Memorandum

Date: October 30, 2006

To: Members of the Legislative Audit Committee

From: Tatum LLC

Re: Colorado Department of Labor and Employment SUPER System Project Recovery Assessment Plan

This memorandum summarizes the findings and respective recommendations resulting from our review of the Colorado Department of Labor & Employment's (CDLE's) recent initiation of a project to assess the possibilities for completing the SUPER System that was halted at the end of the 2005. The focus of our review was on the extent of the CDLE's compliance with the project management standards and guidelines required to follow for this ongoing initiative. Our findings are based on reviews of the existing policies, practices, standards and guidelines at the time of our review as well as reviews of project management documents related to this effort such as CDLE's project plan, as well as interviews with project leadership. The following sections are included in this memorandum: a) Authority, Purpose, and Scope, b) Background, and c) Findings and Recommendations, as well as Responses from CDLE.

Authority, Purpose, & Scope

The purpose of this memo is to present the first of two reports that will be issued on the performance audit of the Genesis project at the Department of Labor and Employment (Department). The performance audit was conducted pursuant to Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government. The State Auditor contracted with Tatum LLC, to conduct this audit. The audit work for this first report was performed from June 1, 2006 to August 25, 2006 and was conducted in accordance with the performance audit provisions of the *Government Auditing Standards* issued by the Comptroller General of the United States.

As described in more detail below, the Genesis project is the name given to Department's effort to redesign the State's Unemployment Insurance program. The State Unemployment Program e-Government Resource (SUPER) system is the information system that the Department undertook to develop as part of the redesign process. The Department contracted with Accenture, LLP, in Fiscal Year 2002 to develop and implement the SUPER system. The contract was mutually terminated by the contractor and the Department in December 2005 with three components of the system complete, however two major components of the system were incomplete. The Department had expended $39.2 million on the SUPER system project, including $35.6 million recorded as expended for the Accenture contract. However, Accenture subsequently refunded $8.2 million and the Department retained an unpaid holdback on the contract of $3.1 million, for

a net cost of $27.9 million out of the $44.8 million appropriation for the project. The net costs included non-developmental costs of $5.8 million for hardware and commercial software. In addition, the Department has expended approximately $6.5 million on salaries of internal staff for fiscal years 2003 through 2006 to work on the SUPER system. These salaries were not charged against the specific appropriation for the SUPER project.

This memo presents our audit of the planning process that Department has undergone for conducting an assessment of the terminated SUPER system development project. The assessment, referred to as the Project Recovery Assessment (PRA), is intended to identify how much of the development work can be salvaged and what the options and related costs will be to the State and the Department for completing the SUPER system.

The purpose of this first audit report on the Genesis project was to determine if the Department was following appropriate standards and guidelines in planning and developing the assessment of the SUPER system development work. This audit identified concerns with the Department's approach to conducting the assessment as of August 25, 2006, which, if not addressed, could result in the assessment not achieving the intended results, as well as schedule and budget overruns. As detailed below, the Department had also identified some of these concerns and is taking steps to address them. In conducting this audit we used the standards established by the Office of Information Technology (OIT) within the Governor's Office. OIT's standards incorporate the Project Management Institute's "Project Management Body of Knowledge" which represents the nationally recognized project management standards. During the audit we interviewed staff from the Department and OIT and reviewed and analyzed various documents related to the SUPER system development effort and the PRA project.

The second report on our audit of the Genesis project will evaluate the project management practices used by the Department during the original SUPER system development project contracted to Accenture.

Background

Colorado Department of Labor and Employment

The Department is the single state agency responsible for administration of the Colorado Unemployment Insurance (UI) Program. The UI Program acts as an income stabilizer for the State by providing cash benefits for unemployed individuals. Employers covered under the UI program are required to contribute to a state fund maintained within the Department through the payment of UI payroll taxes, and qualified unemployed workers receive UI benefits when they meet eligibility requirements. In fiscal year 2006 the Department collected $498.2 million of UI taxes from over 151,700 employers and disbursed $301.6 million in UI benefits to eligible individuals.

In 1999 the Department began a reengineering process to combine the unemployment benefit and unemployment tax collection functions. This overall reengineering process was called the Genesis project. The Genesis project was intended to include the creation of a new single unemployment benefit and tax computer system called the State Unemployment Program e-Government Resource (SUPER) system. Funding for the Genesis project, including the

development of the SUPER system, comes from the Employment Support Fund as defined in Section 8-77-109, C.R.S. This Fund receives 50 percent of the amount collected from the surcharge tax paid by employers under Section 8-76-102(4), C.R.S. This surcharge is based on the amount of unemployment benefits paid and not chargeable to any active employer.

The Department's stated goals for the Genesis project were to:

1. Create a customer-friendly state government and meet the public demand for a new, more responsive, and expanded service for administering the unemployment insurance program.

2. Reduce the paper-based processes and increase effectiveness through greater utilization of electronic-data management, including electronic-data interchange, imaging systems, and interactive-based services.

3. Develop an information-management infrastructure that would provide complete, accurate, and up-to-date information, thus improving the accuracy and speed of processing customer requests for information and services, with a corresponding reduction in paperwork.

4. Upgrade the call-center technology used by UI Benefits to include the UI Tax unit and establish an integrated Customer Service Center.

The Department issued a Request for Proposal to develop the SUPER system on June 26, 2001 to replace the Colorado Unemployment Benefits System (CUBS), the legacy system used to administer unemployment benefits, and the Colorado Automated Tax System (CATS), the legacy system used to collect and track employers' payroll tax payments. The Department awarded the contract to develop the SUPER system, which included the development of five components, to Accenture LLP on April 26, 2002. The original contract with Accenture was for $39.6 million; this amount increased to $40.8 million after the addition of 14 bilateral contract change orders and six contract amendments. Bilateral change orders are changes to the scope of the contract that are fully negotiated and agreed to between the State and the Contractor.

The contract with Accenture was terminated on December 20, 2005 under mutual agreement between the Department and Accenture. At the time of termination only three of the five SUPER components were completed and in operation: Wage Detail, Benefits Payment Control, and Unified Desktop. The two largest and most complex components, the Unemployment Tax and Unemployment Benefits components were still incomplete at the time of the termination. As a result, the Department has had to continue to use CUBS and CATS to administer UI benefits and UI tax collections from employers.

Following the cancellation of the SUPER system contract with Accenture in December 2005 the Department initiated the PRA project to evaluate the work that had been completed and the options for completing the SUPER system. The goals of the PRA project were to assess the condition of the SUPER implementation effort, examine options for completing the SUPER

system, determine the extent of the time and money required for completing the SUPER system, and recommend the most appropriate approach for completing the SUPER system.

In March 2006 the Department requested supplemental funding of $2.3 million from the Joint Budget Committee (JBC) for the purpose of conducting the PRA project and to fund increases in the cost of operating the UI program. The Department stated in its request that the original objectives of the SUPER system project remained viable and critical to the Department. In April 2006 the Department received initial budget approval for $500,000 for the PRA project. The Department resubmitted the original request to the JBC in June 2006 and the JBC approved the additional $1,779,860, bringing the appropriation for the PRA project up to the Department's request of about $2.3 million from cash funds from the Employment Support Fund.

Governor's Office of Information Technology (OIT)

OIT was created in 1999 by House Bill 99-137, and under the bill OIT was given the authority to set policy for information technology (IT) related functions for state agencies. OIT's mission is:

> *To increase the effectiveness of government through the use of shared information and technology. Information technology will be used to maximize the efficiency of service delivery and will operate as a seamless enterprise, delivering consistent, cost-effective, reliable, accessible and secure services that satisfy the needs of the citizens of Colorado, its business communities, and its public sector agencies.*

Senate Bill 06-063, which became effective in June 2006, expanded OIT's authority for all major automation system development projects throughout the State in two respects. First, OIT was directed to establish project management standards for these development projects based on industry-accepted "best practices," and state agencies are required to adhere to these standards. Second, state agencies are required to use qualified project management personnel approved by OIT on these development projects. Major automation system development projects are defined as meeting one of these criteria:

- Project total estimated cost is over $5 million.
- The project is a multi-year effort.
- There is a critical level of risk as determined by OIT.
- The project requires frequent or consistent coordination between or among IT project management staff and agency administrative or program staff.

Both the Department and OIT have agreed that the PRA project will be treated as a major automation system development project as defined under SB06-63 because of the project's critical level of risk. Accordingly, the PRA project is required to follow the project management policies and procedures for project management established by OIT and to use qualified project management personnel that have been approved by OIT.

OIT's *Information Technology Management Policy* (IT Policy) establishes a uniform statewide framework for agencies to use in formulating and implementing IT projects. The IT Policy includes by direct reference the industry accepted standards contained in the Project Management Institute's (PMI) "Project Management Body of Knowledge" (PMBOK), and the PMI "Guide to the Project Management Body of Knowledge," which are the industry accepted standards for project management The IT Policy defines and uses the following project management life cycle components:

- First stage: Initiation (project startup).
- Second stage: Planning (project planning).
- Third stage: Execution and Control (programming & development).
- Fourth stage: Closure (wrap-up).

As of the end of our audit work for this report, the Department was in the planning phase of the PRA project.

Findings

During the budget process, one of the requirements that the JBC imposed on the PRA project was that the Department would be required to provide an OIT-approved project status report to the JBC on a monthly basis. The August 11, 2006 OIT status report from the PRA project indicated concerns with the procurement schedules being too aggressive due to delays of two weeks in a number of procurement contracts and overruns in the schedule.

The Department reported that it recognized the need to identify the most appropriate approach as quickly as possible and thus chose a very tight time frame for this complex project. However, because of the problems experienced with delays in the procurement contracts the Department postponed the beginning of the third stage (execution and control phase) of the PRA project from the original start date of September 11, 2006 to October 2, 2006.

Our discussions with OIT staff and with the Department and review of documentation indicate that the Department has identified many of the problems discussed in this audit with the PRA project and is working to address them before beginning the execution and control phase of the project. By addressing these problems the Department can help prevent the PRA project from exceeding its budget, not being completed on time, or providing inaccurate or incomplete information for Department management to base decisions for completing the SUPER system. These problem areas are discussed below.

Compliance with OIT IT Project Management Policy Requirements

We reviewed the compliance of the Department's PRA project with IT Policy established by OIT for project management. According to the IT Policy, all IT projects undertaken by state agencies shall be carried out in accordance with agency developed methodologies and processes based upon OIT-established project management standards and guidelines. Among other things, OIT's project management methodologies require the Department to develop a "project charter." A project charter is a critical document essential to the success of a development project because it requires the state agency to perform a thorough assessment of the need for the project and the goal of the project, as well as the cost and risks of the project, among other factors. Without a well-developed charter, a project is at risk of failure due to lack of adequate planning. During our audit we found that the Department had not fully complied with the IT Policy requiring a project charter. The IT Policy requirements for the project charter and the areas where we identified concerns are described below.

Project Charter

The IT Policy requires the Department to create a project charter for the PRA project. The project charter defines the scope, goals and processes of the project and should be approved by an executive sponsor, such as the executive director, and steering committee that will oversee the project. According to IT Policy the project charter is to include the following six elements:

1. Project justification: why the project is needed.
2. Project scope: the purpose or goal of the project.
3. Cost estimates: the projected cost of the project.
4. Change management plan: the process for managing and communicating changes to the project.
5. Risk management plan: the process for identifying risks associated with the development how they will be mitigated.
6. Quality management plan: the standards that will be used in testing the system to determine if the desired outcomes are achieved.

According to Department staff, no charter was created for the PRA project. Instead the Department used in lieu of a charter the Emergency Supplemental Budget Request (budget request) initially submitted to the JBC in March of 2006. Our review found that out of the six required elements for a charter, the Department's budget request fully addressed only the first element, project justification. The budget request partially addressed two elements (scope and cost estimates) and did not address the remaining three elements (change management plan, risk management plan and quality management plan). We also reviewed the Department's project plan (plan), which contains the detailed plans and timelines for the project, and determined that although it includes project justification, project scope and cost estimate in the plan, it does not contain the required elements of the change management plan, risk management plan or quality management plan of the project charter. Each of the three incomplete or missing elements are detailed below.

Change Management Plan. According to IT Policy, a change management plan is intended to define the processes and controls over changes to the project and the method to communicate these changes. The Department has established an Internet portal web site that is used to track and communicate the progress of the PRA project, which includes the project plans and other documentation surrounding the project. However the Department has not adopted a change management plan to address how the Department will manage the changes required by the PRA project, including adjusting the staffing requirements and assessment criteria. Without a change management plan, there is a risk of inadequate controls over changes in the scope of work and the tools used to assess the work. This could result in a lack of efficiency as the project changes, or higher costs relating to unanticipated changes. The change management plan should be designed so that all approved changes can be efficiently and effectively communicated to all stakeholders in a timely manner.

Risk Management Plan. IT Policy requires the Department to create a risk management plan that includes deciding how to approach, identify and plan for risk management and perform qualitative and quantitative risk analyses for the project. These risks could include staffing problems during the holiday periods or failure to contract with a required specialist. The Department has not created a complete risk management plan that includes risk identification and qualitative/quantitative risk analysis for the PRA project. While the Department has created various risk assessments, it has not consolidated these into a unified risk management plan. The Department should have a process in place to identify and communicate risks and issues to all stakeholders in the most efficient and effective manner possible.

Quality Management Plan. IT Policy requires the Department to identify which quality standards are relevant to the PRA project and determine how to satisfy them. Quality standards should focus on the independent examination of the review process used by the Department during the assessment to assure adequate coverage in determining what is ultimately "salvageable" from the partially completed components. We found that there was no quality management plan for the PRA project. Without a clear understanding and description of the quality standards that should be followed during the review and testing process, management will be unable to interpret the results of the review/testing process in a consistent manner.

As part of the quality management plan, IT Policy also requires the Department to perform a project plan development, which requires taking the results of all other planning processes undertaken during the project, including staffing plans and procurement plans, and putting them into a consistent, coherent document including the major checkpoints of the project. This type of plan provides the milestones to keep the project on track. We found that such a fully developed project plan development process had not been addressed for the PRA project. By not completing the project plan development process, the Department does not have adequate controls in place to help ensure the PRA project will be completed in the required time frame and within the current budget.

The Department should continue to work to complete a well-developed project charter as part of its efforts to ensure the PRA project succeeds.

Recommendation Number 1:

The Department of Labor and Employment should complete and implement a fully-developed project charter in accordance with the Office of Information Technology's policies for the PRA project.

Department of Labor and Employment Response:

Agree. Implementation Date: Implemented.

The Department has a signed project charter from the project sponsor, Department CIO, OIT and IV&V vendor. The charter contains all elements prescribed by the OIT IT policy and is consistent with the processes being developed for SB 06-063 compliance.

As previously mentioned in the audit, the Department submitted an emergency supplemental budget request that contained portions of what the Project Management Institute Book of Knowledge considers to be a project charter. The charter and subsequent project deliverables were formalized and clarified, respectively, based upon the justification within this budget request during the project assessment and re-baseline effort that occurred during the latter portion of the planning phase of the project. Additional detail on the project progress and re-baseline effort is outlined in the Department's response to Recommendation Number 2.

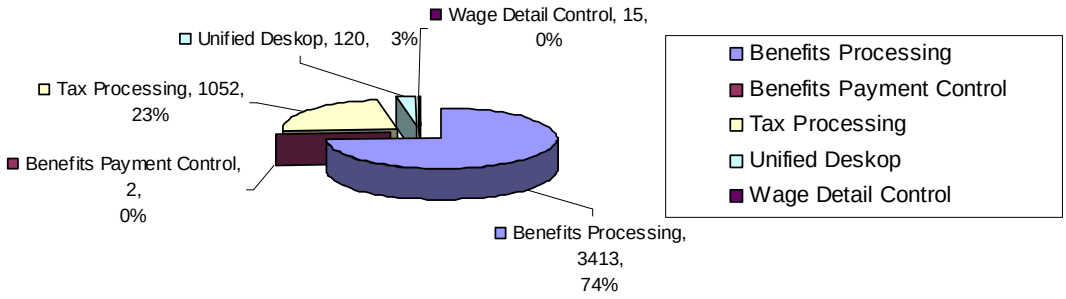
Review of SUPER System Code and Assessment of Alternative Solutions and Costs

OIT's IT Policy requires that each project be based upon a business case that shows the business need, cost/benefit, and approval for the project. Our review indicates that the Department has not established clear project processes for the review of the SUPER system code, adequately assessed other states' systems for possible alternatives, or performed an analysis of the cost for the completion of the SUPER system.

Review of SUPER System Code

To provide an example of the relative complexities of the five major SUPER System components, the pie chart below summarizes the number of original requirements per component. As can be seen, the Benefits component represents nearly 75 percent of the total requirements. The Benefits and the Tax components together represent over 95 percent of the total requirements.

SUPER Requirements by Component



The Department has stated that the outcome of the PRA project will be to assess the status of the programming code for all five SUPER system components, both the two unfinished components for UI Tax and UI Benefits that are not in operation and the three completed components that are in operation. In addition, the Department indicates that the PRA project is expected to provide information on the costs and benefits of the options facing the Department. The options for the unfinished UI Tax and UI Benefits components are:

- Complete the unfinished SUPER system components.
- Replace the unfinished SUPER system components with custom code.
- Replace the unfinished SUPER system components by modifying another state's existing system.

The three completed components are Wage Detail, Benefits Payment Control, and Unified Desktop. The options for these completed components are to:

- Enhance or repair the completed SUPER system components.
- Replace the completed SUPER system components.

The PRA Project Director at the time of this audit has stated that the assessment team will review "Core Functionality" to establish the status of each SUPER System component. Core Functionality includes the function requirements that the software will need to perform in order to correctly edit and process each defined element within the component.

In order to evaluate Core Functionality, the testing methodology must be developed by the project team to determine if the Core Functionality is working, partially working or not working for each component. The Department needs to define the criteria used to assess Core Functionality for each of the five SUPER system components. Ultimately the criteria should indicate whether the component should be completed or scrapped.

If after assessing the Core Functionality for all five components, the Department determines that the SUPER System does not meet the original requirements or newly documented requirements of Core Functionality, then the computer code specific to the Core Functionality should be remediated. In other words, if the code essential to the core functions of the system is not acceptable, the code should be repaired, completed, or enhanced. The extent of computer code related specifically to the Core Functionality that cannot be remediated within a given component, based on pre-set criteria, represents the amount of computer code that is not salvageable—in other words, this code has no recoverable value and must be replaced in its entirety.

During our review we determined that two aspects needed for the review of the Core Functionality are not in place. The Department has not established the testing methodology and the evaluation criteria to be used by the PRA project team to determine the extent of salvageable product that would be acceptable before a decision is made to start over and replace the SUPER component. In other words, a listing of the "core requirements" and the assessment scripts to test them have not yet been developed. In addition, although Statements of Work, which defines the scope and requirements of the work to be performed, have been developed for outside vendors to perform testing/review work of some of the Core Functionality, the criteria for assessing the work has not been developed.

Without clearly identifying the requirements that represent the Core Functionality and the methods and criteria to be used to test and evaluate the existing software for compliance with the requirements, the Department will not have controls in place to help ensure that its efforts to determine the appropriate options available to complete the SUPER system will be efficient and effective.

Review of Alternative Software Solutions

We noted that while the Department has reviewed UI systems in some other states, the work plan for the PRA project does not detail any tasks that address a systematic review of other state systems. The Department's Genesis project personnel originally reviewed other states' systems to determine their suitability for the Department's needs seven years ago, and during 2006 the Department reviewed the benefits system used by the State of Utah. Without a systematic review of other state systems, the Department may not discover potential alternative solutions in use by another state. This review should also take into consideration the relative complexity of the Colorado requirements for the tax and benefit systems and the modifications that would be needed to use another state's system.

Cost Benefit Analysis of Options Available for Completing the SUPER System

We also found that the Department has not performed an analysis on the projected cost to complete the SUPER system. The Emergency Supplemental Budget request approved by the JBC included a requirement for the PRA project to provide a cost analysis for completing the SUPER system. However, the Department's detail work plan under development for the PRA does not have any tasks scheduled prior to mid-September that addresses any cost/benefit

analysis. The detailed project plan did not include plans for performing a detailed cost/benefit analysis for the SUPER system, with the exception of the Telephony system (a part of the Unified Desktop SUPER system component). Without an accurate cost benefit analysis the Department will not be able to determine which option for completing the SUPER system would be the most efficient and cost effective for the State.

Recommendation Number 2:

The Department of Labor and Employment should clarify its processes for meeting project goals, assessing potential alternative solutions for the SUPER system and determining the potential cost to complete the SUPER system by:

a. Developing assessment criteria for each SUPER system component before beginning the testing/review work. In addition, the PRA project team should develop the assessment methodology with IT and subject matter experts early in the schedule and insure all stakeholders are in agreement on the testing methodology to be used.
b. Including updated systematic reviews of the systems used by other states to determine the viability of modifying their Tax and Benefit systems as potential replacements for the SUPER system Tax and Benefit components.
c. Performing a cost/benefit analysis of each option for completing the SUPER system.

Department of Labor and Employment Response:

Agree. Implementation Date: a. and b. implemented c. January 2007.

During the latter portion of July the Department began assessing multiple project risks due to challenges in the procurement of contracted subject matter experts. This analysis resulted in a revision of the PRA project methodology and creation of an alternate project plan.

The new methodology incorporates the strategy identified in the above recommendation, including a multi-solution cost benefit analysis focusing on cost-to-complete metrics and architecture assessment. In addition, the Department considered alternative planning from a project staffing perspective.

The alternate plan identifies a streamlined assessment methodology that focuses on metrics to estimate skill set and time/effort for (1) completion of outstanding business requirements and (2) remediation of existing system defects. In addition, the methodology considers metrics for evaluating the system architecture based upon common industry best-practice framework values such as scalability, maintainability, and complexity to ultimately yield a cost of ownership estimation. The combination of the three "values" identifies the cost to complete the work Accenture began on the SUPER system. The revised assessment methodology also considers the possibility that completing this work may not be the best business solution for the Department. As such, the Department set out to look at similar systems that other states had implemented, as well as to establish a cost boundary that either solution should not

exceed, which would be the cost of starting over and resubmitting an RFP for a completely new system.

The Department's approach for evaluating the other states consists of creation of a scorecard whereby the business requirements, IT requirements, and project management requirements are scored. At least three other states have been identified as possible "re-use" cases with an outcome of identifying the state that most closely aligned with the Department's needs as reflected in the scorecard. Once the preferred state is identified, an RFI will be issued to identify the costs to integrate that solution into the Department's infrastructure while re-using as much of the original SUPER infrastructure as possible.

Finally, the Department intends to use an overall project cost estimate from the Information Technology Support Center (ITSC) to ensure that neither the cost of repairing the existing start, nor of reusing another state's systems exceeds what it would cost to rebuild an entirely new system from the ground up.

In mid-to-late August, the PRA project experienced a change in leadership and as such implemented the alternate plan. The project had already experienced a delay as a result of not having procured required subject matter expert contractors by the September 11, 2006 start date as originally projected in the August 11, 2006 OIT monthly report.

In early September, the Department partnered with OIT to perform a re-baseline effort lasting approximately 30 days. The re-baseline included validation for the previously mentioned change in methodology for assessing the SUPER system. The re-baseline also served to ensure compliance with the SB-63 project certification process.

On September 15, 2006, the Department self-reported its status as "red" at the monthly Commission on Information Management (IMC) report due to the aforementioned issues. The Department presented its revised approach and plan for the October 2, 2006 start date and forecasted that the original January 12, 2007 project end date would still be achievable and under budget. The IMC congratulated the Department on its quick recovery and publicly commented on the transparency that had been provided thus far.

As of October 19, 2006, the Department has reported a status of yellow to the IMC in its monthly status report as a result of delays in securing the vendor to evaluate Correspondence functionality within the PRA project. Due to the revised assessment methodology, the project can tolerate a delay in this procurement through October 30, 2006. Contract negotiations are currently in progress. The Department is conducting alternative planning with regard to the Correspondence evaluation to insure that the PRA effort remains on schedule. All project milestones, documentation, and necessary certifications are well-within acceptable progress parameters according to the revised project plan. The PRA project independent verification and validation (IV&V) Vendor, SysTest Labs, has also validated this assessment of progress.

The electronic version of this report is available on the Web site of the
Office of the State Auditor
www.state.co.us/auditor

A bound report may be obtained by calling the
Office of the State Auditor
303.869.2800

Please refer to the Report Control Number below when requesting this report.

Report Control Number 1778B