Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number NPR-01

Request Titles

NPR-01 Fleet Adjustment

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$80,548**	**$0**	**$80,548**	**$7,155**	**$7,155**
	FTE	-	-	-	-	-
Total of All Line Items	GF	$0	$0	$0	$0	$0
	CF	$0	$0	$0	$0	$0
	RF	$80,548	$0	$80,548	$7,155	$7,155
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$80,548**	**$0**	**$80,548**	**$7,155**	**$7,155**
01. Office of the Governor - Vehicle Lease Payments	RF	$80,548	$0	$80,548	$7,155	$7,155

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes ___ No ___ **Not Required:** ___

Schedule 13s from Affected Departments:

Other Information:

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-01

Request Titles

R-01 (OEDIT) Comp Intel & Marketing Plan

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
	Total	**$3,498,588**	**$0**	**$3,514,699**	**$1,600,000**	**$1,600,000**
	FTE	21.2	-	21.4	1.0	1.0
Total of All Line Items	GF	$2,587,909	$0	$2,602,217	$1,600,000	$1,600,000
	CF	$540,000	$0	$540,408	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$370,679	$0	$372,074	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
	Total	**$3,498,588**	**$0**	**$3,514,699**	**$1,600,000**	**$1,600,000**
	CF	$540,000	$0	$540,408	$0	$0
04. Economic Development Programs - Global Business Development	FF	$370,679	$0	$372,074	$0	$0
	FTE	21.2	-	21.4	1.0	1.0
	GF	$2,587,909	$0	$2,602,217	$1,600,000	$1,600,000

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for $1.6 million General Fund for the Office of Economic Development and International Trade (OEDIT) to strategically market the entire state to businesses. This is an ongoing request and will require 1.0 FTE and 1.0 contract employee.

Current Program

- OEDIT's Corporate Business Development team currently utilizes various tax incentives and funding programs to support economic development activities in Colorado. Current economic development efforts are not as strategic or targeted as they should be.

Problem or Opportunity

- OEDIT does not have funds to develop and implement a strategic business marketing program. Information collected and analyzed with this funding, and the resulting marketing, will benefit all of OEDIT's existing programs and provide benefit to every region of the state.
- OEDIT does not have access to a tool to continuously analyze data that would help OEDIT identify target businesses and markets from which to recruit businesses to Colorado. Without accurate data, the state is at a distinct disadvantage when competing against other states.
- In order to strategically market the state to businesses around the world, OEDIT needs to be able to identify current and future target companies. A strategic business marketing program will further leverage assets across the state and provide additional assistance to every region.

Consequences of Problem

- If OEDIT cannot strategically market the state to businesses, the efforts of OEDIT's Corporate Development team will continue to be less effective when Colorado competes against other states for companies and talent. This translates into job creation opportunities being lost to other states.
- Without this, OEDIT can't effectively target companies to grow the key industry ecosystems.

Proposed Solution

- Hire a Chief Marketing Officer (CMO) to market the state to businesses and help OEDIT's Corporate Development team and regional partners to recruit businesses to move to Colorado.
- Hire a contract data analyst or economist to help the CMO develop a marketing plan for the state focused on business recruitment, retention, and growth of companies.
- Procure and develop analytic tools, database subscriptions, and marketing materials to implement the strategic marketing plan.

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Department Priority: R-1
Request Detail: Competitive Intelligence and Marketing Plan

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Competitive Intelligence and Marketing Plan	$1,600,000	$1,600,000

Problem or Opportunity:

The Office of Economic Development and International Trade (OEDIT) needs to be more systematic about where and how it recruits, retains, and promotes the growth of companies. The State of Colorado does not have the necessary data or information to maximize the return on investment (ROI) from its existing programs. OEDIT has limited resources to proactively market the state to businesses. In order for OEDIT to get the most from its existing programs and to further the branding work that has already been done, the office needs to continuously analyze data to understand, based on the state's strong industries, which markets and companies are the best targets for OEDIT. Using data and other information collected and analyzed, OEDIT will develop and implement a business marketing plan based on a deep understanding of the needs of companies already in Colorado and the needs of target companies not yet here.

Because companies consider human capital and supply chain when deciding where to locate and grow, having the funding to collect and analyze human capital and supply chain data will enable OEDIT to identify gaps and excesses. This will better inform OEDIT's corporate development marketing strategies and its recruitment, retention, and growth efforts. The state does a phenomenal job marketing for tourists; however, it does very little to target market-specific sector growth that would greatly improve the state's workforce and economic diversity.

OEDIT will ultimately put together a list of 100 to 200 companies on which the state will focus its recruiting efforts. These companies will cross a range of industries. The data and other information analyzed will also guide OEDIT in how it can best advocate for, and bring a pipeline of prospects to, communities around the state.

Proposed Solution:

OEDIT is requesting funding to provide the office with the necessary resources to develop and implement a strategic business marketing program. The funding will also be used to collect and analyze the data and information necessary to develop such a plan. Information collected and analyzed, and the resulting marketing, will benefit all of OEDIT's existing programs and will provide benefit to every region of the state.

With hard data and other information about the state's strengths and weaknesses, OEDIT will be able to develop a strategy to better market Colorado as the best place for targeted businesses to locate and grow. The framework laid out below will guide OEDIT's process. First, OEDIT will conduct a situation analysis and look at how the state is currently positioned. This will entail prioritizing the 14 key industries to determine which industries OEDIT should focus on building out first. OEDIT will then determine what, if any, outbound efforts have already been made for those industries. Next, OEDIT will consider what companies have proactively approached the office for incentives and which of those prospects OEDIT identified as high priorities. OEDIT will start to narrow the field of targets by considering whether there is a gap between the kinds of companies that have approached OEDIT and the kinds of companies and industries the state is really targeting. If there is a gap, OEDIT will research how to raise awareness of Colorado's strong industries and how to make the right site selectors and companies see Colorado as a strong contender. As part of this process, OEDIT will conduct in depth interviews of decision-makers who located their companies in Colorado. These individuals can speak to what factors were most important in their decision making and whether these considerations lined up with their actual experiences.

OEDIT will also build relationships with site selectors who focus on the Colorado region and who focus on the industries identified above. In establishing these relationships, OEDIT will learn more about how Colorado compares to other states in the minds of site selectors. OEDIT can gather valuable information from companies such as Deloitte, CBRE, and Jones Lang LaSalle. OEDIT's ability to obtain, understand, and utilize such information will further assist OEDIT in its targeted recruitment efforts.

In conducting this analysis, OEDIT will look at which states Colorado has competed against for the high priority projects. OEDIT will consider Colorado's strengths and weaknesses compared to those competitor states and then think about how to surpass those competitor states. Through this process, OEDIT will determine where Colorado has an advantage and what the state's disadvantages are, and what Colorado's competitors do that Colorado does not do or that the state could do better. States such as Texas and California, two of Colorado's biggest competitors, already have access to the kinds of analytic tools, databases, and other resources for which OEDIT is seeking funding. Colorado will undoubtedly increase its win-rate if OEDIT can not only better understand its competitors, but it can also access the same tools and information.

Multiple companies have selected Colorado for their headquarters or other operations after their site selectors initially excluded Colorado from their short lists. Perhaps one of the best examples is Ardent Mills. Deloitte acted as site selector for Ardent Mills. Before presenting to Ardent Mills a list of potential locations for the company's new headquarters, Deloitte collected nationwide data and analyzed it. Colorado was subsequently not included on Deloitte's short list, and it was only after a conversation in passing between the Governor and a local partner that OEDIT learned of the opportunity. OEDIT went on to submit a proposal on behalf of the state, and Ardent Mills ultimately decided to locate its new headquarters in Colorado. Having access to the same information as site selectors and understanding their perspectives will help OEDIT put Colorado on a company's initial list to be considered early on, instead of playing catch-up.

Another component of this project is that by identifying supply chain and other gaps, the state will be able to recruit companies to fill those gaps by using data to show how profitable a move to Colorado would be. This data will also help ensure the state has the right kind of workforce graduating from its colleges and universities, and it will assist the state in targeted talent recruitment from out-of-state where needed. Colorado companies and the Colorado workforce will benefit from these strategic marketing activities.

After completing the initial analyses and formulating a strategy, OEDIT will work on a business-to-business marketing campaign and execute the plan.

OEDIT is requesting funding for 1.0 FTE and 1.0 contract employee. The FTE will be a Chief Marketing Officer (CMO) dedicated to marketing Colorado to businesses worldwide and recruiting them to move to Colorado. Salary plus benefits will range up to $152,491 in FY 2015-16. OEDIT currently does not have a CMO. In the November 2012 Colorado Tourism Office budget request, OEDIT described the establishment of a CMO position. The CMO was tasked with strengthening the brand power of the state. It was a time-limited position that no longer exists. The CMO hired with the funding requested here will work for OEDIT specifically to build on the former CMO's branding efforts and market the state to businesses, not tourists, and recruit those businesses to move to Colorado.

OEDIT is also requesting funding for 1.0 contract employee to be a data analyst for the CMO. Information analyzed by this employee will help the CMO to formulate a marketing plan for the state. The necessary funding for this position is $65,000.

Funds will also be used for analytic tools, database subscriptions, consulting and other contracting services, and related costs. OEDIT is working with various firms to determine the cost of consulting a professional firm to conduct certain analyses and the costs to access the necessary analytic tools and database subscriptions. At this early stage, OEDIT estimates that, depending on the scope and depth of the initial market analyses and depending on the consultants selected to assist OEDIT with this project, organizing and prioritizing strategy will cost between $150,000 and $250,000. OEDIT is still collecting information on the cost of analytic tools and database subscriptions. The remaining funds will be used to execute the marketing strategy.

Anticipated Outcomes:

Outcomes will be measured by the number of prospects in the state's pipeline and, ultimately, jobs created and the number of companies that move to the state as a result of OEDIT's proactive marketing. Outcomes will also be measured by looking at company recruitment, retention, and growth across the 14 key industries and around the state. OEDIT anticipates that this data and other information will enable the state to more accurately and efficiently target companies and human capital in order to create jobs in Colorado.

Assumptions and Calculations:

The following assumptions were made when calculating the total request of $1.6 million:

-1.0 FTE to be a CMO: salary plus benefits will range up to $152,491 in FY 2015-16. This will be an at-will position, not classified. A more detailed breakdown of the CMO's salary and benefits is on the next page of this funding request.

-1.0 contract employee to be a data analyst for the CMO: salary will be approximately$65,000.

-As described above, remaining funds will be used for analytic tools, database subscriptions, consulting and other contracting services, and related costs.

Calculation Assumptions:

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.

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 2015-16 as 0.9166 FTE to account for the pay-date shift.

Expenditure Detail		FY 2015-16		FY 2016-17	
Personal Services:		FTE		FTE	
	$ 10,000	1.0	120,000	1.0	120,000
PERA			12,180		12,180
AED			5,280		5,760
SAED			5,100		5,700
Medicare			1,740		1,740
STD			264		264
Health-Life-Dental			7,927		7,927
Subtotal Position 1, #.# FTE		1.0	**$ 152,491**	1.0	**$ 153,571**
Subtotal Personal Services		1.0	**$ 152,491**	1.0	**$ 153,571**
TOTAL REQUEST		1.0	**$ 152,491**	1.0	**$ 153,571**

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-02

Request Titles

R-01 (OIT) IT Infrastructure Refresh

Dept. Approval By: _____

OSPB Approval By: _____

___	**Supplemental FY 2014-15**
x	**Change Request FY 2015-16**
___	**Base Reduction FY 2015-16**
___	**Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$10,870,425**	**$0**	**$10,985,300**	**$3,407,200**	**$3,172,200**
	FTE	31.6	0.0	32.0	0.0	0.0
	GF	$0	$0	$0	$3,407,200	$3,172,200
	CF	$1,200,000	$0	$1,200,000	$0	$0
	RF	$9,670,425	$0	$9,785,300	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
05. Office of Information Technology - Infrastraucture Administration	**Total**	**$558,085**	**$0**	**$622,816**	**$2,023,000**	**$2,023,000**
	FTE	7.0	0.0	7.0	0.0	0.0
	GF	$0	$0	$0	$2,023,000	$2,023,000
	RF	$558,085	$0	$622,816	$0	$0
05. Office of Information Technology - Network Administration	**Total**	**$3,098,558**	**$0**	**$3,125,056**	**$944,200**	**$944,200**
	FTE	9.6	0.0	10.0	0.0	0.0
	GF	$0	$0	$0	$944,200	$944,200
	RF	$3,098,558	$0	$3,125,056	$0	$0

	Total	**$7,213,782**	**$0**	**$7,237,428**	**$440,000**	**$205,000**
05. Office of Information Technology - Voice Services	CF	$1,200,000	$0	$1,200,000	$0	$0
	FTE	15.0	0.0	15.0	0.0	0.0
	GF	$0	$0	$0	$440,000	$205,000
	RF	$6,013,782	$0	$6,037,428	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

Cost and FTE

- The Office of Information Technology (OIT) requests $3,407,200 General Fund in FY 2015-16 and $3,172,200 General Fund in FY 2016-17 and ongoing to institute an IT Network, Systems Infrastructure, and Voice Services refresh programs.

Current Program

- OIT Network and Systems Infrastructure are the physical and organizational structures that provide the foundation for all state IT operations. These systems include the state data centers, state servers, both physical and virtual, the Wide Area and Local Area networks, mainframes, and connectivity hardware such as routers, switches, and hubs.
- Network items include the Local Area Networks (LAN) equipment such as routers and switches**.** Systems Infrastructure items will include physical servers, hosting infrastructure storage, virtualization layers, shared enterprise storage, media agency servers, and backup systems.
- Voice systems are over a decade old and many of these have reached the end of their supportable life.

Problem or Opportunity

- OIT does not have a refresh cycle for centralized or decentralized systems infrastructure or network equipment. This creates an environment that is a mismatch of both old and new technologies which lack standardization.
- Over time, the equipment becomes out of warranty, is more susceptible to failure, and is no longer supported by the manufacturer. This puts the storage environment at risk and complicates support due to the inconsistent standards and configuration.
- Historically OIT and State agencies have dealt with legacy systems and voice systems when equipment fails. Replacement and systems upgrades are then requested on an individual ad hoc basis.

Consequences of Problem

- Existing infrastructure will continue to age leading to increased instability and legacy systems that are no longer under warranty and not supported by the manufacturer.
- The voice system contains single points of failure within the infrastructure. The ability to provide an essential service to our citizens with telephones, voice mail, and call center applications are at risk.

Proposed Solution

- $944,200 will be dedicated to Network components, $2,023,000 for Systems Infrastructure, and $440,000 for Voice Services to implement the refresh, of which $235,000 is one-time.
- Develop a statewide refresh life cycle that would replace 20 percent of existing network and systems infrastructure each year in order to keep the State's technology current and under warranty.
- Voice Services plans to redesign and/or upgrade the equipment with current supportable technology, replace equipment or whole systems with current supportable equipment, and transition current services to OIT's Managed IP Communications (MIPC) hosted service leveraging the Colorado State Network.

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Department Priority: R-1
Request Detail: IT Infrastructure Refresh

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Funds
IT Infrastructure Refresh	$3,407,200	$3,407,200

Customer Impact:

Customers will not see a new OIT service offering, however, customers will experience IT system performance with decreases in downtime, outages, and lost connectivity with the added availability to a stable infrastructure. This will further allow telephones, voice mail, and call center application to operate smoothly for customers and employees of the State.

Problem or Opportunity:

In 2013, OIT migrated off a legacy system and onto the Colorado State Network. This new system provides updated and managed service to over 500 sites. The agencies still require adequate endpoints to connect to this capability. Various network equipment within the Local Area Networks (LAN's) are end of maintenance life and in some cases are single points of failure for critical applications. LAN equipment such as routers and switches are not refreshed routinely or standardized. In order to continue to provide a reliable network to state agencies that use the network, the equipment must be refreshed, documented, monitored, secured and maintained.

Network:

Outages and performance problems could negatively impact the residents of Colorado by not providing the connectivity or functionality needed for applications to provide services. Currently the State possesses over 13,000 devices supporting over 1,200 applications.

The State of Colorado continues to pay a high price for maintenance, insurance, and efficient resources. With over 13,000 devices ranging from three months to over 14 years old, OIT requires a staff of personnel that have intimate knowledge in the deployment, configuration and interaction with equipment spanning over 14 years. As an example, it would be like running automotive repair shop required servicing all brands and models of cars, trucks and equipment spanning over 14 years. In addition to the technical knowledge, the repair parts required to maintain all the equipment is costing the state a significant amount of money.

Systems:

OIT Systems Infrastructure and Hosting consists of the foundation for supporting centralized (and decentralized) Critical & Essential Applications, as well as common applications used to service agency portfolio needs and operations. A stable and highly available infrastructure should be routinely refreshed to

ensure optimal performance and health to meet service expectation, customer need, and risk mitigation. It is common industry practice to refresh systems infrastructure components every three to five years. This request is for a five-year refresh cycle for OIT's systems infrastructure, which follows industry standards but extends the potential useful life to be responsible with State funds.

OIT has historically not consistently implemented a refresh cycle for centralized systems infrastructure, or decentralized systems infrastructure. To date OIT has production systems ranging from one to 10 years old, many of which fall into the latter category ranging from five-plus to 10 years old. Many aged and outdated OIT platforms require software and hardware refresh to ensure service stability. In addition to the aged equipment, it is highly recommended that existing newer OIT platforms also recognize a five-year refresh cycle as they complete their fourth year of operation. Implementing a refresh cycle for OIT systems ensures the stability and integrity of OIT operations and business continuity is sustained.

Voice Services:
OIT voice systems infrastructure is also over a decade old and many of these purchases have reached the end of their supportable life cycle. Newer technologies have made these obsolete, difficult to maintain or created a risk of failure that could seriously impact critical and essential programs. This equipment also supports life safety related services for OIT Agency customers. Single points of failure exist within these systems and their associated infrastructure. This poses an immediate and high level of risk to OIT's ability to provide telephones, voice mail, and call center applications which directly impacts the State's ability to provide services to our citizens.

Many State agencies and locations have been upgraded to new technology or migrated to a hosted service as it has made sense to do so, such as when an agency moved into a new building or other opportunity for renovation, remodel or expansion. There is no asset management or lifecycle management program funded for the scheduled replacement of equipment when it reaches the end of its usable/supportable life expectancy. OIT recovers the cost of providing current services, but the rates do not include amounts above and beyond the current cost that might be accumulated and then used to invest in equipment, systems, and infrastructure. Also, many of the benefits and features of new technology that our customers request cannot be realized nor provided because we cannot support the applications on out-dated platforms and architecture.

OIT's older systems came into existence via the old Department of Personnel's Division of OIT organization, so as OIT has evolved so too must the maturity of the infrastructure refresh standards that all well run IT institutions perform. Developing this process is a maturing of OIT operations and should be seen as a critical service support.

Proposed Solution:

Network:
The proposed Network solution is to develop and implement a five year plan that will require refresh of current infrastructure components annually. Using data from an independent audit, establishes the total number of devices with Last Day of Service from FY 2012-13 thru FY 2018-19. Cost and schedules are based on the SmartNet asset management. This audit was performed for all agencies currently under the State of Colorado SmartNet contract therefore OIT has an exact inventory of devices needing replaced.

OIT will conduct annual assessment to determine if the plan needs to be altered. Implement an ongoing infrastructure refresh cycle every year with a five year cycle.

Implementing an equipment refresh cycle saves money, time and brings total cost of operation down per application and for each agency. The standard base provides a more robust platform to operate and increases the flexibility and capability of OIT.

Failure to refresh network equipment causes network outages, performance problems on the network, inability to run more network intensive applications such as VoIP and video, and presents a security risk for older equipment that can no longer be hardened against constantly changing threats.

Systems:
This funding request proposes that the OIT Hosting Infrastructure recognize a five year refresh cycle for its hardware and software, which would be funded in 20% increments each year over a five year period. At the completion of the five year period, the refresh cycle would start over again, 20% at a time. As OIT continues to consolidate servers and migrate physical servers to the virtual infrastructure over time, the refresh program will take over refreshing additional Department owned servers. This refresh will contribute to larger, more robust, and greater capacity infrastructure as OIT begins to purchase, maintain, and monitor the new refresh cycle.

The refresh activity of the infrastructure will not impact services in most cases, but will require the use of off-hour maintenance windows and customer outage notices in certain circumstances. There is no current staff to perform physical refresh activities. The replacement of systems infrastructure refresh components will occur on weekends so they do not interrupt the workflow for Department staff on weekdays. This work will require support from outside contractors. The overall benefit of this refresh plan is to OIT and the Departments who leverage the Enterprise Hosting Infrastructure. Initial idea pitches to agency budgets and IT Directors have yielded no concerns or red flags.

The infrastructure refresh initiative should be recognized as an ongoing annual cost to maintain hosting services that support OIT and agency platforms. If the agency hosted systems in the enterprise infrastructure were local systems at their site, they too would need to recognize refresh costs to efficiently maintain their systems. The refresh cycle and associated cost should be factored into the billing for offered services. The total of this Funding Request is the annual cost needed each year to ensure proper refresh of the Systems Hosting Infrastructure.

Voice Services:
The proposed solution for voice services is to:

1. Redesign and/or upgrade the equipment with current supportable technology (VoIP).
2. Replace equipment or whole systems with current supportable equipment (VoIP).
3. Transition current services to OIT's Managed IP Communications (MIPC) hosted service leveraging the CSN where possible.

To reach this solution, annual engineering site surveys will need to be performed to assess and document gaps and deficiencies within the physical and environmental infrastructure. The plan will focus on one or two locations per year with the first initial efforts being the high risk equipment and infrastructure identified within Capitol Complex. This location has great emergency needs in case of service failure. Once all equipment to be replaced has been documented a schedule will be developed to minimize the impact to the business units and services.

If the refresh proposal is not approved, OIT would have to move forward trying to locate funds out of discretionary budget line-items that would not have factored in this need. This process will not allow for

the comprehensive refresh of infrastructure components and therefore would ultimately see aging systems that fail and incur service interruption to agency services.

Anticipated Outcomes:

Network:
The result of the equipment refresh will be the delivery of reliable, secure, and a better performing network to the State agencies. Also the new standardized network consisting of switches and routers will be capable of strengthening security.

Another outcome would be the reduction of the out of service life equipment, reduction of the overall types (models of equipment), and reduction in time spent on keeping the lights on. The ability to hire personnel that are experienced in the last 10 years of equipment - with an end goal of having personnel trained and specialized in the last 8 years of equipment would be easier with a continued refresh cycle.

Systems:
If this request is approved, departments Statewide would expect to see an infrastructure refresh cycle targeting the following major component areas:

- Physical Servers
- Hosting Infrastructure Compute
- Hosting Infrastructure Storage
- Hosting Infrastructure Hypervisor
- Shared Enterprise Storage
- Backup and Recover Compute

These major component areas of the Hosting Infrastructure would be segregated into distinct refresh pools. Each refresh pool would be tracked with a master checklist mechanism to ensure proper follow-through. As well, each refresh pool/cycle will be worked as a project to ensure progress and completion throughout the effort.

Voice Services:
Mitigating risk to the voice services would allow for added feature sets and functionality that newer technologies can provide. Several thousand phone lines will be secure, stable, and support life safety related services for numerous customers in several locations. OIT's ability to provide telephones, voice mail, and call center applications will be continually provided to our citizens.

Assumptions and Calculations:

Line item costs were derived from previous costs associated to purchases for the components that make up the Hosting Infrastructure today, or were identified by a current industry standard cost.

The total cost of each component area purchased was divided by five to come up with an annual estimate of funds to support a 20% Software refresh.

The total amount of the General Fund request for FY 2015-16 is $3,407,200. The General Fund total is derived from $944,200 for Network, $2,023,000 for Systems, $440,000 for Voice Services. The total continuation amount for General Fund for FY 2016-17 and ongoing is $3,172,200.

Network:
The following line item costs were calculated from the Network equipment refresh inventory at an average cost per item. OIT has price agreements in place with vendors that are regularly renegotiated to gain improved purchasing power. Under present enterprise price agreements OIT receives a 39% discount off list price for routers, switches, and firewalls.

Item	Annual Cost	Description
Routers	$55,000	This estimate is based on replacing 21 routers each year at an average cost of $2,619 each.
System Crypto Routers	$125,000	This estimate is based on replacing 5 systems, crypto routers at an average cost of $25,000 each.
Chassis Switches	$130,000	This estimate is based on replacing 6 chassis switches each year at an average cost of $21,666 each.
Access Switches	$500,000	This estimate is based on replacing 105 access switches each year at an average cost of $4,761 each.
Software	$40,000	This estimate is based on annual software warranty and support for controllers and to manage network devices.
Controllers and other Network Equipment	$14,200	This estimate is based on replacing 2 controllers each year at an average cost of $1,000 each and includes other connectivity devices.
Firewalls	$80,000	This estimate is based on replacing 6 firewalls each year at an average of $13,333 each.
TOTAL	$944,200	Total annual cost each year for refresh.

Systems:
The following line item costs were calculated from the Systems Infrastructure refresh inventory at an average cost per item.

The refresh cycle includes both physical and virtual servers. A virtual server is a physical server that is partitioned into multiple mini servers. Instead of requiring a separate physical computer for each server, new technology allows dozens of virtual servers to co-reside on the same physical computer. OIT continues to transfer aging physical servers into existing virtual servers. An additional mini server can be partitioned from an existing virtual server reducing the need to replace as many physical servers over time. The refresh plan is in line with this strategy. The replacement equipment will be of newer technology with greater capacity thus allowing refreshed servers in the future to replace multiple servers of older technology.

This refresh cycle also includes replacing storage. Storage is physical hardware that is typically located in a rack next to servers that connects to both the servers and the network. This hardware is then configured to support storage requirements as needed. Much like a personal computer, this hardware is subject to increased chance of failure, slower performance, outdated security, and decreasing reliability over time and therefore needs to be refreshed on a regular schedule.

OIT has price agreements in place with vendors that are regularly renegotiated to gain improved purchasing power. Under present agreements OIT receives a 58% discount off list price for servers. Given an average market price of a server from $5,000 to $36,000 depending on size, configuration, and capability OIT has the potential to save significant sums by purchasing in bulk on behalf of state Departments.

Item	Annual Cost	Description
Physical Servers	$219,000	Under existing price agreements, OIT projects replacing a minimum of 29 servers per year at an average price of $7,550 under current configuration standards, prices, and vendor support. Most servers are virtualized, but a small amount will continue to require a physical presence in the hosting infrastructure.
Hosting Infrastructure Compute	$216,000	Under existing price agreements, OIT projects replacing 30 servers per year at an average price of $7,200 per server under current configuration standards, prices, and vendor support.
Hosting Infrastructure Hypervisor	$988,000	This estimate is based on data that was recently executed to cover an Enterprise License Agreement for the entire state. This cost includes extensive vendor support. A Hypervisor acts as a virtual server manager. It is a program that runs on a virtual server that allows multiple operating systems to share a single hardware processor. This infrastructure currently supports 1,558 virtual machines and this footprint is estimated to increase as Departments increasingly use virtual servers.
Hosting Infrastructure Storage	$240,000	This estimate is based on the current footprint of storage in the Hosting Infrastructure and current industry cost.
Shared Enterprise Storage	$240,000	This estimate is based on the current footprint of storage in the Shared Enterprise Storage Infrastructure and current industry cost.
Backup and Recovery Compute	$72,000	Under existing price agreements, OIT projects replacing up to 5 servers per year at an average cost of $14,400 under current configuration standards, prices, and vendor support.
IT Contractors to Support Weekend Refresh	$48,000	This estimate is for 2 IT Contractors for 12 weekends per year at 20 hours per weekend. According to OIT price agreements, the negotiated price for contractors of this nature is $100 per hour.
TOTAL	$2,023,000	Total annual cost each year for refresh.

Voice Services:
The following line item costs were calculated based on professional service rates, vendor recommendations, and historical annual expenditures.

Item	Action	One Time / Annual Cost	Description
Engineering Site Surveys	Refresh	$65,000 Annually	This estimate is based on Professional Services engineering and design at $102.50 per hour. The engineering site surveys will assess current infrastructure, identify gaps or deficiencies that impede the upgrade to VoIP and/or mitigate risk on a site by site basis before any work begins. This means the annual refresh amount will potentially pay for two, three, or even four site surveys each year depending on the size or scope of work until the end of the fiscal year. The engineering documents produced will quantify what equipment, wiring/cabling, and power that will need to be upgraded or replaced.
MX770 ATM Central Switch	Replacement	$40,000 One Time	This is a single central switch that connects all of the voice switches and components so they function as a single system. This equipment is obsolete and unsupportable and creates a single point of failure for the Capitol Complex phones that total 8,000.
Redistribute Voice trunk lines to more than one location	Replacement	$100,000 One Time	Reengineer the voice trunk lines from a single location to multiple locations to increase reliability and add redundancy to ensure inbound and outbound calling can be retained and/or restored in the event of an incident at the single point of failure at 1525 Sherman. Estimate is based upon a vendor high level quote of $25,000 per site and there are four sites.
Uninterrupted Power Supply (UPS)	Replacement	$95,000 One Time	The single existing UPS is old and the support and maintenance can no longer be purchased or provided. The unit is a single point of failure and supports both the Network and Telecommunications core at 1525 Sherman St. Replacement cost is based upon vendor quotes for equipment and installation.
Legacy Avaya G3r PBX Systems	Refresh	$115,000 Annually	This cost estimate is based on Legacy System and Infrastructure refresh and replacement, as well as the 11,500 phones in the system. The current desk phones are included because we

			should be refreshing them and not follow the current break/fix model of replacing them.
Wiring and Cabling Infrastructure	Refresh	$25,000 Annually	This cost estimate is based upon historical annual expenditures for upgrading the physical wiring and cabling for State buildings to support VoIP and Network connections.
TOTAL		$440,000	Total cost

Rationale for General Fund:
While OIT is an internal service organization and almost all other funds originate via charges assessed to State agencies, this function of OIT does not fit within the existing service catalog or cost recovery methodology. OIT provides services to State departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to departments. OIT is prohibited be the federal Division of Cost Allocation (DCA) from using one service to subsidize another. OIT is also prohibited from having one Department subsidize another.

IT infrastructure refresh presents a common good by maintaining current and future equipment, systems, and voice services in order to continue providing reliability and integrity across all State agencies. This refresh cycle will ultimately strengthen the overall infrastructure security leading to less downtime in maintenance work. All users in multiple State agencies will benefit from the refresh, and as a trickledown effect so will Colorado citizens and vendors creating a balanced economic investment. A chargeback model to State agencies is not a viable option because the refresh provided supports a common infrastructure that contains many shared services across the State with no way to divide up a recovery cost structure.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-03

Request Titles

R-01 (OSPB) Ongoing Staffing for Results 1st & Perfor Plan

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$1,920,656**	**$0**	**$1,960,524**	**$157,800**	**$158,835**
	FTE	19.5	-	19.5	2.0	2.0
Total of All Line Items	GF	$417,297	$0	$430,232	$157,800	$158,835
	CF	$0	$0	$0	$0	$0
	RF	$1,503,359	$0	$1,530,292	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$1,859,042**	**$0**	**$1,901,180**	**$154,400**	**$155,435**
	FTE	19.5	-	19.5	2.0	2.0
03. Office of State Planning and Budgeting - Personal Services	GF	$406,627	$0	$421,832	$154,400	$155,435
	RF	$1,452,415	$0	$1,479,348	$0	$0
	Total	**$61,614**	**$0**	**$59,344**	**$3,400**	**$3,400**
03. Office of State Planning and Budgeting - Operating Expenses	GF	$10,670	$0	$8,400	$3,400	$3,400
	RF	$50,944	$0	$50,944	$0	$0

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes ___ No ___ **Not Required:** _____

Schedule 13s from Affected Departments:

Other Information:

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COLORADO
Governor's Office

Priority: R-01 (OSPB)
Ongoing Staffing for Results First and Performance Planning
FY 2015-16 Change Request

Cost and FTE

- The Governor's Office is requesting $157,800 General Fund and 2.0 FTE for FY 2015-16 and $158,835 and 2.0 FTE in FY 2016-17 and beyond to continue funding for two staff currently working on the Pew-MacArthur Results First Initiative.

Current Program

- There are currently two positions housed in the Office of State Planning and Budgeting that are responsible for the implementation of the statewide Pew-MacArthur Results First Initiative.
- The Pew-MacArthur Results First Initiative is an innovative cost-benefit analysis approach that helps states invest in policy and programs that are proven to work.
- These two positions are currently working with the three branches of government, counties and stakeholders to implement this model for Colorado.

Problem or Opportunity

- These positions are funded for FY 2014-15 only and are focused on implementing the adult criminal justice, juvenile justice and Child Welfare portions of the model.
- This request will allow the state to fully implement all components of the Results First Initiative and support expansion of the model into additional policy areas such as substance abuse, mental health, early childhood education, K-12 education, general prevention, public health and more.
- In addition, these staff will provide ongoing statewide expertise and technical assistance on the model to all branches of government.

Consequences of Problem

- The two positions are jointly funded by the Executive and Legislative branch until June 30th 2015, at which time the positions will no longer exist without continued funding.
- The state will be unable to fully utilize the Results First model and will also lose a valuable source of expertise. In addition, the state will lose a statewide coordinating entity for the project, which is essential to its success.

Proposed Solution

- The Governor's Office is requesting ongoing funding for a Project Manager and Research and Data Analyst to fully implement the Pew-MacArthur Results First Initiative. In future years, these staff members will maintain the Results First model, as well as participate in statewide efforts surrounding process improvement and performance management.

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Department Priority: R-01
Request Detail: Ongoing Staffing for Results First and Performance Planning

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Results First Staffing Continuation	$157,800	$157,800

Problem or Opportunity:

The Governor's Office is requesting $157,800 General Fund and 2.0 FTE for FY 2015-16 and $158,835 and 2.0 FTE in FY 2016-17 and beyond to continue funding for two staff currently working on the Pew-MacArthur Results First Initiative. These two positions include a Project Manager and Research and Data Analyst that are currently housed in the Office of State Planning and Budgeting and are responsible for the implementation of this statewide initiative. These positions are jointly funded by the Executive and Legislative branch until June 30th 2015, at which time the positions will no longer exist without continued funding.

This request will allow the state to fully implement all components of the Results First Initiative and support expansion of the model into additional policy areas such as substance abuse, mental health, early childhood education, K-12 education, general prevention, public health and more. In addition, these staff will provide ongoing statewide expertise and technical assistance on the model to all branches of government. Once the Results First model is fully in place, the Governor's Office believes an opportunity will continue to exist to help ensure that programs identified through the model are implemented as effectively as possible and with fidelity. In FY 2016-17 and beyond, these positions will continue to maintain and enhance the Results First model, expanding it as appropriate to additional areas of Colorado government. In addition, these positions will work to integrate findings from the Results First model into statewide efforts surrounding process improvement and performance management.

The Pew-MacArthur Results First Initiative is a joint project of the Pew Charitable Trusts and the John D. and Catherine T. MacArthur Foundation that works with states to implement an innovative cost-benefit analysis approach to help them invest in policy and programs that are proven to work. The principal tool of the approach is a cost-benefit analysis model initially developed by the Washington State Institute for Public Policy, and now supported by the Pew-MacArthur Results First Initiative. Currently, 16 states are participating in the Results First Initiative – to date, five of those states have used the model to target $80 million in funding for effective programs that are projected to generate as much as $38 in social benefits for each $1 invested. The model and on-going technical assistance are being provided to the state by the Pew-MacArthur Results First Initiative at no cost.

During the 2014 legislative session, the Joint Budget Committee funded two positions in the Governor's Office of State Planning and Budgeting to manage and implement the Pew-MacArthur Results First Initiative.

Ongoing Staff Will Expand the Usefulness of the Results First Model

The Results First team in OSPB is currently populating the adult criminal justice, juvenile justice and child welfare portions of the model, with an expected completion date of June 30th, 2015. There is an opportunity to expand and fully utilize other portions of the model, but continued dedicated staff is necessary for this expansion. Ongoing funding for these staff can allow for:

- Expansion of the model into other policy areas, such as mental health, substance abuse, K-12, early childhood education, children's mental health, public health and general prevention programs;
- Expansion of the model to assess state specific programs or policy initiatives, such as the Child Welfare Colorado Practice Model, and marijuana-funded initiatives;
- Creation of program portfolios, which allow the state to predict program outcomes when operating in conjunction with one another; and
- Creation of a prison and policing changes module that will predict how changes in police force funding and staffing will potentially reduce crime and improve the ways offenders move through the judicial system.

Ongoing Staff will Serve as a Statewide Resource on the Results First Initiative

Given that this is a statewide, multi-branch initiative, centralized dedicated staff for the project is essential to its success. In addition to populating the model, the Results First team in the Office of State Planning and Budgeting currently serve as liaisons to the three branches of government, the counties, stakeholder groups and the Pew-MacArthur Results First Initiative. The initiative is data intensive and requires involvement and input from each of these partners. The team is responsible for fostering collaboration and involvement of partners. They are also essential in alleviating state and county staff workloads related to collecting and analyzing data for the model. Without continued funding for the Results First team, it is unlikely that the project could be centrally coordinated or fully implemented.

Once the Results First model is fully implemented, it can be utilized by state departments, the Legislature, and the Judicial Branch for policy-making and budgeting purposes. It can be used in both the annual budget process and the fiscal note process. The Pew-MacArthur Results First Initiative is currently working on building a web-based version of the model that will be easily accessible for multiple users throughout state government. The Results First team will have expertise on the model and can be available on an ongoing basis to provide technical assistance on the use of the model, as well as guidance on how to interpret the results.

In addition, the Results First team can serve as a centralized resource on evidence-based research in the state. There are currently several different organizations in the state that are working on advancing the use of evidence-based practices, such as the Office of Juvenile Justice and Delinquency Prevention and the Colorado Commission on Criminal and Juvenile Justice. The Results first staff has a unique position of being connected to each of these groups and can help coordinate the efforts of these groups and advocate for the advancement of evidence-based practices. There is also an opportunity for these staff to integrate this work into other performance planning projects such as LEAN, department performance planning and the SMART Act.

Proposed Solution:

The Governor's Office is requesting $157,800 General Fund and 2.0 FTE for FY 2015-16 and $158,835 and 2.0 FTE in FY 2016-17 and beyond. This will provide continued funding for two staff currently working on the Pew-MacArthur Results First Initiative and will allow the state to fully utilize the potential of the Results First Model. These staff will also provide expertise and technical assistance on the model on an ongoing basis. Once the model is fully populated, these positions will serve as statewide strategic planning staff on a long-term basis and be responsible for identifying way to advance the use of research and evidence-based practices in decision-making.

The request provides a continuation level of funding for a Project Manager and a Research and Data Analyst, with a small increase for project-related travel.

Project Manager

The Project Manager is responsible for overseeing the implementation of the Results First initiative and ensuring successful implementation of the model. This position is currently responsible for working with a policy working group, as well as stakeholders, to determine the policy priorities of the model and to identify policy questions for analysis. The position also leads technical working groups that assist in collecting and analyzing the data needed to create a Colorado-specific cost-benefit model. In addition, the position is responsible for providing presentations to interested parties on the project, and for communicating the results of the project to decision-makers. On an on-going basis, the position will be responsible for

- Overseeing the full implementation the Results First model;
- Developing a comprehensive inventory of programs funded by the state;
- Identifying potential areas that the model can be expanded to;
- Identifying ways to integrate this work with other strategic planning efforts;
- Creating workable deadlines for project components and deliverables;
- Serving as a statewide expert on the model; and
- Advocating for the advancement of evidence-based research and practices.

Research and Data Analyst

The Research and Data Analyst is responsible for assisting the Results First Project Manager with the implementation of the Results First initiative. The Research and Data Analyst currently works with state and county offices to identify, collect, and analyze the data necessary to populate and operate the model. The position is responsible for overseeing the technical aspects of the model and for collaborating with technical working groups on implementation. This position is also responsible for conducting research on evidence-based practices and for identifying potential future opportunities for the Results First Initiative. In addition, the position is responsible for assisting the Project Manager with preparing reports and presentations on the model. With continued funding, the Research and Data Analyst will be responsible for:

- Providing the technical expertise to fully implement the model in all policy areas the state pursues;
- Serving as a statewide expert on the technical aspects of the model and provide technical assistance to users once the model has been implemented;
- Serve as statewide strategic planning staff once the model has been fully implemented and identifying ways to incorporate the results of this initiative in strategic planning efforts; and

- Providing expertise on evidence-based research and practices and advocate for use in decision-making.

Anticipated Outcomes:

Once fully developed, the Pew-Macarthur Results First Initiative will allow the state to use Colorado-specific data to:

- Systematically identify programs that work and those that do not based on evidence-based research;
- Calculate potential returns on investments for programs included in the Results First model;
- Build an inventory of the programs and services that taxpayers pay for;
- Rank programs based on their projected benefits, costs, and investment risks;
- Compare the efficacy of programs implemented by the state against a database of programs implemented nationwide;
- Identify effective programs that are a good investment;
- Identify ineffective programs that could be targeted for cuts or elimination; and
- Predict the impact of different policy options.

This work is currently underway for the adult criminal justice, juvenile justice and child welfare systems. Retention of the Results First team will allow for expansion of the initiative into other areas such as mental health, substance abuse, K-12, early childhood education, children's mental health, public health, general prevention programs, and other state specific programs.

It is anticipated that the results of the model will be used for state policy, planning and budgeting purposes. Using the Results First approach, the state of Iowa determined that its domestic violence program was ineffective and costing the state three dollars for every dollar it invested in the program. Iowa subsequently eliminated this failed program and worked with the University of Iowa to create a new domestic violence program, which an evaluation has shown to be effective. The Results First model will provide similar opportunities for the State of Colorado to identify programs that work, eliminate those that do not and invest in evidence-based programming. The Executive Branch has already begun to use this valuable information in its planning process.

Colorado's Results First team will also have significant expertise on cost-benefit analysis, evidence-based programming and strategic planning that is a valuable asset to the state. The team can serve as a centralized resource to all three branches of government and the counties, be available to provide ongoing expertise and technical assistance, and identify ways to advance the use of research and evidence in decision-making.

Assumptions and Calculations:

The Governor's Office is requesting $157,800 General Fund and 2.0 FTE for FY 2015-16 and $158,835 and 2.0 FTE in FY 2016-17. There is $150,000 appropriated for these positions in FY 2014-15. The Governor's Office is requesting a continuation level of funding, with annual adjustments for total compensation.

In addition, there is a small increase for project-related travel of approximately $3,000 included in the request. The Results First Initiative requires significant collaboration with counties and travel to local jurisdictions to aid in the implementation of the project is anticipated. The travel requested is based on mileage for 10-15 trips to counties per year with per diem for two overnight stays per year for each position.

Calculation Assumptions:

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.

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 2015-16 as 0.9166 FTE to account for the pay-date shift.

Expenditure Detail			FY 2015-16		FY 2016-17	
Personal Services:			FTE		FTE	
	Monthly Salary					
Project Manager	$ 5,417		1.0	65,004	1.0	65,004
PERA				6,598		6,598
AED				2,860		3,120
SAED				2,763		3,088
Medicare				943		943
STD				143		143
Health-Life-Dental				7,927		7,927
Subtotal Position 1, 1.0 FTE			1.0	**$ 86,238**	1.0	**$ 86,823**
	Monthly Salary					
Research and Data Analyst	$ 4,167		1.0	50,000	1.0	50,000
PERA				5,075		5,075
AED				2,200		2,400
SAED				2,125		2,375
Medicare				725		725
STD				110		110
Health-Life-Dental				7,927		7,927
Subtotal Position 2, 1.0 FTE			1.0	**$ 68,162**	1.0	**$ 68,612**
Subtotal Personal Services			2.0	**$ 154,400**	2.0	**$ 155,435**
Operating Expenses						
Regular FTE Operating		500	2.0	1,000	2.0	1,000
Telephone Expenses		450	2.0	900	2.0	900
PC, One-Time		1,230	-	-	-	-
Office Furniture, One-Time		3,473	-	-		-
Travel		1,500	1.0	1,500	1.0	1,500
Other				-		-
Other				-		-
Other				-		-
Subtotal Operating Expenses				**$ 3,400**		**$ 3,400**
TOTAL REQUEST			2.0	**$ 157,800**	2.0	**$ 158,835**
General Fund:						
Cash funds:						
Reappropriated Funds:						
Federal Funds:						

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Numbe R-04

Request Titles

R-02 (OEDIT) Colorado Tourism Office

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$16,500,000**	**$0**	**$16,526,624**	**$3,000,000**	**$3,000,000**
	FTE	4.0	-	4.0	-	-
Total of All Line Items	GF	$2,000,000	$0	$2,000,000	$3,000,000	$3,000,000
	CF	$14,500,000	$0	$14,526,624	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$16,500,000**	**$0**	**$16,526,624**	**$3,000,000**	**$3,000,000**
04. Economic Development Programs - Colorado Promotion - Other Program Costs	CF	$14,500,000	$0	$14,526,624	$0	$0
	FTE	4.0	-	4.0	-	-
	GF	$2,000,000	$0	$2,000,000	$3,000,000	$3,000,000

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for $3.0 million General Fund for the Colorado Tourism Office (CTO), which resides in the Colorado Office of Economic Development and International Trade (OEDIT), to market Colorado and increase tourism to the state. This is an ongoing request.

Current Program

- The goal of the current marketing campaign, "Come to Life," is to boost economic development in Colorado through tourism. The campaign has been extremely successful with a return on investment (ROI) of $334 to $1 (up from $228 last year as the campaign continues to gain traction), based on calculations and research from Strategic Marketing and Research, Inc. (SMARI).

Problem or Opportunity

- This request is to increase funding by $3.0 million General Fund on an ongoing basis. This will enable the CTO to continue to market Colorado to a wider audience and attract more people to the state, which is the primary goal of the CTO. Based on the most recent ROI numbers from SMARI, the additional $3.0 million could yield over a billion dollars in private sector spending and increase state and local taxes by over $60.0 million if current trends continue.
- With increased funding, CTO can expand agritourism and increase its international marketing efforts.

Consequences of Problem

- If additional funding is not provided, CTO will not be able to continue to expand Colorado's marketing reach and frequency, and the state will not receive the additional revenue and taxes that would be generated by increased tourism.

Proposed Solution

- CTO will use the $3.0 million to increase its marketing contract and thus increase Colorado's reach and frequency both domestically and abroad. The goal is to continually increase annual incremental visits to the state. The state set records for incremental visits the past three years, and CTO wants to continue this trend of growth.
- CTO will use the additional funding to extend its marketing efforts on spot television/national cable in primary markets, national magazine ads in top producing publications, billboards in primary markets, and digital ads in primary markets. CTO will also use the funds to expand agritourism and increase marketing abroad.

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Department Priority: R-2
Request Detail: Colorado Tourism Office

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Colorado Tourism Office request for marketing increase	$3,000,000	$3,000,000

Problem or Opportunity:

This request is seeking a $3.0 million increase to the Colorado Tourism Office (CTO) for purposes of increasing its marketing budget, bringing the total annual budget request to $18.0 million. It will enable CTO to increase its marketing efforts and expand on the very successful "Come to Life" campaign. The goal is to continually increase annual incremental visits to the state, which will result in increased tourism spending and increased sales/use tax collections. If the request is denied, incremental travel to the state will be less than what would be realized if this request is funded. CTO's most recent ad effectiveness research, done by Strategic Marketing and Research, Inc. (SMARI, Inc.) indicates the return on investment (ROI) on the "Come to Life" campaign is continuing to trend upward. The ROI for 2012 was $228 per dollar spent on marketing. The ROI for 2013 was $334 per dollar spent. The campaign continues to gain traction and persuade visitors to come to Colorado.

Other main programs funded by CTO include: (i) international marketing campaigns, (ii) Welcome Center operations, (iii) public relations/social media initiatives, (iv) publishing of the Official State Visitors Guide and Colorado.com (official state travel website), (v) matching marketing grants to rural Colorado tourism entities, (vi) US Pro Cycle Challenge sponsorship, (vii) special event sponsorships (i.e. Cherry Hills/BMW PGA tournament), and (viii) research on ad effectiveness and travel/tourism trends.

CTO's ad agency, Karsh/Hagan, performs a market analysis on the media purchasing to determine value for dollars expended. Per this analysis, if advertising is increased, visits to the state would increase, impacting subsequent private sector spending and related tax revenues.

Proposed Solution:

OEDIT is requesting a $3.0 million General Fund increase to CTO. The additional dollars will allow CTO to buy additional air/cable time in primary markets, national magazine ads in the top producing publications, billboards in primary markets, and digital ads in primary markets. This will enhance Colorado's reach and frequency, which will produce a higher conversion rate of travelers to the state.

The additional dollars will also allow CTO to expand agritourism in Colorado and to gain access to new international markets. International target markets include, among others, Brazil, China, South Korea, Australia/New Zealand, Scandinavia/Nordic countries, the Netherlands, and United Arab Emirates.

Increasing international marketing is important for a few reasons. First, international visitors spend more than domestic visitors, so continuing to attract international visitors and growing that market will increase the amount of money spent by tourists in Colorado. Second, allocating additional funds to CTO's international efforts will allow the office to expand its marketing efforts in emerging markets. For example, with the direct flight between Denver and Reykjavik, the State is seeing more visitors from Scandinavia. It is important to continue building momentum in markets like Scandinavia. Finally, CTO is working with Brand USA, a relatively new federal program to promote the United States as a premier travel destination.

Without this additional funding, CTO will miss a significant opportunity to capitalize on the success of the "Come to Life" campaign and the extraordinary ROI that it has produced. By expending these additional dollars, Colorado will see incremental spending by visitors increase over $1.0 billion in the next 12 months, and sales and use taxes for state and local governments will increase by over $60.0 million.

Anticipated Outcomes:

The additional $3.0 million will allow CTO to increase the reach and frequency of its advertising efforts and will maximize the return that is being produced by the "Come to Life" campaign. This will cause an additional $1.0 billion plus dollars to be spent by visitors in the state and the collection of an additional $60.0 million in state and local taxes.

Assumptions and Calculations:

$350,000 of the additional funds will be invested in agritourism. While CTO does not yet have ROI numbers for agritourism, it is a very important program. CTO has received feedback from legislators indicating they want more money and effort to be put into agritourism and rural tourism. See the attached spreadsheet labeled "Funding Increases for Agritourism FY16" for more detailed information about how these additional funds will be used for agritourism.

$500,000 of the additional funds will be used to promote Colorado abroad. CTO does not yet have ROI numbers for its international efforts. See the attached spreadsheet labeled "FY16 CTO International Funding Increase" for more detailed information about how these additional funds will be used for international marketing.

The remaining funds will be used to expand the highly successful "Come to Life" campaign. The "Come to Life" ROI assumptions are based on the recent ad effectiveness research findings by SMARI. The results are listed above.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-05

Request Titles

R-02 (OIT) Systems Infrastructure Staff

Dept. Approval By: [signature]

OSPB Approval By: [signature]

	Supplemental FY 2014-15
x	**Change Request FY 2015-16**
	Base Reduction FY 2015-16
	Budget Amendment FY 2015-16

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$18,052,132**	**$0**	**$20,307,122**	**$796,726**	**$827,318**
	FTE	44.0	0.0	44.0	7.3	8.0
	GF	$944,109	$0	$957,977	$796,726	$827,318
	CF	$593,876	$0	$866,866	$0	$0
	RF	$16,348,492	$0	$18,274,931	$0	$0
	FF	$165,655	$0	$207,348	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
01. Office of the Governor - Health, Life, and Dental	**Total**	**$7,417,650**	**$0**	**$8,349,588**	**$63,418**	**$63,418**
	CF	$324,562	$0	$454,183	$0	$0
	FF	$88,481	$0	$102,872	$0	$0
	GF	$539,734	$0	$483,030	$63,418	$63,418
	RF	$6,464,873	$0	$7,309,503	$0	$0
01. Office of the Governor - Short-term Disability	**Total**	**$164,289**	**$0**	**$176,633**	**$1,257**	**$1,371**
	CF	$7,411	$0	$10,183	$0	$0
	FF	$2,124	$0	$2,581	$0	$0
	GF	$11,121	$0	$11,716	$1,257	$1,371
	RF	$143,633	$0	$152,153	$0	$0

	Total	**$2,999,560**	**$0**	**$3,552,579**	**$25,131**	**$29,911**
01. Office of the Governor - Amortization Equalization Disbursement	CF	$135,176	$0	$204,740	$0	$0
	FF	$38,735	$0	$51,831	$0	$0
	GF	$202,970	$0	$235,632	$25,131	$29,911
	RF	$2,622,679	$0	$3,060,376	$0	$0
	Total	**$2,812,088**	**$0**	**$3,431,468**	**$24,275**	**$29,599**
01. Office of the Governor - Supplemental Amortization Equalization Disbursement	CF	$126,727	$0	$197,760	$0	$0
	FF	$36,315	$0	$50,064	$0	$0
	GF	$190,284	$0	$227,599	$24,275	$29,599
	RF	$2,458,762	$0	$2,956,045	$0	$0
	Total	**$4,658,545**	**$0**	**$4,796,854**	**$682,645**	**$703,019**
05. Office of Information Technology - Service Management	FTE	44.0	-	44.0	7.3	8.0
	GF	$0	$0	$0	$682,645	$703,019
	RF	$4,658,545	$0	$4,796,854	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

Cost and FTE

- The Office of Information Technology requests $796,726 General Fund for 7.3 FTE in FY 2015-16 and $827,318 General Fund and 8.0 FTE in FY 2016-17 and beyond to enable the Enterprise Server Team to provide better operational support to the agencies.

Current Program

- OIT houses and supports 1,156 physical servers and 1,558 virtual servers for 15 different agencies. The Enterprise Server Team is responsible for administering Backup, Storage, Server, Infrastructure, Service Management, Project Management and Delivery, Service Request and Incident Operations, and Performance & Capacity Management for all 2,714 servers and underlying infrastructure.

Problem or Opportunity

- Since 2011 central systems infrastructure has expanded and the OIT Cloud has added new functionality in service delivery, operations management, and performance and capacity support. During that same time period the central staff has not increased to keep pace with the workload. In addition, the central team has taken on the responsibilities of additional agency systems and infrastructure for DOLA, HCPF, DNR, DORA, DOR, and CDHS.
- Increasing workloads have created multiple service delivery issues. Project deliverables are delayed by weeks due to lack of resource commitments from competing workloads and incidents, service requests are delayed days and weeks with a backlog of a half dozen to a dozen requests, required infrastructure and server maintenance is routinely 2 to 3 update cycles behind, service outages occur weekly due to timely maintenance, monitoring, and review not being performed.

Consequences of Problem

- Without adequate support staff daily maintenance activities, upgrades, patches, and project implementation are delayed leaving the IT infrastructure reliability and stability at risk of security and performance problems.
- Customers will continue to encounter 1 to 2 service outages weekly, agency service areas will experience dissatisfied client calls from service availability issues, and business continuity of operations will be impacted.

Proposed Solution

- Augment the OIT central systems infrastructure team with an additional 8.0 FTE (annualized) to improve the performance and capacity management of servers, reduce delivery time for customer service requests and agency projects, and reduce completion times for server related service desk tickets.

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Department Priority: R-2
Systems Infrastructure Staff

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund	FTE
Systems Infrastructure Staff	$796,726	$796,726	8.0

Customer Impact:

This request will provide an increased level of professional technical staff to support statewide and Department specific server teams. Customers located at Departments throughout Colorado would benefit from this increased staffing by experiencing improved response time on ticket orders, decreased downtime due to more staff hours available for needed service, and improved staff effectiveness.

Problem or Opportunity:

OIT supports a total of 2,714 servers, consisting of 1,156 physical servers and 1,558 virtual servers for 15 different Departments. There are currently 26 FTE at OIT that provide core server support. These FTE consist of 19.5 Server Administrators providing physical server support and 6.5 Virtual Infrastructure Administrators working on the virtualized environment.

Although there are a total of 58 FTE appropriated to Server Management in general, 32 of these positions must support responsibilities and assignments related to the server environment. The 58 appropriated FTE support assignments as displayed in the table below.

FTE	Count	Description
Server Administrators	19.5	Operating System maintenance, patching, upgrades, configuration, troubleshooting, service provisioning, and integration design.
Server Administrators; Virtual Infrastructure	6.5	Virtual Software and Management Console maintenance, patching, upgrades, configuration, troubleshooting, service provisioning, and integration design for a multi-tenant Cloud.
Storage Administrators	6.5	Maintenance and support of Storage Area Network (SANs), storage analysis to ensure storage space is always available, installation and configuration of various software packages including patches and fixes, troubleshooting, and integration design.
Performance Monitoring and Capacity Management Administrators	1.5	Ensure optimal operational efficiency and management of heterogeneous virtualization infrastructure; integration of various toolsets for dashboard reporting

		and real-time views of server, application, and storage performance; trending analysis for planning and scalability; and cost forecasting.
Directory Services and Email Administrators	7.5	Ensure network resources are viewable and accessible to user accounts based on security profile; configure network resources to replicate security data throughout the directory; maintain OIT email integrated Cloud resources are maintained and patched; troubleshoot email reported issues; and work with engineers to integrate application email functionality.
Backup Administrators	8.5	Oversee Enterprise Backup activities, assist new projects requiring integration into backup environment, assist in maintaining and monitoring scheduled backup activities and associated restores. Provide guidance on backup rotations, large data volume management, replication topologies, and integration with virtual infrastructure. Respond to requests for data and server restores.
Desktop Administrators	1	Setup, installation, maintenance and upgrades of computer hardware and software components. Plan, design, and implement client/server based solutions and develop and manage departmental and cross-functional IT projects.
Receptionist	1	
Web/Internet Information Services Administrator	1	Manage and maintain Web Platform configuration to ensure application integration and functionality. Provide reporting on web statistics, perform log cleanup, plan and implement patching, and perform troubleshooting.
Managers/Supervisors	5	Set workload prioritization, review progress and adjust work as required, coach staff on learning opportunities, assist in the development of skill set an career path, collaborate across functional teams, work all HR related activities for team, perform annual reviews and evaluations, engage as necessary for incidents and problem resolutions, and identify and propose budgeting spending plans.
TOTAL	**58**	

OIT services supported by the server team have steadily been growing since IT was consolidated in 2011. However, staffing levels have not kept pace with that growth. The core support team has remained steady at 26 FTE.

The OIT Server Team is organized into two teams: the OIT Headquarters support staff and Department support staff housed at various Department facilities across the state. The OIT Headquarters team handles the virtual environments and Department servers housed at two State Data Centers as well as some Department specific servers. Department support staff is specifically dedicated to physical servers located at Department facilities. These teams have been taking on additional responsibilities through Data Center

Consolidation, added services, and increasing Department demand. With evolving technology the OIT hosting service has new Cloud Service Delivery, Operations Management, and Performance & Capacity functionality support needs. There are multiple components that have grown since the consolidation of OIT. These additional components all require additional support resources.

Server Administration Growth Chart				
Resource/Component	**2011 Count**	**2014 Count**	**Change**	**Comment**
Infrastructure Storage	125 TB	1,250 TB	1,125 TB	Accommodate new services
Performance/Capacity Management	N/A	New	New	Did not exist in 2011, but required for improved service
Service Provisioning	N/A	New	New	Did not exist in 2011, but required for multi-tenant Cloud solution

Departments are looking to the Enterprise Systems Infrastructure and Hosting Services support team to meet their service needs and projects. While addressing Department service request needs is one support requirement to ensure customer satisfaction, the enterprise infrastructure also requires routine support and maintenance to ensure its sustainability.

A Server Administrator supporting physical or virtual servers is responsible for the upkeep, configuration, and reliable operation of the state's servers. This work ensures that the uptime, performance, resources, and security of the computers meet the needs of Departments depending on those resources. Daily tasks for a server administrator include:

- Applying operating system updates, patches, and configuration changes
- Installing and configuring new hardware and software
- Answering technical queries and assisting users
- Documenting the configuration of the system
- Configuring, adding, and deleting file systems
- Providing routing automation
- Maintaining security policies
- Troubleshooting
- Training staff
- Providing technical support for projects
- Analyzing system logs and identifying potential issues with computer systems
- Introducing and integrating new technologies into existing data center environment

Today staff works on steady state operations, projects, infrastructure implementation, and incident/problems. With the addition of staff and new service functionality administration, OIT can recognize a separation of duties amongst support staff so that individuals are not juggling time between projects/implementation and steady-state/incidents-problems. This allows for more dedication and focus in the specific areas, thus performing at more efficient levels for service expectations. Due dates and timelines would be met more often within the scope of project expectations and service level commitments.

The current support group is not staffed to handle the increased support requirements, which is reflected in service request delays, project milestone delays, and service interruption due to insufficiently supported

infrastructure resources. System provisioning can take anywhere from a day to several weeks, depending on the complexity of the request, who has to access the system, and the security policy required to meet audit compliance. Often OIT customers require a 30 day turn around, which demands multiple resources to engage in system analysis, planning, and deployment. This process is meant to utilize one resource, not multiple server administrators. Requests that have a target resolution of two days are currently exceeding two weeks.

Over the past three months, OIT has recorded an average of 13 internal major incidents a month. A major incident is defined as "service unavailable" for a wide range of users and/or customers. These incidents, at times, impact the residents of Colorado depending upon the system that is experiencing the outage.

OIT has repeatedly attempted to leverage support resources servicing other Departments, but due to resource reduction in those areas these efforts have not been successful without worsening those Department services.

Proposed Solution:

This request is seeking eight additional Server Administrators to augment the Enterprise Server Team. Six of the FTE have been identified specifically for physical server support, while the other two are identified for central virtual server and infrastructure administration support.

The increase of support staff will ensure OIT's ability to drastically improve service delivery through better management of service request queues, timely project milestone delivery, and operational maintenance of the servers and infrastructure supporting Department systems. OIT is also in the process of refreshing "Department Service Level Commitments," which the support staff will be better positioned to support due to higher admin-to-server support ratios.

Workload Indicators

Server Administrator and Virtual Infrastructure Administrator workload is managed and tracked internally by the use of an automated system in which users submit tickets and Administrators complete the work required to resolve those tickets. This system was implemented for the OIT Headquarters team late in 2011 and was fully functioning by the start of Calendar Year 2012. This is the time frame for which data is available.

The Server Team workload has consistently increased since OIT was consolidated. The most common tickets server support staff work on are "change orders", a specific type of service provisioning, and "incidents". An "incident" is a less complex issue. For instance, when a user encounters an issue exporting a file from an application, a ticket will be submitted to the server team to determine the issue. "Change orders" are more involved. One of the most common "change orders" is a Firewall Change Request (FCR). This involves configuring interfaces between servers which requires working with teams across OIT. All changes must be mapped and fully vetted through the Security Team. In the new virtual environment, where multiple servers are housed within the same hardware, security protocols are much more stringent and complex. This means the time required to complete "change orders" has increased.

Calendar Year data indicates that incidents increased 30.9% from 2012 to 2013 and "change orders" increased 18.5%.

Annual Number of Server Team Tickets Resolved		
Calendar Year	Incidents	Change Orders
2012	855	384
2013	1,119	455

This trend is continuing in 2014. Taking a look at data year-to-date, as complete data is not yet available for 2014, indicates the number of tickets in 2014 is already trending up over 2013. Year-to-date tickets are up 12.8% for "incidents" and 31.23% for "change orders", as illustrated in the charts below. Looking across the three years, "incident" tickets have experienced an annual average increase of 19.9% and "change order" tickets, 23.3%.

Incidents Reported to Server Team Year-to-Date		
	Incidents	Year-over-Year Increase
Jan-Aug 2012	578	
Jan-Aug 2013	734	26.90%
Jan-Aug 2014	828	12.80%

Change Orders Reported to Server Team Year-to-Date		
	Change Orders	Year-over-Year Increase
Jan-Aug 2012	247	
Jan-Aug 2013	285	15.38%
Jan-Aug 2014	374	31.23%

Not only have the number of tickets submitted increased over the past three years, but the complexity of those tickets has also increased. More stringent security compliance has increased the complexity of the research and communication required between teams. It has also required more detailed mapping of the increasingly complex server environment. Although both the amount and complexity of the work have been increasing, there has been no increase in staffing during the same time period. The mounting workload is affecting delivery and resolution times.

If these resources are not acquired, Department services will continue to experience the impact of service delay and interruption, both for projects and important services supporting business operations and Colorado residents.

Anticipated Outcomes:

The approval of this funding request will directly affect the service received by state Departments. Additional Server Administrators will enable the team to increase performance monitoring and management to provide more detailed reports for systems and applications which will ensure customer understands application availability and performance. OIT will be able to reflect more accurate metrics on the systems hosted. The duration of system and service deployment for the majority of requests is

approximately 30 - 90 days. After further configuration and maintenance of the Cloud functionality, provisioning of service requests should reduce by at least 75%. OIT expects to see improvement in service delivery that will be measured via the following:

Item	Measurement Method	Outcome
Service Request Queue	Service Desk Weekly Report	Decrease time to deliver and meet expectations as defined in the Service Level Agreement.
Project Workload	Project and Resource Management System Delivery Dates	Meet delivery date.
Systems Maintenance	Patching & Security Compliance: Management Console and Security Report	All systems patched according to industry best practice; security risk is mitigated and reported within expected timelines
Storage Maintenance	Patching & Security Compliance: Management Console and Security Report	All storage platforms patched according to industry best practice; security risk is mitigated and reported within expected timelines
Performance and Capacity Management	Management Console: operational dashboard view and associated reports	Development and maintenance of an operational dashboard reflecting system performance and capacity utilization, which will generate associated reports for Departments

Assumptions and Calculations:

This request referenced current FTE salary comparisons and the Computer Economics Industry Standards. On average, about one Server Administrator could manage 100 servers of the same Operating System (OS), same configuration, and same central authentication mechanism. However, OIT servers are not configured this way. This number changes when considering variances in configuration. OITs central support team manages seven OS versions, multiple authentication mechanisms, multiple Departments, multiple sites, and multiple application configurations, as well as the centralized cloud infrastructure platforms located at both primary Data Center locations. In this scenario one admin managing 30 to 50 servers is a strong need. OITs central systems administration team currently supports eight Departments, 700 centralized servers, and 250 decentralized servers at the Department sites. OIT proposes a staffing level between these two industry standards that will provide additional resources while being cautious with taxpayer funds.

Industry Standard Ratio	Servers	Current FTE	Industry Standards	Difference
80 Servers per FTE	2,714	26.0	34.0	8.0

Based on the industry study identified above, and the variances that exist within OIT compared to that study, OIT is requesting that the support team be increased by eight server administrators at a minimum. This would bring the support ratio to 80 servers per FTE. These 8 FTE will be allocated as displayed in the table below.

FTE	Count	Description
Server Administrator	6	Will support server administration responsibilities for physical server support.
Virtual Infrastructure Administrators	2	Will support infrastructure administration responsibilities for the enterprise, as well as the new service delivery functionalities and performance & capacity management.
TOTAL	8	

Rationale for General Fund

OIT is an internal service organization and most funding originates via charges assessed to State Departments. OIT provides services to State Departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to Departments. OIT is prohibited by the federal Division of Cost Allocation (DCA) from using one service to subsidize another or from over charging one Department to subsidize another. An Enterprise Server Team must have the fluidity to shift seamlessly from working on servers for one agency to another without having to spend time on the bureaucratic process of chargeback hours to different agencies. By providing a common funding source through General Fund, the server team would be able to deploy resources in a more timely fashion and better manage shifting workloads. OIT would prefer to have the ability to assign staff to cover outages without having to focus on billable hours by Department. This common to service to all of government is the primary rationale for a General Fund request.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-06

Request Titles

R-03 (OEDIT) Aerospace & Defense Champion

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
	Total	**$3,498,588**	**$0**	**$3,514,699**	**$298,393**	**$298,393**
	FTE	21.2	-	21.4	1.0	1.0
Total of All Line Items	GF	$2,587,909	$0	$2,602,217	$298,393	$298,393
	CF	$540,000	$0	$540,408	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$370,679	$0	$372,074	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
	Total	**$3,498,588**	**$0**	**$3,514,699**	**$298,393**	**$298,393**
	CF	$540,000	$0	$540,408	$0	$0
04. Economic Development Programs - Global Business Development	FF	$370,679	$0	$372,074	$0	$0
	FTE	21.2	-	21.4	1.0	1.0
	GF	$2,587,909	$0	$2,602,217	$298,393	$298,393

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes ___ No ___ **Not Required:** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for $298,393 to fund the Aerospace and Defense Industry Champion (1.0 FTE) and the associated program. The General Assembly approved a one-time appropriation for FY 2014-15.

Current Program

- The Champion is responsible for leading and overseeing the implementation of the state's aerospace strategic plan and developing and aligning strategies surrounding the state's military bases, including efforts around all Base Realignment and Closure (BRAC) activities.
- The Champion promotes the interests of the aerospace and defense industry by assisting aerospace businesses, defense installations, and research institutions to develop economic opportunity for aerospace and defense industry business growth and to retain defense missions.
- The Champion assists the Department of Military and Veterans Affairs to support military personnel and installations, and the Champion works with the Lieutenant Governor on Colorado Space Coalition and Science, Technology, Engineering, and Math (STEM) issues.

Problem or Opportunity

- The aerospace strategic plan identified the need for a single industry "voice" or Champion. The Champion is focused on the aerospace and defense industry. The position oversees the implementation of the state's aerospace strategic plan and developing/implementing strategies surrounding the state's military bases, including leading efforts around BRAC.

Consequences of Problem

- Without funding, full implementation of the strategic growth plan will not take place. This would negatively impact the growth of the aerospace industry in Colorado.
- Without funding, the state will lack strategic focus for a critical advanced industry and lack strategic action to maintain positive relations with the U.S. Armed Forces in accordance with H.B. 14-1351.
- Without funding, OEDIT cannot play an active role in issues around BRAC. It's imperative that the State partner with the private sector to show the importance of the military to Colorado's economy.

Proposed Solution

- OEDIT requests ongoing funding for the Aerospace and Defense Industry Champion position. The position sets the foundation for the continued economic growth of the aerospace and defense industry to meet the core objectives outlined in the Colorado Blueprint and assist with BRAC-related activities.

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Department Priority: R-3
Request Detail: Aerospace and Defense Industry Champion

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Aerospace and Defense Industry Champion	$298,393	$298,393

Problem or Opportunity:

The Colorado Office of Economic Development and International Trade (OEDIT) has facilitated the creation of strategic growth plans for each of Colorado's 14 key industries, one of which is aerospace. Critical to the aerospace plan is the integration of aerospace and defense and the identification of commercialization strategies that will assist these industries as they navigate difficult growth issues such as sequestration and Base Realignment and Closure (BRAC). With the Brookings Launch! Report, significant work and effort was devoted to creating valuable strategic growth plans. Too often, such plans are not acted upon because there is no single person or entity accountable for the implementation of such plans, and there is no funding to help achieve the critical milestones.

In order to ensure continued work on cultivating the aerospace and defense industry in Colorado, in FY 2014-15, OEDIT made a one-time request to continue funding an "Aerospace Champion." The Champion's official title is "Aerospace and Defense Industry Champion," and as initially planned, the Champion will work with industry to create a sustainable funding model that does not rely on state funds. This process has been delayed because a strategic plan around BRAC is still being developed. OEDIT anticipates the Champion being called upon to facilitate discussions and coordinate funding from BRAC-related resources too. While OEDIT initially anticipated being able to have a sustainable funding model in place after two years of State funding (FY 2013-14 and FY 2014-15), it is taking longer than expected with the added BRAC-related workload. With continuation of funding from the State's General Fund, the Aerospace and Defense Industry Champion, along with OEDIT, will have the opportunity to continue to effectively implement the aerospace strategic plan and assist the State as it approaches the next BRAC.

With continuation of funding, the Aerospace and Defense Industry Champion will also be able to continue working closely with the Lieutenant Governor on Aerospace and Science, Technology, Engineering, and Math (STEM) education issues. The Lieutenant Governor is co-chair of the Colorado Space Coalition (CSC) and as such he attends many CSC meetings. The Champion prepares the Lieutenant Governor for these meetings. The Champion also attends certain events on behalf of the Lieutenant Governor (for example a University of Colorado event tied to MAVEN's arrival at Mars at the end of September 2014), and he promotes aerospace in the STEM context too.

Proposed Solution:

Continued funding of the Aerospace and Defense Industry Champion position will enable OEDIT to continue implementing the aerospace strategic plan in order to foster economic growth and promote positive relations with the U.S. Armed Forces. Specifically, implementation of the plan promotes advanced industry economic growth in the aerospace industry through the growth of new companies and jobs; the creation of programs to assist aerospace small and medium sized enterprises; the identification of funding sources to help commercialize aerospace and defense technologies; the exportation of new products; and an increase of revenues for existing Colorado aerospace defense businesses. In addition, the Champion will play a significant role in BRAC discussions with both private and public sector partners.

Cost to continue funding the Aerospace and Defense Industry Champion position and program, with the additional BRAC components, will total $298,393 General Fund. Last year's budget request was initially for $175,000. During the closing of the FY 2014-15 budget, the Joint Budget Committee added an additional $125,000 to further emphasize the importance of BRAC-related and military-related work. This year, OEDIT is requesting an additional $125,000 to give the Aerospace and Defense Industry Champion the same level of funding as the current fiscal year and to ensure the Champion has the necessary resources to assist in BRAC and other military issues. If the position/program does not receive this funding, time and resources already devoted to this effort will have been wasted, and the growth of the aerospace and defense industry in Colorado will be delayed.

Anticipated Outcomes:

Success will be measured by aerospace and adjacent industry retention of jobs, creation of new jobs, new start-ups, business expansions, and continued positive relations with the state-assigned U.S. Armed Forces. All outcomes support the core objectives of the Colorado Blueprint.

Assumptions and Calculations:

The following assumptions were made when calculating the total request of $298,393:

- $128,393 to fund salary and benefits of 1.0 FTE to continue serving as the Aerospace and Defense Industry Champion. A more detailed breakdown of the Champion's salary and benefits is on the last page of this funding request.
- $50,000 to help fund the CSC and fund the State presence at the Space Symposium in Colorado Springs. Funding the CSC includes funding the marketing of aerospace through development of brochures, publication advertisement, speakers bureau, government affairs forum, pop-up banners, and video production. Funding the Space Symposium includes booth rental in the exhibition hall, a conference room for meetings at The Broadmoor, banners, big screen displays, brochure development and procurement, and conference attendance by OEDIT staff.
- $20,000 to fund the production and release of Rocky Mountain PBS public service announcements as part of a Colorado aerospace and defense awareness campaign.
- $25,000 to fund the Champion's out-of-state travel. This includes participating in the Aurora Economic Development Council Accelerate Colorado DC trip, the Colorado Springs Regional Business Alliance Impact DC trip, travel to space launches (examples for the current fiscal year include the WorldView-3,

Orion, and GPS III launches), and quarterly corporate business development travel to meet with various companies and prospects.

- $25,000 to fund the Champion's travel around the State to work on aerospace, military, and BRAC issues. This includes weekly trips to Golden, Boulder, and Colorado Springs; monthly travel to Pueblo and Fort Collins; and quarterly travel to the Western Slope including to Durango, Grand Junction, Montrose, and Yampa Valley.

- $50,000 to fund statewide military and BRAC efforts/initiatives, including proactive efforts made by the Champion. Because these efforts are being undertaken by public private partnerships, these funds would be matched 2:1 by private sector dollars.

Calculation Assumptions:

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.

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 2015-16 as 0.9166 FTE to account for the pay-date shift.

Expenditure Detail		FY 2015-16		FY 2016-17	
Personal Services:		FTE		FTE	
	$ 8,333	1.0	99,996	1.0	99,996
PERA			10,150		10,150
AED			4,400		4,800
SAED			4,250		4,750
Medicare			1,450		1,450
STD			220		220
Health-Life-Dental			7,927		7,927
Subtotal Position 1, #.# FTE		1.0	**$ 128,393**	1.0	**$ 129,293**
Subtotal Personal Services		1.0	**$ 128,393**	1.0	**$ 129,293**
Operating Expenses					
Regular FTE Operating Expenses	500		-		-
Telephone Expenses	450		-		-
PC, One-Time	1,230		-		
Office Furniture, One-Time	3,473		-		
Other					
Other					
Other					
Subtotal Operating Expenses					
TOTAL REQUEST		1.0	**$ 128,393**	1.0	**$ 129,293**
	General Fund:				
	Cash funds:				
	Reappropriated Funds:				
	Federal Funds:				

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-07

Request Titles

R-03 (OIT) Active Directory Consolidation

Dept. Approval By: David B. Zung

OSPB Approval By: [illegible]

___	**Supplemental FY 2014-15**
x	**Change Request FY 2015-16**
___	**Base Reduction FY 2015-16**
___	**Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$4,658,545**	**$0**	**$4,796,854**	**$606,956**	**$478,580**
	FTE	44.0	0.0	44.0	0.0	0.0
	GF	$0	$0	$0	$606,956	$478,580
	CF	$0	$0	$0	$0	$0
	RF	$4,658,545	$0	$4,796,854	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
05. Office of Information Technology - Service Management	**Total**	**$4,658,545**	**$0**	**$4,796,854**	**$606,956**	**$478,580**
	FTE	44.0	0.0	44.0	0.0	0.0
	GF	$0	$0	$0	$606,956	$478,580
	RF	$4,658,545	$0	$4,796,854	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

Cost and FTE

- The Office of Information Technology (OIT) requests $606,956 General Fund in FY 2015-16, $478,580 General Fund in FY 2016-17, and $581,155 General Fund in FY 2017-18, of which $193,960 is ongoing, for contractor hours, software, and hardware to consolidate and simplify Active Directories across 13 state departments.

Current Program

- Active Directory (AD) is a Windows Operating System directory service that facilitates working with interconnected, complex and different network resources in a unified manner. It is what authenticates and authorizes users in a Windows network – assigning and enforcing security policies for all computers, installing or updating software, determining login settings, and granting permissions for access to resources (printers, etc). The Executive Branch has multiple departments with disparate AD structures and support is not standardized. AD is supported by various FTE, at agencies and at OIT, on a part-time basis.

Problem or Opportunity

- Delivery, management, and support of services being offered to both state employees and the citizens of Colorado are not standardized. This causes higher maintenance costs, service gaps in management, and prevents the implementation of new solutions, such as single sign-on, because of the complexity of the various directories across all agencies.

Consequences of Problem

- There will continue to be no easily accessible database that can supply summary information for all state users. For example, when OIT was consolidating email there was no way to easily determine how many employees existed in each department and their email address, name, position title, and employment status.
- The State will not be able to implement new technologies, like single sign-on, and will forego other benefits like increased security, single group policies, faster deployment of state initiatives, less hardware, and service efficiency.
- Not consolidating AD will perpetuate the issues of non-standardized AD support, and inconsistent implementation and maintenance of AD leading to more issues long term.

Proposed Solution

- This project seeks to consolidate Active Directories across agencies, blending these separate directories into one enterprise directory. This will move the support function from many FTE in various positions to OIT central to manage all AD across the state. This proposal is for $1,666,191 General Fund over three years, of which $193,960 is ongoing, to contract with a third party vendor to consolidate and reduce the number of domain controllers across state agencies and to provide centralized, ongoing support and maintenance. This project will be enacted through a rolling implementation across 13 departments.

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COLORADO
Office of Information Technology

John W. Hickenlooper
Governor

Suma Nallapati
Secretary of Technology and
Chief Information Officer

FY 2015-16 Funding Request | November 1, 2014

Department Priority: R-3
Request Detail: Active Directory Consolidation

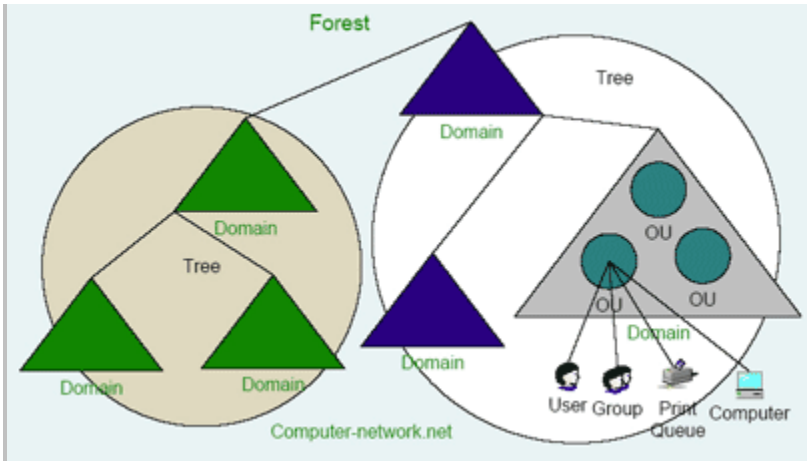
Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Active Directory Consolidation	$606,956	$606,956

Customer Impact:

This request will fund the consolidation of Active Directory (AD) across 13 state departments. Active Directory is a directory service that facilitates working with interconnected, complex and different network resources in a unified manner. Over 95 percent of organizations worldwide use AD. This opportunity to consolidate will have many internal benefits such as providing a single foundation, single group policies statewide, service efficiency, single management infrastructure, better security, better backup and recovery, less hardware to maintain, faster deployment of state initiatives, and cost avoidance. The current structure is analogous to every city in Colorado issuing its own phone book, while after this initiative there will be a single phone book for the state.

Problem or Opportunity:

The Executive Branch has multiple departments with disparate active directory structures. Active Directory authenticates and authorizes users and computers in a Windows network - assigning and enforcing security policies for all computers and installing or updating software. AD allows the Governor's Office of Information Technology (OIT) to determine login settings, grant permissions for access to resources, impose policy settings, and much more.



AD is structured like a forest where each domain tree contains multiple domains and each tree consists of organizational units (OUs) which are like branches. These branches are associated with a network resource, such as a user or service, and stored in a specific security boundary. A single domain may have multiple servers – each of which is capable of storing multiple OUs. Each tree shares a common schema, configuration and global catalog. A forest is formed by a set of multiple and trusted domain trees.

The State of Colorado's AD was constructed piece by piece as computer networks expanded within and across departments. There was no strategic enterprise plan for the development of directories and there has been no investment in their consolidation over time. OIT has managed to consolidate the Governor's Offices including the Capitol, the Energy Office and the Office of Economic Development, as well as the Department of Personnel and Administration and Treasury into a single forest. However, an effort to consolidate at an enterprise level has not been possible due to the size and cost of the project. OIT is unable to undertake this project within the current operating budget or staff resources.

There are many issues with the current AD structure:

- The AD structures are not standardized as a result of the piece by piece expansion, delivery, management, and support of services being offered to both state employees and the citizens of Colorado.
- Higher costs result from AD structures that range widely. There are many different versions and configurations.
- Service gaps in management result from non-uniform configurations and widely dispersed support staff. Currently, Active Directory is being managed and maintained by various staff both within OIT and in some cases within a department. These FTE have primary work assignments in other areas and focus only part-time on Active Directory maintenance. They do not have a common reporting structure and therefore are not managed consistently. In many cases, they have not received the comprehensive training necessary to effectively provide AD maintenance and management.
- Inability to implement new solutions due to the complexity of the various directories across departments.
- Many of the Active Directories do not align with the Industry Best Practices, such as accurate and consistent use of fields so an "Employee Directory" can be rolled up and uniform configurations of organizational units (OUs) so that group policies can be applied correctly.

Proposed Solution:

This project seeks to consolidate Active Directories across 13 departments, much like email consolidation, blending these separate directories into one Enterprise Directory. The following departments will be included in the consolidation: Agriculture, Human Services, Labor and Employment, Transportation, Public Health and Environment, Public Safety, History Colorado, Military and Veterans Affairs, Natural Resources, Corrections, Local Affairs, Revenue, Regulatory Agencies, Health Care Policy and Financing. Departments not included have either been consolidated already or are not participating. This funding request has been presented to each department's budget office and IT director. There were no concerns or red flags that resulted from the review process. The chart below illustrates the status of each department. Only departments that currently fall under the purview of OIT are targeted. The departments that are not participating have the choice to opt in for future projects.

Department	Status
Agriculture	Targeted for Consolidation
Corrections	Targeted for Consolidation
Education	Not Participating
Governor's Office	Presently Consolidated
Health Care Policy and Financing	Targeted for Consolidation
Higher Education	Not Participating
Human Services	Targeted for Consolidation
Labor and Employment	Targeted for Consolidation
Law	Not Participating
Legislature	Not Participating
Local Affairs	Targeted for Consolidation
Military and Veterans Affairs	Targeted for Consolidation
Natural Resources	Targeted for Consolidation
Personnel and Administration	Presently Consolidated
Public Health and Environment	Targeted for Consolidation
Public Safety	Targeted for Consolidation
Regulatory Agencies	Targeted for Consolidation
Revenue	Targeted for Consolidation
Secretary of State	Not Participating
Transportation	Targeted for Consolidation
Treasury	Presently Consolidated

This project seeks to utilize a third party vendor to consolidate and reduce the number of domain controllers across departments. Once consolidation is complete, ongoing contractor hours will be used to support and maintain the new Enterprise AD across the state.

1. The first task will be to catalogue and clean-up AD elements across all departments. This includes the number and location of all workstations, the number of users and logins across those workstations, the location and status of all domain controllers, print servers, file servers, and all other related components. This preliminary work is an essential milestone which will set the project up for streamlined implementation and ultimate success. Once this work is complete, department consolidation will begin.
2. The next step will be to migrate all users and their workstations and laptops, service accounts, security groups, servers, and all other aspects of any department's AD. Due to the size and complexity of the migration, the anticipated timeline is three years.
3. AD consolidation has to unite and rationalize the ID formats, password policy objects, user groups, group policy objects, schema designs and application integration methods that have grown and spread through all of the existing AD environments. This must be done carefully. If something is missed users may not be able to log in, find file shares or access applications.
4. The project plan estimates the first year will include Agriculture, Natural Resources, Health Care Policy and Financing, and Regulatory Agencies. Year two will include: Local Affairs, Public Health and Environment, Public Safety, and Military and Veteran's Affairs. Year three will include: Labor and Employment, Corrections, Revenue, Transportation, and Human Services.

The migration work can be completed with limited interruption to department operations. For each participating department, it is anticipated that there will be one weekend when physical migration work will

be completed. This will entail downtime beginning Friday evening when department staff will not be able to logon until Monday morning. Apart from these few days, there are no other anticipated disruptions to normal department operations.

The project planning will include tasks to ensure that the migration does not disrupt the user's ability to work or access resources. This will include a rollback plan. The project team will analyze potential risks and identify the levels of user impact and downtime that might necessitate rolling back the migration. A rollback might be required if any of the following occur:

- Users cannot log in to their accounts after migration or access resources;
- User migration was successful, but user workstation migration or local profile transfer failed; or
- Users are not able to access any critical business applications.

If user impact or downtime reaches a level that has been defined as unacceptable, a rollback could be implemented, allowing everyone to continue to operate in the legacy environments until the process has been updated appropriately.

Upon completion of this project, the Active Directory infrastructure, functionality, and support will be centralized and fall within the OIT Enterprise Service portfolio. This consolidation, while a more efficient and elegant solution to the current state, moves much of the support function from various staff across OIT and departments to one central team. Currently, because AD is not centralized and exists in different locations across departments, support is being provided by various staff members, as available. These are OIT and department staff that have other primary assignments and performance plans, but who have taken on supporting AD part-time on top of their existing workload. There is currently no dedicated AD support staff. Once consolidation is completed, the support workload will be centralized. Contractors will be hired to provide enterprise-wide ongoing support and maintenance.

This team will be supported by central staff and outside contractors. Duties, responsibilities, and activities will include:

- Install platform/application software and patches.
- Resolve platform/application issues such as access and performance issues.
- Configure the platform/application to support user requirements.
- Support and maintain interfaces with other platforms/applications.
- 24x7x365 reliable support that leverages collective resources to meet service level expectations.
- Actively participate in build activities for platform/application solutions.
- Ensure planned modifications are in compliance with the strategic roadmap of the enterprise.
- Take lead on providing technical solutions/directions to ensure systems/applications are highly available and meet service level agreements.
- Work with business clients, business IT personnel and development staff to avoid communication gap and ensure customer satisfaction.
- User setup in Active Directory.
- Rights and permissions setup.
- User setup in other applications, where appropriate.
- Network drive administration.

Active Directory consolidation is a foundational component for the creation of an agile IT network. Employing a single Active Directory allows for better integration of existing systems, heightens security, and more effectively facilitates communication and collaboration among locations. It also enables user

mobility, common user provisioning processes, consolidated reporting, and unified management of machines. Laying the groundwork for future adaptability through statewide AD consolidation should not be delayed. The difficulties associated with consolidation increase the longer the state waits. Not implementing this solution means continuation and growth of the current, complex AD structure which increases costs and workloads.

Active Directory structure is like the structure of a house. The tenant likely does not notice that the foundation, pipes, and water lines have been pieced together with different materials of varying quality over many years while walking through the house. However, when repairs are needed there will be many costly and time-consuming hurdles. Completing AD consolidation now is the responsible and forward-looking solution.

Benefits

There are many important, tangible internal benefits:

- **Single Foundation** – A single foundation for all other directory-aware services, including messaging and monitoring.
- **Service Efficiency** – Today's enterprise solutions are tightly integrated with AD. These new technologies provide efficient and cost effective methods to use network resources and they require user, application, and service security authentication and access (e.g. software as a service, the pipeline project, single sign on, employee on-boarding). Effectively implementing and gaining the most benefit from these technologies requires a single directory source.
- **Single Management Infrastructure** – One infrastructure for all other directory services tasks, such as software deployment, inventory, and object management sharing and delegation (such as for user accounts). After consolidation every user will be listed in one global directory.
- **Security** – Better security through a single security policy and a single set of administrators. If a user has multiple domains and forests, each has its own administrator. One weak domain exposes all other forests and domains. With only a single domain, it is also easier to enforce statewide security policies.
- **Single Group Policy** – With a single group policy, management policies need to be defined only once, and can be used throughout the entire enterprise without the need to manually export and import Group Policy Objects. For example, when management sets a policy for passwords to require a certain length and complexity and a change frequency, this change can be applied at the root by the Central AD Administrators and filtered down to all users in one step. Today this must be implemented through various AD support staff across various departments, forests, and domains.
- **Backup and Recovery** – The AD structure will have better resiliency because every location will have a full domain backup. Consolidating 13 departments into one active directory forest will eliminate 12 disaster recovery issues. Instead of needing to recover 13 separate systems, only one will need to be recovered.
- **Less Hardware** – In an organization with multiple domains, every location needs two domain controllers (DCs). With a single domain, each location needs only a single DC because if the local DC fails, the locations can use hub DCs. Reduced hardware also means fewer licenses, less management software, and less overhead for server management.
- **Faster Deployment of State Initiatives** – Initiatives in an organization with just a single domain and shared account database solutions need only be deployed once, which means company-wide deployments are much faster than if the organization has multiple and separate domains.
- **Cost Savings/Avoidance** – Consolidation will pave the way for future cost savings due to fewer license fees, lower hardware replacement costs, and reallocating personnel used to support legacy environments to new projects. Decommissioning legacy physical servers that are currently running

domain controllers will save the State from having to replace and upgrade those servers over time. Running only the newest version of AD will avoid the future costs of licensing and supporting various older versions.

Consequences of Problem

Active Directory is a critical component supporting computers across the state. If any domain goes down, users within that group will be unable to login to their computers. An employee that is unable to login to their computer might be unable to meet important, time-sensitive deadlines severely impacting department operations. Employees utilizing critical applications to accomplish public-facing work, such as driver's license examiners, would be unable to provide service to citizens. The risk of these systems crashing is low because support is prioritized very high due to the critical impact of a failure. This request will standardize these systems. Although day to day operations will not be affected, the long term sustainability will be enhanced.

The complexity produced by multiple, unique AD implementations can prevent, or drastically increase the cost of deployments of new, enterprise-wide software and work processes. For example, upon completing the email migration of all agencies, a third party vendor was approached to provide a Single Sign-On (SSO) solution for the State. For a consolidated AD in which there was only a single domain the cost quote was $80,000. However, the quote ranged up to $2.5 million for a structure having 18 domains. Most third party vendor pricing models are based on domain count. Currently, the state has 25 domains across both targeted departments and those not participating.

Increasing complexity also extends the timeline for implementation of projects. When the Pipeline Project was rolled out the application software, which in prior years would be able to span multiple domains was no longer available configured as such. Manufacturers are phasing out software that accommodates complex Active Directories. The pipeline application software could not accommodate the State's multiple, complex domains and a number of work-around settings were needed to enable functionality. This had a significant, unanticipated effect on the team's workload and the project timeline. Similarly, OIT recently rolled out an enterprise solution for network monitoring and management. This was meant to be one deployment, however it is truly a number of isolated silos of deployments: one per domain.

An increasingly complex AD structure leads to ever-increasing needs for both support and hardware. Without the normalization and simplification of AD, the State continues to replicate unsupportable complexity into new solutions, further overtaxing OIT support resources. This means mounting licensing, hardware replacement, and personnel costs which will require requests for additional resources in the future. Until the consolidation finally occurs, the cost and implementation timeline for the consolidation project itself will continue to grow.

Anticipated Outcomes:

A consolidated AD will improve the usage and administration of AD for state users by consolidating all domains across 13 departments into one standardized Active Directory environment. This singular, updated Active Directory environment will increase work efficiency, improve scalability, and mitigate risk.

- Work efficiency will increase due to improvements in the performance for the whole infrastructure. User experiences and administrator processes will be standardized. AD consolidation will enable additional implementation of monitoring, management and identity management solutions.
- The scalability will improve as the new consolidated AD will allow for faster and cheaper growth and there will be a framework for a statewide governance model.

- The consolidation will also mitigate risk by enabling the deployment of a consistent security model across the AD structure.

Overall delivery of AD will improve as a result of this project. Participating departments' directories will be standardized and therefore easier to manage and maintain. Computers, users, and other AD objects will be consistently organized on an enterprise level. Once organized and consolidated, staff now supporting their own directory structures should be able to refocus their efforts to other priority projects within their department.

Current departmental directories range from mostly implemented and maintained according to Microsoft Best Practices to largely ignored and sometimes poorly implemented or in a less than optimal state. Consolidation will address best practices in terms of organization, security policies, and maintenance.

It will also give the State better options in the future when pursing advanced technologies. A simplified active directory structure will provide the foundation necessary for projects such as Single Sign-On and inter-departmental sharing of resources. With Single Sign-On departments that currently have multiple systems with multiple passwords would be able to implement a single username and password for all applications. The possibility also opens up for the implementation of Single Sign-On for Citizens that access multiple externally facing department systems. Departments currently must attach documents in email or hand deliver documents when necessary. AD consolidation would lay the groundwork for the implementation of inter-departmental file sharing.

Most of the outcomes resulting from a directory consolidation may be quantified. Monthly reports will provide the status of the current state and report on consolidation metrics until the future state is reached at the conclusion of this project. There will also be metrics available at the conclusion of the project. Some of the metrics are listed below:

- **Long Term Cost Avoidance/Savings –** Consolidating servers and moving to virtual servers will decrease the total server count. This drastically reduces the costs for server licensing and hardware/software. These savings can be quantified.
- **Percent Reduction in Infrastructure** – The decrease in the number of domain controllers and licenses.
- **Percent Personnel Reallocation** – Hiring contractors to support an Enterprise Active Directory will allow department assigned OIT staff that are currently acting as part-time AD Administrators to reallocate support from legacy environments to new projects.

Assumptions and Calculations:

Cost estimates for the entire three year project are illustrated in the chart on the following page. For a detailed breakout of the project plan and hours estimates consult Appendix A.

The project cost calculations have been estimated based on the specific tasks that will be required in order to complete the migration. The following is a very high level overview of the migration process:

1. **Network/Security Preparation** – New network segments will be prepared for the central root domain controllers. All department network specifications will be identified in detail. All AD sites and services will be adjusted to mirror the current network topology.
2. **AD Analysis and Normalization** – Before proceeding with migration, it is extremely important to understand the details of the current environment. Very detailed surveys of target departments will be completed. Required tools and processes will be tested. Communication plans will be finalized and information will begin flowing to all parties involved in the consolidation. Where necessary

due to legacy hardware, new domain controllers will be procured, installed and configured to operate as designed.

3. **AD Migration and Consolidation** – The project team will ensure many things: Logon scripts and policies are configured and tested; IP subnets and AD sites are configured; a new central mapping of host names to network addresses is implemented and verified that it is up and running and available to all that may need it; the naming system for computers, services, or any resource connected to the AD network is up and running without issues; Organizational Units (OUs) required for the consolidation are created; accounts needed are created and tested; and all changes are documented.
4. **Post Consolidation Support and Remediation** – This task will ensure maximum security, integrity, and performance of the restructured environment. To make sure that resources are accessed properly after restructuring, history entries for migrated accounts must be deleted and references to source accounts removed. Also, the project team will disable or delete source accounts and clean the network of any unused objects that could affect the security and stability of the environment. These tasks and additional administrative support will be required ongoing for management and support of the consolidated environment.

The following assumptions were made for all project costs:

- All contractor hours are estimated at $107 per hour.
- In preparation for this funding request, OIT completed a survey of existing technologies over the past year. Hardware and software costs are based on this survey.
- It is estimated that 20 percent of domain controllers and other related hardware and software will need to be replaced due to incompatible legacy technology and aging equipment. Whenever possible, replacement domain controllers will be virtualized, however network topology and speeds in some remote offices will require the replacement of their existing physical domain controller. Based on a total of 250 domain controllers throughout the state, a cost of $5,000 per equipment replacement, and an estimated necessary replacement of 20 percent of these systems, a total of $250,000 will be spent on approximately 50 new domain controllers.
- Software, Windows Server 2012R2 Standard Edition, will be required to run on the new hardware at a cost of $700 each; a total cost of $35,000.
- The cost estimate applied for each department is an average. Costs are not assumed to be the same for every department. Larger departments and those with more legacy infrastructure will require additional contractor hours and more hardware/software replacement. These costs are balanced by smaller departments and those with more advanced infrastructure which require fewer hours and less hardware/software replacement.

Rationale for General Fund

OIT is an internal service organization per rules of the Internal Revenue Service and most funding originates via charges assessed to state departments. This project, however, does not fit within the existing service catalog or cost recovery methodology. OIT provides services to state departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to departments. OIT is prohibited by the federal Cost Allocation Services Division from using one service to subsidize another. Active Directory consolidation is a project that provides a common good utilized by multiple state departments and therefore is a logical and defendable use of General Fund. By consolidating AD across the Executive Branch, Colorado would be providing a solid and consistent backbone for IT growth and development across departments. OIT strongly believes that these types of projects are core to a responsible and effective consolidated entity and essential for government to operate in an effective manner. This common service to all of government is the primary rationale for a General Fund request.

Fiscal Year	Task Description	Contractor Hours per Department	Total Contractor Hours	Cost
FY 2015-16				
	Project Plan, Communication Plan, and Identification of Resources		188	$ 20,116
	4 Departments			
	Network/Security Preparation	96	384	$ 41,088
	AD Analysis and Normalization	548	2,192	$ 234,544
	AD Migration and Consolidation	134	536	$ 57,352
	Post Consolidation Support and Remediation (4 Departments)	80	320	$ 34,240
	Data Convergence and Integration	47	188	$ 20,116
	Hardware and Software			$ 199,500
FY 2015-16 Total Funds				*606,956*
FY 2016-17				
	4 Departments			
	Network/Security Preparation	96	384	$ 41,088
	AD Analysis and Normalization	548	2,192	$ 234,544
	AD Migration and Consolidation	134	536	$ 57,352
	Post Consolidation Support and Remediation (8 Departments)	80	640	$ 68,480
	Data Convergence and Integration	47	188	$ 20,116
	Hardware and Software			$ 57,000
FY 2016-17 Total Funds				*478,580*
FY 2017-18				
	5 Departments			
	Network/Security Preparation	96	480	$ 51,360
	AD Analysis and Normalization	548	2,740	$ 293,180
	AD Migration and Consolidation	134	670	$ 71,690
	Post Consolidation Support and Remediation (13 Departments)	80	1,040	$ 111,280
	Data Convergence and Integration	47	235	$ 25,145
	Hardware and Software			$ 28,500
FY 2017-18 Total Funds				581,155
Ongoing				
	16 Departments (3 Presently Consolidated, 13 Additional Targeted)			
	Post Consolidation Support and Remediation (16 Departments)	80	1,280	$ 136,960
	Hardware and Software Refresh (20% of $285,000 total new hardware)			57,000
Ongoing Total Funds				193,960

APPENDIX A

Detailed Hour Estimates for Contractor Workload per Agency

Project Planning, Communication Plan, and Identification of Resources		
	Project planning	120
	Identify Key Executives within the Agency to Champion the Project	4
	Develop Announcement and Updates Communications	40
	Identify OIT Staff Leads for Access Control, AD, Deskside Support, Security, and Service Desk.	16
	Identify Potential Vendors for: AD, Deskside Support, and Service Desk Staff Augmentation.	8
	TOTAL one-time initial workload covering all agencies	**188**

Network/Security Preparation		
	Prepare new network segment for Colorado.lcl forest root domain controllers	16
	Identify all Agency Locations and Network Specifications	40
	Adjust AD Sites and Services to mirror current network topology	24
	Establish 2 Way Trust Relationship with Targeted Agency	16
	TOTAL per agency	**96**

AD Analysis and Normalization		
	Identify Current domain controllers and Global Catalogs	8
	Perform Health Check on the DCs	8
	Remediate DC issues exposed from above	24
	Upgrade and/or replace DC server as needed	40
	Identify AD Schema Expansions	4
	Eliminate the need for Exchange Organization within Agency (Data/Voice Convergence)	32
	Identify Current Users' AD Accounts	16
	Identify Domain Admins and other Privileged Accounts in Domain	16
	Identify and Segregate Email Enabled Accounts from other Accounts	40
	Ensure Extended Attributes for Email and other functions are properly populated	40
	Identify Current AD Service Accounts and Related "Service"	40
	Identify Current AD Security Groups and Related "Resource"	40
	Identify Current Computer AD Objects	40
	Identify File and Print Servers and Associated Group(s) and GPOs	40
	Identify Application Servers and Associated Group(s) and GPOs	40
	Identify Microsoft Access Databases - These may need to be altered depending on how setup	40
	Create GPO and/or Scripts to address Desktop and Laptop tasks needed	40
	Create GPO and/or Scripts to address Server tasks needed	40
	Create GPO and/or Scripts to address Account Level tasks needed	40
	TOTAL per agency	**548**

AD Migration and Consolidation		
	Workstations and Laptops – Remove any unused User Profiles from these machines	40
	Verify 2 way trust relationship	16
	Disable SID Filtering	2
	Migration Services Account creation and configuration	16
	Groups Migration	8
	User Account Migration	8
	Resource Update - ReACL	4
	Computer Account Migration	8
	Resource Update and File & Print Server Migration	4
	Resource Update and Application Server Migration	4
	SID History Cleanup	4
	Decommission Old Servers and Domains	20
	TOTAL per agency	**134**

Data Convergence and Integration		
	Configure Common Interfaces	20
	Integration – combine subsystems and address problems with interactions	27
	TOTAL per agency	**47**

Post Consolidation Support and Remediation		
	Augment Support for Deskside Services, Service Desk, and AD in Action	40
	Collaboration and Correction Room Setup and Staffing	40
	TOTAL per agency	**80**

Domain Controller Hardware and Software				
			Qty	**Cost**
	FY 2015-16			
		Domain Controller hardware	35	$ 175,000
		Software	35	$ 24,500
	FY 2016-17			
		Domain Controller hardware	10	$ 50,000
		Software	10	$ 7,000
	FY 2017-18			
		Domain Controller hardware	5	$ 25,000
		Software	5	$ 3,500
	TOTAL			**$ 285,000**
	Ongoing Annual Refresh Cycle			
		Replacement every 5 years (20%)	10	$ 57,000

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Numbe R-08

Request Titles

R-04 (OEDIT) Colordo First & Existing Industry Program

Dept. Approval By: _____

OSPB Approval By: _____

___	**Supplemental FY 2014-15**
___	**Change Request FY 2015-16**
___	**Base Reduction FY 2015-16**
___	**Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$2,725,022**	**$0**	**$2,725,022**	**$1,774,978**	**$1,774,978**
	FTE	-	-	-	-	-
Total of All Line Items	GF	$2,725,022	$0	$2,725,022	$1,774,978	$1,774,978
	CF	$0	$0	$0	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$2,725,022**	**$0**	**$2,725,022**	**$1,774,978**	**$1,774,978**
04. Economic Development Programs - Colorado First Customized Job Training	GF	$2,725,022	$0	$2,725,022	$1,774,978	$1,774,978

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for a $1,774,978 General Fund increase for the Colorado First and Existing Industry Job Training (CFEI) Program. This will bring the total level of funding for the program up to $4.5 million. This increase will bring the program closer to its original size in terms of 1997 dollars.

Current Program

- The CFEI program focuses on two strategic economic development objectives: the talent agenda for work-force development and training, and the economic agenda for retaining, growing and recruiting companies to Colorado. The program provides matching funds to employers to train their employees in resume-building hard skills that increase productivity and promote employment. These skills are transferable across employers and build overall workforce capacity across the state.
- The Office of Economic Development and International Trade (OEDIT) partners with the Colorado Community College System (CCCS) to administer and manage this program through the local community colleges. The program reimburses job training costs, but companies contribute a minimum of 40 percent to the total costs of grant-funded training. Grant awards are currently limited to a maximum of $800 per eligible trainee. OEDIT and CCCS review applications on a competitive basis.

Problem or Opportunity

- There is significant unmet demand for this program. Over the past four years, the demand for the program has significantly exceeded its appropriation levels.
- For 17 years, nominal funding has been frozen at $2,725,022 per year (except for a temporary one-time increase in 2013).
- The cost of providing the service has increased since 1997. As a result, OEDIT estimates that in real dollar terms, the funding level for the program is 58 percent lower than it was in 1997.

Consequences of Problem

- Without funding there will continue to be significant unmet demand, Colorado will continue to have reduced real dollars to incentivize employers to train their workers, workers will receive less training, and Colorado will be less competitive in retaining, growing and recruiting companies.

Proposed Solution

- The proposed solution is to increase annual funding to $4.5 million (an increase of about $1.8 million). This level of funding would substantially increase the program's effectiveness and reach.
- Additionally, to make Colorado more competitive with other states, OEDIT requests to raise the maximum dollar amount available from $800 per eligible trainee to $1,200 per eligible trainee.

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Department Priority: R-4
Request Detail: CO First/Existing Industry Job Training

Summary of Incremental Funding Change for FY 2015-16	Total Fund	General Fund
CO First/Existing Industry Job Training	$1,774,978	$1,774,978

Problem or Opportunity:

The talent agenda (workforce development and training) and retaining, growing, and recruiting companies are key strategic economic development objectives of the Office of Economic Development and International Trade (OEDIT). The Colorado First and Existing Industry Job Training Program (CFEI) targets both objectives by providing matching funds to employers to train their employees in hard skills that increase productivity and promote employment. To qualify for the CFEI program, the provided training must be for job skills that are transferable and resume-building. Once obtained, these skills transcend companies and are transferable across employers, thus building overall workforce capacity. A more skilled, educated workforce benefits the entire state.

Additionally, the CFEI program is an important incentive that OEDIT uses to recruit new companies considering locating in Colorado and it is one of the few discretionary statewide employer retention tools. Even though other states offer significantly higher dollar amounts in training incentives, being able to offer the CFEI incentive makes Colorado more competitive when recruiting, retaining, and growing companies.

Unfortunately, year-over-year the program experiences significant unmet demand. The figures below demonstrate how companies are fighting more and more for limited training dollars and, over the past four years, average demand was over $4.9 million with deficits between requested and approved amounts averaging over $1.4 million. At the proposed $1,200 per trainee level, average deficits would have exceeded $3.9 million. These calculations are based on amounts actually requested and approved. Note that $800 per trainee is the maximum amount available, as is the proposed $1,200 figure. While companies have been able to request up to $800 per trainee, they have not necessarily applied for the full amount.

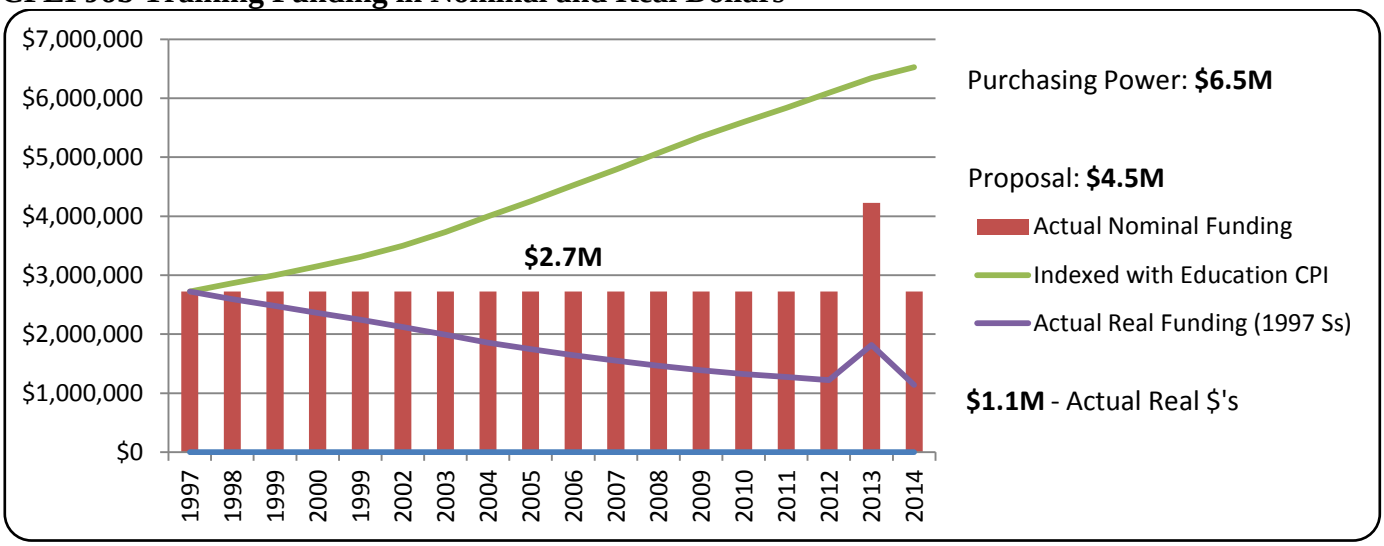
Demand Review Chart	2011		2012		2013		2014	
	Trainees	Grant	Trainees	Grant	Trainees	Grant	Trainees	Grant
At current $800 p/ trainee maximum level								
Requested (Demand)	9,764	$ 5,514,204	5,179	$ 3,907,863	6,418	$ 4,597,106	7,108	$ 5,800,488
Approved	6,965	$ 3,861,908	3,985	$ 2,575,853	5,087	$ 3,492,870	5,587	$ 4,174,938
Deficit	-2,799	$ (1,652,296)	-1,194	$ (1,332,010)	-1,331	$ (1,104,236)	-1,521	$ (1,625,550)
At proposed $1,200 p/ trainee maximum (50% Increase)								
Requested		$ 8,271,305		$ 5,861,795		$ 6,895,659		$ 8,700,732
Approved		$ 3,861,908		$ 2,575,853		$ 3,492,870		$ 4,174,938
Deficit		$ (4,409,397)		$ (3,285,942)		$ (3,402,789)		$ (4,525,794)

Moreover, the demand numbers presented in the table above do not reflect the true statewide demand for the program. Given the strong competition for limited dollars, community college representatives have been advised to only encourage applications for "hard" skill training courses such as manufacturing, lean programs, information technology, etc. "Soft" skill courses, also approved by statute for this program, such as leadership training, conflict management, and pre-employment and new hire trainings, were suppressed given the slim probability for approval in a competitive environment. In a less competitive environment with companies open to applying for all types of training, OEDIT envisions a much higher demand and subsequent need for funding.

Actual nominal funding has been frozen at $2,725,022 per year for 17 years (except for a temporary one-time increase in 2013). Because training, like other services, is very labor intensive, the cost of providing the same service at the same quality levels tends to increase more than overall inflation (which also factors in manufactured goods which have larger, capital-driven productivity increases and lower price increases). In real 1997 dollar terms, purchasing power for the program was reduced by 58 percent from $2,725,022 to $1,137,909 in 2014 (see table and chart below).

Inflation Index	Year	Actual Nominal Funding	Indexed with Education CPI	Actual Real Funding (1997 Ss)
100.0	**1997**	**$ 2,725,022**	$ 2,725,022	$ 2,725,022
105.2	1998	$ 2,725,022	$ 2,865,428	$ 2,591,496
110.0	1999	$ 2,725,022	$ 2,997,238	$ 2,477,530
115.6	2000	$ 2,725,022	$ 3,149,105	$ 2,358,049
121.3	1999	$ 2,725,022	$ 3,306,704	$ 2,245,664
128.5	2002	$ 2,725,022	$ 3,501,553	$ 2,120,700
136.9	2003	$ 2,725,022	$ 3,730,787	$ 1,990,396
146.8	2004	$ 2,725,022	$ 4,000,137	$ 1,856,372
156.0	2005	$ 2,725,022	$ 4,252,295	$ 1,746,291
166.0	2006	$ 2,725,022	$ 4,524,511	$ 1,641,226
175.8	2007	$ 2,725,022	$ 4,790,107	$ 1,550,225
186.1	2008	$ 2,725,022	$ 5,070,948	$ 1,464,370
196.3	2009	$ 2,725,022	$ 5,349,783	$ 1,388,046
205.5	2010	$ 2,725,022	$ 5,599,734	$ 1,326,089
214.1	2011	$ 2,725,022	$ 5,834,527	$ 1,272,724
223.5	2012	$ 2,725,022	$ 6,090,840	$ 1,219,166
232.6	2013	$ 4,225,022	$ 6,338,499	$ 1,816,405
239.5	2014	$ 2,725,022	$ 6,525,783	**$ 1,137,909**

CFEI Job Training Funding in Nominal and Real Dollars



Index is BLS Series CISR0000SAE1

In addition, while not every labor market participant is eligible for grants, Colorado's workforce has grown by 30 percent over the past 17 years, from 2,150,160 in 1997 to 2,804,729 as of May 2014 (source: Colorado Department of Labor and Employment). This means that in nominal terms, available funding per labor market participant has gone down from $1.27 to $0.97. In purchasing power terms, available funding per labor market participant went down by more than two thirds (69 percent), from $1.27 to $0.41 per participant ($1.1 million per 2.8 million participants).

These issues are further compounded by the fact that competing states offer much larger training benefits on both a total budget and a per-employee basis. For example, in a recent company recruitment effort in which OEDIT's Business Development team competed against New Mexico, New Mexico offered more than $9,800 per job. The constrained budget in Colorado prevented OEDIT from offering more than $800 per job.

Proposed Solution:

The proposed solution is to increase annual funding for the CFEI program by $1,774,978 General Fund. This will bring total annual funding to $4.5 million, which makes the program closer to being whole in 1997 dollars. This level of funding would still be lower on a per labor market participant basis than 1997, but it would substantially increase the program's effectiveness and reach. With this increase, Colorado would be able to reach more companies, train more employees, and offer a more competitive benefit of approximately $1,200 per employee trained. As reflected in the chart above, current applications with a more competitive grant per trainee level of $1,200 would take total requested amounts over the past four years up to an average of $7.4 million with a Deficit Average for the same period of $3.9 million.

If the program is not funded Colorado employers will continue to receive reduced real dollars to incentivize them to train their workers, workers will receive less training, and Colorado will be less competitive against other states in retaining, growing, and recruiting companies. The following table is a conservative estimate of the direct fiscal impact of not increasing these training dollars. Note this analysis does not include any multiplier effect that these primary jobs have on related sectors via supply chain or indirectly on non-primary jobs. Note also that once a job is lost, there is a multi-year impact as most jobs persist over many years, so the total annual impact in any given year is the cumulative impact of many years of job losses. The analysis below shows only the first year impact of a given set of job losses.

Description	Amount
Number of Companies/Projects Per Year that Would Be Lost without additional funding	10 Companies/Projects
Number of Jobs per company loss	100 jobs
Total Jobs and Job Opportunities Lost Per Year	1,000 jobs
Average Salary Per Job ($23 p/hr *40 hrs/week * 52 weeks)	$47,840
Total Salary Loss Per Year	$47,840,000
Effective State Income Tax 3% (4.63%)	($1,435,200)
State Sales Tax Per $47,840 job ($336)	($336,000)
Total for 1 Year State Revenue Lost	**($1,771,200)**
Number of years before cumulative annual state revenue lost outweighs additional funding ($1.77M loss versus $3.8M additional funding)	2.1 years

Anticipated Outcomes:

The additional approximately $1.75 million in funding would enable a more competitive grant-funded training of $1,200 per employee with an estimated additional 1,458 workers trained per year. In line with OEDIT's performance objectives for workforce development training and Colorado company retention, recruitment and expansion, incremental funds would further enhance employees' transferable skills and Colorado's workforce competitiveness, in addition to improving the state's ability to attract out-of-state companies with more competitive training incentives. Furthermore, annual program results would underscore the successful deployment of these essential increased funds.

Assumptions and Calculations:

The key assumption used in the request is that the nominal annual funding of $1.7 million has been frozen for the past 17 years. As highlighted in the graph on the previous page, entitled "CFEI Job Training Funding in Nominal and Real Dollars," through the absence of inflationary adjustments over this period, in real dollar terms program funding purchasing power went down by 58 percent. As a result, the program's ability to impact workforce training and company retention, growth, and recruitment has been significantly impaired, and there has been significant unmet demand.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-09

Request Titles

R-04 (OIT) Enterprise Wireless

Dept. Approval By: David B. Zang

OSPB Approval By: Emil M. Sul

___	**Supplemental FY 2014-15**
x	**Change Request FY 2015-16**
___	**Base Reduction FY 2015-16**
___	**Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$3,098,558**	**$0**	**$3,125,056**	**$300,000**	**$72,000**
	FTE	9.6	0.0	10.0	0.0	0.0
	GF	$0	$0	$0	$300,000	$72,000
	CF	$0	$0	$0	$0	$0
	RF	$3,098,558	$0	$3,125,056	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
05. Office of Information Technology - Network Administration	**Total**	**$3,098,558**	**$0**	**$3,125,056**	**$300,000**	**$72,000**
	FTE	9.6	0.0	10.0	0.0	0.0
	GF	$0	$0	$0	$300,000	$72,000
	RF	$3,098,558	$0	$3,125,056	$0	$0

Letternote Text Revision Required? Yes ___ No x ___ If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x ___ No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- The Office of Information Technology (OIT) requests $300,000 General Fund in FY2015-16, annualized to $72,000 General Fund in FY 2016-17 ongoing for operating, maintenance, and licensing expenses associated with the development of an Enterprise Wireless Networking solution.

Current Program

- In April 2011 a wireless pilot was created to determine the feasibility of wireless. Since this was a functional pilot in Pearl Street Plaza only, factors such as redundancy, scalability and management were not included.
- The pilot program has been successful and as of today it services 9 different State agencies across 19 locations, 237 access points, and services an average of nearly 500 concurrent clients daily at these multiple locations. Funding has allowed the pilot to be built into an Enterprise Wireless Solution which is a statewide plan to move all access points to one wireless controller.
- Outside of the pilot wireless program agencies have their own standalone wireless solution but it is costly, duplicative, and inconsistent. Joining the Enterprise Wireless Solution would allow agencies an equipment refresh cycle with expansion, and ongoing maintenance.

Problem or Opportunity

- Enterprise Wireless directly addresses Department goals to provide "Customer Success, Innovation, and Service Excellence" by creating an Enterprise service that has high demand, meets growth, allows for new features and gives customers the convenience and flexibility.
- Some agencies have smaller independent implementations. They would be encouraged to use this Enterprise shared service to reduce duplication of effort, hardware, software, and licensing.
- An Enterprise solution includes the capability for employees, guests, and customers the ability to check schedules and effectively handle workloads on devices like cell phones, laptops and tablets.

Consequences of Problem

- As a pilot, the existing offering was created without backup redundancy and failure of the current single wireless controller in the system would interrupt all wireless services.
- Agencies that manage their own wireless solution are duplicating their efforts across the State with equipment purchases and licensing for a standalone solution. This is not a cost effective solution to a need that continues to grow in supporting multiple devices.

Proposed Solution

- The Enterprise Wireless Solution is designed to benefit and be used by all State agencies. This solution provides wireless availability to the State Network to access files, schedules, and resources in order to positively impact the needs of Colorado citizens. It is built on three major components: 1 - Access Points that directly service wireless devices; 2 - Controllers to manage the Access Points; 3 - Identity Services to track who, how, and what is connecting.

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Department Priority: R-4
Request Detail: Enterprise Wireless Solution

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Enterprise Wireless Solution	$300,000	$300,000

Customer Impact:

Employees, guests, and customers will have the ability to work, check schedules, and effectively handle data more efficiently with an enterprise wireless solution designed to benefit all users at multiple locations. They will see that this solution enhances productivity and availability as they perform job tasks on devices like cell phones, laptops, and tablets that have wireless connectivity built-in.

Problem or Opportunity:

In April 2011 a wireless (Wi-Fi) pilot was created. Its purpose was to answer whether wireless would work at Pearl Street Plaza and how well. Launched to only include Pearl Street Plaza, it was never built as a robust Enterprise solution. In January 2012 the Governor's Office was also added. Proving that it could effectively handle multiple locations, within six months other agencies were added. It was hoped that agencies could provide monies to build out the solution as it grew, but funding constraints made it impossible.

The pilot program was initiated by the previous Network Services Manager at OIT and first rollouts at Pearl Plaza were by an Enterprise Network Engineer with the assistance of a vendor contractor. The Pilot was paid for from Capitol Complex Local Area Network (CCLAN) Funds. Participating agencies were not chosen out of the pilot program, they voiced their desire to join and pay for their own equipment and licenses.

The pilot program has grown into a visible offering for all agencies. Today it services nine different agencies across 19 locations, 237 access points, and services an average of nearly 500 concurrent clients daily, and there are requests pending to expand services to other agencies. This growth in service underscores the risk of having single points of failure. The proposed solution is to move all State agency access points to one wireless primary controller that is both effective and efficient. It is also missing the components to effectively manage guest, vendor, and BYOD access due to inconsistent statewide standards.

This request addresses the need to create an Enterprise Wireless Solution which is a statewide plan to move all access points to one primary wireless controller. There are three goals:

- Provide wireless access for employees allowing them to be productive in multiple locations.
- Allow and control vendor/partner access through wireless.

- Manage guest access at appropriate locations, including support for BYOD (Bring Your Own Device).

Wireless growth within State Government has been brisk. Industry statistics estimate that Wi-Fi growth will be 18-fold between 2011 and 2016, with wireless overtaking wired network traffic by 2016.[1] Virtually all laptops and "smart" devices have wireless capabilities built-in, and people enjoy the convenience. It enables the expectation that email and calendars are always available.

Wireless has quickly moved from a supplementary service to a daily utility for State employees. For example, cell phones issued by the State are all Wi-Fi enabled smartphones. The increased data usage of these devices is well known. Data shows that in 2012 75% of smartphone owners used Wi-Fi on their devices.[2] In 2013, the average smartphone user consumed 529MB of cellular data per month.[3] Research company Mobidia determined that between 1.6 and 4.2 times as much data was transferred over Wi-Fi compared to cellular,[4] and this trend is expected to rise.

Proposed Solution:

Wireless exists in agencies today through standalone solutions. Each agency has deployed its own independent solutions that are costly, duplicative, and inconsistent. After the enterprise solution is deployed the agencies can migrate over when maintenance on their current wireless solution expires. The process for this is the same for all agencies.

1. The enterprise solution is configured to match the existing agency deployment.
2. A schedule to migrate each agency site is agreed upon
3. Sites are swung by transferring management of Access Points from agencies to the enterprise solution which takes approximately five minutes per Access Point, and can be performed remotely.
4. The unused agency controllers are decommissioned and maintenance stops.

The Enterprise Wireless Solution is designed to benefit and be used by all State agencies. It is built on three major components.

1. **Access Points that directly service wireless devices**
   Wireless Access Points are devices that allow wireless devices to connect to a wired network using Wi-Fi. The access point usually connects to a switch/router via a wired network as a standalone device, but it can also be an integral component of the router itself.
2. **Controllers to manage the Access Points**
   Wireless controllers are used in combination with the wireless access points to manage access points in large quantities by the network administrator. The controller automatically handles the configuration of the wireless access point.
3. **Identity Services to track who, how, and what is connecting**
   Identity Services are a means to view and store information on the device that connects to the provided service so that it can be logged and tracked for performance measures. This will be used to continue to provide the best service needed for the user without interference while in use and through the connection process

[1] http://www.cisco.com/en/US/solutions/collateral/ns341/ns524/ns673/solution_overview_c22-642482.html
[2] http://www.analysysmason.com/About-Us/News/Press-releases1/consumer-smartphone-usage-May2012/?bp=%252fNews%252f
[3] http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html
[4] http://www.mobidia.com/products/analytics/

The proposed solution meets numerous goals of the OIT Playbook for FY14.[5]

- As it pertains to customers, Enterprise Wireless is "aligning our work with their goals and priorities."
- The playbook specifically calls for an Enterprise Solution to "break down old barriers of functional disciplines and siloed approaches to information technology and leverage our consolidated, shared services structure."
- Wireless allows the specific innovation of "IT services are available anytime, anywhere, on any device."

Anticipated Outcomes:

Ultimately success is in meeting demands and expectations. Key data points allow us to track success by:

1. Measuring the overall increase in concurrent wireless users.
2. Tracking the number of additional agencies that use the central solution, particularly in those that decommission an existing deployment which directly reduces duplication of effort.
3. Measuring the increase in access points deployed.
4. Having the ability to report on what kinds of devices on wireless and how it is used.

Other outcomes will include meeting the growing wireless needs of State employees, vendors, and guests. Effectively provide wireless connectivity for all users that are consistent and predictable. Also, the equipment will be centrally located allowing for increased support and maintenance.

Assumptions and Calculations:

Within State owned and leased facilities access points will be installed with controllers to manage them so that there is sufficient connectivity for all users. Several departments are already using the wireless deployment currently in place and requests for wireless services from other agencies come in routinely. OIT's direction is to guide and recommend departments that currently manage and support their own wireless deployments to become part of the Enterprise Wireless offering through attrition. The purchased access points would be managed by the central OIT solution and have many advanced features that stand alone solutions lack like identity management, guest wireless, and mobility. Because it is centralized features remain consistent across all agencies.

[5] https://docs.google.com/a/state.co.us/file/d/0B29p7msKOLwAYWU2SFlEem90ek0/edit

Supporting information
Table 1 below shows where the wireless pilot program has been deployed and the deployment sizes. These sites would be swung to the new enterprise solution by transferring the management of the access points which can be performed remotely.

Table #1

Access Points	Agency	Site Name	Street Address
18	CDHS	Florence Nursing Home	903 Moore Drive, Florence, CO 81226
24	CDHS	Fitzsimon's Nursing Home	1919 Quentin St, Aurora, CO 80045
34	CDHS	Homelake Nursing Home	3749 Sherman Ave, Monte Vista, CO 81144
1	CDHS	Pueblo Mental Health Institute	1600 W 24th St, Pueblo, CO 81003
21	CDHS	Rifle Nursing Home	851 E 5th Street, Rifle, CO 81650
27	DPA	DPA	1525 Sherman St, Denver, CO 80203
8	HCPF	HCPF	225 E 16th St, Denver, CO 80203
1	HCPF	HCPF	1570 Grant St, Denver, CO 80203
11	HCPF	HCPF	303 E 17th Ave, Denver, CO 80203
4	Governor's Office	Governor's OEDIT	1625 Broadway Ave, Denver, CO 80202
9	Governor's Office	State Capitol	200 E Colfax Ave, Denver, CO 80203
2	Governor's Office	Governor's Mansion	400 E 8th Ave, Denver, CO 80203
13	OIT	Pearl Street Plaza	601 E 18th Ave, Denver, CO 80203
5	DOR	Rotunda	1881 Pierce St, Lakewood, CO 80214
2	DOR	Athmar Driver's License	1865 West Mississippi Avenue, Denver, CO 80223
8	DOR	Golden Gaming Office	17301 W Colfax Ave, Golden, CO 80401
40	CHS	Colorado Historical Society	1200 Broadway Ave, Denver, CO 80203
9	CDA	Agriculture Broomfield	305 Interlocken Parkway, Broomfield, CO 80021

Total:
237

Table 2 below includes agencies that currently manage and support their own wireless deployment. These sites would also be swung to the new enterprise solution upon attrition of their equipment.

Table #2

Access Points	Agency	Site Name	Street Address
112	CDPS	CDPS	700 Kipling, Denver, CO 80201
110	CDOT	CDOT	4201 E. Arkansas Avenue, Denver, CO 80222
150	CDOC	CDOC	2862 South Circle Dr. Colorado Springs, CO 80906
102	CDPHE	CDPHE	4300 Cherry Creek Dr. South, Denver, CO 80246
62	DNR	DNR	1313 Sherman St, Room 718, Denver, CO 80203
10	DOLA	DOLA	1313 Sherman St, Room 518, Denver, CO 80203
30	DORA	DORA	1560 Broadway Suite 1550, Denver, CO 80202
47	CDLE	CDLE	633 17th St. Suite 201, Denver, CO 80202

Total: 623

Table 3 below represents the ongoing equipment, maintenance, and license needs for the enterprise wireless solution.

Table #3

Amount	Description
$50,000	Equipment refresh cycle and expansion needs. This will go towards purchasing access points needed for the growing infrastructure of wireless services. On average a single access point will cost $875 under existing vendor contract agreements.
$22,000	Ongoing maintenance and licensing needs to support the solution.
$72,000	Total

The requested amount in table 4 below was calculated based on best practice and recommendations of hardware and software from the vendor for the wireless deployment of our size to include the following:

Table 4

Cost	**Description**
$103,000	Wireless main series Controller supporting nearly 1,000 AP's (237 APs for the pilot, plus 623 APs to include absorption of agencies' standalone systems) and licenses. This will be the primary controller placed in the data center.
$43,000	Wireless Controller as backup secondary controller. This will be placed in the data center to provide redundancy and avoid a single point of failure on the network.
$30,000	Infrastructure Device for configuration, administration, monitoring, and troubleshooting of the wireless network.
$35,000	ISE Large Secure Server and End Point wireless for creation and enforcement of security and access policies for end point devices connected to the network.
$28,000	Firewalls.
$50,000	Equipment and maintenance of Access Points purchased through OIT vendor contract agreement.
$10,000	Mobility Service Engine Virtual Appliance to provide efficiencies and additional management features like tracking, troubleshooting, and guest self registration.
$1,000	Modules for connectivity so that devices like switches, controllers, servers, and firewalls can transfer data between themselves.
$300,000	**Total**

This request becomes a true enterprise solution in that OIT is also purchasing $50,000 dollars worth of access points yearly to install at agencies in desired locations for wireless and not just setting up the infrastructure to handle the system. On average one access point and one year of maintenance costs $875 under existing OIT price agreements. Those agencies not in the wireless solution will need to allow their equipment or agreements to run full course of attrition. Even then not all of their equipment will need to be replaced right away as an inventory and lifecycle timetable will need to be established. The requested $72,000 ongoing is for equipment, maintenance, and licenses based on purchasing access points and the Smartnet maintenance.

Rationale for General Fund:
While OIT is an internal service organization and almost all other funds originate via charges assessed to State agencies, this function of OIT does not fit within the existing service catalog or cost recovery methodology. OIT provides services to State departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to departments. OIT is prohibited be the federal Division of Cost Allocation (DCA) from using one service to subsidize another and from charging one Department to subsidize another.

Enterprise wireless solutions present a common good by providing wireless access for current employees at their department location as well as other State agencies. This will also be useful for guests that are visiting whether they are citizens, contractors, or vendors. Furthermore, temporary employees will be able to access needed resources from virtually any location in the building. All of this will produce a new level of productivity that has never been accomplished in State government.

This request makes sense and is logical because many locations already see as much as 500 clients daily accessing the wireless solution at agencies. The need for an enterprise solution is extremely valid, and

customers or vendors expect wireless access at business locations. Billing agencies for this service would be challenging as many locations don't just provide their employees wireless but really serve visitors including temps, vendors, or employees from other agencies. Using General Fund dollars allows this enterprise agreement to reach a vast amount of people to positively impact business for the State of Colorado.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Numbe R-10

Request Titles

R-05 (OEDIT) Colorado Credit Reserve

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$4,485,106**	**$0**	**$5,433,482**	**$400,000**	**$400,000**
	FTE	5.0	-	5.5	-	-
Total of All Line Items	GF	$4,326,283	$0	$5,296,280	$400,000	$400,000
	CF	$158,823	$0	$137,202	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$4,485,106**	**$0**	**$5,433,482**	**$400,000**	**$400,000**
04. Economic Development Programs - EDC - General Economic Incentives and Marketing	CF	$158,823	$0	$137,202	$0	$0
	FTE	5.0	-	5.5	-	-
	GF	$4,326,283	$0	$5,296,280	$400,000	$400,000

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is to maintain the Colorado Credit Reserve (CCR) Program with ongoing annual funding of $400,000 General Fund. The program is designed to increase the availability of credit to small businesses in Colorado, but it has exhausted the $2.5 million that was appropriated in 2009 for a five year period. This request reflects a $100,000 per year deduction from the original amount because of slightly improved market conditions.

Current Program

- CCR is a partnership between the Office of Economic Development and International Trade (OEDIT) and the Colorado Housing and Finance Authority (CHFA). OEDIT provides program direction and oversight. CCR is a credit enhancement tool utilized through CCR participating lenders (banks, Community Development Financial Institutions, and state Business Loan Funds).
- The enhanced credit provides Colorado lenders with an incentive to provide working capital to Colorado businesses. The shared reserve account strengthens credit applications and grows over time with each new loan that is registered. On lender/CHFA approval, state and borrower funding goes into the lender's reserve account.

Problem or Opportunity

- In 2009 S.B. 09-067 (Heath, Marostica and Gagliardi) appropriated $2.5 million General Fund for the program in one-time funding for a five year period. This equates to $500,000 per year. That funding has now been fully disbursed. Even though the economy has improved, small businesses are still finding it hard to obtain financing.
- Since 2009, 1,149 loans have been registered. Private sector dollars leveraged equals $43.9 million, a 20:1 ratio. Businesses receiving loans retained 5,215 jobs and projected creating another 4,853 jobs. Businesses in 32 counties were helped. Without additional funding, future results decrease.

Consequences of Problem

- Without funding, Colorado businesses will not have access to needed working capital. As a result, fewer jobs will be retained and created without these loan enhancements.

Proposed Solution

- Establish annual funding of $400,000 for a minimum of three years. CHFA and OEDIT will continue to track statistics: funds leveraged, projected jobs created, jobs retained, businesses assisted, minority-owned and women-owned businesses, and geographic distribution of service.

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Department Priority: R-5
Request Detail: Colorado Credit Reserve Funding

Summary of Incremental Funding Change for FY 2015-16	Total Fund	General Fund
Colorado Credit Reserve Funding	$400,000	$400,000

Problem or Opportunity:

Economists have identified market failures in lending to small businesses involving information inefficiencies which can lead to credit rationing. These structural market failures in small business credit markets exist regardless of macroeconomic cyclical or local conditions. In traditional markets, if demand for a product exceeds supply, the price for the product is bid up until supply and demand are balanced. However in small business credit markets, when the price (i.e. the interest rate) increases, the higher interest rate may attract borrowers who are undertaking riskier projects (adverse selection) or borrowers may be driven to take bigger risks due to the need to repay higher interest rates (moral hazard). Banks, aware of these risks and the difficulty and high cost of differentiating between higher and lower risk small business borrowers, are likely to respond by restricting the amount of credit they provide to small businesses as a broad class. Appropriately designed credit enhancement tools can help address this issue by incentivizing lenders to provide more capital by creating a mechanism for pricing loans which is at least partially independent of borrower behavior (i.e. lenders don't need to increase interest rates). By reducing the expected losses from loan defaults, these programs increase lender returns at a given interest rate structure, causing lenders to provide more capital to smaller businesses.[1] Providing more capital allows small businesses to grow and retain jobs.

Assisting businesses in maintaining and creating jobs are key strategic economic development objectives in Colorado. Colorado Credit Reserve (CCR) targets both objectives by providing matching funds to lenders to enhance working capital access to Colorado businesses statewide. Once this capital is obtained, these businesses are able to create jobs by business expansion and retain jobs by continued operations.

This public private partnership encourages banks to extend credit to Colorado small businesses that may not qualify under normal bank standards by offering small amounts of public matching funds to help cover any losses associated with loans registered in the program. As a result, more working capital is provided to Colorado small businesses.

The $2.5 million appropriated in 2009 has been largely dispersed to participating lenders' credit reserve pools. As of July 30, 2014, 21 lenders have registered 1,149 loans with CCR, providing a total of $43.9

[1] This economic argument is discussed in detail in a working paper by the Federal Reserve Bank of Kansas City https://www.kansascityfed.org/publicat/commaffrs/08%20jackson.pdf

million in private sector loans to Colorado small businesses as part of the program (generating a 20 to 1 ratio of leveraging state money)[2]. This has increased the supply of small business loans in Colorado.

Since 2009, the Colorado businesses that received loans under the program reported to the Colorado Housing and Finance Authority (CHFA) on their program applications that 5,215 current jobs would be retained and 4,853 additional jobs would be created in the next 12 months due to this loan program. The State has partnered with CHFA to distribute the CCR funds to registered lenders that then make loans to businesses in need of additional loss reserve funding.

Since the program's inception, the economy has improved slightly and credit has improved accordingly, but small businesses, especially start-up and early stage businesses, are still finding it hard to get financing. There are various areas throughout the state where credit remains very tight and businesses are struggling to find financing. Since the CCR is a statewide program, it remains a very essential resource.

Proposed Solution:

The proposed solution is to request annual funding of $400,000 General Fund for a minimum of three years to maintain the program's momentum in creating jobs. This level of funding is 20 percent lower than the average annual funding of $500,000 in the last five years and is appropriate given current economic conditions compared to the situation in 2009.

If the program is not funded, small businesses in Colorado will have reduced access to needed working and expansion capital. Fewer jobs will be retained and fewer jobs will be created without the loan enhancements from this program, which is counterproductive to the job creation goals of the Office of Economic Development and International Trade (OEDIT).

Anticipated Outcomes:

This program produces and will continue to produce an excellent return on investment (ROI) by enhancing small business access to loans. Since 2009, only three percent (approximately) of the loans registered to CCR defaulted. The remaining loans are still being paid down. The ROI from CCR differs from the ROI of other programs in that a smaller amount of state funding is needed to generate a large amount of private funding, leading to the exceptional 20:1 leveraging factor of state funds. There is such a large leverage factor because the businesses utilizing this program are only slightly lacking in the additional funding required for lenders to register loans with them.

CHFA and OEDIT will track various statistics: funds leveraged, projected number of jobs created, jobs retained, number of businesses assisted, number of minority-owned and women-owned businesses helped, and geographic distribution of service. Funding will be successful if OEDIT maintains a private sector ratio of approximately 20:1 and continues to retain and grow jobs at similar rates per dollar spent as between 2009 and 2014. Creation and retention of jobs are OEDIT's key metrics, and the CCR program will continue contributing to such job creation and retention by enhancing small business access to working capital.

Assumptions and Calculations:

No new FTE will be needed to support this program at OEDIT or CHFA. The assumptions and calculations included above are based on past performance of the program.

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[2] This leverage calculation is based on $2.2 million having been distributed to lending institutions registered in the CCR program. The remaining $0.3 million was used to complete state funding requirements of a federal grant loan program, also for small businesses in the state.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-11

Request Titles

R-05 (OIT) Elevation Data Acq. & Comprehensive GIS Coord

Dept. Approval By: David B. Zung

OSPB Approval By:

	Supplemental FY 2014-15
x	**Change Request FY 2015-16**
	Base Reduction FY 2015-16
	Budget Amendment FY 2015-16

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$19,639,726**	**$0**	**$20,938,177**	**$2,574,716**	**$456,858**
	FTE	27.0	0.0	27.0	3.7	4.0
	GF	$1,372,975	$0	$1,512,324	$2,574,716	$456,858
	CF	$593,876	$0	$866,866	$0	$0
	RF	$17,507,220	$0	$18,351,639	$0	$0
	FF	$165,655	$0	$207,348	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
01. Office of the Governor - Health, Life, and Dental	**Total**	**$7,417,650**	**$0**	**$8,349,588**	**$31,709**	**$31,709**
	CF	$324,562	$0	$454,183	$0	$0
	FF	$88,481	$0	$102,872	$0	$0
	GF	$539,734	$0	$483,030	$31,709	$31,709
	RF	$6,464,873	$0	$7,309,503	$0	$0
01. Office of the Governor - Short-term Disability	**Total**	**$164,289**	**$0**	**$176,633**	**$634**	**$685**
	CF	$7,411	$0	$10,183	$0	$0
	FF	$2,124	$0	$2,581	$0	$0
	GF	$11,121	$0	$11,716	$634	$685
	RF	$143,633	$0	$152,153	$0	$0

01. Office of the Governor - Amortization Equalization Disbursement	**Total**	**$2,999,560**	**$0**	**$3,552,579**	**$12,681**	**$14,955**
	CF	$135,176	$0	$204,740	$0	$0
	FF	$38,735	$0	$51,831	$0	$0
	GF	$202,970	$0	$235,632	$12,681	$14,955
	RF	$2,622,679	$0	$3,060,376	$0	$0
01. Office of the Governor - Supplemental Amortization Equalization Disbursement	**Total**	**$2,812,088**	**$0**	**$3,431,468**	**$12,249**	**$14,799**
	CF	$126,727	$0	$197,760	$0	$0
	FF	$36,315	$0	$50,064	$0	$0
	GF	$190,284	$0	$227,599	$12,249	$14,799
	RF	$2,458,762	$0	$2,956,045	$0	$0
05. Office of Information Technology - Applications Administration	**Total**	**$6,246,139**	**$0**	**$5,427,909**	**$2,517,443**	**$394,710**
	FTE	27.0	0.0	27.0	3.7	4.0
	GF	$428,866	$0	$554,347	$2,517,443	$394,710
	RF	$5,817,273	$0	$4,873,562	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

Cost and FTE

- The Office of Information Technology (OIT) requests an appropriation of $2,574,716 General Funds and 3.7 FTE for FY 2015-16, annualized to $456,858 and 4.0 FTE in FY 2016-17 and beyond. This request is to provide sufficient funding for additional resources to coordinate statewide Geographic Information System (GIS) efforts and to acquire critical elevation data.

Current Program

- For FY 2014-15, the General Assembly approved a General Fund appropriation for OIT to continue broadband mapping and GIS services. This effort is currently funded by a federal grant, which is set to expire in the fall of 2014.
- The GIS team is primarily responsible for mapping broadband service in the State and developing a statewide address location database, which has utility for mapping broadband and other critical uses such as emergency management.

Problem or Opportunity

- Colorado does not currently have a central mechanism to inventory all GIS data and make those data readily available to relevant stakeholders.
- In addition to the need for comprehensive GIS coordination, OIT has identified a need to acquire Light Detecting and Ranging (LiDAR) data, which will provide a more accurate elevation baseline of the State. Accurate elevation data will better assist stakeholders in their ability to assess the impact of natural disasters.

Consequences of Problem

- Without a comprehensive approach to GIS, the State will continue to struggle in its ability to quickly access critical GIS data in times of emergency, as was the case after the floods in 2013.
- If the LiDAR data set is not acquired, the State will not have a baseline of accurate elevation data to analyze and model potential flooding, sedimentation, run off, and landform changes in the event of emergencies.

Proposed Solution

- OIT is requesting $2.0 million for the acquisition of LiDAR elevation data, which is a one-time cost for FY 2015-16 only. In addition, $574,716 is requested to support GIS staff (4.0 FTE), infrastructure, software and contract services. This would be on-going beginning in FY 2015-16, annualized to $456,858 in FY 2016-17 and beyond.
- New personnel will fully develop a robust and efficient organizational and technical infrastructure, including a repository to make geographic data transparent and available in the State.

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Department Priority: R-5
Request Detail: Elevation Data Acquisition and Comprehensive GIS Coordination

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund	FTE
Elevation Data Acquisition and Comprehensive GIS Coordination	$2,574,716	$2,574,716	3.7

Customer Impact:

The Elevation Data Acquisition and Comprehensive GIS Coordination request will give customers unlimited access to robust, actively managed GIS data sets. Customers, including State Departments and Agencies, private sector stakeholders, and the general public, will be able to access and create a multitude of maps, perform analysis on various types of GIS data, and collect information relative to their specific individual needs. Additionally, OIT staff will provide customers with technical support to ensure their data is appropriately formatted and accessible to various stakeholders through the Colorado Information Marketplace.

Problem or Opportunity:

Geographic data used in geographic information systems (GIS) and web maps is critical for a variety of State uses, such as broadband mapping, emergency management, public safety, regulating and permitting facilities and resources use, measuring the health of natural resources and agricultural lands and tracking health and human service programs. Until fairly recently, however, there was no single location where users of geographic information could discover what data was available in Colorado and how to get those data. Nor has there been an effective and efficient mechanism for distributing data to those interested in analyzing geographic information. Additionally, there are several data sets that are commonly needed for GIS use, and maintaining them is an intensive process involving integrating data from local governments and other sources, but Colorado does not have an effort to manage these data in an efficient manner. These data sets, while often critical for a multiplicity of uses within the state, often do not fall within the direct purview of a particular agency, so there is not a unified effort to manage them in a way that satisfies these multiple needs. This results in redundant data collection efforts or critical data gaps. The State should collect data from the local sources once and make these data available to all of the State agencies and other entities that need them in one location, thereby reducing the number of redundant requests to the local entities and the work required of State agencies to obtain the data.

Recent events and requests by State agencies and others have demonstrated the need to assemble geospatial data into a single point where users across the state (and outside of the state) can find the data easily and access the data. The 2013 flood was such an event and the State of Colorado does not have such a location or unified on-line base map for the State. Additionally, over the past few years, several other agencies have requested OIT's support in using or implementing and obtaining data for GIS. In FY2014-15, the General Assembly approved a General Fund appropriation for OIT to continue broadband mapping and GIS

services. This appropriation sustains the base staff hired to map broadband service in the state and develop a statewide address location database, which has utility for mapping broadband and other critical uses such as emergency management. With this core staff, OIT has laid a foundation for a solution to the Governor's request, but to approach the problem comprehensively, the work that OIT is doing with current resources needs to be expanded to support all of the critical data sets for emergency response, administrative functions, program management, and regulatory functions, as well as to expand the GIS services to the additional agencies asking for OIT's support. This budget request has two related, but independent, components:

- First, it includes a request for staff and other costs to fully develop a robust and efficient organizational and technical infrastructure, including a repository to make geographic data transparent and available in the state. This includes exposing State owned and managed data as well as other data from local and other sources that are widely important in GIS use. Such an infrastructure will allow users of the data to find data with minimal effort and ultimately compile these data together into their desired analysis or map, whether it is in response to emergencies or for another use such as regulating water diversions, measuring the proximity of oil and gas wells to schools or other buildings, dispatching public safety resources, or assessing the effectiveness of human service programs. The steps in accomplishing this infrastructure are described below.

- Second, the request asks for funds to purchase accurate and very precise data of elevation in the state known as LiDAR (Light Detection and Ranging) data. The recent flood event has shown the importance of having this data across the state to identify potential flood areas and measure changes to the landscape as a result of such events. This request is submitted to leverage potential federal funds for this data collection. While LiDAR is an intensive data collection technology, several vendors have the capabilities to collect and process this data, so the State will competitively select appropriate vendors for this data collection or use existing federal contract mechanisms for this selection and procurement. LiDAR data is expensive to collect, and the federal government (US Geological Survey) will be supporting and funding development of this data. However, they will fund only 50% of the cost of any particular LiDAR collection effort with the State, so the State and other partners will have to supply 50% of the funds for this data. Therefore, this request is to take advantage of the potential federal effort for this critical data.

In addition to supporting these services and managing statewide data, there is an opportunity to develop highly precise data of elevation (i.e., LiDAR data) in the state. Such elevation data is critical for modeling runoff and therefore potential sedimentation and flooding as well as calculating change in landscapes caused by natural disasters or other phenomena. It is important to have a baseline of this elevation data before any large event to determine the landscape change such as debris piles.

History and Background

GIS coordination was included in OIT's responsibilities with the IT consolidation in 2008 (§24-37.5-111 C.R.S, "On and after July 1, 2008, all duties and responsibilities for statewide geographic information system coordination shall be transferred from the department of local affairs to the office."). However, it was not resourced at that time. In 2009 OIT received a federal grant to support broadband mapping and, two years later, development of a statewide address database. The main purpose of the grant was to promote mapping of broadband service in the state. This grant allowed OIT to develop capabilities that served general coordination functions as well. In particular, OIT developed expertise to support State agencies' GIS efforts allowing them to avoid developing a duplicative capability, and a rudimentary organizational structure and technical infrastructure to start aggregating and sharing data. Specifically, OIT

developed relationships with local governments and workflows to obtain data from local governments and integrate these data into a statewide database and then make these data available to State agencies, regional entities and federal agencies easily.

Through an appropriation made in the Long Bill (HB 14-1336), the State legislature agreed to fund the continuation of broadband mapping and GIS data efforts after the federal grant expires in FY 2014-15. This included 4.0 FTE for the mapping and GIS effort, 1.0 FTE for broadband planning, and 1.0 FTE with more technical, engineering expertise in broadband and telecommunications. The latter 2.0 FTE do not contribute to the broadband mapping or GIS data coordination. Most of the effort of the GIS FTE will be focused on the continued broadband mapping, so there is still limited capacity to address the full data coordination needs of the State.

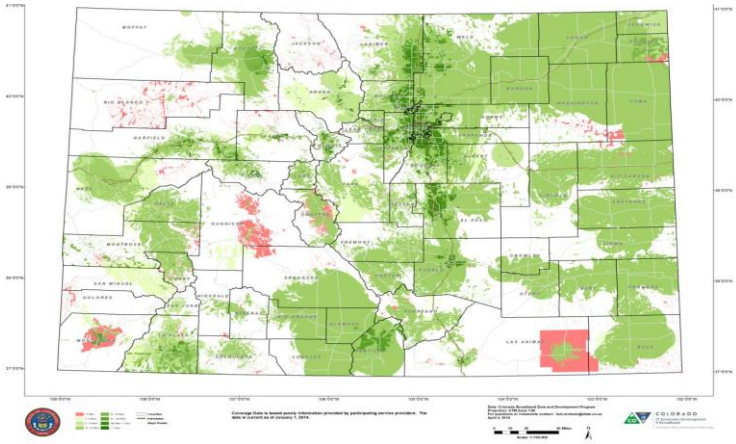
OIT actively coordinates with local governments and State agencies to make local and State data available, however, the need for better coordination became more evident after the flood in 2013. OIT provided support to facilitate this data sharing, but could only accomplish a limited amount. There are several additional data sets that are needed by many State agencies and that provide the framework for a multiplicity of geospatial information use and analysis beyond emergency management. This budget request is to support the active development and management of these additional framework data sets as well as the increased infrastructure demand to house and disseminate these additional data sets and support additional State agencies' GIS needs.

After the 2013 flood, the Federal Emergency Management Agency (FEMA) collected precise LiDAR data over a vast area impacted by the flood. LiDAR data is critical for redefining flood prone areas after the landscape changes brought by the flood. The State agency that works with FEMA on floodplain mapping, the CO Water Conservation Board, has obtained similar data in other limited parts of the state before the flood, but it tends to be on an opportunistic basis based on the availability of partners and funding rather than a comprehensive approach based on prioritized State needs. This funding request will follow such a comprehensive plan that will be presented to the US Geological Survey for their funding of further LiDAR data acquisition.

Efforts for Improvement

As mentioned above, OIT started the active coordination of statewide data while pursuing broadband mapping (Map 1) and address data development and provided additional coordination in response to the 2013 flood (Map 2). Several of the critical data sets that have utility for the variety of services performed by State agencies are best created by assembling data from local governments and other sources. Consequently, managing these data requires hands on acquisition and processing of many data sources and continuous outreach to potential data sources. OIT started the process of assembling local sources of address point data as part of the broadband mapping project to increase the accuracy of the broadband map. OIT has also been assembling and integrating local data for locations of critical facilities, called "Community Anchor Institutions" (CAI) by the federal agency that funded the broadband map. These include education,

Map 1: CO Broadband-Maximum Download Speeds

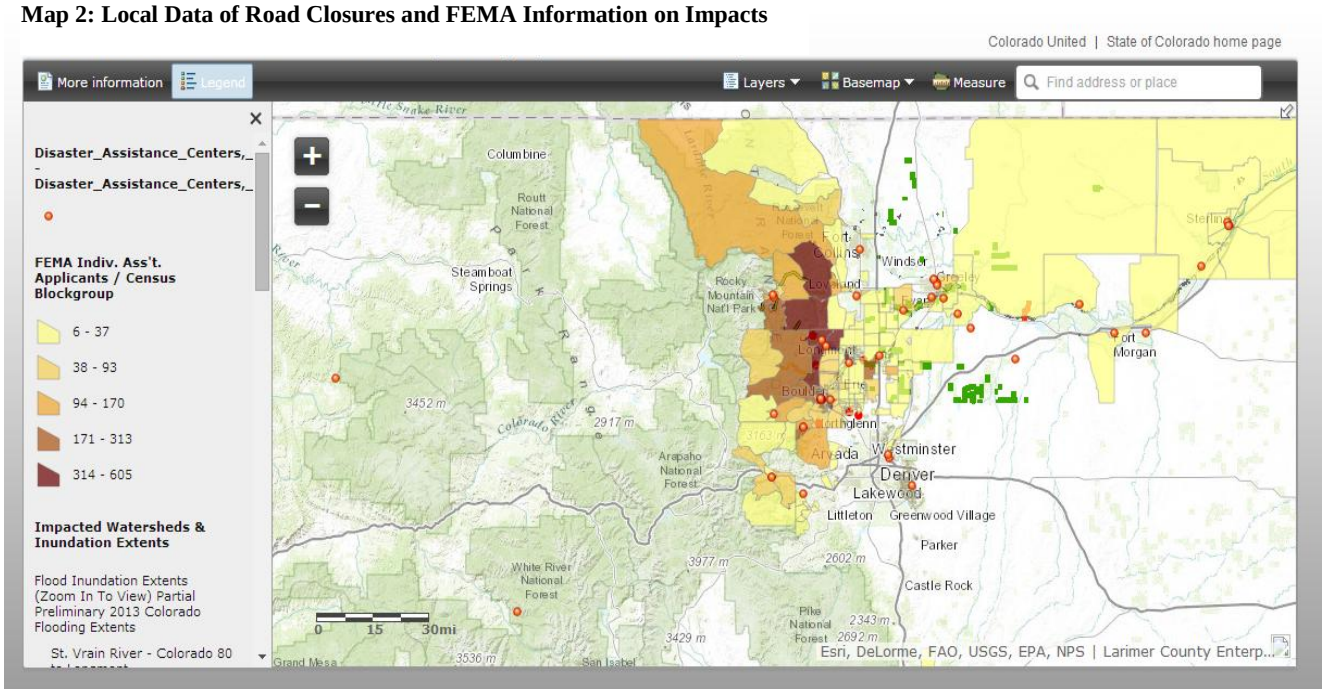


health care, public safety and higher education facilities as well as other government facilities. The address data development has occupied one full FTE for over one year, and managing the CAI data has been mixed in with other duties, but has similarly occupied several months of staff time, and it is still under development. The experience with these data has guided the estimates for developing and managing other data sets. Since OIT has developed robust, trusted relationships with local governments, OIT also reached out to local GIS staff to assemble data related to emergency incidents, such as road closures, damage assessments and evacuation areas, after the flood and wildfires last year thereby facilitating the collection of this information for a broad view of these incidents at the State level.

Additionally, as mentioned above, OIT has been developing the platforms to make these and other critical data sets available to State agencies as well as federal, local and private entities. The purpose is to collect these data in one place and with one request to local governments, and make it as useful and widely distributed as possible. As a result, this would create a system where the information is used many times but generated just once. In addition collecting data and making it available, OIT has communicated with many State agencies and worked specifically with other agencies to make their data accessible. This includes working with the Division of Water Resources, the CO Water Conservation Board (CWCB), and the State Land Board, within DNR, as well as History Colorado, the Division of Homeland Security and Emergency Management, the Department of Agriculture, and the Colorado Energy Office.

While there have been some piecemeal purchases of LiDAR data by the CWCB and the CO Geological Survey before 2013, OIT got involved after the flood because of the large LiDAR acquisition project undertaken by FEMA. OIT provided coordination with local governments on this project and ultimately an easy method for accessing these data. OIT is working with the CWCB to use this mechanism to provide access to all of the LiDAR data that has been collected in the past as well. Because OIT's GIS coordination mandate includes acting as the liaison to federal agencies on GIS issues, OIT has been informed of the interest on the part of the federal government in working with states to develop LiDAR across the country putting OIT in the appropriate lead role to further this effort.

Map 2: Local Data of Road Closures and FEMA Information on Impacts



Proposed Solution:

This request is for expanded staff and operational support of statewide geospatial data management and access, as well as support for further acquisition of LiDAR data. As mentioned above, the expanded support will allow OIT to build an organizational and technical architecture, including a virtual and physical repository, (i.e., a "spatial data infrastructure") for effective, efficient and comprehensive sharing and governance of geographic data in the state. Specifically, the request includes 4.0 FTE, infrastructure, software, and contract services to ensure that critical GIS data is available to State agencies and GIS users in Colorado. The request includes two GIS analysts, one systems analyst/geospatial database administrator and one geospatial application developer. These FTE will develop and manage critical statewide data sets and also expand and manage the systems and databases to distribute these data.

This request is not an effort to consolidate existing GIS staff or resources. Previous experience attempting consolidation of GIS staff has shown that such an approach would be exceedingly difficult both technically and financially. It would also be very unpopular among State agencies as well as being an inefficient solution. State agency GIS staff often require very specific knowledge of their agencies' business to apply spatial information to their agencies effectively. It is important that they maintain that close connection to their agency. In some cases, a person working with GIS in an agency may actually be a scientist or subject matter expert within the agency who has also developed expertise in geographic information. In fact, given previous experience, pursuing consolidation would result in significant distraction and loss of cooperation among State agencies.

The Colorado School of Mines is currently requesting 1.0 FTE, with a knowledge base specific to geology, for FY 2015-16 to create and disseminate geologic maps in an effort to provide post disaster response and recovery support. OIT has reviewed the request and is in general supportive, as the request is complementary to the comprehensive GIS coordination effort. The School of Mines request is complementary in the sense that it would provide additional GIS data to be published on the Colorado Information Marketplace and made available to a magnitude of users. If approved, coordination between OIT and the Colorado School of Mines would be necessary to ensure the GIS data are made available for public consumption.

Collaboration with State Departments and Agencies

The crux of this request is to support new or expanded efforts that will facilitate State agencies' GIS activities by assembling data they could not effectively obtain themselves and by making State data assets more transparent and accessible for State agencies and other GIS users in the state. It is meant to improve the GIS landscape to enable GIS efforts among State agencies and across the state to be more effective and efficient.

One of the primary goals of GIS coordination is to avoid duplication of effort. An inventory of geographic data assets maintained by State agencies several years ago revealed little duplication in data creation among State agencies. However, there was some overlap in multiple State agencies requesting the same data from local governments, which caused inefficiencies for State and local entities, and there were limited incidents of State agencies managing the same data layer for different purposes in parallel to each other, resulting in differing versions of the same layer of data (e.g., roads). This causes inefficiencies for the agencies and potential other users of their data. If this budget request is approved, policies directing agencies to leverage OIT's effort may be required in the case of an agency pursuing its own methods of obtaining data independently. The proposed effort will enhance OIT's ability to provide data for State agencies and lead to greater collaboration among agencies. This will also improve communication allowing OIT to be more informed about activities among State agencies also reducing the potential for redundancy. Where an

agency has its own means for distributing their data, OIT will support those, but ensure that their data is fully known and able to be found.

OIT has worked with several State agencies in providing access to the data that OIT has been managing or disseminating and, in some cases, hosting web based geospatial applications and databases for them. Several other agencies have contacted OIT to express interest in these data or application hosting and spatial analytical services. Much of the data that is currently hosted by OIT and is planned to be hosted in this request are "framework" or foundation data sets are data that will be used by almost any agency interested in utilizing GIS or geographic information, so it is difficult to identify a specific set of agencies that would leverage these data. That is, the goal of making geographic data as accessible as possible would benefit all current and potential users of geographic information technologies in the state. An example of this objective having benefit outside of state government itself was the recent GoCode Colorado effort that was sponsored by the Secretary of State's Office in partnership with OIT and the Office of Economic Development and International Trade. This effort encouraged Colorado citizens to develop applications to assist economic development, and almost every development team used some geographic information that was available. Accordingly, it would be difficult to identify a specific set of agencies that should be charged for this service. Recognizing that easy access to geographic data is important for their own use of GIS, most State agencies support this effort in principle. Charging agencies for the use of this service may result in a disincentive for agencies to work with OIT though.

In developing this capability, OIT will deliver on needs identified by a variety of GIS stakeholders at the local, State and federal levels. These stakeholders, through the Colorado Geospatial Information Advisory Council in 2011, expressed several needs for statewide GIS coordination including resources to support the ability for the public and private sector to find and obtain data easily, data standards, support for localities struggling to use GIS, training and labor force enhancement, aggregating local data into State data and establishing authoritative data sets for the state. This effort will bring Colorado on a par with other states that are leaders in GIS coordination. While different states have different concentrations in their enterprise GIS operations (i.e., some focus on creation of enterprise data, some focus on establishing a centralized repository of data, some focus on supporting applications for State agencies, some do all of these, etc.), it is possible to identify successful common activities. OIT's effort is informed by and reflects successful activities of states that have robust statewide GIS operations such as Arkansas, Michigan, Minnesota, New Jersey, North Carolina, Oregon, Tennessee, Utah, and Virginia. There are some other states with robust State activities, but these are the states interviewed by OIT staff to garner information about their operations and staffing in the development of this request. Additionally, this GIS coordination objective is now an initiative in OIT's strategic playbook as well.

Strategic Plan for GIS Coordination

This objective of this budget request is to build a robust, efficient and effective Colorado Spatial Data Infrastructure (SDI) based on principles of data sharing and leveraging resources as much as possible. This infrastructure includes several components: the data itself, the physical infrastructure (hardware and software), policies and procedures for governing data and making sure it is available in the SDI and, of course, personnel. In addition to ensuring data is available in the most effective manner, this effort will provide enhanced coordination of GIS activities and projects, information on new technologies and capacity building for State and local entities to increase their ability to develop and use geographic information, and a technological platform to support State agencies without their own infrastructure. There will be several aspects or steps in accomplishing this SDI. Milestones for each of these high level steps are outlined in Anticipated Outcomes section. They are:

- Data Discovery - This step creates a searchable inventory of State geographic data in the Colorado Information Marketplace (CIM). It answers the first question often asked, i.e., "Who has what data, and how can I get it?" It is the foundation of any further steps.
- Data Access – This next step addresses the question, "How can users easily get the data that is available," and it will produce a combination of access modes for data including pointing to data on State agencies' infrastructure where these agencies have made significant investments in GIS.
- Data Stewardship - A stewardship program produces seamless statewide data sets essential for many tasks. Many of these data sets aggregate local (e.g., addresses) and other data, and significant work is required to integrate them into a standard structure.

Data Discovery

The data discovery step will ensure that potential data users in the private or public sector or among the general public will be able to find data easily and know how to get the data. It will involve publishing the geographic data sets maintained by State agencies in the CIM (data.Colorado.gov). Most of these data will be listed with links to the data rather than physically uploading them to data.Colorado.gov. Previous experience has shown that this step will require OIT to work with State agencies and local governments proactively to ensure that their data is listed in the CIM. Accordingly, one of the requested FTE will be dedicated to this outreach effort and to publishing data for agencies where necessary. This is consistent with the experience of other states as well. To initiate this step, OIT will meet with each State agency and review the data sets identified in the previous work mentioned above. OIT will instruct the agency on publishing the data in data.Colorado.gov. OIT will publish a subset of each agency's data to demonstrate the process and get them started in publishing the data. Subsequently, OIT staff will communicate with each agency at least quarterly to ascertain progress in publishing data and existence of new data and answer questions or address issues that may arise for the agency.

Data Access

While publishing the data so it can be discovered allows for a clearinghouse of links to data or contacts, the next aspect of this plan involves ensuring that these data are accessible to the interested users. The access to these data may take a variety of forms, for example through download or through web based services. Some agencies may be able to provide this access through their own capabilities. In other cases, OIT will provide the platform to make data accessible. OIT has developed several different mechanisms for disseminating data, which will be used appropriately for the different data sets. These include: FTP access, data.Colorado.gov, web based map and data services, and a new spatially based application, the Colorado GeoData Cache (https://geodata.co.gov). As with publishing data for discovery, this step will require proactive outreach to and collaboration with other agencies, including local entities, to provide for this data access or ensure agencies are providing for it. It will also rely on the cooperation of State and local entities in publishing their data or allowing it to be published. Through meetings with each agency, OIT will assess the data sets to be distributed, starting with data identified in the data discovery process, to determine the most appropriate means for making the data available, levels of access to the data (e.g., fully public, State agencies only, etc), and update frequency among other logistical considerations. All of the agency data should be available at least through web based services. OIT will create a service directory for GIS users in the state to see what data may be consumed through these services. OIT will also evaluate how to provide for download of the data by users. As mentioned, some agencies may already have the capability to support web services and download of their data. In these cases, OIT will communicate with the agency to track the status of their data availability. For other agencies, OIT will support the services and download on OIT's GIS platform.

Data Stewardship

The third aspect of this SDI will involve the active and labor intensive process of collecting and processing local data to deliver statewide data sets. Again, when these data ready to be distributed, they will be made available through the mechanisms listed above. OIT is already doing this for two data sets: statewide address point and CAIs. Both of these data sets have been important for broadband mapping and planning, but they have multiple other uses among State functions. Addresses are critical for emergency management and public safety and any other administrative function that requires a State program to map activities by address. CAIs also are critical for emergency management and public safety and other functions. Several other data sets are important framework data as well. These include:

- Parcel (land ownership) boundaries
- Municipal boundaries (DOLA is starting to maintain an accurate data set of these boundaries, but OIT can provide some minor assistance in coordinating outreach to local governments)
- Surface waters (the Division of Water Resources is physically maintaining this data set, but OIT will be able to help to expedite the work to make it current and complete)
- Public Land Survey System (this is maintained by a federal agency, so little work will be required by OIT for this data set)
- Roads (OIT worked with CDOT to develop a plan for a roads data set that would meet the needs of multiple agencies and be more generally useful than the data CDOT maintains for its own business needs. OIT will provide the staffing to develop this unified data set from local road data and CDOT's road data).
- Imagery (OIT will not be producing this data or acquiring new imagery necessarily, but OIT will proactively reach out to State agencies and local governments to obtain their data, if acceptable to the local government, and make it available on the CO GeoData Cache).
- Elevation (If this request for funding to acquire LiDAR is approved, OIT will manage the acquisition of new data. Otherwise, OIT will proceed with LiDAR in a similar fashion as imagery and collect the data where it exists to make it available in the CO GeoData Cache).
- Special district boundaries (DOLA is interested in working on this data set as well, and OIT will assist with this process).

If funded, OIT will proceed first with stewardship of parcels, imagery, and elevation, and assisting with municipal boundaries and surface waters. OIT will then proceed to the public land survey system and district boundaries and will re-initiate the discussions on maintaining a unified roadway data set. For the data sets such as parcels, roads and boundaries the process of maintaining these data are similar to that for the address points and CAIs. That is, data are obtained from local governments and then normalized and integrated into a statewide data set. Consequently, these data sets are labor intensive to create at first. Over time, the integration process can be automated somewhat to reduce the work load, and if local governments adopt the State standard for the data structure, this reduces work load as well. This integration process will also include some quality assessments of the data, which will be reported back to the local data sources. Continuous outreach to the local governments will be necessary throughout these data management processes, even if the process is automated, to obtain their data, report on the results of the data and show the utility of sharing with the state. OIT's recent experience in developing the address data and experiences of other states have demonstrated that the most important factor in data sharing is cultivating collegial relationships with data sources. In counties that do not have spatial data for these data sets, OIT will assist them with training and, if feasible, contracting or development of the data for them.

Providing for the delivery of data sets maintained by State agencies and potentially local governments and supporting the maintenance of several large enterprise data sets will require additional computing resources. Managing the resulting architecture will present an additional significant work load that OIT

considered in this request as well. With this hardware and software in place, OIT can also continue to support web mapping applications for State agencies that do not have the capability to support such applications on their own.

OIT will also perform enhanced coordination activities, providing training to local and State entities when requested, assisting government entities in identifying their needs for and potential uses of GIS, providing a hub of information on GIS activities across the state to facilities collaboration, and reviewing and reporting on new technology trends. All of this will enhance the GIS environment in the state to promote more beneficial use of geospatial technologies and expand data availability.

Why Should OIT Do This?

This request's goal of situating the data compilation, discovery and access within OIT is based on a number of factors. First, as mentioned above, OIT is mandated and authorized to coordinate GIS activities within the state (§24-37.5-111 C.R.S.), and no other agency owns such a responsibility. Second, individual agency business needs and mandates do not include such multi-agency or inter-jurisdictional coordination, and history has shown that State agencies are reluctant to perform work that may benefit other agencies but is not directly related to their business. Third, OIT is the entity responsible for statewide data coordination and governance in general, so it is logical that such activities concentrating on spatial data occur within OIT has a specific focus of OIT's enterprise data governance. Last, OIT has been the office that has developed close relationships with local GIS activities and federal entities. Through OIT's work in collecting local geographic data for address point locations, and expanding this collection to other critical local data, as well as the coordination of GIS efforts after the flood in September, OIT is known as the place to go to obtain local data. It is worth noting that other states that have successful GIS coordination efforts and enterprise GIS functions (e.g., Utah, Oregon, New York, Minnesota, Arkansas and Ohio) have defined these functions clearly and explicitly within a central office, usually the State's enterprise IT office.

Cost and Funding Source

OIT is requesting ongoing funding to support the staff, infrastructure, software, and initial contract services for this effort. The amount of this total request is $574,716. The funding requested to partner in the LiDAR acquisition is a one-time request in the amount of $2,000,000. The details of the costs are listed below in the Assumptions and Calculations section.

This request is designed to assist other departments. It is not recommending or requesting consolidation of resources from other departments. If it remains a General Fund request, then it will generally not have any adverse impacts on departments and will only expedite their use of geospatial information in performing their business functions. If the request is reappropriated spending authority, then it will require some financial commitment on their part. One potential negative impact of reappropriated funds is if they are based on some measure of consumption, this could provide a disincentive for agencies to use OIT's services and make their data transparent. As matter of principle, the State would like to promote making data discoverable and accessible and greater efficiency through creating data once, but using it multiple times. OIT's GIS coordination role is already named in the authorizing statute for the Office. This request provides the necessary resources for OIT to fulfill this role in an effective manner.

Existing Staff Workload and Expertise

OIT is requesting these positions to supplement existing positions because when OIT is successful in supporting data discovery, access and stewardship for enterprise data, the work load will exceed the capacity of current staff. As mentioned above, the current GIS staff is expected to be 100% or 75% occupied with OIT's current duties in GIS (i.e., broadband mapping and maintaining data sets currently

under active stewardship). The magnitude of work required to manage the process of making all State GIS data discoverable and accessible, as well as actively stewarding additional critical data sets will far exceed the estimated slack time of 25% of 1.0 FTE expected for current staff with current responsibilities. In addition, the increase in data to be actively managed and the expected increase in interaction with and support of State agencies will require more intensive, ongoing administration of infrastructure and back end software, again exceeding the expected slack of current staff. Last, the more intensive management of systems and databases will require a deeper knowledge of these systems to optimize them for the larger demand. The current GIS staff has adequate knowledge in these systems to support the current magnitude of data and services, but this knowledge level will not suffice for the expanded data, services and activity expected with meeting the objectives identified in this request.

Requested Staff Workload and Data

The four classified positions identified in this request include four IT Professionals (Sr. GIS Analysts, Geospatial Database Administrator/System Analyst, and Geospatial Applications Developer). Based on previous experience and information from other states, this request calculates that the effort of proactively communicating with State agencies, ascertaining the participation in the Colorado Information Marketplace and assisting them with that participation will occupy 30-50% of 1.0 FTE. In addition, the hands-on collaboration with agencies to provide for their publishing of data will occupy 50% of 1.0 FTE. We anticipate these efforts to occupy 80%-100% of 1.0 GIS Analyst. This Analyst will also manage the dissemination of two data sets (imagery, elevation). Based on experience with address data and Community Anchor Institutions, OIT calculates that initiating proactive management of geographic data and developing the processes for maintaining these data will occupy 1.0 FTE per data set. As described above, OIT is planning to engage immediately in maintenance of one such data set (parcels), and, as time permits, work with other agencies in managing three others (boundaries, Public Land Survey System, and surface waters), and initiate efforts to maintain a unified, statewide roads data. Thus, this data development and management is expected to occupy the second GIS analyst and any slack time that arises among other staff.

The management of these new data sets and providing access to the data directly will require intensive use of enterprise spatial database technologies and will therefore require spatial database administration to maintain and optimize the database. OIT staff is constrained, even with staff supported with the current Decision Item, in our capacity to manage expanding spatial databases. This request addresses the anticipated expanded needs. Similarly, additional server infrastructure will be required to support the larger data volumes and increased data dissemination needs. This will be accompanied with additional GIS server software to publish web services and display data. We anticipate the management of these GIS server resources will require another resource. Last, processes for integrating and loading data will have to be automated. In addition, web based map applications may be developed, or existing applications may have to be amended. Consequently, OIT is requesting a position for application development concentrating on GIS specific applications. As mentioned and will be discussed in more details, this resource requirement is consistent with states or large cities that have been successful at enterprise wide data management and access.

With regard to the LiDAR data acquisition, OIT, the CGS and the CWCB have identified several areas of the state that are priorities for acquiring this precise data. These are areas that contain significant geologic hazards or will require precise remapping of flood prone areas. In addition, there are some portions of the state where there is considerable local interest in collecting LiDAR data, and the State will be able to leverage this interest and expand the collection areas. Consequently, the expected estimated total cost for the sum of these areas, based on previous LiDAR data acquisitions, is over four million dollars, of which

the State will be responsible for at least half. OIT will also host the technical platform to disseminate these data within the state.

Please see Appendix A for a complete description of the responsibilities and duties for each requested positions.

Comparative Analysis

OIT conducted several interviews with GIS personnel from different states to better understand their GIS efforts. The interviews helped determine the appropriate number of FTE needed to sufficiently support this request. Below are the positions requested in this Decision Item, broken down by position or comparable job description, and how Colorado compares to GIS staff in other states:

- GIS Analyst –Utah employs 2.0 FTE to collect data from State agencies and integrate it into their statewide geographic information database. Minnesota has two staff working with agencies and local governments to assist them in making data compliant with necessary standards to incorporate the data into their "Geospatial Commons," and will be requesting 2.0 FTE to make these data discoverable and accessible. Arkansas has 1.0 FTE almost entirely dedicated to outreach for data. Oregon identifies one position as their "framework coordinator," who handles overhead and outreach to support the organizational structure for framework data maintenance. North Carolina has 1.0 FTE to coordinate data updates into their "NC One Map" and ingest new data or updated data into this system. Michigan employs 6.0 FTE to work with local and State agencies across the state to review data from these entities, ensure the data is compliant with State standards, perform quality assessments on the data and make sure the data is being delivered to the Michigan spatial data warehouse. Michigan also has one person who performs general data manipulation tasks to process data into their spatial data warehouse.
- GIS Analyst –Utah employs 2.5 FTE to maintain statewide roads and addresses, and 2.0 FTE to maintain parcels. Utah performs more detailed editing and manipulation of the parcel boundaries than is expected for OIT. Minnesota is planning on 2.5 FTE to maintain parcels. Like Utah, they will be doing more detailed editing than anticipated in OIT's request. Virginia employs 3.0 FTE to maintain statewide roads and addresses, and their work load currently exceeds their available capacity. Arkansas has 1.0 FTE dedicated to parcel management. New Jersey employs approximately 2.5 FTE for maintenance of framework data of roads and parcels. New Jersey's maintenance of parcel boundaries is most similar to the expected maintenance of parcels for Colorado described here. Hence, while a smaller state in area, New Jersey may be the closest benchmark for FTE requirements for this data.
- Geospatial Database Administrators/Geospatial Systems Analyst and Geospatial Application Developer –Every state interviewed by OIT maintains these system roles in varying allocations. For example Utah employs 3.5 FTE as developers that build applications and manage databases for other agencies and their GIS office and 1.0 FTE to manage their web presence for their spatial data services. Minnesota has 1.0 FTE to manage service and server software, 1.0 FTE for database administration and two application developers for State agency applications and their central "Geospatial Commons." This does not include other database and systems analysts and developers within their "professional services" group to support State agencies explicitly. Minnesota also employs a technical lead/system architect to provide the high level oversight of their systems. Virginia employs 2.0 FTE to manage the geospatial server software for their base mapping services. Arkansas has one analyst to maintain services and server software and one application developer. Similarly, North Carolina has one database analyst and one programmer. Oregon currently has a database/system administrator and a web administrator to manage their web services and back end to support them. They have recognized the need for an additional system administrator as well and

are requesting funding for this additional position. New Jersey employs 2.0 FTE as database administrators who also work on outreach and ingesting data into their central data repository. They also have 2.0 FTE as system administrators to manage their web based services and servers and three application developers who support other State agencies as well as their State GIS operations for data editing. There is also 1.0 FTE dedicated to support the very large database resulting from the centralized repository of State data. Tennessee has two staff managing the system and web infrastructure for their data repository and discovery portal. They also employ two developers that spend significant time developing applications for other agencies. Tennessee does not have a system for centralized download of data within their State GIS office though. Michigan employs two database administrators, one technical modeler/architect, one application developer and one business/system analyst to support a capability much like that proposed here, although it includes a web based data editing application as well.

Consequences if the proposed solution is not approved

If this request is not approved, OIT will continue with the coordination, data management and GIS support efforts that have been funded to date. However, as most the personnel time currently funded will be occupied with statewide broadband mapping, this will not include the full range of necessary data and will result in capacity constraints for timely development of a full infrastructure for spatial data and enterprise GIS services. Consequently, the desire to be able to discover and obtain all necessary State GIS data assets will not be fully realized leaving gaps in data at critical times.

In addition, if the request is not approved, the State will not have a baseline of accurate elevation data to analyze and model potential flooding, sedimentation, run off, and landform changes in the event of emergencies. This data is also useful for engineering purposes at the local level, and local governments will have to make do without this accurate information costing them time and money.

Anticipated Outcomes:

The proposal will be measured by the number of data sets and web based data and map services made available to the GIS community. In addition, OIT will track the number of agencies and users of the sites to discover and download data. Lastly, OIT will perform annual surveys of the GIS community to assess their satisfaction with the data and whether additional critical data sets are needed. This survey will also include queries of the time taken to obtain critical spatial data to determine if the effort required decreases over time.

This solution will be successful if OIT effectively makes data available that has not been available before and GIS users are consuming and using the data. In addition, if the infrastructure is in place to share data rapidly, data will be assembled and made visible in the event of large scale emergencies. Specifically, if funded, OIT will track the following milestones:

- All State GIS data will be listed in the Colorado Information Marketplace (assuming full cooperation of State agencies) – Q2 FY16
- All State data indicated in the Information Marketplace (assuming cooperation of State agencies) will be made accessible – Q3 FY16
- Statewide Community Anchor Institutions, parcel and municipal boundary data will be standardized and integrated into a single statewide data set – Q4 FY16
- Other critical data sets for similar management will be identified and a potential work plan for management developed – Q4 FY16
- Statewide large data (e.g., LiDAR, aerial photography) will be assembled into an easy mechanism for access – Q3 FY16

Assumptions and Calculations:

The table below provides total cost estimates for this request.

Item	FY 2015-16 ($)	FY 2016-17 ($)
Salary for 4.0 IT Professionals	$ 378,904	$409,858
ArcGIS Server software for 1.0 FTE	$18,000	$5,000
ArcGIS Desktop software for 4.0 FTE	$30,000	$13,000
Support for 3 GIS Servers	$7,200	$7,200
Travel (conferences, state travel) for 4.0 FTE	$18,000	$18,000
Operating (telephone, PC, furniture) for 4.0 FTE	$22,612	$3,800
Contract services	$100,000	$0
LiDAR data	$2,000,000	$0
Total	**$2,574,716**	**$456,858**

Please see Appendix B for details on figures based on the requested FTE.

Rationale for General Fund

While OIT is an internal service organization and almost all other funds originating via charges assessed to State departments, this function of OIT does not fit within the existing service catalogue or cost recovery methodology. OIT provides services to State departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to departments. OIT is prohibited by the federal Division of Cost Allocation (DCA) from using one service to subsidize another.

The GIS coordination effort presents a common good that may be utilized by multiple State departments. As a result of greater GIS coordination, users will have unlimited access robust, actively managed GIS data sets, which will allow users to access and create maps, perform analysis, and collect information relative to their specific individual needs. However, it does not present a practical chargeable model because consumption and participation may discourage departments from using OIT's services and making their data transparent. By requesting General funds, this would alleviate reservations the departments may have about the financial burden to engage and participate in the GIS coordination effort.

Appendix A: Requested FTE and Position Descriptions

Position/FTE	Position Description
GIS Analyst/ 1.0 FTE	• Communicate with State departments and local GIS staff to inform them of and train them in publishing their data in the Colorado Information Marketplace. • Provide communication and coordination on making data accessible or downloadable, providing for access to State and local data through State (OIT) platforms where appropriate. • Load imagery and other data into the CO GeoData Cache. • Assist with other data stewardship as time permits.
GIS Analyst/ 1.0 FTE	• Manage maintenance of statewide, enterprise parcel data set to include, development of communication process with stakeholders and data owners, development and implementation of a process for receiving local data and transforming it into a statewide standard usable by State agencies and other GIS personnel including federal entities such as FEMA, the federal wildfire response community and others. • Perform quality assessments on the data received from local governments an report these assessments back to the local data sources. • Provide training and technical support to local governments in maintaining parcel data. • Assess the efficacy of contracting for the development of such data or developing the data in house for counties without the digital spatial data. • Ensure the statewide data stays current and potential users are aware of the data, and provide for access to the data through download and web services.
Geospatial Database Administrators/Geospatial Systems/ 1.0 FTE	• Maintain enterprise geospatial databases and database management software. • Manage user access and permissions for OIT GIS staff and State agency staff using enterprise GIS databases. • Optimize and tune databases for efficient transactional performance and performance in web data services. • Ensure security of databases. Administer server infrastructure supporting GIS databases, services

	and applications. • Monitor and report on performance of servers and work with OIT infrastructure team to accomplish necessary changes or improvements. • Ensure servers are current with software versions, and manage Internet Information Services (IIS) on servers and FTP processes and services. • Provide technical assistance to other State agencies.
Geospatial Application Developer/ 1.0 FTE	• Manage geospatial web applications hosted for other agencies as well as for OIT's efforts. • Refine existing applications and upgrade to best practice technologies (e.g., HTML5). • Develop applications to automate data import and management for enterprise geospatial databases including broadband data and other relevant data.

Appendix B: FTE Calculation

Expenditure Detail		FY 2015-16		FY 2016-17	
Personal Services:		FTE		FTE	
	Monthly Salary				
IT Professional	$ 6,491	3.7	288,200	4.0	311,568
PERA			29,252		31,624
AED			12,681		14,955
SAED			12,249		14,799
Medicare			4,179		4,518
STD			634		685
Health-Life-Dental			31,709		31,709
Subtotal Position 1, 4.0 FTE		3.7	**$ 378,904**	4.0	**$ 409,858**
Subtotal Personal Services		3.7	**$ 378,904**	4.0	**$ 409,858**
Operating Expenses:					
Regular FTE Operating Expenses	500	4.0	2,000	4.0	2,000
Telephone Expenses	450	4.0	1,800	4.0	1,800
PC, One-Time	1,230	4.0	4,920		
Office Furniture, One-Time	3,473	4.0	13,892		
Travel	4,500	4.0	18,000	4.0	18,000
ArcGIS Desktop Software	7,500	4.0	30,000	4.0	13,000
Subtotal Operating Expenses			**$ 70,612**		**$ 34,800**
TOTAL REQUEST		**3.7**	**$ 449,516**	**4.0**	**$ 444,658**

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Numbe R-12

Request Titles

R-06 (OEDIT) COFTM Film Incentive Rebate Program

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**
___ **Change Request FY 2015-16**
___ **Base Reduction FY 2015-16**
___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$5,500,000**	**$0**	**$509,322**	**$5,000,000**	**$5,000,000**
	FTE	4.5	-	4.5	-	-
Total of All Line Items	GF	$5,000,000	$0	$0	$5,000,000	$5,000,000
	CF	$500,000	$0	$509,322	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$5,500,000**	**$0**	**$509,322**	**$5,000,000**	**$5,000,000**
04. Economic Development Programs - Colorado Office of Film, Television, and Media	CF	$500,000	$0	$509,322	$0	$0
	FTE	4.5	-	4.5	-	-
	GF	$5,000,000	$0	$0	$5,000,000	$5,000,000

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This is a one-time request for $5.0 million General Fund to maintain the current level of funding for the Colorado Office of Film, Television & Media (COFTM). The funding will enable COFTM to continue the 20 percent rebate and loan guarantee programs for eligible film, television, and other creative productions.

Current Program

- The COFTM program includes a 20 percent rebate for production related expenses incurred in Colorado, subject to approval from the Economic Development Commission. COFTM also provides liaison services including location and permitting assistance, public relations, and other general support.
- Service recipients are production companies and crew, but this program also impacts the broader community. Productions support direct and indirect jobs, and boost economic and tourist activity.

Problem or Opportunity

- Colorado's market share of employees in the film industry has declined. The decline is directly related to other states offering higher levels of incentives and capturing the majority of productions.
- COFTM received one-time funding of $5.0 million in FY 2014-15 from the General Assembly. Providing continued funding for COFTM incentives and loan guarantees will continue to build momentum created in previous fiscal years by attracting major productions enhancing Colorado's image and business development. Since FY 2012-13, COFTM has incentivized 36 projects, and production interest has increased dramatically because of available incentive funds.

Consequences of Problem

- Without adequate funding, Colorado won't attract production companies and job opportunities won't be created.
- In FY 2013-14 and FY 2014-15, COFTM denied the rebate to a number of production projects due to limited funding and therefore, productions went to other states offering more incentive funding.

Proposed Solution

- The proposed solution is to continue to fund COFTM for FY 2015-16 with $5.0 million General Fund to continue incentivizing production activities in Colorado. Funding will allow for program growth and generate at least $25.0 million in economic activity.

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Department Priority: R-6
Request Detail: COFTM Incentive Rebate Program

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
COFTM Incentive Rebate Program	$5,000,000	$5,000,000

Problem or Opportunity:

The Colorado Office of Film, Television & Media (COFTM) incentive rebate program was designed to encourage film and media production in Colorado. The mission of COFTM is to promote Colorado as a location for making feature films, television shows, television commercials, and digital games. Content creation, which is the contribution of information to any form of media, including for example, production or post production activities necessary to produce a finished film (editing and the creation of sets, props, costumes, and special effects, etc.), is an important and growing international business. Colorado was once a leader in the film and television business, but with fewer productions in Colorado, the state has seen its market share of people employed in the industry decline significantly (see Appendix A). The decline has been directly related to the implementation of incentives in other states that have left Colorado in a noncompetitive position. Currently, film and TV productions are overwhelmingly located in states that offer significant production incentives. The states that offer the highest levels of incentives (see Appendix B) are capturing the largest percentage of the nation's productions and, as a result, reaping the economic benefits.

In order to compete with other states, Colorado needs to maintain financial incentives to attract these productions. Recognizing that the 2006 incentive rebate program was not competitive in the current environment, the General Assembly enacted the bipartisan H.B. 12-1286 which implemented changes that went into effect July 1, 2012. To be eligible for the rebate program, production companies must follow strict guidelines that benefit Colorado. For example, out-of-state production companies must spend at least $1.0 million in Colorado production activities, and Colorado production companies must spend at least $100,000. Both in- and out-of-state productions must hire a workforce of at least 50 percent Colorado residents, and all employees must pay Colorado income taxes.

All projects seeking the film incentive rebate must first be conditionally approved by the Colorado Economic Development Commission (EDC). Upon completion of production activities, and prior to

receiving an incentive, the production company must retain a Colorado CPA to audit the reported qualified local expenditures.

COFTM receives an annual appropriation for the incentive and rebate programs and administrative costs. In FY 2014-15, a total of $5.5 million was appropriated for the program. This includes $5.0 million General Fund for incentive spending and $500,000 cash funds for operating expenses. In addition to the incentive programs, COFTM provides a broad range of services to communities including location assistance, educational outreach, marketing Colorado, and acting as a liaison between communities, government agencies, productions, and special projects. The funding for the past two years has been effectively deployed and committed for incentives to attract production companies to Colorado. To continue to attract production companies to Colorado, it is critical to continue to fund the film incentive programs.

Since the beginning of last fiscal year (starting July 1, 2013) through the present, 24 projects have been approved. These 24 projects will bring over $31.0 million to Colorado and create 615 full-time jobs. Using the multiplier effect developed by the University of Colorado Leeds School of Business, as much as $60.0 million could be spent and 935 jobs created (See Appendix C). Continued funding is necessary to maintain this level of job creation and economic growth in the state.

The incentive rebate program cannot compete with other states to incent production if no General Fund is allocated. OEDIT is requesting the funding because of the economic boost for local economies and job creation for current industry crew and new film students.

The proposed solution is to continue to fund COFTM at its current level by funding $5.0 million General Fund for FY 2015-16 in order to continue to incentivize production activities in Colorado and allow for continued growth in the program. Incentivizing film and TV production creates jobs and dramatically increases economic activity in local communities. Since 2012, 46 Colorado counties have directly benefited from production activity. Several communities in Colorado have experienced significant sales tax growth due to film and television production (See Appendix D).

Proposed Solution:

The proposed solution is to continue to fund COFTM for FY 2015-16 with $5.0 million General Fund. Maintaining COFTM's funding at this level allows Colorado to entice filmmakers and television producers to the state by offering the 20 percent rebate. Without this funding, efforts to attract productions to Colorado will be severely handicapped.

Many Colorado communities, urban and rural, benefit from money spent during productions. A variety of local businesses are affected (restaurants, hotels, retail stores, car rental companies, etc). Productions also create new jobs and provide invaluable experience and training for new and existing workforce.

The film and television industries have a long standing impact on tourism. The COFTM office and local tourism offices around the state receive numerous calls regarding the filming locations of various films,

most notably, the Ridgway locations of *True Grit* and the Durango locations of *Butch Cassidy and the Sundance Kid*. More recently, the Weather Channel's hit television show *Prospectors* has brought tourism to Salida and the Mt. Antero area, where much of the show is filmed.

Anticipated Outcomes:

Attracting more projects to Colorado is part of a broader strategy to capture the economic value of Colorado's landscapes and build the necessary infrastructure to make Colorado attractive to the film industry. With the $5.0 million, COFTM expects to provide exceptional benefits to the state at almost no cost. Production spending impacts local communities and allows Colorado to be competitive in the business of content creation. Production spending and hiring includes:

- Producers, directors, and writers
- Actors, extras, and casting directors
- Carpenters, electricians, painters, scenic designers, and artists
- Makeup artists and hairdressers
- Costume designers and wardrobe personnel
- Editors, sound recorders, photographers, and musicians
- Food services employees and caterers
- Lawyers
- Truck drivers and location specialists
- Camera and lighting equipment rentals
- Dry cleaners, car rental agencies, suppliers of trailers and equipment, hotels, and apartment rentals

Assumptions and Calculations:

The spending and job numbers come from the applications for incentive rebates. Other calculations were arrived at by using data provided by production companies and the University of Colorado Leeds School of Business 2011 "Economic and Fiscal Impact Analysis of Actual Film Budget Scenario on Colorado."

Appendix A

Colorado was a very popular location for film and television series in the 1990s. Once film incentives were introduced by states like Louisiana in 2002, production began declining in Colorado and increasing in states that offer film incentives.

1970s, 1980s & 1990s

Mork & Mindy (1978)
The Shining (1980)
National Lampoon's Vacation (1983)
War Games (1983)
Perry Mason Mysteries (1987)
Father Dowling Mysteries (1989-1990)
Indiana Jones and the Last Crusade (1989)
Die Hard (1990)
City Slickers (1991)
Thelma and Louise (1991)
Ladybugs (1992)
North (1983)
Cliffhanger (1993)
Wyatt Earp (1993)
Dumb & Dumber (1994)
The Stand (1994)
Lightning Jack (1994)
White Fang 2 (1994)
Walker, Texas Ranger (1995)
Things to do in Denver When You're Dead (1995)
Under Siege 2 (1995)
The Fan (1996)
Larger Than Life (1996)
Independence Day (1996)
The Shining (TV) (1997)
Asteroid (1997)
Phantoms (1998)
Switchback (1998)

2000s

Nurse Betty (2000) (filmed one scene in Durango; the rest filmed in Los Angeles and Arizona)
Silver City (2004)
Catch and Release (2005) (filmed only establishing shots in Boulder, the rest in Vancouver, Canada)
Resurrecting the Champ (2006) (filmed one week in Denver, the rest in Los Angeles)
Imagine That (2008) (filmed three weeks in Denver, the rest in Los Angeles)
Lone Ranger (2012) (filmed several weeks in Creede, Colorado, the rest in New Mexico and Utah)

After 20% film rebate was instituted in 2012

Clean Guys of Comedy (2012)
Prospectors Season 1 (2012)

Appendix A *continued*

Fast & Furious 7 (2013)
Colorado Experience S 2 (2013)
Prospectors Season 2 (2013)
Dear Eleanor (2013)
The Frame (2013)
Countdown to Sochi (2013)
Podium 360 (2013)
USA Rugby Documentary (2013)
Heart of the World: Colorado's National Parks (2014)
Star Raiders (2014)
The Great Divide (2014)
Prospectors Season 3 (2014)
Life in Frames (2014)
Colorado Public Television (2014)
Ultimate Sportsman's Lodge (2014)
Being Evel (2014)
Odyssey: Discovering a Hidden Universe (2014)
Cop Car (2014)
Christmastime (2014)
The Hateful Eight (2014)

Appendix B

Competing States Offering Film Incentives			
State	Incentive	Cap	Total Income to State Derived from Productions
Colorado	20% rebate	Varies/cannot exceed yearly allocation	$31million (2012-2014)
Georgia	30% tax credit	Unlimited – no cap	$689 million (2011)
Illinois	30% tax credit	Unlimited – no cap	$286 million (2013)
Louisiana	30-35% tax credit	Unlimited – no cap	$773 million (2012)
Michigan	Up to 42% rebate	$50 million/year	$143 million (2013)
New Mexico	25-30% rebate	$50 million/year	$1.5 billion (2009-2014)
North Carolina	25% tax credit	Unlimited – no cap	$376 million (2012)
Ohio	25-35% rebate	$40 million/year	Not available
Utah	25% rebate	$6.7 million/year	$47.3 million (2012)
Oklahoma	35-37% rebate	$5 million/year	Not available
New York	30-35% tax credit	$420 million/year	Not available
California	20-25% tax credit	$100 million/year 2014 $230 million/year 2015 $330 million/year 2016	$856 million (2013)
Source: Cast & Crew Entertainment Services, Fall 2014			

Appendix C

Use of Film Incentives

For every production dollar spent in Colorado, the state pays $0.01 ($0.0102)

Film Incentive Data from July 1, 2013-present	Total Production Company Spend in Colorado	Total Production Company Spend in Colorado w/ multiplier effect*	Total State Incentive Paid to Production Companies	Projected Tax Revenue* (from Colorado spend)	Net Program Cost to State (total incentive less tax revenue)	Actual Net Incentive Paid (program cost divided by total Colorado spend)	Number of Jobs Created	Number of Jobs Created w/ multiplier effect*
Total	**$31,432,224**	**$60,664,192**	**$4,390,839**	**$3,771,867**	**$618,972**	**1.02%**	**615**	**935**

Note: The projected tax revenue does not include revenue anticipated from tourism. For example, the town of Creede experienced a 24.7% increase in sales tax revenue after the filming of Walt Disney's *The Lone Ranger*. Tourists were drawn to Creede because of press relating to the recent production.

*Extrapolated from the University of Colorado Leeds School of Business 2011 Colorado Film Incentives, Economic and Fiscal Impact Estimated Tax Revenue from production spending.

Heart of the Rockies Chamber of Commerce

406 W. Hwy. 50 ~ Salida, CO 81201 ~ (719) 539-2068 ~ Fax (719) 539-7844
www.salidachamber.org ~ email: info@salidachamber.org

December 9, 2013

The Honorable John Hickenlooper
Governor of Colorado
State Capitol Building, Room 136
200 E. Colfax
Denver, CO 80203

Dear Governor Hickenlooper:

Early in November I wrote your office to express appreciation, on behalf of the Salida Chamber of Commerce, for your efforts in welcoming film production companies to the state of Colorado. In particular, some scenes for "Fast and Furious 7" that were filmed in the Monarch Pass area in October focused on Chaffee County as a filming location, as well as a vacation destination.

As a follow up to my previous letter, overall year-to-date sales-tax revenues show an increase of 13.8 percent over last year. Additional statistics illustrate what we already believed: The film company arrived in early fall at a time when tourism generally begins to slow down. However, Salida's October sales-tax figures were up 7.8 percent over October 2012. More specifically, lodging and foodservice increased 95 percent and 41 percent, respectively, over the same period last year. It is our belief that the presence of the film crew certainly contributed to this economic boost.

Once again, our sincere gratitude to you for your efforts, as well as those of the Colorado Office of Film Television and Media, for providing opportunities to put this portion of Colorado in the cinematic spotlight.

Best regards,

Lori Roberts

Lori Roberts
Executive Director

cc: Donald Zuckerman, Commissioner
Colorado Film Television and Media

HIGH NOON
ENTERTAINMENT
LOS ANGELES • DENVER • NEW YORK

March 2, 2014

To: Mr. Donald Zuckerman – Commissioner
Colorado Office of Film Television & Media

For the past two years (2012-2013) High Noon Productions, based in Denver, Colorado, has produced "Prospectors" - a reality series – for the Weather Channel. The series depicts the challenges and rewards our real life miners face in their search for gems in the mountains of Colorado. Prospectors has been a big success for The Weather Channel and was its highest rated program this past season.

Prospectors has also been an economic success – certainly for High Noon – but just as importantly for the State of Colorado. Virtually the entire budgets for seasons 1 & 2 of Prospectors have been spent within the state – approximately $5,000,000 total. Where does that money go?

First, it pays the salaries of the skilled production crews working on the production – the producers, writers, photographers, and editors – to name a few of the positions. And since most of these individuals reside right here in Colorado, the state reaps the benefit of the income taxes paid. High Noon also rents and buys both production and expedition gear for its production here in Colorado – cameras, sound equipment, camping and extreme weather gear. So the vendors for such gear and services realize profits from the production.

Additionally, High Noon rents hotel rooms, cabins, and vehicles in the Buena Vista and Pikes Peak regions to house and transport our crews. Last season alone $70,000 went toward Jeep rentals; $90,000 in the long-term rental of rooms and cabins. Working at high altitude and for long hours creates hungry production teams; in 2013 $60,000 was spent in the local economies at supermarkets and restaurants on food and beverages for our crews.

There is another layer of economic benefit that is harder for us to quantify but we hear about anecdotally. And it comes about as a result of fans of Prospectors visiting the state to see the show's locations for themselves - Mt. Antero and Pikes Peak; to walk the trails and explore the gorgeous landscapes they see each week on Prospectors. We have heard from hotel and restaurant owners of the impact such visits have had on their businesses – all enthusiastic.

High Noon is proud to say we will be producing a THIRD season of Prospectors here in Colorado this summer. And we're delighted that all the economic benefits described above will be coming back to our state once again.

Our thanks, as always, to the Colorado Office of Film Television & Media. They have been a tremendous resource for us in the production of Prospectors.

Best Regards,

Sonny Hutchison
Chief Administrative Officer
High Noon Productions LLC

3035 SOUTH PARKER ROAD ▪ SUITE 500 ▪ DENVER, CO 80014-2926
PH: 303.872.8700 ▪ FAX: 303.872.8701

City of Creede

A Colorado Town

P.O. Box 457
Creede, CO 81130
(719) 658-2276
Fax 658-2017

Est. 1892

E. R. Grossman – Mayor, Creede Colorado **March 21, 2013**

Dear Donald,

It was a pleasure catching up with you for coffee a few weeks back, and also meeting Lauren last week at our Region 8 OEDIT meeting. Congratulations as well for landing the state 3 quality movie projects! As the push continues to demonstrate why this type of pursuit is of economic value to all of us, I wanted to take a moment and remind everyone who will listen what happened in Creede at this time last year: Hollywood came to town. For a community that relies heavily on summer tourism (June – September), it has long been an idea to extend that season. Disney's Production of "The Lone Ranger" was by far the biggest selling point in the economic necessity to branch out for any extra business. To begin, let me give a rough time-line in order to give context for the numbers presented at the bottom of the page.

Upon executing the contract to begin construction at the end of March 2012, the clock began ticking on doubling our population of ~400. The first wave of crew was about a 20 count that grew to about 50 into April, and that stayed constant until the middle of May. At that time, the full onslaught began which peaked with a cast and crew of 400 during the month of June. (A reminder that we are talking this time, last year.)

Now let's look at the graph below. Some would say that we were already on the way to increasing our numbers for all months, and that's true. However, last years wildfire season was very damaging to the notion that it was a normal year. The 24/hour news cycles of today could only tell the public that, "Colorado was on fire," and that negative PR told tourists to not come, and in the early summer months I can tell you they did not. With this in mind, it makes the numbers below seem all the more stunning. The smoke did not clear our area until the end of July, and yes our traditional visitors returned in earnest. But only one thing explains our increase in numbers, and frankly it was Hollywood and the impact their people left behind in dollars.

In the end for us in the small town mindset, it was also the people involved with the production that made it so worthwhile. For our community fell in love with the movie, and the movie fell in love with Creede. Which I firmly believe will result in repeat business and thus more dollars, which makes the point that the investment on our end does indeed bear fruit. This crop is worth watering, and fertilizing... in this Mayor's view.

The Entertainment Industry is vast, and with a public hungry for these products, why shouldn't Colorado be a bigger player in the manufacture of it? With that said, I offer up our experience as evidence of why we should. A story as you know, I'm willing to tell at any time, to anyone.

Stay in Touch and may this be of assistance... Cheers.

-Eric Grossman – Mayor, City of Creede - 415.760.1986 cell – ericredlion@yahoo.com

ERIC GROSSMAN

CITY OF CREEDE, CITY SALES TAX REVENUE, 2009-2012

Month / Year	2009	2010	2011	2012
MAR	5131.66	4722	6314	6055.8
APR	5107.56	4515	4018.22	10,718.54
MAY	9679.22	9422	10,445.38	14,455.4
JUN	21,708.02	22,658.14	23,933.7	35,718.68
JUL	35,685	37,059.7	33,625.68	47,628.54
AUG	23,399	24,105	31,995.74	32,142.54
SEP	23,158	21,925.58	25,117.9	33,401.24
OCT	6875.84	7933.1	10,027.22	tba

(Data as of Oct. 2012 by the Town Clerk and Recorder of the City of Creede, Colorado.)

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-13

Request Titles

R-06 (OIT) CDPHE Network Infrastructure

Dept. Approval By: David B. Zung

OSPB Approval By: Emil M. Sol

	Supplemental FY 2014-15
x	**Change Request FY 2015-16**
	Base Reduction FY 2015-16
	Budget Amendment FY 2015-16

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$3,098,558**	**$0**	**$3,125,056**	**$508,200**	**$268,200**
	FTE	9.6	0.0	10.0	0.0	0.0
	GF	$0	$0	$0	$0	$0
	CF	$0	$0	$0	$0	$0
	RF	$3,098,558	$0	$3,125,056	$508,200	$268,200
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$3,098,558**	**$0**	**$3,125,056**	**$508,200**	**$268,200**
05. Office of Information Technology - Network Administration	FTE	9.6	0.0	10.0	0.0	0.0
	RF	$3,098,558	$0	$3,125,056	$508,200	$268,200

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number: 6130 IT Revolving Fund

Reappropriated Funds Source, by Department and Line Item Name: CDPHE

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments: CDPHE

Other Information:

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Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Public Health and Environment

PB Request Number NPR-02

Request Titles

NPR-02 Network Refresh

Dept. Approval By: _____

OSPB Approval By: _____

___	Supplemental FY 2014-15
X	Change Request FY 2015-16
___	Base Reduction FY 2015-16
___	Budget Amendment FY 2015-16

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	Total	$7,134,425	$0	$7,229,335	$508,200	$268,200
	FTE	-	-	-	-	-
	GF	$0	$0	$0	$0	$0
	CF	$53,560	$0	$32,136	$0	$0
	RF	$7,080,865	$0	$7,197,199	$508,200	$268,200
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
01. Administration and Support - Payments to OIT	Total	$7,134,425	$0	$7,229,335	$508,200	$268,200
	CF	$53,560	$0	$32,136	$0	$0
	RF	$7,080,865	$0	$7,197,199	$508,200	$268,200

Letternote Text Revision Required? Yes ___ No X

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes X No ___ Not Required ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- The Office of Information Technology (OIT) requests $508,200 in Reappropriated Funds in FY 2015-16, and $268,200 in Reappropriated Funds in FY 2016-17 and beyond to provide enhanced network connectivity to the Colorado Department of Public Health and Environment (CDPHE).

Current Program

- CDPHE has 3 buildings on its main campus, 1,200 employees, thousands of customers and thousands of visitors to its websites each day.
- CDPHE utilizes approximately 200 applications in the course of its business.

Problem or Opportunity

- The Department has been participating in OIT's data center consolidation project, but as more program applications are moved to the data center at E-fort, connection speeds are slowing.
- CDPHE is requesting funding for a 10 gigabyte connection between the Department and E-fort to ensure that CDPHE can serve its customers and fulfill its mission.
- OIT recommends that State agencies have maintenance and support contracts to protect against equipment failures.
- These maintenance contracts provide fast, cost effective technical support and equipment replacement.
- The Department does not have sufficient spending authority to fund the 10GB line or maintenance and support agreements.

Consequences of Problem

- Slow connection speeds and Equipment and network failures make it difficult for customers to communicate with Department staff and get the information or services they need.
- Without maintenance and support contracts the Department risks equipment failure and associated costs in addition to lost productivity and service interruption to staff and customers.

Proposed Solution

- This request seeks $508,200 in FY 2015-16 and $268,200 in FY 2016-17 to enhance and protect CDPHE's network.
- The request is for cash fund spending authority at CDPHE and reappropriated fund spending authority at OIT to fund these activities through OIT common policy.
- Requested funding includes $240,000 in onetime equipment and $65,000 in on-going service fees for a 10GB connection between CDPHE and the state data center.
- $203,200 in on-going funding will fund maintenance and support contracts that will protect the Department from costly service interruptions that result from equipment failure.

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Department Priority: R-6
Request Detail: CDPHE Network Infrastructure

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Network Infrastructure for CDPHE	$508,200	$0

Customer Impact:

Employees at the Colorado Department of Public Health and Environment will receive a 10 gigabyte data connection between the Department and the State's data center. This project is specific to the Department and will provide a dedicated line for their data needs.

Problem or Opportunity:

This request seeks $508,200 in Reappropriated Fund spending authority for the Office of Information Technology (OIT) and a commensurate amount in Reappropriated Fund spending authority for the Colorado Department of Public Health and Environment (CDPHE) in FY 2015-16. The request also includes on-going reappropriated spending authority of $268,200 to enhance network connectivity at CDPHE. The request will fund a dedicated 10 gigabyte connection between the Department and the State's data center (E-fort) as well as fund maintenance and support service contracts necessary to manage the Department's information technology infrastructure. The request is predicated on OIT receiving the cash fund spending authority and charging CDPHE through reappropriated, indirect cost spending authority via common policy.

The Colorado Department of Public Health and Environment (CDPHE) has 1,200 employees, thousands of customers and thus, thousands of visitors to its websites each day. To ensure that staff and customers have fast, reliable, secure access to information, the department needs sufficient capacity in its connection between the Department and the State's data center (E-fort). The Department also needs sufficient funding for maintenance and support contracts that ensure servers, routers, power supplies and other network equipment operate efficiently and effectively.

Since the late 1980s when state agencies began relying on computers to do their work, data centers were created within state agencies across Colorado with varying levels of sophistication. Very few of the data centers had power or cooling redundancy and even fewer had alternate sites for disaster recovery in case of an emergency at the main location. Having the data center onsite at the agency makes it prohibitively expensive to make each of those data centers robust. This means that when the power goes out or the cooling system fails, staff and customers lose access to the applications hosted there for hours, days or even months.

CDPHE currently has a 1Gigabyte connection between staff workstations and the onsite servers that host program applications. Having the servers located on-site means high speed but also that there is very limited ability to recover quickly from an equipment failure. When those servers are moved miles away to E-fort, there is greater protection from outages, but the connection slows to 300 Megabytes. This decrease in speed is the reason the Department would like to add a dedicated 10GB line which will increase bandwidth and allow the Departments servers to be located at E-fort without negatively impacting the responsiveness of the applications staff rely upon to do their work and serve their customers.

Over two years ago, OIT began to address the issues of department specific data centers with the Data Center Consolidation (DCC) effort. This DCC approach reflects best practice for how servers are stored and operated state-wide. The project will reduce the number of state data centers from over thirty five to just two; one main site for production systems and one backup site to allow for timely disaster recovery.
The DCC is an important step in bringing the State closer to its goal of next day, or even next hour, application recovery.

CDPHE has been participating in the DCC effort by steadily moving servers to E-fort for the past two years. However, that effort has all but stopped as department staff noticed that their applications are slowing down as more servers are moved to E-fort. Some business units in the department will not allow OIT to continue moving servers out of the department's data center to e-fort until the issue is addressed.

CDPHE utilizes approximately 200 applications in the course of its business, from CEDRS which is used to monitor and respond to disease outbreaks; to the Air Quality Forecasting and Monitoring system that monitors and determines air quality for the public; to Health Facility licensing to ensure that residence and patients receive the federal standard level of care. The Department's many websites receive thousands of visits each day from home owners wanting to test their well water; business owners needing permits; researchers studying birth defects; and individuals wanting to quit smoking.

CDOT addressed this same issue last year with a 10GB dedicated line between their main building and E-fort. CDOT has been very pleased with the results of the faster connection. CDPHE is requesting funding to create the same connection. Once the 10GB line is in place the Department will be able to resume moving its application and file servers out of the department's tier 1 data center, which offers no redundancy, to the tier 3 data center at E-fort which has power and cooling redundancy. The 10GB connection will also allow the department to eventually make use of the disaster recovery data center on 6th and Kipling when that data center becomes operational.

Another OIT best practice is to recommend that State agencies have maintenance and support contracts that protect each agency from the negative impacts of equipment failures. Having a single maintenance and support vender allows OIT to develop a relationship with one company which facilitates rapid response to emergencies. Additionally, having a single vender eliminates confusion for OIT staff about who to call when equipment fails.

In July 2011 OIT consolidated agency network equipment warrantee purchases under one enterprise contract with SmartNet warranty coverage. SmartNet allows the departments OIT support staff to request help from equipment experts when they are troubleshooting complicated technical issues. Without this coverage, the Department would not have access to technical experts. If a covered piece of equipment fails the SmartNet agreement guarantees that the Department can have replacement equipment in place by the next business day. Without the coverage, costs to repair or replace equipment on an emergency basis

could be as high as $250,000. See Appendix A for a list of the equipment covered by the SmartNet agreement.

Unplanned equipment failure means that staff cannot access network services such as the internet, phone system, program specific applications or shared file storage locations necessary to serve customers and perform work. Citizens, business owners and other customers cannot get the information they need.

The Department believes this SmartNet warranty is a valuable service. However, CDPHE does not have a dedicated funding source for this protection and therefore cannot guarantee continuation of current SmartNet coverage. This request seeks that permanent, stable funding for SmartNet be included in the OIT common policy line.

In addition to the above, CDPHE is requesting funding to purchase a maintenance plan to ensure that the batteries, of the three Uninterruptible Power Supplies (UPS) on the main campus, are checked regularly. Battery checks are not covered by the SmartNet maintenance agreement, but, based on recent experience, the Department believes a support contract to check and maintain the UPS batteries is critical. In 2014 a UPS failed. The Department was unaware of the failure until construction in the parking lot caused a power outage in the A building, where the Department's server room is located. When the power went out, two network switches were damaged. Had the switches not been covered under the SmartNet agreement the cost to replace them could have been as high as $220,000. Had the batteries been checked the UPS would have protected the equipment in the server room, avoiding the downtime, additional work for OIT staff and service interruptions for staff and customers that resulted from the damaged equipment.

Proposed Solution:

This request seeks $508,200 in FY 2015-16 and $268,200 in FY 2016-17 and on-going to ensure that CDPHE has a reliable, secure network that meets the needs of citizens and Department staff. The request is for cash fund spending authority at OIT and Reappropriated Fund spending authority at CDPHE to fund these costs through OIT common policy. CDPHE Programs would pay for these services through the customary departmental indirect cost recovery model. The requested funding would allow OIT to ensure that CDPHE has the network infrastructure it needs to serve its customers and fulfill its mission.

The Department’s current 300 megabyte line is inadequate to carry the significant electronic traffic, between The Department and E-fort, necessary to conduct the Department’s business and serve its customers. This request seeks $305,000 in one-time spending authority to purchase the equipment necessary to establish the 10 gigabyte connection between The Department and E-fort. The request also includes $60,000 for the annual cost of the line and $5,000 for the SmartNet coverage on the equipment. The 10 Gigabyte connection is 33 times faster than the 300 megabyte connection. Without this high speed connection, staff productivity will be limited and customers will experience slower response in accessing the Department’s hundreds of data-driven web pages. The long term affect is the inability to complete data center consolidation and the inability to take advantage of the backup data center for disaster recovery, currently being developed. The 10GB connection also has capacity built in to accommodate increased demand which is likely as program applications evolve and change.

An additional benefit of the 10GB connection is that the current 300 megabyte connection would be dedicated to traffic from the Department’s satellite locations at the State Lab and Pueblo. Shifting the main campus traffic to the 10GB line will result in increased speed for the satellite locations that will continue to use the 300MB connection.

The request also includes $190,000 for the annual SmartNet maintenance and support contract. This contract covers the equipment listed in Appendix A and ensures 24x7 next business day coverage. Without this contract the Department risks equipment failure and associated costs which can be as high as $250,000 in addition to lost productivity and service quality.

The request also includes $13,200 for an annual maintenance agreement for the universal power supply. This cost estimate is based on the lowest quotes received after asking two vendors for information

Without Funding for the 10 gigabyte connection between E-fort and CDPHE, productivity and customer service will be negatively impacted. Without funding for SmartNet maintenance, CDPHE will be at risk for costly equipment failures that will also negatively impact productivity and customer service. Without funding for the UPS maintenance plan the State risks costly service disruption.

Anticipated Outcomes:

If authorized, this request will establish a reliable, secure, high performing network for CDPHE customers and staff. With the upgraded connection between CDPHE and E-fort, department staff and customers will have speeds approximately 33 times greater than can be achieved with the current 300 megabyte connection. This will allow CDPHE to enjoy the benefits of E-fort without compromising access to applications. The 10 gigabyte line will allow sufficient bandwidth to manage hundreds of thousands of web hits per month. This means that CDPHE's website will have capacity to manage a significant volume of hits such as happens when there is a public health emergency or natural disaster.

Stable funding for SmartNet will ensure that equipment is repaired or replaced if it fails without unexpected and potentially significant costs.

The addition of the UPS maintenance contract will ensure that the batteries in the three main UPSs on campus are always working. This means that, in case of emergency, the UPSs can be relied on to support the load of servers and other equipment long enough for that equipment to be shut down effectively and safely. Powering down equipment too suddenly and failure to power it down correctly can mean costly damage to the equipment as well as delays in restoring service.

If authorized, the requested improvements will enhance the Department's ability to perform its daily operations, serve its customers and fulfill its mission of protecting public health and the environment.

Assumptions and Calculations:

This request seeks $508,200 in FY 2015-16 and $268,200 in FY 2016-17 to enhance CDPHE's network. The request is for reappropriated spending authority at OIT and Reappropriated Fund spending authority at CDPHE to fund these activities through OIT common policy.

The first year request includes $240,000 in one-time funding for the equipment, servers and routers, to establish the 10 gigabyte connection. There is an on-going charge of $60,000 for the connection as well as $5,000 for the annual SmartNet subscription. See Appendix B for a breakdown of costs. These cost estimates are based on an inventory of network equipment required to support services provided to the department.

$190,000 of the requested funds is for the annual SmartNet subscription. See Appendix A for the list of covered equipment.

The request also includes $13,200 for an annual maintenance agreement for the Department's three main universal power supplies. This cost estimate is based on the lowest quotes received after asking two vendors for information

This request will be funded through reappropriated indirect cost recoveries in the payments to OIT line. CDPHE programs would pay for these services through the customary departmental indirect cost recovery model.

Appendix A, SmartNet Coverage

Product Description	**Total Units**	**Total Cost**
Onsite SmartNet Premium 24x7x4hr Support	9	$2,957
SmartNet for Tandberg Devices 8x5xNBD Parts Replacement	1	$1,665
SmartNet Essential Software Support	3800	$33,013
SmartNet Software Application Support	1	$1,895
SmartNet Software Application Support With Upgrades	2	$1,896
SmartNet 8x5xNext Business Day Parts Replacement	172	$60,682
SmartNet Enhanced 8x5x4hr Parts Replacement	1	$504
SmartNet Premium 24x7x4hr HW Parts Replacement	20	$38,404
SmartNet IPS Service 8x5xNBD Parts Replacement	2	$4,950
SmartNet Unified Communications Software Subscription	3800	$25,997
Grand Total	**7808**	**$171,963**

Appendix B, Request Cost Detail

Dedicated line between Main Campus and E-Fort	**Year 1 costs FY16**	**On-Going costs**
2 10GB Routers, 1 at main campus and 1 at E-Fort	$240,000	$0
10GBps Service Cost	$60,000	$60,000
Additional SmartNet maintenance	$5,000	$5,000
Subtotal	**$305,000**	**$65,000**
Warranty/Support and Maintenance Cost	**Annual Amount**	**On-Going costs**
SmartNet Maintenance / Equipment warranty and support	$190,000	$190,000
UPS Maintenance	$13,200	$13,200
Subtotal	**$203,200**	**$203,200**
Grand Total	**$508,200**	**$268,200**

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Numbe R-14

Request Titles

R-07 (OEDIT) Leading Edge Program

Dept. Approval By: _____

OSPB Approval By: _____

___ **Supplemental FY 2014-15**

___ **Change Request FY 2015-16**

___ **Base Reduction FY 2015-16**

___ **Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$126,407**	**$0**	**$126,407**	**$25,000**	**$25,000**
	FTE	-	-	-	-	-
Total of All Line Items	GF	$50,976	$0	$50,976	$25,000	$25,000
	CF	$75,431	$0	$75,431	$0	$0
	RF	$0	$0	$0	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
	Total	**$126,407**	**$0**	**$126,407**	**$25,000**	**$25,000**
04. Economic Development Programs - Leading Edge Program Grants	CF	$75,431	$0	$75,431	$0	$0
	GF	$50,976	$0	$50,976	$25,000	$25,000

Letternote Text Revision Required? Yes ___ No ___ **If Yes, describe the Letternote Text Revision:**

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name

Approval by OIT? Yes ___ No ___ **Not Required** ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for $25,000 General Fund to increase business training opportunities across the state. This funding request is ongoing and does not require additional FTE.

Current Program

- The LEADING EDGE (LE) program provides entrepreneurial training to existing and new businesses statewide. The training can take different formats, including a one-day conference, a 12 to 15 week business planning course, or a short 3 to 5 day bootcamp.
- The program is open to entrepreneurs in any stage of business. Typically, programs are segregated into demographics or industries (i.e. women, existing businesses, veterans, etc.).
- All participants in the LE program are required to meet one-on-one with Small Business Development Center (SBDC) business consultants for at least five hours during the program. Graduates are invited to a statewide graduation and awards ceremony at the Governor's Mansion.

Problem or Opportunity

- The Colorado SBDC Network has worked to increase trainings across the state to meet demand.
- Budgetary constraints have caused the SBDC Network to limit the number of programs offered, and there is unmet demand around the state.
- With increased funding, the SBDC Network can increase the amount of LE courses across the state.

Consequences of Problem

- Each time capacity is added to a class, costs go up (including costs related to trainers, books, consultants, supplies, and printing). Failure to adequately fund the LE program will force OEDIT to decrease the amount of entrepreneurial training offered across the state, and there will continue to be unmet demand.
- Fewer entrepreneurs will be assisted which will decrease the number of jobs created and retained, business starts, and capital formation.

Proposed Solution

- With increased funding, OEDIT can provide more training for hundreds of business owners.
- Increased funding will foster economic growth in all small businesses across Colorado and allow the SBDC Network to focus on key industries identified in the Colorado Blueprint.
- The SBDC diligently tracks all economic impact achieved through the LE program and will continue to track that impact including jobs created and retained, loans secured, government contracts obtained, certifications received, business starts and more.

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Department Priority: R-7
Request Detail: OEDIT/CO SBDC Leading Edge

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
OEDIT/CO SBDC Leading Edge	$25,000	$25,000

Problem or Opportunity:

There is growing demand for the Colorado Small Business Development Center (SBDC) LEADING EDGE (LE) program. This program is SBDC's flagship entrepreneur program, and it delivers comprehensive training to small businesses by providing entrepreneurs with a better understanding of how to start and operate a small business. Some of the positive impacts of the program include: creating jobs, raising capital for new businesses, and growing existing businesses. General Fund for the program has been stagnant for the last 13 years, which has prevented the program from keeping up with demand for its services. The LE program has been appropriated $126,407 to implement the program. Of this amount, approximately $51,000 is General Fund and $75,000 comes from cash fund spending authority through private grants, donations, and charging program participants. However, sufficient revenue has not been available to support the cash fund spending authority amount. As a result, the General Fund appropriation has been the source of revenue for the program.

Based on trends over the last 10 years, the Office of Economic Development and International Trade (OEDIT) estimates that with the additional $25,000 General Fund the Colorado SBDC will be able to add at least six additional programs which would include at least 600 additional consulting hours. Those program and consulting hours translate into a positive economic impact for Colorado, including the creation and retention of an additional 150 jobs, the start of 30 businesses, and an increase in capital formation by $600,000 *per year*.

The LE program has existed since 1989. The SBDC has successfully implemented this program to make it a tremendous asset to the State of Colorado for new and existing businesses. Unfortunately, due to budgetary constraints, despite the high demand for this program, OEDIT has been unable to expand the reach of this program to all communities that have requested such programming. This is a flagship program with a high success rate of impact in both rural and metropolitan areas.

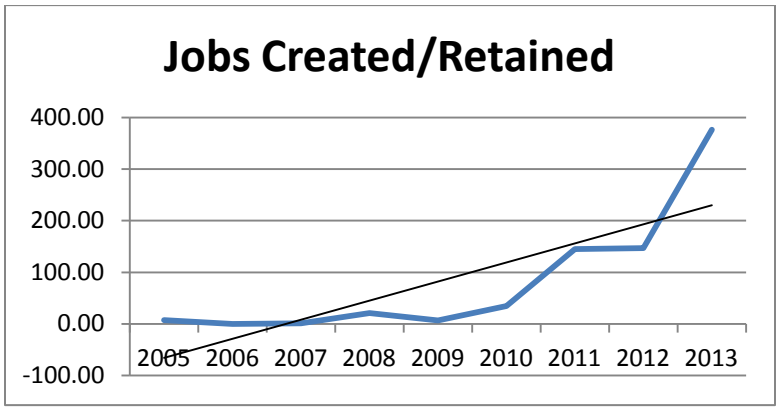
Over the past several years, OEDIT has required and will continue to require local sponsorships to support the program. However, there is not enough sponsorship money available to meet the growing demand entirely. Therefore, OEDIT is requesting additional funding from the state. Additional state funds may actually have the impact of attracting more sponsors.

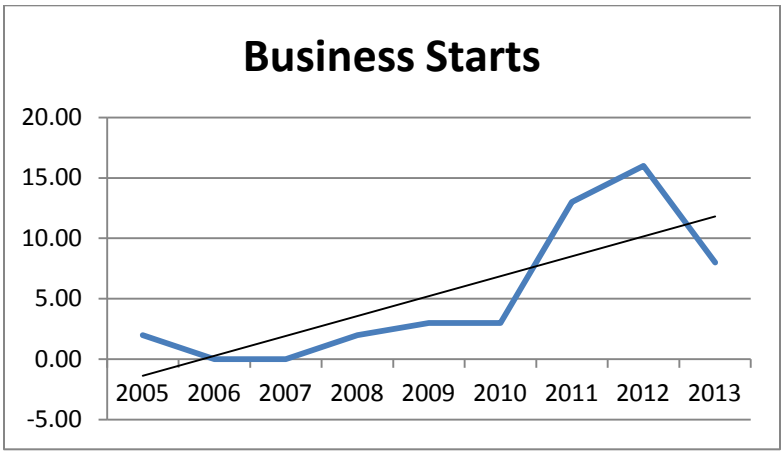
Proposed Solution:

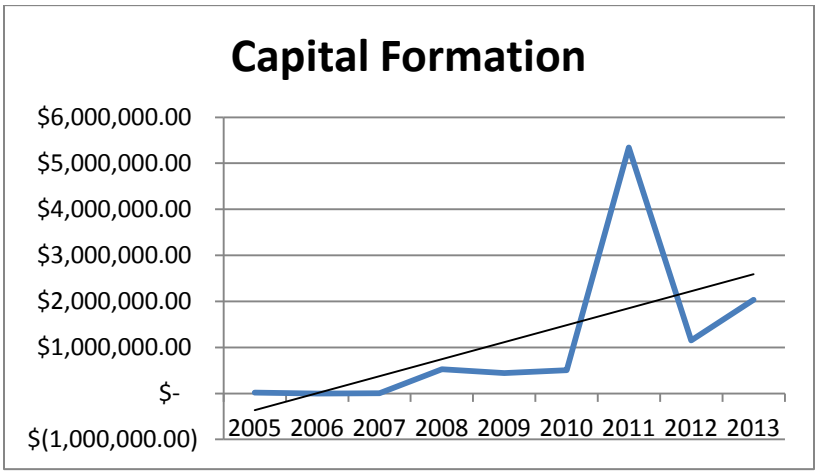
OEDIT is requesting $25,000 General Fund to increase business training opportunities across the state. It is estimated that with an increase of $25,000 in funding, the SBDC could assist businesses in creating and retaining 150 jobs per year, starting 30 businesses, and increasing capital formation by $600,000 *per year*. All of these estimates are based on previous years' trends and past economic impact reported by small businesses that have been through the LE program. See the tables below for the trends in economic impact created due to the LE program since 2005. These numbers are reported by small businesses and are verified by the actual client; numbers are not reported unless that client specifically signs an affidavit that the economic impact was created through the assistance of the SBDC Network. The estimates were created by averaging the economic impact reported over the last three years and then taking into account that some LE programs will be specifically for start-up or existing businesses.

Businesses enrolled in the program may be new or existing businesses. For new businesses, completing the program could constitute a business start and count towards jobs created. For an existing business, completing the program typically means the SBDC assists the company in creating and retaining jobs, but it does not qualify as a business start.

With the increased funding, the SBDC Network may be able to run a total of up to 19 LE programs per year, an increase from the 12-15 programs per year that are currently funded. If half of those classes are aimed towards start-up businesses and the average program has 20 participants, there is a potential of 190 business starts within that year alone. Knowing that about 80 percent of the program's participants "graduate" from the program with a fully realized business plan, and about 20 percent of those businesses will in fact start within that year, OEDIT estimates that increased funding of the LE program could increase business starts by at least 30 in a single year.







The execution of these entrepreneurial training courses will foster economic growth across the key industries identified in the Colorado Blueprint. OEDIT would be able to offer specialized training to identified industries, including health and wellness, aerospace, bioscience, advanced manufacturing, and more. The LE program is the only statewide entrepreneurial program in Colorado that provides this type of assistance to businesses in remote, rural areas as well as the metropolitan areas.

Colorado SBDC is looking for ongoing funding to expand this statewide program due to overwhelming and unmet demand. In some areas, there can be up to three times the demand over what current funding can support. There are anywhere from 5 to 20 people on a waiting list at any given time. Moreover in rural areas, centers only have enough funding to hold each course once per year. This forces some entrepreneurs to wait months in order to join a class, which delays them from moving forward with their businesses. In areas where centers have expanded the class sizes to accommodate more participants, the centers have received negative feedback about the quality and level of individual attention.

Failure to adequately fund the LE program will force OEDIT to continue decreasing the amount of entrepreneurial training across the state. As the number of small business owners participating in the LE program increases, the incremental cost to hold a single program also increases, in effect reducing the number of courses that can be held within a fiscal year. This will decrease the economic impact of the

program, resulting in a decrease in jobs retained and created, business starts and capital formation across all industries in Colorado.

Colorado SBDC has already implemented the community investment into the LE program and searched for statewide sponsors as well. SBDC will continue to search for those additional alternatives to continue to enhance the offerings.

There is no additional FTE required as SBDC has an existing infrastructure through the SBDC Network, and the program manager is already in place.

Anticipated Outcomes:

The SBDC Network has the capability to track and trend all outcomes of the program. The SBDC presently tracks all impacts though its internal system, and they can be reported semi-annually. The SBDC will continue to track capital raised, new business starts, jobs created and jobs retained.

The impact can and will be reported on an on-going basis to measure the success of adequately funding the LE program. SBDC sets yearly goals and compares the proposed goals to the actual outcomes. The LE program produces an excellent return on investment by providing important entrepreneurial training to small businesses around the state. Moreover, it is the only program that helps small businesses statewide create economic impact for their businesses through, among other things, job creation and retention, loans secured, sales increased, government contracts obtained, and businesses started.

A company's successful completion of the LE program and subsequent growth could help facilitate its use of other state programs. Moreover, when applying for certain state programs, graduation from the LE program may be viewed positively.

Assumptions and Calculations:

No additional FTE is required, and there will be no equipment costs.

On average, $45,000 of the $50,000 budgeted to the LE program is distributed to Colorado SBDC's subcenters as $3,000 grants to run their LE programs. These grants pay for the instructor, books, supplies, and other necessary costs. The rest of the funds are used to pay for instructor certification, other LE-related programming out of the Colorado SBDC Network office in OEDIT (such as partnering to provide youth entrepreneurship training), books, the statewide LE graduation at the Governor's Mansion each spring, and similar expenses.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-15

Request Titles

R-07 (OIT) Colorado Information Marketplace

Dept. Approval By: David B. Zung

OSPB Approval By: Emil N. Sebek

	Supplemental FY 2014-15
x	**Change Request FY 2015-16**
	Base Reduction FY 2015-16
	Budget Amendment FY 2015-16

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$6,246,139**	**$0**	**$5,427,909**	**$65,000**	**$65,000**
	FTE	27.0	0.0	27.0	0.0	0.0
	GF	$428,866	$0	$554,347	$65,000	$65,000
	CF	$0	$0	$0	$0	$0
	RF	$5,817,273	$0	$4,873,562	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16	FY 2016-17 Continuation
05. Office of Information Technology - Applications Administration	**Total**	**$6,246,139**	**$0**	**$5,427,909**	**$65,000**	**$65,000**
	FTE	27.0	0.0	27.0	0.0	0.0
	GF	$428,866	$0	$554,347	$65,000	$65,000
	RF	$5,817,273	$0	$4,873,562	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for an ongoing appropriation of $65,000 General Fund in FY 2015-16 for the Office of Information Technology to fund the Colorado Information Marketplace website subscription.

Current Program

- The Colorado Information Marketplace (CIM) is a framework for sharing data sharing across the state. It encompasses data and information governance, the publishing of the information, and the identity resolution of the information across any contributing entity. It is a portal for public consumption of state data sets. It is provided via a website, data.colorado.gov. This website provides a wealth of state data to the general public. It promotes government transparency and supports the Governor's Blueprint by enabling businesses to leverage state data for better decision making.
- Go Code Colorado, an initiative of the Colorado's Secretary of State's Business Intelligence Center, depends on the application programming interfaces (APIs) provided through the website to allow applications to link with the data sets on the website. This functionality enables Go Code Colorado to conduct Apps Challenges with the goal of solving business problems and growing the Colorado economy. The kick-off event for the next challenge is scheduled for April 8, 2015.
- CIM is a "software as a service" (SaaS) platform. SaaS is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. It is sometimes referred to as "on-demand software."

Problem or Opportunity

- CIM does not have a consistent source of funding. It was first operational in November 2011. It was created and has been supported from various sources over the past three years, including Department Federal Grants and portions of other OIT Services operating budgets. This funding is not consistent or dependable. There is currently no funding identified or available for FY 2015-16 and the current website subscription will expire June 30, 2015.

Consequences of Problem

- Not funding the CIM subscription fees will cause the website to go down. Citizens and businesses will no longer be able to access public state datasets from one location. All applications that have been built using the interfaces available through CIM, both independently and through the Go Code Colorado "Apps Challenge" initiative, will stop functioning.

Proposed Solution

- Appropriate $65,000 General Fund in FY 2015-16 and ongoing for subscription fees for the data.colorado.gov website. This funding will support the continued operation of the website.

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Department Priority: R-7
Request Detail: Colorado Information Marketplace

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Colorado Information Marketplace	$ 65,000	$ 65,000

Customer Impact:

This request will fund the subscription service that supports the Colorado Information Marketplace (CIM) website, data.colorado.gov. This will not have a significant impact on State Departments. It will primarily impact the citizens and businesses of Colorado by continuing to provide a central location for access to public state data and continued support to the many applications that utilize the application programming interfaces (APIs) available through the website.

Problem or Opportunity:

OIT currently maintains CIM which is an open data platform offering citizens a central location to access and use public information. This site exists for the purpose of data sharing and transparency of public data with the general public. It provides a wealth of information on topics spanning all of state government. Rather than going through a formal process to request information (i.e. CORA requests), citizens can review, compare, visualize, and analyze data – and share their discoveries – in real time. CIM has made it easier for citizens to get the information they need.

In addition to general use by the public, CIM is a critical component supporting Go Code Colorado, an initiative of the Colorado's Secretary of State's Business Intelligence Center in cooperation with the Statewide Internet Portal Authority, OIT, and the Governor's Office of Economic Development and International Trade. Go Code Colorado is an applications (apps) challenge designed to make public data more accessible and user-friendly. Many award winning apps have been created as a result of this initiative. CIM provides the application programming interfaces (API) required for these applications to run. If this funding request is not approved, the website will no longer support those applications and they will no longer function.

Last year's Go Code Colorado brought together Colorado's entrepreneurs, business leaders, developers and teams for the first annual Go Code Colorado civic apps challenge. The first, second and third place winners were awarded a $25,000, $15,000 and $10,000 contract with the State of Colorado respectively. The data to support these winning apps is a combination of state data from the Secretary of State, Labor and Employment, Department of Local Affairs mashed up with other public data available on the Internet to create rich applications. The competition uses the public data available through CIM to build business tools and grow commerce. The applications created are aimed at helping Colorado companies thrive.

The following chart shows the website analytics for CIM for Fiscal Year 2013-14.

Website Analytics		
Activity	**FY 2012-13 Count**	**FY 2013-14 Count**
Charts Created	7	78
Comments	5	15
Unique Datasets Added	189	308
Filters Created	14	118
Geocoding Requests	943	1,478,904
Maps Created	18	190
Page Views	145,425	311,823

Currently, there is no consistent funding source for the continued support of this website. The website was created in May 2012 by funding from the Department of Education Statewide Longitudinal Data System grant and OIT Broadband Grant. Since that time OIT has worked to obtain funding from the Secretary of State Business Intelligence Center and the OIT broadband grant. These are not reliable funding sources. The grant monies are one-time funding and it is unlikely the state will continue to receive these funds. Dedicated funding is needed continue support of the existing site.

Proposed Solution:

This request seeks $65,000 General Fund ongoing to renew subscription fees to continue support for CIM, the data.colorado.gov website. The CIM is a Software as a Service (SaaS) platform which is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted by an external vendor. It is sometimes referred to as "on-demand software". Users can access SaaS using a computer program via a web browser. The current CIM subscriptions are a vendor set price of $65,000. The services included in the subscriptions are:

- Data Repository
- Visualization Tools and Charts
- Data Sharing
- Geocoding Maps
- API's to Support Mobile Applications
- Form Creation
- Links to External Data Sets
- Web Embedding

Without this funding, the current subscription will expire on June 30, 2015 at which point the website will go down as no additional funding sources have been identified. This will impact all applications that have been created that utilize the APIs provided through the website. This includes all applications resulting from the Go Code Colorado initiative. In addition, future app challenge events planned by Go Code Colorado will no longer be possible. The termination of CIM will be a step backwards for government transparency. The public will no longer be able to access the 471 public datasets that are currently on the website (308 were added in the last fiscal year), not to mention the additional sets that are planned for the future.

Anticipated Outcomes:

- For the CIM website, success from the continued operation of the website will consist of increases in counts across all website analytics activities.
- Public awareness of the website and the availability of data will grow and users will increasingly download datasets from the website.
- More users will utilize the APIs available through the website to create inventive, practical applications that help solve business problems and grow Colorado's economy.
- The mission of Go Code Colorado will be supported by continued operation of the CIM.

Assumptions and Calculations:

The CIM cost estimate of $65,000 is based on the price set by the vendor for the subscription service that supports the data.colorado.gov website.

Rationale for General Fund

OIT is an internal service organization and most funds originate via charges assessed to state Departments, however this request is for a service that does not benefit Departments, but serves the general public through data transparency and availability. OIT provides services to Departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to Departments. OIT is prohibited by the federal Division of Cost Allocation (DCA) from using one service to subsidize another. The cost cannot be charged to Departments using the service since there are no Departments currently using the service.

Schedule 13

Funding Request for the FY 2015-16 Budget Cycle

Department of Governor's Office

PB Request Number R-16

Request Titles

R-08 (OIT) Data Governance and Analytics Planning

Dept. Approval By: David B. Zang

OSPB Approval By: Emil M. Kolb

___	**Supplemental FY 2014-15**
x	**Change Request FY 2015-16**
___	**Base Reduction FY 2015-16**
___	**Budget Amendment FY 2015-16**

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
Total of All Line Items	**Total**	**$6,246,139**	**$0**	**$5,427,909**	**$226,800**	**$0**
	FTE	27.0	0.0	27.0	0.0	0.0
	GF	$428,866	$0	$554,347	$226,800	$0
	CF	$0	$0	$0	$0	$0
	RF	$5,817,273	$0	$4,873,562	$0	$0
	FF	$0	$0	$0	$0	$0

Line Item Information	Fund	FY 2014-15 Appropriation	FY 2014-15 Request	FY 2015-16 Base Request	FY 2015-16 FY 2015-16	FY 2016-17 Continuation
05. Office of Information Technology - Applications Administration	**Total**	**$6,246,139**	**$0**	**$5,427,909**	**$226,800**	**$0**
	FTE	27.0	0.0	27.0	0.0	0.0
	GF	$428,866	$0	$554,347	$226,800	$0
	RF	$5,817,273	$0	$4,873,562	$0	$0

Letternote Text Revision Required? Yes ___ No x

If Yes, describe the Letternote Text Revision:

Cash or Federal Fund Name and CORE Fund Number:

Reappropriated Funds Source, by Department and Line Item Name:

Approval by OIT? Yes x No ___ Not Required: ___

Schedule 13s from Affected Departments:

Other Information:

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Cost and FTE

- This request is for a one-time appropriation of $226,800 General Fund in FY 2015-16 for the Office of Information Technology to hire a private vendor to help facilitate and create a data governance model and interoperability plan and also create a detailed project plan for central statewide data sharing and analytics.

Current Program

- There is no current program. The State of Colorado does not have a data governance model or standard gating process for data analytics projects.
- Leveraging Department funding from a few current projects, OIT has begun to build out a new technology called a data repository. This technology is flexible and the data connections can be easily reconfigured. Implementation is severely limited due to funding and only a small number of agencies currently utilize this technology for specific projects only.

Problem or Opportunity

- The State of Colorado does not have a secure, centralized location for data set merging and analytics statewide. Each new project and new legislative reporting mandate requires Departments to invest in the creation of independent databases and data sharing infrastructure. These independent data exchanges are costly to construct and maintain. They are also difficult to decommission or repurpose. The resulting infrastructure build out can be used for only that specific project.
- The opportunity is to fully research and determine the feasibility of implementing a robust, statewide data governance model to ensure data security and the proper use of data sets according to state and federal requirements.
- The opportunity is to complete a thorough study of the state's data analytics needs and design a detailed plan build one-time infrastructure to possibly create a new service offering for statewide data analytics: the State Data Repository.

Consequences of Problem

- Not funding the research and groundwork necessary to determine the optimal strategies for an enterprise data governance and interoperability solution means the state will continue to invest in the build out of independent, data sharing platforms for each Department project that needs to perform analysis across data sets. This increases the state database infrastructure leading to increasing support and refresh costs and redundant hardware and storage.

Proposed Solution

- $226,800 General Fund in FY 2015-16 to hire contractors to research and determine the feasibility of a statewide data governance model, including the optimal funding model and location within state government. Any recommendations for implementation will include detailed outlines of gating processes, infrastructure and interoperability implementation plans, and improved integration in business processes and workflows for Departments.

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Department Priority: R-8
Request Detail: Data Governance and Analytics Planning

Summary of Incremental Funding Change for FY 2015-16	Total Funds	General Fund
Data Governance and Analytics Planning	$ 226,800	$ 226,800

Customer Impact:

Today, there is no service offering for projects requiring data analysis. The current process is to create an independent data sharing infrastructure with costly and cumbersome interfaces that require significant initial investment and ongoing maintenance. Once the analysis is complete those investments are lost when the infrastructure is no longer needed. This request will fund a study to recommend whether a service that provides a central repository for analysis across departments is feasible, and if so what it would entail, what the optimal configuration would be, and where it would fit best structurally within the state. The customer can anticipate a detailed, thoughtful analysis that will inform a possible future service offering for analytics needs.

Problem or Opportunity:

There are many projects and legislative mandates, both state and federal, which necessitate sharing data. The state currently handles these projects by creating separately deployed data sharing solutions. These projects involve high price tags and many staff hours and the resulting IT infrastructure can only be used for that specific project. It cannot be leveraged for any other analysis. As an example:

- Colorado Amendment 64 included a requirement to study marijuana implementation. C.R.S. 24-33.5-516. "Study marijuana implementation. (1) The Division shall gather data and undertake or contract for a scientific study of law enforcement's activity and costs related to the implementation of section 16 of Article XVIII of the State Constitution over the two-year period beginning January 1, 2006, and over the two-year period beginning January 1, 2014." This study was conducted by the Department of Public Safety and may have benefited from the existence of a central state data repository.

This process has grown out of old data sharing methods. Historically, this was the only way to complete these projects. This is no longer true. Information Repositories are a new technology that mitigate the problems arising from data proliferation and eliminate the need for separately deployed data storage solutions.

OIT has already begun implementing this technology when able. The creation of the State Data Repository (SDR) started by leveraging a federal grant from the Department of Education: the Statewide Longitudinal Data System (SLDS) Grant. The grant requirements included building an infrastructure to link data from the Department of Education, Department of Human Services, Department of Higher Education,

Department of Corrections, Department of Labor, and Department of Public Safety. The SDR was piloted using the SLDS requirements to prove the technology was sound. It is currently implemented to share information between C4-HEALTH and HCPF Medicaid expansion and to create eligibility dashboards. The build out has continued for two additional projects:

- CDHS received a $1.0 million interoperability planning Federal grant to create an interoperable human services system that provides high-quality, cost-effective and efficient services using data-driven, decision making strategies to improve the lives of all children, youth and families in the State of Colorado. The proposed project will tie together data from the seven Divisions within the Colorado Department of Human Services. Although this project provides much needed data sharing and enables in depth analysis and oversight that was never before possible, it is limited only to within CDHS.
- The Department of Health Care Policy and Financing has a Federal Mandate to provide data and analysis related to Medicaid. With the implementation of the Affordable Care Act, States are required to report statistics on the Medicaid expansion and application processing progress to the Centers for Medicare and Medicaid Services. This data is housed in different Divisions within the Department so the necessary reporting required a new data sharing platform. HCPF chose to partner with the Data Service Division of OIT to accomplish the requirements of the mandate.

However, the implementation has been severely limited based on the funding restrictions imposed by the grant monies being used for those projects. As a result, the SDR currently exists in its infancy and only HCPF and CDPHE are able to access it. Departments could benefit from the ability to use the SDR if it were already configured, built out, and readily available and if there was a data governance model in place to ensure security, privacy, and legality requirements are met and to streamline access and implementation for projects. However, that structure is not in place.

CDHS has submitted a FY 2015-16 capital funding request to integrate the data systems to build out their connection to the data platform, as it currently exists. OIT has been an active participant in the planning of the CDHS Interoperability project and will continue to be involved through implementation. This funding request exists apart from the CDHS capital request in that it addresses data interoperability for the state as a whole in addition to planning for a state wide governance model. The CDHS request addresses only the interoperability for the seven divisions within CDHS.

Proposed Solution:

This request seeks to contract with a third party vendor to research the feasibility of implementing a State Data Repository. The project will include consideration of the funding model and location of the service. It will make recommendations on the possible creation of a complete data governance model and interoperability plan. If recommended, the resulting report would enable the implementation of the State Data Repository as a service offering that will be available for use by all Departments.

OIT surveyed Departments on interest in participating in a State Data Repository and currently two Departments have stated they would opt-in. Other Departments have stated they do not have enough information to determine whether they would give permission for their data to be used or whether they would utilize the new service.

The following components will be addressed in the governance model and interoperability plan:

- Research the optimal statewide strategy and structure for data governance and analysis.

    - Determine feasibility of a central data repository.
    - Determine appropriate funding model for the new service.
    - Determine appropriate location of the service within the state structure.
- Recommendation for establishing a data governance model and cross departmental coordination. This model would:
    - Oversee the implementation of the recommendations for data collection.
    - Provide oversight into the development of data reports and analytics which are statutorily required.
    - Provide leadership and input into predictive and higher value data management activities and initiatives.
    - Ensure agency resources are available to support data reporting expectations.
    - Establish reporting frequency.
- Recommendation for establishing an improved interoperability and integration in business process and workflows to support Colorado State Agencies using the data they collect.
- Investigation of the issues of privacy, legality, sensitivity of data, HIPPA compliance, and any other governance-related concerns.
- Investigation of the optimal model for providing the service, including identification of the appropriate state service provider and where the solution will be housed.

Anticipated Deliverables will include:

Project Plan

- Definition of scope – defines which integrated, multi-disciplined information analysis will be analyzed and who the appropriate subject matter experts (SMEs) are for each.
- Identification of project stakeholders – defines who has influence or vested interest in the project.
- Communications plan – how and when communications will be sent to project stakeholder.
- Project management and control – defines how the project will be managed, including identification and management of project risks; deliverable review and approval, process for updating the project schedule, etc.
- Project schedule – task-based plan for completing all the work of the project.

Final Recommendations Report

The Final Recommendations Report will be a compilation of all findings. It will provide an analysis of existing interoperability and analytics in addition to requirements and recommendations for new interfaces. This report will include the following*:*

- Include a thorough review of existing architectures, as well as a definition of the future interoperability and data architectures.
- Analyze Current and Future State Business Process
- Analyze Current and Future State Interoperability Architecture
- Analyze Current and Future State Data Sharing Architecture
- Analyze Current and Future State Interagency Reporting and Analysis
- Other recommendations, as appropriate

Anticipated Outcomes:

- Approval of this funding request will inform the future implementation of state analytics.
- Success can be measured by the completion of a comprehensive, detailed data governance model and interoperability plan. When complete, success will mean:

- Deployment of an efficient, secure gating and governance process that protects state data and complies with all state and federal statutes while optimizing the customer experience to provide an agile analytics service.
- Department utilization of the service to easily extract and analyze data across multiple, networked data storage technologies running on diverse operating systems.
- Cost avoidance for Departments choosing to utilize the service in lieu of creating another separately deployed data storage solution.

Assumptions and Calculations:

This request seeks $226,800 General Fund to create a comprehensive plan and governance model for fully implementing a State Data Repository as a new service offering. The cost estimate was derived by determining the project activities and estimating the hours required to complete each activity and applying an hourly rate of $105. The hours and the rate were estimated by referencing documented quotes from similar projects. The chart on the following page illustrates the project activities and milestones that will be required by the project.

Rationale for General Fund

OIT is an internal service organization and most funds originate via charges assessed to state Departments, however this request is for start-up funding for a new service that does not currently exist. OIT provides services to Departments on a cost recovery basis, meaning that the cost pool for each service is built into the rate structure charged to Departments. OIT is prohibited by the federal Division of Cost Allocation (DCA) from using one service to subsidize another. The cost cannot be charged to Departments using the service since there are no Departments currently using the service.

Implementing the State Data Repository and Analytics service will benefit all state Departments that choose to utilize the service. However, at this time it is not known which Departments will be utilizing the service and how much of it they will use. Therefore, it cannot be equitably charged out the Departments using any reasonable measurement.

A metric will be developed to accurately measure the amount of the service that a Department is consuming when the new service is up and running at the completion of Phase II. At that point, Department utilization will be charged back in the same manner as other services that Departments consume.

Project Estimates: Hours and Total Cost		
Activity		**Hours**
Milestone: Anticipated Start Date		
Prepare for SME Interviews		
	Provide all available documentation on existing interfaces	16
	Review documentation	80
	Provide SME interview questions for review and approval by State staff	16
	Provide SME contact information	16
	Schedule SME interviews	48
Deliverable 1: Formulation of Detailed Project Plan		
	Submit plan	16
	Revise plan based on availability of SMEs	16
Conduct SME Interviews		
	Conduct SME sessions for existing interfaces	528
	Conduct SME sessions for new interfaces (may be combined with above)	192
	Conduct SME sessions for governance model	352
Deliverable 2: Final Report - Interoperability & Interface Findings		
	Provide draft report	16
	Review report and provide feedback	192
	Incorporate State feedback	384
	Submit final report	16
Deliverable 3: Final Report - Governance Model		16
	Provide draft report	192
	Review report and provide feedback	48
	Incorporate State feedback	16
	Submit final report	
TOTAL		2,160
COST ESTIMATE: 2,160 hours at $105 per hour		$ 226,800