Department of the Interior
Enterprise Architecture (IEA)

DOI Enterprise Transition Strategy

February 23, 2006

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Executive Summary

Throughout the Federal government there is much discussion of, and focus on, transformation. Federal transformation is being influenced by the President's Management Agenda (PMA), legislation, social trends, and judgments by the courts. These influences have resulted in transformation programs that increasingly use a structured, Enterprise Architecture (EA) method of analysis.

At the Department of the Interior (DOI), the Interior Enterprise Architecture (IEA) program has seized on the benefits of EA. In fact, the award winning IEA program has taken the power of this structured planning approach to new levels of effectiveness through its Methodology for Business Transformation, DOI Enterprise Architecture Repository (DEAR), trained Bureau and Department staff, and its focus on business customer involvement. Through these continuous improvements as well as its ongoing Modernization Blueprint creation and implementation initiatives, the IEA program has been increasingly recognized as a leader in both the private and pubic sectors for achieving results, using what the IEA program calls *Actionable Architecture*.

The IEA is a major contributor to business transformation within DOI. However, in compliance with the Enterprise Architecture there are other transformation initiatives within DOI that are also shaping the future state. When all of the transformation initiatives are viewed as a whole at the enterprise level, it is apparent that waves of change are sweeping over DOI's business and technology communities. Overall, DOI is actively taking guidance from the PMA, PART Assessments, e-Government circulars and legislation, and most importantly the social trends of its wide and diverse customer base in order to shape an efficient organization that more effectively meets the Department's diverse missions.

This document is intended to describe the *actionable architecture* that has been developed at DOI, and to detail the Enterprise Transition Plan that guides DOI and the Bureaus from their current state to the architected target state. It is important to note that there are costs associated with implementing the Enterprise Transition Plan. There exists a strong link between the Modernization Blueprints and the Investment Business Cases however successful implementation of the Enterprise Transition Strategy is dependent on appropriate funding of modernization activities. It is also important to note that the DOI Modernization Blueprints that are completed and under development do not necessarily equate to system retirements. The Modernization Blueprints created at DOI are focused on increasing performance and satisfying business needs; not just retiring systems.

Specifically, this document has two distinct sections:

1. Part I is a detailed discussion of the DOI Enterprise Transition Plan. This discussion is intended to detail the enterprise wide sequencing plan and its associated business and investment impacts. Furthermore, this section also includes a discussion of the recurring cycles that impact transformation at DOI and how those cycles impact the enterprise planning being conducted by IEA.

2. Part II outlines the business results of architecture as they relate to the principles detailed in the *DOI Conceptual Architecture* document (http://www.doi.gov/ocio/architecture/documents/conceptual_architecture_final.doc). Multiple examples of business results are provided to illustrate the effectiveness of the IEA program and its use of the *DOI Conceptual Architecture* document.

The DOI Segmented Approach to Enterprise Architecture

There are many alternatives for focusing work at the right level. Among the factors to be considered is the question of whether to build a single architecture or a federated approach wherein lower level architectures can be assimilated up into a more comprehensive view. This is not an easy decision to make and must consider the organization needs, the cultural factors of the organizations and a myriad of other trade-offs. In diverse, complex organizations such as DOI, this consideration leads to a need for an integrated architecture program rather than a simple collection of organizationally based architecture programs.

DOI is one of the more widely diverse Federal Agencies as it delivers services in twelve of the Federal Business Reference Model Services to the Citizen lines of business. Figure 1 shows these twelve lines of business with an overlay to depict the number of DOI Bureaus that deliver services to the citizen for each area. This complexity and breadth of mission requires that DOI not simply employ eight stand-alone enterprise architecture programs but rather an approach to enterprise architecture that allows for Bureau specific needs while providing vertical and horizontal, service-oriented architecture capabilities.

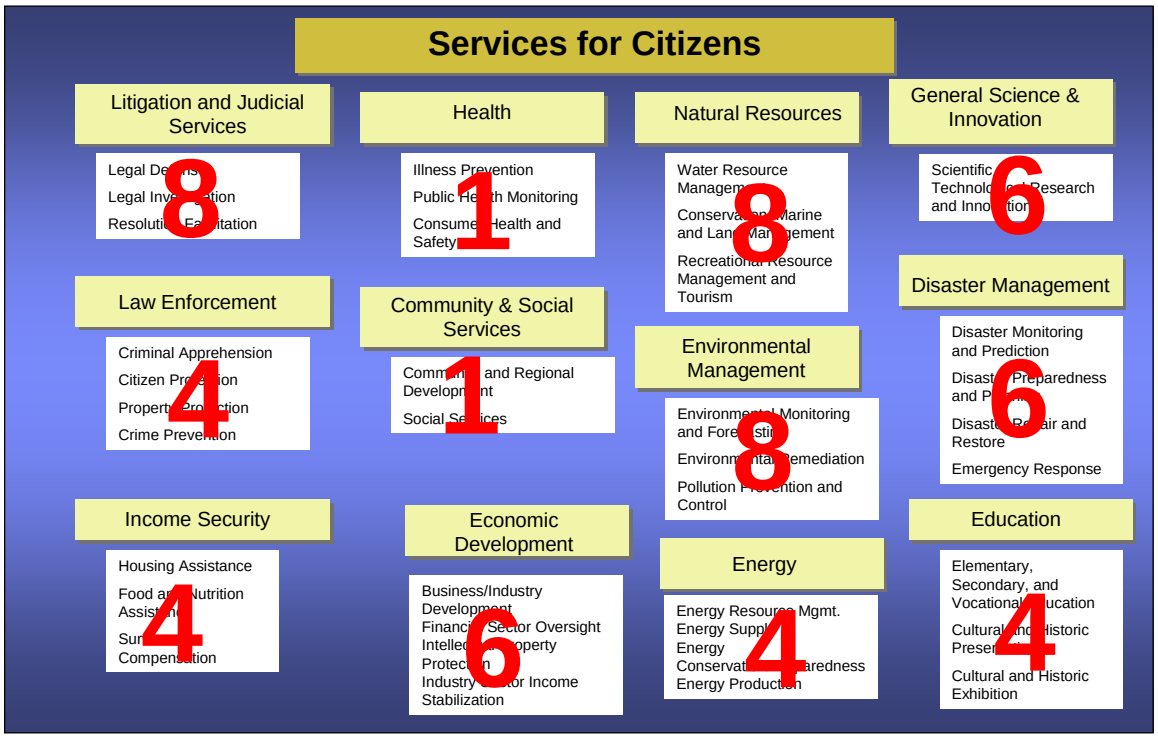


Figure 1: Services to Citizens at DOI

Prior to FY2004, DOI and the Bureaus had achieved some architectural alignment, but many areas existed where a planned architecture did not exist at the Bureau level, or they were not aligned with the rest of the Agency. In order to prevent the emergence of a collection of uncoordinated architecture programs, the DOI made a decision to standardize the policies, methods, and terminology which should be used to develop the Bureau architectures. By standardizing the approach instead of the structure, an atmosphere was created wherein many different enterprises could work together, learn from each other, innovate together, and architect a harmonious whole.

There are many dimensions to DOI EA that have been standardized across the Bureaus. All Bureaus leverage the same Methodology for Business Transformation (www.doi.gov/ocio/architecture/mbt) for developing and implementing Modernization Blueprints. All Bureaus leverage the same toolset and corresponding metamodel for storing architecture related information in the DOI EA repository (DEAR). And all Bureaus participate in inter-Bureau governance teams for business, data, technology, and investment decisions. As a result, many Bureaus are currently working on initiatives to develop cross-organizational target architectures.

The standardization of architecture programs has enabled the Bureaus and Department to work together on inter-organization modernization teams. Due to the breadth of mission areas represented in Figure 1, DOI has adopted a segmented architecture approach. Specifically, the segmented architecture approach allows DOI to prioritize all of its business and service areas and to modernize each area in the priority order set. This approach allows DOI and the Bureaus to concentrate limited resources on the highest priority business and service areas so that they can be modernized first to achieve performance results where they are most needed. This

approach also allows DOI and the Bureaus to remain flexible to change priorities as they relate to the current and future Modernization Blueprint studies.

Currently there are four business transformation initiatives that have been completed with three of the four approved by the DOI Investment Review Board (IRB), the Department's investments decision making governance team. These Modernization Blueprints have resulted in program, business, data, technology, systems, and security related recommendations that are based on stakeholder needs and overall mission readiness and delivery. Additionally, these business transformation initiatives have resulted in the identification and recommendation of common services and solutions that can be shared across business areas and organizational boundaries.

Based on the segmented approach to EA, the DOI and Bureau architecture programs will be completing several additional business transformation initiatives in FY06. Like the previous Blueprints, the new studies will result in Modernization Blueprints that are inter-Bureau collaboration where appropriate. The approval of the FY06 Blueprints, with the addition of the four completed studies, will provide DOI with a roadmap for increasing business and technology performance within the enterprise. The planning of these business areas is successful due in large part to the truly integrated and standardized architecture programs within DOI and the Bureaus. The common approaches and techniques for architecture planning will continue to result in inter-Bureau recommendations for business transformation and the continuous tightening of inter-Bureau relationships within DOI.

Part I: The DOI Enterprise Transition Plan

DOI is currently involved in a large number of transformation projects, including major technology infrastructure initiatives and many business initiatives related to the approved Modernization Blueprints. This transformation activity impacts many business areas within DOI and will do so for years to come. Such a vast collection of transformation projects would be difficult if not impossible to manage and coordinate without the existence of an Enterprise Transition Plan to aid the governance, policy, integration and decision making teams.

The DOI Enterprise Transition Plan first discusses the business transformation projects resulting from the completed Modernization Blueprints. The Enterprise Transition Plan then outlines the Modernization Blueprints currently being developed. Following the Modernization Blueprint section, the plan details modernization activities that are being driven by the PMA. These modernization activities include the DOI e-Gov Alignment and Implementation plan as well as the IPv6 Transition Plan. Lastly, there is a discussion on the major investments within DOI, not affected by a completed Blueprint, including a detailed discussion on select investments.

Overview of DOI Enterprise Transition Plan

The DOI Enterprise Transition Plan is divided into three main sections:

- *Modernization Blueprint Initiatives*: The *Modernization Blueprint Initiatives* section of the plan includes all of the recommendations and associated transition plans that have resulted from Modernization Blueprints within DOI. These Modernization Blueprints and their recommendations have been approved by the DOI IRB (or have are pending approval by the IRB) and are

scheduled to be implemented by the Core Modernization Implementation Teams.

The *Modernization Blueprint Initiatives* section also includes the Modernization Blueprints that are currently underway, and the Modernization Blueprint studies that are nearing their kickoff as official architecture studies.

Overall, the *Modernization Blueprint Initiatives* section captures the focus of the DOI and Bureau architecture teams and is reflective of the recommendations being set forth by IEA to executive management.

- *PMA Driven Initiatives*: The *PMA Driven Initiatives* section of the plan includes all of projects that have been initiated within DOI as a result of the President's Management Agenda. Specifically, this section includes the DOI e-Government Alignment and Implementation tasks and milestones as well as the DOI IPV6 transition plan.

- *Major Investments*: The *Major Investments* section includes an overview of the DOI major investments, a grouping of the major investments by DOI Mission Area (from the DOI Strategic Plan), and a summary of the business performance milestones that are expected from the major investments.

Modernization Blueprint Initiatives

The segmented approach to enterprise architecture at DOI has been coordinated to focus on high impact and high priority business and service areas while ensuring that DOI does not exceed a sustainable rate of change within the enterprise. The segmented approach to architecture has produced several Modernization Blueprints that have been approved by the DOI Investment Review Board. These "completed" Blueprints represent the business areas of Recreation, Law Enforcement, and Wildland Fire. As these Blueprints are implemented, the IRB will soon be reviewing the "vetted" Financial Management for final approval and implementation. Although these four Blueprints represent much business, citizen, and governmental value, there are continuing efforts to produce additional Blueprints for other business and service areas within DOI, and to present these findings and recommendations to the DOI IRB.

The goal of the segmented architecture approach is to develop and implement modernization plans for business areas and horizontal services throughout the enterprise. The following section outlines the Modernization Blueprint efforts and how they are impacting the mission areas of DOI.

Discussion of Completed Blueprints

To date, four Modernization Blueprints have been "completed" and submitted to the DOI Investment Board for approval (Financial Management is pending approval). As a result of the IRB approvals, these four Modernization Blueprints will enter the implementation stage of business transformation. Figure 2 illustrates the high level timeline of these implementations across the DOI fiscal years.

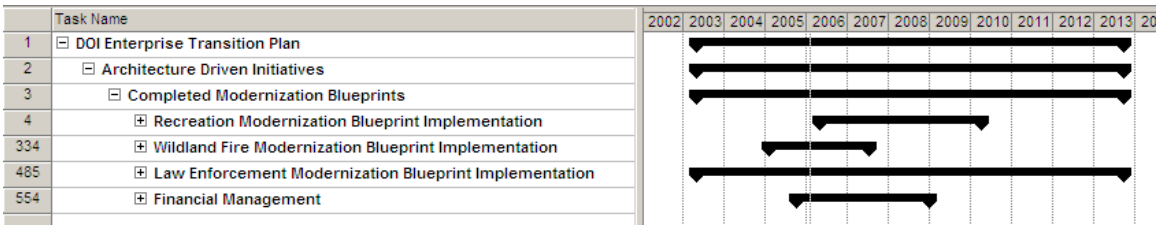


Figure 2: Modernization Blueprints Being Implemented

Recreation Modernization Blueprint Implementation: The Recreation Modernization Blueprint Implementation spans several facets of the Recreation organizations within DOI and its Bureaus. The Blueprint defines a collection of recommendations that impact Services to Citizens such as recreation information delivery, recreation reservations, recreation permits management, and land use metrics. Additionally, the Blueprint defines recommendations that are oriented towards the management of government resources. Specifically, these efficiency-oriented recommendations include the elimination of redundant systems, the establishment of data sharing relationships to eliminate duplicate data collection and storage, and the use of business process reengineering techniques to redefine the way that recreation conducts some of its operations.

OMB has issued its guidance for the development of an Enterprise Sequencing Plan. A conceptual example of an Enterprise Sequencing Plan was provided by OMB and is depicted in Figure 3.

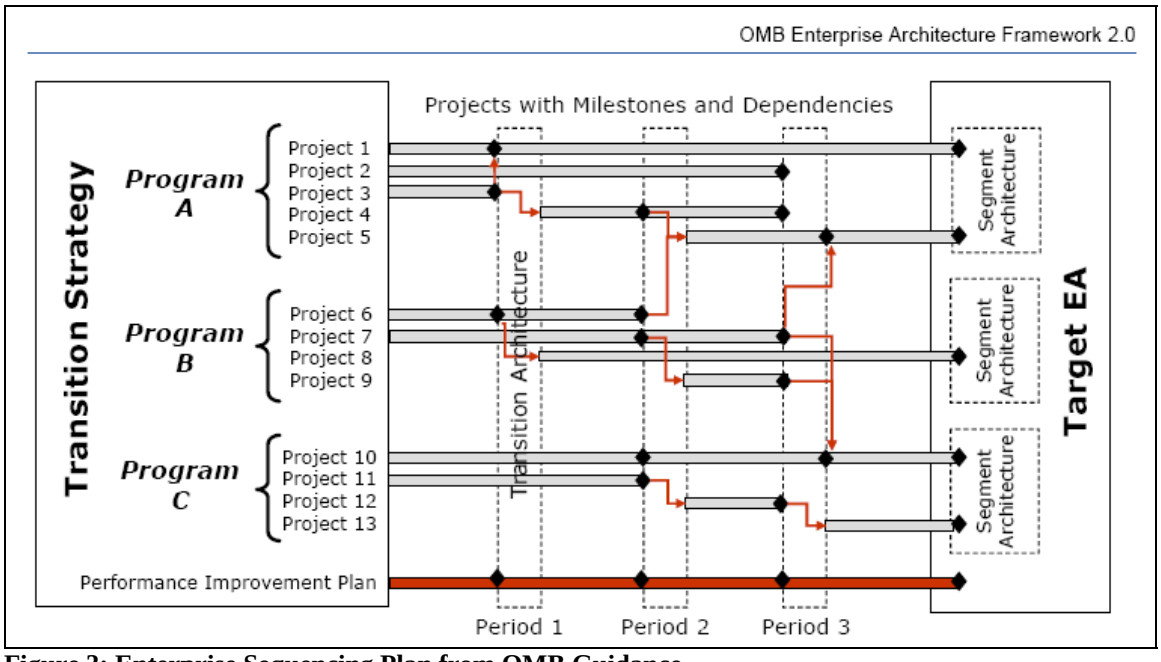


Figure 3: Enterprise Sequencing Plan from OMB Guidance

The DOI Enterprise Transition Plan includes sequencing visuals that are patterned from the OMB guidance shown in Figure 3. The sequencing visual within the DOI Enterprise Transition Plan that is associated with the Recreation Modernization Blueprint Implementation is depicted in Figure 4. It is important to note that Figure 4 is a sequencing plan and that systems slated for retirement will not be

decommissioned until respective functionality is operational in the target system(s). For more detail on the Recreation Modernization Blueprint please visit: http://www.doi.gov/ocio/architecture/modblu/recreation/know.htm

Figure 4 shows how systems will evolve within the Recreation business area. Specifically, the target state recreation systems will be the National Recreation Reservations Service (still in procurement) and the Recreation Information Database (currently in production). The Recreation Information Database (RIDB) is the national source of record for recreation data and will feed the National Recreation Reservations Service (NRRS) with the data necessary for recreation related transactions. As reflected in Figure 4, there are a host of duplicative systems that will be retired and replaced by the NRRS over time. Additionally, there are systems that are potentially duplicative but their final fate will be determined as part of a more specialized study into DOI's non-commercial recreation permits processes and systems.

In the web based version of this visual, each blue star is clickable to show the performance milestones for the business area.

Sequencing Visual for Modernization of DOI Recreation Line of Business

(actual sequencing will be determined at contract award for NRRS)

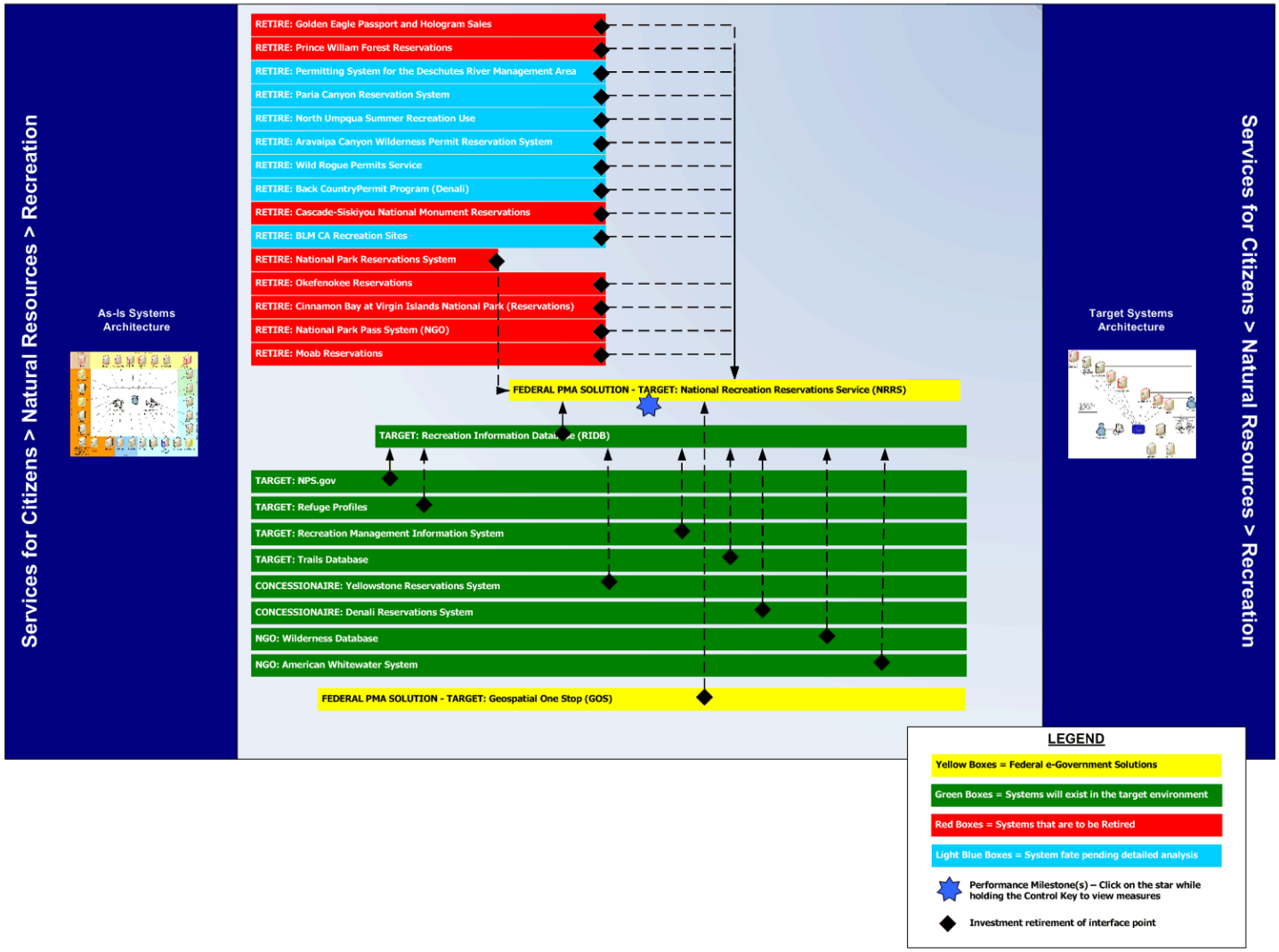


Figure 4: Recreation Modernization Blueprint Sequencing

Recreation Systems Architecture Transition: The Recreation Modernization Blueprint produced systems analysis that clearly shows redundancy in systems that enable recreation functions such as information delivery, retail sales, and recreation reservations. In addition to basic systems redundancy, Figure 5 shows the state of chaos that the citizen faces when interacting with these duplicative systems.

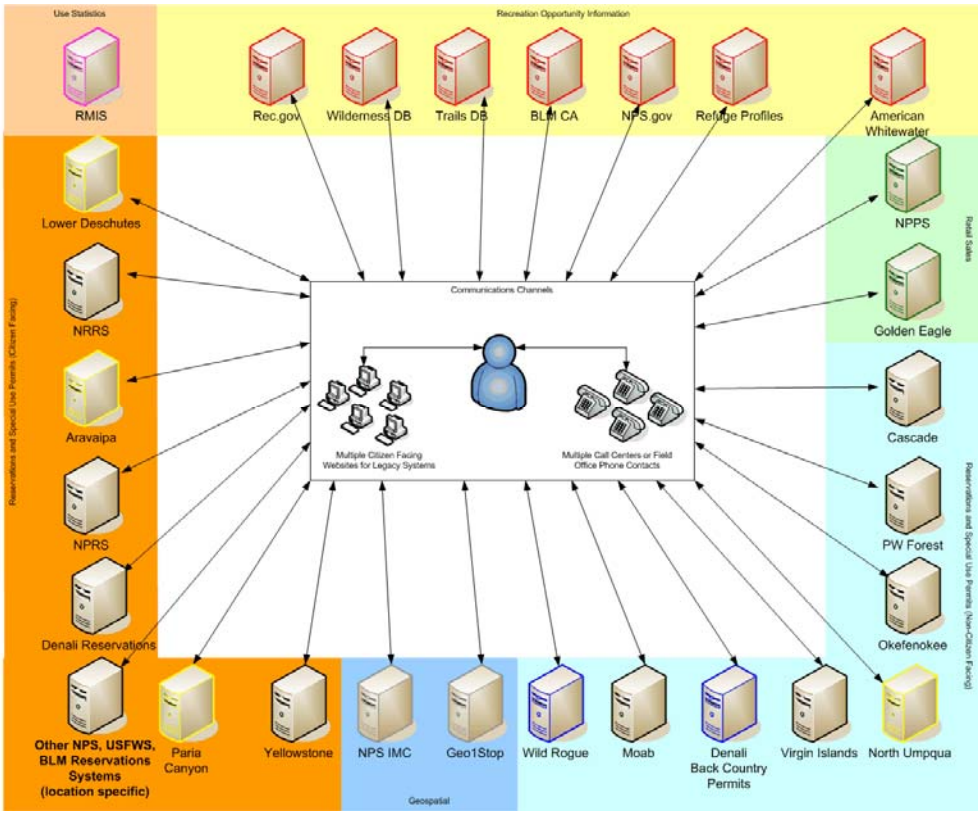


Figure 5: Recreation As-Is Conceptual Systems Architecture

Beyond the obvious systems architecture and investment findings that are illustrated in Figure 5, there is the bigger problem of a fragmented citizen interaction with the Federal government. It is clear that eliminating the confusion faced by the citizen is a critical issue for the Recreation LOB. It has been recommended that the functionally redundant systems be retired from the DOI Recreation LOB, and that the citizen's interaction with the Federal government be the key business justification for retiring the systems. The intent of this recommendation is to increase the value of the service to the citizen by making more recreation opportunities available through the NRRS. This recommendation requires a scouring of recreation opportunities within NPS, BLM, and USFWS to eliminate manual reservations and information delivery methods and to train staff to leverage the investment in the NRRS. Based on the business and technical analysis, Figure 6 has been constructed to illustrate the future state.

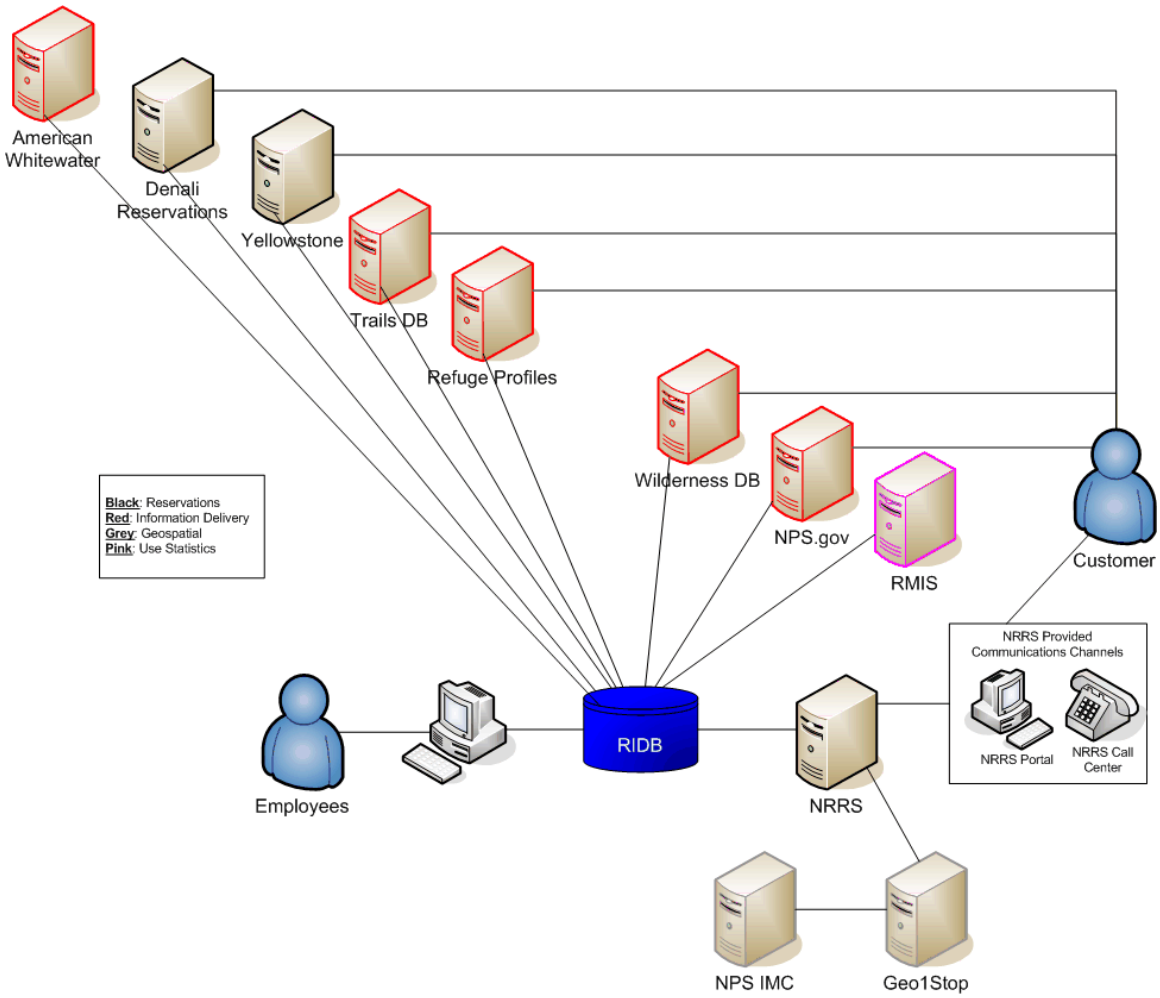


Figure 6: Recommended Recreation Target Conceptual Systems Architecture

Figure 6 illustrates the use of the Recreation Information Database (RIDB) as the central hub for systems interfaces and NRRS integration. It further illustrates the simplified citizen interaction as the citizen has a single NRRS Portal and a single NRRS Call Center. There are still several legacy systems remaining in Figure 6. It has been recommended that these systems remain based on their support of non-Recreation functions, their status as non-governmental systems, or, in the case of Yellowstone, the dramatic operational need for the system.

Recreation Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan: In keeping with the strategic direction of the enterprise, the IEA architects maintain mappings of Modernization Blueprint recommendations back to the DOI Strategic Plan. These mappings serve as partial justification for the recommendations and ensure that the overall business transformation is in line with the strategic intent. Figure 7 illustrates the relationships between the recommendations in the Recreation Modernization Blueprint and the DOI Strategic Plan.

Recreation Blueprint		DOI Strategic Plan						
Issue	Specific Recommendations	Recreation and Management Excellence			Presidents Management Agenda			
		REO_1 Provide for a quality recreation experience, including access, and enjoyment of natural/cultural resources on DOI-managed and partnered lands and waters	REO_2 Provide for and receive fair value in recreation	XEO_4-M_2 Percent of business lines with shared processes, systems, to eliminate redundancy and/or inefficiency	PMA-EO_3 Improved Financial Performance	PMA-EO_5 Budget and Performance Integration	PMA-EO_6 (PMA) Performance/process improvement	PMA-EO_4 Expanded Electronic Government
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - Non-Commercial Special use permits - Multiple special use permits systems	–Issue Non-Commercial Special Use Permits	X		X	X	X	X	X
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - Entrance fees (other than passes) through Recreation One Stop	–Sell Entrance Fees to Federal Lands DOI standard for metrics gathering and use Business Process Reengineering for legacy Non-Commercial Special User Permit processes that are too complex for immediate integration with Recreation One Stop	X		X	X	X	X	X
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - Immediate use of extended market channels	–Sell through other market channels (e.g., Expedia)	X	X		X	X	X	X
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - Common branding and standardized business rules	–Establish common business rules	X	X		X		X	
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - Integration with paper based information delivery	–Integrate with paper based info delivery (brochures)	X			X	X	X	X
A business decision has not been made within DOI to incorporate the following components into Recreation One Stop: - DOI wide recreation metrics management and use - Bureau metrics and NRRS metrics together in a Department level decision support mechanism	–Extended Data Metrics Use		X		X	X	X	X
–Recreation must share data internally and externa	•Complete implementation of RIDB components	X						X
–Recreation must share data internally and externa	•Implement inter-Bureau process for adopt, implement, and evolve RecML	X					X	X
–There are 16+ redundant systems that should be r	•Interface 12 systems	X	X		X			X
–There are 16+ redundant systems that should be r	•Retire 9 systems with databases and web front ends	X	X	X	X			X
–There are 16+ redundant systems that should be r	•Conduct BPR on 2 systems to standardize processes and consolidate into Recreation One Stop.	X	X	X	X			
–There are 16+ redundant systems that should be r	•Retire 5 "systems" which consist of html pages and manual processes	X			X		X	X
–There are 16+ redundant systems that should be r	•Leverage training available free of charge through NRRS			X				
The data analysis shows that the current Recreatio	Integrated Data Management and Reuse with Other Programs (Fire, Trails, Rivers, Accessiblilty Data)	X		X			X	X

Figure 7: Recreation Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan

Measurable Results from the Recreation Modernization Blueprint: The Recreation Modernization Blueprint includes systems, program, business, data, and technology

findings that are designed to make the business area more effective and efficient. Within these findings is the implementation of the National Recreation Reservations Service, delivered as part of the Recreation One Stop e-Government initiatives. This implementation is designed to fulfill the following measures:

- Measure: # of Federal websites that have inconsistent recreation data --- Planned Improvement: Reduce # of inconsistent websites by 50 percent
- Measure: # of partners that are exchanging data (via RecML) with recreation.gov --- Planned Improvement: Increase by 15 percent
- Measure: % of people rating recreation.gov (via on-line survey) very good or superior --- Planned Improvement: Increase by 15 percent

Furthermore, the Recreation Modernization Blueprint has produced a reengineering of its non-commercial permits processes across the DOI Bureaus. This reengineering includes a detailed cost/benefit analysis as well as an analysis of general benefits to the citizen. Once this analysis is approved by the Investment Review Board, its findings and recommendations will be appended to the Recreation Modernization Blueprint and will be measured through the Enterprise Transition Plan. It is anticipated that the reengineered processes will result in double-digit percentage improvement in efficiency within the Recreation Business Area.

Overall, the Recreation Modernization Blueprint implementation, and the achievement of the associated performance measures, has been delayed due to the ongoing protest of the National Recreation Reservations Service (NRRS) procurement. This procurement has been protested two times and the delays have impacted the implementation of the Blueprint. Following the resolution of the NRRS protest, the NRRS will be implemented and the remaining aspects of the Blueprint will move to implementation accordingly.

Wildland Fire Modernization Blueprint Implementation: The Wildland Fire Modernization Blueprint Implementation is particularly focused on information delivery and the better enablement of Wildland Fire related systems. Specifically, the Blueprint defines projects that will select an official Federal source of record for active fire status information, will design and implement an official portal for Wildland Fire information dissemination, and will aid firefighters by geo-spatially enabling existing Wildland Fire systems. These recommendations are of benefit to the citizen and to internal operations as they act to improve capabilities, reduce risks, and increase the flow of accurate information that relates to Wildland Fires.

There are cross-business area results of this Modernization Blueprint as well. The Recreation Modernization Blueprint states that active fire status is required for conducting operations. Specifically, the recreation community needs to know the location and status of active fires in order to protect citizens on Federal lands. The establishment of an official Federal source of record for active fire status opens the opportunity for the recreation business area to create a data sharing partnership with the Wildland Fire business community for this information.

The sharing of information should not be done in a “point to point” architecture where systems are hard wired to talk directly to one another. This is especially true for active fire status since that information is needed by Recreation as well as business organizations like Law Enforcement. As a result, the Wildland Fire Modernization Blueprint defines a Service Oriented Architecture (SOA) for Wildland

Fire to ensure that information is delivered by means of shared, reusable services and not point to point interfaces.

Note: The DOI Wildland Fire Blueprint has been adopted into the National Wildland Fire Enterprise Architecture (NWFEA) along with DOI's Methodology for Business Transformation (MBT). The DOI Wildland Fire artifacts and Blueprint recommendations have formed the core of the NWFEA architectural knowledge base. The NWFEA is developing and integrating the U.S. Forest Service and state level information into the DOI's existing architecture information. With this development, a number of the projected activities have been delayed while they are establishing cross agency program governance and capital planning capabilities. These are critical dimensions to ensuring the results of the recommendations are achieved. Consequently, the numerous previously scheduled activities are now dependent upon the completion of the prioritized governance and planning work. Additionally, there is a dependency on receiving investment funding to implement the Wildland Fire Modernization Blueprint. Delays in such funding will delay the implementation of the Modernization Blueprint.

OMB has issued its guidance for the development of an Enterprise Sequencing Plan. A conceptual example of an Enterprise Sequencing Plan was provided by OMB and is depicted in Figure 8.

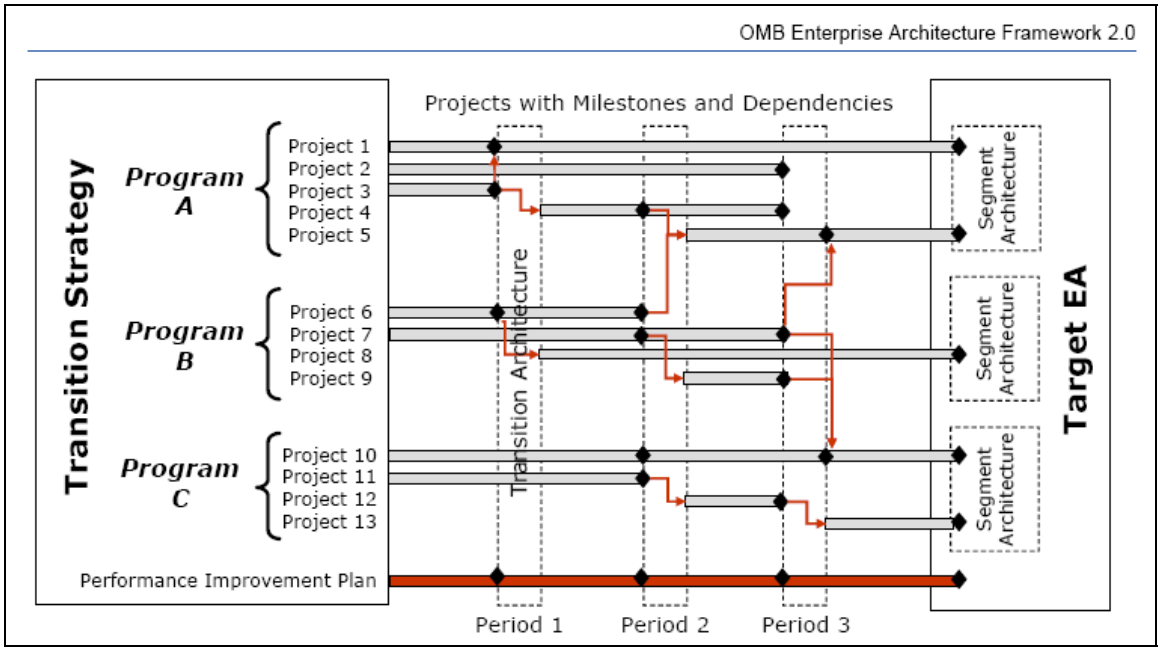


Figure 8: Enterprise Sequencing Plan from OMB Guidance

The DOI Enterprise Transition Plan includes sequencing visuals that are patterned from the OMB guidance shown in Figure 8. The sequencing visual within the DOI Enterprise Transition Plan that is associated with the Wildland Fire Modernization Blueprint Implementation is depicted in Figure 9. It is important to note that Figure 9 is a sequencing plan and that systems slated for retirement will not be decommissioned until respective functionality is operational in the target system(s). For more detail on the Wildland Fire Modernization Blueprint please visit: http://www.doi.gov/ocio/architecture/modblu/fire/know.htm

Figure 9 reflects the evolution of the DOI Wildland Fire systems environment. Most notable in the future state systems environment for DOI Wildland Fire is the existence of several systems as "targets". Currently there are many systems that perform mission critical and unique roles within the business area. The target systems environment calls for the standardization on many of these existing systems and the retirement of a handful of other systems that are duplicative. The result is a target environment without functional overlap. Also notable are the connections with the Federal PMA solutions of Disaster Help, Geospatial One Stop, and the HR Center of Excellence.

In the web based version of this visual, each blue star is clickable to show the performance milestones for the business area.

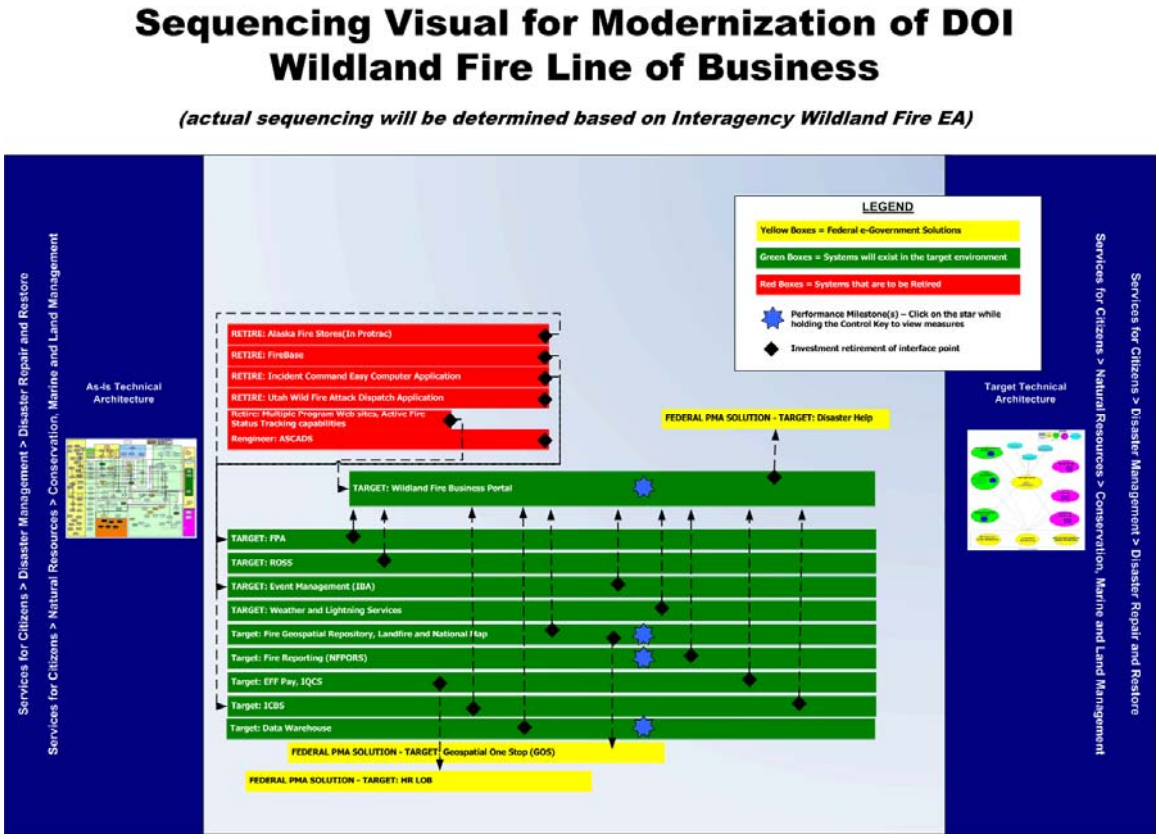


Figure 9: Wildland Fire Modernization Blueprint Sequencing

Wildland Fire Systems Architecture Transition: The Wildland Fire Blueprint implementation fundamentally assesses the core business processes and the supporting IT assets for the DOI's fire organizations. They have benefited from several shared investments that have begun to reduce more parochial solution efforts from the contributing organizations. The DOI blueprint has articulated an Enterprise Application Integration (EAI) strategy that would allow for the development of numerous "common services" while relegating the existing business intelligence to a large percentage of their existing portfolio. The Blueprint has identified numerous opportunities for data reuse within and across program areas

along with numerous geospatial recommendations that would facilitate historical fire behavior understanding, incident management and response.

The current state of the Wildland Fire systems environment is depicted in Figure 10 while the new EAI state is depicted conceptually in Figure 11.

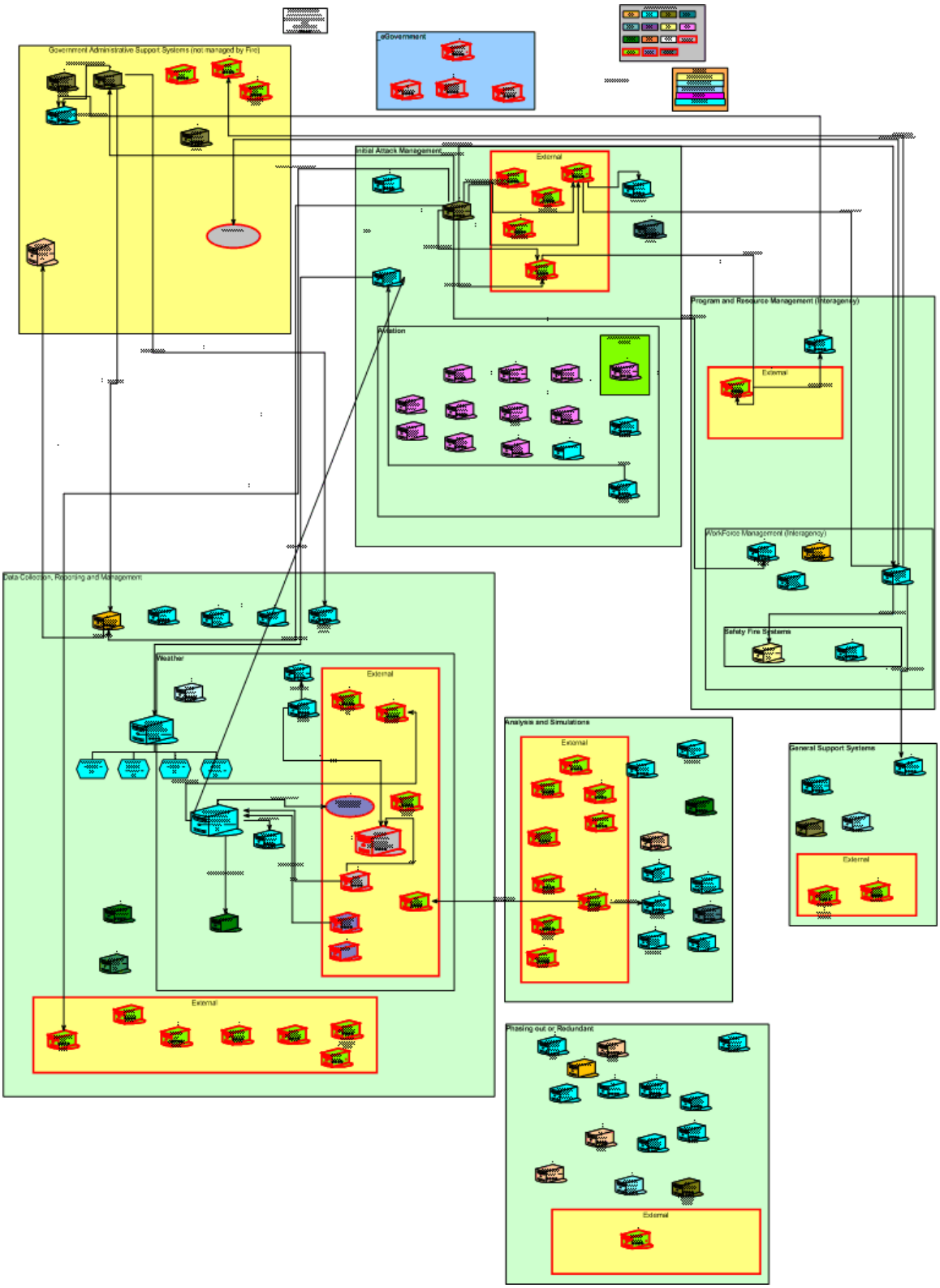


Figure 10: Current State Wildland Fire Systems Architecture

Click the icon for a higher resolution version of the Current State Wildland Fire Systems Architecture:

As Is Wildland Fire Systems Arch

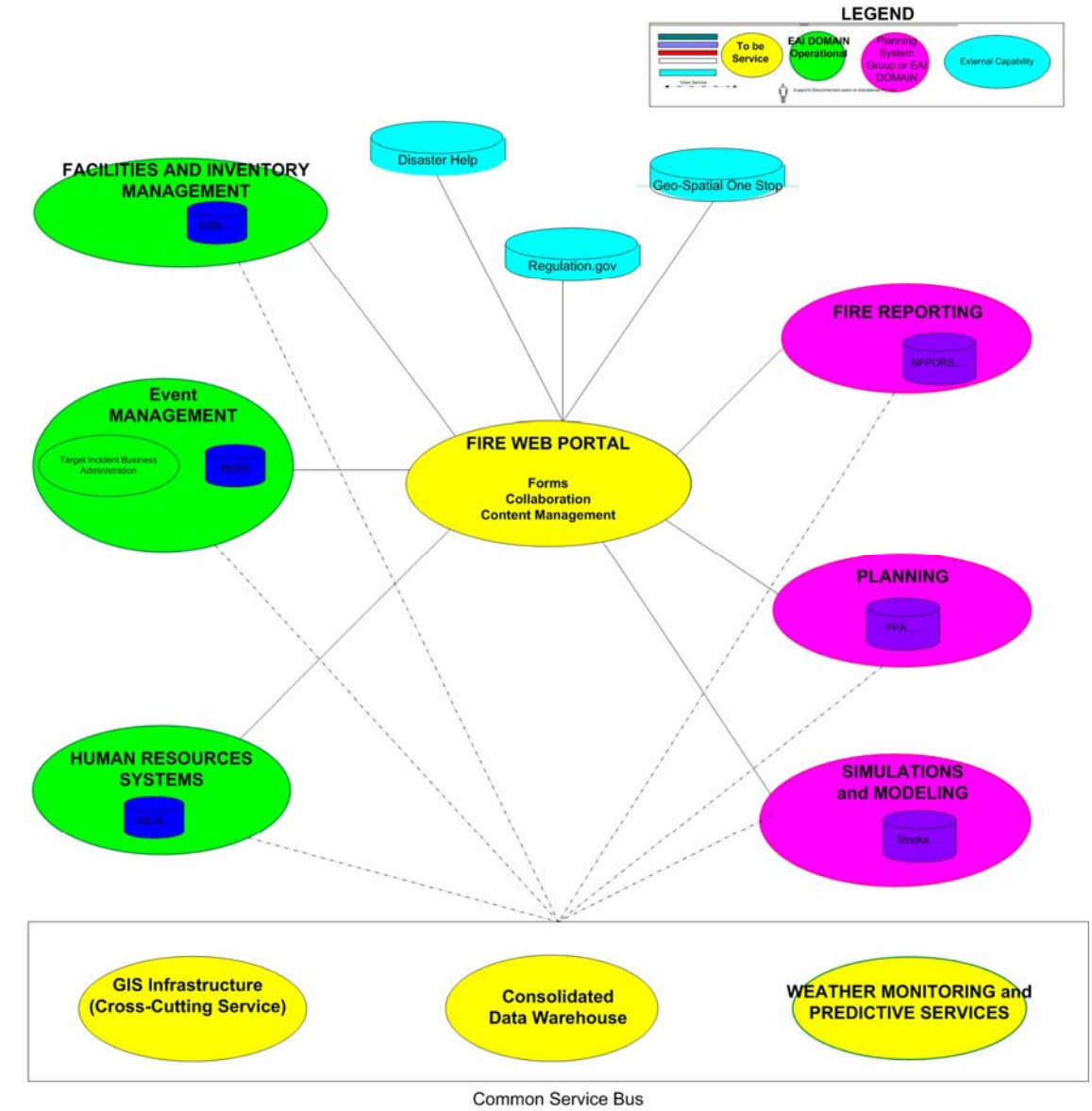


Figure 11: Target State EAI Environment for Wildland Fire

Wildland Fire Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan: In keeping with the strategic direction of the enterprise, the IEA architects maintain mappings of Modernization Blueprint recommendations back to the DOI Strategic Plan. These mappings serve as partial justification for the recommendations and ensure that the overall business transformation is in line with the enterprise strategic intent. Figure 12 and Figure 13 illustrate the relationships between the recommendations in the Wildland Fire Modernization Blueprint and the DOI Strategic Plan.

Wildland Fire Blueprint		DOI Strategic Plan						
Issue	Specific Recommendations	Wildland Fire and Management Excellence			Presidents Management Agenda			
		SEO_1 Protect Lives, Resources and Property	PEO_1 Watersheds, Landscapes & Marine Resources	XEO_4-M_2 Percent of business lines with shared processes, systems, to eliminate redundancy and/or inefficiency	PMA-EO_3 Improved Financial Performance	PMA-EO_5 Budget and Performance Integration	PMA-EO_6 (PMA) Performance/process improvement	PMA-EO_4 Expanded Electronic Government
The overall systems architecture and business enablement is hampered due to an incomplete accounting of the systems portfolio within the CPIC process. In addition, USFS and DOI have several existing and proposed future major Wildland Fire IT investments.	1.Account for all IT systems within the CPIC process to ensure mission and technology compatibility as well as functional significance.				X	X	X	
	2.Incorporate full IT System Portfolio Reviews as a part of the Investment Cycle.				X	X		
	3.Establish joint DOI & USFS Investment Review Board for cross-agency Wildland Fire Investments				X	X		
Many Fire related applications enable the same or similar business functions in the current architecture. Furthermore, many of the existing applications require similar data sets. The current architecture does not promote the re-usability of data and technology through horizontal services	1.Investigate existing horizontal services within DOI and services being introduced within the next 12 months (e.g., e-authentication, DOI-wide spatial layers, etc.)			X			X	X
	2. Market to other business areas the data that Fire maintains as the source of record. Provide master data records to "customer" business *areas like Recreation (*e.g., live feed active fire status on Recreation One Stop to alert recreationists).	X	X			X	X	X
The business area is not currently supported by a Systems Engineering organization that is integrated into the investment and system development life cycles. This missing engineering component increases the risk of a fragmented target architecture and increased long-term system development dollars and O&M costs.	1.Formalize the discipline of Systems Engineering (SE) with adequate support resources.						X	
	2.Focus the SE on requirements management, risk assessment of baseline issues, technology evaluations, system designs and interface designs.						X	
	3.Ensure the SE organization embraces a framework (e.g. CMMI) to guide development and incremental improvements						X	
*T*here are a fixed number of business functions that are enabled through a multitude of systems and technologies. In many instances, a single function is enabled by more than one system. In other instances, critical systems are not interfaced appropriately to other dependent systems	1.Implement Target Solutions then sunset legacy systems with functional overlap.	X	X	X		X	X	X
	2.Leverage Department level middleware standards to implement an application integration approach to data exchange.			X	X			
	3.Leverage the Enterprise Service Network (ESN) infrastructure to better support the enabling systems			X	X			
The existing Geo-Spatial architecture includes solutions that need to be integrated, some solution redundancy, and a lack of data standards, data quality, and data collection standards. The Fire community should be a customer of the Geo-Spatial service provider organization much like other business areas such as Recreation	The IEA should partner with the USGS-lead E-GIM project to develop a plan for providing high priority GIS service layers with standardized data to multiple lines of businesses. This plan should be presented to the IRB for approval & implementation	X	X	X			X	X

Figure 12: Wildland Fire Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan

Wildland Fire Blueprint		DOI Strategic Plan						
Issue	Specific Recommendations	Wildland Fire and Management Excellence			Presidents Management Agenda			
		SEO_1 Protect Lives, Resources and Property	PEO_1 Watersheds, Landscapes & Marine Resources	XEO_4-M_2 Percent of business lines with shared processes, systems, to eliminate redundancy and/or inefficiency	PMA-EO_3 Improved Financial Performance	PMA-EO_5 Budget and Performance Integration	PMA-EO_6 (PMA) Performance/process improvement	PMA-EO_4 Expanded Electronic Government
Dissemination for Wildland Fire information both Internal and External to DOI is fragmented, duplicative and in some cases, inconsistent	Implement a Portal based architecture to:	X	X	X	X	X	X	X
	-Reduce content management cost	X	X	X	X	X	X	X
	-Reduce risks of inaccurate information	X	X					X
	-Provide a new access model	X	X	X	X	X	X	X
Special Conditions and other Critical Business Information. Fire is dependent upon critical information owned by other program areas. No established mechanism to get this data in a consistent fashion	1.Investigate the development of data exchange capabilities via with the maturing DOI Facilities, cultural heritage, recreation capabilities.	X	X	X	X	X	X	X
	2.Investigate the enterprise licensing and use of commercially available data sources like streets databases, geo-coded address listings for support in the life and property protection within the Wildland Urban Interface (WUI).	X	X	X			X	X
The LOB will need to develop an integration strategy with the E-Gov initiatives. Affected areas include HR, Regulation review, geo-spatial, recreation and potentially portal	1.Review current investments to ensure long term alignment with the following E-Gov initiatives:	X	X	X			X	X
	1.HR & Financial Management E-Government Service Model	X	X	X			X	X
	2.Geo-Spatial One-Stop	X	X	X			X	X
	3.Recreation One-Stop (Special conditions and facilities)	X	X	X			X	X
	4.Regulation.gov	X	X	X			X	X
	5.E-Training	X	X	X			X	X
	3.Ensure FIRES, Causal Pay and future Geo-Spatial Architecture are addressed	X	X	X			X	X

Figure 13: Wildland Fire Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan (continued)

Measurable Results from the Wildland Fire Modernization Blueprint: The Wildland Fire Modernization Blueprint addresses system engineering, investment management, systems, program, business, data, and technology findings that are oriented towards making the LOB more effective and efficient. The Wildland Fire Blueprint generated an implementation Exhibit 300 for the DOI IRB approved recommendations. This Exhibit 300 was submitted to the OMB. The transformation

initiatives were focused on improving key business processes and integration with the Common Alert Protocol. Similarly, there are numerous other target investments owned and managed by the DOI and the USDA for which there are key performance measures being managed to ensure optimal investments. The DOI Wildland Fire Blueprint is currently being leveraged as a starting point for the National Wildland Fire Enterprise Architecture (NWFEA) effort. DOI anticipates many of the existing recommendations being adopted and carried forward. DOI's initiative will be assessed by the following measures:

- **Measure**: # reduction in the number of Federal websites and support processes that have active fire data, program content and integrate with E-government– **Planned Improvement**: 75%
- **Measure**: Increase the reuse of information from non-Wildland Fire programs in support of business process efficiency – **Planned Improvement** 2 new services per year
- **Measure**: Increase the access, reliability and availability of geospatial information – Planned 24X7 geospatial data store – **Planned Improvement**: 50% less labor for preparing geospatial information for an incident response
- **Measure**: Improvements in process to report data to enterprise level and communicate with Disaster Community. (Process time/incident) - **Planned Improvement**: Increase efficiency by 15 percent/year

Additionally, the Wildland Fire Blueprint has initiated numerous near term improvements within the Wildland Fire community including management of active fire content, cross agency capital planning and the National Wildland Fire Enterprise Architecture with strong participation from the US Forest Service and state governments. As the NWFEA matures, the results based projects spawned from the effort will be governed and measured through the Enterprise Transition Plan.

Law Enforcement Modernization Blueprint Implementation: The Law Enforcement Modernization Blueprint Implementation is centered on the implementation of the Incident Management and Response System (IMARS). The IMARS solution is designed to be the standard solution for law enforcement incident management. The Law Enforcement Modernization Blueprint details the solution architecture for the IMARS solutions and additionally presents a series of tactical and strategic recommendations for the Law Enforcement business area beyond just the use of IMARS.

Specifically, the Modernization Blueprint recommends:

- Retire three legacy law enforcement systems in order to standardize on IMARS.
- Consolidate the LE-IMAGS (Law Enforcement Information and Gathering System) system into LEMIS (Law Enforcement Management Information System)
- Migrate functionality of LEMIS into IMARS (Incident Management, Analysis, and Reporting System)

Additionally, the Modernization Blueprint defines a heavy use of services in order to leverage other investments made within DOI or the Federal sector. These recommendations include the IMARS use of pay.gov, FBMS (Financial and Business Management System), and Geospatial One Stop. Pay.gov, for instance, will be leveraged by the IMARS Customs Declaration Module for the collection of fees and duties.

OMB has issued its guidance for the development of an Enterprise Sequencing Plan. A conceptual example of an Enterprise Sequencing Plan was provided by OMB and is depicted in Figure 14.

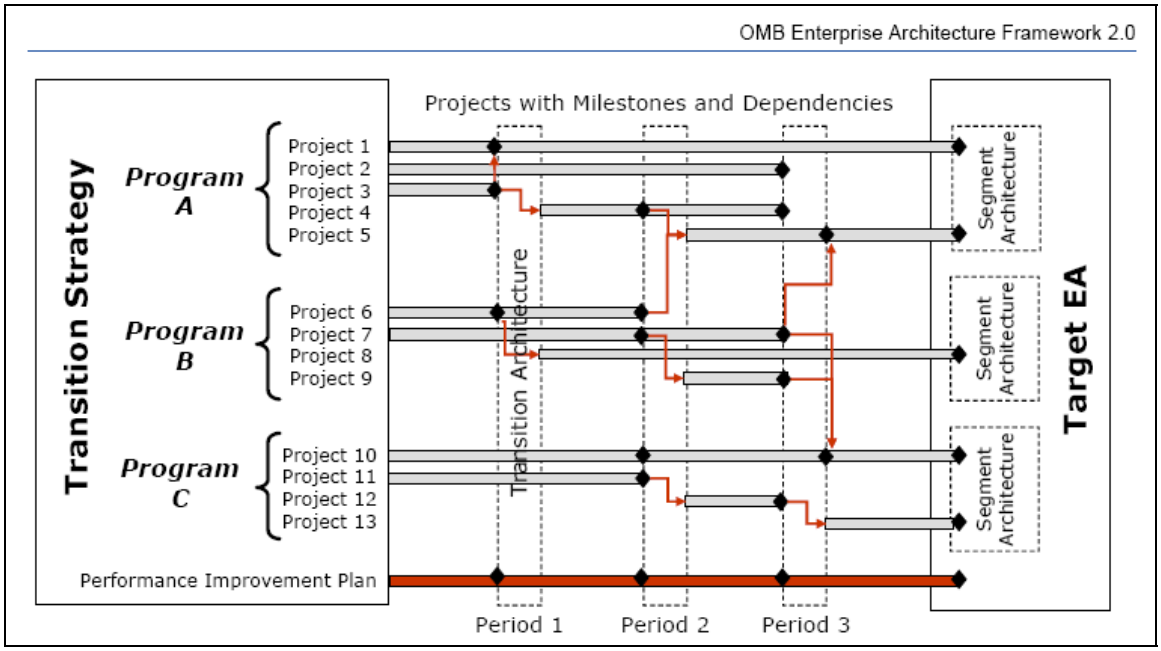


Figure 14: Enterprise Sequencing Plan from OMB Guidance

The DOI Enterprise Transition Plan includes sequencing visuals that are patterned from the OMB guidance shown in Figure 14. The sequencing visual within the DOI Enterprise Transition Plan that is associated with the Law Enforcement Modernization Blueprint Implementation is depicted in Figure 15. It is important to note that Figure 15 is a sequencing plan and that systems slated for retirement will not be decommissioned until respective functionality is operational in the target system(s). For more detail on the Law Enforcement Modernization Blueprint please visit: http://www.doi.gov/ocio/architecture/modblu/law/know.htm

Figure 15 illustrates the evolution of the Law Enforcement systems environment within DOI. In the target state, there will be only one Law Enforcement system which will embody the functionality of each of the legacy systems. There will be an interface between this target system (IMARS) and the National Incident-Based Reporting System. Within the legacy systems environment, there will be the immediate retirements of CIRS, CRIMES, and LAWNET as well as the partial retirement of LEMIS. The remaining functionality within LEMIS will be consolidated in the future, once the Case Law, Declarations, and Seized Assets functions are available within IMARS. In the interim state, the LE-IMAGS solution will be consolidated with the LEMIS solution.

In the web based version of Figure 15, each blue star is clickable to show the performance milestones for the investment.

Sequencing Visual for Modernization of DOI Law Enforcement Line of Business

(actual sequencing will be determined at contract award for IMARS)

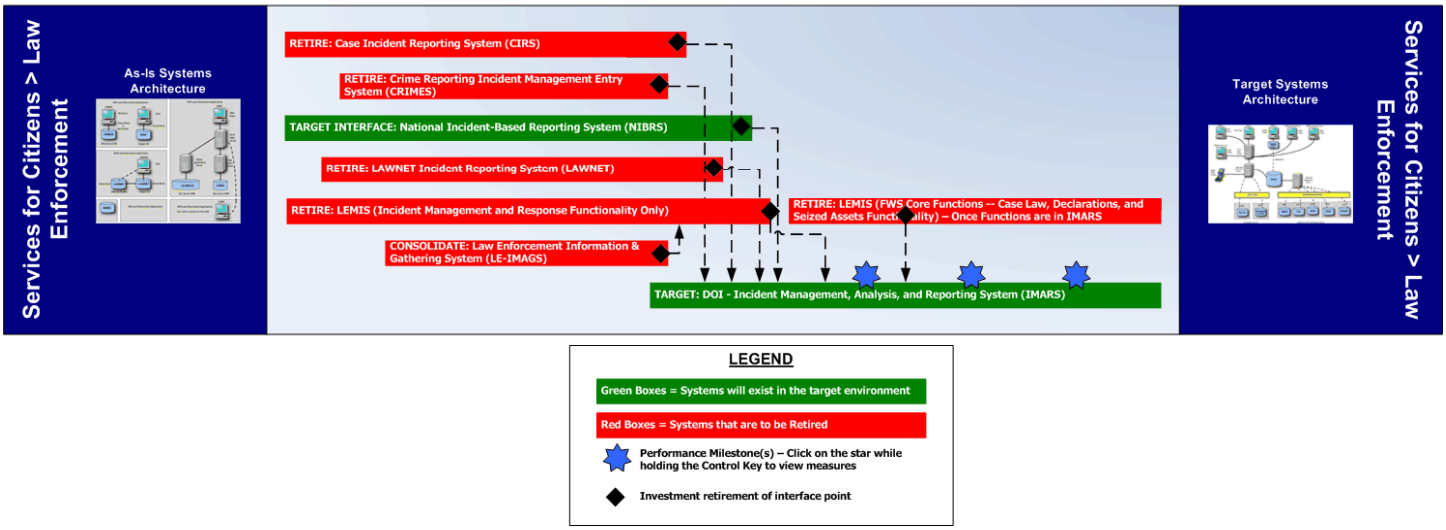


Figure 15: Law Enforcement Modernization Blueprint Sequencing

Law Enforcement Systems Architecture Transition: The commonality of business functions among examined law enforcement systems has supported the hypothesis that a single system (IMARS) could meet 80% or more of the required incident management and reporting functionality across all business units. The FWS (LEMIS) is one exception with customs declarations, case law research, and seized assets functionality that will not be immediately addressed by the IMARS procurement but will eventually be part of the IMARS solution. Due to this gap in functionality, the LEMIS solution will be part of the interim target state. The key system findings within the Law Enforcement Modernization Blueprints include:

- Current Law Enforcement Systems are not integrated and have deployed non-shared, Bureau-system-specific infrastructure investments.
- Current Law Enforcement Systems provide similar services.

Additionally, the Blueprint states that currently it is not possible to query for incidents across multiple NPS parks or across multiple DOI Bureaus. Given the fact that each system was developed independently with different technologies and database schemas, it is not currently possible to consolidate the data for cross departmental analyses or reporting. Any DOI-wide analyses or cross Bureau analyses must be done manually. Figure 16 provides a conceptual system architecture of the existing law enforcement systems.

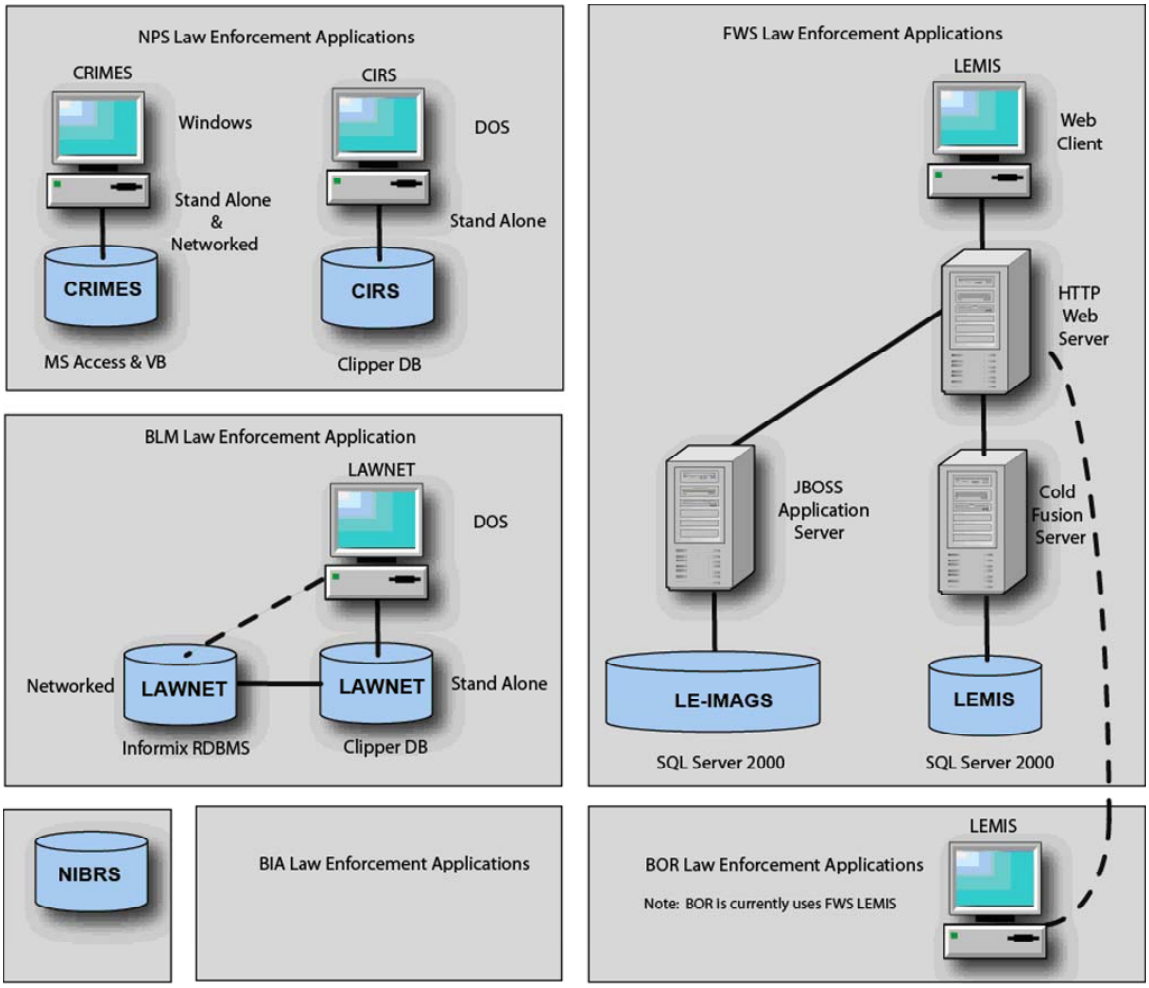


Figure 16: Law Enforcement As-Is Systems Architecture

As a result of the systems analysis, it is has been recommended that the DOI procure the IMARS system and implement a single incident management and reporting system across the DOI. This implementation will have a significant impact on the Law Enforcement systems architecture as depicted in Figure 17. It is important to note that Figure 17 is a long-term conceptual solution state. It is expected that prior to this state, the Law Enforcement environment will have an interim state where LEMIS and IMARS are both in use as separate entry points. Ultimately, a detailed solution architecture will be developed to determine the best technical solution that eliminates functional redundancy between the systems, reduces the total cost of ownership to DOI, and ensures no loss in functionality with the exiting LEMIS capability.

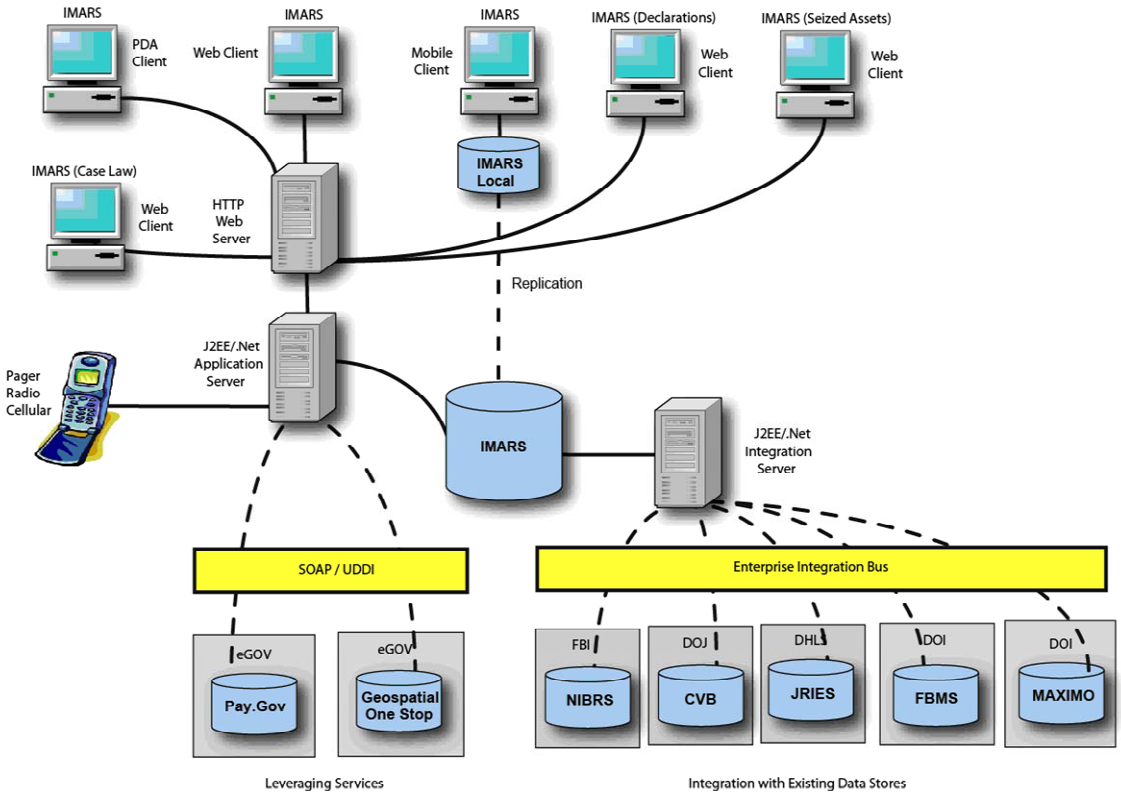


Figure 17: Law Enforcement Target Conceptual Architecture

Law Enforcement Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan: In keeping with the strategic direction of the enterprise, the IEA architects maintain mappings of Modernization Blueprint recommendations back to the DOI Strategic Plan. These mappings serve as partial justification for the recommendations and ensure that the overall business transformation is in line with the enterprise strategic intent. Figure 18 illustrates the relationships between the recommendations in the Law Enforcement Modernization Blueprint and the DOI Strategic Plan.

Law Enforcement Blueprint		DOI Strategic Plan						
Issue	Specific Recommendations	Law Enforcement and Management Excellence			Presidents Management Agenda			
		SEO_1 Protect Lives, Resources and Property	SEO_4 Quality Communities for Tribes and Alaska Natives	XEO_4-M_2 Percent of business lines with shared processes, systems, to eliminate redundancy and/or inefficiency	PMA-EO_3 Improved Financial Performance	PMA-EO_5 Budget and Performance Integration	PMA-EO_6 (PMA) Performance/process improvement	PMA-EO_4 Expanded Electronic Government
Current Law Enforcement Systems provide similar functions and services and are isolated along organizational boundaries.	Recommend to proceed with planned Departmental IMARS procurement planned for early Fiscal Year 2005. Functional redundancies are being addressed by the replacement of current outdated Law Enforcement Systems by IMARS procurement. Recommend DOI retire current LAWNET, CIRS, CRIMES, and non-core LEMIS modules upon successful IMARS deployment and field acceptance	X	X	X			X	X
Currently only the BLM's LAWNET system provides uniform Bureau-wide incident reporting to the FBI's National Incident-Based Reporting System (NIBRS) system on an annual basis.	Recommend DOI proceed with planned Departmental IMARS procurement planned for early Fiscal Year 2005. Key IMARS requirement is uniform NIBRS incident collection and reporting.	X	X	X		X	X	X
Current Law Enforcement Systems are not integrated and have deployed non-shared, Bureau-system-specific infrastructure investments	Recommend DOI proceed with planned Departmental IMARS procurement planned for early Fiscal Year 2005. Recommend DOI consolidate LEMIS and LEMIS NWRS module infrastructure. Recommend DOI retire LAWNET, CIRS, CRIMES systems.	X	X	X			X	X
The planned IMARS system has extensive requirements for interfacing with existing DOI, Bureau, and external systems that span law enforcement, facilities management, asset management, and accounting.	Recommend development of a published IMARS data model and DOI-wide standards for information exchanges between these systems. Recommend development of detailed information exchange documentation between IMARS and legacy data stores. Recommend detailed operational concept document for information exchange / updates between Bureau and central DOI IMARS servers.			X			X	X
Activities performed by Bureaus supporting the law enforcement LOB vary across the DOI, but there are core function activities that are suitable for cross departmental automation	Recommend DOI proceed with planned Departmental IMARS procurement planned for early Fiscal Year 2005. The current IMARS strategy of implementing incident / records management systems in tandem with a computer-aided dispatch addresses both the current level of automation and mission criticality.	X	X	X			X	X
Activities performed by Bureaus supporting the law enforcement LOB vary across the DOI, but there are core function activities that are suitable for cross departmental automation. BIA's law enforcement activities are by far the most wide ranging of all Bureaus	Recommend DOI proceed with planned Departmental IMARS procurement planned for early Fiscal Year 2005. Recommend DOI ensure procured IMARS system is robust enough to capture Bureau specific requirements. Recommend DOI prioritize the automation of identified 'core' function / activities that cut across all Bureaus and assign Bureau-specific non-core function / activities to follow-on IMARS modules	X	X	X				X
There is clearly a need for a DOI-wide law enforcement data model. Physical data models of existing systems and a conceptual data model of the planned IMARS system will be necessary to effectively plan any data migration	Recommend law enforcement data migration and system interfaces be clearly defined as part of IMARS development effort. Recommend physical data models of existing systems be reverse engineered where data exchanges take place. Recommend the continued development of a conceptual data model for the law enforcement line of business and mapping of IMARS and legacy system data models to the IMARS conceptual data model..	X	X	X				X

Figure 18: Law Enforcement Modernization Blueprint Recommendations Mapped to the DOI Strategic Plan

Measurable Results from the Law Enforcement Modernization Blueprint: The Law Enforcement Modernization Blueprint includes systems, program, business, data, and

technology findings that are designed to make the business area more effective and efficient. Within these findings is the implementation of the IMARS solution. This implementation is designed to fulfill the following measures:

- Planned Improvement: 5% reduction of illegal incidents leading to damage or loss of Federal property or private property located on DOI lands or areas of interest from baseline year.
- Planned Improvement: 5% improvement in cases successfully adjudicated from baseline year.
- Planned Improvement: 5% more DOI facilities have security plans and continuity of operation plans from baseline year.

It is important to note that the results associated with the Law Enforcement Modernization Blueprint have not yet been realized due to delays in the IMARS procurement. Once the procurement is finalized, the DOI Enterprise Transition Strategy and sequencing visuals will be updated and republished.

Financial Management Modernization Blueprint: The Financial Management Modernization Blueprint is centered on the implementation of the Finance and Business Management System (FBMS). This commercial off the shelf (COTS) solution is designed to incorporate the majority of the financial management functions into one solution that eliminates over 70 DOI and Bureau systems.

The Financial Management Modernization Blueprint also defines a services approach to leveraging the FBMS solution to deliver services to other DOI business areas. Specifically, business organizations such as Recreation, Law Enforcement, and Wildland Fire all need access to standard, accurate asset data. Currently, such asset data is collected and stored separately within each business area. The Financial Management Modernization Blueprint defines a services approach where this data is delivered to anyone who needs it within DOI and the Bureaus. Other "services-ready" data defined in the Blueprint includes customer data and organizational structure data. Overall the Financial Management Modernization Blueprint is expected to have a wide impact on many business areas within DOI and designates many areas for improvement in efficiency of operations and use of resources.

The impact of the Blueprint will be delayed due to the re-procurement of an integrator to implement the FBMS solution. Since the FBMS solution is the cornerstone of the Financial Management Modernization Blueprint, the performance results within the Blueprint will be delayed until the FBMS integrator is selected and implementation tasks resume.

OMB has issued its guidance for the development of an Enterprise Sequencing Plan. A conceptual example of an Enterprise Sequencing Plan was provided by OMB and is depicted in Figure 19.

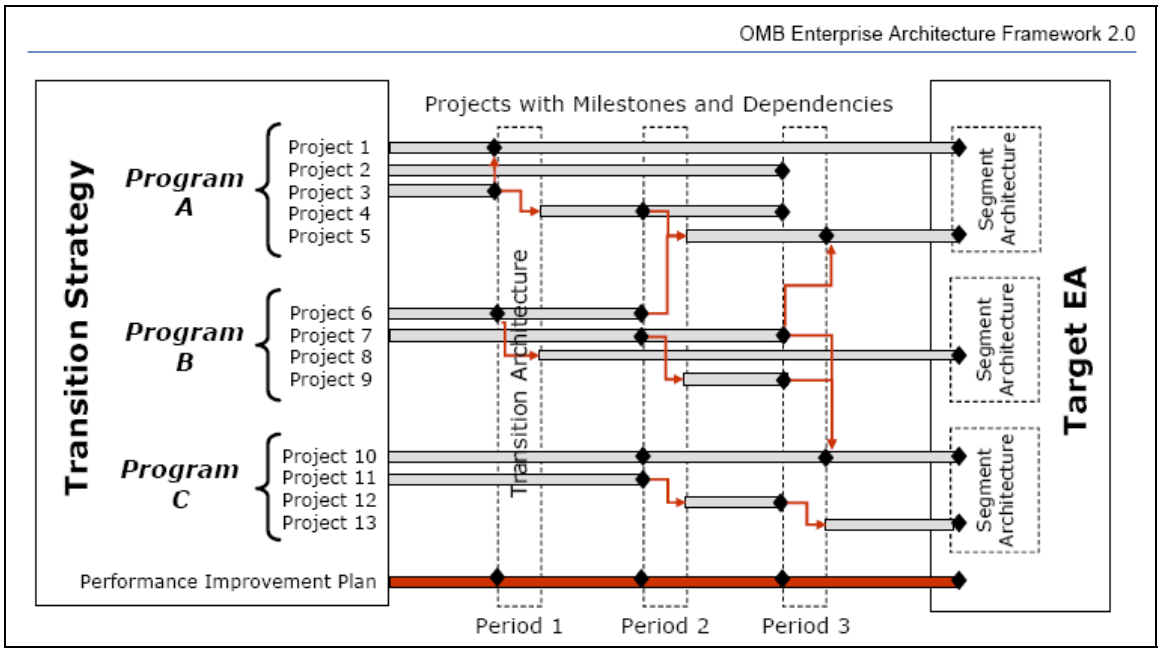


Figure 19: Enterprise Sequencing Plan from OMB Guidance

The DOI Enterprise Transition Plan includes sequencing visuals that are patterned from the OMB guidance shown in Figure 19. The sequencing visual within the DOI Enterprise Transition Plan that is associated with the Wildland Fire Modernization Blueprint Implementation is depicted in Figure 20. It is important to note that Figure 20 is a sequencing plan and that systems slated for retirement will not be decommissioned until respective functionality is operational in the target system(s). Also, the actual timing of the sequencing is dependent on the award of the FBMS integration contract.

Figure 20 illustrates the high level evolution of the systems environment for Financial Management at DOI. The figure reflects the systems that will be retired due to the Financial and Business Management System (FBMS), whose integrator is currently being procured. Once the procurement of the FBMS integrator is complete, the order of sequencing will be determined and this visual and the Enterprise Transition Strategy will be updated. However, despite the existence of the integrator, the systems reflected in Figure 20 are still known to be retired once FBMS is implemented. Additionally, in the web based version of this visual, each blue star is clickable to show the performance milestones for the business area.

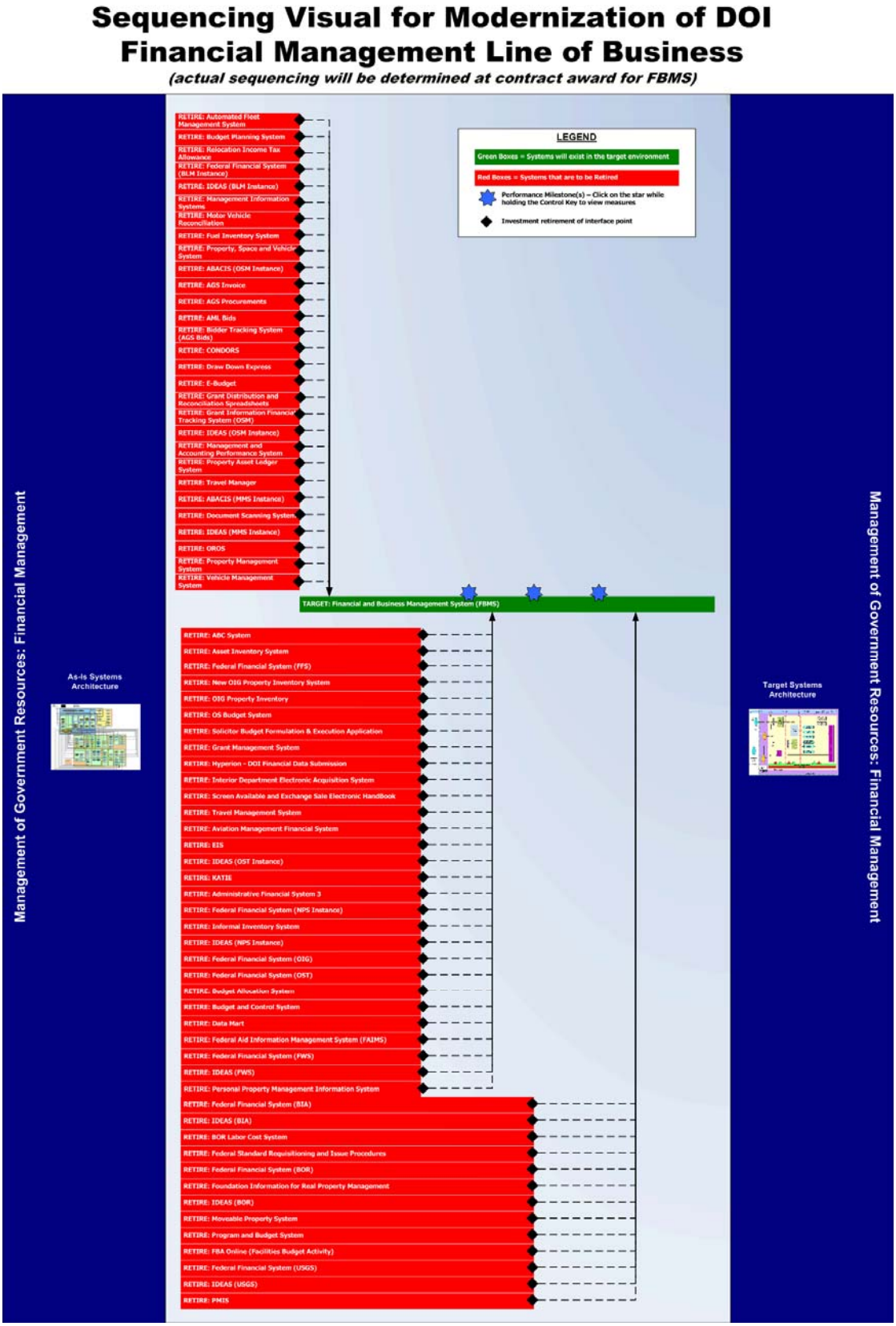


Figure 20: Financial Management Modernization Blueprint Sequencing

Financial Management Systems Architecture Transition: The Financial Management Modernization Blueprint and specifically the FBMS initiative is mainly focused on improving the enablement of business operations. However, one of the objectives is the modernization of the IT infrastructure that currently supports financial and business management. The broad scope of financial and business management allows for a wide array of legacy technologies to be included in the assessment for modernization.

Currently, there are over 160 different systems that support the Financial Management scope. The systems landscape varies in complexity by Bureau, but is far too complex even within the most modernized Bureaus. Beyond just the use of systems, there are differences in hosting environments, hardware platforms, system operations rules, and underlying software development standards. As a result of the technology complexity, the Financial Management LOB cannot adopt the modern business practices that are required by its mission. Figure 21 illustrates the tangled web that is the existing Financial Management LOB systems environment.

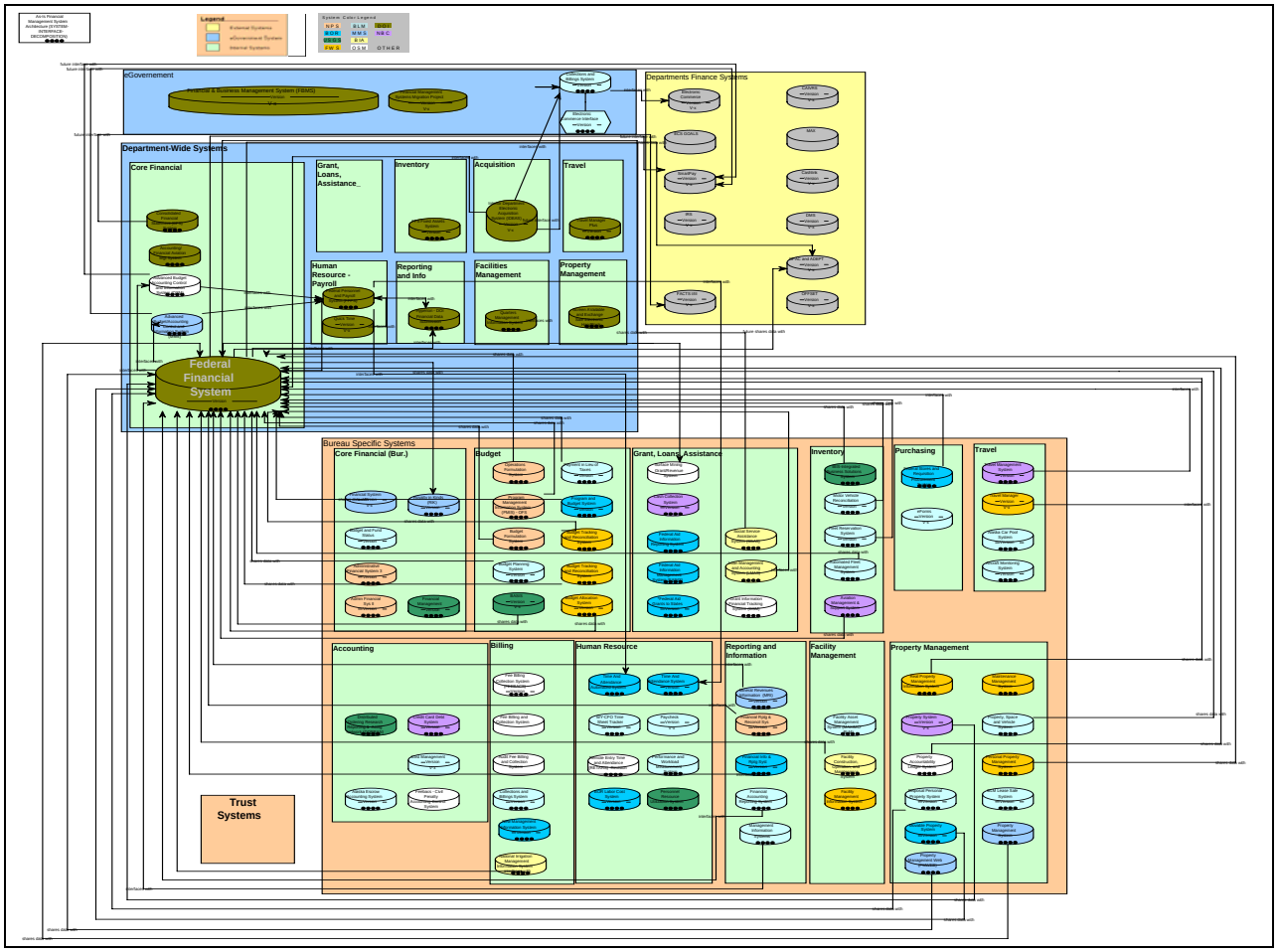


Figure 21: Financial Management As-Is Systems Architecture

The future state of the technologies used to enable Financial Management is vastly different than the current state. The Financial Management LOB will be modernized, in large part, by the implementation of the FBMS initiative. Beyond just the technologies themselves, the FBMS solution will provide a unified technical approach to information management across the Bureaus by using applications where all the components have the same look and feel, and information access is familiar through standardized screens and reports.

Figure 22 illustrates the conceptual technical components that will be implemented as part of the FBMS solution. These technical components are organized into seven layers:

- *Presentation*: The layer from which users will connect to FBMS through the FBMS Portal.
- *Persistence*: The layer that tracks who is in the system and what screens should be served to them.
- *Reporting*: The layer that contains the reporting capability to be used in conjunction with the Business Warehouse (BW) when the reporting capabilities of BW do not satisfy the reporting needs.
- *Monitoring*: The layer that contains the tools used to monitor the application suite.

- *Application*: The layer that contains applications that comprise the FBMS solution and their associated databases.
- *Master Data Management*: The layer that manages the master data between applications in the FBMS solution.
- *Integration*: The layer that provides the "glue" by which the applications that comprise FBMS will be connected.

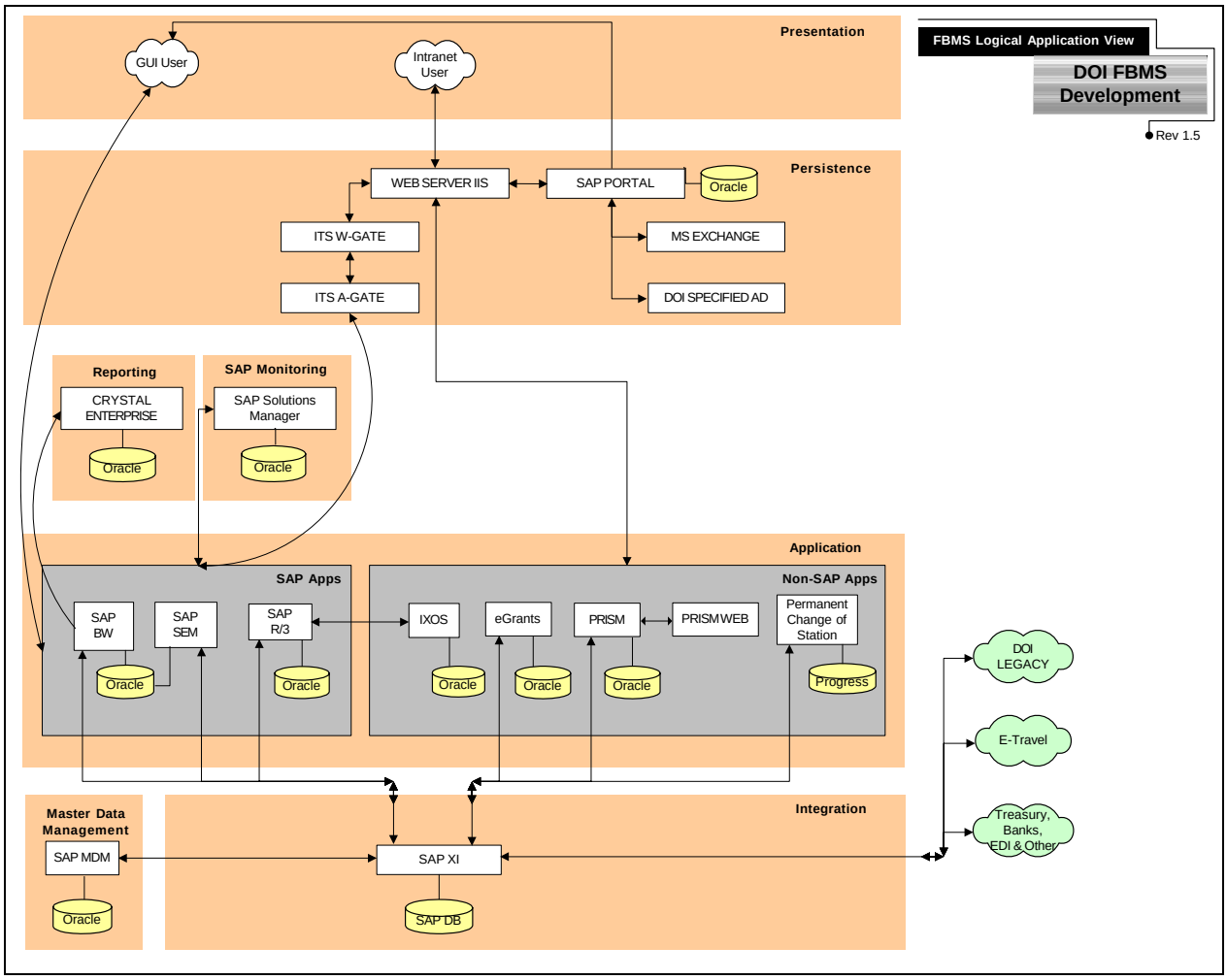


Figure 22: Financial Management Target Conceptual Systems Architecture

Impact of the Completed Modernization Blueprints: Within DOI, the four completed Modernization Blueprints have been significant drivers of transformation within their important business areas. These business areas were chosen for analysis because they are critical to the DOI mission and they represent sizable investments in information technology resources. Figure 23 graphs the percentage of DOI systems (in the DEAR inventory) that are attributed to each of the business areas within DOI. The bars in blue represent the business areas studied in completed Blueprints. As the reader can see, the Completed Modernization Blueprints are of large impact to the enterprise systems picture as a whole.

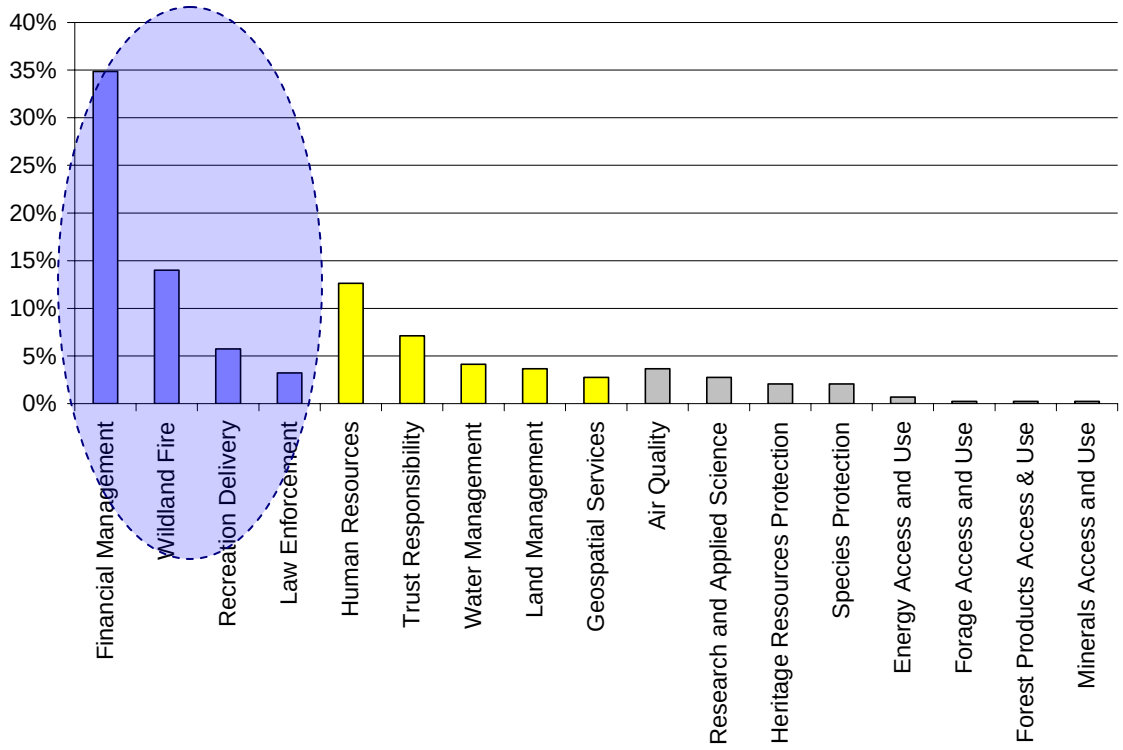


Figure 23: % of DOI Systems Associated with Each DOI Business Area

The Modernization Blueprints continue to provide a significant impact to the existing portfolio of investments. Each business area has had its associated portfolio of investments analyzed to determine EA compliance in strategy, direction, and technology. As a result of the analysis, the IEA architects have developed findings and recommendations that are specific to the investment portfolio and its compliance with the target architecture. The alignment of the portfolio of investments to the target architecture has been a critical component of the Modernization Blueprints as it has ensured alignment of expenditures to strategic direction. Additionally, the capital planning group has improved its overall business intelligence around the portfolio by having more detailed architecture information to support its own analysis. Figure 24 depicts the major investments that are associated with the completed Modernization Blueprints and are included in recommendations for alignment to the target architecture. Their alignments will take place over several fiscal years.

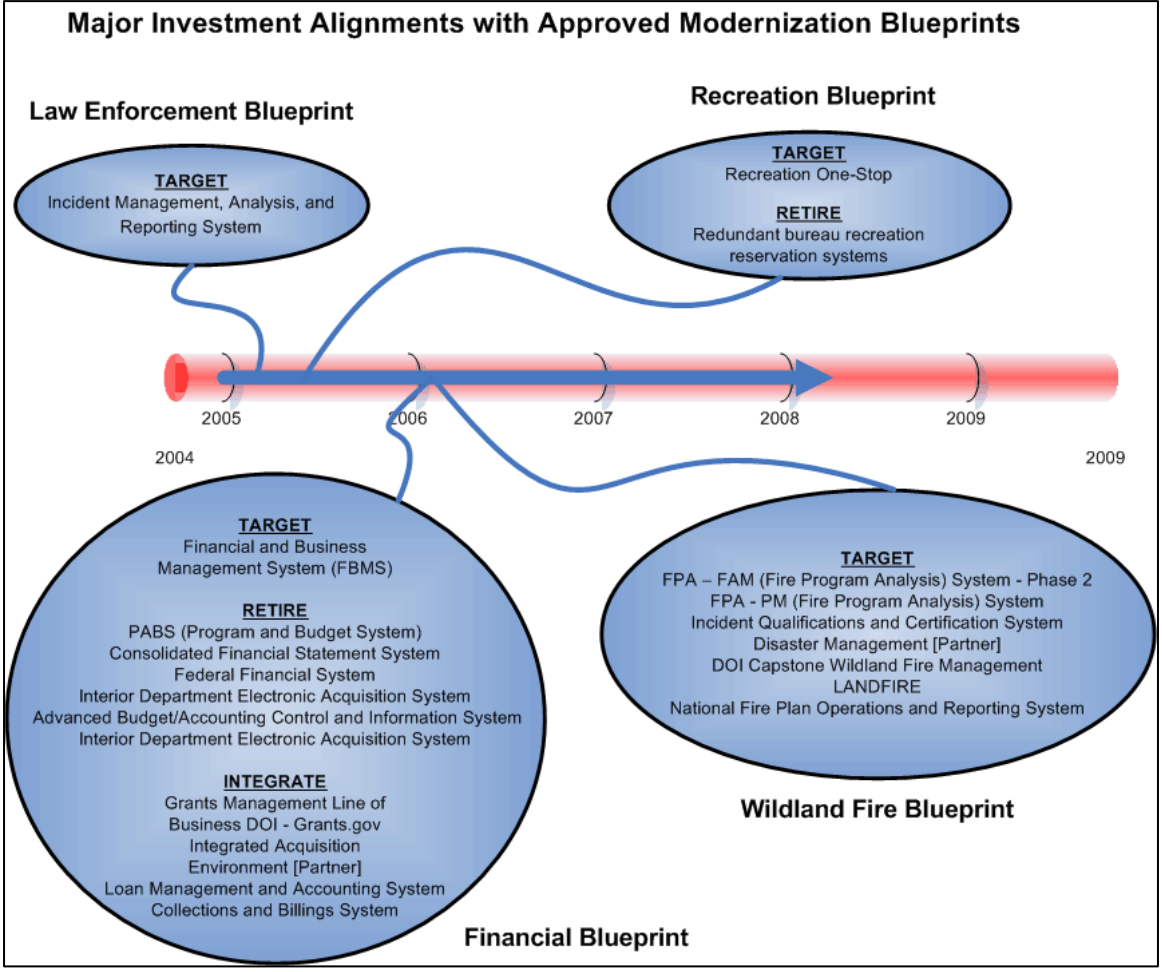


Figure 24: Major Investments Integration with Completed Modernization Blueprints

In order to coordinate the collection of transformation projects and investment alignments stemming from the Modernization Blueprints, each Blueprint includes a master transition plan that is tailored to the business area. The transition plans define the high level dates and milestones associated with the Blueprint's business, technology, services, and data-related transformation recommendations. These recommendations and plans are vetted through the DOI enterprise architecture and investment governance model to ensure optimal strategic results from the DOI investments. Furthermore, each of the Modernization Blueprint transition plans has been absorbed into the DOI Enterprise Transition Plan in order to coordinate the business transformation at an enterprise level.

Discussion of Blueprints Being Developed and Blueprints Nearing Analysis Kickoff

The intention of the segmented architecture approach at DOI is to incrementally work through analysis projects within the Department and Bureau business areas. The first set of Modernization Blueprints were worked, coordinated, managed, and communicated by staff coming from the Department level program. The intent of this approach was for the Department level resources to lead by example with the creation of an initial set of Blueprints that were of value to the Department and the Bureaus.

The second set of Blueprint studies, currently underway, is largely being led by Bureau architects and bureau business leadership. The Department staff provides

methodology training, facilitation, and governance coordination while the Bureaus are leading Blueprint studies that are within the domain of their organizations. Since many similar business areas exist within the Bureaus, there are many inter-Bureau core teams working and leading the current set of Blueprint studies. The conscious shift in roles and responsibilities from Department-led to the Bureau-led is intended to empower the Bureau's business owners, who are closest to the issues. The enterprise methods and tools provided to the bureau architects are designed to lead to the creation of structured business-driven transformation plans. This allows the Department staff to concentrate on overall architecture program maturity, segment integration, standards, and oversight roles.

At present, there are four Modernization Blueprint studies underway, two of which are managed solely by the Bureau architects and inter-Bureau core teams. Additionally, there are four Modernization Blueprint studies whose kickoff meetings are imminent. Three of these additional four Modernization Blueprint studies are solely managed by Bureau architects and inter-Bureau core teams. The business areas being studied are intended to be representative of the areas of specialty within the Bureaus and are intended to continue adding to the overall DOI Enterprise Architecture which currently includes the four completed Modernization Blueprints.

The following business areas are currently being analyzed and will ultimately produce Modernization Blueprints that will be presented to the DOI Investment Review Board for executive approval:

- Management Planning and NEPA
- Geospatial Services
- OCIO Services
- Trust Responsibilities

In addition, the following business areas will be initiating Blueprint studies in the coming months:

- Surface Mining
- Human Resources
- Water Management

Although many of these Blueprints are their first self-lead studies, the Bureaus are leveraging considerable experience and knowledge through the IEA's Methodology for Business Transformation (MBT). IEA has actively conducted training classes to prepare over 40 of the Bureau architects and capital planners by teaching the MBT, as well as preparing an additional 150 Bureau resources that might participate in such studies. Each Bureau that leads or participates in a Modernization Blueprint study will be working through the same analysis tasks and preparing similarly structured work products and deliverables. The benefit of the standard approach will be the ease of inter-Bureau communications on EA related issues, the common leveraging of the DOI Enterprise Architecture Repository (DEAR) for storage of work products, and the ease of oversight for the applicable IT and EA governance teams.

The following section provides more detail on the nature of each Blueprint currently being developed and each Blueprint study that is pending kickoff of analysis tasks:

Management Planning and NEPA Blueprint: This Blueprint is being led by Bureau of Land Management architects, with ownership from an inter-Bureau core team and executive sponsorship by the Director of the DOI Office of Environmental Policy and Compliance. The study is particularly focused on establishing common processes that can be supported by common systems across the Department and the Bureaus.

Geospatial Services Blueprint: This Blueprint is being led by U.S. Geological Survey architects, with ownership from an inter-Bureau core team and executive sponsorship by the U.S. Geological Survey Geographic Information Officer. The study is particularly focused on the establishment of a services model for delivery of geospatial information. This services approach would include the processes, organizational structure, e-government services, business rules, and inter-organizational relationships necessary to provide services that meet the needs of a variety of DOI and Bureau business areas like Management Planning and NEPA, Recreation and Wildland Fire.

OCIO Services Study: This Blueprint is being led by DOI architects, with ownership from a DOI core team and executive sponsorship by the DOI Chief Information Officer. This study is focused on the operations of the DOI Office of the CIO (OCIO) and particularly on the processes and information flow between the functions within the OCIO. This is a Department level study and is focused specifically on the OCIO.

Indian Trust Modernization Blueprint: The Indian Trust business area has received extensive attention over the last several years. Due to the attention given to Trust in recent years, strategic initiatives have already been defined in a number of areas, plans for consolidation or improvement of systems have been developed and approved, and many plans are in progress as of the start of the Modernization Blueprint work itself. In light of the prior work in this business area, one of the purposes of the DOI led, Indian Trust Blueprint is to pull together the many threads of activities affecting the Trust business and especially its inspection systems as a whole. In addition, the Indian Trust Blueprint effort is focused on validating past findings and recommendations while identifying additional potential improvements to the evolving Trust environment.

Surface Mining Blueprint: This Blueprint has not been initiated but is expected to be an Office of Surface Mining (OSM) specific study. The study will be led by OSM architects and the core team and executive sponsor will also be from OSM. It is expected that this study will focus on the major changes facing OSM across its business areas, including mission-specific changes as well as changes pending from implementations such as the Finance and Business Management System (FBMS) and the geospatial services at the enterprise level.

Human Resources Blueprint: This Blueprint has not been initiated but is expected to be a DOI-wide study. The study will be led by DOI architects, the core team will include resources from across the Bureaus, and the project executive sponsor will be the DOI Deputy Assistant Secretary for Performance and Management. It is expected that this study will focus on the Human Resources (HR) and HR service delivery within DOI and the Bureaus. It is expected that there will be an emphasis on streamlining operations and increasing efficiency in the use of systems and e-government initiatives that support HR.

Water Management Blueprint: This Blueprint has not been initiated but is expected to be an inter-Bureau study of a segment of Water Management. The study will be

conducted by Bureau of Reclamation (BOR) architects, supported by an inter-Bureau core team, and led by the executive sponsor from BOR. A Water Management framework document is pending publication and this document segments Water Management in order to guide future Blueprint efforts. Each of the future Water Management Blueprints will be guided by the initial framework document.

Potential Impact of the FY2006 Modernization Blueprints Being Developed: The Bureaus are taking the lead on much of the next wave of Modernization Blueprints. These publications are intended to be specific to the business areas of the Bureaus and intended to drive inter-Bureau participation in each set of architecture analysis steps. Furthermore, the development of the target segment architecture via these Modernization Blueprints will evolve the Segmented Architecture approach at DOI. The integration of these segments is designed into the MBT and is supported by the DOI governance teams. The result will be another set of recommendations for business transformation which will be coordinated through the DOI Enterprise Transition Plan.

The proposed Modernization Blueprints provide a significant impact to the existing portfolio of investments. Each business area has an associated portfolio of investments that are analyzed to determine EA compliance in strategy, direction, and technology. As a result of the analysis, the IEA architects develop findings and recommendations that are specific to the investment portfolio and its compliance with the target architecture. The alignment of the portfolio of investments to the target architecture is a critical component of the Modernization Blueprint as it ensures alignment and a common strategic direction. Figure 25 depicts the major investments that could be associated with the new Modernization Blueprints and are likely to be included in recommendations for alignment to the target architecture. Their alignments will take place over several fiscal years.

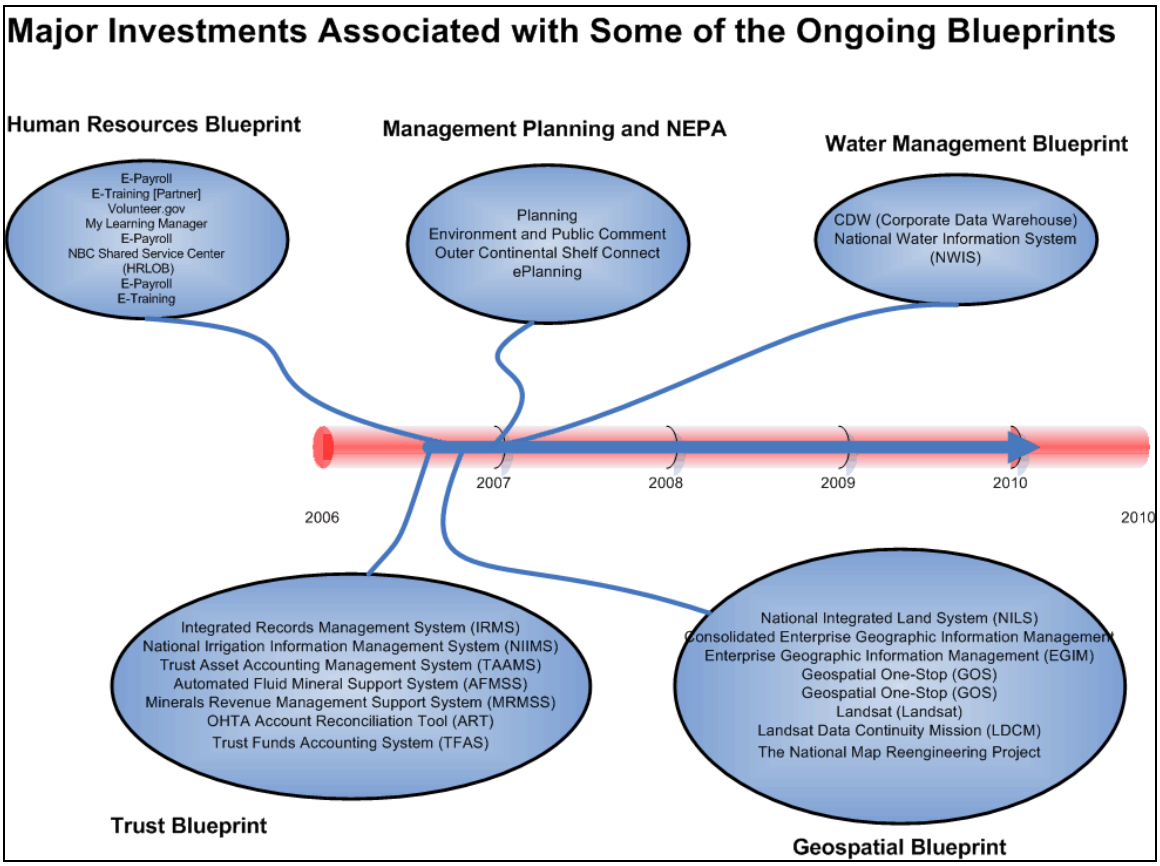


Figure 25: Major Investments Associated with Some of the Ongoing Modernization Blueprints

Overall, there is much progress towards modernization as it relates to DOI's current investment portfolio. Figure 26 shows the percentage of major investments as they relate to the Blueprints. As illustrated in the Figure, there has been a focus on creating Blueprints in the areas where major investments are currently underway within the Department.

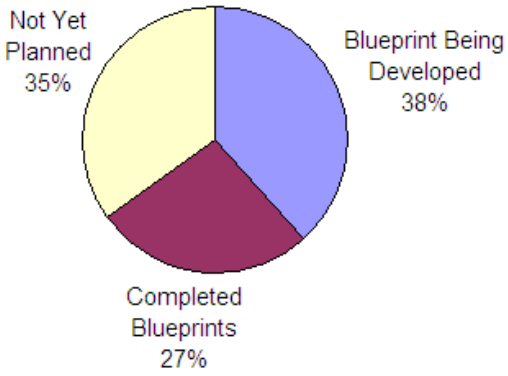


Figure 26: % of Major Investments Mapped to Blueprints

As each new Modernization Blueprint is developed, the IEA and Bureau architects will also be developing an associated business area specific transition plan. These plans are intended to guide the business areas through the implementation of the recommendations within the Modernization Blueprints. As the Modernization Blueprints are finalized and approved by the appropriate governance teams, the IEA program will work with the Bureau programs to incorporate the business area transition plans into the DOI Enterprise Transition Plan.

PMA Driven Initiatives

Although DOI has initiated much business transformation through its own Modernization Blueprints, there are also externally driven business change agendas to which DOI is responsive. Currently, DOI is actively engaged in ensuring that the Agency is aligned with the Federal e-Government solutions and services as well as ensuring that the Agency has appropriately transitioned to the Internet Protocol Version 6 standard. The tasks and milestones to achieve both of these requirements are integrated into DOI Enterprise Transition Plan. The following section briefly details these initiatives and their impacts at DOI.

Discussion of e-Government Alignment and Implementation Plan

DOI has the opportunity to lead two of the President's Management Agenda (PMA) e-Government (e-Gov) initiatives and to integrate with sixteen additional PMA e-Gov solutions. Through its leadership roles with Geospatial One Stop and Recreation One Stop, DOI has been making strides to fulfill the PMA's intentions of delivering better quality services to the citizen with increases in internal efficiencies. The internal efficiencies and better delivery of services to citizens is also furthered through DOI's efforts to integrate with the other applicable PMA e-Gov initiatives. This integration is being architected through the Modernization Blueprints and through the efforts of the most closely associated segments of DOI and the Bureaus. The following is a list of PMA e-Gov initiatives to which DOI is playing a participatory or lead role:

1. Business Gateway
2. Disaster Management
3. E-Authentication
4. E-Clearance
5. Enterprise HR Integration
6. E-Records Management
7. E-Rulemaking
8. E-Training
9. E-Travel
10. Federal Asset Sales
11. Geospatial One-Stop
12. GovBenefits
13. Grants.gov
14. Integrated Acquisition Environment
15. Recreation One-Stop
16. Safecom
17. USA Services
18. E-Payroll

The Modernization Blueprints include findings and recommendations for alignment to the PMA e-Gov initiatives. The various PMA e-Gov initiatives are discussed in the Modernization Blueprints in order to document how those business areas can best leverage services that are available within the Federal government. Additionally, in a submission to OMB, DOI documented the milestones and dates that DOI has set for aligning with the eighteen PMA e-Gov initiatives. These same milestones and dates are documented and maintained within the DOI Enterprise Transition Plan.

Figure 27 depicts the segment of the DOI Enterprise Transition Plan that is associated with the eighteen PMA e-Gov initiatives. The tasks are shown across several DOI fiscal years.

	Task Name	Start	Finish
1	DOI Enterprise Transition Plan		
2	Modernization Blueprint Initiatives	Tue 10/1/02	Mon 9/29/08
824	PMA Driven Initiatives	Fri 12/31/04	Mon 3/31/08
825	DOI e-Government Alignment and Implementation Plan	Fri 12/31/04	Mon 3/31/08
826	Recreation One-Stop	Thu 6/30/05	Fri 12/30/05
835	GovBenefits.gov	Fri 9/30/05	Fri 3/31/06
840	USA Services	Fri 12/31/04	Fri 12/30/05
848	E-Rulemaking	Fri 9/30/05	Fri 9/29/06
874	Federal Asset Sales	Fri 9/30/05	Fri 9/29/06
886	Business Gateway	Fri 9/30/05	Fri 9/29/06
902	Geospatial One-Stop	Fri 9/30/05	Fri 12/30/05
917	Disaster Management	Thu 6/30/05	Fri 12/30/05
929	SAFECOM	Thu 3/31/05	Fri 9/30/05
938	Grants.gov	Thu 6/30/05	Fri 12/28/07
954	E-Training	Fri 9/30/05	Fri 12/29/06
961	EHRI	Fri 9/30/05	Fri 9/29/06
971	E-Clearance	Fri 12/30/05	Fri 12/30/05
978	E-Payroll	Fri 12/30/05	Fri 12/30/05
981	E-Travel	Fri 12/30/05	Mon 3/31/08
989	Integrated Acquisition Environment	Fri 9/30/05	Fri 12/30/05
1004	E-Records Management	Thu 6/30/05	Fri 12/30/05
1008	E-Authentication	Thu 3/31/05	Fri 9/29/06

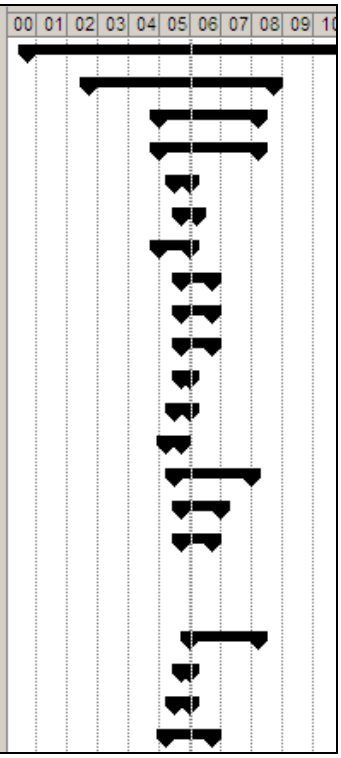


Figure 27: DOI e-Government Alignment and Implementation Plan

Select the following icon to view the entire DOI eGovernment Alignment and Implementation Plan:

DOI E-Gov Plan - 01-18-06.pdf

Impact of DOI integrating with the PMA e-Gov Initiatives: The Presidential Management Agenda (PMA) e-Government (e-Gov) initiatives are intended to deliver a set of Federal level solutions that can be leveraged by business areas at all levels of the Federal government. DOI has been embracing this process of reusability and has actively incorporated the projected PMA e-Gov solutions into its analysis efforts and its publications. Furthermore, the DOI e-Government Team has been an active participant in reviewing the Modernization Blueprints from an e-Government perspective and with a careful eye to ensure compliance with the Federal solutions.

The DOI e-Government team has also played a large role in ensuring that there are business milestones that are associated with the PMA initiatives. Figure 28 illustrates the count of milestones that are associated with each PMA initiative within the DOI Enterprise Transition Plan.

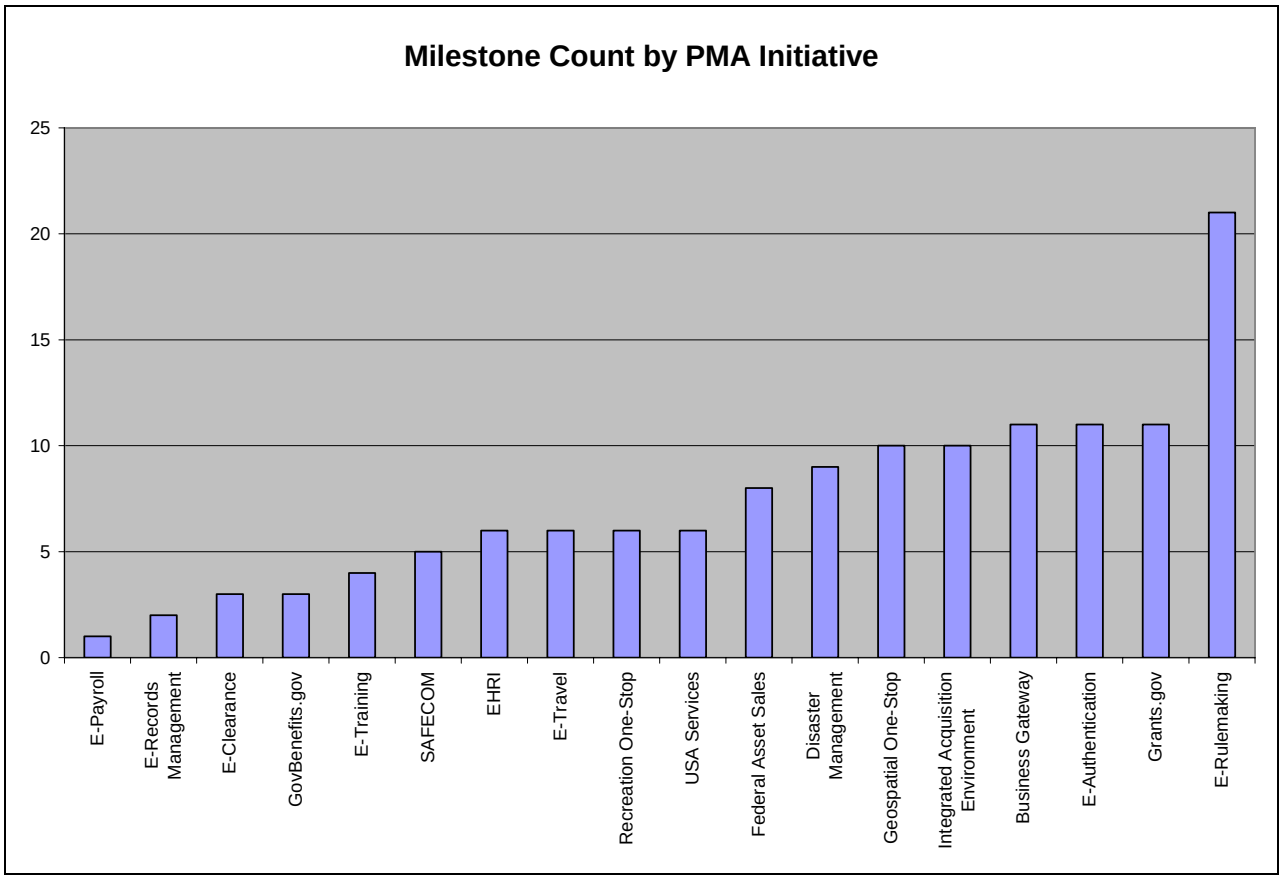


Figure 28: Count of Milestones by PMA Initiative

Discussion of IPV6 Transition Plan

DOI plans to transition the Enterprise Services Network (ESN) and DOI-managed bureau networks to Internet Protocol version 6 (IPv6) by June 2008 to be in compliance with the Office of Management and Budget (OMB) mandate. Future versions of this plan will include bureau LANs, applications, servers, and desktops.

In order to provide assurance that business will not be disrupted by the transition of the ESN to IPv6, DOI plans to implement dual-stack IPv4 and IPv6 capability until such time that the IPv4 capability can be phased out. Tunneling and Network Address Translation (NAT) technologies will be used when and where it is appropriate. Appropriateness will be based on the necessity to maintain an IPv4 environment, an inability to implement IPv6, and the ability to implement the technology without compromising security. As the presence of IPv4 diminishes, it is expected that tunneling and NAT will be eliminated or move to extremities of the network until IPv4 is eliminated altogether.

The inventory that has been collected based on OMB guidelines was inadequate to fully and accurately assess the impact of a transition to IPv6. Another more detailed inventory is underway to enable an impact analysis. A detailed design and an implementation plan are being developed. The project schedule is dependent upon the impact analysis along with the detailed design and the implementation plan. Significant milestones in the schedule would be to begin implementing IPv6

capability as possibly as early as January 2007, starting with the intranet (bureau connectors) and then the Internet gateways.

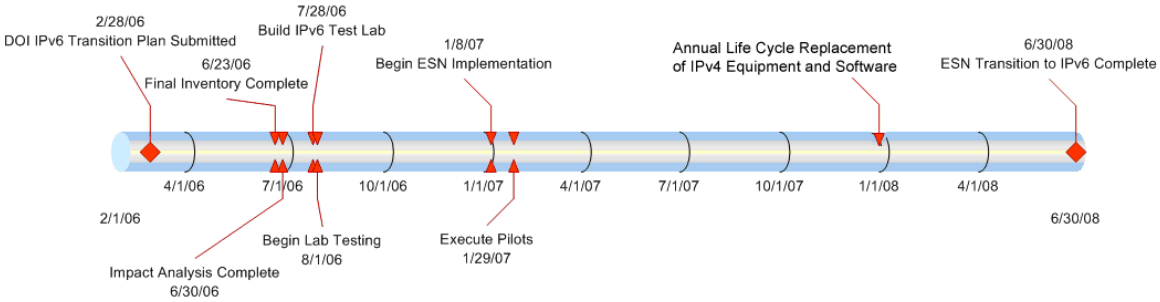


Figure 29: DOI IPv6 Transition Milestones

Implementation would be preceded by extensive lab testing to assure the design will support IPv4 and IPv6 as necessary, without a reduction of performance, without compromising existing security, and without sacrificing functionality. With IPv6 capability in the ESN, small pilot programs will be initiated, enabling the passage of IPv6 traffic between controlled entities on the network, such as between a host on a bureau network and a test application server set up in a secure area on the ESN. Pilot programs will be increased in size and capabilities tested until such time that it has been determined that IPv6 can be enabled across the entire ESN and managed bureau networks.

A similar approach to enabling IPv6 capability to the Internet will be taken. Pilot programs will be initiated with IPv6 traffic only allowed between controlled entities on the network, expanding in size and capabilities until it is determined that DOI can operate in an IPv6 environment on the Internet.

DOI will provide support as appropriate to the bureaus in their transition, giving priority to those applications that must traverse the ESN. DOI will support bureau transitions to IPv6 in the following ways:

- Including bureau Chief Technology Officers on the Executive Board for IPv6
- Involving bureau personnel in the activities of the DOI IPv6 Transition Office
- Sharing knowledge gained during testing and implementation
- Encouraging bureaus to participate in pilot programs
- Enabling bureaus to use the DOI IPv6 test lab(s)

IPv6 Assumptions

DOI will be able to transition the ESN and managed bureau networks to IPv6 by the June 2008 deadline, assuming:

- Technology is available to support IPv6 without a reduction of performance
- Technology is available to support IPv6 without compromising existing security
- Technology is available to support IPv6 without sacrificing functionality

- Funding is available to support the transition; this includes, but is not limited to procurement of technology, as well as engineering and implementation support
- DOI is able to establish a DOI IPv6 Transition Office comprised of various participants from throughout DOI, along with the OCIO, service providers, and vendors. This is contingent upon funding.

Any delays in the availability of technology and/or funding could postpone implementation of IPv6 or introduce risk into its implementation.

IPv6 Key Accomplishments to Date

- DOI completed a Wide Area Network (WAN) inventory by November 15, 2005. We determined that the inventory was inadequate for the purpose of developing an impact analysis and architecting a solution. The inventory of WAN components consisted of identification (hostnames, serial numbers, IP addresses) and version information (operating system). It was not feasible to collect more meaningful information in the timeframe allotted.

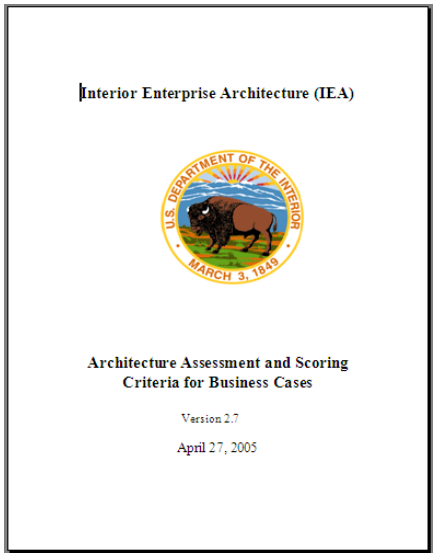
  DOI is working with Cisco to establish criteria for certifying that a device is IPv6 capable and to develop an automated process for collecting detailed information. The process generates a report on IPv6 capabilities; identifying each device by red, yellow, or green status and listing what is required to change from yellow to green status. A pilot was run on a single bureau in February and the results will be available in March.

  DOI chose to develop these criteria and process with Cisco because most of the network components are from Cisco and due to the many variations of hardware configurations.

- All bureaus have initiated data collection for all other IP aware hardware and software. The largest bureau (based on number of locations and network devices) reports 90% completion.
- All bureaus have initiated work on impact analysis reports and are at various stages of assessing capabilities to determine the impact of an IPv6 transition and to develop individual bureau transition plans. One bureau has submitted a mission needs statement as a precursor to an impact analysis.
- DOI developed and distributed a template to the bureaus for collecting and inventorying applications and hardware.
- DOI has developed a database for consolidation of inventory data collected from all bureaus.
- The DOI CTO Council has been designated as the governance board for IPv6 matters.
- All bureaus have appointed individuals to function as POCs for IPv6 matters.
- Several bureaus are in the process of appointing a full time Government employee to manage and coordinate their IPv6 transition efforts.
- DOI has written and submitted an IPv6 Transition Plan to OMB; additional detail will be added to the plan as it is available.
- DOI is working with their managed services provider to develop the detailed components (design, test plan, deployment plan, work breakdown structure, IPv6 policies) in support of the IPv6 Transition Plan.
- DOI has obtained a /32 address block and has completed development of an addressing plan.
- DOI is designing a test lab for IPv6. A location has been identified for the test lab. A source of funding must be determined to proceed with building the lab.

Major Investments

The major investments at DOI, like most Agencies, go through a rigorous capital planning processes in order to be approved for funding and implementation. For FY 2007, all proposed investments were graded against the DOI Architecture Assessment and Scoring Criteria illustrated in Figure 30. These scores are assembled and presented to the Investment Review Board for consideration during their business case review process.


Interior Enterprise Architecture (IEA)

Architecture Assessment and Scoring Criteria for Business Cases

Version 2.7

April 27, 2005

Figure 30: Architecture Assessment and Scoring Criteria Document

Of the investments that have moved forward for funding and implementation, there are several key investments that will fundamentally change business at DOI. The following section details two such investments that are of critical impact to DOI.

Discussion of DOI Infrastructure Investments

Information technology plays a major role in the operations of government within DOI. Those mission area operations are impacted by the services and technologies and the impacts on the functions performed daily within the Department. At DOI, the business process, service delivery, and enabling technology dimensions of the technology infrastructure are being revived with this critical investment designed to increase efficiencies, security, quality of work life, and overall reliability. This investment will impact each of the business areas within DOI and will be an enabler for many of the recommendations within the current and future Modernization Blueprints.

Historically, DOI's Information Technology (IT) infrastructure has paralleled the evolution and nature of the organization, in that it is large, diverse, and geographically dispersed. Each bureau and office has operated with relative independence, managing individual network and information services and a wide range of IT systems and applications. The result has been an IT environment that is challenging to control, maintain, and plan. These facts have been cited by audits and legal challenges that have scrutinized the Department's information management and security practices. Several of the major issues with the historical environment are:

- **Fragmentation** - Bureaus have maintained similar but separate IT infrastructure platforms that make it difficult to deploy enterprise applications and share fundamental IT resources. In addition, the Department has been unable to consistently account for actual spending on many IT services

- **Inefficiency** - The Bureaus' considerable autonomy and flexibility has allowed bureaus to tailor IT services to varying IT needs, but has resulted in duplicative investments, non-standard operational processes, and a higher overall total cost of ownership

- **Operations and Security** - The lack of centralized management of IT operations and security has made enterprise applications and services difficult

to manage and has led to inconsistent security implementations with increased security vulnerabilities

Under the leadership of DOI's senior management, with the acknowledgement of these historical issues, and in response to external pressures, mandates, and business needs, DOI has embarked on an IT infrastructure transformation. IT infrastructure planning, implementation, and management processes will gradually transition from a historically distributed and independent management environment to a unified IT infrastructure strategy managed by the Enterprise Infrastructure Division (EID).

For the FY07 budget request (submitted to OMB September, 2005), DOI separated its budget into two categories, primarily Operations and Maintenance (O&M) phase legacy IT investments managed at the Bureau-level and primarily Acquisition phase enterprise-level projects. The Bureau-level projects were presented at an aggregate level and organized by OMB cluster: Computing Services, Communications Services, Electronic Work Environment, and Cross-Cutting.

The second category, enterprise-level, is currently comprised of the following discrete projects:

Enterprise Services Network (ESN) – Unified wide area network (WAN) that replaces the 13 disparate bureau networks and connects all DOI offices to each other and to the internet

- Project Initiation – October, 2003
- Milestones:
    a. Phase 1 (10/03 – 9/05) – deploy intranet, internet, Network Operations and Security Center (NOSC), security – *completed on schedule*
    b. Phase 2 (10/05 – 10/06) – Bureau network topology, equipment, and management optimization – *in process*
- Summary of benefits achieved to date:
    a. Judicial Mandates – ESN has addressed the Cobell v. Norton mandates for securing sensitive DOI Trustnet data
    b. Centralized Management – With the exception of USGS, all DOI WAN circuits and equipment are centrally managed by a 24x7 NOSC that tracks and reports service metrics
    c. Gateway Consolidation – To improve security and reduce costs, ESN has reduced the number of DOI internet gateways from about 33 to less than 10

Land Mobile Radio (LMR) – Budget category that includes several subprojects including narrowband radio, spectrum relocation, radio upgrades, and the O&M of DOI's entire radio infrastructure. The narrowband and relocation projects are responses to federally-mandated spectrum reallocations.

- Project Initiation – October, 1997
- Milestones:
    a. VHF narrowband – due January, 2005 – *substantially complete, but some bureaus are still attempting to comply*
    b. UHF narrowband – due January, 2008 – *on schedule*
    c. First consolidated wireless infrastructure Exhibit 300 (prepared 1/06-9/06 for FY08) – *in progress*
- Summary of benefits achieved to date:

a. Making progress towards executive and legislative mandates
b. Improved interoperable communications between public safety officials throughout all levels of government, before, during, and after their response to a variety of events
c. Cost savings through standardization of equipment and sharing of infrastructure

Enterprise Active Directory (EAD-Root) - Stores DOI information and settings (resources, services, people) in a central, organized, accessible database

- Project Initiation – October, 2002
- Milestones:
  a. Planning (10/02 – 9/06)
  b. Root Implementation (10/03-9/07) – *substantially complete, but dependent upon the Bureaus completing the Bureau AD infrastructure*
- Summary of benefits achieved to date:
  a. Enhanced security and administration capabilities for internal operational resources
  b. Allows DOI to integrate management and centralize coordination of network resources and users for other enterprise applications such as EMS, HSPD12, FBMS, etc.

Homeland Security Presidential Directive (HSPD12) – Simplifies and unifies identity authentication for DOI employees using standardized physical and electronic credentials

- Project Initiation – October, 2002
- Milestones:
  a. FIPS 201 compliant issuance architecture, Part 1 (10/05) – *complete*
  b. FIPS 201 compliant cards, Part 2 (10/06) – *in progress*
  c. Project Completion (10/09)
- Summary of benefits achieved to date:
  a. Eliminates DOI's existing overlapping and redundant authentication technologies and/or processes
  b. By virtually eliminating password reset requests, DOI will increase staff productivity and reassign technical resources to more productive tasks
  c. Improved access to inter-agency electronic processes, including e-forms, e-payroll, and e-travel

Enterprise Resource Management (ERM) - Addresses the deficiencies in the delivery of IT products and services by coordinating and consolidating the acquisition and management of IT hardware and software products to ensure compliance with standards and specifications prescribed by the enterprise architecture. ERM targets the consolidation of the existing DOI infrastructure contracts by providing a centralized audit of all current DOI licenses, by providing the prioritization of license consolidation, and by providing for the re-negotiation of licenses

- Project Initiation – October, 2002
- Milestones:
  a. Implementation, hiring / training – (10/02-09/07) – *in progress*
- Summary of expected benefits:
  a. Ensures that acquired IT products and services comply with standards and specifications prescribed by the enterprise architecture

b. Provides marketing and outreach to DOI users on enterprise-wide contracts to ensure that they can quickly and easily obtain needed products through an online order system

Discussion of DOI - Financial and Business Management System (FBMS) Investment

The Financial and Business Management System (FBMS) is a major enterprise management initiative that will integrate financial management, procurement, property management and other subsidiary systems, and will revamp administrative processes throughout the DOI. FBMS will provide the system and process structure for the Department to modernize its operations and retire duplicative systems per the Modernization Blueprint for Financial Management. FBMS will provide complete, accurate and timely information on financial activities, including budget execution, acquisition, grants, property management, core accounting, and performance that will enable Interior's employees and managers to make informed decisions about their programs. It is directly related to the Department's management improvement goals and strategies.

The scope of this project is to provide a Department-wide solution that significantly improves access to reliable, accurate, current and complete financial and business management information to support the decision-making process throughout all levels of the Department, affecting all employees and operations (approximately 70,000 DOI employees at about 2,400 locations nationwide). This includes such things as ensuring unqualified audit opinions, economic and efficient input and retrieval of data, and ensuring the best use of taxpayer and other available funds to promote proactive management of these funds. This also includes standardizing and streamlining the underlying functional processes with adequate internal controls and security. Overall, the FBMS investment will eliminate many redundant systems and provide DOI with the financial management infrastructure necessary to efficiently conduct back office and mission related functions within the Department and the Bureaus.

Other Major Investments

Overall, DOI features investments that support each of its mission areas. Each of the investments is tied back to the strategic plan to demonstrate the importance of the investment in terms of the overall goals and objectives of the Agency. Furthermore, there are hundreds of business performance measures that are documented across the portfolio of investments within DOI. These business performance measures are captured within the Enterprise Transition Plan and are being tracked for fulfillment as part of the DOI governance processes.

The intent of the major investments is to increase service delivery to the citizen while establishing a modern infrastructure upon which better service delivery can be built in the future. The Enterprise Transition Plan includes details for each of DOI's major investments, including the performance milestones that have been documented for each investment during the capital planning process.

Figure 31 depicts DOI's other major investments and whether they are associated to an ongoing Modernization Blueprint study. The figure does not represent a migration style sequencing like previous visuals, however it does illustrate each major investments not within a completed Modernization Blueprint and whether the

investment will be addressed by an ongoing study. Additionally, in the web based version of this visual, each blue star is clickable to show the performance milestones for the investment. Once the ongoing Modernization Blueprints are completed, detailed sequencing visuals will be published for each business area.

Visual for DOI Major Investments (not included in completed blueprints)

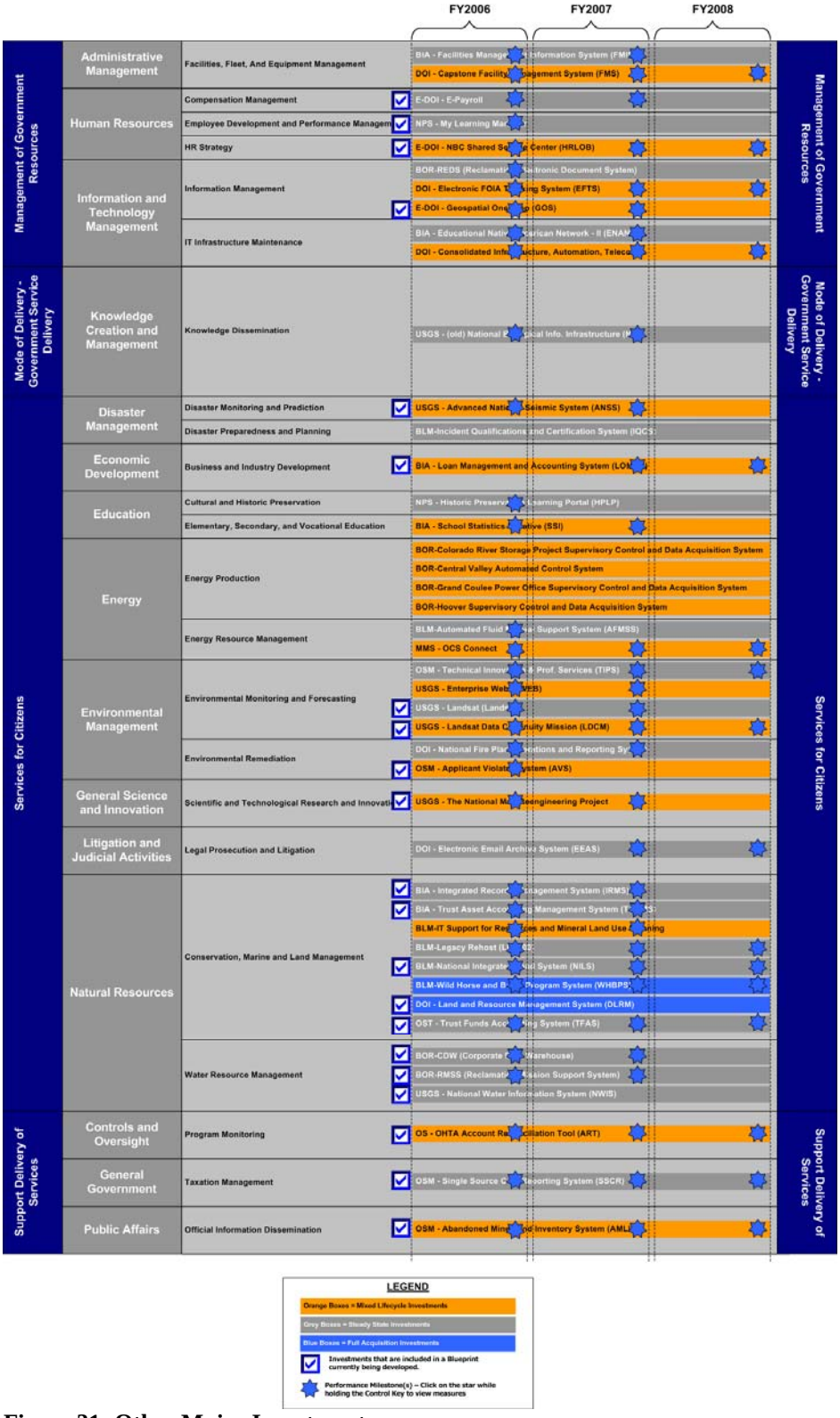


Figure 31: Other Major Investments

Part II: Enterprise Results Guided by the DOI Conceptual Architecture

At DOI, architecture focuses on far more than just technology. The emphasis is first on the business organization's customers, the business organization's strategy, and its associated business processes. The understanding of the business and its customers is essential to forming recommendations for changes to the organization's solutions and technology environment. Once the business organization is fully understood, the technology resources are analyzed from the perspective of the business architecture. This structured method is why DOI, in its Enterprise Transition Plan, has such a diverse array of transformation initiatives that are focused on business strategy, process, technology, and workforce.

In a planning environment that results in such a wide variety of transformation initiatives, it is critical that the federated architecture be based on a conceptual architecture. The DOI Conceptual Architecture document establishes a set of Conceptual Architecture Principles that ensure quality and consistency in direction. The remainder of this section presents conceptual architecture principles through a range of examples that illustrate the coordinated, consistent, and integrated approach to enterprise-wide change within the Department.

Principle 1: "Actionable" Architecture

Interior Enterprise Architecture adds value by aligning its products and services with business in order to enhance mission performance. This Principle is shown in the following transformation initiatives:

Recreation – Non-Commercial Permitting: The IRB-approved Recreation Blueprint includes a wide variety of business and technology recommendations. One such recommendation is to standardize the processes and systems associated with non-commercial recreation permits within the Bureaus. The Enterprise Architecture team analyzed the Recreation goals and objectives and existing business environment and concluded that the non-commercial permits processes were a target-rich environment for improving the way that we do business, interact with citizens, and expend the time of field staff and technology resources. As a result, the Modernization Blueprint recommended a reengineering effort to more closely analyze recreation permits processes. The result of the BPR initiative will be the standardization of the way that permits processing is handled in conjunction with other dimensions of the recreation business area. The end result will be an increase in mission performance and a more efficient set of business processes and technology solutions.

Financial Management – System Retirements: The Enterprise Architecture analysis and the supporting DOI Enterprise Architecture Repository (DEAR) has added great value to the Financial Management line of business within DOI. The Financial Management Modernization Blueprint was developed and is pending final approval from the DOI IRB. The Blueprint includes the new Financial and Business Management System (FBMS) and the retirement of over 70 existing redundant systems. The DEAR repository was an important source of information when identifying redundant functionality and services across the entire DOI and its

Bureaus. The existing BRM and SRM mappings to the DOI and Bureau system inventories helped in identifying the lists of systems to be retired or interfaced in the future. The Enterprise Architecture analysts further developed the Financial Management Blueprint to include recommendations to implement more efficient and centralized operations and systems and service interfaces.

Enterprise Licensing Agreements: The Enterprise Architecture work at DOI has resulted in the identification of several opportunities for Enterprise Licensing Agreements (ELA). In concert with the standards and specifications included in the DOI Technical Reference Model (TRM), ELAs or Blanket Purchase Agreements (BPAs) enable DOI customers to realize significant cost-savings from acquiring select IT hardware and software products at higher-volume discounts. The keys to determining which products and/or services should be acquired on an enterprise-wide basis are for DOI's technical and business communities, led by the Chief Technology Officer Council, to assess whether they: a) comply with the most up-to-date technology standards referenced in the TRM, and b) are widely used by various DOI bureaus and offices to support their respective IT investments. These technology assessments combined with business, performance, service and data needs assessments, based on the other FEA reference models and data contained in the DOI EA Repository (DEAR), are used as major guide posts for competitively procuring ELAs and BPAs. DOI cost-savings resulting from the established ELAs and BPAs are measured in terms either of cost-avoidance or direct cost-savings. By committing to set quantities of select products up-front as part of the base enterprise agreement enrollment, DOI is realizing about $68.0 million in cost-avoidance, or 45 percent below GSA-schedule prices for comparable product configurations for the duration of the contract.

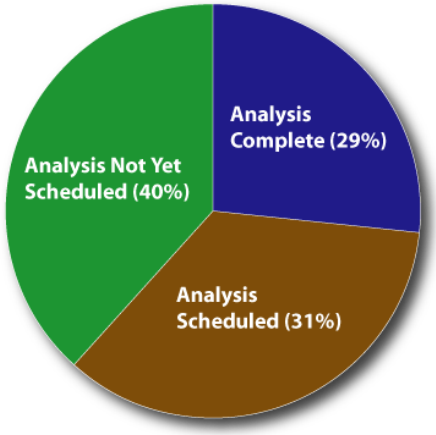
Products	DOI Cost	GSA Cost	DOI $ Savings Over GSA	DOI % Savings Over GSA	Duration of Agreement
Software ELAs:					
ESRI	$25.50	$71.80	$46.30	64.50%	10/01/03 – 09/30/08
Microsoft	$50.29	$63.94	$13.65	21.35%	06/17/05 – 06/17/09
Oracle	$6.31	$12.92	$6.61	51.16%	05/24/01 - 05/24/06
Symantec	$1.47	$2.78	$1.31	47.12%	09/30/03 – 09/30/06
Subtotal	**$83.57**	**$151.44**	**$67.87**	**44.8%**	

Figure 32: Cost-Avoidance for Select Software Agreements Based on Duration of Agreement

Principle 2: Transformational

Using Modernization Blueprints, Interior Enterprise Architecture provides a roadmap that facilitates Interior modernization. Through the Blueprints and the Enterprise Transition Plan, DOI creates a line of sight through all aspects of the business in order to achieve success in mission transformation. This Principle is demonstrated below:

Overall Progress – A Summary of Progress by Line of Business: Detailed Modernization Blueprints have been created for four lines of business within DOI. The intention of the IEA



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program is to incrementally work through the lines of business at DOI to modernize each area while also developing horizontal services that can be leveraged by multiple business areas. The incremental approach to enterprise modernization allows the IEA program to manage the number of concurrent studies in order to ensure that DOI maintains a *sustainable change rate*. This concept is a commercial best practice and is a recognition that organizations with high mission complexity are at risk of taking on too much modernization too quickly and therefore putting all modernization efforts at risk.

The progress to date has been impressive considering that the business areas studied reflect major components within the Department. Figure 33 illustrates the percentage of the DOI major investments that are part of a completed Blueprint or are planned to be part of a Blueprint study that is currently ongoing as part of the DOI Enterprise Architecture program and its work with the associated business areas. Four business areas have completed Modernization Blueprint and additional business areas are scheduled for study in FY06. As each Modernization Blueprint is completed, the enterprise architecture and transition plan is extended to new areas. It is important to note that although a large percentage of major investments are part of completed or ongoing Modernization Blueprint studies, DOI does perform annual architecture assessments on all major investments to ensure architectural alignment.

Law Enforcement – Overall Modernization: The Law Enforcement business area was studied by the Interior Enterprise Architecture team in FY2004. The resulting Modernization Blueprint included a set of transformational recommendations that include the program, system, business, and data dimensions of the business area. For example, the Blueprint concluded that there was redundancy within the law enforcement systems, that there were opportunities for greater integration between legacy systems, and that there are core activities performed within the Bureaus that could be standardized. The Law Enforcement analysis was not solely focused on technology, but on business and process as well. This is a direct result of IEA's Methodology for Business Transformation (MBT). The MBT includes many steps and tasks to fully analyze the business in terms of strategy, process, and resources. This structured analysis method ensures that the published Modernization Blueprints are fully transformational in nature.
Figure 34 is a conceptual depiction of the critical business dimensions analyzed and types of questions answered via DOI's MBT.

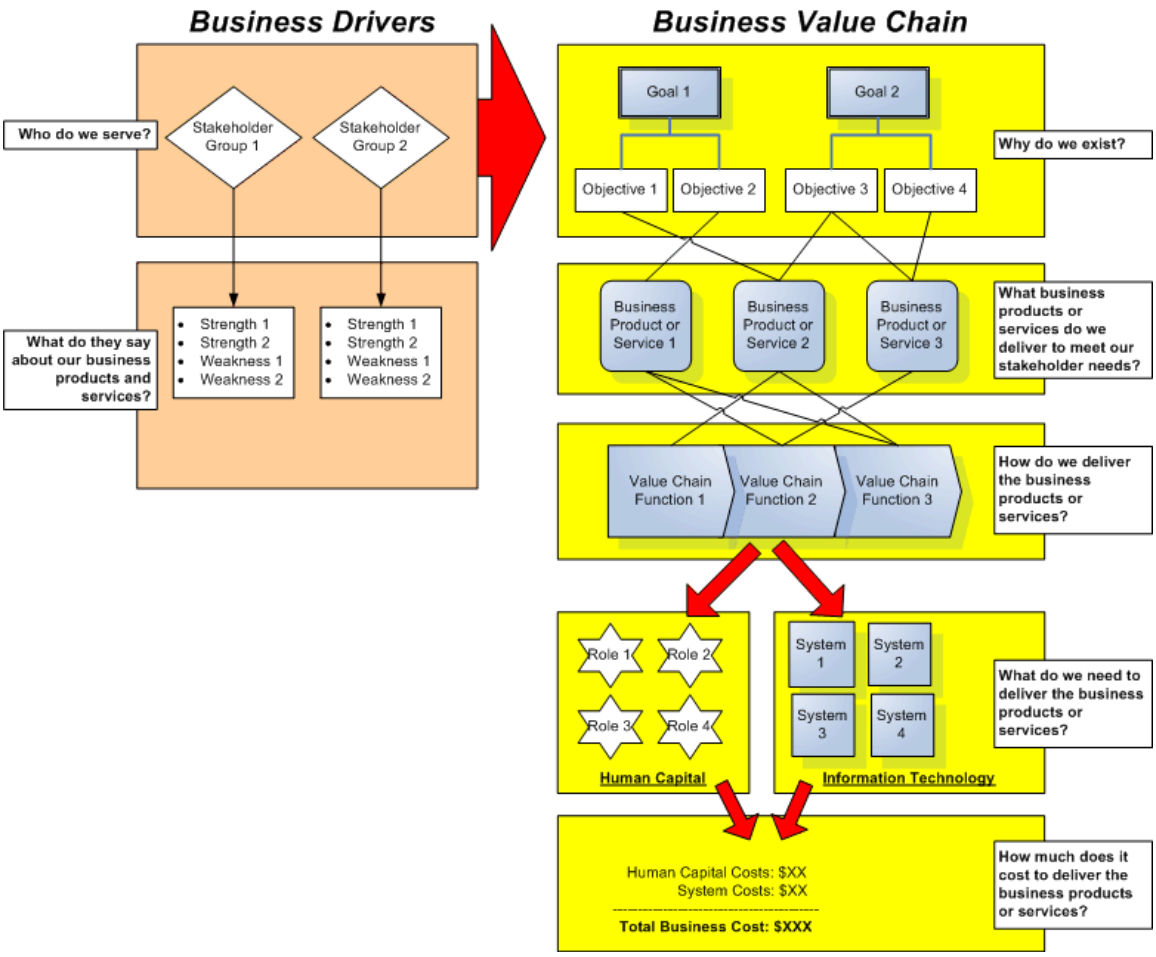

Figure 34: Conceptual Visual Illustrating Areas Analyzed Via the MBT

The Methodology for Business Transformation consists of fourteen steps that form the process for Creating a Modernization Blueprint and Implementing the Business Transformation. Each step is further broken down into a series of tasks and each step is accompanied by a narrative document to explain the analysis tasks in more detail. The MBT analysis techniques are supported by the DOI Enterprise Architecture Repository and the MBT was designed around the Federal Enterprise Architecture taxonomy. Significant effort was made to ensure the alignment of the MBT with the DOI's capital planning model, governance processes, security requirements, and project management standards. More details on the MBT can be found at http://www.doi.gov/ocio/architecture/mbt.

Principle 3: Collaborative

Interior Enterprise Architecture promotes an environment that emphasizes the inclusion of customers and stakeholders. This Principle is demonstrated in the following transformation initiatives:

Wildland Fire – Collaboration between Forest Service and DOI: The Wildland Fire business area is divided between several Federal Agencies with the bulk of the responsibility resting with USDA Forest Service and DOI. In FY2004, the DOI

Wildland Fire business area was studied by IEA. The resulting findings and recommendations were shared with the larger Federal Wildland Fire business community and DOI recommendations were leveraged into the National Wildland Fire Enterprise Architecture (NWFEA) effort being led by the National Wildland Fire Coordinating Group (NWCG). The NWCG adopted DOI's Methodology for Business Transformation (MBT), which is built around the principle of collaboration between organizations, stakeholders, and customer groups. As evidenced by Wildland Fire, the collaboration aspects of Enterprise Architecture analysis within DOI are of critical importance as target architectures and migration plans are assembled to modernize business areas.

In the case of Wildland Fire, members of several Federal Agencies were interviewed and included in preparing the DOI Wildland Fire Blueprint. Upon completion and acceptance of the DOI Wildland Fire Blueprint, the collaboration extended to newly established governance groups and the existing National fire organizations. The result is an architecture and transition plan that has been built in a highly collaborative setting. This ensures a better target state and a lower risk transition strategy.

Geospatial – A Bureau led Blueprint that Touches All Bureaus, DOI Offices and External Partners: Collaboration was built into the Methodology for Business Transformation (MBT) to accommodate inter-Agency business areas such as Resource Management and Protection as well as to accommodate inter-Agency service areas such as Geospatial cataloging and meta-data management. The Geospatial service concept extends to virtually every business area within DOI as well as numerous other agencies like the USDA, Forest Service and EPA. By leveraging the MBT, the U.S. Geological Survey will be taking lead on developing a target state and transition plan for this widely used capability. The lessons learned from Wildland Fire and Recreation have been incorporated into the MBT and will be utilized in the development of the Geospatial Modernization Blueprint. Because DOI architects have the time to incorporate lessons learned from these previous collaborative analyses, the result will be a more effective and more accurate target state and transition plan for Geospatial Services.

Principle 4: Modular, Adaptive and Reusable Services (service-oriented architecture)

Interior Enterprise Architecture promotes modular, adaptive and reusable service-oriented solutions. (Service Oriented Architecture (SOA) facilitates the development of an IT environment that will be modular and independent ("atomic") in nature. The Adaptive SOA will enable dynamic capabilities and reconfiguration of the architecture services. Solution Architectures will be assembled from an agreed upon set of existing, sharable services from DOI and federal repositories, whenever possible.) This Principle is demonstrated in the following transformation initiatives:

DOI Technical Infrastructure Services: Reusable services are at the forefront of thought for the Office of the CIO (OCIO) at DOI and for the IEA program. Within the OCIO there are several reusable services that have been identified to improve efficiency, reduce risk, and save money. These reusable services were identified by looking for infrastructure capabilities that were repeated often within DOI, and had very similar functions.

As a result of the analysis done to identify potential reusable services, the OCIO is sponsoring the implementation of:

- **Enterprise Active Directory** – A single authoritative directory to replace the hundreds of existing directories.
- **Enterprise Services Network** – Establish a single, centrally managed wide area network for the Department of the Interior.

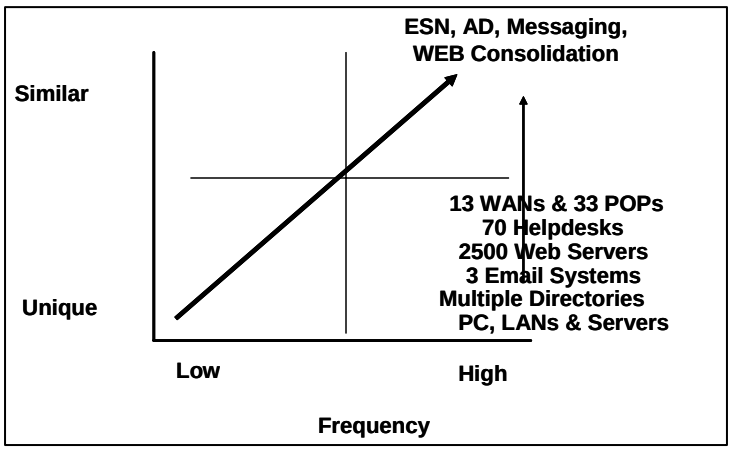

Figure 35: Classifying Potential Services

- **Consolidated Web Servers** – Reduce from hundreds (2500+) of distributed web servers to a right sized enterprise hosted environment.

The establishment of these technology infrastructure services has been incorporated into the existing IEA-developed Modernization Blueprints and will be a significant enabler for other business areas as their target business architectures are approved and the associated target technology architectures are developed.

Federal e-Government Initiatives: The President's Management Agenda places a heavy emphasis on electronic government and the idea of leveraging modern technologies to improve overall efficiency and delivery of services to citizens. DOI is impacted by 18 of the PMA e-Government initiatives including 2 of the initiatives where DOI is the managing partner (Geospatial One Stop and Recreation One Stop). Many of the PMA e-Government initiatives represent Federal standard services that can be used by many business areas within DOI. As a result, the IEA program, through its Methodology for Business Transformation, has actively incorporated these reusable services opportunities into the Modernization Blueprints. For example, the Financial Management Modernization Blueprint includes interactions between the Finance and Business Management System (FBMS), the Federal e-Travel solution and the Federal Grants.gov solution. Another example is the Recreation Modernization Blueprint which includes a detailed depiction of interactions between the National Recreation Reservations Service and the other DOI data sources of record such as the concessionaire systems and the Recreation Information Database (RIDB).

Principle 5: Solutions-Focused

Interior Enterprise Architecture provides and promotes a solution-focused approach with standard technology components, emphasizing strategic development of interfaces that will provide flexibility in solutions and accommodate business requirements as the organization responds to change. This Principle is demonstrated in the following transformation initiatives:

Recreation – System Interfaces: The Recreation Modernization Blueprint includes a section on legacy systems and an assessment of the overall solution necessary to meet mission challenges. The Blueprint concludes by establishing an overview of the technologies that are required to meet the Recreation mission, and then recommends the fate for redundant Recreation systems. However, there are some legacy solutions that are unique to a particular function or are owned by partners or concessionaires and cannot be phased out. In these instances, the Blueprint specifies interface relationships. Ultimately, the Blueprint includes a depiction of what functions should be supported by standardized technologies, a summary of the likely redundant technologies, and strategic recommendations to establish interfaces that will draw in more information and promote data reusability. The overall systems and services model for the Recreation business area is designed to maximize the benefits to the citizen while providing the Federal government with a high degree of flexibility in meeting future demands.

Financial Management – System Interfaces: The Financial Management Modernization Blueprint (pending approval) describes a complex environment that includes more than 160 systems supporting a variety of finance and business related functions. Through the Finance and Business Management System (FBMS) initiative, over 70 of the systems will be retired from service and be replaced by the FBMS solution. With the retirement of so many systems, and the planning for other systems to be integrated, there is an entirely new systems interface picture that has evolved for Financial Management. In order to accommodate the wide array of interfaces and data exchange, the target state solution is leveraging an Enterprise Application Integration (EAI) solution to provide for easier operations and data interchange in the future.

Principle 6: Business-Driven

Interior Enterprise Architecture establishes an IT planning foundation based on business priorities. Interior's Strategic Plan, goals and outcome provide business direction in developing key services of the architecture that support the business vision. This Principle is shown in the following transformation initiatives.

The Methodology for Business Transformation (MBT) establishes a structured approach to understanding the strategic and business aspects of a business area prior to establishing the technology architecture. This structured approach to business area analysis results in a truly business-driven Modernization Blueprint. Furthermore, the Blueprint Creation portion of the MBT and the implementation of the Modernization Blueprint are both overseen by a Core Modernization Blueprint Team (CMBT) for each business area. The CMBT consists of appointed business representatives from all associated organizations, subject matter experts, architects, and business decision makers. The CMBT is chaired by the executive sponsor for the business area being studied. Figure 36,

Figure 37, and Figure 38 illustrate the MBT Steps and Tasks that occur prior to analyzing the information technology dimensions of the business area.

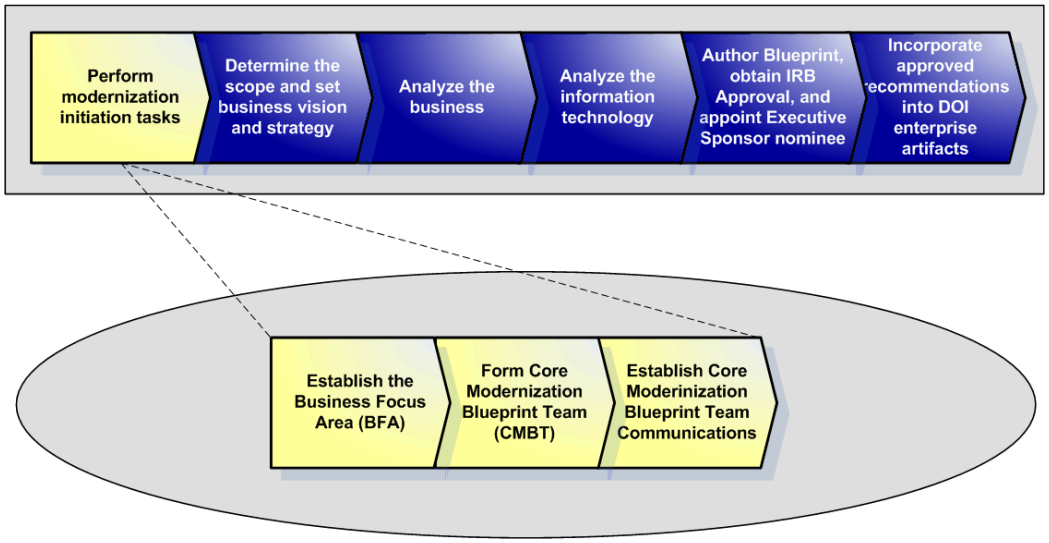

Figure 36: MBT - Perform Modernization Initiation Tasks

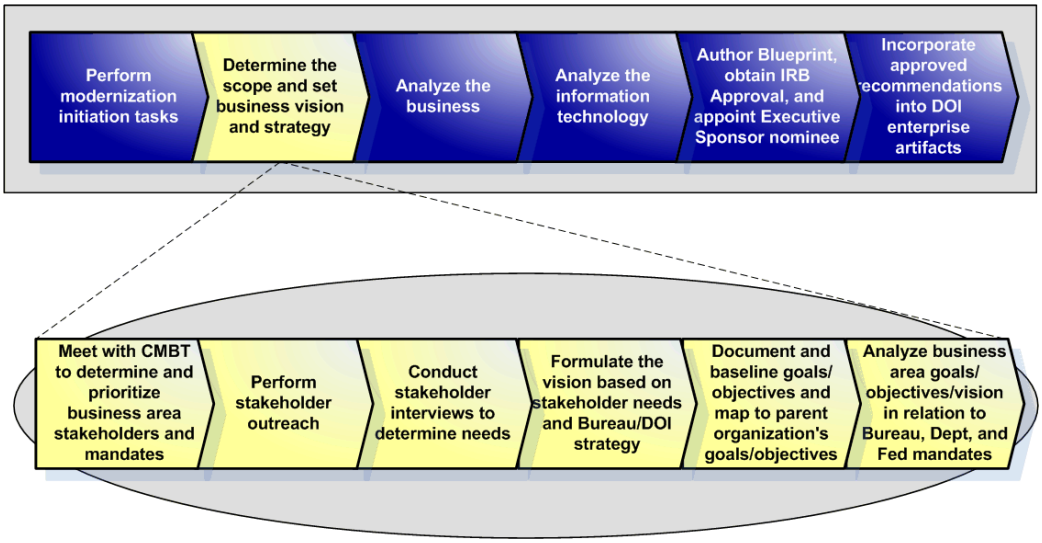

Figure 37: MBT - Determine the Scope and Set Business Vision and Strategy

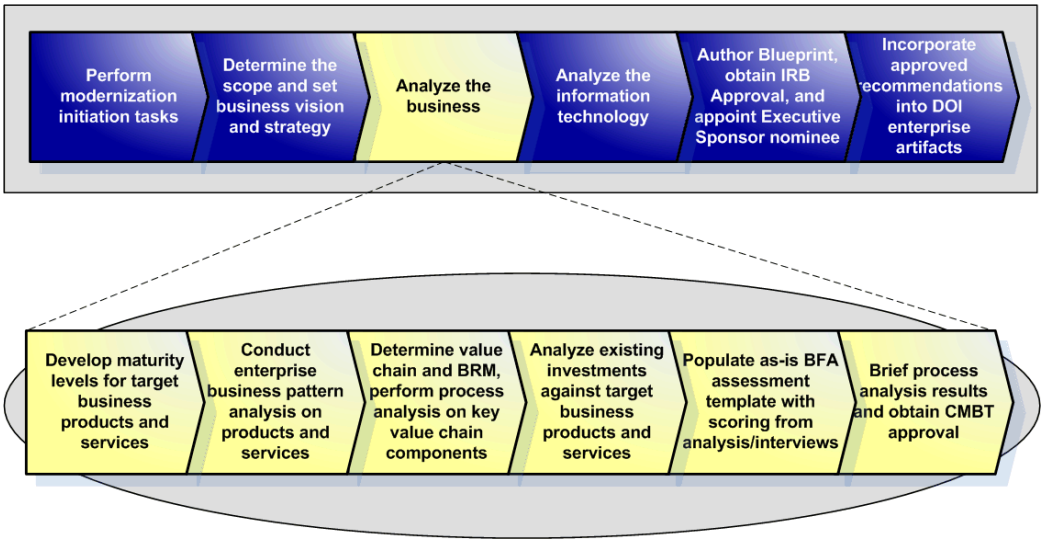

Figure 38: MBT - Analyze the Business

During the creation of a Modernization Blueprint, the analysis begins with the business strategy and leads into the business functions and processes. Ultimately, all of the recommendations for a business area can be associated back to the business drivers and the strategy. This is a line of sight that IEA builds to ensure that the Modernization Blueprint recommendations are in line with the strategic goals and objectives of the business area and are also aligned to the key stakeholders and business drivers. The Principle of a Business-Driven architecture is shown in the following examples of Blueprint recommendations that are tied back to the business area's value chain:

Recreation – Results Tied to the Recreation Value Chain: Figure 39 depicts the Recreation functions in a value chain format (Core, Management, and Enabling/Support activities). This value chain has an overlay of the many recommendations within the Recreation Modernization Blueprint. This visual illustrates not only the portions of the Recreation business area that are impacted by the Modernization Blueprint, but also the fact that these recommendations are business-driven and better enable certain aspects of the Recreation business area. For example, the standardization of non-commercial recreation permits will positively impact the Recreation Reservations and Permits functions as well as the Business Process Management Functions. Another example is that the Information Delivery Function is positively impacted by the recommendations to synchronize paper information content (brochures) with the content available via websites. This function is also positively impacted by the recommendation to extend market channels so that Federal recreation information is available on third party websites.

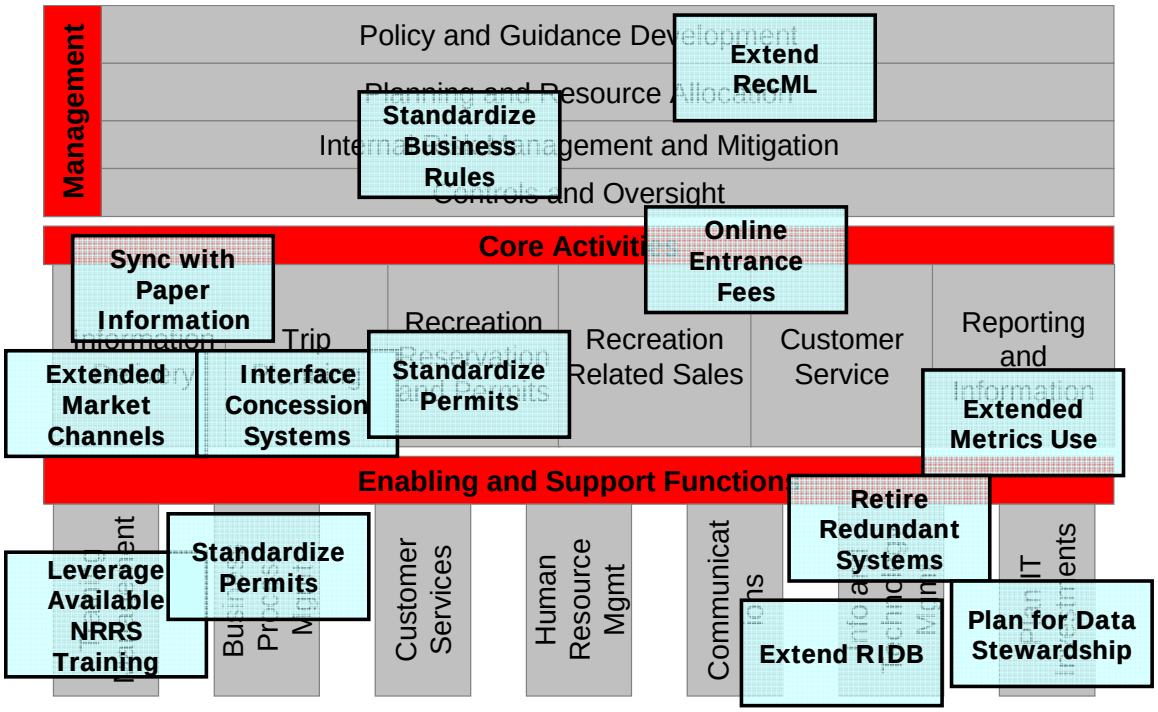

Figure 39: Recreation Value Chain and Blueprint Recommendations

Wildland Fire – Results Tied to the Wildland Fire Value Chain: Figure 40 depicts the Wildland Fire functions in a value chain format (Core, Management, and Enabling/Support activities). This value chain has an overlay of the many recommendations within the Wildland Fire Modernization Blueprint. This visual illustrates not only the portions of the Wildland Fire business area that are impacted by the Modernization Blueprint, but also the fact that these recommendations are business-driven in that they can all be traced back to how they better enable certain aspects of the Wildland Fire business area. For example, the Blueprint recommendation to coordinate integration and measurement of work is a heavy impacting recommendation because it positively impacts all core functions within the Wildland Fire business area. The same impact is also present with the recommendation to access the data available within non-Fire owned programs in order to better deliver decision support information. These recommendations are business-driven because they stem from the core Wildland Fire business functions.

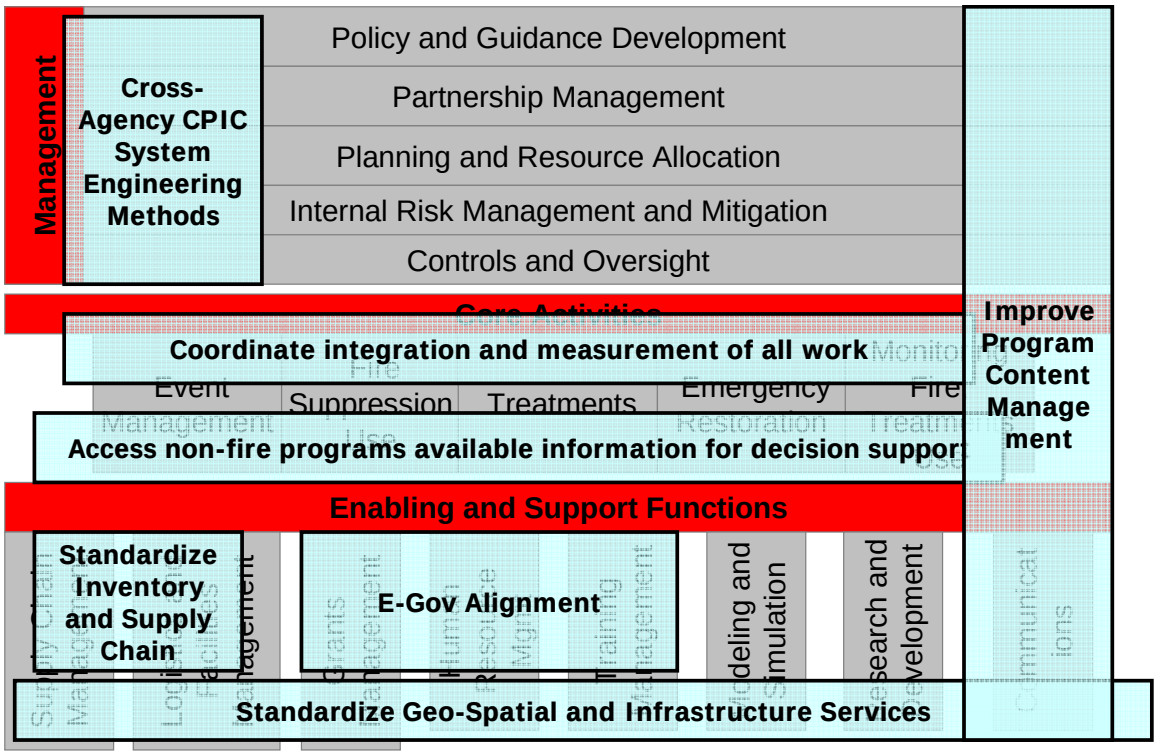

Figure 40: Wildland Fire Value Chain and Blueprint Recommendations

Principle 7: Understanding of Federated Business Models

The Interior Enterprise Architecture program supports the implementation of policy and architecture, accommodating the need for program-unique functionality and requirements. The IEA program is supported by a methodology and system of governance that promotes optimal outcomes across a highly diversified set of mission areas. This Principle is shown in the following transformation initiatives:

Bureau Led Blueprints – Coordinating Modernization at the Bureau Level: The Bureaus represent areas of specialty within DOI such as Water Management (Bureau of Reclamation). Currently the Bureaus are working together to study areas such as Management Planning & NEPA and Geospatial Services. The Bureau led Blueprints and the Department led Blueprints come together to form the Federated Architecture for DOI.

The federated approach to architecture is the only solution for a Department with such a widely diverse set of mission responsibilities. This Federated Architecture is overseen by an effective governance structure that includes coverage of business architecture, data architecture, performance, e-government, technology policy, and technology trends. Additionally, this governance structure is supported by integrated project teams that cover specialized tasks related to the DOI Enterprise Architecture Repository and specific technology issues. Within the Methodology for Business Transformation, there are gates instituted where Core Modernization Blueprint Teams must brief, provide review time, and receive approval from these governance teams. This same methodology is in use within each of the Bureaus and their Bureau-led Modernization Blueprint initiatives. As a result, there is a consistent application of methodology and governance instituted within the Department and

within each Bureau. This ensures that the Bureau-led Modernization Blueprints are of high quality and have been sufficiently vetted through the appropriate channels. Only through the common methodology and standard approach to governance can each of the Bureaus lead Modernization Blueprint initiatives that combine to form the DOI Federated Architecture.

Governance in Action – History of Governance Participation with Recreation: The Recreation Modernization Blueprint was authored in FY2004 with participation from BLM, USFWS, BOR, and NPS. Throughout the Blueprint creation process, the Interior Business Architecture Team, the Data Advisory Committee, and the Interior Architecture Working Group were all briefed periodically on interim findings, interim recommendations, and status of Blueprint development. This incremental approach to the Blueprint briefing helped in the development of the final Blueprint as well in providing the governance teams with sufficient information to ensure that the Federated Architecture was being modified appropriately throughout the process.

Once the Blueprint for Recreation was completed, the same governance teams were briefed, as well as the DOI Investment Review Board. The IRB is comprised of senior business executives and the CIO from each DOI Bureau and major office. Once the blueprint is approved by the IRB, investment decisions are made in alignment with the approved blueprint.

Collaborative Governance – National Wildland Fire Community Developing Governance Model: With the recommendation from the DOI Wildland Fire Blueprint, the national Wildland Fire community is in the process of adopting an integrated investment planning process and supporting governance structure. This critical improvement will ensure that the recommendations from the DOI Blueprint and subsequent National Wildland Fire Enterprise Architecture (NWFEA) are vetted and aligned to the budget and capital planning cycles. This complex undertaking entails, in addition to the DOI bureaus, the Association of State Foresters and the U.S. Forest Service.

Principle 8: Information is an Interior asset.

Information is a valued asset, useful in accelerating decision-making, improving management, and increasing accountability. This Principle is shown in the following transformation initiatives:

Recreation – Land Use and Planning Metrics: The Recreation Modernization Blueprint includes a finding and recommendation associated with land use metrics and their use for Recreation-related planning and land use planning. This segment of the Recreation Blueprint is a good example of information being reused as an asset within DOI. The mission function of the field staff is to provide a quality recreation experience while preserving natural resources for future generations. These tasks are provided through the use of assets such as visitor centers, information brochures, signage, etc. One asset that cannot be forgotten is the information that helps decision makers in their jobs. Within the Recreation Blueprint, this was considered and applied in the recommendation to standardize the way that recreation-related metrics are being gathered and used across the Bureaus. Having instant and standardized information available to decision makers is a key asset in trying to provide a quality recreation experience while preserving natural resources.

Wildland Fire – Active Fire Status: The Wildland Fire Blueprint considers the critical issue of publishing and communicating information about active fires on Federal lands. Just as use statistics are important to the Recreation community, active fire status information is critical to the livelihood of the fire fighters and citizenry that are working to protect our nation's lands or using them. The Wildland Fire Blueprint not only identifies the criticality of this information, but also identifies issues with the current sources of record for this information, and recommends a single source of record to ensure the dissemination of quality information on active fire status. Ensuring accuracy of such an important data asset helps the Fire community as well as other business areas like Recreation that need to inform citizens who might be affected by the associated risks.

Information Exchanges between Business Areas: The Logical Information Exchange Matrix in Figure 41 is patterned after the examples in A Practical Guide to Federal Enterprise Architecture published by the Federal CIO Council in February 2001. The Logical Information Exchange Matrix explains a set of information exchange instances that have been recommended via the Modernization Blueprints. The matrix includes information about source and destination business areas, source and destination systems, information to be exchanged, and a standard designation of interoperability from the Department of Defense's Levels of Information Systems Interoperability (LISI) Reference Model.

Number	Source	Destination	Information	Associated Activity	Source AIS	Destination AIS	Media	LISI	Event Trigger	Frequency of Transmission
1	DOI: Accessibility SOR	DOI: Recreation	Accessibility Info	Update Accessibility Information	TBD	NRRS	Electronic	3	Schedule	Daily
2	DOI: Facilities	DOI: Recreation	Recreation Facilities	Pull Recreation Related Facilities	FBMS	NRRS	Electronic	3	Schedule	Daily
3	DOI: Facilities	DOI: Wildland Fire	Fire Affected Facilities	Pull Fire Affected Facilities	FBMS	TBD	Electronic	3	Fire	On Demand
4	DOI: Facilities	DOI: Law Enforcement	Facilities of Interest	Pull Law Enforcement Associated Facilities	FBMS	IMARS	Electronic	3	Law Incident	On Demand
5	DOI: Land Planning	DOI: Wildland Fire	Land Planning Info	Land Data for Fire Affected Area	TBD	TBD	Electronic	3	Fire	On Demand
6	DOI: Recreation	DOI: Financial Management	Revenue	Book Daily Revenue into G/L	NRRS	FBMS	Electronic	3	Schedule	Daily
7	DOI: Recreation	DOI: Financial Management	Costs	Book Daily Costs into G/L	NRRS	FBMS	Electronic	3	Schedule	Daily
8	DOI: Recreation	DOI: Wildland Fire	Reservations	Send Reservations Data for Fire Affected Area	NRRS	To Be Determined	Electronic	3	Fire	On Demand
9	DOI: Recreation	DOI: Law Enforcement	Reservations	Send Daily Reservations Data	NRRS	IMARS	Electronic	3	Schedule	Daily
10	DOI: Recreation	DOI: Financial Management	Customer	Maintain Master Customer Records	NRRS	FBMS	Electronic	3	Customer Update	On Demand
11	DOI: Recreation	DOI: Land Planning	Land Use Metrics	Update Recreation Use Metrics	NRRS	TBD	Electronic	3	Schedule	Daily
12	DOI: Rivers	DOI: Recreation	Rivers	Update Rivers Data	TBD	NRRS	Electronic	3	Schedule	Daily
13	DOI: Trails	DOI: Recreation	Trails	Update Trails Data	TBD	NRRS	Electronic	3	Schedule	Daily
14	DOI: Wildland Fire	DOI: Recreation	Active Fire Status	Pull Active Fire Status	TBD	NRRS	Electronic	3	Customer Request	On Demand
15	DOI: Wildland Fire	DOI: Law Enforcement	Active Fire Status	Pull Active Fire Status	TBD	IMARS	Electronic	3	Law Incident	On Demand
16	NOAA	DOI: Recreation	Weather	Pull Weather Data for Customer Viewing	TBD	NRRS	Electronic	3	Customer Request	On Demand
17	NOAA	DOI: Wildland Fire	Weather	Pull Weather Data for Fire Affected Area	TBD	NRRS	Electronic	3	Fire	On Demand

Figure 41: Logical Information Exchange Matrix

In each instance within the matrix, there currently exists no such exchange of information, which forces the business areas to either do without the information or to operate their own data collection and storage processes. The Modernization Blueprints set forth a series of recommendations that, in part, have defined a more appropriate data sharing environment that would provide for a higher degree of usability for information that is currently residing in only one segment of the organization. By implementing the recommendations in the Modernization Blueprints, the exchange instances defined in the Logical Information Exchange Matrix will become an operational reality and the overall integration of systems and integration of business areas will be matured within DOI.

Principle 9: Data and Information Stewardship

Data and information must be managed and maintained as a stewardship responsibility to support the mission of Interior. This Principle is demonstrated in the following transformation initiatives:

Data Stewardship – Facilities: Data stewardship is a complex issue when multiple business areas use the same type of data. Few data entities are as reused within

DOI as often as the entities associated with Facilities. Business areas like Recreation (campgrounds, visitor centers), Wildland Fire (buildings at risk), Financial Management (asset depreciation), and Law Enforcement (incident locations) use Facilities data as an important aspect of their business operations. As a result, these business areas have historically maintained their own databases with this information populated multiple times, sometimes by the same field staff. The Modernization Blueprints for each of these business areas seek to return the field staff to mission related tasks and relieve them of the burden of data entry by standardizing and establishing data sharing relationships centered on Facilities. The implementation of the Finance and Business Management System (FBMS) will establish the asset source of record within DOI, and the data sharing relationships established in the Modernization Blueprints will remove duplicative data entry and ensure that Facilities data is stored and managed centrally, and accessed by the field locations that require its availability. The inclusion of these recommendations within the Blueprints of each of the business areas is an illustration of how data stewardship is an important part of DOI modernization.

Data Stewardship – Trails: There are data subject areas, such as Trails data, where there are limited DOI-wide accepted standards and no enterprise level sources of record. For trails data, there is a need to present this information online so that citizens can plan their recreation experiences on Federal lands. The lack of implemented standards and lack of sources of record is an opportunity for DOI to provide a valuable service to the citizen. The Recreation Modernization Blueprint establishes a recommendation to create an official set of standards for trails data within DOI, and to create an official source of record for trails data within the Federal government. This is an example of an important data asset not being adequately organized and maintained so that it can be useful to citizen trip planners, recreation managers, and land use planners. The standardization of trails data includes setting trails standards, establishing trails data stewardship responsibilities, and creating a trails source of record. These work tasks are included in the Recreation Modernization Blueprint and are captured within the Recreation and the Enterprise Transition Plan.

Future of the Enterprise Transition Strategy

The Interior Enterprise Architecture (IEA) program has coined the phrase "Actionable Architecture" to define its intentions for modernization planning within DOI. The IEA team is focused on producing a valuable planning service to the business and technology organizations within DOI. With performance analysis and planning as the key drivers, the IEA architects will continue to produce recommendations that will transform DOI into an efficient manager of government resources as well as an effective provider of services to the citizen. Through its continuing analysis and implementation efforts, IEA will continue to build and maintain the Enterprise Transition Strategy as the central, integrated guide of the overall transformation initiatives within the DOI.

DOI expects the Enterprise Transition Strategy to be a useful management tool for monitoring and tracking progress with initiatives as well as for determining dependencies between projects. With that in mind, DOI has established a working team to lay out recommendations for the continuing maturity of the Enterprise Transition Strategy in terms of its content, structure, use within daily operations, and use within management processes. The working team has been formed with an emphasis on collaboration and thus contains cross-functional and cross organizational experts to provide a broad perspective to the effort. This working team will follow the Methodology for Business Transformation to properly analyze and form recommendations for how the Enterprise Transition Strategy can best evolve to higher levels of maturity within DOI.

The working team will be looking at all aspects of the Enterprise Transition Strategy including the lower level project planning itself. DOI, and specifically its Program Management Office (PMO), is driving towards the standardization of project plans based on the PMO's Project Plan Guide. This guide summarizes and standardizes the major elements and artifacts of a project management plan, and although the use of the guide is not intended to be prescriptive, it is intended to offer a framework for organizing the project plan elements and artifacts. The Project Plan Guide is built from established international standards including the Project Management Institute (PMI) Project Management Body Of Knowledge (PMBOK) and ANSI/PMI 99-001-2004. This standardization of lower level project plans will enable the synthesis of tasks and milestones at the enterprise level for management and reporting purposes.

The outputs of the working team will serve to support the key areas of use that have already been identified for the Enterprise Transition Strategy, including the reduction of risks as well as the tracking of progress against planned performance milestones. Both of these areas of use involve the continuing evolution of how the information is gathered and stored to build the plan itself, as well as the continuous outreach and communications associated with raising awareness of the plan within management and executive decision making forums. These demands for standardized mechanisms for capturing, storing, synthesizing, and reporting task and performance information will be the focus of the maturation of the Enterprise Transition Strategy as DOI and the Bureaus continue to move forward.