Schedule 13

Funding Request for the 2013-14 Budget Cycle

Department: Revenue
Request Title: DOR IT Infrastructure Performance Enhancements
Priority Number: R-2

Dept. Approval by: Barbara J Brohl 10/22/12 Date

OSPB Approval by: [signature] 10/26/12 Date

☑ Decision Item FY 2013-14
☐ Base Reduction Item FY 2013-14
☐ Supplemental FY 2012-13
☐ Budget Amendment FY 2013-14

Line Item Information		FY 2012-13		FY 2013-14		FY 2014-15
		1	2	3	4	6
	Fund	Appropriation FY 2012-13	Supplemental Request FY 2012-13	Base Request FY 2013-14	Funding Change Request FY 2013-14	Continuation Amount FY 2014-15
Total of All Line Items	Total	10,766,898	-	10,778,405	3,917,008	3,264,141
	FTE	-	-	-	-	-
	GF	6,636,299	-	6,808,143	2,859,487	2,206,620
	CF	3,696,181	-	3,970,262	1,057,521	1,057,521
	HUTF	32,000	-	-	-	-
	RF	402,418	-	-	-	-
(1) Executive Director's Office, Purchase of Services from Computer Center	Total	9,645,539	-	9,745,942	3,208,201	3,114,141
	FTE	-	-	-	-	-
	GF	5,759,188	-	5,889,878	2,150,680	2,056,620
	CF	3,483,933	-	3,856,064	1,057,521	1,057,521
	RF	402,418	-	-	-	-
(3) Information Technology Division, Personal Services	Total	347,402	-	258,506	150,000	150,000
	FTE	-	-	-	-	-
	GF	217,352	-	258,506	150,000	150,000
	CF	98,050	-	-	-	-
	HUTF	32,000	-	-	-	-
(3) Information Technology Division, Operating Expenses	Total	773,957	-	773,957	558,807	-
	FTE	-	-	-	-	-
	GF	659,759	-	659,759	558,807	-
	CF	114,198	-	114,198	-	-

Letternote Text Revision Required? Yes: ☐ No: ☑ **If yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and COFRS Fund Number: Various Cash Sources
Reappropriated Funds Source, by Department and Line Item Name:
Approval by OIT? Yes: ☑ No: ☐ **Not Required:** ☐
Schedule 13s from Affected Departments: Office of Information Technology
Other Information:

Calculation Assumptions:

Personal Services -- Based on the Department of Personnel and Administration's July 27, 2012 System Maintenance Study - Applications Programmers and Information Technology Services, an IT Supervisor at the MIDDLE of the pay range will require a monthly salary of $8.300. An IT Professioal at the MIDDLE of the pay range will require a monthly salary of $6,300.

Operating Expenses -- Base operating expenses are included per FTE for $500 per year. In addition, for regular FTE, annual telephone costs assume base charges of $450 per year and training costs of $500 per year.

Standard Capital Purchases -- Each additional employee necessitates the purchase of a Personal Computer ($900), Office Suite Software ($330), and office furniture ($3,473).

General Fund FTE -- New full-time General Fund positions are reflected in FY 2012-13 as 0.9166 FTE to account for the pay-date shift.

Expenditure Detail		FY 2013-14		FY 2014-15	
Personal Services:		FTE	$	FTE	
	Monthly Salary				
IT Supervisor	$ 8,300	2.0	199,200	2.0	199,200
PERA			20,219		20,219
AED			7,171		7,171
SAED			6,474		6,474
Medicare			2,888		2,888
STD			353		353
Health-Life-Dental			8,842		8,842
Subtotal Position 1, #.# FTE		2.0	**$ 245,147**	2.0	**$ 245,147**
	Monthly Salary				
IT Professional	$ 6,300	18.0	1,360,800	18.0	1,360,800
PERA			138,121		138,121
AED			48,989		48,989
SAED			44,226		44,226
Medicare			19,732		19,732
STD			2,409		2,409
Health-Life-Dental			79,579		79,579
Subtotal Position 2, #.# FTE		18.0	**$ 1,693,856**	18.0	**$ 1,693,856**
	Monthly Salary				
Project Manager	$ 11,756	2.0	282,142	2.0	282,142
PERA			28,637		28,637
AED			10,157		10,157
SAED			9,170		9,170
Medicare			4,091		4,091
STD			499		499
Health-Life-Dental			8,842		8,842
Subtotal Position 3, #.# FTE		2.0	**$ 343,538**	2.0	**$ 343,538**
Subtotal Personal Services		22.0	**$ 2,282,541**	22.0	**$ 2,282,541**

Operating Expenses					
Regular FTE Operating		20.0	-	20.0	-
Telephone Expenses		20.0	-	20.0	-
PC, One-Time	1,230	20.0	24,600		
Office Furniture, One-Time	3,473	20.0	69,460		
Training		20.0	-	20.0	-
Other			-		
Other			-		
Other			-		
Subtotal Operating Expenses			**$ 94,060**		**$ -**
TOTAL REQUEST		22.0	**$ 2,376,601**	22.0	**$ 2,282,541**
General Fund:					
Cash funds:					
Reappropriated Funds:					
Federal Funds:					

DEPARTMENT OF REVENUE AND THE GOVERNOR'S OFFICE OF INFORMATION TECHNOLOGY

John W. Hickenlooper
Governor

Barbara J. Brohl
Executive Director

FY 2013-14 Funding Request

November 1, 2012

Barbara J. Brohl 10/25/12
Signature Date

Department Priority: R-2
Request Title: DOR IT Infrastructure Performance Enhancements

Summary of Incremental Funding Change for FY 2013-14	Total Funds	General Fund	Cash Funds	FTE
DOR IT Infrastructure Performance Enhancements	$3,917,008	$2,859,487	$1,057,521	0.0

Request Summary:
The Department of Revenue (DOR) requests $3,917,008 ($2,859,487 General Fund and $1,057,521 cash funds) for server hosting services, hardware and software upgrades, and operations support services. This request will provide funding for investments in the data network, server, and storage environment, while enhancing the Governor's Office of Information Technology (OIT) support services for the Department. This request consists of four components all of which are interdependent upon each other and will enhance the performance of the Department's information technology (IT) infrastructure. These components include the following:

1. Migration to the Enterprise Computing Environment (ECE) through the Governor's Office of Information Technology. This request supports a server virtualization strategy for the Department and provides a stable, modern, and sustainable environment for its aging IT infrastructure. This request totals $831,600.
2. Modernization of the core data network infrastructure including the replacement of switches, routers, and UPS devices. This one-time request totals $558,807.
3. On-going software licensing for hardware operating systems that support the GenTax application. This request totals $150,000.
4. Enhanced OIT operational services to support the Department's IT infrastructure including service desk, desk side support, network support, server and system support, security, and project management. This request totals $2,376,601 including one-time start-up costs of $94,060 and 22.0 FTE for OIT.

Problem or Opportunity:
The Department's current IT infrastructure is unable to provide the necessary ongoing capacity and reliability required to support current usage and planned projects. The set of services that are the most critical to address include the server, storage, and network infrastructures. The current server infrastructure is a mismatch of both old and new technologies, some of which date back 15 years; it lacks standardization; the equipment is out of warranty and more susceptible to failure; and the operating systems and software are out-of-date and no longer supported by the manufacturer. The storage environment is at risk

due to out of warranty equipment and inconsistent platforms. In regards to the network infrastructure, hardware replacement and maintenance has been inconsistent and further compounded by the existence of old legacy systems and the network has been plagued with inconsistent configurations and standards.

The Department of Revenue receives appropriations in the Information Technology Division personal services and operating line items in the Long Bill. The table below shows appropriation history for three fiscal years after the consolidation of OIT. Most of this funding is used to purchase hardware and software for network and servers, equipment maintenance and contracts, and telecommunication costs, along with programming costs for special bills. When appropriations are not sufficient to respond to problems or failures, for example, the Department utilizes funds from personal services and operating expenses elsewhere in the Department to supplement IT spending. This negatively impacts the Department's business units by diverting funds that otherwise would be used to hire staff and deliver services to the public.

Department of Revenue Information Technology Division Appropriations			
Line Item	**FY 2010-11**	**FY 2011-12**	**FY 2012-13**
Personal Services	$306,559	$420,666	$347,402
Operating Expenses	$847,111	$800,222	$773,957
Total	$1,153,690	$1,220,888	$1,121,359

Prior to FY 2009-10, there were 84.4 FTE appropriated to the Department. In FY 2008-09, SB 08-155 moved 4.5 FTE to OIT for the initial consolidation. In FY 2010-11, the IT staff was reduced by 5.2 FTE due to statewide budget cuts. When OIT consolidated staff in FY 2010-11, they were required to reduce staff in each department by 10 percent. For the Department this reduction equated to 10.6 FTE. In FY 2011-12, OIT allocated an equivalent to 66.2 FTE to the Department to provide IT services (not including CSTARS staff).

Brief Background:
In FY 2011-12, the Department engaged a contractor to develop a strategic plan in concert with OIT that would identify, prioritize, and plan for network infrastructure improvements to meet the Department's identified business demands and requirements. Based on the needs of the Department, OIT is augmenting the plan and recommending a service model that manages the current challenges of the Department's network infrastructure operations and improves the day-to-day quality and reliability of these services. The goal of the plan is to enable the Department to migrate critical applications to more reliable, secure, and efficient technologies, replace hardware based on replacement cycles, and support the Department's network infrastructure as recommended by OIT.

Proposed Solution:
Part 1: Migration to Enterprise Computing Environment
OIT proposes to migrate the majority of the Department's current server infrastructure to the ECE. This request totals $831,600 in FY 2013-14. The funding will be appropriated in the OIT common policy Purchase of Services from Computer Center line item in the Department's Long Bill.

This request is consistent with OIT's statewide data center consolidation initiative and will result in the migration to a hosted virtual server environment for the majority of the Department's legacy servers over a two-year period. This virtualization strategy provides the ability to segment multiple servers into partitions on virtual servers. The virtualization model offers a variety of benefits including a robust modern architecture that is scalable and sustainable, compliant with cyber security requirements, enables the Department to upgrade and migrate applications to the most optimal platforms, and provides standardization and functionality currently not available with the present systems.

Physical servers can be inefficient in space utilization and energy consumption.

Virtualization allows for the consolidation of physical servers at a ratio up to 10:1 depending upon the application, security requirements, platform, and database compatibility. Virtualization also gains efficiencies in server licensing at a ratio of 4:1.

Each virtual server is configured with an operating system and is set up to run a specific suite of applications and/or services. Not all applications and/or server data can be migrated to the ECE. The Department of Revenue has approximately 35 physical servers that are not suitable candidates for a virtual server environment. During the planning and design phase for this initiative, each of the applications supported by these servers will be evaluated for virtualization.

Part 2: Modernization of Core Data Network Infrastructure

OIT proposes to modernize the Department's network equipment. This one-time request totals $558,807 General Fund in FY 2013-14 of which $419,735 is to purchase equipment and $112,462 is for labor costs to design, configure, install, and test the equipment. The funding will be appropriated in the Department's Information Technology Division Personal Services and Operating Expenses line items. The useful life of this equipment is 5 years; therefore, the Department anticipates a funding request to modernize the network infrastructure every five years.

This request is in alignment with OIT's strategic direction to modernize the Department's network infrastructure and to employ standards for platforms and routing protocols. The solution proposed by OIT is to replace 48 network switches and 2 network routers and to purchase and install 20 uninterrupted power supply (UPS) devices to provide emergency back-up power to the network devices. This equipment will be installed at two DOR locations: 1375 Sherman (Annex) and 1881 Pierce Street. Attachment A provides a list of equipment required to modernize the Department's network by location.

The core network at 1375 Sherman is over 15 years old. The switches, routers, uninterrupted power supplies (UPS), and cabling are well past end of life and are no longer supported by the manufacturers. The network routers and switches are obsolete and operating systems are no longer updated. The devices are not repairable in the event of a failure as parts for these devices are no longer available.

There are only two working UPS devices at 1375 Sherman; when there should be seven. There is significant risk to the Department in loss of data, loss of productivity, and loss of services to the public. While the cabling at both locations is in critical need of replacement, the scope of this request is limited to modernization of the switches and routers in the network infrastructure.

Additionally, the current network has no routing protocol due to antiquated technology. This limitation requires every IP network to be placed on the routers and switches manually, thus making these devices slow and inefficient. The routing protocol is a program that allows a network to dynamically adjust pathways through the network. Currently, the Department's network is in a static mode with all pathways predefined. Without a routing protocol, the network cannot change dynamically if a pathway goes down. Thus, if one device fails, the network cannot change routing protocols unless a change in pathways is done manually. When new equipment is purchased, this can be properly configured throughout the network.

The current preprogrammed routing in the network requires much more memory within the routers and switches. Once the network is upgraded and network routing protocols are established, the network devices will not need as much memory to hold the routes in place. That memory can then be used for faster transfer through the network devices (also known as network latency). The use of a routing protocol versus static routes can reduce latency by up to 10.0 percent.

The Department requires a network with 99.99% reliability. Only scheduled outages should be allowed and down time should be minimized. Currently, the DOR network performs at 99.45% reliability. The service level reflects all servers, switches, routers, and other network equipment associated with the infrastructure. This level of service for July 2012 equates to four hours of network downtime and 57.4 hours of application downtime. The majority of the downtime impacted the Driver's License System and the Colorado State Titles and Registration System (CSTARS). These outages were experienced during business hours and directly affected the public. Without a modern network infrastructure and a dependable method of transporting data between end users, be they citizens or employees of the Department of Revenue, these functions will cease to operate.

Part 3: Ongoing software licensing

The Department requests $150,000 General Fund in FY 2013-14 and each year thereafter for software license and maintenance renewal costs to support the GenTax application on the network. License renewal costs for monitoring tools, system backup and recovery, firewalls, help desk, and virtual server licenses are included in this request. Currently, these costs are supported by the Colorado Integrated Tax Architecture (CITA) project. As the CITA project nears completion, there will be no funds available to pay for these on-going expenses. These renewals will insure the software supporting the GenTax application on the network is secure, monitored for threats, and backed up.

Part 4: Operational Support Services

OIT requests $2,376,601 and 22.0 FTE in FY 2013-14 and $2,282,541 each year thereafter to provide operational support services for the Department of Revenue. This funding provides additional staff for service desk, desk side support, network support, server/systems support, security, and project management. This funding will be appropriated in OIT's common policy Purchase of Services from Computer Center line item in the Department's Long Bill.

OIT performed a staffing analysis using a combination of resource allocation tools, industry standards, work volume, project scaling, and current staffing patterns to determine the optimal number of staff required to support the Department of Revenue's IT infrastructure. This includes maintaining current systems, upgrading applications, migrating the current infrastructure to the hosting environment, and supporting the modernized infrastructure identified in this request.

The additional 22.0 FTE is, in part, supported by an analysis of the current environment compared to Computer Economics Industry Standards. The Industry Standards are based on the number of users per IT staff to be consistent across different functional areas. The criteria used are based on a medium-sized IT organization between 10 to 99 staff. The data compared utilization rates and the number of PCs, servers, network devices, and users that can be supported per IT staff. Appendix B shows the current level of staffing compared to industry standards for each functional area.

OIT is planning to use Industry Standard data to support organizational service requirements for other departments going forward. OIT is also implementing other tools such as Resource Allocation and Asset Management that will further support the planning and justification of IT resources needed to support departments and their operations and services.

The Department of Revenue has experienced multiple issues with critical systems due to equipment outages and equipment failures. Appendix C shows Department applications were available 98.3 percent of the time on average in FY 2011-12. The multiple outages predominantly affected not only the staff but the public utilizing the Driver's License System, CSTARS, and the Enforcement Business Group licensing system. Consequently, OIT staff is often reassigned to manage these outages rather than doing daily maintenance activities, upgrades, patches, project planning and implementation,

and proactive planning to ensure the IT infrastructure is reliable and scalable.

While not all servers can be placed in the ECE, by locating the majority of the servers in one place, updating them to current technology, and purchasing the proper tools allows for greater efficiency in servicing the environment. Additionally, there are several OIT initiatives (Data Center Consolidation, Google deployment, Colorado State Network, Enterprise Computing Environment) that will help move the Department to newer technology platforms with standardization and centralized management, and reduce the need to add more staff than supported by this request.

The following information summarizes the duties and responsibilities of the 22.0 FTE by functional area included in this request.

Service Desk: 3.0 FTE -- This staff provides Tier 1 support for a wide range of services, products, and applications and is the primary intake for problem and incident management. This staffing level will provide the following:

- Records details of customer contacts and actions taken
- Diagnoses problems and provides solutions
- Resets and restores end users passwords and provides access to the mainframe
- Uses documented processes and procedures to manage outages
- Ensures outage notifications are sent and status updates are provided timely
- Manages service tickets in incident management system
- Escalates large scale incidents and liaisons with other OIT sections
- Determines solutions, procedures, and configuration options
- Determines which technical specialist to refer problems

Desk Side Support: 5.0 FTE – This staff provides Tier II support including on-call support 24/7/365 and includes the following:

- Troubleshoots and finds resolutions to software, hardware, computers, mobile devices, and network problems associated with the LAN/WAN environments
- Configures, images, and deploys computers, laptops, and mobile devices in accordance with OIT service standards
- Determines resolution for software and hardware problems and estimates resources required
- Remotely pushes/publishes software, security updates, and patches
- Ensures software license compliance
- Analyzes and tests configuration options
- Runs diagnostic procedures and determines cause of problems
- Works on IT projects involving software, hardware, and network connectivity issues
- Provides scope, estimates, and plans and schedules projects
- Participates and tracks project progress and provides technical support

The staffing request for the service desk and desk side support is sufficient to address an increased workload due to the following: (1) implementation of newer technologies such as Wait-Less kiosks, which requires OIT to assume a vendor management role; (2) aging hardware, operating systems, and applications; (3) ongoing support issues related to aging technology and incompatibility between new technologies and the legacy infrastructure; (4) outdated legacy systems; (5) lack of standardization in equipment and operating systems; (6) increased number of Major Incidents; and (7) Service Level Agreement requirements of detecting, communicating, and resolving problems in 4 hours or less.

The risks of not having a properly staffed service desk and desk side support include the following: (1) negatively impacts staff productivity; (2) increased number of dropped/abandoned calls--1,190 per month--about 25 percent of the total volume of tickets; (3) long wait times--between 45 to 55 minutes; (4) long resolution times; (5) backlog of three months for network and system

account provisioning; (6) backlog in deploying 180 new computers; (7) poor communication--due to volume of calls and the inability to send out timely notices advising users of outages; and (8) increased dissatisfaction by users.

Network Support: 1.0 FTE – This staff supports day to day operations of the network environment including LANs, WANs, network segments, intranets, and other data communication systems and includes the following:

- Tests and evaluates existing network systems
- Performs regular maintenance and responsible for day to day operations
- Supports and troubleshoots the network environment and other data communications
- Designs, configures, installs, and modifies network hardware and software
- Selects network equipment to create fully functional network systems using appropriate protocols
- Documents business rules; creates, configures, and customizes equipment and tracks warranties
- Manages firewalls including rules and upgrades
- Completes annual legislative changes
- Assists in testing service packs and new application releases
- Provides development and technical support and problem resolution
- Maintains network and computer system security
- Collects data and evaluates network/system performance
- Manages telecommunications networks
- Assesses capacity and functionality criteria for networks

Servers/Systems Support: 10.0 FTE – This staff is responsible for managing the Department's server environment and includes the following:

- Performs functions as domain administrator of the server network and application administration (i.e., Altiris, Commvault, HP SIM, PSR, VMware, Sharepoint, Tumbleweed, Active directory, SAN administration
- Recommends administrative systems and procedures to ensure infrastructure/domain run smoothly
- Diagnoses, plans, and solves problems relating to all servers and networks
- Advises and counsels DOR management in server systems, recovery, and software issues
- Oversees monitoring of infrastructure performance insuring high speed and reliable access and recovery
- Researches, develops, and evaluates specifications for new hardware and software
- Produces plans and makes recommendations on policy and operating procedures to manage network updates and improvements
- Supports IT project implementation
- Oversees the installation, adaptation, and functionality of new system hardware and software
- Prepares technical specifications for RFP and bid processes and costs for fiscal notes

Security: 1.0 FTE – This position is responsible for providing operational and technical advice in matters relating to information security and works to ensure confidentiality, integrity, and availability of systems, networks, and data and includes the following:

- Addresses practical and statutory requirements of computer security program
- Provides technical support to ensure effective IT security practices are incorporated into the analysis, development, implementation, maintenance, and enhancement of systems, programs, and policies
- Advises system owners of security implementation, operations, maintenance, and disposal activities
- Conducts system security audits and risks and vulnerability assessments and makes recommendations
- Prepares information security plans, contingency plans, and disaster recovery procedures

- Develops security certification, accreditation, and security assessment policies and procedures that are consistent with IRS Publication 1075 and applicable federal laws
- Participates in defining information technology security requirements, developing security standards, implementing best practices, and supporting IT security applications
- Monitors networks for anomalous activity and security breaches and investigates violations
- Researches information security trends

The need for additional security staff assigned to the Department is due to the following: (1) increasing security requirements imposed by the IRS; (2) increasing number, scope, and complexity of external threats; (3) aging infrastructure and systems; and (4) many existing security solutions are ineffective in addressing complex and aggressive attacks. The number of remediation items for FY 2011-12 totaled 226, which is more than double the previous audit.

Project Management: 2.0 FTE – These positions provide project management support to the Department and include the following:

- Develops project plans to include high level statement of work, project schedule, resource planning and scheduling, change management plan, communication plan, risk and mitigation plan, and quality assurance
- Provides project leadership and guidance by prioritizing, problem solving, decision making, and conflict resolution
- Utilizes Enterprise Portfolio and Project Management methodology and Clarity to manage and report project status

The need for additional IT project management assigned to the Department is due to an increasing number of new projects that enhance service delivery to stakeholders and require IT solutions. Currently, there are 26 projects in progress, 27 projects in the queue, and another 72 projects do not have project managers and technical resources assigned due to the lack of availability.

Alternatives:

Without predictable, consistent, and adequate funding, the Department will have to reallocate funding from other programs to support its IT infrastructure. Programs such as the Taxation Business Group, Division of Motor Vehicles, and the Enforcement Business Group will be negatively impacted if resources are diverted from providing services to the public such as processing and auditing tax returns, answering taxpayer questions at the call center, processing business license applications, and issuing driver's licenses.

Replacing and maintaining all the Department servers is an option to the hosting environment. The life cycle for a server is four years. Currently, the Department has 230 servers, of which 66 percent are older than four years old. If the Department maintains a four-year replacement schedule (58 servers replaced annually), the annual replacement costs of these servers is estimated to total $3.2 million (not including installation costs).

If the Department purchases and implements its own system using virtual servers, similar to the hosting recommendation, the initial cost would be more than $2.0 million (not including installation costs) with additional costs for annual maintenance of the servers. The Department would be responsible for replacing the equipment and supporting the software on a routine basis.

OIT estimates a third party managed service contract would cost $3.0 to $5.0 million annually to support the Department's network infrastructure. Managed service contracts are used in other Departments, such as the Department of Human Services for county network infrastructure support. Additionally, the Department of Revenue uses a third party contractor to support CSTARS equipment. The contractor has specific duties related to approved task orders and is also responsible for deploying equipment to remote locations. The Department's primary network is old, fragile, unstable, and uses a large number of platforms

and applications, thereby increasing the need for expertise in legacy systems and more contractors. According to OIT, hiring a contractor for other than predefined tasks is three times more expensive per contractor than hiring FTE.

Anticipated Outcomes:
This request provides $3,917,008 and 22.0 FTE in OIT for FY 2013-14 to modernize and support the Department's IT infrastructure. This investment provides numerous benefits as delineated below:

- Less physical servers to maintain, less power consumption and space requirements, ability to share resources between virtual machines, and lower hardware maintenance costs.
- Server configuration provides application developers with separate partitioned environments for development and testing.
- Allows portability from one physical server to another without reconfiguring or affecting the applications or users.
- Provides the ability to move mission critical applications to any comparable server in the event of a disaster.
- If a machine crashes or for any reason needs to be rebooted, all other virtual machines on the server continue to operate, unaffected by the problems of other virtual machines.
- The design and planning phase for the server migration will identify requirements for current applications and eliminate any data on the physical servers no longer used in the current environment.
- Modernizes the core network infrastructure, improves network reliability, ability to dynamically reroute traffic when failures occur, ability to maintain and restore the network more quickly in the event of a failure, faster network speeds, and overall improvement in network performance.
- Provides for on-going software licensing for the hardware that supports the GenTax application, ensures updates, patches, maintenance, and support are in place, and safeguards the hardware during the renewal period.
- Augments OIT staff providing operations services supporting the IT infrastructure hosting mission critical applications.

Assumptions for Calculations:
Appendix D provides detailed calculations related to this request.

Consequences if not Funded:
Without a comprehensive strategic approach to address its aging and failing network infrastructure, the Department will continue to experience network slowdowns, frequent outages or complete failure. This will continue to have a significant impact on staff productivity and customer service while increasing costs.

If the additional OIT staff resources are not provided, the migration to the hosting environment and the upgrades to the core data network cannot be performed. Daily maintenance of the Department's infrastructure will revert to emergency fixes only and IT projects that enhance the delivery of services and improve the efficiency and effectiveness of the Department's business operations will not be initiated.

The lack of funding will affect the Department's network infrastructure in the following ways:

1. Reliability and Serviceability: If the network breaks in any substantial way, the consequences to the business will be unpredictable, but serious. Depending on where the network fails, applications may stop working completely, or gradually degrade because of a lack of data refresh. Employees affected by the failure will not be able to use email or access the internet and applications. Any function that requires continuous remote data access will fail immediately.
2. Function, Flexibility and Resilience: Beyond simple reliability, the Department's network has virtually no resilience in the event of a failure and is lacking in speed and features. Modern networks have the ability to route around failed components, so the network can

continue operating without downtime while the failed component is being replaced. Unfortunately, the Department's network will disconnect customers immediately upon failure, their number and location being dependent on the location of the failure. In addition, the lack of modern features means that the network is inflexible and requires manual reconfiguration to support projects like data center consolidation. This lack of flexibility slows projects down and utilizes valuable staff time. And finally, the Department's network is slower than modern networks, which means that new features like video conferencing or IP telephony are not possible.

Impact to Other State Government Agency:
Governor's Office of Information Technology

Cash Fund Projections:
The Department allocates the costs of this request proportionally across all the cash-funded programs. These programs have sufficient fund balances to cover the additional spending authority provided in this request.

Relation to Performance Measures:
This request relates to the Department's goal of Customer Service and being respectful to customers by providing processes that are clear, simple, timely, and convenient; and Fiduciary Responsibility by providing responsible financial, resource, and project management that builds a sustainable foundation utilizing a high standard of care.

Supplemental, 1331 Supplemental, or Budget Amendment Criteria:
Not Applicable

Current Statutory Authority or Needed Statutory Change:
None

APPENDIX A

MODERNIZATION OF CORE DATA NETWORK EQUIPMENT

Building	Location	Equipment	Switch Qty	Router Qty	New Equipment Needed	Cost Per Device	Total Cost	UPS Qty	UPS Cost/Unit	UPS Total Cost	Additional Costs (Fiber Connectors, Cross Connects)	Smartnet Per Year	Purchase 3 Yr SmartNet	Total/Site
Annex	Floor 7	Switch 2 HP 2650	3		3 Cisco 3750 (48 port)	$5,840.21	$17,520.63	1	$513	$513	$1,886	$1,208.10	$3,624.30	
Annex	Floor 6	Switch 2 HP 2650	2		2 Cisco 3750 (48 port)	$5,840.21	$11,680.42	1	$513	$513	$1,244	$805.40	$2,416.20	
Annex	Floor 5	Switch 2 HP 2650	2		2 Cisco 3750 (48 port)	$5,840.21	$11,680.42	1	$513	$513	$1,244	$805.40	$2,416.20	
Annex	Floor 4	Switch 2 HP 2650	2		2 Cisco 3750 (48 port)	$5,840.21	$11,680.42	1	$513	$513	$1,244	$805.40	$2,416.20	
Annex	Floor 3	Switch 1 HP 4108	3		3 Cisco 3750 (48 port)	$5,840.21	$17,520.63	1	$513	$513	$1,886	$1,280.10	$3,840.30	
Annex	Floor2	Switch 2 HP 2650	2		2 Cisco 3750 (48 port)	$5,840.21	$11,680.42	1	$513	$513	$1,244	$805.40	$2,416.20	
Annex	Computer Room	Switch 3 HP 2650	3		3 Cisco 3750 (48 port)	$5,840.21	$17,520.63	4	$513	$2,052	$1,886	$1,208.10	$3,624.30	
Annex	Computer Room	Router 1 HP 5308		1	1 Cisco 4500 + options	$29,814.26	$29,814.26							
Annex	Computer Room	Router 1 HP 3500		1	1 Cisco 4500 + options	$29,814.26	$29,814.26							
Annex	Computer Room	Switch 1 HP 4108	3		3 Cisco 3750 (48 port)	$5,840.21	$17,520.63				$1,886	$1,208.10	$3,624.30	
Subtotal			**20**	**2**			**$176,432.72**	**10**		**$5,130**	**$12,520**	**$8,126.00**	**$24,378.00**	**$218,460.72**
Pierce	Closet A	Switch 1 HP 4108	3		3 Cisco 3750	$5,840.21	$17,520.63	1	$513	$513	$1,886	$1,208.10	$3,624.30	
	Closet B	Switch 1 HP 4108	3		3 Cisco 3750	$5,840.21	$17,520.63	1	$513	$513	$1,886	$1,208.10	$3,624.30	
	Closet C	No Equip.						0	$513	$0			$0.00	
	Closet D	Switch 2 HP 4108	5		5 Cisco 3750	$5,840.21	$29,201.05	2	$513	$1,026	$3,110	$2,013.50	$6,040.50	
	Closet E	Switch 4 HP 4108	9		9 Cisco 3750	$5,840.21	$52,561.89	4	$513	$2,052	$5,598	$3,624.30	$10,872.90	
	Closet F	Switch 2 HP 2650	2		2 Cisco 3750	$5,840.21	$11,680.42	1	$513	$513	$1,244	$805.40	$2,416.20	
	Closet F	Switch 1 HP 4108	4		4 Cisco 3750	$5,840.21	$23,360.84	1	$513	$513	$2,488	$1,208.10	$3,624.30	
Subtotal			**26**	**0**			**$151,845.46**	**10**		**$5,130**		**$10,067.50**	**$30,202.50**	**$187,177.96**
Kipling	Site	Switch 2 Procurve J8693A	2		2 Cisco 3750	$5,840.21	$11,680.42				$1,244	$805.40	$2,416.20	
Subtotal			**48**	**2**			**$11,680.42**	**20**				**$805.40**	**$2,416.20**	**$14,096.62**
Total Equipment														**$419,735.30**
Total Labor														**112,462.00**
Contingency-5%														**26,609.87**
Grand Total														**558,807.17**

APPENDIX B

OIT FTE COMPARISON BY FUNCTION

Function	Current FTE*	Industry Standards	Difference
Service Desk	2	5	3
Desk Side	7	12	5
Networks	4	5	1
Server/Systems	3	13	10
Security	1	2	1
Project Management	2	4	2
Total	19	41	22

*Reflects OIT FTE assigned to DOR

APPENDIX C

DOR APPLICATIONS PERCENT AVAILABLE IN FY 2011-12

Application Name	Unplanned Downtime (hours)	Availability
CDO – Remittance Processing	0.00	100%
DLS - Driver's License System	419.27	92.23%
DLS – Interfaces	15.96	99.82%
DLS – L1	18.31	99.79%
DLS – On-line Systems	0.00	100%
DLS – Wait Less	8.63	98.60%
EDO	65.52	99.25%
ENF – Auto Industry Dealers	0.00	100%
ENF – License2000	76.23	99.13%
ENF – MyLicense Office	752.30	87.10%
ENF – PSR (Public Safety Records)	48.00	99.45%
Lottery	10.50	99.88%
MCS – IRP (GenTax)	4.23	99.95%
MCS – IRP (Revenue Online)	4.23	99.95%
MCS – POE Interfaces	0.00	100%
MCS – Port of Entry (POE)	11.90	99.87%
MVD – CSTARS	1,368.90	84.42%
MVD – CSTARS Interfaces	10.70	99.88%
MVD – EARS	5.00	99.94%
Tax – GenTax/CITA	35.90	99.59%
Tax – Legacy	20.00	99.77%
Tax – Revenue Online	22.28	99.75%
TOTAL	**2,897.86**	**98.30%**

Appendix D

Cost Calculations for DOR/OIT Infrastructure Hosting and Support

Service	FTE	FY 13-14	FY 14-15
ECE/Server Hosting			
Virtual Server Fees		$39,600	$232,800
Storage Fees		$30,000	$180,000
Migration, Planning, Implementation		$722,400	$379,200
Project Contingency		$39,600	$39,600
Subtotal		$831,600	$831,600
Hardware Modernization			
Switches, Routers, UPS		$419,735	$0
Professional Services (Labor)		$112,462	$0
Project Contingency		$26,610	$0
Subtotal		$558,807	$0
Software License Fees			
To support hardware for GenTax		$150,000	$150,000
Operations Support Services			
IT Support Staff	22.0	$2,282,541	$2,282,541
Operating Start-up		$94,060	$0
Subtotal	22.0	$2,376,601	$2,282,541
Total	**22.0**	**$3,917,008**	**$3,264,141**