

# Fiscal Year 2022-23 Information Technology Request

Office of Information Technology  
R-01 Modernizing Aging IT Systems

## SHORT PROJECT DESCRIPTION

The Governor's Office of Information Technology (OIT) is requesting \$66.0 million in one-time state funding to begin to address the state's technology debt by updating, modernizing, and decommissioning aging technology systems.

## PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2022-23</u>	<u>FY 2023-24</u>	<u>Future Requests</u>	<u>Total Cost</u>
GF	\$0	\$66,000,000	\$0	\$0	\$66,000,000
<b>Total</b>	<b>\$0</b>	<b>\$66,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$66,000,000</b>

## PROJECT STATUS

This is a new, never-before-requested project.

## PROJECT DESCRIPTION

OIT is requesting \$66.0 million in one-time state funding to begin updating, modernizing, and decommissioning the state's aging technology systems. There are three main components to this request:

1. Decommission the mainframe

OIT plans to partner with agencies to move all applications currently on the mainframe onto modern, cloud-based systems. These include the State Identification Module (SIDMOD), Electronic Benefits Transfer (EBT), the Automated Child Support Enforcement System (ACSES), the Colorado Payroll and Personnel System (CPPS), and managed file transfer (MFT)/Cyberfusion.

2. Applications modernization

OIT plans to decommission end-of-life technologies by upgrading to newer versions and replatforming applications where possible.

3. eFORT exit

OIT plans to migrate systems out of the leased eFORT datacenter and transition these to modern technologies, including the cloud.

Additional details regarding the scope of the project is included in the Appendix table provided by OIT.

## PROJECT JUSTIFICATION

According to and OIT analysis, the state has at least \$465 million in technology debt, which creates increased risks to state security and operations. This request is meant to be the first step in meaningfully addressing this risk.

## COST-BENEFIT ANALYSIS

Details regarding the cost-benefit analysis for each project component is provided in the Appendix table.

## PROJECT COST INFORMATION

Cost information for each project component is provided in the Appendix table.

## CASH FUNDS

N/A

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## PROJECT RESEARCH

Detailed assumptions regarding the request are included in the Appendix table.

## ADDITIONAL PROJECT INFORMATION

In FY 2019-20, OIT received approval to create a common policy for application refresh and consolidation. This service has an annual budget of \$800,700 for all agencies. According to OIT, these funds are typically deployed to assist a few agencies in addressing an emergency or immediate need due to the limited funding. Additionally, Senate Bill 21-287 created the Technology Risk Prevention and Response Fund, which may be used for one-time costs associated with an IT emergency; ensuring compliance with the office's IT standards and policies; and preventing risk from IT debt that is anticipating failure, nearing or no longer maintained or supported by manufacturers or vendors, out of security compliance or creating security risk, part of an outstanding state audit recommendation, or keeping the state from recognizing efficiencies or advances in IT or IT financing. The bill appropriated \$2.0 million General Fund to the new fund, but did not create a sustainable funding mechanism.

According to OIT, for FY 2023-24, the Rates and Services Board has approved for OIT to charge legacy tier rates for databases that will result in charging agencies more for their legacy systems, which OIT hopes will incentivize agencies to modernize systems and take advantage of the non-legacy tiers of service rates.

## PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2022	December 2023
Implementation	September 2022	June 2024
Testing	September 2022	June 2024
Closing	June 2023	June 2024

## QUESTIONS

1. Please describe how the "Mainframe Decommissioning Application 4: CPPS/payroll port application to server environment" line relates to the request submitted by the Department of Personnel and Administration for a payroll modernization project. Please describe OIT's work with DPA on both of these requests. What, if any, learnings from the prior HRWorks project will be able to be leveraged for this project?

DPA and OIT have collaborated on both requests. DPA's CC-IT-01 Payroll Modernization request, if approved, would focus on modernizing the payroll and financial systems but does not include funding for the overarching mainframe replacement. The OIT request was submitted as part of a comprehensive plan to decommission the mainframe, which includes five tracks addressing several systems, including CPPS. Regardless of DPA's request, the work requested by OIT remains critical and necessary in parallel to any effort for DPA's business-focused initiative. Once detailed planning for both efforts is completed, we will be able to understand efficiencies, vulnerabilities, and risks and how the projects overlap one another to actually optimize efforts across the requests. The ultimate priority for OIT is to reduce risk and cost to the state by removing the legacy mainframe. While the mainframe is in production, our priority is to mitigate the risks to the state of failure, lapses in support, and loss of specific system knowledge necessary to sustain the solution.

Learnings from the prior project include having the benefit of the Gartner study, HRWorks lessons learned, and the extensive market information we've recently received. The agile methodology also has shown to be very effective in this type of project and should prevent expenditures with no immediate value/benefit (MVP). The clear benefit of product and process ownership along with clear roles and responsibilities will be applied.

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2. After completion of the five mainframe decommissioning projects included in this budget request, does OIT plan to totally eliminate the mainframe and will there be any additional mainframe-related costs in the future?

OIT would hope there would be no mainframe services after the requested mitigations are complete. We have identified the five major threads and plan for a full decommission. Ancillary dependencies may be discovered during the course of our work. If such additional services require an ongoing mainframe, OIT plans to migrate said functions to the cloud or to implement other options thereby mitigating the risk.

3. Please provide additional information about OIT's stakeholding work with agency partners and change management plan for every aspect of this project.

See the table provided in the Appendix for the information currently available and used to rough out our budget request. We have not yet conducted detailed project planning, stakeholder engagement or detailed costing for this work. Funding for detailed planning is included as part of the request. It would be the first phase of work. As a result, the detailed answers to most of these areas of inquiry are not yet available. OIT has not yet put together a change management plan and will do so once funding is approved.

4. Page 2 of the budget request document discusses the common policy service that was created in FY 2019-20 for agency refresh costs with an annual budget of \$800,700. Please describe what projects these funds have been used for since then.

The agency, expense, and project descriptions for FY 2019-20 and FY 2020-21 are detailed below. Project information for FY 2021-22 is not yet available as the service owner is finalizing the projects and spending plan with the agencies. These funds are used to migrate applications to OIT standard or enterprise platform solutions.

FY 2019-20 total: \$776,700

- Dept. of Agriculture: Contract developer to convert MS Access database to MS SQL for business applications, \$50,920
- Dept. of Public Health and Environment: Records management project, \$114,106
- Dept. of Military and Veterans Affairs: Digitize National Guard orders that are paper, \$9,504
- Dept. of Natural Resources: Migration of Colorado Parks and Wildlife from Inspect This! To Salesforce, \$28,850
- Dept. of Local Affairs: Bureau of Assessment Appeals Court Case Management System and migration of the Division of Housing from Inspect This! To Salesforce, \$262,950
- Dept. of Revenue: Kronos implementation (partial cost), \$60,056
- Dept. of Regulatory Affairs: Public Utilities Commission Hyland PAWS project, \$106,154
- Dept. of Personnel and Administration: Fairfax Pipeline upgrade, \$114,900
- History Colorado: Data consolidation and cleaning from multiple databases (EOS and Archivist toolkit) so data can be moved from a 2008 terminal server before it fails, \$29,260

FY 2020-21 total: \$776,997

- Dept. of Human Services: MoveIT project, CHATS request related to IAM, ACSES request tied to Automic, and VIP forms and ladders, \$95,000
- Dept. of Transportation: replace vendor LMS with OIT LMS, OnBase project, Contract Management System, \$171,273
- Dept. of Public Safety: OnBase human resources project, \$48,852
- Dept. of Health Care Policy and Financing: Salesforce Marketing Cloud, \$229,800
- Dept. of Revenue: Kronos implementation (partial cost), \$51,577
- Dept. of Personnel and Administration: OnBase human resources project, \$30,496

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5. Page 3 of the budget request document discusses the \$2 million General Fund that was transferred to the Technology Risk Prevention and Response Fund in Senate Bill 21-287. Does OIT have plans for specific projects for which to use these funds yet?

OIT has allocated the \$1 million in available spending authority to initiatives needing immediate attention: Firewall Cleanup and Network Security Device Upgrades.

For the Firewall Cleanup project, the outcomes include:

- Improve stability of Firewalls and enables documentation of operational configurations
- Improves Security posture and reduces risk to the state
- Improves customer satisfaction for both internal Agency partners and our constituents
- Reduces technical debt through the elimination of legacy configurations
- Provides a single pane of glass to manage systems, thus reducing complexity and staff time needed to manage these

Once completed, the firewall cleanup will have two measurable benefits:

- Reduced service disruption from lengthy outage recovery steps
- Increased availability of network security personnel for more valuable work efforts, such as solutions development, delivery, and audit preparation/mitigations

For the Network Security Device Upgrades, the outcomes include:

- Replaces end-of-life hardware before catastrophic failure
- Eliminates dependency on Agency under-funded network refresh needs
- Improved customer service to internal agency partners and our citizens
- Reduces tech debt by modernizing hardware and ensuring support for critical network components
- Staff can work on more modern systems

Once completed, the network security device upgrades will have two measurable benefits:

- Improved stability of network by reduced service disruptions
- Increases network hardware capacity for SB-WAN readiness

With the evolving incidents with Log4J and Kronos, it is anticipated that some funds will be needed to be used to remediate, although no funds have yet been allocated.

# Appendix:

Description	Submitted Amount	Updated Amount	What is this system/ application used for?	Why this system/ application/ project was selected to be included in this request;	Who uses this system/ application?	What does the Acronym Stand for?	An overview of the a cost-benefit analysis and project alternatives	A detailed breakdown of the cost estimates and market research that was used to develop the estimates;
<b>Decomission Mainframe</b>								
Application 1: SIDMOD	\$1,100,000	\$2,494,850	Provides common identity resolution for health systems	Highest operations and security risk to the state	Co. Dept of Human Services	SIDMOD= State Identification Module	Overall Cost estimate = \$34.4 M; Estimated savings = \$3.77 M/year. 11% return on investment per year.	Application 1: SIDMOD Replace SIDMOD functionality and Broker (EntireX) interface (3 parts) Part 1 - SIDMOD to AWS Cloud - \$425,000 (6 months) Part 2 - Modification of Source Systems to integrate with AWS Cloud - \$360,000 (6 months) Part 3 - Replacement of EntireX Broker - \$261,000 (6 months) Staffing using contractor rates since term limited 18months: 1 Project Manager(\$358,800), 1 Business Analyst(\$263,250), 2 Developers(\$563,550), 1 Quality Assurance analyst (\$263,250)
Application 2: Electronic Benefit Transfer	\$10,300,000	\$7,935,200	Facilitates direct money transfers as part of eligibility and relief programs	Highest operations and security risk to the state	Co. Dept of Human Services	EBT= Electronic Benefits Transfer	Overall Cost estimate = \$34.4 M; Estimated savings = \$3.77 M/year. 11% return on investment per year.	FTEs per Project w/2 year Level of Effort: 3 Developers, 2 Business Analysts, 1 Quality Assurance analyst # Teams needed: 4 Total FTEs requested per year 2 years: 12 Developers (\$4,508,400), 8 Business Analysts(\$2,808,000), 4 Quality Assurance analyst (\$1,404,000), 1 Project Manager (\$478,400)
Application 3: ACSES Modernization	\$1,900,000	\$2,180,100	ACSES is a computerized network used in most jurisdictions to collect child support.	Highest operations and security risk to the state	Co. Dept of Human Services	ACSES= Automated Child Support Enforcement System	Overall Cost estimate = \$34.4 M; Estimated savings = \$3.77 M/year. 11% return on investment per year.	FTEs per Project w/1 year Level of Effort: 3 Developers, 2 Business Analysts, 1 Quality Assurance analyst # Teams needed: 2 Total FTEs requested: 6 Developers(\$1,127,100), 4 Business Analysts (\$702,000), 2 Quality Assurance analysts(\$351,000)
Application 4: CPPS port application to server environment	\$20,500,000	\$17,979,000	Statewide payroll system and accounting interface	Highest operations and security risk to the state	Co. Dept of Personnel & Administration	CPPS= Colorado Personnel Payroll System	Overall Cost estimate = \$34.4 M; Estimated savings = \$3.77 M/year. 11% return on investment per year.	LOE=2Yrs. Below needed for 2 years 5 Project Managers (one lead PM, 4 PM's to handle an average of 4 agencies)-\$2,392,000 16 Business Analysts (one per agency) \$5,616,000 20 Lead Developers (one per agency and the CPPS Team) \$7,514,000 7 Quality Assurance analysts \$2,457,000
Application 5: Replacement of MFT (Cyberfusion)	\$600,000	\$941,200	Provides functionality for various systems to share data files via the mainframe	Highest operations and security risk to the state	CDHS, HCPF, CDLE, DOR	MFT/ Cyberfusion= Managed File Transfer	Overall Cost estimate = \$34.4 M; Estimated savings = \$3.77 M/year. 11% return on investment per year.	LOE= 1 yr 1 Project Manager (\$239,200) 1 Business Analyst(\$175,500) 2 Developers(\$351,000) 1 Quality Assurance analyst(\$175,500)
<b>Other Tech Debt Projects</b>								
Salesforce Security Vulnerabilities Refactoring	\$1,300,000	\$1,836,900	Salesforce is a customer relationship management (CRM) platform that allows for marketing, sales, commerce, service and IT teams work as one from anywhere.	Highest operations and security risk to the state	All agencies utilizing Salesforce	Not Applicable	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	LOE= 1 yr 1 Project Manager (\$239,200) 1 Business Analyst (\$175,500) 5 Salesforce Administrators/Developers (\$1,071,200) 2 Salesforce-trained Quality Assurance analysts(\$351,000)

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ITSM and ITAM	\$2,400,000	\$2,400,000	This platform is used to manage IT projects, IT assets, business management, service desk, billing, and financial management.	The report which was the outcome of SB 19-251 recommended that OIT set up a IT Asset Management program and Configuration Database. Some funding was approved and the work commenced, the Hardware Asset Management base	All agencies supported by OIT	ITSM+Information Technology System Management; ITAM = Information Technology Asset Management (OIT has procured ServiceNow)	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	HAMPro (licensing 1yr) - \$309,295 SAMPro (licensing 1yr) - \$674,830 IT Operations Management (licensing 1yr) - \$288,675 IT Asset Anlysts to commence audit of non- discovery assets (1Yr) - \$375,000 Implementation estimate \$752,200
Salesforce Classic to Lightning Upgrade	\$1,600,000	\$1,836,900	Salesforce is a customer relationship management (CRM) platform that allows for marketing, sales, commerce, service and IT teams work as one from anywhere.	No longer vendor supported. Medium security risk.	All agencies utilizing Salesforce	Not Applicable	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	1 Project Manager (\$239,200) 1 Business Analyst (\$175,500) 5 Salesforce Administrators/Developers (\$1,071,200) 2 Salesforce-trained Quality Assurance analysts(\$351,000)
SharePoint Migration to platforms OnBase	\$100,000	\$2,243,800	SharePoint is used as a secure place to store, organize, share, and access information from any device.	Tech debt reduction. Medium security risk.	CDA, CDPHE, CDPS, CPW, DORA and CDOT	Not Applicable	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	FTEs per Agency w/1 year Level of Effort: 3 Developers, 2 Business Analysts, 1 Quality Assurance analyst # agency Teams needed: 2 (allows 3 Agencies to be simultaneously) Total FTEs requested: 6 Developers(\$1,127,100), 4 Business Analysts (\$702,000), 1 Quality Assurance analysts(\$175,500), 1 Project Manager (\$239,200)
Enterprise Identity (SSO, MFA, and Proof of Identity) note: this replaces the line item for PPMA/PEAT migration since PEAT migration already completed and Enterprise Identity is critical	\$1,400,000	\$1,400,000	There is no statewide single identity, single sign on, this would be used for all systems and applications	Highest operations and security risk to the state	All agencies	SSO= Single Sign On MFA= Multifactor authentication	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	License costs (vendor quote) - \$1.4M

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MS Access replatforming	\$700,000	\$614,900	Microsoft Access is an information management tool, or relational database, that helps you store information for reference, reporting and analysis.	Highest operations and security risk to the state	All agencies	MS= Microsoft	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	1 Project Manager (\$239,200) 2 Developers(\$375,700)
Call Center Transformation	\$500,000	\$614,900	There are four agencies which have old call centers (IVR or others) which can be upgraded to Omnichannel support. This project would migrate 15 call centers used by DOR, OIT, CDPHE, and others.	Migrate to modern, stable platform. Medium security risk.	All agencies	Not Applicable	Overall Cost estimate = \$8M; Estimated savings = \$2.79 M/year. 35% return on investment per year.	1 Project Manager (\$239,200) 2 Developers(\$375,700)
<b>Exit Efort and Cloud Migration</b>								
Cloud Migration	\$2,900,000	\$2,900,000	Provides a virtual private cloud for business application hosting to reduce physical service space and costs.	Cloud migration. Medium security risk.	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	Cloud migration costs and annual Ops Support - \$2,309,800 Project Manager-\$239,200 Business Analyst-\$175,500 Solutions Engineer-\$175,500
Upgrading SQL servers from 2008	\$2,100,000	\$2,319,460	Provides an operating system for business applications.	Highest operations and security risk to the state	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	FTEs needed: 1 Server Admin (\$214,240), 1 Firewall Admin (\$214,240), 2 Database Administrators (\$428,480), 2 Systems Analysts (\$457,600), 1 Project Manager (\$239,200), 1 Scrum master(\$239,200), 1 Business Analyst (\$175,500), 2 Testers (\$351,000)
Windows 2008 retirement	\$5,200,000	\$3,987,750	Provides an operating system for business applications.	Highest operations and security risk to the state	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	FTEs per Agency w/1 year Level of Effort: 3 Developers, 2 Business Analysts, 1 Quality Assurance analyst, 1 project manager # agency Teams needed: 3 (allows 3 Agencies to be simultaneously) Total FTEs requested: 9 Developers(\$1,690,650), 6 Business Analysts (\$1,053,000), 3 Quality Assurance analysts(\$526,500), 3 project manager (\$717,600)

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Infrastructure and Network Buildout	\$4,100,000	\$4,404,200	A reliable, monitored, secure, and state-owned storage platform for application and database needs as well as backups, disaster recovery, and file shares.	Highest operations and security risk to the state	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	<ol style="list-style-type: none"> <li>1. Cloud Services - \$1,650,000 one-time</li> <li>2. Lakewood Data Center Buildout - \$1,750,000 one-time [with \$200,000 ongoing]</li> <li>3. Rearchitecture - \$100,000 one-time</li> <li>4. Project Manager - \$239,200 one-time</li> <li>5. FTE (2) - Cloud Platform Services - \$665,000 ongoing</li> </ol>
Storage Renewal	\$5,200,000	\$5,200,000	A reliable, monitored, secure, and state-owned storage platform for application and database needs as well as backups, disaster recovery, and file shares.	Highest operations and security risk to the state	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	<ol style="list-style-type: none"> <li>1. Storage Area Network and Cloud Storage - \$3,600,000</li> <li>2. On-Prem Shared Services Storage - \$1,600,000</li> </ol>
CORE network refresh	\$4,100,000	\$4,139,200	The CSN Core is the information highway built for state enterprises. As the hut, it provides the deployment flexibility and administrative control you need to manage mission-critical applications.	The existing network communication gear requires a refresh and functional expansion to continue supporting ongoing statewide business needs. Medium security risk.	All agencies	Not Applicable	Overall Cost estimate = \$23.6 M; Estimated savings = \$4.33 M/year. 18% return on investment per year.	<ol style="list-style-type: none"> <li>1. Project Manager - \$239,200 one-time</li> <li>2. Upgrade Primary Internet Bandwidth to 20GB - \$400,000 one-time [with \$300,000 ongoing]</li> <li>3. Infrastructure Backbone - \$1,000,000 one-time [with \$275,000 ongoing]</li> <li>4. Next Gen Networking(SDWAN/SASE/DIA) - \$1,000,000 one-time [with \$500,000 ongoing]</li> <li>5. Data Center Failover - \$900,000 one-time [with \$200,000 ongoing]</li> <li>6. Enterprise Wireless - \$300,000 one-time [with \$200,000 ongoing]</li> <li>7. Enterprise ISE - Identity Services Engine - \$300,000 one-time [with \$200,000 ongoing]</li> </ol>