

**OIT**

**Governor's  
Office of Information  
Technology**



**State of Colorado  
Information Technology  
Enterprise Architecture, Governance, and  
Consolidation  
Business Community Partnership**





### ***Introduction***

The State of Colorado is embarking on an Information Technology management consolidation effort which will realign Information Technology management within the State of Colorado from a series of functions managed in a distributed manner to an enterprise function managed from a centralized perspective. The transition to the consolidated structure requires extensive planning using information about existing Information Technology resources, service requirements, and processes.

The State of Colorado has identified a series of pre-consolidation activities that it will undertake in order to not only determine the magnitude of the consolidation, but also to develop the consolidation plan within the context of the already developed consolidation framework. The framework calls for Phase I (the pre-consolidation phase) where information about State of Colorado information technology resources, service requirements, and processes are collected and analyzed. Phase II of the consolidation is targeted largely at infrastructure consolidation and will rely heavily on having a detailed understanding of State of Colorado Information Technology resources.

As a part of these organizational readiness activities, the State of Colorado is seeking industry experts willing to assist the State of Colorado in collecting and analyzing the data required to make strategic consolidation decisions and to develop the Phase II consolidation plan and associated organizational support. The initial activities focus largely around assessing Information Technology resources (personnel, hardware, software, networks, and services) as well as reviewing and selecting processes (contracting and funding) used inside of the State of Colorado.

### ***Resource Requirements***

On the following page is a visual of the various work activities and how they correlate with each other for Phase 1. The pages following the chart are the initial set of initiatives and the high level experience and tools that would be valuable for some of the initial activities. At this time, only the initial sets of activities are included. With each of these activities there will also be State of Colorado resources that will be used to support the efforts.

The State of Colorado is kindly requesting the business community to partner with the State of Colorado in achieving its objectives and completing the pre-consolidation activities. None of these engagements are extremely long, nor do they require a full time commitment. We have projected that some activities will take only a few weeks where others will have a duration of several months. During initial planning meetings, a plan will be developed that will encompass a projection of the total anticipated time. The State of Colorado wishes to leverage the expertise of its partners in collecting and analyzing this information.

The initial plan would be to engage the industry experts in the initial planning session for each of the activities where scope, approach, financial requirements, schedule, and resources would be refined. Once each of these has been refined, the resources would be secured and the activity would be initiated. If financial resources are required to complete the activity, funds to support the activity will be sought before the activity is initiated. Once initiated, the industry expert would have two primary responsibilities.

- 1.) Oversee activity execution, consulting with State of Colorado resources to address issues that may arise during the execution of the activities and managing the activity as if a normal project.
- 2.) Coordinate with State of Colorado identified resources (e.g. consolidation facilitators) to ensure that the nature of the information collected and analyzed is of sufficient accuracy and coverage to ensure that decisions can be made based on the information

It is anticipated that an individual would only need to allocate 1-3 days per week for the duration of the activity although there is the potential that this allocation will vary slightly (a little more than 1-3 days some

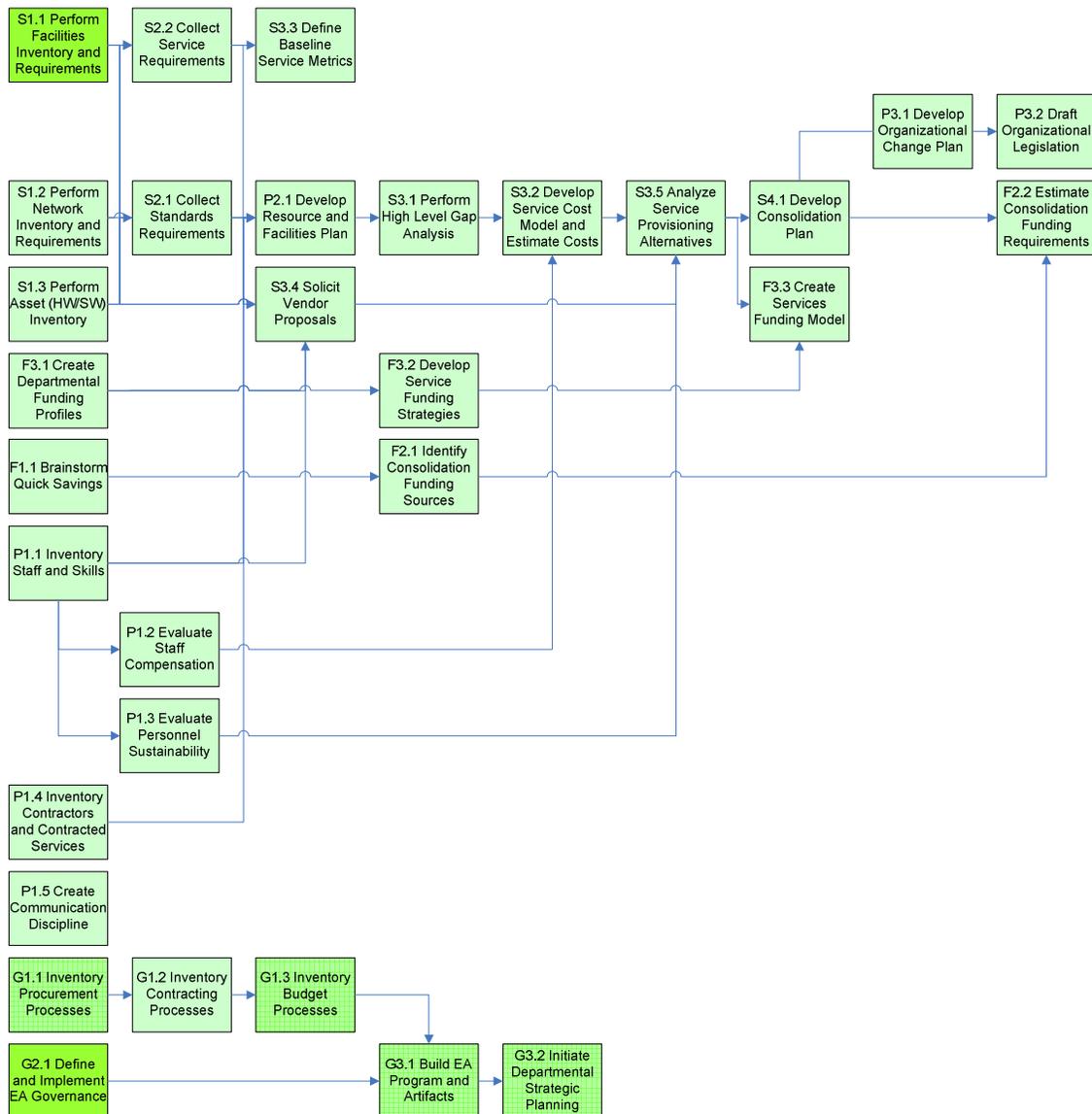


## State of Colorado Pre-Consolidation Activities Overview

weeks, a little less on others). For each of the activities, it would be valuable if each of the industry experts had some level of project management experience. Once industry experts have been identified, the engagement schedule will be defined.

There are a number of activities that will be undertaken after these initial data collection activities are completed. A map defining general relationships of these activities has been provided below. The activities below and their planned order of execution are subject to change as certain activities are completed, information is discovered, and new developments occur within the political landscape.

If your organization is able as this time to provide resources or have questions, please contact Ron Huston, the State of Colorado Enterprise Architect at [ron.huston@state.co.us](mailto:ron.huston@state.co.us) or 303.866.4431.





S1.2 – Perform Network Inventory and Requirements

Description	Inventory all wide area network links (inclusive of radio links, internal providers of WAN services and external providers of WAN services) used throughout the State of Colorado. Collect lease terms (service levels, lease dates, costs, and termination fees), bandwidth, cyclical traffic patterns, origination and destination, usage, type of link, network nodes connected to link, traffic carried. Store this information in a repository and establish a process to collect any newly established network links. Also, collect any planned departmental network requirements including bandwidth, destination and origin, reliability, QoS, security, and type of service. Included within this activity is collection of facilities (network closets) used by the individual departments throughout the State of Colorado using network links and the level of security on those facilities. In general, network requirements and network inventories are not expected to vary greatly.
Potential Approach	Inquire of DoIT of any network inventory that DPA has and then send this out to the departmental CIOs as an information request asking them to validate and augment the existing data, storing it in a common repository Experienced in WAN network design and analysis and WAN provisioning carrying of multiple protocols. Ability to collect network requirements from stakeholders. Knowledge of different types of network topologies and network services. Access to a tool that can measure bandwidth usage and protocols traversing the links would be of value. Ability to develop physical and logical drawings of networks. Ability to work with GIS staff to develop a statewide GIS layer covering network services and resources.



**S1.3 – Perform Asset (HW/SW) Inventory**

Description	Inventory all information technology assets (routers, storage devices, servers, desktops, laptops, IDSs, switch, printers, etc.) used throughout the State of Colorado inclusive of those that are leased. Collect lease terms (service levels, lease dates, buy out amounts monthly costs, refresh schedule, and termination fees) for hardware, hardware type, serial number, model, original cost, manufacturer, location positioned, installed software, software versions, license type (enterprise, concurrent users, named users, processor, system) date placed into service, primary purpose, depreciation schedule, 3 <sup>rd</sup> party acquisition terms (if any), maintenance costs, utilization (if any), and types and % of funds the asset was acquired with. Store this information in a repository and establish a process to collect any newly procured assets. As possible, the capacity and utilization of these assets will be collected as well. Also this activity will collect any projected increases in capacity required for either hardware or software over the next 24 months.
Potential Approach	Discuss the possibility of using automated tools to capture base asset information attached to networks throughout the State of Colorado. Once collected send this base list of assets to departmental CIOs as a request for information having them augment the information and then storing it in a repository. If a tool can not be found, an asset spreadsheet will be developed which the departmental CIO's will be requested to fill out. Utilize a formal asset management product with supportive reporting mechanisms as available to store asset information once fully collected.
Attributes of Industry Expert	Experienced in methods of identifying asset bases through various automated methods or tools, ideally with access to tools supporting creation of an asset list, by department with as many of the attributes above which can be stored in a format (e.g. Access or Excel) which can be further augmented with additional financial and contractual attributes.



### F3.1 – Create Departmental Funding Profiles

Description	Develop a funding profile for each department showing what type of funds (e.g. “color of money”) are generally used in the department for acquisition of information technology equipment and personnel and who has control of the funds and through whom they are approved. This activity will also address unusual funding strategies used by departments (e.g. using funds from multiple sources to fund a position or acquisition of an asset). It will seek to define the various line items that compose the funding for information technology within the department (although this changes). This activity will define the various types of funds that are used throughout the State of Colorado, how those funds are requested, approved, acquired, accounted for, and reported on. In addition, this activity will capture constraints on funds provided from sources and how and when savings in funds are returned to the sources of the funding. This activity will address the disposition of funds in the event that the expected expenditures are not made. This activity will also address how assets and services which are currently acquired through program funds will be handled in the future (if differently). Also this activity will work through how to address unfunded mandates (pink/blue sheets) and grant processing to ensure that OIT has some input to the impacts and fiscal notes required to support the mandates or grants. This activity will also capture prior year IT budgets, current year IT budgets both broken down into relevant categories, FTE load (program and IT)
Potential Approach	Develop a formal information request around departmental funds used (the types, amounts in the previous fiscal year, restrictions, line items, process for acquisition, and approvals). Also map out the process how grants are addressed and how pink/blue sheets are developed so that processes can be developed around the fiscal components of these instruments.
Attributes of Industry Expert	Experienced in State Government department funding models (preferably with experience in project and operational federal funding, grant funding, block, general, and cash funding), budgeting, and accounting, with a detail orientation. Knowledge of legislative processes (or ability to research State of Colorado processes). Ability to segregate IT purchases versus other departmental purchases on behalf of the programs and services.



**P1.1 – Inventory Staff and Skills**

Description	Inventory all Information Technology staff positions within all State of Colorado departments including open staff positions, reporting structure, roles and responsibilities, pay, classification, benefits, direct personnel expenses, potential retirement dates, and skills. This activity includes all IT positions that may be resident in program and other departmental areas and how those individuals are allocated (potentially with split responsibilities). This activity will identify any individuals supporting information technology which are on the payroll of the program areas. This activity will identify any key individuals that need to be retained throughout consolidation. It will identify any specific training that various positions require in order to execute their responsibilities (e.g. fixing computers in a maximum security facility) or certifications or personnel checks required. Furthermore, this activity will address how much training a given individual receives per year. Scope includes all Executive level departments, the Secretary of State, Judicial, and Legislative Information Technology staffs.
Potential Approach	Utilizing a tool from CDLE, provide the capability for each Information Technology person in the state to enter information about their skills. Once this is done, the basic skills information will be augmented by departmental CIO's forming the basis of the employee skills and personnel inventory.
Attributes of Industry Expert	Experienced in workforce management; ability to assimilate output from tool used by rank and file SoC employees, and validating input provided by employees through existing departmental management. Ability to categorize, as closely as possible various positions into industry standard positions.



**P1.2 – Evaluate Staff Compensation**

Description	Develop a high level, but accurate comparison of staff compensation for State of Colorado employees and comparing that compensation to prevailing market conditions. This activity will require comparing various State of Colorado positions against more industry standard position descriptions. The goal of this activity is to compare State of Colorado total compensation versus total market compensation. This must be conducted at both the base salary and total compensation levels.
Potential Approach	Once the basic information about skills and compensation has been collected and positions have been loosely associated with industry standard positions, this information will be weighed against market compensation structures commensurate with positions requiring similar skills and capabilities. Assumptions may need to be made versus various types of provided and optional compensation offered in the private and public sectors.
Attributes of Industry Expert	Experienced in human resources, compensation management, ideally with someone having access to wide range of IT job descriptions and compensation models with both vertical and geographic dimensions. Experience in mapping existing responsibilities into various industry standard positions, evaluating job grades and positions across State of Colorado departments.



**P1.3 – Evaluate Personnel Sustainability**

Description	Evaluate whether the State of Colorado will be able to maintain an effective workforce in all types of economic conditions given the current compensation structures, and workforce management structures. This activity will attempt to develop a total experience metric covering the state workforce to assess whether there is a net drain on experience within the state. Furthermore, this activity will evaluate the impact of the loss of experienced workers on a consolidated IT structure. In addition, evaluation of the current legislative support, SES (Senior Executive Service) system, the classified system, and funding support for such services need to be considered during this activity.
Potential Approach	Using the staff and skills inventory and the staff compensation analysis, another analysis will be performed to determine between the potential for retirement and market conditions, whether the State of Colorado is prepared to invest in and sustain the workforce necessary to support a consolidated Information Technology organization.
Attributes of Industry Expert	Experienced in human resources and the ability to evaluate staff sustainability given economic factors, compensation comparisons (market vs. State of Colorado), workforce evolution, etc. Ability to assess whether the State of Colorado will be able to acquire and retain the level of personnel required supporting consolidation Information Technology operations and what changes might be introduced to improve the State of Colorado's chances of acquiring and maintaining an effective workforce.



**P1.4 – Inventory Contractors and Contracted Services**

Description	Inventory all contractor positions within all State of Colorado departments including open contractor positions, their roles and responsibilities, department worked for, project(s) or work activities assigned to, skills, compensation model, term of their engagement, termination terms, and their compensation model. Included in this activity is collection of all existing managed service contracts with vendors, services provided, duration of the contract, termination terms, and the method and locations through which the contract services are sourced. Finally, capture any contractual provisions or restrictions on transferring these to a different provider.
Potential Approach	Utilizing a simple spreadsheet, request Departmental CIO's enter relevant information regarding contractors employed within the state. Develop a separate Excel spreadsheet to capture all existing services contracted for inclusive of the relevant information. Issue an information request to Departmental CIO's to provide this information. Store all information in a repository.
Attributes of Industry Expert	Experienced in inventorying various contracted resources and service management functions utilized by State of Colorado departments. Ability to categorize the services into generic service categories (e.g. development, etc.).



**P1.5 – Create Communications Discipline**

Description	Create the communications disciplines, consistent with the communications plan supportive of undertaking many of the changes and initial consolidation planning activities throughout the enterprise. This activity has multiple independent efforts for completion and thus requires different skills for each of the activities. One activity establishes the Statewide Communication Director, Public Information Officer (PIO), and Legislative Liaison and then charters them with specific activities related to communicating with the enterprise. This activity includes interviewing and identifying resources and defining core activities that these positions will undertake. There will be an activity to define the provisioning strategy for each of the various communications mechanisms and initiate as funds and resources allow, the various communications mechanisms. For example, developing the web presence for communicating the projects progress, gathering employee questions and posting the question with a response, etc. Another activity is identification of how the consolidation web portal will be developed, branding strategy and development of the brand, development of core messages, values, objectives, and mission, and scheduling of resources to support core communications activities. Furthermore, creation of the various templates for State of Colorado policies, procedures, and standards will be developed as well.
Potential Approach	Seek funding for the positions. Develop formal job descriptions for the three positions and post the positions, interview for the positions and then select appropriate candidates, establishing their charter. Define the sourcing strategy for the various types of communications mechanisms for the initial work and long term responsibility. Initiate the various work streams associated with each of the communications mechanisms. Work will proceed on aspects of this activity even without dedicated State of Colorado resources.
Attributes of Industry Expert	Experience in developing various communications disciplines and various mechanisms used to disseminate information according to the communications plan. Experience in developing a “brand” supportive of enterprise wide activities. Experience in developing communications policies and procedures with structured approvals processes. Experience in developing repositories to locate information from a web portal (e.g. metadata management) and developing branded templates. Experience in developing provisioning strategies for each of the communications mechanisms and defining roles and responsibilities of key communicators.



### G1.2 – Inventory Contracting Processes

Description	Inventory contracting processes used in State of Colorado departments. This activity covers contracting for all types of services as well as for hardware and software which is acquired through contractual methods. Furthermore, this activity will capture specific metrics on contracting as possible such as the time required, number of contracts issued, how contracts are managed, workflow associated with contract development, issuance, analysis, and awarding, etc.
Potential Approach	Develop a formal request for information regarding contracting processes within the departments and within the State of Colorado purchasing office distributing it to departmental contracting personnel. Once information has been received consolidate the information and then hold a meeting to present the results to ensure they are vetted. Take the collected contracting information and store it in a normalized manner in a repository.
Attributes of Industry Expert	Experience in contracting from the legal side and the process side. Experience in mapping specific trans-departmental processes and collecting metrics on contracting. Will need to be able to review and collect information related to contracting regulations and policies. Experience in identifying and classifying services and software contracted for as well as identifying organizational responsibilities involved in contracting.



S2.2 – Collect Service Requirements

Description	<p>Create a service catalog with services and then collect departmental service requirements and service levels required for those services (as is) and any additional services or improved service delivery required. Included within these requirements and levels operational services, installation services, administrative services, management services, and support services related to both computer room equipment and desktop equipment. This activity also includes an inventory of all services provided by State of Colorado departments and their geographic distribution across the State of Colorado. Specifics of the services to be collected include all the service requirements and attributes – service description, hours required, response times required from service, availability of service, location where service is required, etc. In addition, fixed service requirements will be identified well along with their attributes. Also to be collected, although not initially used is the requirements for development services, asset management services and similar types of services. Such projections will come from both departmental and enterprise projects as well as projections of staff changes. This activity will attempt to collect existing service baselines if they exist. This activity will validate network requirements and design with the geographic services map. Finally any growth projections for services will be captured as well.</p>
Potential Approach	<p>Start by building a service catalog (which DoIT has initiated). Once completed, the service catalog would be distributed to the departmental CIO's in an information request. The service catalog would cover such items as the type of service, the frequency of the service, the location the service is provided in, specific requirements of the service, the response time required for the service, the current provider of the service, and the duration of the service. The catalog could be augmented by departmental CIO's as necessary to include services they provide which are not listed. Once received, this will form the basis of the service requirements and will be stored in the repository.</p>
Attributes of Industry Expert	<p>Experience with developing service requirements and service catalogs including geographical dimensions and customer facing services. Experience as a service provider providing managed services to an organization responsible for service provisioning and service level monitoring is a plus. Experience in developing service levels ensuring that collected service requirements are specific, measurable, and reasonable to be used in creating required skills and staffing profiles for a consolidated organization. Experience in negotiating service requirements ensuring they are realistic. Experience in estimating levels of effort for services defined. The goal of this activity is to define both the breadth and depth of services required to support State of Colorado departments using a consolidated organization. As such, services will have to be distilled to a level where skills and work efforts can be determined to forecast the shape of the consolidated service organization.</p>



### ***Activities Not Requiring Industry Experts***

The following initiatives do not require industry experts either because they have already been undertaken to some degree or because the work involves primarily State of Colorado personnel

S1.1 – Perform Facilities Inventory and Requirements (partially completed)

S2.1 – Collect Standards Requirements

F1.1 – Brainstorm Quick Savings

G1.1 – Inventory Procurement Processes (already completed)

G2.1 – Define and Implement EA Governance

### ***Other Resource Requirements***

In addition to the resources required for the various activities, resources will be required for two (2) specific disciplines that must be staffed. These two disciplines are the Enterprise Architecture discipline (which should form the basis of the resources that will be used to implement the EA governance as well as processes, architectures, etc.) and the Communications discipline which should be resident with the Governor's Office of Information Technology.

### ***Approach to Engage***

At the same time that the industry experts are being engaged, a working session with the State of Colorado CIO's will be held. The purpose of the working session is two fold. First, the activities that are planned to be initiated shortly would be reviewed and any feedback collected and discussion held. The feedback and discussion would cover potential approaches, scope, and required resources (in effect vetting activity plans). Once complete, the second part of the working session would be to identify resources that could participate and the level to which they could participate in the activity.

Once we have identified the two resource groups (State of Colorado and Industry Experts) a planning session will be held to formalize the approach, formally define the scope, identify any financial requirements, and set a schedule given the resource allocations. Once the planning meeting is completed and the necessary resources (human, financial) secured, the activity would be initiated according to the agreed upon schedule.