Five-Year IT Roadmap

Department of Local Affairs

Aligning business goals and technology forecasts

July 2019

COLORADO
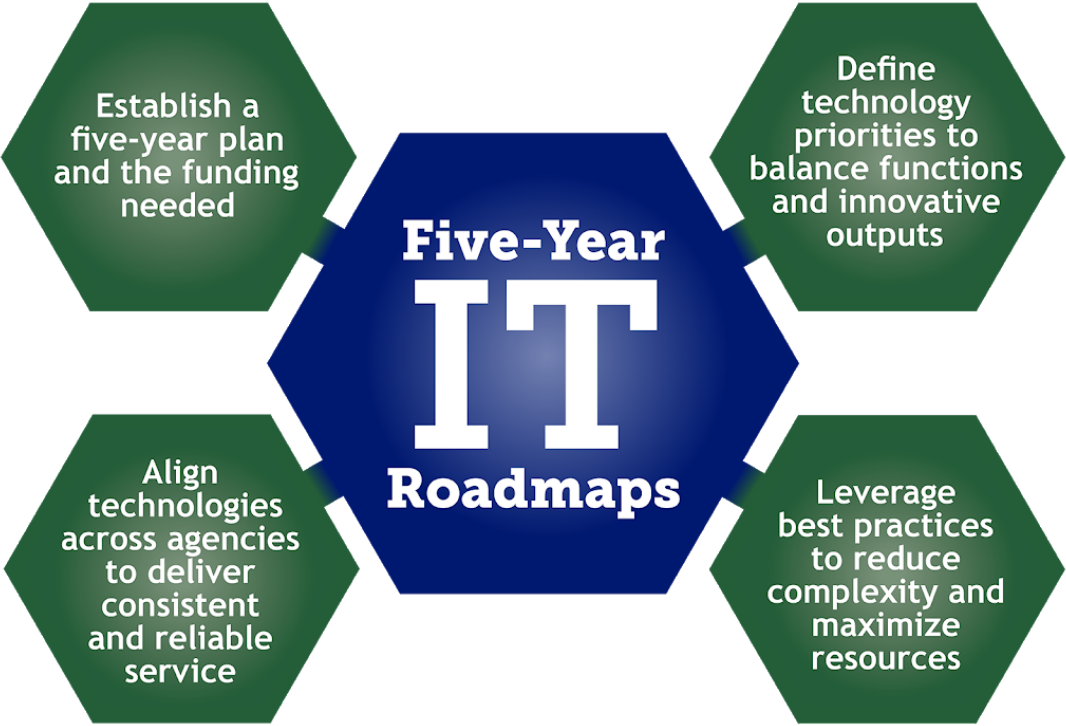**Governor's Office of Information Technology**
Serving people serving Colorado

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Introduction

The Governor's Office of Information Technology (OIT) works in partnership with our customers to create a Five-Year IT Roadmap for each agency we serve. OIT has four primary goals that guide our technology planning to help state agencies receive the most from their technology and related services.

Technology Planning Goals

Establish a five-year plan and the funding needed

Define technology priorities to balance functions and innovative outputs

Five-Year IT Roadmaps

Align technologies across agencies to deliver consistent and reliable service

Leverage best practices to reduce complexity and maximize resources

Assumptions

Agency and enterprise initiatives, timelines and costs within this document operate under the following assumptions.

Environment

- Decisions related to major agency initiatives or projects may alter this plan.
- Infrastructure and security will be maintained to meet state and federal compliance.
- OIT is a cloud-first advocate and, therefore, will look to cloud solutioning for all new service needs. OIT will also seek cloud service capabilities for legacy applications/workloads requiring refresh before targeting on-premise utilizations.
- As it relates to this document, the term "enterprise" is used to define high-impact, IT services utilized by multiple OIT customers.

Drivers of Cost and Complexity

- Costs are estimates that are based on an initial quote, vendor information or past initiatives and are subject to change.
- It is estimated that overall IT costs will increase by no less than 3% per year.
- Cost allocation for Decision Items are based on OIT's current Common Policy rates.

Assumed Constants

- Staffing is assumed to remain constant.
- Hardware refresh cycles are assumed to be executed on a four-year lifecycle for desktop computers and a three-year lifecycle for laptops.
- Approximately 20% of the state IT infrastructure is refreshed annually with the intent of completing a full infrastructure refresh every five years. Budget constraints may impact this cycle.

Changes to Roadmap

- This is a living document which will be updated once per year; dependencies, timelines, and cost estimates are subject to change.

Agency Business Objectives

Maximizing technology resources requires that agency business objectives drive technology investments. The objectives below have been identified by the Colorado Department of Local Affairs and submitted to the Governor's Office of State Planning and Budgeting (OSPB) to reflect the agency's current top strategic IT priorities. OIT works with the agency to provide the best solutions to support each objective.

Objective 1

Allocate discretionary grant set-aside funds through Energy and Mineral Impact Assistance (EIAF) and establish an initiative by August 2019 and subsequently award no less than $6 million towards rural economic development projects which grow the clean-energy sector by June 30, 2020.

Key Strategies:
- Position the Colorado Resilience Office (CRO) as a statewide resource on recovery and planning through creation of long-term grant funding initiatives by using unspent CDBG-DR grant to strengthen communities.
- Establish additional criteria for communities funding that include a 5% increase of dollars utilized to fund renewable energy projects.
- Incorporate REDI program to assist with the design of infrastructure grants that support diversification as it relates to the green and renewable energy plans.
- Collaborate with OEDIT, CEO, CDOT and DNR to develop new grant program criteria to measure growth in the clean-energy sector and rural development projects.

Objective 2

Strategically align grant funding opportunities to allocate no less than $2M towards projects that support the development of infrastructure for early childhood education programs by June 30, 2020.

Key Strategies:
- DOH to focus growth in the Next Step Grantee Program to work with 10 housing authorities to provide housing assistance to K-12 families in need of sustainable housing.
- Create additional funding criteria for communities to consider building daycare and early childhood educational facilities in commercial or mixed housing use development by 3% by June 30, 2020.
- Work in partnership with OEDIT to incentivize job growth through rural roadmap development.

Objective 3

Ensure that at least 5 rural Colorado communities implement strategic community development that focuses on workforce development and economic sustainability by June 30, 2020.

Key Strategies:
- Increase DPT accessibility of online tools, classes and training for County Assessor's and staff.
- Implement BAA online stipulation filing statewide for 64 counties
- Set aside a portion of EIAF sources to facilitate the completion of the "middle mile" infrastructure needs of rural and Front Range counties.
- Complete at least 8 rural shows in partnership with CDHS, OEDIT, CDA, CDPHE and CEO.

Agency Initiative Roadmap

The graph below shows where agency and enterprise objectives fit into the overall five-year roadmap and plan for scheduled completion. The graph contains three sections. The first presents mission critical technology debt which are either agency or enterprise initiatives that are vital to the functioning of government services. The second section presents new solutions which are requested by the agency or initiatives that OIT has identified as a gap in services or solutions, and the third section presents future innovations which are proposed as solutions that will increase state employee efficiency and improve service to Colorado residents and state visitors.

		FY20	FY21	FY22	FY23	FY24
Mission Critical Technology Debt	Application Consolidation and Decommissioning		██	██	██	██
	Automated System to Replace Current Legacy Grants and Loans	██				
	Change Process for Local Government Information System (LGIS) Contacts	██	██	██		
	Court Case Management System	██	██			
	Division of Property Taxation (DPT) County Portal Consolidation and Enhancements	██	██			
	Migrate Microsoft Access Database for State Assessment to New Platform	██	██			
	New Paperless Process for Appeal Board	██	██	██		
	Ongoing Funding to Stay Current with Software Versions		██	██		

		FY20	FY21	FY22	FY23	FY24
	Online Application Filings - Three Divisions	███	███	███		
	Refresh Recording Equipment for the Board of Assessment Appeals		███			
New Solutions	Automate the Basic Equipment Lists		███	███		
	Automated Process for Calendar/Scheduling of Appeals	███				
	Centralized Data Warehouse	███	███	███		
	Document Retention System	███				
	Electronic File Storage	███				
	Electronic Payment Voucher (EPV) System for all Programs	███				
	Electronic Submission of County Abatements	███				
	Interfaces - CORE to various DOLA Systems	███				

	FY20	FY21	FY22	FY23	FY24
Interface - Elite and Oracle Check Log					
Online Distribution of Notice of Value (NOV) to Counties and Taxpayers					
Online Streaming of Appeal Hearings					
Salesforce Inspect This!					

Agency Initiative Details

Mission-Critical Technology Debt

These initiatives are vital to the functioning of normal government services. Delay in pursuing the initiatives will create a need for future efforts and resources that surpass the resources needed if the initiative were carried out proactively.

Application Consolidation and Decommissioning

At DOLA, there are three applications recommended for decommissioning and seven recommended to be consolidated with other applications. This will result in the requirement for Enterprise Applications to process decommission and consolidation plans and obtain agency approval to remove data and decommission servers. This initiative is unfunded and the timeline is FY21-24.

Automated System to Replace Current Legacy Grants and Loans

Purchase a comprehensive system to replace the current Oracle system to manage Division of Housing (DOH) grants and loans. This will be a total replacement for tracking projects from application/underwriting through contract drafting/routing, management and long-term compliance. This initiative is funded and the timeline is FY19-20.

Change Process for Local Government Information System (LGIS) Contacts

This effort will combine the grants area within DOLA with the compliance side to make the process of collecting contact information consistent. Currently, there are multiple accounts on the LGIS side because each contact is tied to a local government and a function/role within that government. For some of the management companies, that results in them having 20-30 accounts (one for each government to which they provide services). On the grant side, there is one contact record for each individual associated with organizations and projects. This initiative is funded and the timeline is FY20-22.

Court Case Management System

Board of Assessment Appeals (BAA) is requesting a new court case management system to replace their current legacy systems. This initiative is unfunded and the timeline is FY20-21.

Division of Property Taxation (DPT) County Portal Consolidation and Enhancements

Consolidate the county activity into a single DPT portal that would provide access to Abstracts, Levies and ideally, Senior/Veteran Exemptions. This includes providing the ability for DPT staff to manage accounts without the need to engage the OIT Database team. This initiative is funded and the timeline is FY19-21.

Migrate Microsoft Access Database for State Assessment to New Platform

The current database that houses the state assessed information for the Division of Property Taxation is a legacy Microsoft Access database. This database needs to be converted to a more modern platform. This initiative is unfunded and the timeline is FY19-21.

New Paperless Process for Appeal Board

Currently, the documents for hearing appeals are all hard copy. DOLA would like to move members to reviewing on a laptop computer so that documents can be reviewed online. Computer hardware and software is needed for the eight member board. This initiative is unfunded and the timeline is FY21-22.

Ongoing Funding to Stay Current with Software Versions

There is a need for additional funding to support ongoing purchases of version upgrades of software such as Adobe, Oracle, SPSS and Java. Additionally, there are specific software tools for economic modeling and other purposes (ESRI, IMPLAN, EVIEWS) that the Department uses and needs to upgrade regularly. OIT does not have an Enterprise Licensing Agreement for these types of software, so the agency is having to fund this need out of existing budgets. With newer versions coming out almost annually, the need to purchase the newer version has increased so that the software continues to serve the business needs and work with existing agency technologies. These costs exceed what the agency's operational budget can absorb. This initiative is unfunded and the timeline is FY19-23.

Online Application Filings - Three Divisions

Three divisions within DOLA need the ability for customers to file applications online. The three divisions are Board of Assessment Appeals, Property Taxation and Housing. The Board of Assessment Appeals has an existing system that can either be enhanced to better meet its needs and then be expanded to include Property Taxation (Exemptions and Annual Statement of Property (ASOP) and Housing (Grants and Loans), or the entire system could be replaced with a more robust system that would meet the needs of all three divisions. This initiative is unfunded and the timeline is FY21-22.

Refresh Recording Equipment for the Board of Assessment Appeals

The Board of Assessment Appeals (BAA) holds a large number of hearings related to tax assessments to businesses. These hearings are recorded, and the equipment eventually wears out or the technology becomes 'end of life' and needs to be replaced. This initiative is unfunded and the timeline is FY21.

New Solutions

These initiatives provide new yet fundamental service to agencies. Heightened end-user technical expectations are driving service providers to strengthen system functionality. Delay in implementing these new services in the coming years would exacerbate major inefficiencies and significantly impair the state from meeting citizen expectations.

Access to Local Government Information System (LGIS), Budget, Elections, and Grants systems

A new solution is needed that replaces the current segregated systems and allows the Division of Local Government staff to access Budget, Elections, LGIS and Grants information sources within one application. One application will remove current cumbersome processes and make business functions more streamlined and efficient. This initiative is unfunded and the timeline is FY19-21.

Automate the Basic Equipment Lists

A new, automated system is needed for tracking the Basic Equipment Lists (BELS). The current process is in Excel spreadsheets and driven by numerous formulas. A more automated system will make the process more accurate and less timely to maintain. This initiative is unfunded and the timeline is FY21-22.

Automated Process for Calendar/Scheduling of Appeals

The Board of Assessment Appeals needs a system to automate the process for scheduling appeals. The current manual process relies on information pulled from various sources and is very labor intensive for Division staff. A new automated process would save time and allow staff to focus on other tasks and activities. This initiative is unfunded and the timeline is FY20.

Centralized Data Warehouse

DOLA needs a centralized data warehouse solution to hold data that can be reported out for management and legislation requests. This initiative is unfunded and the timeline is FY20-22.

Document Retention System

DOLA would like to create a document repository for original files to ensure compliance with state retention schedules along with availability for customers, staff and grantees. This initiative is unfunded and the timeline is FY19-20.

Electronic File Storage

DOLA would like to purchase a cloud-based system that has a secure public facing interface to allow all of Division of Housing rental assistance contractors access to upload and view files related to their individual tenants. This initiative is unfunded and the timeline is FY19-20.

Electronic Payment Voucher (EPV) System for all Programs

DOLA would like to develop and implement an Electronic Payment Voucher System for all DOLA programs so that grantees may submit pay requests electronically, and DOLA staff can receive, approve and route them for payment in a much quicker and more expedited manner. This initiative is funded and the timeline is FY19-20.

Electronic Submission of County Abatements

This project would provide the counties the ability to submit their abatements through the DOLA website, similar to the Senior/Vet and Abstract programs. This will eliminate the need to send via the U.S. Postal service. This initiative is unfunded and the timeline is FY19-20.

Interfaces - CORE to various DOLA Systems

DOLA would like to create an interface that allows payment information from CORE to be transferred directly into the Elite system after each check run is processed. Create an interface that allows data from CORE to be automatically populated into our different budgeting tools and dashboards for real-time data. This initiative is unfunded and the timeline is FY19-20.

Interface - Elite and Oracle Check Log

DOLA would like to create interfaces between SQL (Elite-Salesforce) and Oracle Check Log for all fraud recovery checks to have the check entered into the Elite application and Oracle extract the checks and code them based on program. This initiative is funded and the timeline is FY19-20.

Online Distribution of Notice of Value (NOV) to Counties and Taxpayers

The State Assessed section would like utility companies and others they value to look at Notice of Value online or through the DOLA website. This initiative is funded and the timeline is FY19-20.

Online Streaming of Appeal Hearings

The Board of Assessment Appeals division would like the ability to stream its Appeal Hearings online so that the information is available to the public, much like many of the other hearing events within the State of Colorado. Aside from a new solution for streaming, the infrastructure for 1313 Sherman St. will need to be evaluated to ensure that enough bandwidth is available. This initiative is unfunded and the timeline is FY19-20.

Salesforce Inspect This!

This project would continue maintaining and refining Salesforce Inspect This! and create, maintain, and refine, including database and interface (GIS), the new Manufactured Home Park Inventory app that will interface with the current Salesforce Inspect This! App for home modification. This initiative is funded and the timeline is FY19-20.

DOLA Unfunded Technology Outlook

The totals below are high-level cost estimates where funding has not been clearly identified. In most cases, for technology initiatives defined as an OIT enterprise initiative, OIT seeks funding through Decision Items. Enterprise initiatives help ensure that the state maintains consistent technology service and is able to take advantage of scalable rates.

For a more detailed breakdown, contact your agency's IT Director.

	FY20	FY21	FY22	FY23	FY24
Mission-Critical Technology Debt	$0.00	$0.00	$0.00	$0.00	$0.00
New Solutions	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL	$0.00	$0.00	$0.00	$0.00	$0.00

Mission Critical Technology Debt, New Solutions and Total
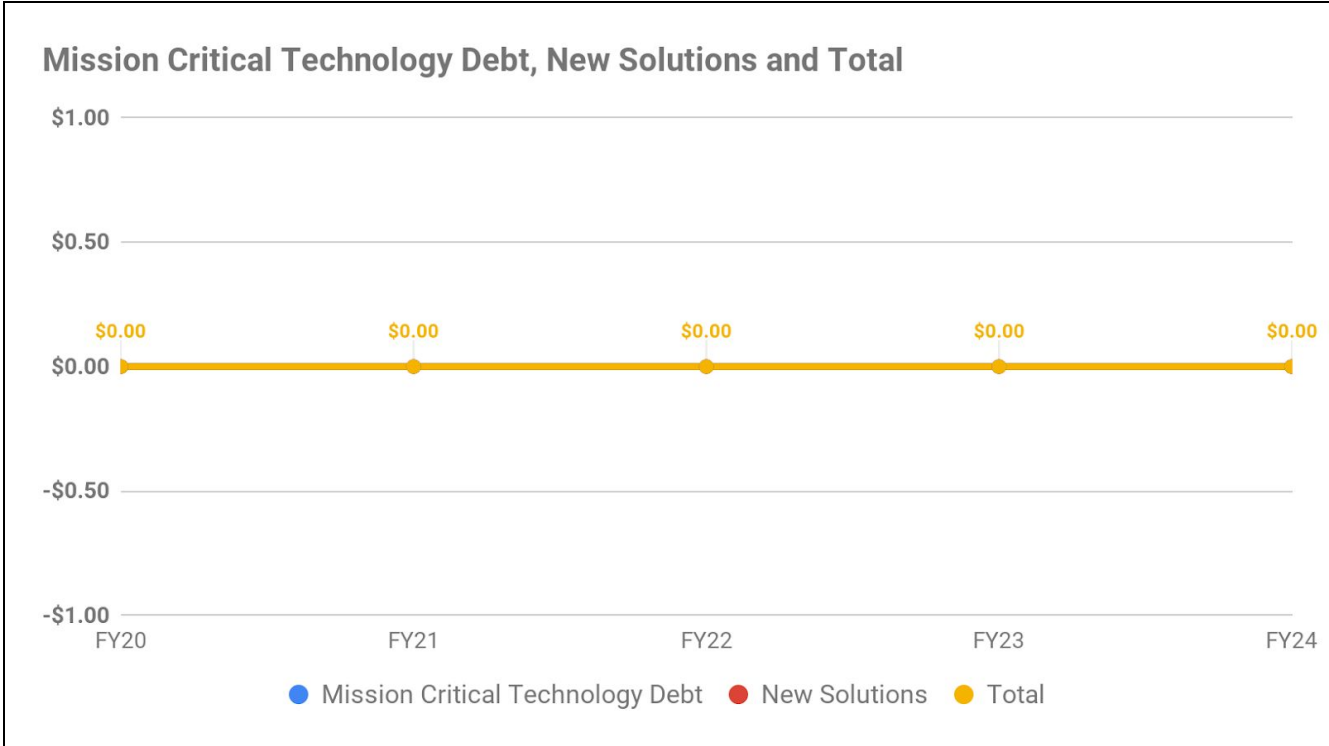
Appendix A: Enterprise Initiative Roadmap

The timeline below represents OIT's enterprise initiatives. Enterprise initiatives help to ensure that the state maintains consistent technology service and is able to take advantage of scalable rates. These initiatives are part of OIT's overall strategic direction and may be mandated or offered to agencies optionally.

This timeline has been included to provide a reference as to how an individual agency's IT Roadmap correlates to OIT's enterprise plan. Descriptions of each initiative can be found in Appendix B.

	FY20	FY21	FY22	FY23	FY24
Enterprise Initiatives					
Application Lifecycle Management	███	███	███	███	
CORE NIST File Transfers	███				
Clarity PPM (CA PPM or Clarity)	███				
Enterprise Infrastructure Refresh	███	███	███	███	
HRWorks	███	███	███	██	
Mainframe Decommission	███	███	███	███	
Network & Infrastructure Refresh	███	███	███	███	
Next Generation Colorado	███	███	███	███	
OS Server Upgrades	███	███			
Telecom Enhancements (MIPC)	███	███			
Two-factor Authentication	███				
Windows 10 Upgrade	███				

New Solutions		FY20	FY21	FY22	FY23	FY24
	Antivirus Protection Removal	██	██	██	██	██
	Content Services Application Consolidation	██	██	██	██	██
	Content Services Enterprise Solution Deployment	██	██	██	██	██
	CrowdStrike	██	██	██	██	██
	Desktop Cloud Backup	██	██	██	██	██
	MyColorado	██				
	Privilege Access Management	██				
	Salesforce Platform Org Strategy	██	██	██	██	██
	Salesforce Lightning Migration	██	██	██	██	██
	Salesforce Release & Environment Management	██	██	██	██	██
	Secure Office Print Ecosystem (SOPE)	██				
	Technology Accessibility and Mobile Assessment, Testing and Remediation	██				
Future Innovations	Cloud Access Security Broker	██	██	██	██	██
	Data and Access Governance	██				
	Cloud Access Security	██	██	██	██	██
	East West Traffic Security	██				
		FY20	FY21	FY22	FY23	FY24

	FY20	FY21	FY22	FY23	FY24
Easy Secure Service Excellence - ESSE					
End-to-End Monitoring and Logging					
Identity Analytics and Risk Intelligence					
Server and Deskside Endpoint Management					
Smart Cities Exploration					

Appendix B: Enterprise Initiative Details

This section provides an overview of each Enterprise Roadmap initiative.

Mission-Critical Technology Debt

These initiatives are vital to the functioning of normal government services. Delay in pursuing the initiatives will create a need for future efforts and resources that surpass those needed if the initiatives are carried out proactively.

Application Lifecycle Management

With an inventory of 1100+ applications, a key strategy for OIT is to streamline the application footprint. Through the consolidation of existing and new applications onto standard enterprise platforms, OIT can create a simpler and easier end-user experience, reduce the long-term cost of maintaining duplicative applications, and strengthen OIT's support capabilities. Consolidation efforts completed through FY16 were funded through the Eliminate Redundant Applications Decision Item; with the funding of the Service-Oriented Business System Refresh Decision Item, $800,700 will be approved for this program in future years. Allocation of the funds will be under the authority of an agency focused governance team. This funded initiative impacts all agencies and the timeline is FY20-23.

CORE NIST File Transfers

The CORE secure file transfer service provides file transfer services between the State (all agencies, Wells Fargo and other external / higher ed institutions) and the CORE financial system. The CORE file transfer service was originally implemented during the CORE project as a temporary service. The service compromises regulatory compliance and security of the assets entrusted and has significant risks from process and personnel perspectives. Although meant to be a secure file transfer server, this asset is also used for archival of data files and the nature of that use compromises both the asset and the content. Data currently on the CORE secure file transfer server needs to be migrated to the properly structured and organized file storage and appropriate archiving and retrieval processes need to be established. If not executed there will be severe impacts to the CORE system and continued audit findings, it will cause a drain on OIT resources needed to support the current solution and perpetuation of risk due to inadequate business processes and inadequate, costly IT solutions supporting those processes. CORE secure file transfer server replacement will require any current department/agency user of CORE to become a consumer of technology platforms (Automic and MoveIT) providing new CORE integration services. This unfunded initiative impacts all agencies and the timeline is FY20.

Clarity PPM (CA PPM or Clarity)

Clarity PPM is a comprehensive project and portfolio management tool in use by OIT and other agency customers to track and report on projects, programs and maintenance activities across the State enterprise. In recognition of this, OIT will begin distributing the costs associated with the tool by user license and type. Invoices are received from the vendor on or about July 1 of each fiscal year. OIT will produce a report of all users on July 1 of each year and based upon license type disburse the expense amongst the agencies of the user community. This initiative impacts all agencies and the timeline is FY20.

Enterprise Infrastructure Refresh

This effort includes refreshing infrastructure support equipment (power, HVAC, UPS systems, etc.) for all agencies in order to ensure service uptime is in accordance with our service level commitments. This unfunded initiative impacts all agencies and the timeline is FY20-23.

HRWorks

The Department of Personnel & Administration (DPA) and OIT continue their work to develop an enterprise Human Resource Information System (HRWorks). The HRWorks project is a collaborative effort to consolidate approximately 80 disparate, outdated, and redundant systems into a modern, seamless solution that will eventually integrate with CORE, the state's financial system of record. Development of the system is funded through a DPA FY16 Decision Item. At this time the HRWorks project consists of human capital management (HCM), benefits module, payroll, labor allocation and timekeeping. Work is underway to Identify the impact to each agency. Decommissioning of CPPS and related applications will be handled as a separate project. This funded initiative impacts all agencies and the timeline is FY20-22.

Mainframe Decommission

OIT is working to retire the mainframe and associated applications. Integration and data sets must be identified and planned for migration or retirement. This includes determining agency costs. Agencies that still have applications on the mainframe include the Departments of Human Services, Labor & Employment Personnel & Administration, and Revenue. Additionally, with the state payroll system on the mainframe, all agencies are impacted by this initiative. OIT has identified dependencies amongst other large projects that will prevent the retirement of the mainframe until functionality residing on the mainframe moves to new applications, and will require agency funding to address agency-specific migration and services costs. This funded initiative impacts all agencies and the timeline is FY20-22.

Network & Infrastructure Refreshes

OIT is developing a statewide refresh lifecycle that will annually replace 20% of network and systems infrastructure that is at its manufacturer's end-of-support lifecycle. This will keep the state's technology current and under warranty, which ensures continued support for these critical components. Customers will experience increased IT system performance with decreases in downtime, outages and lost connectivity with the added availability to a secure and stable infrastructure. This is an ongoing effort that will incur some impact to each agency each year. The effort has been funded through the FY16 Infrastructure Refresh Decision Item; however, the funding does not cover all the needed network refreshes, so agencies will need to fund part of the agency-owned network components. The systems infrastructure portion of the refresh initiative includes shared storage and vBlock hosting platforms in the two state data centers. Agencies do not pay additional funding outside the Decision Item budget line for this portion of the refresh effort. This unfunded initiative impacts all agencies and the timeline is FY20-23.

Next Generation Colorado

This is a two-part initiative representing infrastructure and operational improvements as well as data center modernization. Next Generation Colorado is an initiative to develop the automation and operations to support quick service delivery, transparent cost modeling, scalability on-demand, high availability, upgrades and agility of workloads across the enterprise. This effort will also include data center modernization, operational management and hybrid cloud solutioning to span private and public Infrastructure as a Service (IaaS) models. This is a capital-funded initiative from a FY18 Decision Item. Half of the funding was approved for use in FY19 and will support cloud readiness and sustainability, security improvements and data center repairs. The second half of the funding is expected to be approved for use starting in FY20 and will be used to continue our FY19 work as well as automation and service efficiencies. This funded initiative impacts all agencies and the timeline is FY19-23.

OS Server Upgrades

As Windows Servers (2003, 2008 and 2012) reach their end-of-support lifecycles, it is increasingly difficult to find service providers who continue to support these operating systems (OS). To ensure state servers continue to receive appropriate support and reduce risk, OIT will retire and replace all server end-of-support operating systems used by supported agencies. Moving to a newer version will give customers a more secure and supportable OS for their applications. The Enterprise Applications and the Server Admin teams will work together to determine the affected applications in FY19 and migrate the servers to the new OS in FY20 and FY-21. This unfunded initiative affects all agencies and the timeline is FY19-21.

Telecom Enhancements (MIPC)

To keep our phone technology current and consistent, OIT's Telecommunications Team will migrate agencies from their stand alone Cisco VoIP systems to the enterprise Managed IP Communications (MIPC) voice solution. The multi-year initiative is in the planning phase for the four remaining agencies: CDPHE, DNR, DOLA, CDHS/CMHIP. Implementation will occur as the current stand alone Cisco VoIP system approaches end of life in each of the agencies. This unfunded initiative impacts CDHS, CDPHE, DNR, DOLA, DOC and the timeline is FY20-22.

Two-factor Authentication

OIT will enable two-factor authentication (2FA) to add an extra layer of security to the verification process and thus reduce the risk of data breaches and meet data privacy requirements. OIT's internal and statewide Access Control policies require that access to the state's information systems be restricted to just those who need access to perform their jobs, using the principle of least privilege. The implementation to CDHS, CDPHE, DNR, DOLA will be completed by the end of FY20.

Windows 10 Upgrade

Support for the Windows 7 operating system (OS) expires in January 2020. To ensure there is no lapse in support, OIT will upgrade all Windows 7 computers (desktop and laptop) to Windows 10. This is a multi-year effort that spans 17 agencies and more than 28,000 devices. The Microsoft Enterprise License Agreement will cover the upgrade for all agencies except four that will need to cover the cost of the upgrades: CDHS, CDOC, DNR and HC. This is a funded initiative and has a timeline of FY20.

Enterprise New Solutions

These initiatives provide new yet fundamental service to agencies. Heightened end-user technical expectations are driving service providers to strengthen system functionality. Delay in implementing these new services in the coming years would exacerbate major inefficiencies and significantly impair the state from meeting citizen expectations.

Content Services Application Consolidation

Per the findings from a recent audit, Enterprise Content Services (ECS) will strategically assist agencies in transitioning and migrating away from unsupported, legacy content services applications. The goal is to eliminate redundant agency deployed ECM applications, which will dramatically reduce agency hardware and software costs by leveraging our Enterprise License Agreement with Hyland. Furthermore, this will streamline content management applications and directly support the playbook strategy of "Strengthening Colorado's Technology Landscape". We will continue to move the states legacy and/or unsupported applications to our enterprise content services platform, which will reduce the total number of applications. The EDW application is the immediate focus in FY20-FY22 and is used by 14 agencies today. HP Records Manager deployed at CDPHE will also drive forward in FY21-FY22. This initiative is unfunded and the timeline is FY20-24.

Content Services Enterprise Solution Deployment

ECS is continuing to develop enterprise solutions that can be leveraged by all agencies - highly standardized with an ability to customize via embedded non-code configuration will dramatically increase time to value. Agencies will directly benefit with improved operational efficiency, document/information sharing, visibility and cloud infrastructure. This effort ties to many of the agency application modernization efforts. Targeting License, Permitting & Inspections, Contract Management, Electronic Requisitions, Employee File Management, and Travel Requests, Approval & Reimbursement solutions. These solutions will improve business processing times and bring complete visibility to each business lifecycle, saving time and money! Content Services enables us to establish these enterprise solutions, which become standardized products offerings in our solutions portfolio. This initiative is based on the assumption that approximately half of the agencies leverage each of the following solutions:

1. License, Permitting & Inspections - OIT pilot is underway. Standard service offerings are slated for FY20.
2. Contract Management - contract creation through signatories (integrated with DocuSign). OIT project in-flight.
3. Electronic Requisitions - complete processing of funding requests with dump into CORE - already live at OIT.
4. Employee File Management - focus on capturing and managing HR employee files. OIT and CDOT are in-flight.
5. Travel Requests, Approval and Reimbursements - already live at OIT.

This unfunded initiative affects all agencies and the timeline is FY20-24.

Crowdstrike Deployment

Deploy Crowdstrike across all agency systems to provide the very best endpoint security and protection from current threats, for the agency. This is a funded initiative and the timeline is FY20 - FY24.

Desktop Cloud Backup

OIT will be providing expanded backup services across the state in the future. This expanded service will now include providing backups of documents and files that are stored on individual laptops and desktops. This is a funded initiative and the timeline is FY20 - FY24.

myColorado

OIT is leading the effort to create a mobile application that will deliver current and future agency services on a modern and mobile platform. The myColorado app will provide residents, visitors and businesses easy and secure access to services via Federated Identity Management for users engagement through a single interface accessible anytime, anywhere. The solution will provide easy integration for agencies wanting to add a service to the app. It will provide users a protected entry point into state services, and once they establish a profile, it will reduce the need to re-enter that data. Phase 1 is the release of the app through the Department of Revenue in FY19 with the initial services of driver license and vehicle registration renewal as well as the ability to store a digital copy of a vehicle insurance card. It will also include the ability for the Governor's office to provide direct communication to app users. Future phases will include the integration of services provided by multiple state agencies. Phase II, could include state services provided by DNR, DOC, DOLA, DPA, CDPS and CDE. The planning efforts are underway which includes determining costs and funding. This is a funded initiative and the timeline is FY20.

Optimization of Endpoint Security

Assess endpoint security tools to ensure the most effective security while minimizing performance impact. This may result in the lessening or removal of the McAfee endpoint agent, and may incorporate additional tools and capabilities to ensure appropriate anti-virus, encryption, and patching. This is a funded initiative and the timeline is FY20 - FY24.

Privilege Access Management (PAM)

This is an effort to implement a least privilege management solution to oversee enterprise password management over privileged credentials, application password management and session logging and server privilege management to ensure administrator and root security and compliance. The benefits are many and include: a dashboard for operations, management and audit reports, an open standards tool that integrates with ITSM, IDM, Active Directory, etc. It also offers automatic discovery of systems with privileged access, automating the creation of role-based access, assisting in role definition/creation, and secure employee exit deprovisioning which currently relies on manual processes that create security risks and the loss of assets. This funded initiative affects every agency and the timeline is FY20.

Salesforce Platform Org Strategy

Defining a Salesforce Org Architectural Strategy to improve business/IT alignment, platform effectiveness and IT cost savings is part of the Salesforce Program strategic initiatives planned to continue transforming how government innovates, maintains and promotes secure cloud-based agile technology platforms in an enterprise model. This approach will account for the OIT enterprise Salesforce support model and application management best practices. This initiative is unfunded and the timeline is FY20-24.

Salesforce Lightning Migration

Continued migration of existing legacy applications to and development of all new applications in the Salesforce Lightning (UI) is an effort to maintain the quality of the platform and accessibility to new product features. This is part of the effort to improve business/IT alignment, platform effectiveness and IT cost savings is part of the Salesforce Program strategic initiatives planned to continue transforming how government innovates, maintains and promotes secure cloud-based agile technology platforms in an enterprise model. This initiative is unfunded and the timeline is FY20-24.

Salesforce Release & Environment Management

Salesforce Release & Environment Management practices and tools to govern how changes occur between the platform and various environments is an effort to minimize application issues and protect the integrity of existing applications in the multi-use environment when deployed to production. This initiative is unfunded and the timeline is FY20-24.

Secure Office Print Ecosystem (SOPE)

OIT is working with the Department of Personnel & Administration (DPA) on the Secure Office Print Ecosystem (SOPE) project to secure the state's multifunction printers against hackers. This project involves approximately 656 devices managed by DPA's Multifunction Printer Program, which are distributed in 16 executive branch agencies. As partners of the SOPE project, OIT's security and deskside teams are helping to upgrade firmware and secure the printer platform and its entry points into the state network. OIT is also providing project management services. DPA is incurring all costs associated with this managed print service solution. This unfunded initiative affects all agencies and the timeline is FY20.

Technology Accessibility and Mobile Assessment, Testing and Remediation

OIT has a statutory obligation to work with executive branch agencies to improve technology access to users with disabilities, including those who are blind and/or visually impaired (see C.R.S. 24-85-101 et seq). To fulfill our duty to improve these services, OIT must provide tools, methods and resources to adequately assess, remediate and maintain the systems for their ability to provide proper accessibility (in conformance to industry standards). This initiative will establish project governance, application testing requirements, standards and training to achieve the goals and mandates of this statute. Any changes needed to address accessibility within an agency will be funded by the agency. The initiative is scheduled for assessment in FY19-20 and remediation thereafter.

Enterprise Future Innovations

The ideas in this section have been proposed as solutions that will allow OIT to grow and discover new and innovative services for state agencies. The solutions in this section will increase state employee efficiency and improve service to Colorado residents and state visitors. These ideas are either unfunded or funded through Decision Item funding. We may see these as new projects in the future.

Cloud Access Security Broker

Cloud Access Security is a software functionality that enables automation of manual processes used to govern the use of and protect sensitive state data in the cloud. As cloud computing continues to grow, OIT needs a way to deliver consistent security across multiple clouds and protect everyone using that data, this is outside of on prem data storage. The solution is scheduled to go active in FY20 with ongoing funding each year thereafter. This funded initiative impacts all agencies and the timeline is FY20-24.

Data and Access Governance

This initiative ensures that sensitive, unstructured data is only accessible to approved users. Funding will be used to implement data governance to analyze, approve and fulfill unstructured data access to files, folders, shares across Microsoft NTFS file systems, Network Attached Storage (NAS) devices and SharePoint - on prem storage. The solution is scheduled to go active in FY20 with partial ongoing funding each year thereafter for maintenance. This funded initiative impacts all agencies and the timeline is FY20.

East West Traffic Security

The East West Traffic Security initiative addresses vulnerabilities present within the traffic going to public cloud, traffic between agency-to-agency applications, and traffic from network to servers. These initiatives are the "glue" that helps bind the security infrastructure together, representing agency network upgrades and firewall upgrades and enhancements. They cross the functional infrastructure, Network, Access Control and Security Operations. The solution is scheduled to go active in FY20 with partial ongoing funding each year thereafter for maintenance. This funded initiative impacts all agencies and the timeline is FY20.

Easy Secure Service Excellence - ESSE

The Enterprise Application team is requesting a network solution that will allow all application developers to access the code at any agency in the Executive branch. At this time, firewall rules and servers are set up currently, because each agency has its own network, developers would need remote access to 17 agencies to perform work. This request is being made in hopes that Enterprise Applications will be able to align with Demand Management infrastructure, enabling developers to serve across many domains, working across a multitude of practices. This structure will directly impact the level of service EA is able to provide to the customer. In order for EA to move to a Service Excellence model, this demand must be met. This unfunded initiative impacts all agencies and the timeline is FY21-24.

End-to-End Monitoring and Logging

This initiative will increase the annual budget for this particular activity, which enables OIT to have the management platform to automate, manage and patch more endpoints and at a faster pace. Technical training and an incident response retainer are inclusive of this initiative. The anticipated outcome of this initiative is that all agency endpoints would be aligned under a common platform that deploys scripts, patches, and updates for proper security compliance and hardening. In short, agencies can expect to see the number of vulnerable endpoints to be drastically reduced. The solution is scheduled to go active in FY20 with ongoing funding each year thereafter. This funded initiative impacts all agencies and the timeline is FY20.

Identity Analytics and Risk Intelligence

OIT would like to incorporate identity analytics into our security and big data strategy using machine-learning and advanced behavioral analytics that consume and analyze data and will improve our capabilities to detect and respond to risk timely, help with digital change, increase agility and enable higher levels of automation. This funded initiative impacts all agencies and the timeline is FY20.

Server and Deskside Endpoint Management

This initiative will increase the annual budget for this particular activity, which enables OIT to have the platform to automate, manage and patch more endpoints and at a faster pace. Technical training and an incident response retainer are inclusive of this initiative. The anticipated outcome of this initiative is that all agency endpoints would be aligned under a common platform that deploys scripts, patches, and updates for proper security compliance and hardening. In short, agencies can expect to see the number of vulnerable endpoints to be drastically reduced. The solution is scheduled to go active in FY20 with ongoing funding each year thereafter. This funded initiative impacts all agencies and the timeline is FY20.

Smart Cities Exploration

A smart city is a designation given to a locality that incorporates information and communication technologies to enhance the quality and performance of urban services such as energy, transportation and utilities to reduce resource consumption, wastage and overall costs. Traditional smart city projects focused on community internet access, smart lighting, transportation and citizen data sharing. State effort around smart cities would be focused around the coordination of infrastructure and standards to enable smart applications that seamlessly transition as residents transition from one locality to another. This unfunded initiative impacts all agencies and the timeline is FY20-24.

Appendix C: DOLA Application Lifecycle Recommendations

The table and chart below show the applications used by DOLA, and the lifecycle recommendation for each application. In future years this will be expanded to include the application lifecycle timeline. The definitions for the recommendations below are as follows:

- **Consolidate**: Recommended when more than one application is being used to perform a single process. The multiple applications should be consolidated to perform the process.
- **Decommission**: Recommended for applications that have a definite plan to be decommissioned.
- **Enhance**: Recommended when an application that needs to be upgraded requires a more significant effort to upgrade than a recommendation to sustain.
- **Replace**: Recommended when an application needs to be replaced with a newer application.
- **Re-Platform:** Recommended when an application has the proper functionality but may be written in an outdated language or database and needs to be moved to a better platform.
- **Sustain**: Recommended when an application is functioning properly and does not require a major upgrade or change.

DOLA Application Recommendations

Legend: ■ Replace ■ Sustain ■ Consolidate ■ Decommission ■ Enhance
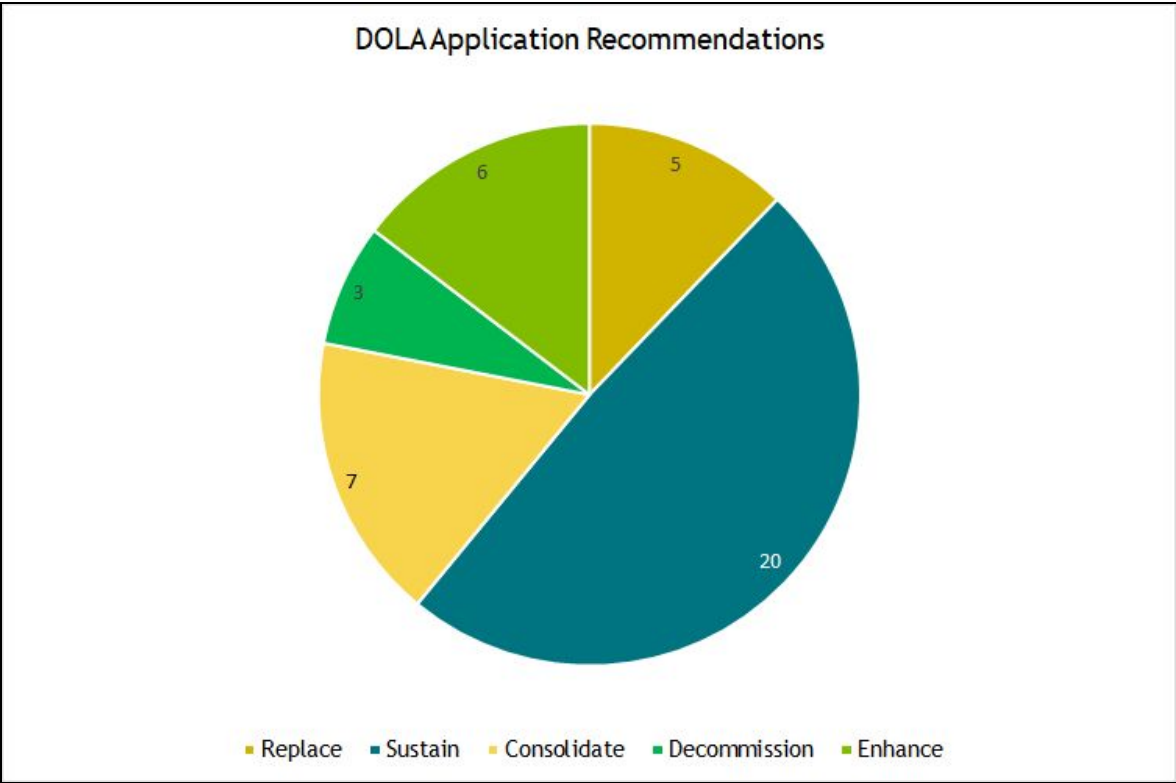
Department of Local Affairs

Five-Year IT Roadmap