



U.S. Department of Transportation

Office of the Chief Information Officer

IRM Strategic Plan





I am pleased to present the Information Resources Management (IRM) Strategic Plan (the Strategy) for the U.S. Department of Transportation (DOT), which we are publishing in accordance with OMB Circular A-130, *Management of Federal Information Resources*, dated February 8, 1996.

Since its inception in 1967, DOT has been responsible for ensuring a safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people. The initiatives outlined in the Strategy continue and enhance this responsibility by driving performance excellence and service delivery through effective Information Technology (IT) governance and resource management.

At the 93rd Annual Transportation Research Board Chairman's Luncheon, Secretary Foxx outlined his priorities for the Department. His comments supported the mission of DOT, specifically drawing attention to improving safety, fixing the infrastructure deficit, funding a surface reauthorization bill, establishing a national vision for transportation, and gaining efficiency.

These priorities set us on a path to achieving DOT's core mission and better serving our customers. In order to do that, we believe that it is essential to deliver mission-driven IT capabilities through a secure foundation operated by a dispersed, skilled workforce. The Strategy is the blueprint for an enterprise approach to IT management—led by DOT's Office of the Chief Information Officer (OCIO)—that will take advantage of smart consolidation opportunities to help manage technical diversity and increase utility and accessibility of information and technology. It will also guide us as we redesign complex business processes to improve the customer experience while streamlining service delivery.

A diverse, multi-agency group with support from both executive leadership and individual employees developed the Strategy. The resulting final Strategy builds on initial collaboration by including goal-oriented metrics that detail our approach to IRM implementation.

The issuance of the Strategy is just the beginning. We are committed to ensuring that the Strategy serves as a foundation for continued innovation in the way we manage IT resources, both now and in the future. We welcome your comments and encourage you to send your feedback to OCIO@dot.gov.

Sincerely,

Victor M. Mendez
Acting Assistant Secretary



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0.1	May 2013	Initial Draft
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1.0	March 2014	Final



Executive Summary

Execution of the U.S. Department of Transportation (DOT) Information Resources Management (IRM) Strategic Plan (the Strategy) will enable the delivery of mission-driven Information Technology (IT) capabilities through a secure foundation operated by a dispersed, skilled workforce. The DOT will take advantage of smart consolidation opportunities that manage technical diversity by leveraging an integrated governance process. The Strategy goals tie directly to the Secretary's priority to gain efficiency – in operations, technology, cybersecurity, governance, and the IT workforce.

Specifically, the Department will:

- Increase utility and accessibility of information and technology;
- Leverage collaborative opportunities to drive innovation and cost reductions;
- Deploy secure and reliable information systems and solutions;
- Drive performance excellence and service delivery through effective IT governance and resource management; and
- Develop an IT environment and workforce that support the evolving transportation mission.

Throughout the Strategy are code-mapping indicators required by the Office of Management and Budget (OMB) as elements of all IRM strategic plans across the Federal government. These indicators are defined in Appendix B and cross-references elements of the Strategy with the requirements established in OMB's Portfolio Stat 2.0 guidance. Additional appendices discuss the Department's approach to implementation of Chief Information Officer (CIO) authorities and detail implementation metrics. The metrics will provide a comprehensive picture of DOT's IT environment upon successful completion of the Strategy goals.



Introduction

The U.S. Department of Transportation is responsible for ensuring a “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.” DOT 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.

Until recently, DOT was operating under many short-term extensions to its authorizing legislation, creating a climate of uncertainty among state and local transportation departments and agencies. In 2012 Congress passed two reauthorization bills, Moving Ahead for Progress in the 21st Century (MAP-21) for DOT surface transportation programs and the FAA Modernization and Reform Act of 2012 for DOT aviation programs. These reauthorizations made several changes to the way DOT accomplishes its mission. One of the drivers for these changes is that, after 56 years of steady funding increases fueled by Federal gas taxes, the Highway Trust Fund now faces shortfalls.

The authorizing legislation provides DOT with a mandate to implement a more data-driven and performance-based transportation policy. As with other Federal IT organizations, client demands, technological environment, and resources available to achieve mission are in a constant state of change, requiring re-evaluation and prioritization. This Strategy, developed by the DOT Office of the Chief Information Officer (OCIO) with significant input from the DOT Operating Administrations (OAs), establishes five priority goals that serve as the foundation for meeting these challenges. The Strategy supports the Department’s stated objective of Organizational Excellence, which strives to make DOT a high-performance, outcome-driven agency and the Best Place to Work in the Federal Government (OMB Code: AXXA).

The Organizational Excellence objective is a primary focus because it values people, property, and processes as central to achieving all of our strategic goals and objectives. Two objectives in particular are emphasized in the FY2014-FY2018 Organizational Excellence goal:

- Put people first. Build a capable, diverse, and collaborative workforce of highly-skilled, innovative, and motivated employees by making DOT a workplace of choice through employee empowerment and engagement, learning and development, succession planning, workplace flexibilities, and a healthy and safe workforce.
- Advance secure and innovative information systems and technology platforms that protect against cyber threats and support the efficient use of information and data for financial management.

The OCIO holds the primary responsibility to provide secure, customer-focused information systems and technology platforms that support the innovative, effective, and efficient use of information and data for the management of all DOT business processes. Providing this support allows DOT to leverage new technologies and ensure employees can function as a mobile workforce in all situations by encouraging telework, enabling work features on mobile devices, and providing broadband connectivity to our DOT



workforce allowing them to securely work from anywhere. Achieving Organizational Excellence will make the Department a more data-driven, performance-based organization that operates efficiently and effectively (OMB Code: AXXB).

Secretary Foxx's priorities for DOT specifically draw attention to improving safety, fixing the infrastructure deficit, funding a surface reauthorization bill, establishing a national vision for transportation, and gaining efficiency. The Strategy helps achieve these priorities by ensuring that the IT environment is flexible, scalable, secure, and sustainable, and fully supports the evolving and increasingly complex efforts of the Department. All five goals in this Strategy tie directly to the Secretary's priority to gain efficiency – in operations, technology, cybersecurity, governance, and the IT workforce.

With regards to IT, DOT has historically been a decentralized agency, where each OA has its own CIO or IT Director and its own IT budget. This is not uncommon in government, be it federal, state or local. Today, however, there is widespread recognition that this decentralized construct that literally dates back to the 1980s has grown to be needlessly complex, difficult to manage and secure, ill-suited for the Internet world and, as a result, more costly than is necessary and sustainable. Rather than simply returning to the traditional centralized model of yesteryear (one CIO, one IT department) whose widely recognized failure spawned decentralization in the first place, the Departmental OCIO, in close consultation and collaboration with the OA CIOs, is looking to find the correct balance between centralized and decentralized IT, a "third way". This "third way" creates an enterprise-based, consolidated IT infrastructure while recognizing that each OA can and should retain control and management of the business solutions that drive their mission. This balanced approach ensures that the Department benefits in terms of increased security, improved service delivery and reduced cost while protecting the OAs' ability to have direct control of their unique mission solutions.

The DOT is deliberately moving toward implementing the updated governance model that will help provide the structure necessary for this consolidation and collaboration. With the right people at the table, communicating, opportunities and strategies for shared services and shared technology should be more easily identified and discussed.

Critical to the Department's success is the ongoing maturation of its IT community's mission-focused service, analytical and engineering excellence, risk awareness, critical thinking, and resource management, which appropriately service the Department's overall safety mission with secure and reliable systems. The DOT IT community recognizes this and operates with the keen understanding that performance excellence in these arenas is critical to the overall success of the Department.

The DOT IRM development process included engagement by the OCIO with a diverse set of stakeholders, representing the diversity of mission, operational responsibility, opinions, knowledge, and capabilities within the Department to achieve informed, balanced, and broadly supported resource management strategies. These stakeholders include the OA CIOs and IT Directors, the Office of the Senior Procurement Executive (OSPE), the Office of the Assistant Secretary for Budget and Programs and Chief Financial Officer (OCFO), and the Office of the Assistant Secretary for Administration. The Strategy



reflects the dynamics and complexities of the Department and is a goal-oriented plan for our combined desired state of IT at the Department. Our stakeholders represent resource owners, developers, users, regulators (those who establish requirements), and broader communities of interest with a stake in a successful DOT IT program.

The OCIO's proactive process described in Figure 1 prioritizes leadership by issue experts while recognizing that solution ownership is distributed across the organization.

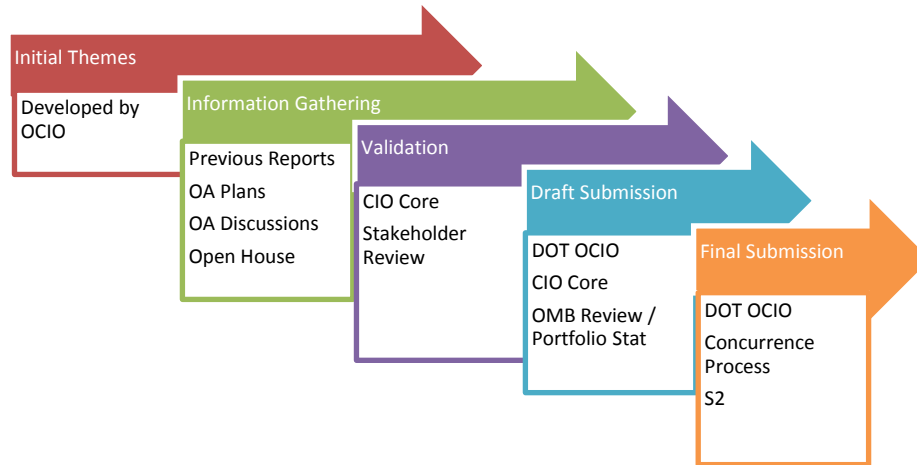


Figure 1 – DOT's iterative approach to developing the IRM includes stakeholders from across the Department

Department stakeholders unequivocally recognize that inviting and incorporating feedback is critical to the success of the DOT mission and the systems that support it, and the IRM development is no exception. As defined by OMB as the responsible party of the IRM, the OCIO led the data gathering and writing of the final product; however, ownership of the final product is held by the entire IT organization. The following is a brief synopsis of the DOT process for creating the Strategy.

Initial Themes

- Identify broad themes based on review of OMB requirements and existing CIO strategies
- Theme presentation and discussion at CIO Core Council meetings

Information Gathering

- Review OA plans to identify commonalities and divergences
- Interview OA CIO leadership and staff, senior leadership, and thought leaders
- Identify specific opportunities supportive of themes through Open House collaboration

Validation

- Refine themes based on information gathering activities



- Propose IRM Strategic Goals and supporting Strategic Objectives to CIO Core
- Confirm IRM Performance Goals with sponsors

Draft Submission

- Review of draft work product by DOT CIO
- Identify items under development or in need of further refinement
- Present to CIO core for discussion and review of language, goals and metrics
- Draft submission to OMB for review and comment

Final Submission

- Address OMB comments and concerns regarding draft submission, focusing on mission integration and metrics
- Submit approval of the final document through the official DOT concurrence process
- The Deputy Secretary of Transportation (S2) signs the final document as an official DOT strategy

The Department's Strategy acknowledges that failure to assemble a broad constituency of stakeholders and engage them on a continuous basis throughout the development process will ultimately lead to a narrow definition of issues and problems, and not contribute meaningfully to corrective policy and management actions.

This cooperative approach seeks to understand varying interests and priorities of our stakeholders and take them into consideration during the development process. While DOT's approach requires significant investment on the front end, promoting collegial and effective dialogue across communities of interest has already produced benefits for the Department. By fostering these relationships during the planning process, the OCIO ensures that stakeholders are prepared to implement and execute the finalized IRM strategies.

Our Approach

This Strategy represents the agency's direction to effectively prioritize and manage our IT investments. It helps ensure that IT investments are aligned to the strategic objectives of the Department, and illustrates how the budget, procurement, capital planning and investment, financial management, and human resources management processes are integrated. The ability of the DOT IT community to achieve the shared vision of delivering innovation and technology solutions to enable the business of transportation is predicated upon the execution model of Define, Build, and Institutionalize outlined in DOT's Integrated Program Planning and Management (IPPM) Governance Guide.

The Department recognizes the triple constraints of quality, resources, and timeliness. This Strategy reflects a need to rapidly shore up the fundamentals so that the accelerating pace of demands placed on Federal IT may be met head on and with confidence. This Strategy leverages our existing strengths, addresses challenges, and includes key planning assumptions:



Strengths

- Innovative thinking
- Recognized leaders in new technology delivery
- Fundamentally sound infrastructure
- Collaboration across DOT and with Federal partners
- Clear Departmental mission that has stayed stable over time
- Strong relationships with Budget, Finance, and Human Resources

Challenges

- Unpredictable funding levels from multiple sources
- Increased demand to adapt to a changing technology environment
- Continued cyber vigilance required to address threat pervasiveness and sophistication
- Evolving skills requirements for IT staff
- Mission executed with other levels of government (State, local, tribal)
- Managing complexity and lead times associated with Federal contracting
- Changing executive leadership across the Department

Assumptions

- Resources will continue to contract throughout the strategy timeframe
- Stakeholder services will be delivered on a variety of platforms

Strategy Goals and Objectives

The Strategy is comprised of five equally important Goals; here at the Department, the goals have been broken down in such a way that each is quantifiable, measurable, and can be achieved over time. The Strategy lays out what will drive success in achieving each goal, how programs and work products contribute, and the result will, over time, lay out the roadmap for achieving future goals and driving further success.

Our Philosophy

Reliable & High Performance

We understand that our business processes are highly dependent on reliable and secure IT. Security and performance concerns are top priorities in the management of our IT strategic planning and resource allocation. As we expand and enhance our services, we will continue to invest in our IT infrastructure to ensure that we maintain high performance standards, data management, and reliability to meet the needs of both the public and our workforce. We will securely maintain our systems to protect our business processes and continue to focus on strengthening our information security program.



Strategic Investment

We understand that technologies are always evolving and changing. We therefore vet all new technologies before adoption by monitoring technology trends and evaluating how they align to our business needs, the maturity of the technology, the long-term viability of the technology and vendor. We only implement new technologies that demonstrate a return on investment and fulfill our business needs.

Project Management

We recognize that large, complex IT projects come with significant risks. We implement our IT projects incrementally and at the simplest level that provides business value. This approach helps to ensure that we update our project plans and requirements to adapt to changing business and technology environments and realize true return on investment.

Holistic Infrastructure Development

Effectively modernizing an enterprise system of the Department's scope is complex. We are constantly evolving our IT to incorporate innovative and stable technologies that meet our business needs. When new projects and infrastructure lifecycles provide us with an opportunity to update technology or system design, we will do this holistically and systematically. We focus on finding innovative, efficient approaches rather than simply updating the existing infrastructure.

Investing in our Workforce

Our IT workforce is the backbone of the technology at the Department. We are committed to training, staff development, and maintaining a positive work environment that values diversity and employee input. As our workforce transitions, we will use comprehensive training programs and transfer institutional knowledge. We continue to focus on recruiting and maintaining our highly-competent IT workforce.

Keys to our Success

- **Recognize Change can be Difficult.** Institutionalization of the goals envisioned in this plan is heavily reliant on significant and sustained effort on the part of management and staff.
- **Motivating and Sustaining New Ideas and Operating Models Is Critical to Overcoming Inertia.** Governance reform and service innovation requires change management tools that include institutional and employee incentives, constant learning and professional development, on-the-job training, highly engaged leadership and managers, and knowledge sharing across the Department.
- **Stakeholder Buy-In Is Fundamental to Sustain Improvement.** Integration and support for IT change is not contingent upon the IT community alone and must be understood, supported, and advanced by a broad spectrum of stakeholders who recognize the benefits of collaboration, shared services, and governance reforms.



- **Skills Must Keep Pace with Change.** Management must support efforts and find creative means to develop staff capabilities necessary to operate successfully in a new technology environment. In tight budget years, training cannot always be the first cut.
- **Leveraging Previous Successes.** Connecting with private and public sector officials and colleagues who have already successfully adopted, and are now employing, new policies, systems, and procedures strengthens internal efforts and reduces duplicative or ineffective efforts.



Goal 1: Enable a data-driven decision-making environment that promotes a safe, efficient, and reliable transportation system

Data is crucial to DOT's mission. The Department manages data as an asset to support activities related to ensuring safety, measuring regulatory compliance, and measuring the effectiveness of customer service.

Our top priority is to make the U.S. transportation system the safest in the world. The Department has always collected data to help execute its mission; however, recent legislation, such as MAP-21, is focused on transforming DOT into a data-driven and performance-based organization.

For DOT to accomplish the task of becoming more performance based, two things need to happen: access to Departmentally collected data needs to be increased, and data visualization capabilities need to advance. Data from across DOT must be integrated to better understand the performance of the entire U.S. transportation system. Cross-cutting policy initiatives in the areas of freight, congestion, and hazardous materials transportation require the collection and analysis of data regarding roads, roadway users, railroads, transit, airports, ports, waterways, and pipelines. The DOT business processes and the data that support those processes must be interoperable, discoverable, and readily shareable with authorized users and the general public. The formats used to store and share data must be modernized to maximize the reusability and downstream utility for all users (OMB Codes: BXXB, BXXC).

The Department of Transportation (DOT) approach to ensuring all data assets from each OA will be identified and accounted for in its Enterprise Data Inventory is focused on linking various information management programs together. Specifically, the DOT Enterprise Data Inventory is considered complete when each of its Operating Administrations (OAs) has accounted for all datasets that are:

- Collected under an OMB-approved Information Collection Request,
- Contained in Records Disposition Schedules (RDS) and Electronic Information Systems (EIS) list,
- Covered by a Privacy Act System of Records Notice (SORN), and
- Associated with an information technology (IT) investment reported on the Exhibit 53

Among a number of other efforts, DOT's first integration of cross-modal data was the Pipelines and Hazardous Materials Safety Administration (PHMSA) HazMat Intelligence Portal (HIP), which aggregates Hazardous Materials (HazMat) transportation data from across DOT and provides awareness and decision support to DOT officials and the public. The DOT will use the lessons learned from this project to implement similar integrations across the Department.

Objective 1: Provide internal and external stakeholders with timely access to information and data

The DOT stakeholders, both internally and externally, need to be able to access Department data at any time, from any place, on any device. Data can empower users to make more informed decisions about



all aspects of their safety in real time including, but not limited to, food, crime, traffic, and consumer product safety. Users need to be able to analyze safety data on the go and DOT field employees need to be able to check registration and inspection information from the roadside.

Stakeholders and employees can make better decisions when equipped with accurate, timely, and easily accessible data. **In addition to supporting a culture of continuous improvement, the DOT plans to improve data quality and reduce data redundancies through execution of IT investments and IT development funds.** The Maritime Administration's (MARAD) proposed IT modernization activities will define an enterprise architecture model that includes a service-oriented architecture (SOA) and will implement data management policies and procedures to improve the accessibility and life cycle management of information. MARAD plans to establish an Information Management Authority (IMA) working group to focus on data management and data quality issues. The IMA will be responsible for reviewing all system change requests for potential impact on data quality and management, and report assessments to IT governance boards. DOT has several other ongoing or upcoming modernization projects which can benefit from the lessons learned from MARAD.

The DOT customer service plan includes a signature initiative that is responsive to public feedback, focuses on releasing enforcement and compliance data in modern formats, and encourages novel presentation and reuse. In an effort to better communicate with citizens and external transportation stakeholders, DOT has worked to deploy mobile applications, or apps, that help show data in a user-friendly way. One success in this area is Federal Motor Carrier Safety Administration's (FMCSA) signature initiative, the SaferBus application, which gives travelers quick, streamlined access to the agency's safety data as well as the complaint history for a given bus company. FMCSA collects information to evaluate motor carrier safety as well as track consumer complaints; this information was released in new ways, offering an Application Programming Interface (API) encouraging the development of mobile applications and making information more available on the Web, which resulted in the SaferBus application. Access to this information helps travelers make informed decisions about choosing a safe motor coach when booking a trip. This app also provides access to FMCSA's consumer complaint forms to enable the submission of complaints from a mobile device. National Highway Traffic Safety Administration (NHTSA) has already used the API to create a similar application, SaferCar.

The DOT is optimizing existing systems for mobile use by establishing standards in our enterprise architecture (EA) and evaluating all new systems and substantial modernization efforts against the future architecture. One example is the Federal Railroad Administration (FRA) Grade Crossing App. This app will allow users to identify grade crossings and obtain safety-related information.

While many Federal agencies collect important safety-related data, DOT recognizes that simply releasing data does not fully leverage the potential of those datasets for discovering new information, inventing new products, or identifying complex patterns to improve decision making. Because of this, **DOT will continue to enable the public, as well as internal and external stakeholders, to make better safety-related decisions using both current statistical descriptions and explanations of the environment that will affect our future.** Safety.data.gov will tap into the innovation of application developers, the immediacy of the internet, and information that the Federal government collects to enable informed



decisions that will enhance public safety and improve public health in the United States. DOT will continue to actively engage with external stakeholders to ensure we are focusing on the top priority datasets and app development through datapaloozas, data jams, and other events.

The DOT will leverage more granular and continuous data. In the current transportation environment, there is an increasing need for real-time data to improve operational decisions that help DOT achieve its economic competitiveness and environmental sustainability goals. The FAA is focusing multiple IT investments on what it calls operational improvements (OIs), which are aimed at increasing efficiency, increasing capacity, improving safety, and reducing costs by updating technology and processes. One of these investments, Automatic Dependent Surveillance Broadcast (ADS-B) separation, uses GPS to provide real-time visibility, which allows for improved access and more efficient flight paths. FAA also plans to deploy the flight information service-broadcast (FIS-B) nationally; FIS-B provides weather services on the airport surface, in terminal, and en route which improves situational awareness and reduces frequency congestion.

The DOT is actively working with the all of the Department's Web and new media leads and web content providers through the Web Community of Interest (COI) to disseminate best practices and provide opportunities for training and discussion. The Web COI has regular meetings with representatives from each of the DOT OAs. The DOT has also established an accessibility working group with web and business representatives from each of the DOT OAs. This working group is identifying challenges and potential solutions to address accessibility goals on an enterprise level to ensure all Departmental websites meet accessibility standards.

The DOT has also implemented Google Analytics on most of DOT's .gov domains and utilized the resulting data to develop custom reports for many offices to ensure they are using the analytics to the fullest extent possible. **The DOT is also pursuing an enterprise approach to customer feedback based on the American Customer Satisfaction Index (ACSI).**

Objective 2: Improve information management and enhance interoperability

The DOT must invest in data modeling, management, and integration to ensure that its information is managed efficiently and accurately. This will reduce redundancy and support the efficient, safe use of information across the Department.

The DOT is evaluating ways to make information collection across the Department less burdensome to the public and more efficient and useful across OAs. Internally, several OAs collect and analyze similar types of datasets, so shared platforms, apps, and standards will help create data consistency across the Department. Sharing this data will not only allow for efficiencies in terms of collection, but will provide a picture of the entire transportation system instead of a snapshot of one piece of the system. (OMB Code: GXXA)

FMCSA's IT modernization of registration services has shown how information collection processes are improving. The modernization will streamline the registration process of motor carriers by consolidating



the number of forms the registrant is required to complete. The program also reduces the amount of time necessary to both complete the application and for FMCSA to review the application.

The Department has initiated an innovative approach to managing information as an asset. The approach will guide the Department in the development of a comprehensive data inventory. Key to the approach is the improved collaboration across existing information management and data governance functions. In developing the data inventory, the Department will review approved Information Collection Requests, Records Disposition Schedules, Exhibit 53 information, and Privacy Act System of Records Notices. Integrating data from all of its information management programs will improve the Department's effectiveness at collecting, managing, archiving and protecting its data and information assets. Only with this integrated foundation in place will the Department improve its overall effectiveness at releasing open data to spur innovation and increase accountability.

In terms of information integration, **DOT will analyze the performance of its infrastructure investments to ensure that investments achieve measurable improvement in their performance of the nation's transportation system.** To enable this kind of analysis, Federal Highway Administration (FHWA) is working on integrating data from across data systems to enable cross-program reporting, data analysis, and data-driven decisions. For example, linking investments in bridge maintenance with the National Bridge Inventory can show whether money is being allocated to high priority projects.

The OCIO is working with the Office of the Chief Financial Officer (OCFO), Office of the Senior Procurement Executive (OSPE) through an IPT focused on Financial Assistance. The IPT is chartered to review OA financial assistance processes and systems to identify potential process improvements and review opportunities for shared solutions or shared solution components. These efforts will comply with emerging data standards for reporting and Federal financial assistance transactions both internally and externally. The Committee on Financial Assistance Reform is increasing oversight of, and compliance with, Federal financial and assistance data standards. The DOT has an opportunity to "build once and reuse" common solutions to meet these requirements. This methodology will serve as a **roadmap for future DOT endeavors to consolidate across EA segments.**

The DOT will continue to improve its information management capabilities by strengthening its records management (RM) program. The DOT is currently focused on standardizing records management policies and practices across the Department, and **integrating RM requirements into the business use cases for new systems to support automation of RM functions.** In support of the Presidential Memo on Managing Government Records, the Department will implement mandatory RM training for all employees before the end of the fiscal year. To help the Department achieve its RM modernization goals and compliance with new directives, the Departmental Records Management Office has launched a consultative working group with other Federal RM offices to seek combined solutions for common challenges.



In 2011, the Department established the position of DOT Chief Privacy and Information Asset Officer (CPO), distinct and separate from that of the Office of Cybersecurity¹. By doing so, the Department signaled its intent to ensure that the **Fair Information Practice Principles (FIPPs) are incorporated into all its technology, data collection, and rule making activities**. The Department's initial focus is to bring its systems into full compliance with the transparency requirements of the e-Government Act by publishing Privacy Impact Assessments (PIA) for all systems which create privacy risk for members of the public. The CPO launched a comprehensive review of the Department's Privacy Act notices and is working with the OAs to retire, update, consolidate, or develop new system of records notices (SORNs) as required. Together these documents form the basis of authorized use and access to personally identifiable information (PII) maintained by the Department; these are monitored through programmatic reviews and technical assessments. The CPO is also a key component of the team developing the Department's controlled unclassified information (CUI) initiatives (OMB Code: GXXB).

¹ As a Federal statistical agency, the Bureau of Transportation Statistics (BTS), is subject to the Confidential Information Protection and Statistical Efficiency Act (CIPSEA) of 2002. Additional information on BTS and its responsibilities under CIPSEA may be found on the BTS website (www.dot.gov/bts).



Goal 2: Share services, technology, and ideas to drive innovation and cost reductions

Information technology continues to advance at a rapid rate, and there are always new and innovative technologies gaining traction and transforming the way agencies can execute their mission. Cloud computing is one initiative that has strong backing from the Federal community. It allows agencies to leverage shared resources to reduce costs and increase flexibility.

The DOT continues to find ways to reduce duplication and gain efficiencies in spending as it works toward achieving the goal of Organizational Excellence. Shared services and shared technology are ways to eliminate duplicative solutions for mission, support, and commodity IT.

By consolidating or eliminating commodity IT investments, DOT will:

- Promote the use of Green IT by reducing the overall energy and real estate footprint of DOT data centers;
- Reduce the cost of data center hardware, software, and operations through virtualization;
- Increase the overall IT security posture of the Department; and
- Shift IT investments to more efficient computing platforms and technologies.²

The DOT has a successful history of using shared services and shared technology; the Department leverages the Department of Interior's national business center for human resources (HR) services, uses one timekeeping system for all of DOT, and serves as a Federal Shared Service Provider (SSP) to provide financial systems, services, and related support to other agencies.

The DOT has developed mature internal shared services programs that provide selected IT services for all of the OAs within the Department. The maturity of these programs ensures that centralized services are supported by an optimal, efficient infrastructure. In the past year, DOT has conducted an exhaustive inventory of IT assets and data centers to ensure that the starting baseline for all DOT organizations is accurate and detailed. The Department will use this inventory to find new opportunities to share other services and technologies (OMB Code: HXXC).

Objective 1: Achieve balanced hybrid approach to IT infrastructure services

Beginning in 2007, the OCIO established the Common Operating Environment (COE), managed by the IT Shared Services (ITSS) organization, designed to provide shared IT services to the OAs. Today that organization provides a range of services to the OAs with varying degrees of success, resulting in varied participation from mode to mode. DOT seeks to provide a blend of both centralized and decentralized IT across the organization utilizing an underlying IT infrastructure managed in the COE, while allowing OAs to focus on managing their unique mission solutions and data.

² FDCCI FAQs, May 2012. <https://cio.gov/wp-content/uploads/downloads/2012/09/FAQ-May-2012-Update-V1.pdf>



Accordingly, the OCIO needs to identify any service offerings that are currently unavailable or underused within the Department. The OCIO plans to further **define the cost of providing COE services, investigate how to ensure COE is staffed with the appropriate skills mix, and to define the relationship between staffing models and service price points.** This will support OCIO's efforts to;

- Ensure COE services meet customers' needs;
- Determine the ideal balance of staffing between federal employees and contractors; and
- Update cost structure.

The initiative is already underway and there is a strong commitment from the OAs to be involved in implementing any changes to the OCIO model. OA representatives from the CIO Council have already formed a working group to focus on how the Department can and should architect, build, and manage the shared services COE to meet both the enterprise needs of the Department as well as the unique business needs of the modes themselves. A successful restructuring would benefit the entire department, and would allow OAs to focus on mission objectives and move away from providing infrastructure.

The Federal Aviation Administration (FAA) is transitioning from a distributed model for providing IT products and services to lines of business and staff offices to a "One IT" shared services model in order to provide innovative and cost-effective solutions that "move at the speed of business." The new structure of the FAA's Information & Technology (AIT) organization was designed around a set of principles that will enable this transition. Those principles are:

- Prepare for the future—Innovate!
- Ensure operational excellence
- Gain efficiency
- Design to support "concept" to "operation"
- Provide exceptional customer service
- Partner and collaborate with each other and with customers
- Empower the workforce—create growth opportunities for employees

Six functionally oriented offices are the foundation that reports to the FAA CIO and Deputy CIO in this new organizational structure.

Objective 2: Move to a more cloud-oriented shared infrastructure

Cloud-oriented infrastructure is meant to reduce spending on infrastructure by using a consumption-based cost model and to improve accessibility and flexibility. **The DOT will expand its use of cloud-based platforms and eliminate duplicative and redundant capabilities within the DOT OAs.** Redundant capabilities, including collaboration tools, web hosting, infrastructure, and content management, are being identified through the PortfolioStat process and present the best opportunities for successful migration to the cloud.



The DOT has shown that cloud-based capabilities provide the Department with the ability to pilot and quickly scale enterprise platforms, as it did with Drupal Content Management System (CMS). The initiative, led by the OCIO, is premised on the reinvestment of resources identified to manage multiple one-off/non-standard environments. The U.S. Merchant Marine Academy (USMMA) has already migrated; FMCSA and Office of the Assistant Secretary for Research and Technology (OST-R) are migrating to the common platform. This has spurred other OAs, with OCIO assistance, to evaluate the Drupal CMS as a viable alternative to existing environments. The OCIO continues to support efforts to identify additional opportunities for near-term platform consolidation around common technologies.

There are additional benefits to cloud-oriented infrastructure. When the Enterprise Messaging System (EMS) initiative, led by the FAA, is fully implemented it will provide DOT with innovative cloud services for e-mail, new teleconferencing capabilities, and will result in a consolidated Active Directory structure. **These additional capabilities have the potential to lower management overhead and administrative costs for key enterprise capabilities and would be indirect benefits to the commodity IT consolidation effort.**

FAA is leading the FAA Cloud Services (FCS) contract initiative that consists of outsourced data center services in which DOT customers will purchase computing capabilities that are hosted in one or more commercial data centers. Computing resources will be used to support processing for a wide range of databases, backend servers, and data-processing applications.

The Department is also leveraging the private cloud to deploy enterprise services. For example, the new SharePoint platform provides an application development capability that may help reduce infrastructure that duplicates other areas of commodity IT.

As part of the DOT Data Center Consolidation Plan, DOT has committed to taking a “virtualize first” approach to consolidation activities, reducing the server footprint, and increasing asset utilization. The DOT components, including FHWA, FTA, MARAD, OST-R, and FMCSA, have been aggressively pursuing virtualization efforts. In addition, a DOT mission investment managed by NHTSA’s National Driver Registry (NDR) recently migrated from a mainframe solution to a server-based solution. The DOT continues to investigate advantages of a partial move to the cloud to achieve further operational efficiencies. **The DOT will continue virtualization efforts as part of its data center consolidation plan.**

Objective 3: Manage technical diversity and reduce duplication

The DOT is committed to using common platforms and reducing duplication of technology in order to maximize the benefit to the enterprise as a whole. Technical diversity leads to higher maintenance costs and often results in losses of connectivity between multiple processing environments.

The DOT must take an integrated, portfolio-based approach to IT investment management. The Department’s strategy is to (OMB Code: HXXA):

- Rationalize software in use by OAs;



- Identify and execute strategic sourcing opportunities; and
- Search for further opportunities to improve business processes and technology integration.

The DOT has learned that in addition to reducing costs, consolidation activities can yield ancillary benefits. As part of a DOT-wide strategic sourcing effort, DOT consolidated multi-function printer (MFP) capabilities around the Department to leverage the FAA Strategic Acquisition for Various Equipment and Supplies (SAVES) multi-function printer contract. The solution leverages use of Personal Identity Verification (PIV) cards to release print jobs, so the initiative has helped to increase the number of employees who are actively provisioning and using PIV cards.

The DOT has adopted SharePoint as its standard stakeholder engagement tool, both internally and externally, and the OCIO is in the process of eliminating multiple instances of SharePoint across the Department. The duplicative sites will be abandoned during the migration to SharePoint 2010, which is currently underway. FHWA and MARAD partnered to implement the externally facing SharePoint environment, which facilitates collaboration with external partners. The DOT anticipates leveraging this solution across multiple OAs. The use of SharePoint as the collaboration tool of the Department provides reduced overall costs by eliminating redundant capabilities and duplicate infrastructure.

Objective 4: Use collaboration platforms to engage employees and the public

The Department is looking for new ways for employees to share ideas with each other, as well as to gain insight from the public and external partners. In the current rapid-paced world, everyone is looking for quick ways to communicate and the fastest ways to get ideas to action.

During the creation of the Open Government Plan, DOT used the Public Value Assessment Tool (PVAT), created by the Center for Technology in Government at the University at Albany, to assess the value of employees' contributions. The DOT continues to engage employees using the process illustrated in Figure 2.

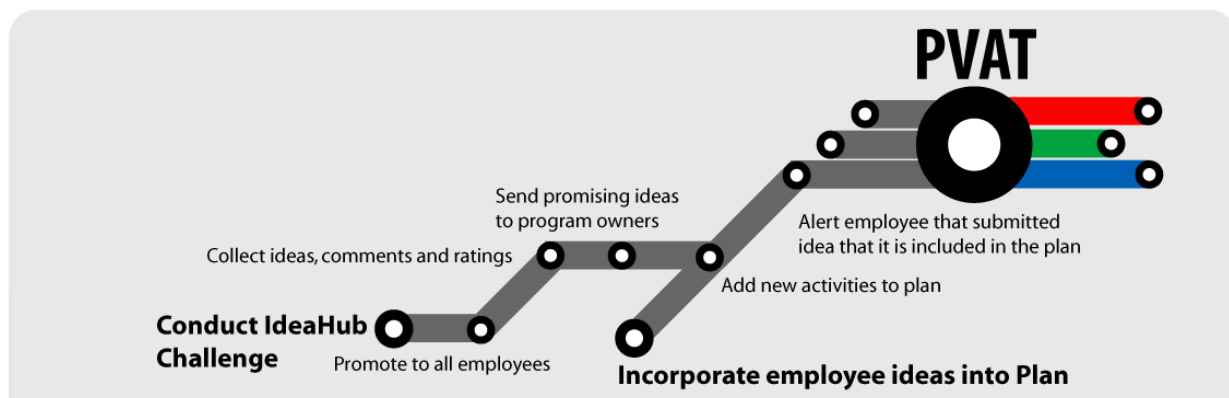


Figure 2 – After collecting employees' ideas on IdeaHub, DOT uses the PVAT to assess the value and incorporate the ideas.

To adhere to the principles of transparency, participation, and collaboration with almost 60,000 Federal DOT employees from across the country in this planning process, the Department uses DOT's IdeaHub platform, a DOT-wide ideation platform launched after publication of the first Open Government Plan.



IdeaHub is a robust ideation platform that allows ideas to be submitted, allows employees to see and vote on those ideas, and encourages employees to comment on and refine each other's ideas. The DOT has used IdeaHub many times to elicit ideas that have produced actionable results across the Department.

A similar process is in place to assess ideas collected from external stakeholders and engage the public, illustrated by Figure 3. This was first used in the open government planning process; given its success in that forum, DOT is seeing this process being applied all across the Department. The tool most often employed is IdeaScale, an online public dialogue platform.

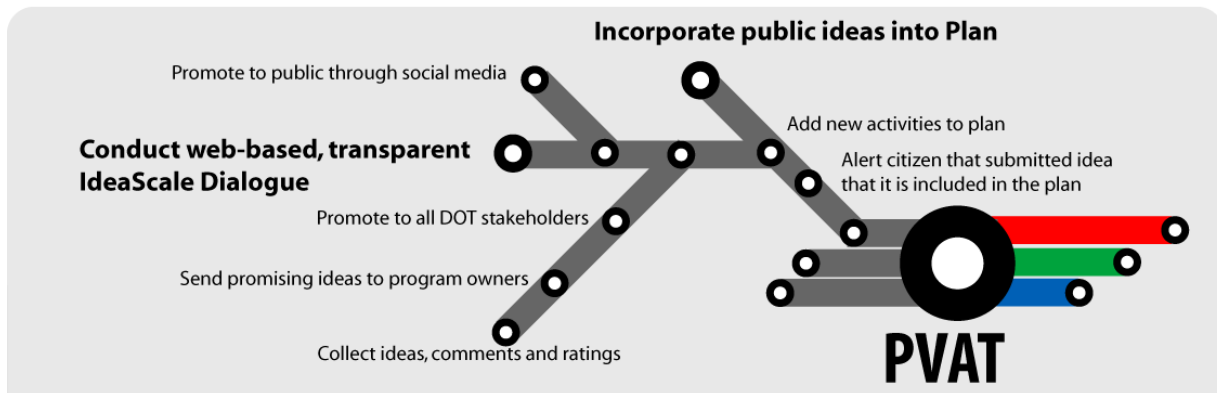


Figure 3 – DOT also uses PVAT to assess ideas collected from external stakeholders and the public.

As evidenced by the data in Table 1 below, DOT has been very successful with its use of IdeaScale, and will build upon the use of online dialogues to institutionalize collaboration to solve important issues facing the Department.

Dialogue	# visits	# unique visits	# signups	# ideas	# comments	# votes
Performance Measures	8,165	5,300	975	228	293	3,695
Freight	2,061	1,707	199	69	71	462
Transit Asset Management	6,692	4,411	740	86	146	1,478
Ferry Program	831	426	130	54	39	675
Transit Provider Representation in MPOs	3,362	2,376	343	106	81	776
Totals	21,111	14,420	2,387	543	630	7,086

Table 1 - DOT has had great success using IdeaScale to gather input from the public.



Goal 3: Strengthen cybersecurity through improved situational awareness, effective risk-management, and pragmatic application of mission-driven capabilities

President Obama and the Department consider digital infrastructure a strategic national asset. In light of evolving cybersecurity threats, DOT's federated technology-based environments are required to update the methodology for monitoring networks, identifying malicious activity, and mitigating threats to protect sensitive information and systems. The OCIO, working side by side with the OA CIOs, the Office of the Inspector General (OIG), and business owners, establishes the required framework and resources for the Department to achieve cybersecurity goals outlined by the Presidential Administration. The OCIO is establishing enterprise-wide security capabilities that most or all of the DOT components will leverage. The OCIO and OAs must collectively work together to establish a viable DOT-wide contingency plan to ensure the continuity of these critical core infrastructure services (OMB Code: EXXB).

The nature of cyber threats requires a continuous, growing commitment to focus on several key measures. These measures include:

- Characterizing the cyber threat environment;
- Identifying tools, techniques, and procedures used by adversaries;
- Developing techniques and approaches useful for defending and countering cyber attacks;
- Formulating approaches for creating resilience against cyber attacks; and
- Strengthening the foundation for ensuring the mission in the face of ever-growing and evolving cyber threats.

The DOT maintains a strong commitment to achieving the Administration's Cyber Cross Agency Priorities (CAP) goals, which encompass three areas of focus within security: strong authentication using PIV cards, trusted internet connections (TIC), and continuous monitoring and diagnostics of networked systems. The DOT's plan to address these initiatives is to prioritize Departmental efforts toward strong authentication through mandatory PIV card use. The OCIO has restarted the PIV Internal Project Team and called out to the OAs to provide representatives for participation. This team will develop an implementation strategy, capture challenges to success, and develop communication and support plans to demonstrate progress. The continuous monitoring goals will be greatly improved with the inclusion of FAA into the DHS-sponsored Continuous Diagnostics and Mitigation program, which provided software and implementation services in Q4 of FY13 (OMB Code: EXXA).

Objective 1: Implement a cybersecurity risk management program that continually adapts to changing threats, vulnerabilities, and assets

The Department is focused on implementing a risk management framework within all of DOT's OAs. The DOT plans to use this framework to guide cybersecurity-related investment decisions and to enable cyber-related policy decisions. **Investments in the Department's cyber defenses are justified and**



prioritized from a perspective of impact to mission and, as a function of risk exposure, risk mitigation, solution cost, and direct experience.

The risk management framework will define processes to:

- Assess threats, analyze risks, and share risk information through the corporate risk executive;
- Inform risk-based decisions that consider mission assurance and cost-effective risk mitigation strategies;
- Convey assurance and conduct oversight; and
- Ensure consistency with guidelines from National Institute of Standards and Technology (NIST) and Committee on National Security Systems (CNSS) cyber requirements.

The DOT OCIO is currently working with the Department of Justice (DOJ) to mature the Cyber Security Assessment and Management (CSAM) tool, a DOJ-managed solution which DOT uses to assist in assessing cyber risk and to manage Plan of Action & Milestones (POA&Ms). The updates will improve the abilities and efficiencies within CSAM.

The DOT recognizes that **improving the integration of risk management with IT capital planning information will lead to more efficient cybersecurity governance and a decrease in security management costs.** NHTSA has made progress in this area with the development of the Integrated Risk Executive (iREx) System. iREx is web-based tool that supports the Federal requirements by integrating information assurance management, the IT capital planning process, and enterprise architecture, creating a comprehensive information security program. With iREx, NHTSA can effectively document its security risks and view risks at the enterprise, system, or project level. iREx is also being used to assist in NHTSA's security authorization process to supplement NHTSA's information technology security architecture, engineering, and support efforts. NHTSA plans to integrate with other NHTSA and DOT operational and management tools, thereby leveraging the data to be authoritative and reused across different systems, eliminating the need for duplicate data entry.

The DOT has established a Cyber-committee under the CIO Core that governs the evolution of the Departmental cybersecurity program to be more mission-focused, balancing risk-informed security actions with compliance activities that help ensure appropriate mission protection, continuous situational awareness and effective risk mitigation. Currently the DOT CISO's office works with the modal ISSM community to address our cybersecurity issues. However, these efforts are more tactical than strategic. In order for this shift in focus and direction to occur and be successful, it must be driven and governed by the CIO Core.



Objective 2: Enhance the Departmental Cybersecurity Incident Response Program to provide interdependent, enterprise-wide coordination, information-sharing and response

The DOT understands the need to be prepared for cybersecurity incidents, and to have an incident response program in place. The DOT will incorporate all aspects of the incident management lifecycle, depicted in Figure 4.

The incident management (IM) approach functions as a holistic program whereby a change in one program component is supported by other program components. The central preparation and prevention component offers program management and is integral to ensuring each part of the program interacts appropriately with all other parts of the IM capability. The ultimate goal is to **make IM a more holistic, networked, and self-improving process.**

The OCIO is coordinating with the Safety Council³ to complete an update of a Department-wide Cyber Incident Response Plan and procedures; the Cyber Security Management Center (CSMC), run by the FAA, will be involved as well. The new plan will **connect incident management more directly with mission and business processes and will use data, where available, to support governance processes for mission/business system owners.**



Figure 4 – The Incident Management Approach Is Self-Improving Because of Its Continuous Reporting of Lessons Learned

Traditionally, OAs have addressed their circuit and continuity of operations/disaster recovery (COOP/DR) site requirements independently. **The Department is establishing a Common Operating Environment (COE) cloud environment for Multi-Protocol Label Switching (MPLS) with the capacity to support multiple OAs lessening the risk of the DOT HQ as a single point of failure.** The OCIO is also establishing a Managed Trusted Internet Protocol Service (MTIPS) cloud to provide redundancy to the Department's

³ For additional information on the DOT Safety Council please see - <http://dotnet.dot.gov/about/safetyCouncil.html>



(non-FAA) Trusted Internet Connection (TIC). The COE and MTIPS clouds are fully operational, with connectivity to HQ and connectivity will soon be extended to Lakewood, CO. (OMB Code: EXXB).

Objective 3: Focus efforts on data and information entering and exiting our networks, what assets are on our networks, when security statuses change, and who is on our systems

Effective response to cyber threats requires knowledge of DOT's information technology assets, including:

- Where the weaknesses are;
- What is happening on the DOT network and systems at any given moment; and
- Having the means to react quickly.

New technologies, specifically the emergence of mobile technology, create more opportunities for the DOT network to be breached. The DOT is **improving cyber situational awareness and remediation** by focusing on three different initiatives:

- Trusted Internet Connections (TIC) to monitor who enters and exits DOT networks;
- Continuous monitoring of assets already on the networks; and
- PIV Identify Authentication (PIV) to see who is on DOT systems.

The DOT is working to significantly **reduce the number of agency-wide Internet connections to comply with Trusted Internet Connection (TIC) requirements**. This initiative allows DOT to more easily monitor and identify potentially malicious traffic, minimizing intrusions and compromises of DOT systems and networks and ensuring Federal enterprise visibility for DHS via the EINSTEIN program. The OCIO is currently consulting with OAs to address any OA-specific restrictions and concerns.

The OCIO has begun implementing a set of secure, standardized technologies and products to **ensure increased cyber situational awareness and interoperability, taking a "shared-first" approach to key cybersecurity capabilities**. The Automated Enterprise Continuous Monitoring (AECM) shared service solution supports all DOT components, excluding FAA, and detects patterns of malicious and anomalous activity for desktop, laptops, and servers in addition to the implementation of an enterprise-wide asset management capability. The AECM shared service will allow DOT components to take a different approach to security operations, yielding operational efficiencies. More information on transition activities underway is available in the DOT EA Roadmap.

The DOT has been making significant progress in the issuance of PIV cards to DOT employees and contractors, which helps ensure only authorized employees have access to Federal information systems by requiring a higher level of assurance by using multi-factor authentication. Using PIV cards for network login significantly removes the ability of threat actors to obtain user-IDs/passwords to gain access to DOT systems and to access or modify data. Using PIV cards will also reduce the number of passwords that users have to remember and show progress towards a single sign on environment.



Goal 4: Drive performance excellence and service delivery through effective IT governance and resource management

The DOT is continuously working to evolve its IT governance and portfolio management policies and practices. This will improve the effectiveness of IT investment management while promoting efficient use of IT resources. The CIO reports directly to the Secretary of Transportation, providing advice on matters involving IT, promoting prudent and cost-effective IT investments across the Department, and ensuring oversight and coordinated improvement in the efficient use of IT resources supporting organizational missions. The OCIO works to balance these matters with a focus on the overall benefit to the Department in meeting its public service responsibility and compliance with external mandates.⁴

IT governance at DOT blends the virtues of a centralized and decentralized approach, eliminating needless duplicity and complexity, providing a holistic approach to security and driving down the cost of IT services. This approach is coordinated with the overarching budget formulation process and supplemented by careful oversight during budget execution. The OCIO uses quantitative tools and measures for conducting this oversight, evaluating the performance of all major IT investments. All major IT investment performance reports flow through the DOT IT investment management tool. The DOT has conducted nine TechStats since March 2011, covering 57 investments and accounting for approximately \$160M of IT spending. Further, OMB has conducted three TechStats on DOT IT investments, covering five investments and approximately \$300M of IT spending. Taken together, the TechStat process has covered approximately 15 percent of all IT spending and approximately 16 percent of DOT's IT investments. The DOT oversight processes have resulted in the termination of two investments,⁵ eliminating \$101M of lifecycle investment costs from the IT budget. In addition, the OCIO is working closely with two investments⁶ to implement recommendations that will improve program performance. Finally, seven investments⁷ have demonstrated improvement in their cost and schedule performance since May 2011.

Even with these successes, DOT recognizes that it can further improve IT management practices by providing clear, written expectations, tightly coupled with hands-on oversight and continued development of repeatable processes.

⁴ DOT Order 1101.16A, <http://isddc.dot.gov/OLPFiles/OST/014829.pdf>

⁵ FAA Logical Access and Authorization Control Services (LAACS) and DOT Delphi Data Management Center

⁶ DOT Delphi Version Two and FMCSA Application and Information Services Modernization

⁷ DOT Common Operating Environment (COE), FAA Instrument Flight Procedure Automation (IFPA), FAA NextGen Network Enabled Weather (NNEW), FAA NextGen R&D Reduce Weather Impact (RWI), FAA NextGen R&D Safety, Security, and Environment (SSE), FAA Alaskan Satellite Telecommunication Infrastructure (ASTI), and FAA Aeronautical Information Management Program (AIM)



DOT Governance Model

The OCIO is working to reform IT management within the Department by developing an effective, efficient, outcome-oriented governance structure for IT infrastructure, business support, and mission systems (OMB Code: CXXA). At the Departmental level, IT governance is centered on the oversight and direction of five core groups:

- The **DOT Investment Review Board (IRB)** is the highest level of reporting for the new governance structure and will focus on providing strategic direction, leadership, and ensuring alignment of IT investments and programs with DOT missions. The DOT IRB is chaired by the Deputy Secretary of Transportation with the CIO as co-chair. Voting membership includes the Chief Financial Officer (CFO), Senior Procurement Executive (SPE), Undersecretary for Policy, Assistant Secretary for Administration, and Operating Administration Administrators (OMB Code: CXXB).
 - The **OA IRBs** perform similar duties to the DOT IRB, but are focused on their specific portions of the DOT IT portfolio (OMB Code: CXXD). OAs are ultimately responsible for selecting, controlling, and evaluating their own IT investments, optimizing their own portfolios in alignment with DOT IRB direction and assistance from the IRB supporting boards. Their investment proposal evaluation process is expected to emphasize the maximization of business value, with the supporting metrics and qualitative review guidelines aligned to the OA's mission and business strategy. OA IRBs are expected to meet as often as necessary to effectively carry out the duties mentioned above, which can be partially dependent on the size of their portfolios and lifecycle phases of their investments (OMB Code: CXXE).
- The **Investment Working Group (IWG)** will support the DOT IRB by coordinating efforts to implement IRB priorities and provide recommendations in the areas of funding, acquiring, consolidating, restructuring or stopping IT investments to the DOT IRB, DOT OAs, or other audiences as deemed necessary.
- The **CIO Core Council** will provide leadership and authoritative decision support in the execution of the DOT's strategic direction and guidance of enterprise transition activities. The group will develop and approve recommendations in the areas of acquiring, securing, optimizing, operating, and managing enterprise IT systems and IT infrastructure; identify shared service, consolidation, and integration opportunities; and seek continuous improvement opportunities in the operation and management of DOT infrastructure and end user support services.
- The **Enterprise Architecture Board (EAB)** will oversee the DOT EA program, which includes ensuring existing and target architectures align to the Federal EA and to DOT strategic goals, optimizing the use of DOT IT assets, identifying opportunities for collaboration and shared services, and general governance of changes to the DOT EA.
- **Investment Analysis Team (IAT)** will be comprised of analysts from the OCIO's IT Governance Team, and works with the OA CPIC coordinators and other OA representatives to conduct analytical reviews of all IT portfolios and presents findings for the IRB and supporting boards to



make data-driven decisions. The IAT will use cost and schedule baseline data, as well as performance metrics and risk assessments provided by the OAs to generate investment analysis and recommendations for the IRB. Preliminary findings will be shared with applicable OAs via Issue Papers to help resolve or clarify perceived discrepancies prior to submission to the IRB supporting boards. Any unresolved issues will be presented to the IRB.

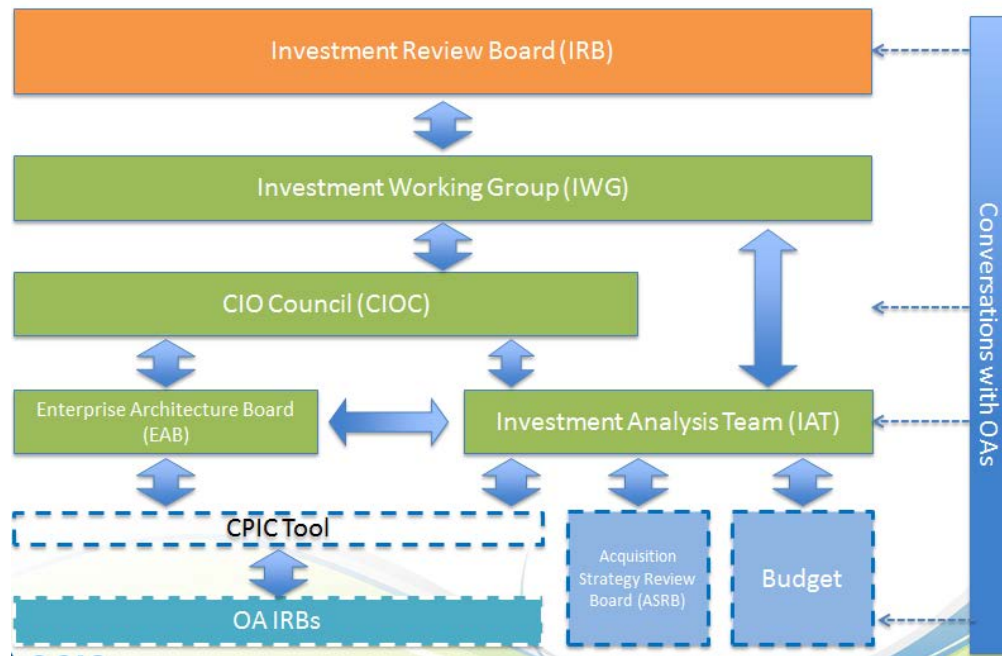


Figure 5 – DOT's reformed, outcome-oriented governance structure centers on the oversight and direction of five core groups and supporting activities

As the executive groups within this structure mature, opportunities for stronger collaboration will be considered. An example of this could be leveraging the IWG as a forum for each OA to present their current IT portfolio and new business needs, and allow other OAs along with the Department to offer or suggest ways of closing those performance gaps. The DOT may also leverage the IWG to establish boards or working groups with a horizontal focus, creating new opportunities to inculcate “shared first” culture while providing local flexibility to the DOT components (OMB Code: CXXF).

Objective 1: Build on PortfolioStat success to integrate budget, procurement, enterprise architecture, and IT decision making

The DOT IT governance process is closely aligned with the overall budget formulation process. The management processes outlined in the previous paragraphs detail our approach to **apply consistent, common criteria for evaluating investment performance, ensuring architectural alignment, and maximizing the use of shared services**. The CIO and governance boards bring these data points into the budget formulation process, closely coordinating with the CFO and SPE. Figure 6 is a representation of how the budget formulation process integrates with the IT budget and PortfolioStat processes.

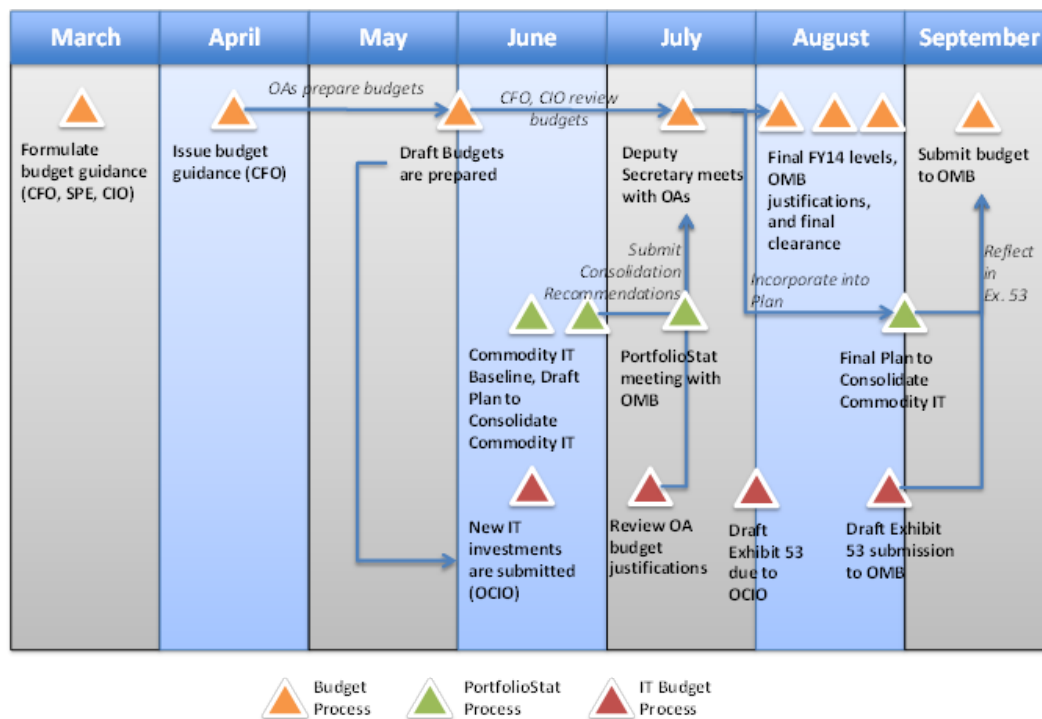


Figure 6 – The budget formulation process integrates the IT budget process with the PortfolioStat process.

Specifically, the CIO provides the CFO with detailed analysis of OA budget submissions, identifying IT investments that do not align with the DOT target architecture and formulating specific passback recommendations. Through these passback recommendations, commodity IT investments are managed under the leadership of the DOT CIO. For example, the CIO provided specific commodity IT consolidation recommendations during the FY 2014 budget formulation process. This plan reflects the commitments that were made as part of this process (OMB Code: DXXA).

The OCIO and the Office of the Senior Procurement Executive (OSPE) are working together for greater integration of IT and procurement decision making based on established risk criteria. Both the OCIO and the OSPE agree that management of enterprise license agreements can be done anywhere in the Department – so long as purchasing arrangements permit any DOT organization to issue requirements on those vehicles. In this way, DOT spending can be leveraged while distributing the administrative workload of managing enterprise-wide agreements. Further discussion regarding advancing the integration of IT governance and procurement can be found in *Objective 3: Increase the use of strategic sourcing while enforcing procurement standards*.

Every DOT investment is aligned to the Federal Enterprise Architecture (FEA) and the DOT Segment Architecture, as required by the Exhibit 53 reporting process. Enterprise architecture plays a vital role in managing the DOT IT portfolio. Our operating environment is dynamic, and our modernization efforts are aligned with changes to the industries we regulate, the modes in which we operate, and the increased focus on delivering transportation infrastructure investments in a timely, efficient manner while maintaining the highest level of safety.



Integrating EA with governance processes will enable DOT to implement a true portfolio-based approach to more effectively deliver and manage new systems and services. The **DOT's EA will drive business decisions and provide actionable recommendations that will transform the Department into an efficient manager of government resources and an effective provider of services to citizens.** Our architecture efforts support U.S. transportation policy by enhancing transparency and accountability, focusing on strategic outcomes, and maximizing the value of public investments.

For more information about how DOT will evolve its EA program, refer to the DOT EA Roadmap submitted to OMB in March 2014.

Objective 2: Promote a culture of continuous IT performance and value assessment

The DOT's Integrated Program Planning and Management (IPPM) framework suggests a risk-adjusted net present value (NPV) approach for evaluating the value of agency IT investments. The IPPM framework serves as guidance to the DOT components, but as part of our enhanced governance approach, DOT will be **formally establishing IPPM as the framework for use by DOT modes.** In addition to the IPPM framework, the FAA Acquisition Management System (AMS) provides for detailed, rigorous investment analysis processes,⁸ also based on a risk-adjusted NPV approach. Finally, each of DOT's major investments is required to develop the OMB Exhibit 300, which requires an enumeration of costs, risks, and performance metrics (OMB Code: CXXC).

The DOT recognizes that NPV is but one method for evaluating an investment's worth against its costs. In addition to NPV, the DOT will work to **advance and standardize its customer satisfaction evaluation methodology as part of its value measurement structure.** The methodology will include simple feedback collection requests such as overall satisfaction with a system/IT service, as well as more descriptive data capture around the specific parameters of a product or service (OMB Code: CXXC). These parameters will be set based on the key purposes, functions, and features of the product or service being evaluated by customers. As these methodology principles mature and are adopted, they can be expanded to include not only a customer's satisfaction with product/service parameters, but also the relative importance of that parameter to the customer, further focusing the identification of performance gaps and where enhancement budget should be directed (OMB Code: BXXA).

The DOT IT valuation model will provide guidance for properly evaluating and quantifying the economic impacts of IT investments that provide the Department with the ability to meet these objectives. The CIO will consult with the CFO, as required by updated OMB Circular A-11 guidance, to validate and implement the valuation model as part of the DOT performance management and improvement capability.

As part of the FY 2014 IT budget request (known as the Exhibit 53), OMB requested all agencies reduce their IT budgets by 10 percent. Agencies were then told they could reinvest up to all of that reduction in

⁸ FAA AMS guidance on investment analysis: <http://fast.faa.gov/InvestmentAnalysis.cfm>



new and innovative IT to meet their business and mission needs. While this exercise proved to be a challenge for DOT, it reemphasized the principles and value of forward-thinking IT portfolio planning and management. Further, it required DOT to take a hard look at its portfolio and identify cost-saving commodity IT consolidation opportunities first before prioritizing and distributing funds to IT investments. The DOT plans to continue to **promote this “reduce and reinvest first” approach to portfolio management throughout all OAs in ongoing IT budget formulation activities.**

With the cost savings identified through these exercises, the DOT will **focus on making much-needed improvements to its IT mission systems** (OMB Code: HXXB). For example, NHTSA will improve the reliability and performance of its National Driver Registry, a top priority of recent transportation legislation. NHTSA also plans to deliver a modernized IT infrastructure and motor vehicle crash data acquisition resource by consolidating its Fatality Analysis Reporting System (FARS) and Electronic Data System (EDS). This reinvestment will provide more efficient and robust data collection and analysis capabilities and spark additional savings opportunities using a simplified and less expensive platform.

The DOT will also **dedicate cost savings to improve the automation of its core business processes** (OMB Code: HXXB). PHMSA plans to expand the DOT’s SharePoint 2010 environment to promote additional collaboration across its mission offices, as well as improve interaction with its customers and stakeholders through previously under-utilized social media outlets. The Saint Lawrence Seaway Development Corporation (SLSDC) plans to modernize its dated financial management system; manual data validation, analysis, and inventory services will become automated to achieve process efficiencies. Multiple OAs will also use the savings from the 10 percent reduction to migrate their websites and small dynamic applications to a cloud-based Drupal Content Management System, providing additional cost savings that can be leveraged elsewhere, thus propagating the “reduce and reinvest first” budget formulation approach.

Objective 3: Increase the use of strategic sourcing while enforcing procurement standards

The Department is **transforming its Technology Control Board (TCB) into a governance body with purview over the entire DOT application, infrastructure, and security portfolio.** The TCB will be chartered under the EA Board and will be responsible for (OMB Code: HXXC):

- Identifying duplicative software and recommending rationalization;
- Establishing software and hardware standards;
- Evaluating new technology solutions and managing technical diversity in a standardized way; and
- Guiding strategic sourcing efforts for software and hardware.

The OSPE established a DOT Strategic Sourcing Executive Steering Committee (SSESC) to facilitate a collaborative and structured strategic sourcing process to critically analyze current spending and develop future buying strategies that are more effective and efficient. The first meeting of the DOT



SSESC was convened on October 26, 2011. In that meeting, the SPE outlined the SSESC organizational structure and discussed three phases of commodities and services that DOT would consider for strategic sourcing opportunities. The SSESC is composed of representatives from each of the OAs who serve as voting members. The SSESC is charged with designating commodities for study and making decisions on the sourcing of those specific commodities using a structured process of **critically analyzing current spending to develop future buying strategies that are more effective and efficient**. The OCIO is working in concert with OSPE to identify key areas of commodity IT that would benefit from strategic sourcing analysis. (OMB Code: CXXG)

As discussed in *Objective 1: Integrate budget, procurement, enterprise architecture, and IT decision making*, the OCIO and OSPE agree that **enterprise license agreements can be created and managed anywhere in the Department**. Therefore, OAs throughout the Department need to (OMB Code: CXXG):

- Identify opportunities for Department-wide solutions and build requirements;
- Seek out Department-wide solutions to meet their business needs and performance gaps; and
- Offer shared services to other OAs.

To be successful, OAs must integrate shared first principles into their IT decision-making processes, and leverage the SSESC and IWG as the forums to promote and execute these activities.



Goal 5: Develop IT environment and workforce that support the Transportation mission

The DOT understands the importance of providing its workforce with the knowledge, tools, and flexibility to allow each person to do the job to the best of his or her ability. Due to the numerous types of employees—those working at headquarters as well as multiple types of employees in the field—DOT understands that job expectations and requirements will be diverse. The suite of tools and platforms provided to all staff to conduct their daily business must keep pace with the technical savvy of the workforce and the need to perform their jobs regardless of location. The tools that support the everyday needs of our workforce must be as innovative as the solutions implemented in support of direct mission activities.

The Department is committed to maintaining a high-performing IT workforce through comprehensive training programs, leadership development, certification opportunities, and an inclusive and accessible culture. An accessible culture requires compliance with Section 508 of the Rehabilitation Act, as well as providing employees with necessary devices to allow them to complete their jobs. Because of competitive sourcing and constantly emerging technologies, a workforce must be maintained that is both easily adaptable and highly skilled in mission critical competencies.

With technology changing so quickly and the transformation of the Department into a performance-based organization, it is imperative that the Department have an IT workforce versed not only in technology but also in business skills. Greater emphasis will be placed on the conventionalization and management of technical projects and less on direct technical implementation. The ability of the IT workforce to effectively communicate with business owners, risk managers, and technical staff as well as provide appropriate oversight and ensure compliance is critical to the transformation of the IT environment. IT staff must continue to grow their core competencies while gaining an appreciation for operational mission requirements. Increased exposure to innovative business processes and technologies—such as cloud computing—requires IT staff to know how these new technologies can enhance the solutions and services offered by the Department (OMB Code: IXXA).

Objective 1: Promote a flexible work environment

The DOT is committed to encouraging employees to seek the work environment that best fits their needs. Whether an employee works at headquarters, in the field, from home, or a combination of these locations, DOT will provide the technology needed. DOT will ensure that accessibility needs are considered in the procurement and provisioning of IT (OMB Code: IXXB). The OCIO recently **published its Enterprise IT Accessibility policy and training**, requiring officials, acquisition, and IT professionals to understand how to meet accessibility requirements. The OCIO continues to work closely with the Departmental Office of Civil Rights (DOCR) to ensure that employees and customers with disabilities have full access to and use of electronic and information technology (EIT) in DOT, which is comparable



to the access and usage by Federal employees and members of the public without disabilities (OMB Code: IXXC).

The DOT officially launched the DOT Mobilize Program in April 2012 as a means of evaluating models for providing employee access to mobile devices. The DOT Mobilize is an OCIO-led program to **identify and implement next generation IT mobility solutions to support a distributed and mobile workforce.**

The DOT is revising management and technology standards for the use of mobile devices as part of the recent Executive Order on Promoting Efficient Spending. The revisions will be as follows:

- **Management Standards:** All employees will be issued devices based on either their standard DOT personas or unique personas defined by each modal administrator. Other than supporting prototype or test activities for new technology, employees will generally be allowed to have only one device per device category (for example, an employee could not have a Blackberry and an iPhone). Exemptions to the persona standards are expected to be very limited and would be approved following a standard documented process for each mode.
- **Technology Standards:** The DOT currently provisions desktops, laptops, and smartphones. As technology continues to evolve and mature, these technology standards will change in several important respects:
 - The DOT is moving to the Cloud, and desktops will give way to thin clients and Virtual Desktop Infrastructure (VDI), which could be implemented using mobile tablet devices. Eventually, only employees who have validated needs will retain desktops. At this time, laptop standards will not change.

NHTSA is a leader in DOT's mobility efforts, having already implemented a persona-based IT device distribution process. Leveraging NHTSA's lessons learned and best practices will greatly improve and accelerate the implementation of similar processes across the Department.

Another DOT initiative aimed at increasing employees' flexibility is the bring-your-own-device (BYOD) agreement, which allows an employee to use his or her own mobile device instead of one provided by DOT. Employees are required to follow the DOT guidelines for mobile use in order to alleviate any privacy and security concerns. The BYOD initiative presents the Department with an opportunity to realize cost savings by spending less on mobile devices. The DOT continues to actively engage senior IT and labor relations personnel to address the policy considerations that make a successful BYOD deployment possible.

Objective 2: Enhance workforce skills necessary to manage and secure changing IT environment

The Information Technology Management Reform Act of 1996 (also known as the Clinger-Cohen Act and now codified in title 40 of the United States Code) created a wide array of responsibilities for Federal agency CIOs, including developing strategies and specific plans for hiring, training, and professional



development of the information technology workforce. As the complexity and nature of our work continues to evolve, the skills and competencies of our staff must also change to meet these new demands.

Historically, the IT and business sides of operations have varied in communications and requirements. The DOT will work to strengthen the integration of IT and business workforces.

Using the CIO Council’s “2012 Clinger-Cohen Core Competencies & Learning Objectives,” the **OCIO plans to conduct skills and needs assessments of its workforce**. Based on the assessment outcomes, and other requirements such as the Federal Acquisition Certifications for the IT workforce, the OCIO will work with our Human Capital Office to identify the appropriate courses of action to address skills gaps. These actions will include training, recruiting, and responsibility realignment (OMB Code: FXXA).

While the planned assessment is a key element to achieving workforce enhancement goals, the OCIO has already taken significant strides in **providing alternative opportunities for staff to expand their knowledge base**. The DOT launched the Technology, Evaluation, and Learning Sessions (TELS) program to engage vendors, educational institutions, and other organizations in an effort to educate DOT employees about available information technologies and services. Discussions range from general overviews to specific descriptions of a particular technology, service, procedure, or best practice. TELS sessions provide the opportunity to:

- Collaborate and share knowledge with colleagues;
- Learn about new technology and methodologies;
- Speak directly with new and upcoming IT service providers;
- Find answers to current work-related IT issues; and
- Explore areas of interest.

As part of the TELS sessions, the OCIO has launched a specialized cybersecurity education series that showcases presentations from the 2012 and 2013 Black Hat security conferences. The Black Hat briefings are a series of highly technical information security conferences that bring together thought leaders from all facets of the cybersecurity world—from the corporate and government sectors to academic and even underground researchers. The presentations qualify as specialized training and are focused on the sharing of practical insights and timely, actionable knowledge.



Appendix A: Implementing CIO Authorities

M-11-29 focuses on improving line-of-sight and to ensure that appropriate oversight is exerted and duplication is prevented. Specifically, the intent is to pool agency resources and drive toward enterprise solutions. This keeps Agency CIOs in a role of policymaker and standards developer, guiding strategic sourcing issues and ensuring that budgets requests are not duplicating capabilities.

The DOT approach of consulting with the CFO and the CAO/SPE is designed to implement M-11-29. In accordance with [DOT Order 1101.16A](#) and the delegation of authorities in the Department of Transportation ([49 CFR part 1](#)), Section 2.c, our authority and function is to *promote* prudent and cost-effective IT investments across the Department. Given the statutory limitations outlined below, the Department CIO exercises CIO authorities through alternative means, as described in our plan of action. As the OCIO continues working with its counterparts in the CFO and SPE, we will identify additional methods of implementing CIO authorities and will update this section of the IRM Strategic Plan accordingly.

Gap Analysis of Statutory Authorities

Federal Aviation Administration

The authority of the Department of Transportation Chief Information Officer provided under the Clinger-Cohen Act (Public Law 104-106, Division E, re-codified as 40 USC 11101 *et seq.*) is statutorily limited by the following acts:

- [Public Law 104-50, Section 348](#). This provision of law authorizes the Federal Aviation Administration to develop and implement, not later than January 1, 1996, an acquisition management system for the Federal Aviation Administration that addresses the unique needs of the agency and, at a minimum, provides for more timely and cost-effective acquisitions of equipment and materials. This law also states that the following provisions of acquisition law shall not apply to the FAA:
 - Title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 252–266).
 - The Office of Federal Procurement Policy Act (41 U.S.C. 401 *et seq.*).
 - The Federal Acquisition Streamlining Act of 1994 (Public Law 103–355).
 - The Small Business Act (15 U.S.C. 631 *et seq.*), except that all reasonable opportunities to be awarded contracts shall be provided to small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals.
 - The Competition in Contracting Act.
 - Subchapter V of chapter 35 of title 31, relating to the procurement protest system.
 - The Brooks Automatic Data Processing Act (40 U.S.C. 759).



- The Federal Acquisition Regulation and any laws not listed in (a) through (e) of this section providing authority to promulgate regulations in the Federal Acquisition Regulation.
- [Public Law 104-264, Sections 221-223](#). This provision of law establishes a division of authorities between the Secretary of Transportation and the FAA Administrator. Among other things, Congress found:
 - Because the Administration is a unique Federal entity in that it is a participant in the daily operations of an industry, and because the national air transportation system faces significant problems without significant changes, the Administration has been authorized to change the Federal procurement and personnel systems to ensure that the Administration has the ability to keep pace with new technology and is able to match resources with the real personnel needs of the Administration. (See Section 221(14))
 - The existing budget system does not allow for long-term planning or timely acquisition of technology by the Administration. (See Section 221 (15))
 - Without reforms in the areas of procurement, personnel, funding, and governance, the Administration will continue to experience delays and cost overruns in its major modernization programs and needed improvements in the performance of the air traffic management system will not occur. (See Section 221(16))
 - All reforms should be designed to help the Administration become more responsive to the needs of its customers and maintain the highest standards of safety. (See Section 221(17))

Congress explicitly intended “to establish a more autonomous and accountable Administration within the Department of Transportation” (See Section 222(3)). In so doing, Congress made the FAA Administrator the final authority for “the acquisition and maintenance of property and equipment of the Administration” and specifically provided “except as otherwise provided for in this title, and notwithstanding any other provision of law, shall not be required to coordinate, submit for approval or concurrence, or seek the advice or views of the Secretary or any other officer or employee of the Department of Transportation on any matter with respect to which the Administrator is the final authority.” The current provision is found at [49 U.S.C. 106\(f\)](#).

In summary, the FAA is not subject to the provisions of the Clinger-Cohen Act and, to the extent that OMB memoranda or other policy vest the Department CIO with certain authorities under the provisions of the Clinger-Cohen Act, the Department of Transportation CIO is statutorily prohibited from exercising those authorities. These include, but are not limited to, exercising authority over the acquisition of commodity IT.



Office of the Inspector General

The Department CIO is statutorily limited in its ability to exert control over the Office of the Inspector General. [Public Law 111-250](#) provides that Inspectors General have independent authorities and function as entirely separate offices.

Surface Transportation Board

The Interstate Commerce Commission Termination Act, [Public Law 104-88](#), established the Surface Transportation Board as a decisionally independent entity under the Department of Transportation.

Plan of Action for Budgeting and IT Governance

Engagement with the CFO

Historically, the IT budget formulation process at DOT has been performed as an outcome of the overall DOT budget formulation process. As a result, DOT has missed opportunities to provide specific, actionable recommendations to its component Operating Administrations (OAs) for reducing IT expenditures.

During the FY2014 budget formulation process, PortfolioStat provided the opportunity for the CIO and CFO to create a more efficient budget formulation process.

The DOT EA team led the formulation of the commodity IT baseline, passing the information along to the DOT IT governance team for analysis and recommendations. The IT governance team integrated the EA team recommendations into their analysis of the draft OA budgets and provided specific recommendations to the CFO budget analysts for inclusion in the Department passback to the OAs. The passback recommendations were then acted upon by the OAs and reflected in their IT budget exhibits.

Through the tight integration of IT portfolio and budget analysis, DOT was able to identify and act upon new opportunities for efficiencies in commodity IT, applying an innovative approach to implementing the intent of OMB Memorandum M-11-29, [Chief Information Officer Authorities](#).

Moving into the FY2015 budget formulation cycle, DOT believes there are opportunities to improve PortfolioStat implementation. A key lesson learned through the FY2014 budget formulation process was that PortfolioStat guidance came after the budget process had already begun. The DOT will work with the CFO and the Department Investment Review Board (IRB) to incorporate PortfolioStat focus areas directly into FY2015 budget formulation guidance.

Engagement with the SPE

The OSPE established a DOT Strategic Sourcing Executive Steering Committee (SSESC) to facilitate a collaborative and structured strategic sourcing process to critically analyze current spending and



develop future buying strategies that are more effective and efficient. The first meeting of the DOT SSEC was convened on October 26, 2011. In that meeting, the SPE outlined the SSEC organizational structure and discussed three phases of commodities and services that DOT would consider for strategic sourcing opportunities. The SSEC is composed of representatives from each of the OAs who serve as voting members. The SSEC is charged with designating commodities for study and making decisions on the sourcing of those specific commodities. The OCIO uses a structured process of critically analyzing current spending to develop future buying strategies that are more effective and efficient.

The PortfolioStat process provided the OCIO with information to help the OSPE to identify key areas of commodity IT that would benefit from strategic sourcing analysis. The OCIO will work with the OSPE to ensure all IRM Strategies are incorporated into DOT IT purchasing.

Engagement with the OAs

The main forum for the OCIO to engage with the OAs is the CIO Council (CIOC), which includes the CIO from every mode as well as the DOT CIO. The CIOC oversees IT infrastructure requirements and ensures the DOT's infrastructure supports emerging business requirements and is responsive to changing technology trends (e.g., mobility, cloud computing, digital services, Internet Protocol version 6, etc.). The CIOC also identifies opportunities for shared services and other IT-related efficiencies across the Department.

As of January 2014, the DOT commissioned two committees under the CIO Council, one to deal with shared services and one with cybersecurity. These committees are made up of at least one CIOC member and representatives chosen by the modes. The Shared Services/Common Operating Environment (COE) committee will provide continuous guidance and feedback to the CIO and Associate CIO for ITSS on how the Department can and should architect, build, and manage the shared services COE to meet both the enterprise needs of the Department as well as the unique business needs of the modes themselves. The Cyber committee is focused on governing the evolution of the Departmental cybersecurity program to be more mission-focused, balancing risk-informed security actions with compliance activities that help ensure appropriate mission protection, continuous situational awareness, and effective risk mitigation. More working group committees may be formed under the CIO Council as other initiatives become the focal points of the Department.

Evolving Governance and Departmental IRB

IT governance at DOT blends the virtues of a centralized and decentralized approach, eliminating needless duplicity and complexity, providing a holistic approach to security and driving down the cost of IT services. This approach is coordinated with the overarching budget formulation process and supplemented by careful oversight during budget execution. The OCIO uses quantitative tools and measures for conducting this oversight, evaluating the performance of all major IT investments. All major IT investment performance reports flow through the DOT IT investment management tool.



The DOT is continuously working to evolve its IT governance and portfolio management policies and practices to improve the effectiveness of IT investment management while promoting efficient use of IT resources. The CIO reports directly to the Secretary of Transportation, providing advice on matters involving IT, promoting prudent and cost effective IT investments across the Department, ensuring oversight and coordinated improvement in the efficient use of IT resources supporting organizational missions, balancing with a focus on the overall benefit to the Department in meeting its public services responsibility and compliance with external mandates.

The OCIO has begun reforming IT management within the Department by developing an effective, efficient, outcome-oriented governance structure for IT infrastructure, business support and mission systems. We are working to create an integrated line of sight at the Department level while guiding local Operating Administration IT investment decisions and ensuring that they are aligned with the Department's strategies. We are implementing a governance structure with the following components and focus areas:

- The **Investment Review Board (IRB)** will be the highest level of reporting for our updated governance structure, with a focus on Department-wide portfolio concerns and major investments.
- The **Investment Working Group** will oversee analysis, research, and providing specific recommendations, reports, and alternatives to the IRB.
- The **CIO Council** will oversee enterprise hardware and software, data centers, network transport, IT security, and end-user access capabilities for DOT systems. This also includes enterprise collaboration tools such as SharePoint and other common workforce productivity capabilities.
- The **Enterprise Architecture (EA) Board** will oversee the DOT EA program, which includes aligning DOT IT investments to the DOT Strategic Plan and Annual Performance Plan, identifying opportunities for DOT to reduce IT duplication, proposing new shared services opportunities, and general governance of changes to the DOT EA.

Establishing governance boards with a horizontal focus that crosses the traditional vertical mission areas represented by the DOT Operating Administration portfolios will create new opportunities to inculcate "shared first" culture while providing local flexibility to the DOT components.



Appendix B: OMB Code Mapping

The following table maps the requirements identified in OMB Memo M-13-09, Appendix A. We have identified the DOT goal where each requirement is discussed in the IRM Strategic Plan.

OMB Code	Code Description	DOT Goal #
AXXA	Identify agency strategic goals and objectives supported by the IRM strategic plan	Intro
AXXB	Describe how activities of the IRM Strategic Plan and Enterprise Roadmap advance these goals and objectives	Intro
BXXA	Measure customer use and satisfaction through analytics and other approaches	4
BXXB	Improve usability, availability, and accessibility of services, including optimization of services for mobile use	1
BXXC	Advance agency performance goals	1
CXXA	Scope of governance process, including IRB and other Portfolio Governance Boards along with delegation of authority to bureaus or other organizational units	4
CXXB	Which agency stakeholders are engaged, including "C"-level leadership	4
CXXC	Valuation methodology used to comparatively evaluate investments, including what criteria and areas are assessed	4
CXXD	How the agency ensures investment decisions are mapped to agency goals and priorities	4
CXXE	High-level description of the process used to assess proposed investments and make decisions, including frequency of meetings and how often the process is updated	4
CXXF	How you coordinate between investment decisions, portfolio management, enterprise architecture, procurement, and software development methodologies	4
CXXG	Describe DOT's IT strategic sourcing plan, to include processes for addressing enterprise licenses	4
DXXA	Describe how the agency policies, procedures, and authorities implement CIO authorities, consistent with OMB Memo 11-29	4
EXXA	Summarize agency's strategy to ensuring IT investment and portfolio decisions align with the Administration's Cybersecurity Priority Capabilities and your agency's IT security goals, and how you will continue to strengthen this alignment	3



OMB Code	Code Description	DOT Goal #
EXXB	Describe DOT's approach to ensure all mission critical applications have the proper continuity of operation and disaster recovery capabilities such that the agency can support the proper level of continuity of Government operations in accordance with Federal statute and guidance	3
FXXA	Summarize DOT's approach to IT human capital planning, including the ability to build a future ready workforce to support the agency's strategic goals and objectives	5
GXXA	Address how information collection and creation efforts, information system design, and data management and release practices will support interoperability and openness	1
GXXB	Describe how DOT ensures that personal information, including PII and controlled, unclassified information, is accessible only to authorized personnel and how frequently these controls are verified	1
HXXA	Describe DOT's approach to maturing the IT portfolio, to include optimizing commodity IT, rationalizing applications and adopting a service orientation approach	2
HXXB	Describe DOT's plan to re-invest savings resulting from consolidations of commodity IT resources	4
HXXC	Describe DOT's approach to maximizing use of inter- and intra-agency shared services and shared acquisition vehicles for commodity IT in order to reduce duplicative contract vehicles	2
IXXA	Approach to creating a diverse environment where individuals of all abilities can work, interact, and develop into leaders	5
IXXB	Approach to integrating accessibility considerations into the processes used in developing, procuring, maintaining, or using IT	5
IXXC	Building workforce skills to support an environment where Section 508 requirements and responsibilities are well understood, communicated, implemented, and enforced	5

Table 2 - The DOT IRM Strategic Plan addresses all OMB requirements.



Appendix C: IRM Strategic Plan Evaluation Metrics

The OCIO has designed metrics that illustrate the Department's goals for progress through FY2018 and beyond. These goals directly correlate to the objectives stated throughout the IRM Strategic Plan and are broken down into three sections: performance indicators, sub-indicators and lead office.

The performance indicators are the end goal the Department plans to achieve; the sub-indicators are measurements that, once met, show the performance indicators have been achieved; and the lead office indicates that the OCIO will take the lead in achieving these indicators, but that the OAs and Secretarial offices (ALL) assist with the design and execution of sub-indicator processes.

Performance Indicators	Sub-Indicators	Lead Office
Goal 1: Enable a data-driven decision-making environment that promotes a safe, efficient, and reliable transportation system		
Timely access to information and data	75% of datasets are identifiable by stakeholders by FY2018	OCIO/ALL
	100% of systems for which initial privacy analysis is complete by FY2018	
Interoperable and discoverable information	All Departmental apps and APIs will be published to www.dot.gov/developer by FY2018	OCIO/ALL
Electronic records management	100% of email records managed electronically by FY2016	OCIO/ALL
Goal 2: Share services, technology, and ideas to drive innovation and cost reductions		
Restructured ITSS focused on alleviating burden of infrastructure.	100% of eligible OA infrastructure and services migrated to COE by FY2016.	OCIO/ALL
	100% of existing license agreements and purchasing/vendor engagements evaluated for use as an enterprise shared service	
A cloud-based, virtualized environment	100% of investments have evaluated cloud as an alternative by FY2016	OCIO/ALL
	75% of current cloud services spending migrated to standard DOT cloud provider by FY2018	



Performance Indicators	Sub-Indicators	Lead Office
	75% virtualization of eligible systems by FY2016	
A rationalized IT environment	# of dollars saved and avoided from reduction of duplicative IT investments by FY2016	OCIO/ALL
Goal 3: Strengthen the cyber security posture of the Department through holistic situational awareness and risk management capabilities		
An enterprise, risk-based, cyber program that continuously adapts to changing threats, vulnerabilities, and assets in near-real time	100% of systems governed by Automated Continuous Monitoring capabilities within each Component by FY2019	OCIO/ALL
	100% of systems converted to an ongoing authorizations process compatible with NIST standards by FY2019	
Knowledge of what assets are on our networks, when security statuses change, and who is on our systems	100% of total external network traffic passing through a TIC by FY2016	OCIO/ALL
	100% of qualified users required to use PIV card by FY2018	
Goal 4: Drive performance excellence and service delivery through effective IT governance and resource management		
Integrated budget, procurement, EA, and IT decision making processes	100% of complete IT investment portfolios aligned to the Target Architecture by FY2015	OCIO/ALL
	100% of IT investment dollars reviewed through IRB processes by FY2017	
	100% of new, qualified proposed investments reviewed by Acquisition Strategy Review Board (ASRB) by FY2018	
A culture of continuous IT performance and value assessment	90% of projects within 10% of cost on IT Dashboard by FY2016	OCIO/ALL
	80% of projects within 10% of schedule on IT Dashboard by FY2016	



Performance Indicators	Sub-Indicators	Lead Office
	Record and report an annual increase in cost savings avoidance from consolidated and/or shared services	
Increased use of strategic sourcing	75% of DOT-issued mobile devices using approved enterprise contracts by FY2016	OCIO/ALL
	80% of eligible IT contracts migrated to enterprise-wide licenses by FY2016	
Goal 5: Develop IT environment and workforce that support the evolving transportation mission		
Flexible work environment	30% reduction in Remote Desktop Protocol users by FY2015	OCIO/ALL
	Ensure appropriate telework technology is available to 100% of telework-ready employees	
	Create an enterprise strategy and cost model consistent with personas by FY2015	
Efficient use of IT workforce skills	80% of Federal IT positions evaluated for position/skill compatibility by FY2016	OCIO/ALL
	60% of IT skills gap reduced by training, recruiting, and responsibility realignment by FY2018	