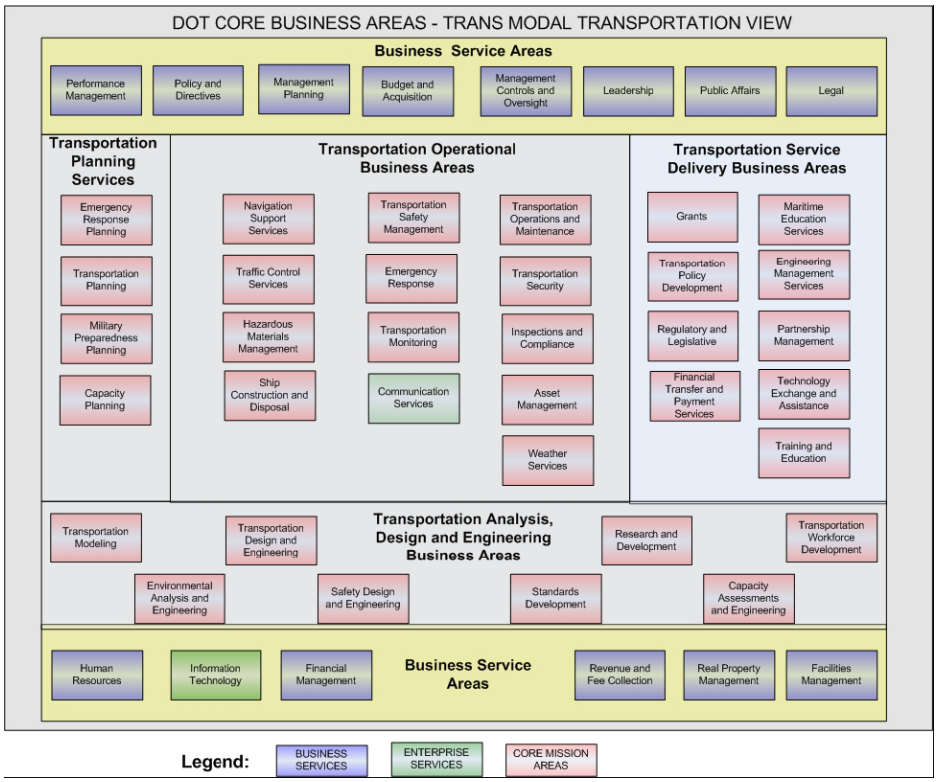



Figure 7: DOT Baseline Business Areas

## 2.2. Target Enterprise Architecture

The Target Architecture translates DOT business and service requirements into a set of target business processes that are, in turn, supported by a set of common technologies, reusable services, and shared data. These transformations are then implemented through business process re-engineering and IT system investments that collectively bring about the desired target end-state.

As reported in the DOT's 2008 ETP, there are two completed segments: Air Traffic Control and Grants. Since then there has been a significant increase in the amount of segments which are "In-Progress", "Planned", and "Notional" segments whose timelines are outlined in Section 6 within this document. Over the past year, DOT has made significant progress in the area of the In-Progress segments, details of which can be found in Section 7.

There has been an increase in enterprise-wide collaboration with each of the DOT OA architecture efforts along with the realignment of the architecture under three major business areas: Core Transportation Services, Enterprise Business Services, and Enterprise IT Services. These changes are a result of recent guidance and reporting requirements from OMB and an effort by DOT to move toward a more modular and strategically aligned architecture.

### 2.2.1. Identification of Segment Architectures

This section identifies and briefly describes the segments that comprise the target DOT environment. A complete listing of specific individual investments as they are aligned to the new segmented architecture can be found in Appendix A: Investments by Segment.

The segments, as presented, are the result of a process of evaluation of DOT's strategic direction, its current investment portfolio, and a high-level analysis of business process data

commonalities. An important part of the process was that DOT looked beyond the legacy mode-based OA structural barriers and concentrated instead on the commonalities between the different transportation modes. By grouping like functions together across modes, DOT has already had a major impact in eliminating or merging redundant processes and investments, and has benefited from improved cross-modal data sharing. Just as such consolidation has worked to improve cross-enterprise communications with the IT infrastructure consolidation, so too will capitalizing on the similarities between mission functions across the operating administrations.

For the purposes of the ETP, the following definitions are provided for each of the three segment areas: Core Transportation Services, Enterprise Business Services and Enterprise IT Services, depicted in Figure 8.

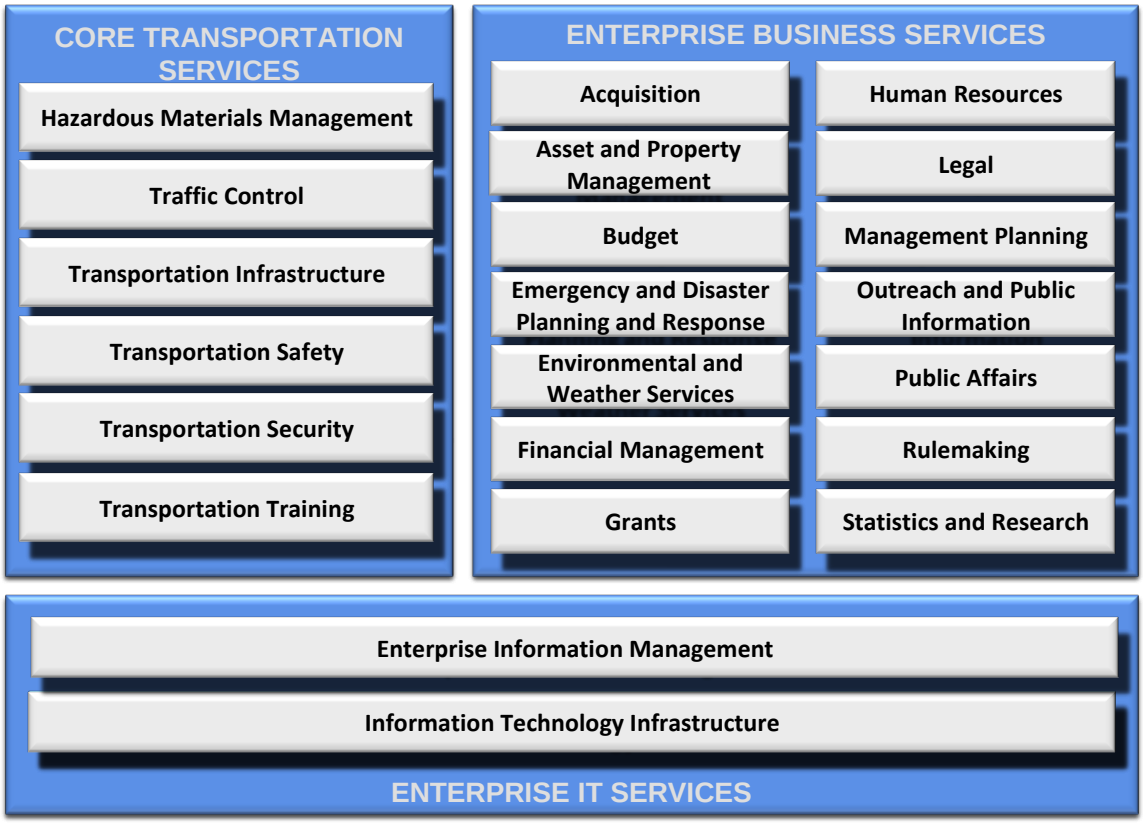



Figure 8: DOT Target Architecture

Core Transportation Services: Core Transportation Services segments hold a prominent position, indicating the importance of the mission programs and investments as the main purpose of the agency. Services and solutions that are tightly aligned with and directly support an Operating Administration mission as related to the national transportation system and defined by law or regulation, the Office of the Secretary, or the DOT Operating Administration Administrator. Examples include, but are not limited to, transportation infrastructure, traffic control, and transportation security.

Enterprise Business Services: Enterprise Business Services segments stand to the right of the mission area, denoting critical support but auxiliary role to the core work of DOT. Enterprise Business services are “back office” functions essential to supporting the mission of the Department. These functions include, but are not limited to, human resources management, training management, budget and financial management, acquisition, asset and property management, public affairs and communications management, legal matters and rulemaking,

statistical analysis and research, environmental and weather services, performance measurement, and management planning.

Enterprise IT Services: The position of the Enterprise Business Services segments across the bottom of the diagram represents the fact that enterprise functions literally support all the business services and core mission functions, acting as an underlying enabler. Enterprise IT Services are foundational automation services, including those that support Enterprise Business services and Core Transportation services. These services will be identified by the DOT CIO and will be driven by the departmental recognition that there are compelling reasons to integrate certain business applications, technology solutions, or infrastructure utilities to better deliver departmental capability and to more effectively marshal resources.

As depicted in Table 3 below, all OAs are participating in at least one segment.

| | DOT | FAA | FHWA | FMCSA | FRA | FTA | MARAD | NHTSA | OST | PHMSA | RITA | SLSDC | STB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Core Transportation Services** | | | | | | | | | | | | | |
| Hazardous Materials Management | ● | ● | | ● | | | | | | | | | |
| Traffic Control | | ● | | | | | | | | | ● | ● | |
| Transportation Infrastructure | ● | ● | ● | | ● | | | | | | | | |
| Transportation Safety | | ● | | | ● | ● | ● | ● | | ● | ● | | |
| Transportation Security | ● | ● | | | | | | | | | | ● | |
| Transportation Training | | ● | ● | | | | | | | | | | |
| **Enterprise Business Services** | | | | | | | | | | | | | |
| Acquisition | ● | ● | ● | | ● | ● | | ● | | ● | | | |
| Asset and Property Management | | ● | | | | | | | ● | | | | |
| Budget | ● | ● | | | | | | | | ● | | | |
| Emergency and Disaster Planning and Response | ● | | | | | | | ● | ● | | | | |
| Environmental and Weather Services | | ● | ● | | | | | | | | | | |
| Financial Management | ● | ● | ● | | ● | ● | | | ● | | | ● | |
| Grants | ● | | | | | ● | | | | | | | |
| Human Resources | ● | ● | | | | ● | | | ● | | | | |
| Legal | | ● | ● | | | | | | ● | | | | |
| Management Planning | | ● | ● | ● | ● | | ● | ● | ● | ● | | ● | ● |
| Outreach and Public Information | | | | | | ● | | ● | | | ● | | |
| Public Affairs | | ● | ● | | | | | | | | | | |
| Rulemaking | ● | | ● | | ● | | | | ● | | | | |
| Statistics and Research | ● | ● | ● | | ● | ● | | ● | | | ● | | |
| **Enterprise IT Services** | | | | | | | | | | | | | |
| Enterprise Information Management | | ● | ● | | ● | ● | ● | ● | ● | ● | ● | | |
| Enterprise Information Management | | ● | ● | | ● | ● | | ● | ● | ● | | | |

Table 3: OA to Segment Mapping

# 3. Redundancy and Gap Analysis

Once the Baseline and Target Enterprise Architectures were developed and validated through the Department's EA governance process, the DOT EABTO performed an IT redundancy analysis within the as-is environment and a gap analysis (per program) between the as-is and the to-be environments.

Upon completion and Departmental approval of the Redundancy and Gap Analysis, the EABTO used the results of the analysis to refine, prioritize, and begin development of DOT's segments. These results are a critical factor in finalizing the Department's segments and determining the order of their development since they:

- Provide insight into which programs had the greatest performance gaps
- Identified business capability and service redundancy across DOT OAs – allowing the EA Program to facilitate a collaborative approach to Transition Strategy Planning

## 3.1. Redundancy Analysis

One of the first steps in the transition approach used by DOT is to identify opportunities for performance improvement and reduction of redundant processes and services, and then to document the steps taken in order to convert opportunities into tangible improvements.

Redundancy analysis is the process by which DOT examines all of its business processes, services and data and identifies commonalities across the enterprise. This process is particularly revealing in a federated environment, where organizational stove-pipes have caused similar processes and investments to be created within separate OAs over time. Redundancy analysis was one of the key tools used to identify the numerous repeated architectural components related to IT infrastructure, and is one of the main reasons that the number of IT Infrastructure investments has dropped by about two-thirds in the past few years. The same type of analysis has been used to identify redundancies related to grants programs at DOT, and has led to the ongoing systematic consolidation of grants processes and investments under the Grants segment.

## 3.2. Gap Analysis

While redundancy analysis identifies those areas where there is overlap in resources or attention, the gap analysis highlights those areas where attention is lacking. The gap analysis has been instrumental in driving performance improvement in DOT's various investments by continuously assessing performance weaknesses and providing specific actionable remediation steps to be incorporated into the investment's project management plan.

The gap analysis results are used to assist the Department with comparing its actual performance (as-is) with its desired performance (to-be). The goal of any gap analysis is to identify the gap between the optimized allocation and integration of the inputs and the current level of allocation. This helps provide the Department with insight into areas that have room for improvement. The gap analysis process, with respect to Enterprise Architecture, involves determining, documenting, and approving the variance between business requirements and current capabilities in different areas and then making informed decisions to help bridge the gap.

### 3.2.1. Business Architecture Gap Analysis

There are certainly functions performed within the Department which have not yet been fully improved to follow standard, repeatable processes. During FY 2006/2007, the EABTO conducted a gap analysis effort, which resulted in a DOT Business Transformation Roadmap (focused on

EA and Business Transformation activities in the near-term and longer-term categories). By using data from PAR, PART, and OMB, the OCIO evaluated the DOT business areas and charted opportunities for business transformation.

The roadmap and the related business architecture analysis that followed helped the OCIO to determine a discreet set of segment development priorities as well as to organize governance conversations around common business areas.

In addition to the accomplishment of scheduled business architecture activities, this analysis and the resulting roadmap enabled the identification of these follow-on transformation activities:

- Validate the DOT business areas
- Validate the mappings between business areas, PAR, PART, financial outlay, and IT spending data
- Determine which of the business areas are receptive to participating in a modernization study
- Brief governance teams and obtain a record of decision for initiating new modernization studies

### 3.2.2. Knowledge Architecture Gap Analysis

In general, DOT maintains a sufficient inventory of transportation-related data and information to effectively accomplish its mission. Furthermore, DOT is effective in meeting the data and information requirements of its stakeholders (particularly from the safety and policy data perspectives) by making data and information accessible via web-based and formalized reporting channels. DOT maintains appropriate divisions of responsibility within the critical data and information areas which supports timely decision making and information accountability. However, the divisions of responsibility also encourage departmentalized management of enterprise data. The following data and information architecture improvement opportunities are focused on expanding the Department's efficiency in handling enterprise data, and will also strengthen the Department's ETP:

- Reduced data redundancy
- Standardization of data formats and technological platforms
- Formalized policies guiding data handling
- Frequency of data captures

### 3.2.3. Applications and Services Gap Analysis

DOT is actively seeking areas of integration within the applications and services area to limit stove-piped architecture and duplicative systems. Other applications and services architecture goals that will strengthen the Department's ETP include:

- Standardize on the underlying technologies enabling applications
- Consider Department-wide standards for cross-cutting applications (e.g., Federal Personnel and Payroll System (FPPS), e-Gov Travel) and standardize on office/productivity tools
- Database integration (also consider enterprise application integration)

### 3.2.4. Technology Gap Analysis

During FY 2006/2007,DOT has completed an analysis of the technical architecture, created an inventory and mapped that inventory within the TEAMS repository modeling tool. The DOT

Technical Reference Model is contained within the tool, and a summary of the mappings is available to the DOT EA and Business Transformation community. In this way, OCIO has provided a direct connection between its Technical Architecture and the wide variety of DOT stakeholder communities that are supported.

### 3.2.5. Security Gap Analysis

By prioritizing existing/known security gaps and identifying new gaps, the Department will implement remedies that further strengthen the Department as a whole while continuing to pass security-related guidance along to the segment architectures and their sponsors. In addition, the Department plans to continue the following tasks to strengthen the Enterprise Transition Plan and close any remaining security gaps:

- Update the physical inventory of systems and audit software to identify machines and software that reside on the headquarters backbone;
- Examine all systems for proper implementation of security measures, paying specific attention to common problem areas such as configuration settings; and
- Compare current security practices against existing Department standards.

# 4. Segment Prioritization

Since the DOT EA program is centered on developing architectures on a segment by segment basis, there is an emphasis on prioritizing DOT's business and service areas and to modernize each area in the order of need. This approach allows DOT and the OAs to concentrate limited resources on the highest priority business and service areas, modernizing first to achieve performance results where most needed. This approach also allows DOT and the OAs to remain flexible to change priorities as they relate to the current and future modernization blueprint studies.

To determine the relative priority of each DOT segment, the EABTO developed a repeatable, structured Segment Prioritization Methodology. This methodology is used to: (1) identify high priority segments for potential transformation and/or modernization within the Department (2) facilitate enterprise IT planning and (3) identify opportunities for improvement of IT portfolio quality, information sharing and cost savings. Figure 9 below highlights the steps taken to develop DOT's Segment Prioritization Methodology.

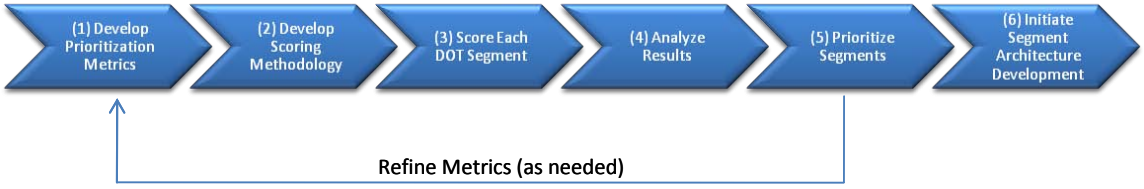



Figure 9: DOT Segment Prioritization Methodology Development

A set of prioritization metrics were developed by the EABTO, which included the following: financial outlays, risk and performance metrics, OMB input, and DOT priorities (Step 1). Once these metrics were agreed to by key DOT stakeholders, a scoring methodology was developed, which consists of a series of 18 questions with various weights assigned (Step 2). Each DOT Segment was scored individually (Step 3), and the results analyzed (Step 4), resulting in a list of DOT prioritized segments (Step 5). Details on the scoring criteria used and results for each segment can be found on the EABTO website[5]. The next steps for DOT are to initiate segment architecture development for each prioritized segment, if not done so already (Step 6).

As a result of the segment prioritization methodology, the following segments (see Figure 10) emerged as priority candidates for transformation/modernization within the Department:

- Grants
- Hazardous Materials Management
- Traffic Control
- Transportation Safety
- Financial Management
- Enterprise Information Management
- Information Technology Infrastructure

[5] http://one.dot.gov/ost/s80/S81/EA_Business_Transformation/default.aspx

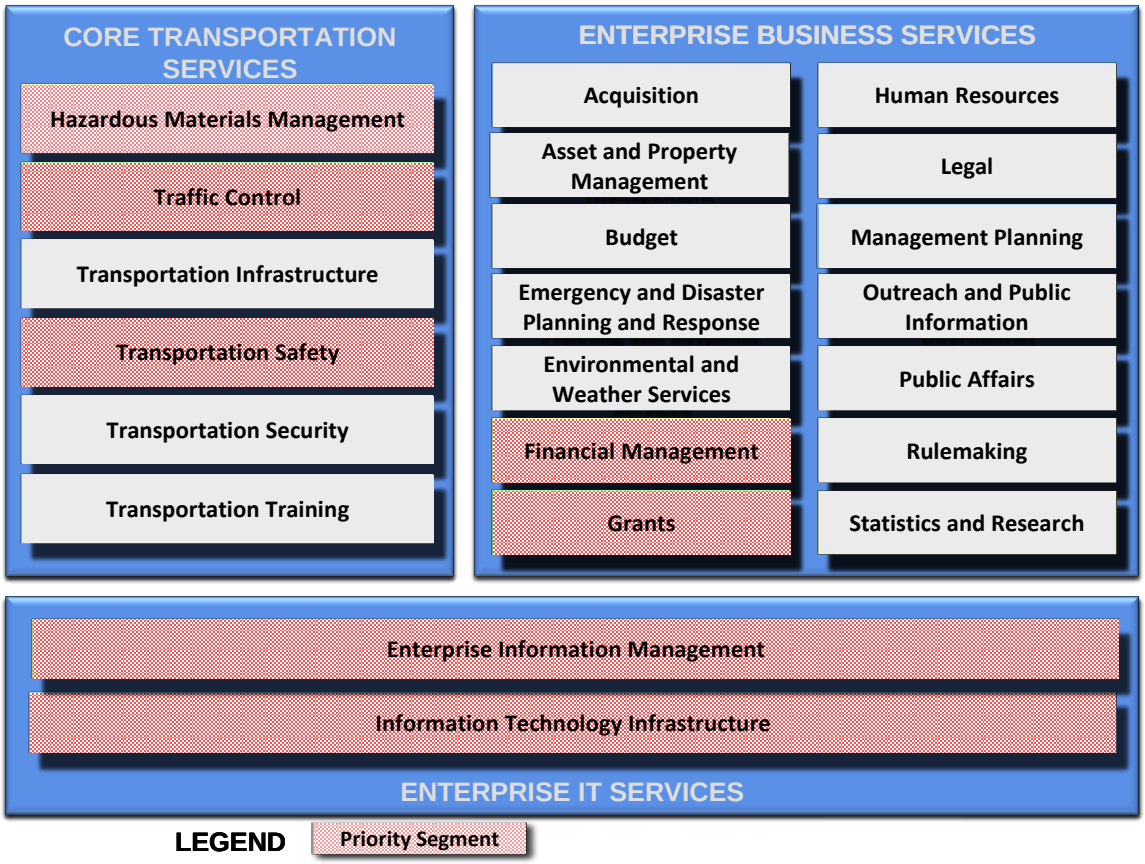



Figure 10: DOT Priority Segments

Per EAAF v3.0 requirements, the DOT CIO, and segment business owners have approved the list of high priority segments. Throughout FY2009/2010, DOT plans to initiate or continue segment architecture development for each of these segments.

# 5. Enterprise Sequencing Plan

As shown in Figure 11, the DOT Enterprise Sequencing Plan offers a high-level view for each DOT segment addressed in this Transition Plan. The DOT Enterprise Sequencing Plan attempts to align key DOT investments with their respective segments, and represents the current environment as well as the development programs that are both planned and under way (five calendar years). For specific details of the implementation milestones, refer to the segment sequencing plans in Section 6 of this document. The current version of the Enterprise Sequencing Plan does not include budget request milestones for new investments.

The progress of the individual segment architectures is a collective EA advance by DOT to fulfill its Target EA vision. As more prospective segments are selected and implemented, there will be more of an opportunity for an "enterprise" DOT Sequencing Plan.

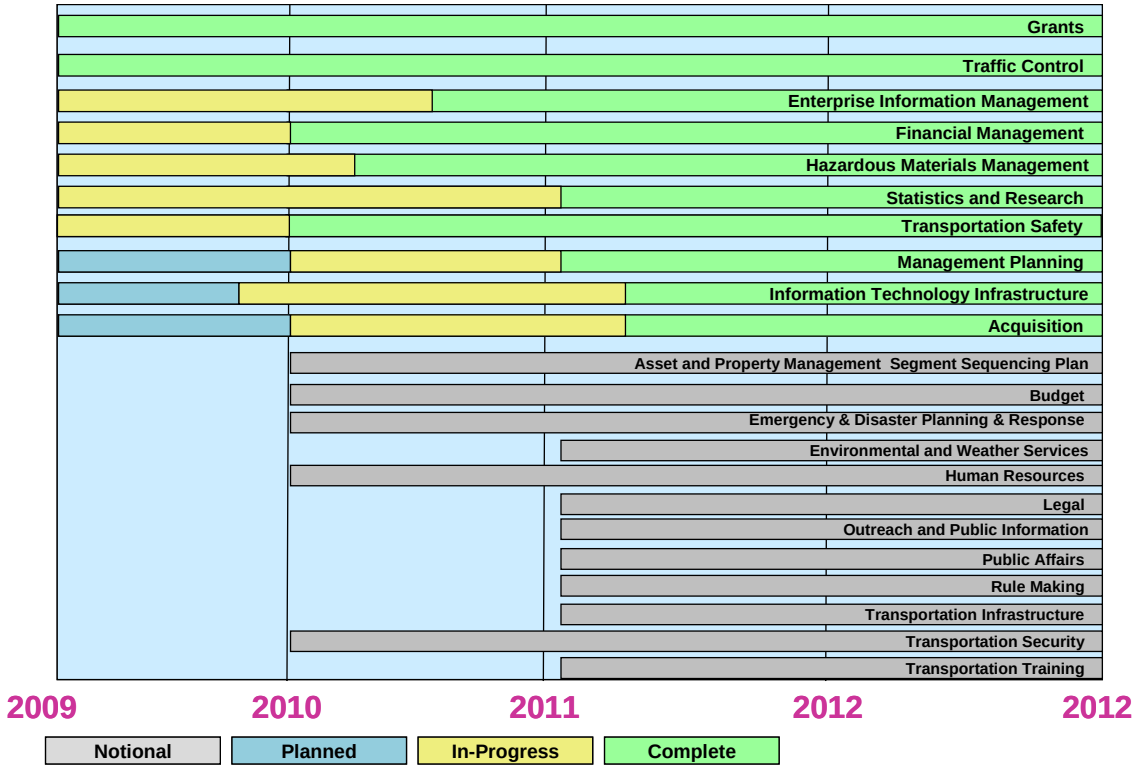



Figure 11: DOT Enterprise Sequencing Plan

# 6. Segment Summaries, Sequencing Plans and Milestones

This section contains high-level segment summaries that describe business-driven components of the segment from strategic mappings to budget summaries that are supported by detailed segment sequencing plans. Alignment of all DOT IT investments to segments improved visibility for target activities and provided performance improvements in the analysis of the IT portfolio as well as linking the EA and Capital Planning and Investment Control (CPIC) processes. Figure 12 below highlights the current list of DOT segments and maturity levels.

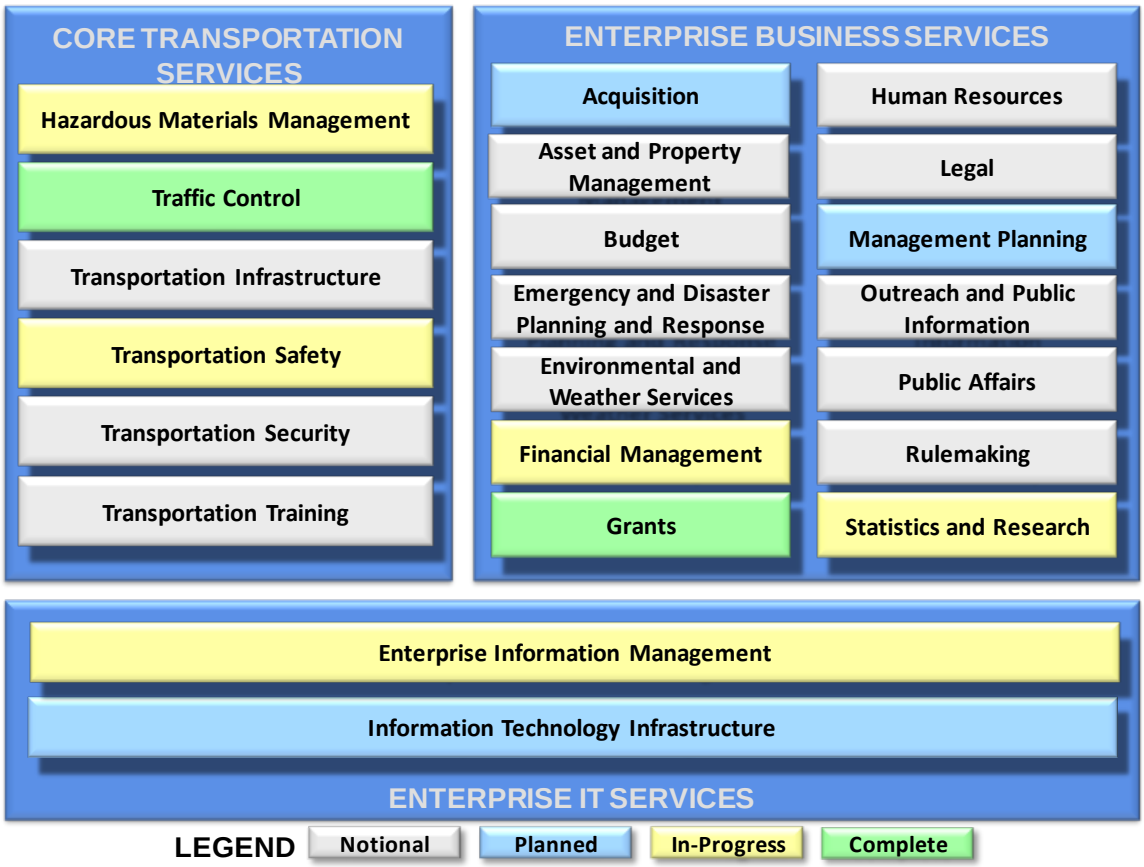



Figure 12: DOT Enterprise Segment Structure

The segment summary reports represent a compilation of input and collaboration across organizational boundaries. The reports feature a dashboard view of key considerations for decision-makers including: performance outcomes, activities underway, OAs involved, list of investments, performance outcomes, next steps, and funding. Future releases of this document will further populate these reports as segments mature.

Following the segment summary reports are the segment sequencing plans. The sequencing plans visually depict major investments that fall within the segment, systems (planned and operational), and key milestones (development and implementation milestones). As segments mature, these sequencing plans will be updated and provided as an output of TEAMS, our enterprise-wide EA repository. It should be noted that segments without major investments do not have a corresponding sequencing plan or milestones. As segments mature, segment summary sheets and sequencing plans will be updated accordingly.

## 6.1. Completed Segments

DOT has two completed segments—Grants and Traffic Control. Detailed descriptions of completed segment architectures have been posted to OMB MAX[6].

[6] The Enterprise Architecture Segment Report (EASR) Instruction Guide v1.1, dated February 2009, recommends that completed segment documents should be posted "on the OMB MAX site for sharing and collaboration with other agencies to promote transparency and reuse."

## 6.1.1. Grants Segment Summary

**DOT Segment: Grants** (207-000)

The Grants segment includes activities and investments related to the disbursement of federal funds to external projects or activities. This includes the processes associated with grant administration, including the publication of funds availability notices, development of the grant application guidance, determination of grantee eligibility, coordination of the peer review/evaluation process for competitive grants, the transfer of funds, and the monitoring/oversight as appropriate. This segment is in direct support of DOT's strategic goals for Organizational Excellence.

**Executive Sponsor:** Linda J. Washington (OST) (proposed)

**Segment Status:** Complete (Priority)

### Overview

**OAs Involved**

- DOT
- FTA

**# Major Investments:** 4
**# Non-Major Investments:** 0
**# Primary Investments:** 4
**# Supporting Investments:** 0


### Performance Outcomes

**Performance Goals**

- Save operating costs by eliminating less functional, smaller grants systems and leveraging more functional and cost-effective systems (systemcentric approach)

**Accomplishments**

- Updated Grants Segment Architecture Document
- Completed DOT-ACF Migration Strategy for OAs that will utilize HHS's Center of Excellence
- Leveraging ACF's GrantsSolution system in a pilot for FRA

### Activities Underway

- Identify immediate grant system needs for OAs and leverage existing systems by consolidating and removing less practical ones
- Working on funding strategy for DOT OAs using HHS/ACF's COE ('GrantsSolution" application)
- Identifying interested OAs and gauging their needs and ability to comply with an HHA IAA
- FMCSA, OST, NHSTA, and FAA Centers of Excellence Program are also interested and meeting with HHS representatives to explore options
- Delphi interface near completion between HHS and DOT

### Next Steps

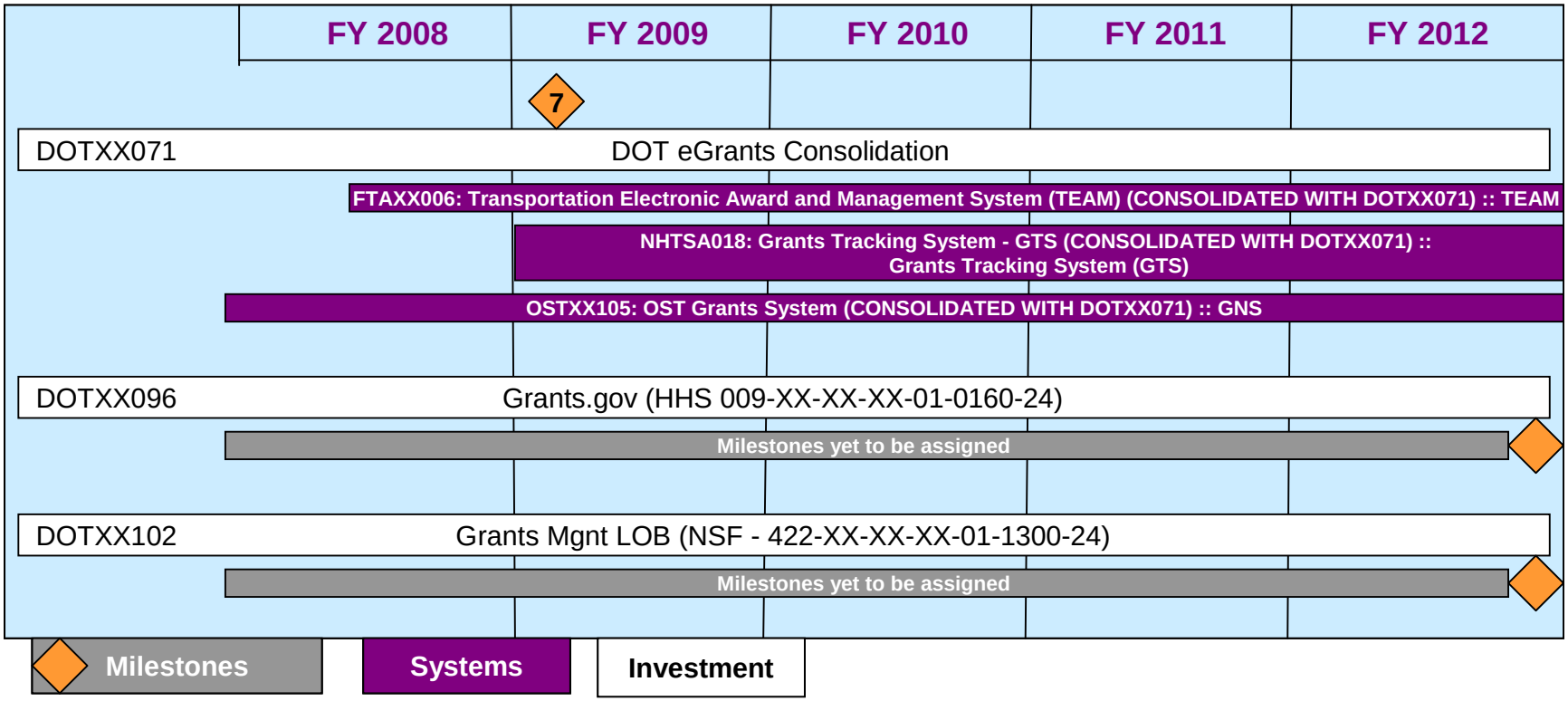
- Determine which DOT grants systems may be consolidated and eliminated to save costs in the short term
- Transition qualified DOT OAs to use the HHS/ACF "GrantsSolution" system
- Develop funding and migration strategies for DOT OAs to adopt HHS/COE
- Complete Delphi-interface (HHS-DOT)

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $2.176 | $0.978 | $0.909 | $8.984 | $11.515 | $12.409 |

**0.06% of Total IT Portfolio Costs**

### 6.1.1.1. Grants Segment Sequencing Plan




### 6.1.1.2. Grants Segment Milestones

| No. | Investment | Description of Milestone | Date (CY) |
|---|---|---|---|
| 7 | DOTXX071: DOT eGrants Consolidation | Develop Migration/Consolidation Plan | Q1 2009 |

## 6.1.2. Traffic Control Segment Summary

**DOT Segment: Traffic Control** (102-000)

The Traffic Control segment includes activities and investments related to the safe and efficient flow of traffic through America's various transportation networks, mainly focused on real time command and control systems for the movement of traffic. This segment is in direct support of DOT's strategic goals for Reduced Congestion and Safety.

**Executive Sponsor:** Hank Krakowski (FAA) (proposed)

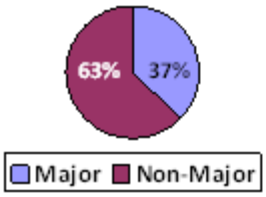
**Segment Status:** Complete (Priority)

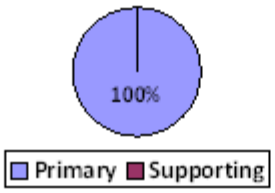
### Overview

OAs Involved

- FAA
- RITA
- SLSDC

**# Major Investments:** 22
**# Non-Major Investments:** 37
**# Primary Investments:** 59
**# Supporting Investments:** 0




### Performance Outcomes

Performance Goals

-

Accomplishments

-

### Activities Underway

-

### Next Steps

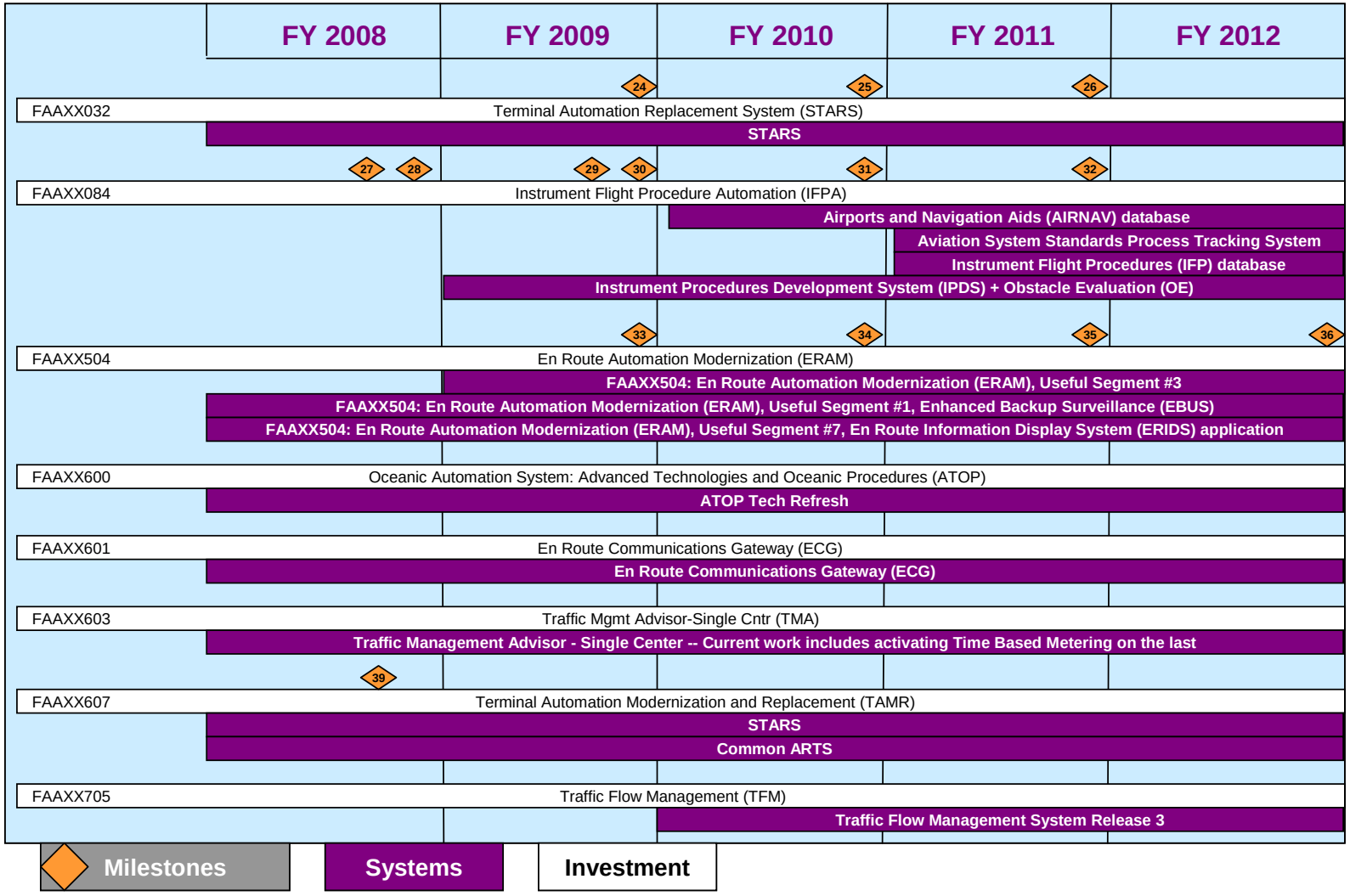
-

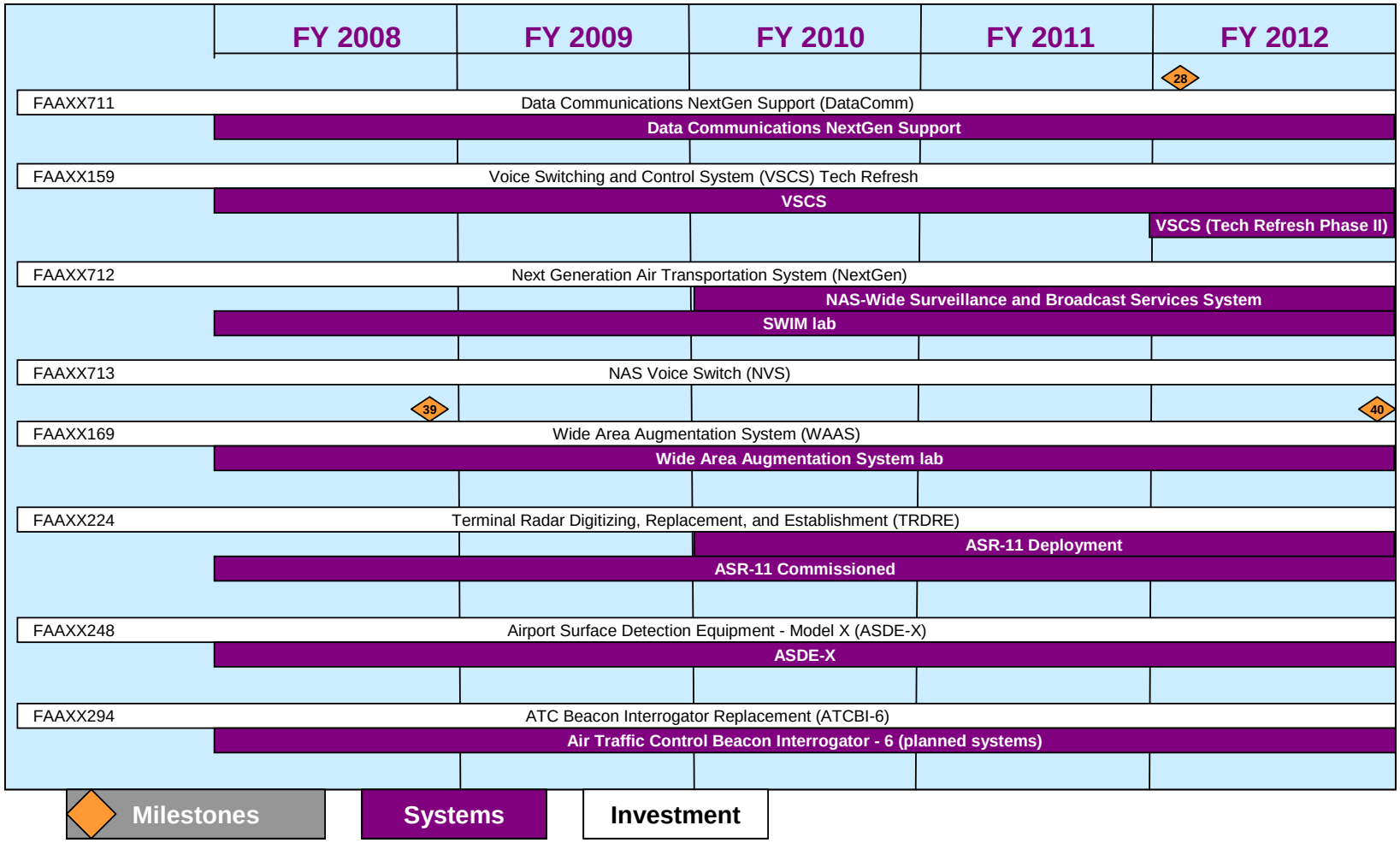
### Segment Funding

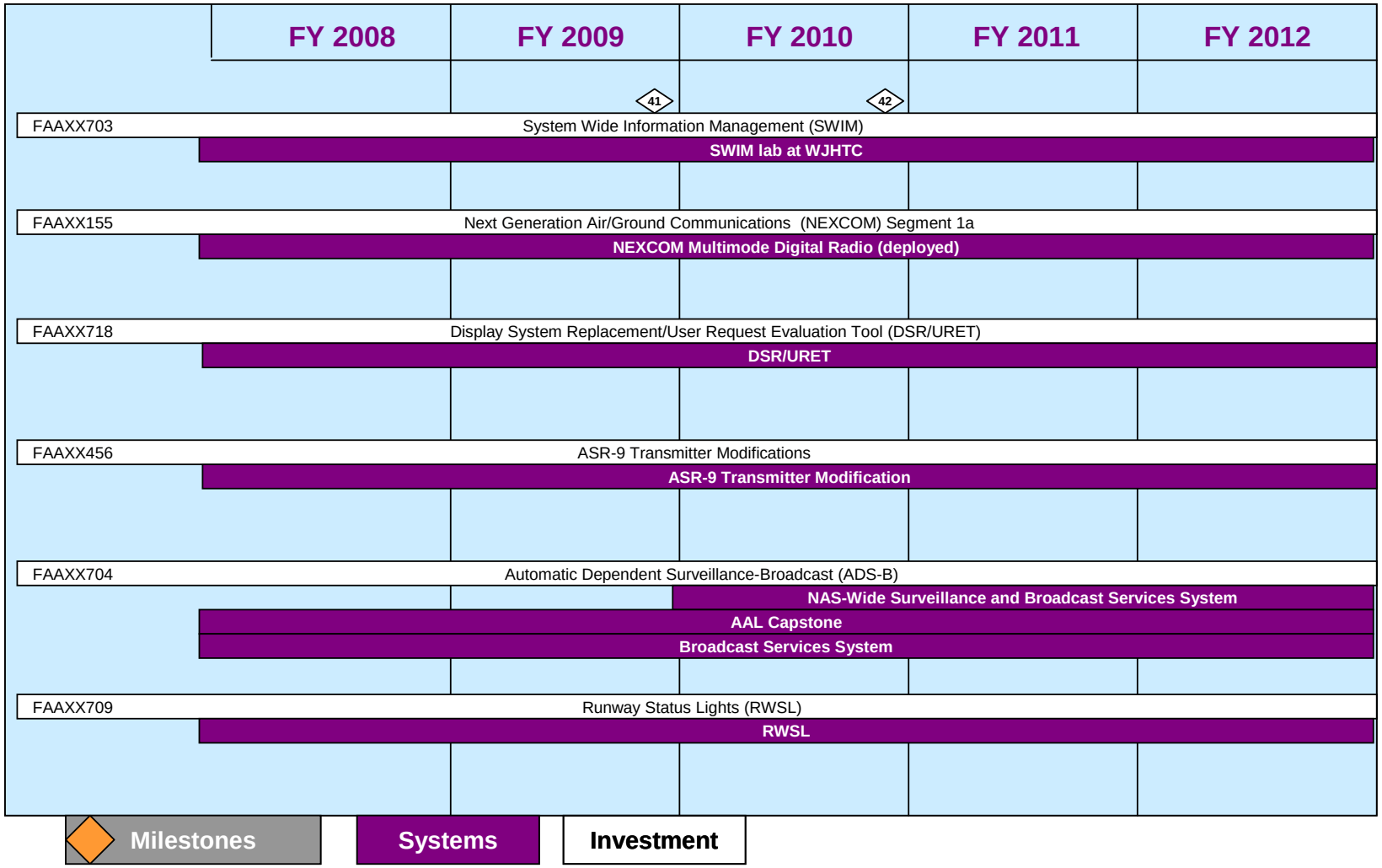
| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $1255.484 | $1440.538 | $1492.759 | $487.75 | $538.952 | $560.22 |

89.81% of Total IT Portfolio Costs

### 6.1.2.1. Traffic Control Segment Sequencing Plan




FY 2008
FY 2009
FY 2010
FY 2011
FY 2012
28
FAAXX711
Data Communications NextGen Support (DataComm)
Data Communications NextGen Support
FAAXX159
Voice Switching and Control System (VSCS) Tech Refresh
VSCS
VSCS (Tech Refresh Phase II)
FAAXX712
Next Generation Air Transportation System (NextGen)
NAS-Wide Surveillance and Broadcast Services System
SWIM lab
FAAXX713
NAS Voice Switch (NVS)
39
40
FAAXX169
Wide Area Augmentation System (WAAS)
Wide Area Augmentation System lab
FAAXX224
Terminal Radar Digitizing, Replacement, and Establishment (TRDRE)
ASR-11 Deployment
ASR-11 Commissioned
FAAXX248
Airport Surface Detection Equipment - Model X (ASDE-X)
ASDE-X
FAAXX294
ATC Beacon Interrogator Replacement (ATCBI-6)
Air Traffic Control Beacon Interrogator - 6 (planned systems)
Milestones
Systems
Investment


FY 2008
FY 2009
FY 2010
FY 2011
FY 2012
41
42
FAAXX703
System Wide Information Management (SWIM)
SWIM Iab at WJHTC
FAAXX155
Next Generation Air/Ground Communications (NEXCOM) Segment 1a
NEXCOM Multimode Digital Radio (deployed)
FAAXX718
Display System Replacement/User Request Evaluation Tool (DSR/URET)
DSR/URET
FAAXX456
ASR-9 Transmitter Modifications
ASR-9 Transmitter Modification
FAAXX704
Automatic Dependent Surveillance-Broadcast (ADS-B)
NAS-Wide Surveillance and Broadcast Services System
AAL Capstone
Broadcast Services System
FAAXX709
Runway Status Lights (RWSL)
RWSL
Milestones
Systems
Investment

### 6.1.2.2. Traffic Control Segment Milestones

| No. | Investment | Description of Milestone | Date (CY) |
|---|---|---|---|
| 24 | FAAXX032: Terminal Automation Replacement System (STARS) | H/W Design & Development | Q4 2009 |
| 25 | | Test & Evaluation | Q4 2010 |
| 26 | | Integration, Assembly, Test and Checkout - Replacment Qualificaiton CLIN 723 | Q4 2011 |
| 27 | FAAXX084: Instrument Flight Procedure Automation (IFPA) | (S31) Operational Test & Evaluation (OT&E) - Final | Q2 2008 |
| 28 | | Installation | Q1 2008 |
| 29 | | AIRNAV Development | Q3 2009 |
| 30 | | Installation | Q3 2009 |
| 31 | | ISM - OPS Transition - FY10 | Q4 2010 |
| 32 | | In-Service | Q4 2011 |
| 33 | FAAXX504: En Route Automation Modernization (ERAM) | 2.15 FY08 Planning and Support for Other Development Activities | Q4 2009 |
| 34 | | 2.16 FY09 Planning and Support for Other Development Activities | Q4 2010 |
| 35 | | 3.9 FY10 Installation/Testing Activities | Q4 2011 |
| 36 | | 2.0 ERAM Release 1 Development | Q4 2012 |
| 37 | FAAXX607: Terminal Automation Modernization and Replacement (TAMR) | Test and Evaluation | Q4 2008 |
| 38 | FAAXX711: Data Communications NextGen Support (DataComm) | Other - Design Phase (Seg 1) | Q1 2012 |
| 39 | FAAXX169: Wide Area Augmentation System (WAAS) | 13.2- FY09 Ground Segment Development/Modernization/Enhancement | Q4 2008 |
| 40 | | 19.4- FY12 Avionics and Operational Implementation 4 | Q4 2012 |
| 41 | FAAXX703: System Wide Information Management (SWIM) | Architecture Development - (Service Container) | Q3 2009 |
| 42 | | Implementation | Q4 2010 |

## 6.2. In-Progress Segments

Overall, DOT's most significant progress in the past year has been in the area of In-Progress segments. DOT currently has five segments that are in progress, including Enterprise Information Management, Financial Management, Hazardous Materials Management, Statistics and Research, and Transportation Safety. These segments are currently underway and are expected to continue progress through FY 2011.

## 6.2.1. Enterprise Information Management Segment Summary

### DOT Segment: Enterprise Information Management (301-000)

The Enterprise Information Management segment includes activities and investments related to optimal and efficient use of information throughout the Department. The goal is to establish a DOT-wide solution that will allow information to be managed from the moment it is created to the time it is no longer needed. This segment is in direct support of DOT's strategic goal for Organizational Excellence.

**Executive Sponsor:** Maureen Jones (OST)

**Segment Status:** In-Progress (Priority)

### Overview

**OAs Involved**

- DOT
- FAA
- FHWA
- FRA
- FTA
- MARAD
- NHTSA
- PHMSA
- RITA

**# Major Investments:** 0
**# Non-Major Investments:** 18
**# Primary Investments:** 17
**# Supporting Investments:** 1


### Performance Outcomes

**Performance Goals**

- Reduce number of small applications doing similar functions, especially through consolidation/integration and shared services
- Implement applications that are more easily shared, are more accessible to more staff

**Accomplishments**

- Developed and have budgeted plans for document management based on SharePoint solution instead of much more expensive document management system
- Established reimbursable shared services agreements with OST, OIG, FTA, NHTSA, PHMSA, RITA, and FMCSA for their use of FHWA's FOIA Log application

### Activities Underway

- **Define Business and Information Requirements**
  - Evaluating options to consolidate various systems used for tracking activities

### Next Steps

-

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $4.16 | $4.04 | $2.99 | $6.351 | $7.88 | $7.616 |

**0.25% of Total IT Portfolio Costs**

## 6.2.2. Financial Management Segment Summary

### DOT Segment: Financial Management (206-000)

The Financial Management segment includes activities and investments related to the collection of financial records including revenue, expense, asset, liability, and cash flow information. This segment is in direct support of DOT's strategic goal for Organizational Excellence.

**Executive Sponsor:** Lana Hurdle (OST)

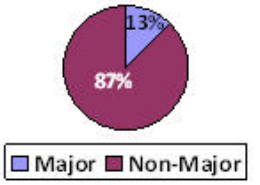
**Segment Status:** In-Progress (Priority)

### Overview

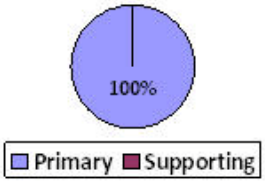
**OAs Involved**

- DOT
- FAA
- FHWA
- FRA
- FTA
- OST
- SLSDC

**# Major Investments:** 2
**# Non-Major Investments:** 14




**# Primary Investments:** 16
**# Supporting Investments:** 0




### Performance Outcomes

**Performance Goals**

- Improve financial management reporting and information sharing strategy by developing standardized reporting strategy and adopting streamlined and efficient way of sharing information
- Reengineer and streamline financial management business processes leverage economies of scale within our service center and to most effectively make use of future Oracle functionality
- Develop data management strategy that most effectively manages Departmental financial information and aligns with OMB's CGAC
- Effectively manage the transition from the current system set-up (11.5.10) to the future system set-up (12.FSIO)
- Consolidate and minimize number of financial management systems used by various organizations

**Accomplishments**

- Reviewed "Vision and Plan" and "Design" phases of FMBT project plan
- Drafted "Stakeholder Engagement and Communications Plan"
- Consolidating and reducing number of AA/division-level financial management systems; ITS-JPO FMS now serving several associate administrations

### Activities Underway

- **Determine Participants and Launch Project**
  - FMBT SharePoint portal being finalized – structure has been completed and content is currently being organized/developed
  - Developing team charters
- **Develop the Segment Scope and Strategic Intent**
  - Updating project plan tasks and activities

### Next Steps

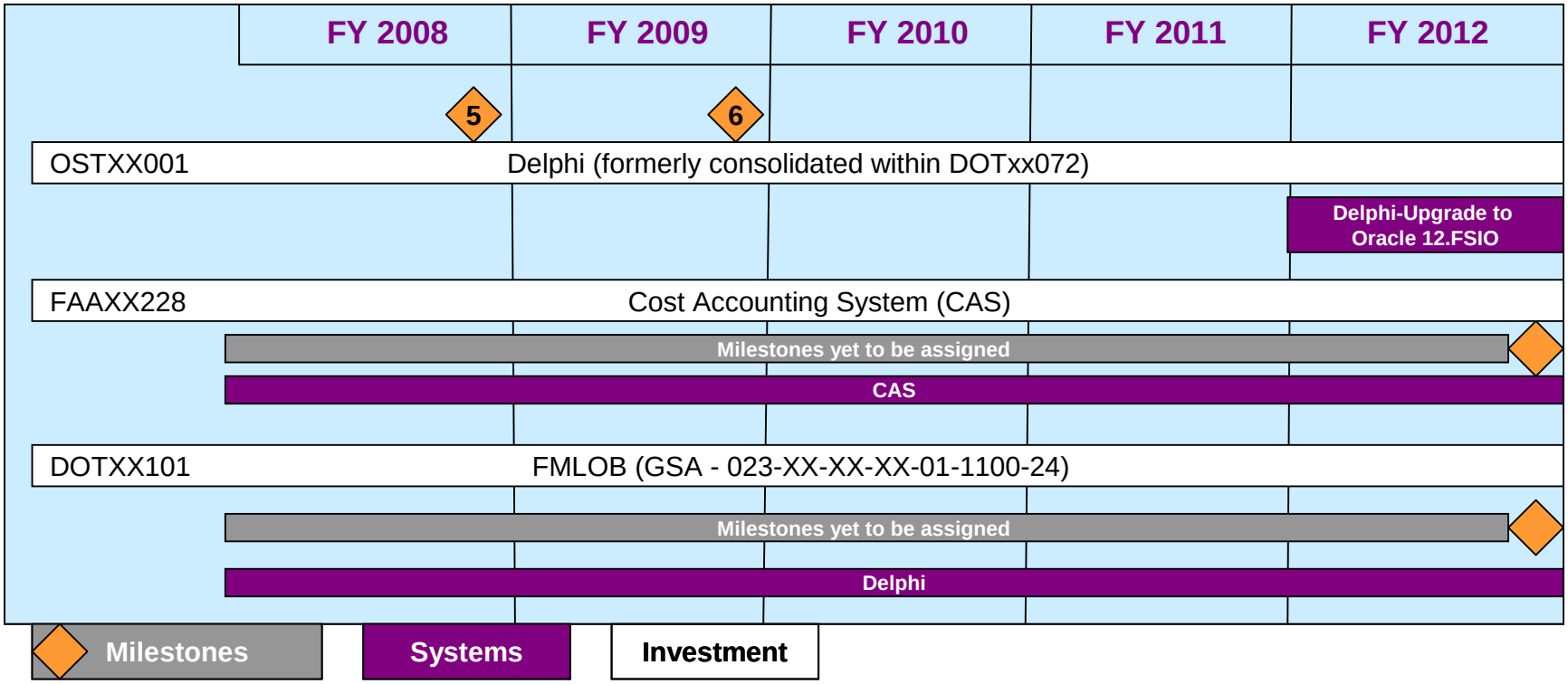
- **Determine Participants and Launch Project**
  - Finalize team charters
  - Launch SharePoint portal
- **Develop the Segment Scope and Strategic Intent**
  - Complete estimation for "Design" phase
  - Prioritize "Vision and Plan" phase activities
  - Update project plan for near term activities

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $4.269 | $21.523 | $21.331 | $44.245 | $45.059 | $48.322 |

**1.34% of Total IT Portfolio Costs**

### 6.2.2.1. Financial Management Segment Sequencing Plan



6.2.2.2. Financial Management Segment Milestones

| No. | Investment | Description of Milestone | Date (CY) |
|---|---|---|---|
| 5 | OSTXX001: Delphi (formerly consolidated within DOTxx072) | FY 08 Steady State Operation of DOT-wide accounting and financial management system (Delphi) | Q4 2008 |
| 6 | | FY 09 Upgrade to Oracle 12 and Implementation of GWAC | Q4 2009 |

## 6.2.3. Hazardous Materials Management Segment Summary

**DOT Segment: Hazardous Materials Management** (101-000)

The Hazardous Materials Management segment includes activities and investments related to the transport of hazardous materials through the nation's transportation infrastructure. This segment is in direct support of DOT's strategic goals for Safety, Environmental Stewardship, Security and Preparedness & Response.

**Executive Sponsor:** TBD

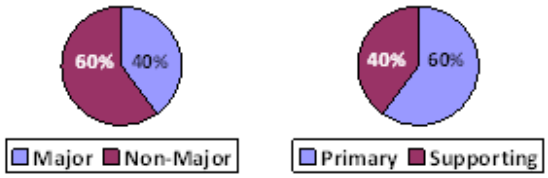
**Segment Status:** In-Progress (Priority)

### Overview

OAs Involved

- DOT
- FAA
- FRA
- PHMSA

**# Major Investments:** 2
**# Non-Major Investments:** 3
**# Primary Investments:** 3
**# Supporting Investments:** 2




### Performance Outcomes

Performance Goals

-

Accomplishments

-

### Activities Underway

-

### Next Steps

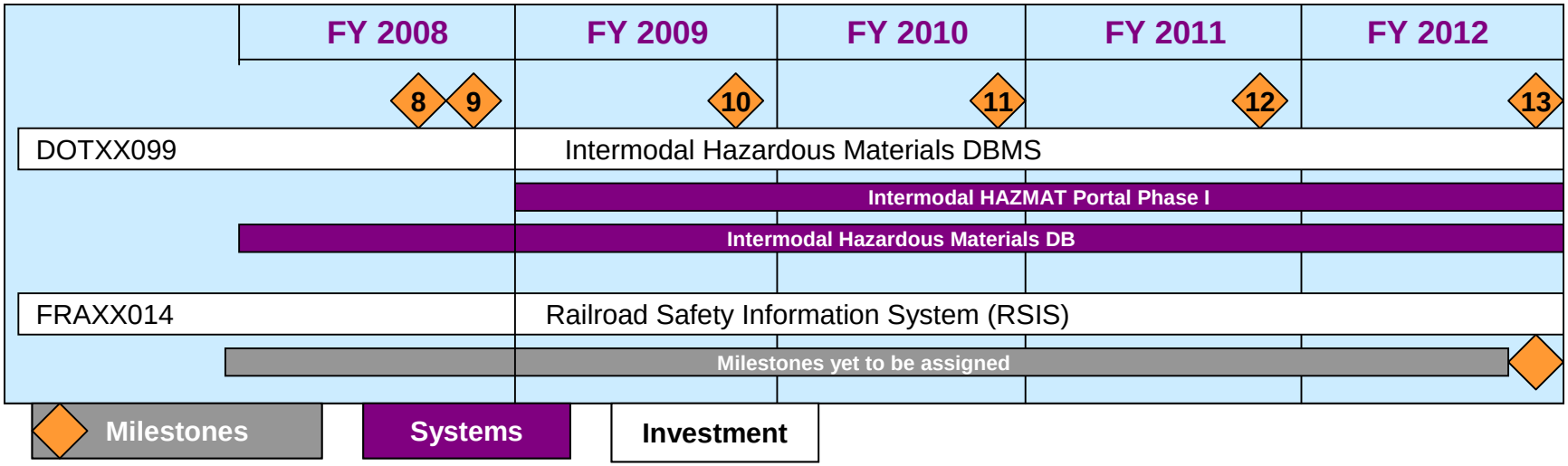
-

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $3.045 | $2.533 | $2.309 | $2.827 | $3.246 | $3.485 |

**0.16% of Total IT Portfolio Costs**

### 6.2.3.1. Hazardous Materials Management Segment Sequencing Plan



6.2.3.2. Hazardous Materials Management Segment Milestones

| No. | Investment | Description of Milestone | Date (CY) |
|---|---|---|---|
| 8 | DOTXX099: Intermodal Hazardous Materials DBMS | 6.1.2.2 FY08 Phase I - Requirements and Design | Q4 2008 |
| 9 | | 6.1.2.9 FY08 Phase I - Testing and Production Review | Q4 2008 |
| 10 | | 7.0 FY 09 Phase II - OBIEE Implementation | Q4 2009 |
| 11 | | 8.9 FY 10 Phase III - Enhancements | Q4 2010 |
| 12 | | 9.0 FY 11 Phase IV - OBIEE Implementation | Q4 2011 |
| 13 | | 10.0 FY 12 Phase V - OBIEE Implementation | Q4 2012 |

## 6.2.4. Statistics and Research Segment Summary

**DOT Segment: Statistics and Research** (214-000)

The Statistics and Research segment includes activities and investments related to the collection of transportation-related data and subsequent analysis and reporting of that data. This segment is in direct support of DOT's strategic goals for Organizational Excellence and Safety.

**Executive Sponsor:** Dr. Steven K. Smith (RITA) (proposed)

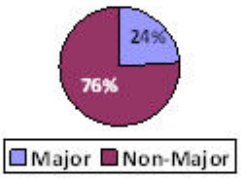
**Segment Status:** In-Progress

### Overview

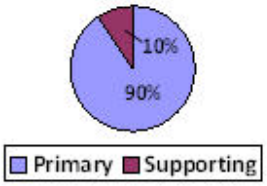
OAs Involved

- DOT
- FRA
- PHMSA
- FAA
- FTA
- RITA
- FHWA
- NHTSA

**# Major Investments:** 5
**# Non-Major Investments:** 16




**# Primary Investments:** 19
**# Supporting Investments:** 2




### Performance Outcomes

Performance Goals

-

Accomplishments

-

### Activities Underway

- Research Planning and Investment Coordination (RPIC)
-

### Next Steps

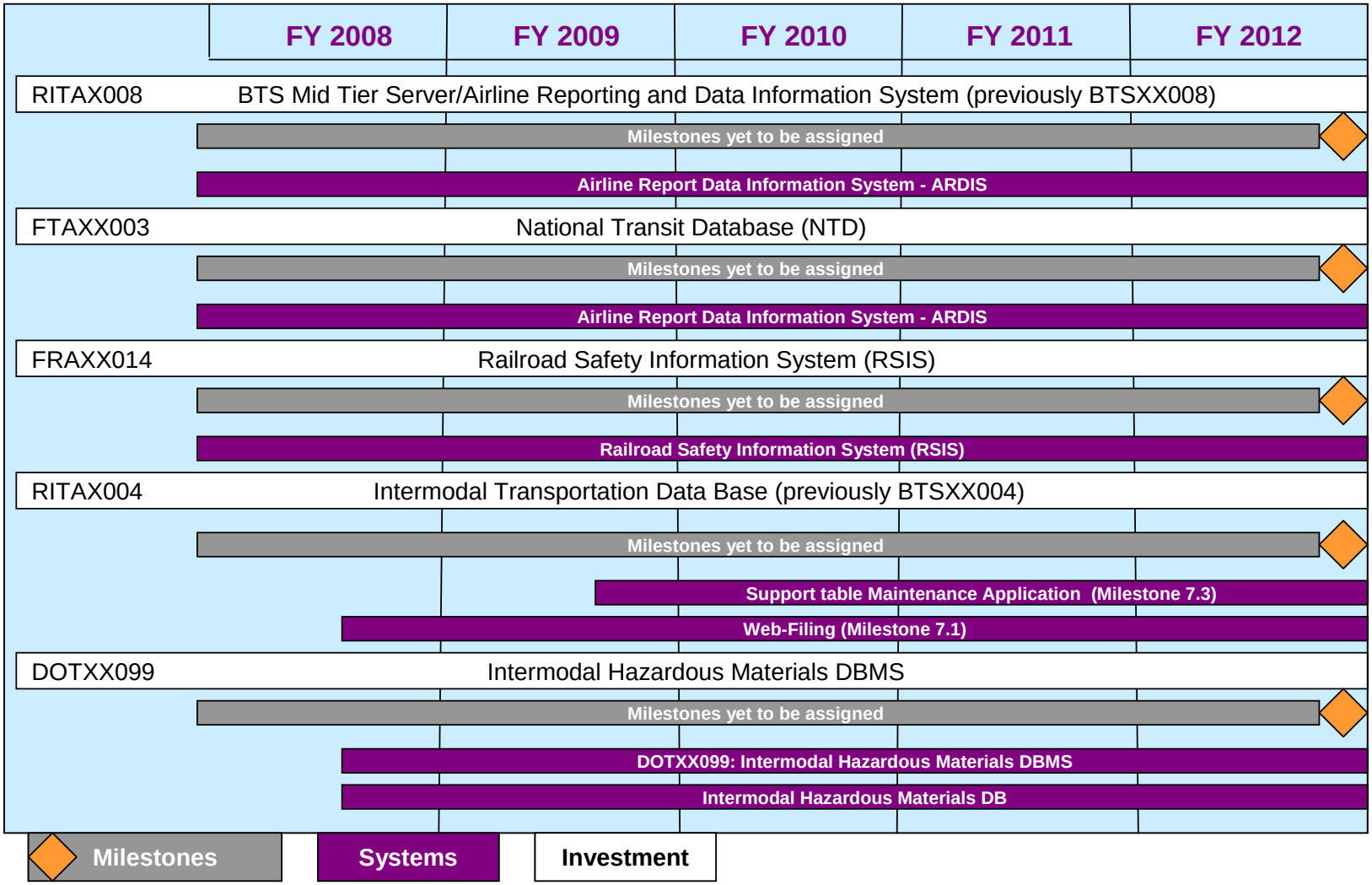
-

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $2.717 | $2.938 | $1.254 | $11.824 | $13.377 | $14.029 |

**0.18% of Total IT Portfolio Costs**

### 6.2.4.1. Statistics and Research Segment Sequencing Plan



## 6.2.5. Transportation Safety Segment Summary

**DOT Segment: Transportation Safety** (104-000)

The Transportation Safety segment includes investments and activities related to reducing transportation-related deaths and injuries. This segment is in direct support of DOT's strategic goal for Safety, Global Connectivity, and Organizational Excellence.

**Executive Sponsor:** Margaret Gilligan (FAA) (proposed)

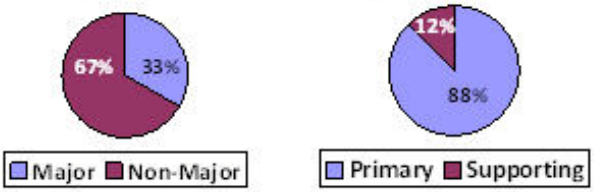
**Segment Status:** In-Progress (Priority)

### Overview

OAs Involved

- DOT
- FAA
- FHWA
- FRA
- FTA
- MARAD
- NHTSA
- PHMSA
- RITA

**# Major Investments:** 11
**# Non-Major Investments:** 22
**# Primary Investments:** 29
**# Supporting Investments:** 4




### Performance Outcomes

Performance Goals

-

Accomplishments

-

### Activities Underway

- Aviation Safety
-

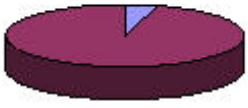
### Next Steps

-

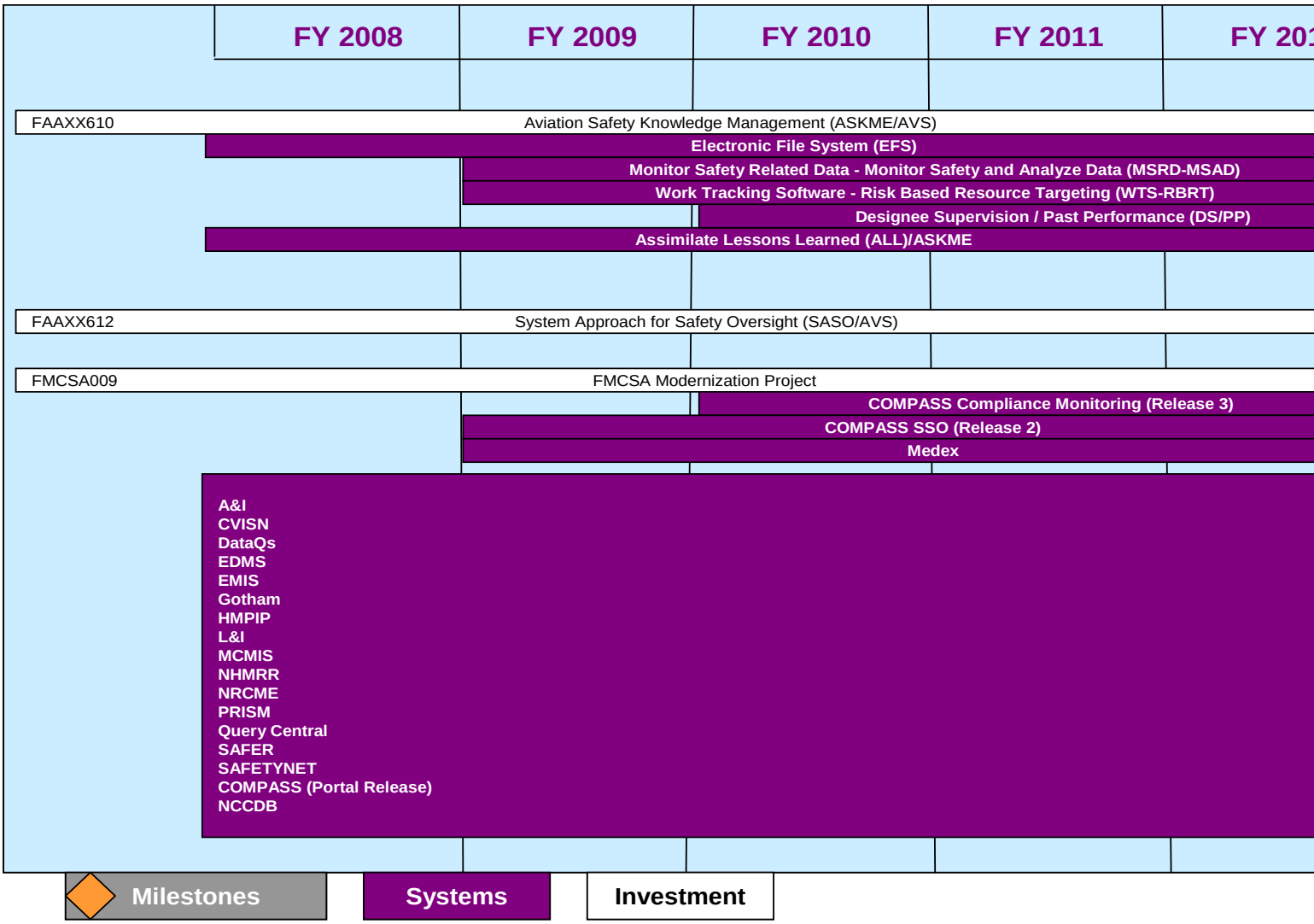
### Segment Funding

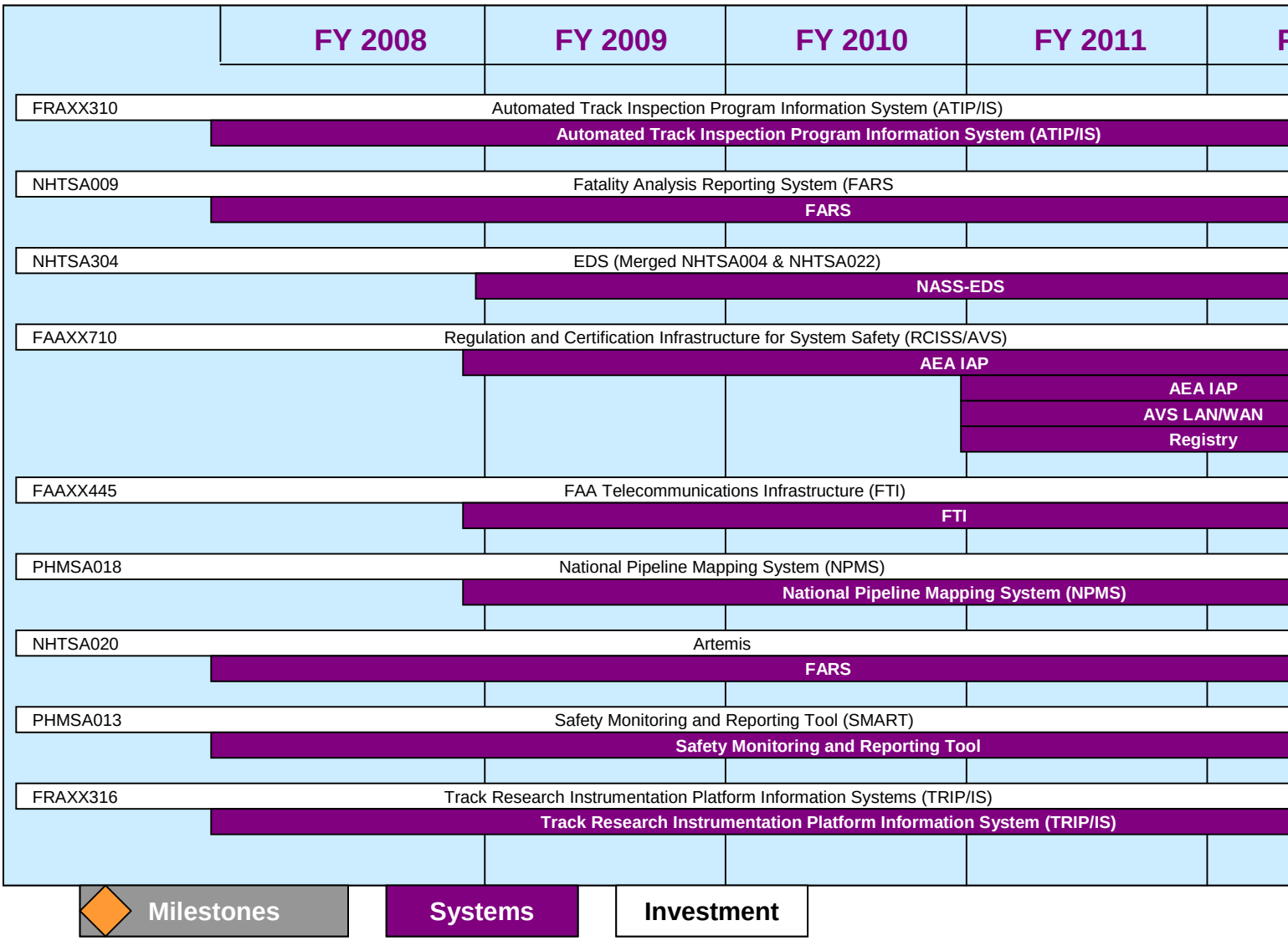
| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $61.168 | $73.102 | $70.083 | $91.951 | $90.539 | $95.845 |

4.56% of Total IT Portfolio Costs



### 6.2.5.1. Transportation Safety Segment Sequencing Plan




FY 2008
FY 2009
FY 2010
FY 2011
FRAXX310
Automated Track Inspection Program Information System (ATIP/IS)
Automated Track Inspection Program Information System (ATIP/IS)
NHTSA009
Fatality Analysis Reporting System (FARS
FARS
NHTSA304
EDS (Merged NHTSA004 & NHTSA022)
NASS-EDS
FAAXX710
Regulation and Certification Infrastructure for System Safety (RCISS/AVS)
AEA IAP
AEA IAP
AVS LAN/WAN
Registry
FAAXX445
FAA Telecommunications Infrastructure (FTI)
FTI
PHMSA018
National Pipeline Mapping System (NPMS)
National Pipeline Mapping System (NPMS)
NHTSA020
Artemis
FARS
PHMSA013
Safety Monitoring and Reporting Tool (SMART)
Safety Monitoring and Reporting Tool
FRAXX316
Track Research Instrumentation Platform Information Systems (TRIP/IS)
Track Research Instrumentation Platform Information System (TRIP/IS)
Milestones
Systems
Investment

## 6.3. Planned Segments

DOT has three planned segments—Acquisition, Information Technology Infrastructure, and Management Planning. These segments are expected to initiate development of segment architectures by FY2010.

## 6.3.1. Acquisition Segment Summary

**DOT Segment: Acquisition** (201-000)

The Acquisition segment includes activities and investments related to the procurement of physical goods, products, services, and capital assets to be used by DOT. This segment is in direct support of DOT's strategic goal for Organizational Excellence.

**Executive Sponsor:** Joanie Newhart (OST) (proposed)

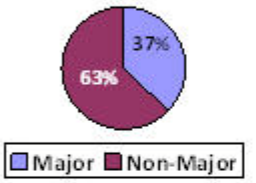
**Segment Status:** Planned

### Overview

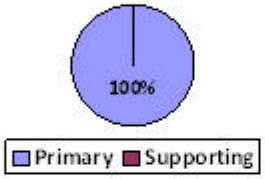
OAs Involved

- DOT
- FAA
- FHWA
- FRA
- FTA
- NHTSA
- PHMSA

**# Major Investments:** 0
**# Non-Major Investments:** 11




**# Primary Investments:** 11
**# Supporting Investments:** 0




### Performance Outcomes

Performance Goals

-

Accomplishments

-

### Activities Underway

- **Determine Participants and Launch Project**
  - Working on shared services arrangement with PRISM; planning to integrate PRISM implementations in various OAs

### Next Steps

-

### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $0.167 | $0.17 | $0.15 | $26.957 | $16.867 | $17.051 |

**0.01% of Total IT Portfolio Costs**

## 6.3.2. Information Technology Infrastructure Segment Summary

**DOT Segment: Information Technology Infrastructure** (302-000)

The Information Technology Infrastructure segment includes activities and investments related to the infrastructure required to operate information systems, store data, and provide productivity tools to DOT personnel in support of the ongoing business of the Department. This segment is in direct support of DOT's strategic goals for Organizational Excellence, Security, and Preparedness & Response.

**Executive Sponsor:** Maureen Jones (OST)

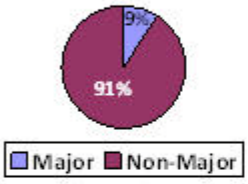
**Segment Status:** Planned (Priority)

### Overview

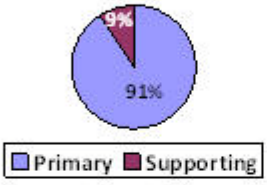
**OAs Involved**

- DOT
- FAA
- FHWA
- FRA
- FTA
- MARAD
- NHTSA
- RITA

**# Major Investments:** 2
**# Non-Major Investments:** 20




**# Primary Investments:** 20
**# Supporting Investments:** 2




### Performance Outcomes

**Performance Goals**

- Improve IT Services to internal customers (employees). Improve IT Services to external customers
- Provide stable and secure IT infrastructure that supports transportation business processes
- Ensure effective continued operations during times of contingency. Effectively support departmental and federal disaster recovery procedures
- Standardize business applications across the department and leverage federal common solutions where applicable.
- Minimize Departmental IT expenses by developing organization that utilizes cost and performance transparent processes and procedures

**Accomplishments**

- Established strategic IT group to evaluate needs, implement strategy to make most effective use of scarce IT money
- Launched 2nd phase of IPv6 – deployment of COE to Departmental and OA field sites across the nation

### Activities Underway

- **Determine Participants and Launch Project**
  - Migrating field desktop services to common operating environment (COE)

### Next Steps

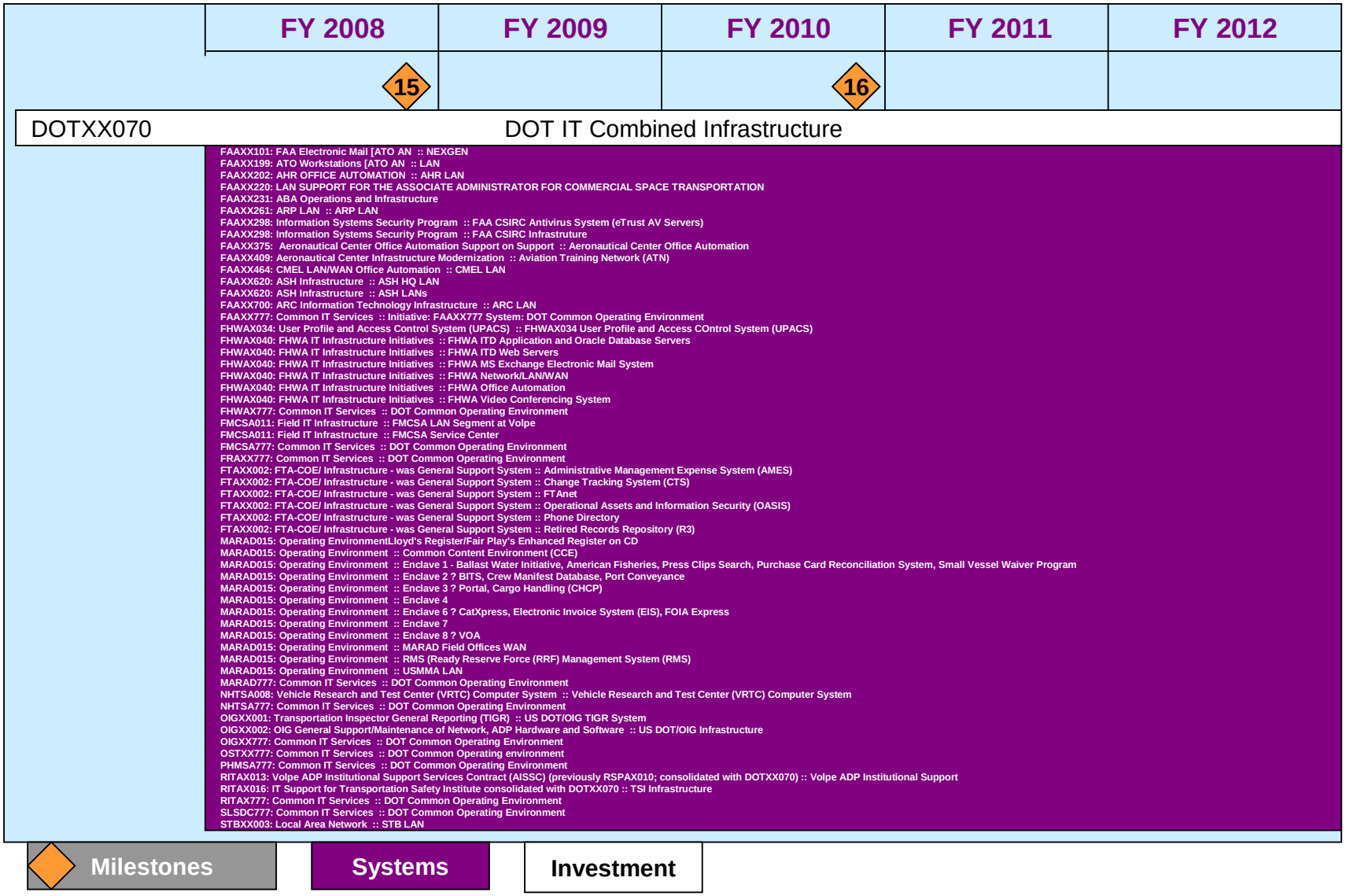
-

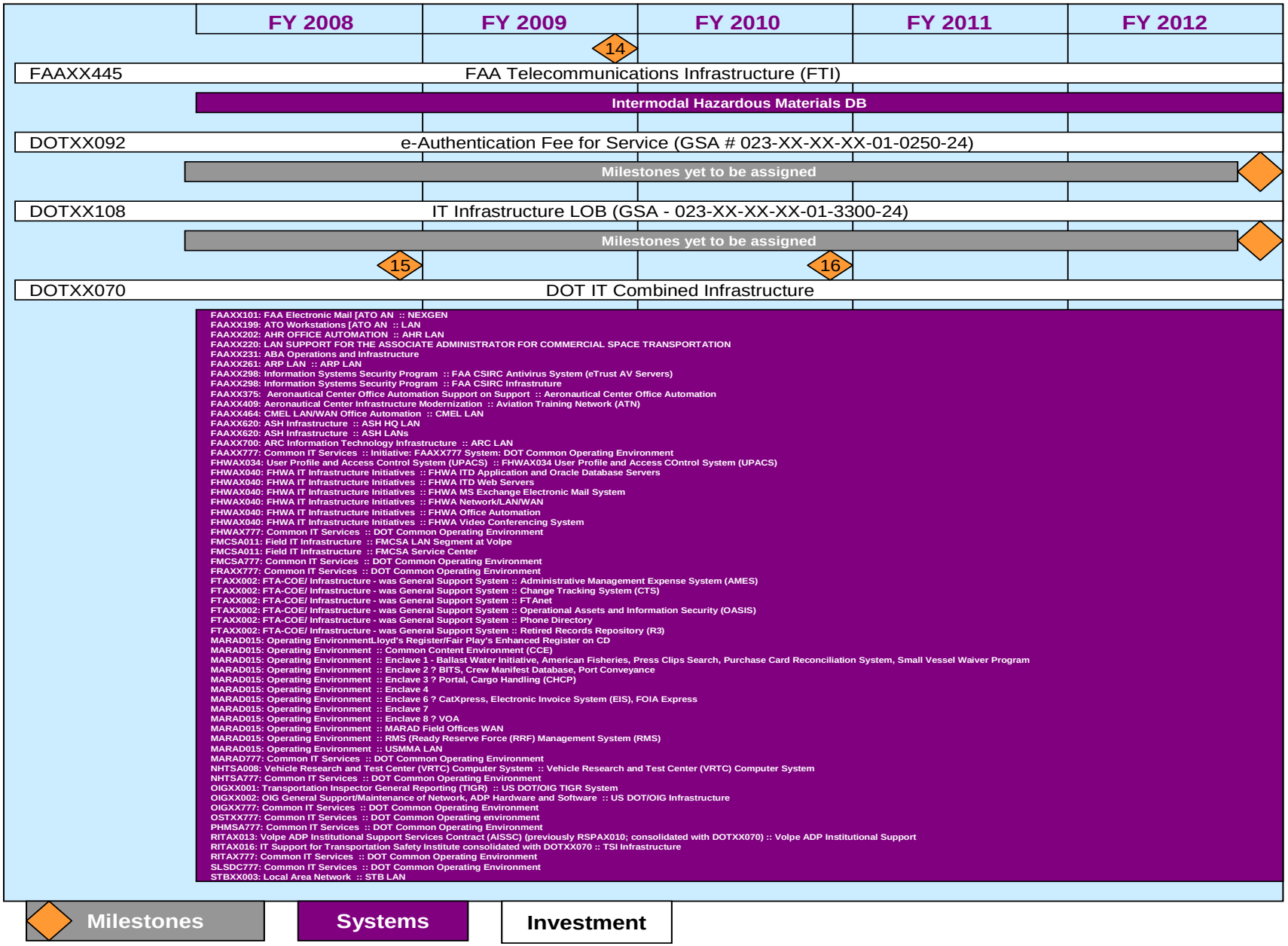
### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $46.599 | $27.807 | $21.142 | $429.108 | $410.931 | $386.398 |

**1.73% of Total IT Portfolio Costs**

## 6.3.2.1. Information Technology Infrastructure Sequencing Plan




FY 2008
FY 2009
FY 2010
FY 2011
FY 2012
14
FAAXX445
FAA Telecommunications Infrastructure (FTI)
Intermodal Hazardous Materials DB
DOTXX092
e-Authentication Fee for Service (GSA # 023-XX-XX-XX-01-0250-24)
Milestones yet to be assigned
DOTXX108
IT Infrastructure LOB (GSA - 023-XX-XX-XX-01-3300-24)
Milestones yet to be assigned
15
16
DOTXX070
DOT IT Combined Infrastructure
FAAXX101: FAA Electronic Mail [ATO AN :: NEXGEN
FAAXX199: ATO Workstations [ATO AN :: LAN
FAAXX202: AHR OFFICE AUTOMATION :: AHR LAN
FAAXX220: LAN SUPPORT FOR THE ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION
FAAXX231: ABA Operations and Infrastructure
FAAXX261: ARP LAN :: ARP LAN
FAAXX298: Information Systems Security Program :: FAA CSIRC Antivirus System (eTrust AV Servers)
FAAXX298: Information Systems Security Program :: FAA CSIRC Infrastruture
FAAXX375: Aeronautical Center Office Automation Support on Support :: Aeronautical Center Office Automation
FAAXX409: Aeronautical Center Infrastructure Modernization :: Aviation Training Network (ATN)
FAAXX464: CMEL LAN/WAN Office Automation :: CMEL LAN
FAAXX620: ASH Infrastructure :: ASH HQ LAN
FAAXX620: ASH Infrastructure :: ASH LANs
FAAXX700: ARC Information Technology Infrastructure :: ARC LAN
FAAXX777: Common IT Services :: Initiative: FAAXX777 System: DOT Common Operating Environment
FHWAX034: User Profile and Access Control System (UPACS) :: FHWAX034 User Profile and Access COntrol System (UPACS)
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA ITD Application and Oracle Database Servers
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA ITD Web Servers
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA MS Exchange Electronic Mail System
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA Network/LAN/WAN
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA Office Automation
FHWAX040: FHWA IT Infrastructure Initiatives :: FHWA Video Conferencing System
FHWAX777: Common IT Services :: DOT Common Operating Environment
FMCSA011: Field IT Infrastructure :: FMCSA LAN Segment at Volpe
FMCSA011: Field IT Infrastructure :: FMCSA Service Center
FMCSA777: Common IT Services :: DOT Common Operating Environment
FRAXX777: Common IT Services :: DOT Common Operating Environment
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: Administrative Management Expense System (AMES)
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: Change Tracking System (CTS)
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: FTAnet
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: Operational Assets and Information Security (OASIS)
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: Phone Directory
FTAXX002: FTA-COE/ Infrastructure - was General Support System :: Retired Records Repository (R3)
MARAD015: Operating EnvironmentLloyd's Register/Fair Play's Enhanced Register on CD
MARAD015: Operating Environment :: Common Content Environment (CCE)
MARAD015: Operating Environment :: Enclave 1 - Ballast Water Initiative, American Fisheries, Press Clips Search, Purchase Card Reconciliation System, Small Vessel Waiver Program
MARAD015: Operating Environment :: Enclave 2 ? BITS, Crew Manifest Database, Port Conveyance
MARAD015: Operating Environment :: Enclave 3 ? Portal, Cargo Handling (CHCP)
MARAD015: Operating Environment :: Enclave 4
MARAD015: Operating Environment :: Enclave 6 ? CatXpress, Electronic Invoice System (EIS), FOIA Express
MARAD015: Operating Environment :: Enclave 7
MARAD015: Operating Environment :: Enclave 8 ? VOA
MARAD015: Operating Environment :: MARAD Field Offices WAN
MARAD015: Operating Environment :: RMS (Ready Reserve Force (RRF) Management System (RMS)
MARAD015: Operating Environment :: USMMA LAN
MARAD777: Common IT Services :: DOT Common Operating Environment
NHTSA008: Vehicle Research and Test Center (VRTC) Computer System :: Vehicle Research and Test Center (VRTC) Computer System
NHTSA777: Common IT Services :: DOT Common Operating Environment
OIGXX001: Transportation Inspector General Reporting (TIGR) :: US DOT/OIG TIGR System
OIGXX002: OIG General Support/Maintenance of Network, ADP Hardware and Software :: US DOT/OIG Infrastructure
OIGXX777: Common IT Services :: DOT Common Operating Environment
OSTXX777: Common IT Services :: DOT Common Operating environment
PHMSA777: Common IT Services :: DOT Common Operating Environment
RITAX013: Volpe ADP Institutional Support Services Contract (AISSC) (previously RSPAX010; consolidated with DOTXX070) :: Volpe ADP Institutional Support
RITAX016: IT Support for Transportation Safety Institute consolidated with DOTXX070 :: TSI Infrastructure
RITAX777: Common IT Services :: DOT Common Operating Environment
SLSDC777: Common IT Services :: DOT Common Operating Environment
STBXX003: Local Area Network :: STB LAN
Milestones
Systems
Investment

### 6.3.2.2. Information Technology Infrastructure Milestones

| No. | Investment | Description of Milestone | Date (CY) |
|---|---|---|---|
| 14 | FAAXX445: FAA Telecommunications Infrastructure (FTI) | Acquisition (Current Baseline Segment) | Q4 2009 |
| 15 | DOTXX070: DOT IT Combined Infrastructure | FHWA Field Migration Phase 1 | Q4 2008 |
| 16 | DOTXX070: DOT IT Combined Infrastructure | DOT COE Development Phase 3 (Server Optimization & Consolidation) | Q4 2010 |

### 6.3.3. Management Planning Segment Summary

**DOT Segment: Management Planning** (210-000)

The Management Planning segment includes activities and investments related to critical strategic decision making by top DOT decision makers. This segment is in direct support of DOT's strategic goal for Organizational Excellence.

**Executive Sponsor:** Jackie Patillo (Acting) (OST) (proposed)

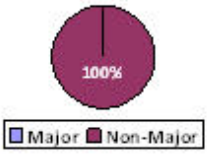
**Segment Status:** Planned

#### Overview

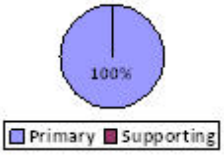
OAs Involved

- FAA
- FRA
- OST
- STB
- FHWA
- MARAD
- RITA
- FMCSA
- NHTSA
- SLSDC

**# Major Investments:** 0
**# Non-Major Investments:** 26




**# Primary Investments:** 26
**# Supporting Investments:** 0




#### Performance Outcomes

Performance Goals

- Ensure minimum duplication of effort for common functionality, such as project management or tracking applications

Accomplishments

- Federal Lands unified project management systems from 3 regions into one unified system

#### Activities Underway

- **Determine Participants and Launch Project**
  - Federal Lands is consolidating other project management/tracking systems into unified system that can be used by all of Federal Lands

#### Next Steps

-

#### Segment Funding

| DME ($M) | | | Steady State ($M) | | |
|---|---|---|---|---|---|
| Prior (BY08) | Current (BY09) | Future (BY10) | Prior (BY08) | Current (BY09) | Future (BY10) |
| $2.008 | $3.548 | $3.205 | $126.654 | $8.726 | $8.403 |

**0.22% of Total IT Portfolio Costs**

## 6.4. Notional Segments

DOT has twelve segments in the notional stage, including the following:

- Asset and Property Management
- Budget
- Emergency and Disaster Planning and Response
- Environmental and Weather Services
- Human Resources
- Legal
- Outreach and Public Information
- Public Affairs
- Rulemaking
- Transportation Infrastructure
- Transportation Safety
- Transportation Training

These segments are expected to initiate development of segment architectures between FY2010 and FY2012, based upon DOT's segment prioritization and consideration of changing Departmental needs.

# 7. Significant Segment Highlights

The section contains notable segment highlights that DOT as the department continues towards a As the DOT moves towards achieving the target architecture.

## 7.1. Grants

The Grants Segment is currently going through two concurrent activity streams:

- Analyzing DOT's grants environment and recommend removing and consolidating systems in order to improve all grants processes and standardize grants-related data
- Migrating select DOT grants services to HHS-ACF's COE

In January 2009, the eGrants IPT worked with HHS-ACF's COE to conduct fig-gap analyses on the three largest DOT grant-making systems; Federal Aviation Administration's (FAA) SOAR, Federal Highway Administration's (FHWA) FMIS, and the Federal Transit Administration's (FTA) TEAM-WEB, in order to determine if the COE can support their grant services, and what it would take to use the COE. As of this date, it has been determined that the HHS-ACF's COE is not capable of supporting the larger grants programs' functional needs. But, as a pilot program, FRA has migrated all of its grants services to HHS's COE. Other smaller OAs which do not need highly functional grants systems are interested in HHS COE, but a decision to let them migrate to the COE has not been. Instead, the scope of the IPT shall be altered to focus on a more system-centric approach rather than adopting an inter-agency solution. Currently, grants-related efforts are focused on analyzing the existing systems and consolidating them to support all OAs, leveraging more technologically functional systems. This will result in immediate cost-savings and a more streamlined grants process.

In September 2008 the Grants Segment Architecture document was finalized. Also the three fit-gap analyzes conducted by HHS are completed, but no further action (costing, etc) has been conducted.

The Grant Segment Architecture can be viewed within the file embedded below, or on OMB MAX

Grants Segment Architecture

## 7.2. Traffic Control

### 7.2.1. Air Traffic Control Sub-Segment Architecture

The Federal Aviation Administration (FAA) Air Traffic Control Sub-segment Architecture shows the programs planned to sustain the existing National Airspace System (NAS) and to continue the transition to the Next Generation Air Transportation System (NextGen).

The Air Traffic Control Sub-segment Architecture includes programs to deploy foundational technologies and infrastructure such as: Automatic Dependent Surveillance - Broadcast (ADS-B), Data Communications (DataComm), NextGen Network Enabled Weather (NNEW), NAS Voice Switch (NVS) and System Wide Information Management (SWIM). These are core technologies for the introduction of new capabilities promised for NextGen. They provide the communication, navigation

and surveillance technology supported by the more sophisticated information flows that will allow better use of airspace capacity.

The Air Traffic Control Sub-segment Architecture also includes programs to implement the NextGen solution sets (e.g. trajectory-based operations, high density arrivals and departures, etc). In some cases these projects will develop and buy new equipment; in other cases the programs will create demonstrations to prove the new technology is accurate and reliable enough to use operationally.

NextGen is not a copy of the current air traffic control system; it embodies a whole new concept for handling air traffic. Individual flight paths will be assigned and controllers will seldom have to intervene when aircraft fly their assigned trajectory and hit the assigned waypoints at the assigned times. Real time information on weather and traffic conditions will be available to all users, and solutions to any conflicts will be worked out collaboratively.

The Air Traffic Control Sub-Segment Architecture can be viewed within the file embedded below or on OMB MAX.


FAA Air Traffic Control Subsegment A

## 7.3. Enterprise Information Management

### 7.3.1. FRA Information Systems

FRA has made major strides in information sharing by moving its SharePoint collaboration environment from the pilot phase into production. All FRA program offices are using the environment. In addition, the FRA SharePoint collaboration site became a shared services provider to all of the Department of Transportation. In support of SharePoint, FRA is working to establish a full disaster recovery site in Cambridge, MA.

FRA has also been actively pursuing effective records management. As a first step, FRA began the Shared Drive cleanup initiative. Once the existing data has been cleaned up and organized, it will be moved to the new R drive. This is a preparation step toward the goal of implementing an electronic records management application.

### 7.3.2. FHWA Information Management

FHWA is working towards moving from an environment of numerous, sometimes stove-piped applications doing similar functions, to one of fewer, multi-use applications with greater usability and accessibility.

Our Investment Review Board (IRB) has been meeting with all Associate Administrators, to identify small applications with few users to determine if such applications can be incorporated into other applications with wider use and greater accessibility. We are identifying applications with similar functionality (e.g., tracking data/requests, project tracking, financial management) to determine where we can eliminate and consolidate.

The FHWA has been seeking a document management system; originally, the focus was on a higher cost system with use by a limited number of offices. We have now moved to a solution using SharePoint, which will have greater usability and wider access across the Agency.

FHWA has also been actively involved in shared services agreements within DOT in areas in which we have taken a leadership role. FHWA had developed a system to track Freedom of Information Act (FOIA) inquiries and produce an annual FOIA report. We have been entering into

shared services agreements with other DOT organizations; by now 7 other modes have reimbursable agreements with us to use our FOIA Log application. FHWA is also the first DOT organization to develop an application for ARRA reporting, and we are currently seeking to establish shared service agreements with other DOT modes.

### 7.3.3. Information Sharing Environment Participation with DOT

DOT has continued to move forward in its accomplishments within the ISE community, including the following items of note:

- In 2004, the DOT joined the FBI's National Joint Terrorism Task Force (NJTTF)
- In 2005, the DOT joined the Information Sharing Council (ISC)
- Several key DOT personnel have been representing the department on a number of ongoing working groups that are assisting the Program Manger-ISE to move DOT's government communities closer to a mature information sharing environment. For example, DOT is represented on the Privacy Guideline Committee, the Sensitive But Unclassified (SBU) Coordinating Committee, the Common Terrorism Information Sharing System (CTISS) Committee, and the Foreign Government Information Sharing Coordinating Committee (FGISCC). Together, DOT's ISE Program Manager and all the department's members that are diligently working on the aforementioned groups continue to improve DOT's knowledge and credibility in the information sharing arena. Further, DOT has recently held its first ISE meeting to discuss issues internal to the department's development of a sound ISE program and will continue to routinely meet to tackle many challenging issues that confront DOT in the ISE arena.

The timeframe in executing our strategy spans the next five years with implications over the next 20 years to support the Next Generation Air Traffic System (NextGen) initiative. As a participant in the Joint Program Development Office, the FAA is implementing an integrated plan to attain NextGen with its vision of transformation of the National Airspace System, focused on year 2025. This information/data management strategy will support NextGen. Our goal is to support the evolutionary progress toward the future National Airspace System. In fulfilling this goal, we will be able to support the future state where transparent, open, agile, timely, and relevant information sharing occurs to promote freedom of maneuverability across information domains.

### 7.3.4. Records Management

DOT has been actively engaged in standing up a Records Management program throughout the department. The purpose of this program is to ensure that the DOT is in full compliance with laws and regulations and ensuring DOT results are adequate, effective, and efficient. The Department is also supporting all OAs and departmental offices in meeting the DOT requirements to review and update the existing policy and develop the CIOP Chapter on Records Management as well supporting in the development of disposition schedules in response to NARA bulletins 2006-2 and 2008-03.

### 7.3.5. Correspondence Management

The Department re-evaluated its current Correspondence Management Tool (CCMS) to assess its capability and functionality in meeting the business requirements. After careful comparison with several Commercial Off–the-Shelf tools, the Department decided to make some critical enhancements to CCMS. The Department has determined that there is a need for a longer-term enterprise-wide CMS solution that fits in the Department EA and supports the transparency mission.

## 7.4. Financial Management

The Financial Management Business Transformation (FMBT) team has taken a comprehensive approach toward managing the segment and placed a strong emphasis on appropriate planning, governance, and stakeholder involvement prior to conceptualizing a solution. Specifically, they have established a PMO and established a team to address planning from the business perspective; created FMBT governance bodies and work groups that include various functional areas; brought in experts in various areas (including EA) to implement activities as required; and are using a phased approach to encourage stakeholders to present requirements and identify problems prior to determining the direction for a solution.

### 7.4.1. FRA Financial Management

The FRA RCRA (Railroad Credit Risk Assessment) system was enhanced and redesigned as a web-based tool. The client-based RCRA system is still being used to access information about older loans.

During FY2008, DOT implemented a new mandatory Credit Programs Portfolio Management System (CPPMS) for offices that have loan programs. All modes have a version of CPPMS that has been "tweaked" for their respective use. The FRA version was made available to the Railroad Rehabilitation and Improvement Financing (RRIF) Program in September 2008. RDV will use CPPMS and continue to use CRA to document, process, and track RRIF applicants and loans. The two systems do have some overlapping information but there is no interface capability between the systems. RDV must continue to use CRA in addition to the DOT mandated system as CRA utilizes OMB information and calculates the Credit Risk Premium paid by each borrower—critical functions to RDV and RRIF.

### 7.4.2. FHWA Financial Management

Several Associate Administrations and offices within FHWA had at one time developed their own financial management systems. FHWA has consolidating financial management systems in order to reduce this number. Within the past year, at least two AA/office financial systems were retired in favor of the ITS-JPO Financial Management System (FHWAX107). The ITS-FMS now provides services for several AAs/Offices within FHWA.

Within the past year, FHWA has also retired the Managerial Cost Accounting System; FHWA is now using the DOT's Delphi system for this functionality.

## 7.5. Hazardous Materials Management

### 7.5.1. PHMSA Materials Management

Pipeline and Hazardous Materials Safety Administration (PHMSA) developed the Hazmat Intelligence Portal (HIP), a web-based hazardous materials intelligence fusion center that provides OAs and the U.S. Coast Guard (USCG) centralized access to vital data and information to support risk management, transparency, and decision support objectives to improve safety performance and reduce risk in the safe, secure, and reliable transport of HazMat. The HIP integrates inspection, incident, regulation, penalty, and other data collected by Pipeline Hazardous Materials Administration (PHMSA), Federal Railroad Administration (FRA), Federal Aviation Administration (FAA), Federal Motor Carrier Administration (FMCSA), and US Coast Guard (USCG). The HIP provides the following benefits:

- Allows DOT to increase safety performance through risk-based enforcement – use data to identify high risk shippers and carriers most likely to be involved in an incident
- Maximizes limited resources by prioritizing inspection activities to focus on the greatest risk – inspectors are focused on shippers and carriers with complaints, serious incidents, failed inspections, etc. Also limits duplicate inspections.
- Strengthens cross modal, state, and local collaboration by sharing inspection results, enforcement actions, last inspection date, etc which can be critical in identifying potential high risk shipper and carrier. If a carrier skimps on safety in the air operations it is likely the same is true for their road, rail, and/or water operations.
- Increases the effectiveness of outreach, training, and emergency preparedness by using the data to focus efforts on areas that had the most issues. For example, what commodity was involved in the most incidents, what packaging containers or materials had the most failures, etc

The investment will support DOT's goal to reduce serious incidents and the rate of recidivism.

## 7.6. Statistics and Research

### 7.6.1. FRA Flagship RSIS Program

In addition to activities that began in FY2007 and continued through FY2008, several activities began in FY2008 or will begin in FY2009.

- SAS Business Intelligence Platform and Support Services - FRA completed an upgrade of its current, out of date, SAS IntrNet implementation with the more current SAS Business Intelligence (SAS-BI)platform which greatly enhances Safety's ability to develop and roll out reports.
- Enhanced Dashboard –The enhanced dashboard development program is an executive management tool to provide FRA management with key business intelligence and situational awareness of the most critical safety issues. It incorporates NIP and GPRA data renderings to provide FRA management with critical performance monitoring tools.
- Regulatory Analysis – New Rules Implementation Support – This project integrates products such as MS SharePoint into the RSIS service offering to address the growing need for rapid data management solutions to support FRA's rulemaking line of business. This task will begin in FY2009.
- RISPC Version 5 –FRA is modifying the RISPC program to expand SOA-readiness capabilities within RISPC to better manage the uploading of inspection/violation/IAR data and eliminate the need for inspectors to upload full databases. This version of the program will transform the program to utilize 'loosely coupled' components such as InfoPath and other forms. It will also provide for the development of web forms that will enhance the ability of an inspector to perform his normal work when his issued laptop computer is inoperable.
- State Inspector Program (SIP) –The motivation behind the establishment of the program is the ability for State Inspectors to conduct a track inspection and use the data as both a state inspection and a federal inspection. This ability allows FRA to increase the amount of inspection data without incurring the additional costs of more inspectors. With this state support, RSIS management can dramatically increase their inspection capabilities; in exchange for this goodwill the state inspectors are provided with new computers and secure connections to FRA servers.

In addition to the activities introduced in FY2008, a number of new activities will begin in FY2009 and continue throughout the life of the program.

- System Application Development, Modernization and Enhancement
- Regulatory Analysis Support Services
- Client Application Development, Modernization and Enhancement Services
- Software/Platform Acquisition

## 7.7. Transportation Safety

### 7.7.1. FRA Transportation Safety Initiatives

FRA has made major strides in upgrading and enhancing systems to enhance transportation safety, in particular RES and ATIP.

In 2007 and 2008, the Railroad Enforcement System (RES) was redesigned from the previous Enforcement Case System (ECS). The new RES system takes advantage of network connectivity, has enhanced security controls, and automates most of the RES related processes. The RES system was released on April 30, 2009.

The FRA Offices of Safety and Railroad Development have consolidated ATIP/IS and TRIP/IS into one program for the following reasons:

- ATIP and TRIP are complementary components of a common endeavor—using specialized Track Geometry Cars (railcars) for automated track inspection in support of FRA's rail safety mission and railroad safety compliance program. ATIP focuses on the automated inspection of track and TRIP is responsible for the development and demonstration of research and development (R&D) products which advance track inspection technologies. Both programs directly support FRA's mission to improve railroad safety by closing the performance gap of enhanced and faster track inspection capabilities.
- ATIP/IS and TRIP/IS enable their programs by providing the necessary technology and inspection tools needed to achieve the program's goals. They both are comprised of only the IT components of their programs including the data acquisition systems, management systems, post-processing analysis tools and supporting hardware housed on their railcars. Combining the programs will result in a single management team that can more effectively and efficiently oversee the maintenance of the IS components, as well as better plan and acquire improvements to the technology and inspection tools systems of all the railcars.
- Over the past several years, TRIP railcars (with the TRIP/IS components) have been loaned to the ATIP program for a significant part of each year. RRS borrowed the RDV railcars for enforcement purposes on an as-needed basis. All of the railcars have similar configurations and capabilities. Combining the programs will enable one management team to prioritize annual inspection and development needs and, thus, use the railcars more effectively in support of the programs' related goals and ultimately in support of FRA's mission.

The benefits of having all of the railcars under one Program, ATIP, include:

- Reduction in management and administration support – both contractor and FRA. Having the cars under one program will greatly reduce the coordination often required between RRS and RDV and reduce the management efforts to needed for two separate contracts. For example, having all railcars under ATIP will reduce documentation effort to maintain TRIP's T-16 and T-18 railcars such as SOPs, maintenance plans, operations plan, and spare parts list.
- Increased consistency in operations and maintenance procedures.
- Reduction of Federal Government FTEs as the FTE support for the consolidated program will remain the same as the previous ATIP/IS program, eliminating the Federal Government support for TRIP/IS.

RRS and RDV have developed a Memorandum of Understanding (MOU) to put all of FRA railcars under ATIP to have one office (RRS) be responsible for the operation and maintenance of these cars while the RDV office will coordinate for borrowing the cars for R&D purposes. According to

the MOU, RRS will be responsible for the budget requests associated with the acquisition, operation and maintenance of these railcars; RDV will be responsible for the operation and maintenance of the railcars while they are under R&D care (i.e., when requested from RRS to perform RDV activities). To ensure transparency and accountability, separate Contract/Task Orders will be set up when the railcars are under RDV operations and maintenance. However, RRS will be the primary office for coordination of all operation and maintenance activities.

### 7.7.2. Aviation Safety

The Transportation Safety Segment features one completed sub-segment, Aviation Safety (AVS which has been approved by the FAA. In addition to the investments within this completed and approved sub-segment, FRA, NHTSA, PHMSA, FHWA, FMCSA, FTA, and RITA have mapped multiple investments within the Transportation Safety segment as well.

FAA is making significant strides to reduce transportation-related fatalities and injuries, despite increasing exposure to safety risk from demographics, globalization and economic activity.

The FAA's Office of Aviation Safety (AVS) has a singular mission: to promote aviation safety in the interest of the American public and the millions of people who rely on the aviation industry for business, pleasure, and commerce. To fulfill this mission, AVS directs and manages safety programs that fall into three primary areas:

1. Continued Operational Safety: AVS' most important function (and one that AVS will never compromise) is to ensure that existing certificate holders continue to meet the safety requirements, standards, and regulations of their original certification. AVS does this through safety surveillance and oversight programs, audits, evaluations, air traffic oversight, education and training, research, and accident/incident investigations.

2. Standards and Policy: AVS creates and amends as necessary the rules and regulations that provide the safety standards for people, organizations, and equipment operating in the U.S. civil aviation system. AVS does this through policy development, analysis, and rulemaking.

3. Certification: AVS issues initial and renews existing certificates that allow (i) people, organizations, and equipment to operate in the U.S. civil aviation system, (ii) manufacturers to build aircraft and avionics, and (iii) organizations to provide maintenance services.

## 7.8. Acquisition

### 7.8.1. FRA Acquisitions

FRA upgraded PRISM to version 6.3, which contains several important enhancements/

- Users can now retrieve completed funding opportunity application packages from Grants.gov and associate them to corresponding documents in PRISM.
- PRISM now supports FAADS Plus reporting, which combines the data currently captured for FAADS reporting, plus new data elements that are required for compliance with the Federal Funding Accountability and Transparency Act (FFATA), when you report your agency's grants expenditures. With this enhancement, PRISM extracts the FAADS Plus data as a batch file for sending as a monthly report to USAspending.gov.
- PRISM now supports the Federal Procurement Data System-Next Generation (FPDS-NG) version 1.3.
- The Electronic Signature enhancement enables a Contracting Officer to sign solicitations and awards electronically, by printing a graphic image of the Contracting Officer's signature on the applicable form. Additionally, this enhancement enables an Agreements Officer to electronically sign grants, Section 845 OTs, and Section 845 OT DO/TOs.

- The Requisition for Modification feature has been enhanced to allow users create requisitions for modification from grants, Section 845 OTs, and Section 845 OT delivery order/ task orders.

## 7.9. Information Technology Infrastructure

The Information Technology Infrastructure (ITI) segment at DOT operates under the vision of creating a ONE DOT IT Common Operating Environment (COE) through which separated infrastructures will be consolidated to eliminate redundant operations, as well as improve overall service and security levels. The COE will be IPv6 capable and available to all departmental employees, excluding the FAA. The COE will support the strategic goals of improved service to citizens and increased security of operations, at a reduced cost, while also providing improved internal communications within the entire Department. It also will provide improved support to continuity of operations and disaster recovery procedures.

The Information Technology Infrastructure Line of Business (ITILOB) has conducted studies to investigate four identified alternatives. Based on its analysis, an OST-Managed Consolidation was selected as the easiest option to manage in the shortest timeline for mission accomplishment. This was critical because the HQ IT services had to be consolidated prior to the mandated move to a new headquarters building in FY 2007. This option also had more of an immediate impact on cost avoidance through enterprise licensing and consolidated mass purchases of required hardware and software as well as supported stronger assurance to the adherence of a common set of rules and standards.

### 7.9.1. FRA Information Technology Infrastructure

FRA made a lot of progress toward centralizing all FRA HQ IT decision making. Collaboration among stakeholders both in person and on SharePoint is used to determine IT user needs, provide status on requests, and provide training as needed. In addition, processes to respond to user requests have been streamlined, and the mobile computing infrastructure strengthened.

### 7.9.2. FHWA Information Technology Infrastructure

FHWA is using industry best practices and EA principles to improve the cost and performance of our IT infrastructure. FHWA has standards and procedures in place for standard and non-standard hardware and software, closely coordinated with our Information System Security Officer (ISSO) and Information Security Team.

Under the leadership of our CIO, FHWA is taking several steps to optimize our IT infrastructure and has established a strategic IT group to evaluate current and future needs and to optimize scarce dollars while maximizing achievement of our business requirements.

FHWA is currently in the process of migrating field desktop services to the Common Operating Environment (COE). This should be completed by the end of this fiscal year.

## 7.10. Management Planning

### 7.10.1. FRA Enterprise Architecture

FRA's Enterprise Architecture program is developing a detailed architecture corresponding to the organizational structure of the agency. At this time, there are five major architectural parts, or segments, corresponding to FRA organizational units:

- Office of Chief Counsel (RCC),
- Office of Railroad Safety (RRS),
- Office of Railroad Development (RDV),
- Office of Financial Management and Administration (RAD), and
- Office of the Administrator (ROA).

The RCC segment was the first of the five segments to be addressed. RRS and RAD were the second and third segments to be addressed and are each addressed in an individual report. Segment development will investigate and document business processes, organizational structure, workforce competencies, data, and applications used to support the corresponding part of the FRA mission. Interrelationships among the segments through common business, data, or application usage will be included in the evolving architecture as interdependencies are encountered. Segment architecture development tasks for RCC, RRS, and RAD have been completed, and RDV and ROA segments will be completed during FY2009.

Once the initial architecture is complete, FRA will begin work on functional segments. Some work on this, for FRA's grants segment, has already be initiated. Work on the organizational segments has already revealed a number of cross-organization functions to be explored.

In addition to the functional segment work, FRA will work to keep the models developed for the organizational segments up to date. The EA Team plans to leverage the FRA SharePoint site to encourage collaboration on this effort from the business owners.

### 7.10.2. FHWA Enterprise Architecture

In the management planning segment, FHWA is continuing to consolidate and to expand the accessibility and usability of applications. As in some other segments, several AAs and offices had developed or acquired their own applications for management planning activities, and is now trying to identify the most useful and flexible applications and consolidating as appropriate. FHWA is working to combine related functions such as project tracking, performance tracking, and budgeting into single applications, which would enable more integrated and effective project and program management.

The most concrete results recently have come from our Federal Lands group. Federal Lands has three large field offices, and provides program stewardship and transportation engineering services for planning, design, construction, and rehabilitation of the highways and bridges on federally owned lands. Federal Lands has consolidated project management applications for the three regions, and has been incorporating additional management and administrative functions that were originally planned for as separate applications.

### 7.10.3. FRA Capital Planning

FRA made great progress in efficiency, effectiveness, and timeliness goals, as related to processing of OMB Exhibit 300 submissions. In addition, great progress has been made in assisting FRA managers in developing Program Management Notebooks, a one-stop resource for all information about a given investment.

The Program Management Notebooks are compliant with the Office of Management and Budget (OMB) and Department of Transportation (DOT) requirements for program support

documentation beyond that which is submitted as part of its annual budget period, OMB Exhibit 53 information. The RSIS is part of the overall FRA IT Investment Portfolio, which is governed by the processes in specific areas of governance including Strategic Planning, Enterprise Architecture (EA), Capital Planning Investment Control (CPIC), Program Management, Information Assurance and Workforce Planning.

Sections 300 and 53 of OMB Circular A-11 provide guidance on the planning, budgeting, and acquisition of capital assets. OMB Section 300 establishes policy for planning, budgeting, acquisition and management of Federal capital assets, and provides instructions on budget justification and reporting requirements for large scale information technology (IT) investments. OMB Section 53 is a companion to Section 300, and provides guidance to show how all IT investments must clearly demonstrate the investment is needed to help meet the agency's strategic goals and mission.

The specific processes that govern PM activities include CPIC, which is the structured and integrated approach to selecting and managing IT investments. CPIC processes ensure that all IT investments align with the agency's mission and strategic goals while supporting the business goals and minimizing risk. FRA's CPIC policy provides a framework within which FRA can formulate, justify, and manage its IT portfolio.

## 7.11. Public Affairs

### 7.11.1. FHWA Public Affairs

FHWA is beginning to employ EA/Business Transformation methods to enhance its web presence. FHWA ha conducted a special web study to evaluate total Agency costs associated with the web presence, and to identify issues that could impede achievement of Agency goals for its web presence. In particular, this means trying to identify means to better serve FHWA customers and the general public.

FHWA is currently evaluating concepts for a more topic-based web presence (vs. more organizationally-based). They are also evaluating issues related to funding of Agency web sites, compliance with all Federal web guidelines and standards, and ensuring that such standards are maintained.

# 8. Near Term Plans

With performance analysis and planning as the key drivers, the EABTO team will continue to produce recommendations that will transform DOT into an efficient manager of government resources, and an effective provider of services to the citizen. Through its continuing analysis and implementation efforts, EABTO will continue to build and maintain the ETP as the central, integrated guide of overall transformation initiatives within the DOT. DOT expects the ETP to be a useful management tool for monitoring and tracking progress with initiatives, as well as, for determining dependencies between projects.

Near term plans for progressing EA and business transformation at DOT over the next year include the following activities:

- Refine and improve EA Governance processes to better align with the Department's Capital Planning and Investment Control (CPIC) and Investment Review Board (IRB) processes.
- Support transparency and sharing of DOT's information through government-wide initiatives (e.g., Data.gov).
- Provide business and IT stakeholders access to Department-side data via TEAMS
- Redesign and release of DOT's Enterprise Architecture and Business Transformation Office's (EABTO) external public-facing website.

# 9. Appendix A - Investments by Segment

A complete listing of specific individual OA investments as they are aligned to each DOT segment can be found in embedded file below.

Investments by Segment