



FEASIBILITY STUDY REPORT

EXAMINATION AND CERTIFICATION ONLINE SYSTEM PROJECT

STATE PERSONNEL BOARD

June 13, 2011

**STATE OF CALIFORNIA
STATE PERSONNEL BOARD
EXAMINATION AND CERTIFICATION ONLINE SYSTEM PROJECT
FEASIBILITY STUDY REPORT**

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SECTION 1

**EXECUTIVE PROJECT
APPROVAL TRANSMITTAL**

**Information Technology Project
Request**



**Feasibility Study Report
Executive Approval Transmittal**

Department Name

State Personnel Board

Project Title (maximum of 75 characters)

Examination and Certification Online System

Project Acronym

ECOS

Department Priority

1

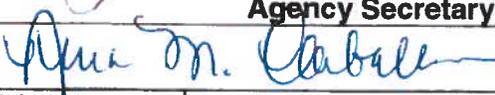
Agency Priority

APPROVAL SIGNATURES

I am submitting the attached Feasibility Study Report (FSR) to request the California Technology Agency's approval of this project.

I certify that the FSR was prepared in accordance with State Administrative Manual Sections 4920-4930.1 and that the proposed project is consistent with our information technology strategy as expressed in our current Agency Information Management Strategy.

I have reviewed and agree with the information in the attached FSR.

Chief Information Officer		Date Signed
		6/20/2011
Printed name:	Pouneh Terhani	
Budget Officer		Date Signed
		6/20/2011
Printed name:	Pouneh Terhani	
Department Director		Date Signed
		6/20/11
Printed name:	Suzanne Ambrose	
Agency Secretary		Date Signed
		6/21/11
Printed name:	Anna Caballero	

SECTION 2

EXECUTIVE SUMMARY

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EXAMINATION AND CERTIFICATION ONLINE SYSTEM PROJECT
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1. Submittal Date	June 13, 2011
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2. Type of Document	FSR	SPR	PSP Only	Other:
	X			
Project Number				

3. Project Title	Examination and Certification Online System		
	Project Acronym	ECOS	
		Estimated Project Dates	
	Start	End	
	Aug 2011	Dec 2014	

4. Submitting Department	State Personnel Board
5. Reporting Agency	State and Consumer Services Agency

6. Project Objectives	<p>In September 2009, the State Personnel Board (SPB) implemented the JobAps System (JobAps), a proprietary, web-based, modified off-the-shelf product to replace two systems used for processing examinations (exams) and certifications (certs). The new system was also envisioned to be a one-stop shop for state job seekers, allowing them to take exams and apply for vacancies in one place. Currently the system does not meet expectations of SPB or other departments throughout the state who use this system to conduct their exam and cert processes. The system is experiencing data integrity and performance issues and is missing a significant amount of required functionality. Given its deficiencies, the new system is currently being supplemented by three systems (the Legacy Exam System, the Legacy Cert System, and the SPB Web Exams System), two of which were supposed to be decommissioned once JobAps was implemented. In addition, a new State Restriction of Appointment (SROA) and Reemployment System was built to address additional limitations of the system. However, the support of legacy and other systems does not adequately address the state's business needs and in fact adds to JobAps' performance issues. Efforts to work with the vendor to stabilize the system have been unsuccessful; therefore, SPB will, upon the approval of State and Consumer Services Agency and California Technology Agency, begin custom development of a new system designed to adequately address the state's examination and certification needs.</p>
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8.	Major Milestones	Est. Complete Date
	Project FSR Approval	Aug 2011
	Project Initiation and Planning	Sept 2011
	Requirements and Design Phase	Dec 2011
	Phase One	Jan 2012
	Phase Two	Sept 2012
	Phase Three	July 2014
	Phase Four	Dec 2014
	Post Project Phase	Aug 2015
	Key Deliverables	
	Complete FSR	June 2011
	Develop Project Schedule	Sept 2011
	Develop Project Management Plan	
	Develop Risk Management Plan	
	Develop Communications Plan	
	Develop Change Management Plan	
	Requirements and Design Phase	
	Develop Requirements Definition Document	Dec 2011
	Develop Traceability Matrix Document	
	Develop Architectural Design Document	
	Develop Systems Design Document	

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<p>Phase One Migrate Exams Off of JobAps Convert JobAps Exam Data Clean Up JobAps Exam Data</p>	<p>January 2012</p>
<p>Phase Two Develop New Certification System Perform User Acceptance Testing (UAT) Develop Cert Documentation Perform Training Implement New Cert System</p>	<p>Sept 2012</p>
<p>Phase Three Develop New Examination System Perform UAT Develop Exam Documentation Perform Training Implement New Exam System</p>	<p>July 2014</p>
<p>Phase Four Develop AD-Hoc Reports & Change Control Items Perform UAT Develop Documentation Perform Training Implement Remaining System Finalize Help Desk Documentation, System and Technical Documentation, Operations Documentation, and User Manuals.</p>	<p>Dec 2014</p>
<p>Post Project Phase Develop Decommission Plan Execute Decommission Plan Develop Lessons Learned Document Complete PIER</p>	<p>Aug 2015</p>

<p>7. Proposed Solution Develop an in-house, custom-built, web-based automated examinations and certification online system.</p>
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Project #	1
Doc. Type	FSR

Executive Contacts								
	First Name	Last Name	Area Code	Phone #	Ext.	Area Code	Fax #	E-mail
Agency Secretary	Anna	Caballero	(916)	653-4090				anna.caballero@scsa.ca.gov
Dept. Director	Suzanne	Ambrose	(916)	653-1028				sambrose@spb.ca.gov
Budget Officer	Pouneh	Terhani	(916)	651-0804				pterhani@spb.ca.gov
Acting CIO	Pouneh	Terhani	(916)	651-0804				pterhani@spb.ca.gov
Proj. Sponsor	James	Murray	(916)	651-0924				jmurray@spb.ca.gov

Direct Contacts								
	First Name	Last Name	Area Code	Phone #	Ext.	Area Code	Fax #	E-mail
Doc. prepared by	Lori	Gillihan	(916)	653-1373				lgillihan@spb.ca.gov
Primary contact	Lori	Gillihan	(916)	653-1373				lgillihan@spb.ca.gov
Project Manager	John	Dong	(916)	651-3906				jdong@spb.ca.gov

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1.	What is the date of your current Operational Recovery Plan (ORP)?	Date	January 2011
2.	What is the date of your current Agency Information Management Strategy (AIMS)?	Date	August 2002
3.	For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.	Doc.	AIMS
		Page #	18-21

4.	Is the project reportable to control agencies? If YES, CHECK all that apply:	Yes	No
		X	

	a) The project involves a budget action.	
	b) A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.	
X	c) The estimated total development and acquisition cost exceeds the departmental cost threshold and the project does not meet the criteria of a desktop and mobile computing commodity expenditure (see SAM 4989 - 4989.3).	
	d) The project meets a condition previously imposed by Finance.	

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Project #	1
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Budget Augmentation Required?	No	X	If YES, indicate fiscal year(s) and associated amount:												
	Yes		FY		FY		FY		FY		FY		FY		FY

PROJECT COSTS

1.	Fiscal Year	11-12	12-13	13-14	14-15	15-16	TOTAL
2.	One-Time Cost	\$984,122	\$1,009,122	\$784,122	\$759,122	0	\$3,536,488
3.	Continuing Costs	0	0	0	\$376,828	\$791,841	\$1,168,669
4.	TOTAL PROJECT BUDGET	\$984,122	\$1,009,122	\$784,122	\$1,135,950	\$791,841	\$4,705,157

SOURCES OF FUNDING

5.	General Fund	\$0	\$0	\$0	\$0	\$0	\$0
6.	Redirection	\$702,371	\$686,203	\$533,203	\$893,031	\$791,841	\$3,606,649
7.	Reimbursements	\$281,751	\$322,919	\$250,919	\$242,919	\$0	\$1,098,508
8.	Federal Funds	\$0	\$0	\$0	\$0	\$0	\$0
9.	Special Funds	\$0	\$0	\$0	\$0	\$0	\$0
10.	Grant Funds	\$0	\$0	\$0	\$0	\$0	\$0
11.	Other Funds	\$0	\$0	\$0	\$0	\$0	\$0
12.	PROJECT BUDGET	\$984,122	\$1,009,122	\$784,122	\$1,135,950	\$791,841	\$4,705,157

PROJECT FINANCIAL BENEFITS

13.	Cost Savings/Avoidances	\$0	\$0	\$0	\$0	\$0	\$0
14.	Revenue Increase	\$0	\$0	\$0	\$0	\$0	\$0

Note: The totals in Item 4 and Item 12 must have the same cost estimate.

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Vendor Cost for FSR Development (if applicable)	\$0	Project #	1
Vendor Name		Doc. Type	FSR

VENDOR PROJECT BUDGET

1.	Fiscal Year	11-12	12-13	13-14	14-15	15-16	TOTAL
2.	Primary Vendor Budget	\$0	\$0	\$0	\$0	\$0	\$0
3.	Independent Oversight Budget	\$0	\$0	\$0	\$0	\$0	\$0
4.	IV&V Budget	\$0	\$0	\$0	\$0	\$0	\$0
5.	Other Budget	\$225,000	\$225,000	\$25,000	\$0	\$0	\$500,000
6.	TOTAL VENDOR BUDGET	\$225,000	\$225,000	\$25,000	\$0	\$0	\$500,000

----- (Applies to SPR only) -----

PRIMARY VENDOR HISTORY SPECIFIC TO THIS PROJECT

7.	Primary Vendor	
8.	Contract Start Date	
9.	Contract End Date (projected)	
10.	Amount	\$

PRIMARY VENDOR CONTACTS

	Vendor	First Name	Last Name	Area Code	Phone #	Ext.	Area Code	Fax #	E-mail
11.									
12.									
13.									

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RISK ASSESSMENT

	Yes	No
Has a Risk Management Plan been developed for this project?	X	

General Comment(s)

The risk management strategy is discussed in section 7 of this FSR. In addition, a detailed Risk Management Plan has been developed for this project.

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SECTION 3

BUSINESS CASE

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3.0. INTRODUCTION

This Feasibility Study Report (FSR) considers the need to rebuild the examination (exam) and certification (cert) systems administered by the State Personnel Board (SPB) which support the hiring needs of departments throughout the state. The objective of this section is to provide a thorough description of the state's current systems and how they relate to state hiring processes.

This section is divided into the following subsections:

- Business Program Background.
- Business Problem or Opportunity.
- Business Objectives.
- Business Functional Requirements.

3.1. BUSINESS PROGRAM AND BACKGROUND

The California State Constitution and State Civil Service Act require SPB to ensure that California's system of hiring and promotion is free from political patronage and that employment decisions are based on merit. SPB's duties are performed under the provisions of the Constitution, the Government Code (GC), and the California Code of Regulations (CCR). As part of its selection-related responsibility, SPB maintains the state's exam and cert systems that electronically manage applicants' progress throughout the testing and appointment processes. Each system is described in detail in the functional description section.

The 2004 California Performance Review (CPR) and the 2005 Little Hoover Commission Report, *Serving the Public: Managing the State Workforce to Improve Outcomes*, recommended more timely and streamlined hiring methods and more robust recruitment efforts to address the human capital crisis expected as the baby boom generation reaches retirement age. In addition, the Information Technology (IT) Classification and Selection Project recommended testing for competencies so that the individuals with the right skills could be matched to the right job. The IT classifications themselves are too broad to make this type of match. In response to these initiatives, SPB began the process of procuring a new system that would meet these needs.

In September 2009, SPB implemented the JobAps System (JobAps), a proprietary web-based modified off-the-shelf system (MOTS), to replace two legacy systems used for processing exams and certs. The system was envisioned to be a one-stop shop for state job seekers, allowing applicants to take an exam and apply for a vacancy all in one place. JobAps is lacking functionality and does not perform adequately to meet the state's needs. Due to

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the system's failings, SPB is in large part relying on its legacy systems and custom-built systems to process exams and certs outside of JobAps.

3.1.1 FUNCTIONAL DESCRIPTION

SPB has statutory responsibility for the administration of exams and has delegated authority to departments to administer their own department-specific exams under SPB oversight. SPB provides state departments guidance and training to ensure that departments conduct their delegated exam activities in a nonbiased, competitive manner, and that exam criteria and tools are developed to measure the knowledge, skills, abilities, and personal characteristics essential for an individual to be successful on the job. SPB directly administers exams for classifications used commonly throughout state government.

Exam Processing

Most departments use SPB's systems to process their exams. The alternatives for an individual department other than using SPB's systems include manual processing of exams or using their own system(s). These options are not cost effective for the state.

JobAps is used for planning and scheduling exams; creating exam bulletins; submitting and processing employment applications; conducting test administration; scoring exams; posting exam results; and generating management reports, exam notices, and employment inquiries. The system allows for adjustment of some elements of the exam process, such as the number of phases, weightings, and other elements of the exam throughout the exam life cycle prior to the final posting of scores.

Because of JobAps' instability, lack of functionality, and poor performance, some exams such as those involving the calculation of complex minimum qualifications (MQ), the testing of multiple levels within a single exam, and the processing of a large volume of candidates must be processed through SPB's Legacy Exam System or SPB Web Exams System. The legacy system was intended to be decommissioned once JobAps was implemented. As JobAps is not a stand-alone system and does not offer the functionality as originally intended, it has essentially become a third system for conducting and processing exams, rather than a replacement of the legacy system.

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Cert Processing

GC and CCR prescribe the specific conditions under which a department may hire an individual into a civil service classification. In order to ensure that the appropriate individuals are given consideration, SPB is charged with maintaining the eligible lists for all state departments and ensuring that the applicable rules and laws are applied to filter those broad eligible lists to certified lists.

JobAps supports statewide online access to and maintenance of eligibility lists, including state restrictions of appointment (SROA) and reemployment lists. These lists contain the names and other pertinent data of individuals who must be considered for hire prior to others on the cert list given that they have been or will be subjected to layoff. All state departments must use JobAps to generate cert lists from which to make hires to ensure that SROA and reemployment eligibles are properly included. Therefore, departments using external exam systems must enter exam records into JobAps, whether by manual key entry or by import.

Because JobAps is not able to address all of the state's exam scenarios, reliance on prior systems for exams requires the use of the Legacy Cert System as a bridge. All exams which require complex online MQs and large volume exams are processed through the Legacy Exam System. Additionally, the creation of SROA and reemployment lists in JobAps is cumbersome and inefficient. This led to SPB creating a custom, in-house SROA and Reemployment System in order to process SROA and reemployment lists and accommodate departments such as the Department of Corrections and Rehabilitation with thousands of potential layoffs. SROA and reemployment eligibles are then imported into JobAps, since all cert data processed outside of JobAps must be imported or hand entered in order to create cert lists. Batches of eligibles along with exam results are imported daily. This is time consuming and inefficient. In addition, if a batch is rejected, the errors must be corrected and resubmitted again for overnight processing.

An interface with the State Controller's Office (SCO) Employment History System updates elements of the eligibility lists, including names and addresses of current state employees, and reactivates or removes from active status specific individuals based on their appointment status. Updates to information for individuals not currently employed by the state, are manually processed by SPB, the testing department, or the applicant.

The reliance on five different systems (the Legacy Exam System, the Legacy Cert System, the SPB Web Exams System, the SROA and Reemployment System, and JobAps) for processing exams and certs results in confusion and additional workload, while increasing the risks of data integrity issues and preventing the overall processing of cert data from occurring in real time.

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3.1.2 KEY FEATURES OF THE SYSTEMS

The following represent some of the key features of the exam and cert systems which are included in the system requirements. Many of these features were not realized in JobAps; however, these features are accessible in one or more of the five systems. The key features of each system are as follows.

SPB Legacy Exam System

- Generates audit reports describing actions taken, by whom, and when.
- Accommodates multiple types of phases within a single exam ((e.g., written and Qualifications Appraisal Interview (QAP)).
- Allows authorized personnel to generate reports related to ethnicity, gender, and disability data.
- Produces general notices as required (e.g., exam bulletins, extension of lists, and abolishment of lists).
- Maintains complete exam history of applicants by classification and date.
- Provides various scoring criteria (e.g., raw scores and percentage).
- Provides accurate reports on scoring prior to releasing results to candidates.
- Accommodates large amounts of candidate pools for scheduling.
- Maintains the veteran's preference points file and apply points accurately.
- Accommodates multiple types of exams (e.g., open and promotional).
- Checks promotional eligibility.

SPB Legacy Cert System

- Automatically updates eligible records and lists based on personnel actions (e.g., hiring and separation).
- Produces informal and formal cert lists in accordance to applicable laws and rules.
- Allows cert lists to be extended, cancelled, and reissued.
- Produces contact letters to eligible candidates on request.
- Generates reports and notices required to ensure that the system is processing candidates appropriately.
- Allows for the establishment and maintenance of SROA and reemployment lists in an efficient manner.
- Captures employment contact and hiring results.

SPB Web Exams System

- Conducts complex online MQs and exam questions.
- Maintains database of all exams results and applicant information.
- Provides unique user identification and password access for all applicants.
- Captures job-related criteria such as knowledge, skills, and abilities.

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SROA and Reemployment System

- Adds SROA and reemployment eligibles onto lists within seconds, which is critical when manually adding thousands of eligibles.
- Adds eligibles onto multiple lists at one time (e.g., subdivisional, departmental, and general).
- Stores eligible information for later use.
- Inputs location/tenure/time-base preferences.

JobAps System

- Allows real time transactions.
- Allows public users to maintain an online profile and standard state application with the ability to update preferences, contact information, view history of exams taken, etc.
- Captures candidate job preference information (e.g., location and time base).
- Allows remote access to site.

3.2 BUSINESS PROBLEM/OPPORTUNITY STATEMENT

3.2.1 CURRENT SYSTEMS

In September 2009, SPB implemented JobAps, a proprietary web-based MOTS product to replace two systems used for processing exams and certs. The new system was also envisioned to be a one-stop shop for state job seekers, allowing them to take exams and apply for vacancies in one place. Currently the system does not meet expectations of SPB or other departments throughout the state who use this system to conduct their exam and cert processes. The system is experiencing data integrity and performance issues and is missing a significant amount of required functionality. Given its deficiencies, the new system is currently being supplemented by three systems (the Legacy Exam System, the Legacy Cert System, and the SPB Web Exams System), two of which were supposed to be decommissioned once JobAps was implemented. In addition, a new SROA and Reemployment System was built to address additional limitations of the system. However, the support of the other systems does not adequately address the state's business needs and in fact adds to JobAps' performance issues.

At the request of the State and Consumer Services Agency (SCSA) and the California Technology Agency, SPB contracted for a consultant to do an independent assessment of JobAps. Based on the project's status, the extent of the system's problems, and the state's hiring needs, the consultant

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recommended that SPB continue with the project and work to improve the system's performance and implement the missing functionality.

In order to assist SPB, SCSA and the California Technology Agency committed to providing SPB the enhanced guidance and support needed to attempt to stabilize JobAps, including providing SPB a project manager with extensive project management experience. A project team was assembled and new governance and appropriate project management practices were put into place; however, despite the efforts of SPB, the stabilization effort was unsuccessful due to the vendor's inability to successfully correct JobAps' deficiencies.

As discussed previously, because of the deficiencies of JobAps, SPB uses five different systems (the Legacy Exam System, the Legacy Cert System, the SPB Web Exams System, JobAps, and the SROA and Reemployment System) to process exams and certs. These systems include character-based, mainframe systems requiring many manual and batch processes and a web application which behaves erratically with large amounts of users or data. The systems lack many features that would improve customer service and reduce internal processing time and errors. The current issues with the systems include the following:

Customer Support Issues and Inefficiencies

- Scoring and ranking errors; which could lead to illegal appointments.
- Inaccurate applicant feedback, including incorrect rankings, notices, dates, etc.
- Poor performance in processing reports, uploads and downloads of information, and screen loading.
- Applicants are required have several logins due to the reliance on multiple systems.
- Difficulty providing efficient and timely service and training to departments due to increased workload from current systems.
- Duplication of effort in departments preparing for and conducting exams using their own resources rather than using SPB's flawed systems.

Technical System Issues

- Existing systems have reached their limits and are unable to expand data fields; as a result some data is truncated
- Legacy systems have character-based, mainframe screens with cryptic codes rather than drop-down lists to ensure standard input codes and online error correction and do not sufficiently validate data during the input process.
- Legacy systems provide only limited connectivity to remote sites and limited access for public applicants.

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- Systems have very slow processing times. In legacy, everything is submitted overnight for processing. In JobAps, processes often time out or deadlock.
- Systems do not pass information across seamlessly to one another, impacting data integrity.
- Data entry screens do not follow the sequence of steps in application forms to facilitate ease of use.
- Support for SPB legacy systems is becoming more difficult as personnel qualified in the original programming languages (COBOL, Assembler) to maintain the legacy systems retire or leave state service.
- JobAps works only with specific browsers ((Internet Explorer 7 and 8 (compatibility mode))). This will prove troublesome to accommodate when technology progresses and newer browser software is released.
- No timing out of administrator or applicant sessions after a period of inactivity.
- Systems are technically complex, costly to modify, and lack the functionality and flexibility to support modern exam and cert best practices and changing civil service requirements.
- Added workload of maintaining multiple databases instead of one central database resulting in diminished service to departments.
- System documentation is lacking, making the systems difficult to support.
- There is no standardized unique identifier for exam applicants. As a result, applicant records have been merged impacting applicant security. In addition, some candidates are illegally taking an exam more than once.
- Systems do not adequately address employees on cert lists that go on military leave and then return.

System Functionality Issues

- Existing processes have limited functionality and require labor intensive manual workarounds. SPB's customer support workload has greatly increased.
- Reporting functionality is limited.
- System audit logs are either inaccessible to the user or are inaccurate. Audits require manual intervention to ensure that all applicants are treated equally.
- Scheduling functionality is limited.
- JobAps is unable to process complex patterns of MQs; therefore, users rely on the Legacy Exam System to determine if an applicant is eligible to take an exam.
- SPB cannot add custom interfaces or modify custom data in JobAps when needed by departmental users.
- Systems lack help functionality.
- Systems have limited error checking.
- Systems do not allow users to modify contact letters.
- Systems do not allow users to email contact letters to applicants/candidates.

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This combination of systems is not ideal and is highly inefficient to maintain. The legacy systems are 30 years old and are unable to meet the needs of departmental and public users. JobAps was implemented to alleviate workarounds and provide an online system meeting the needs of its users and serve as the sole exam and cert system for the state. However, JobAps requires workarounds to process day-to-day functions and relies on four other systems to substitute its missing functionality. This results in SPB resources being diverted from conducting or supporting exams and maintaining operations to assist departments and public users in using the systems.

3.2.2 CHANGES IN BUSINESS PROCESSES

CPR identified a business opportunity to revise the cert process to allow for a list eligibles based on differentially weighting the relative importance of the various skills for a specific position. Currently, tests only consider what is common to all classes and does not identify the best qualified person for any given vacancy. Hiring for servicewide classes would be more effective if the process includes the flexibility to create certs based on the relative importance of skills for a specific position and not on a broad classification concept basis.

New class specifications would include details of the type of tasks required by the class by functional area, such as application software development or information systems security. Position descriptions would be created by the departments based on the type of the duties to be performed by the position. This information would allow candidate lists to reflect a targeted set of skills. In some cases, positions may require tasks that cross more than one functional area; while in other cases, some positions may have tasks covered under a single functional area such as 100 percent in network/client server administration.

The new classification structure would provide all departments with greater flexibility and ease to address rapidly changing technology and its impact on the IT workforce. However, these proposed changes cannot be supported by SPB's current systems.

3.3 BUSINESS OBJECTIVES

3.3.1 EXAM AND CERT GOALS AND OBJECTIVES

The following goals and objectives must be met by the business solution to ensure that the state's business needs are met and that the SPB's statutory and operational responsibilities and requirements are achieved. The proposed system must:

- Reduce systems supporting exams and certs from 5 to 1.

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- Provide a system with reliable scoring functionality and accurate ranking functionality according to current laws, rules and regulations, including:
 - Accurate Percentage scoring
 - Accurate Raw scoring calculations
 - Accurate Composite scoring calculations
 - Accurate Full range scoring
 - Accommodate Various applicable banded scoring according to State of California classifications
 - Accommodate Application of 6 rank managerial scoring
 - Accommodate Application of rule of 3 names ranking
 - Accommodate Application of rule of 3 ranks ranking
 - Accommodate Application of rule of 1 ranking
- Improve security issues:
 - Confidential data is not shared with unauthorized users due to system actions
 - Adhere to best practices in regards to session timeouts and log offs.
- Provide reliable accurate Audit functionality to ensure the ability for SPB business staff to determine the actions taken on applicant records, examinations, eligible lists, and certification lists as well as when and by whom the actions were performed.
- Reduce known performance issues by 80 percent.
- Eliminate current workaround processes to allow proper automation of processes.
- Increase departments use of SPB's automated exam and cert functions by 10 percent.
- Increase Exam Supervisor's Forum customer satisfaction.

3.3.2 BUSINESS BENEFITS

SPB has identified strategic benefits that can potentially be achieved through the implementation of an upgraded exam and cert solution. They are as follows:

- Improved timeliness, accuracy, and availability of hiring data.
- Increased flexibility to implement business Improvements.
- Improved morale and productivity of human resource professionals in all state departments.
- Creation of a one-stop shop for employment with the State of California.

3.4 BUSINESS FUNCTIONAL REQUIREMENTS

The following business functional requirements reflect the business needs of the exam and cert system.

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Req. #	Business Requirements	Category
B1.	Allow the administrator to assign multiple roles for a single user.	Admin
B2.	Allow for users to develop an online customized workflow when conducting exams.	Exams
B3.	SPB administrator must be able to modify business rules based on business needs.	Admin
B4.	Allow user intuitive report generators to create reports on any and all fields deemed necessary by end users.	Reports
B5.	Provide pull-down lists for all coded data fields displayed consistently throughout system.	General
B6.	Perform all functionality on a real-time basis without impact on performance, while allowing fine tuning of data released to the public.	General
B7.	Provide web access using a variety of internet browsers.	General
B8.	Provide access to the application in compliance with all levels of Americans with Disabilities Act (ADA) for both public and admin sites while allowing flexibility to address future federal- and state-level ADA modifications.	General
B9.	Accommodate multiple types of exams (e.g., open and promotional) while determining business rules are being followed (e.g., servicewide classifications and certain classifications to be given on an open basis require approval).	Exams Admin
B10.	Allow a single exam to create more than one eligible list with combination list types (e.g., open and promotional) ((Merit Selection Manual: Policies and Practices (MSM) § 4440)).	Exams Admin
B11.	Allow one or more departments to participate in an exam and allow the resulting lists from this exam to be specific to one or more than one department or common to all participating departments. Allow the processing department to control read/write access to the exam records for other departments (GC § 18930.5).	Exams Admin
B12.	Create eligibility lists based on a single employee classification or a series of employee classifications (CCR title 2, division 1, § 207).	Exams Admin
B13.	Allow applicants to test for one or more classifications in a series exam.	Exams Applicant
B14.	Allow modifications of scoring a specific exam at any time during the exam process (GC § 18937).	Exams Admin

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B15.	Allow authorized personnel to specify which applicant scores must be retained, for how long, and make the scores available with proper authorization for verification at a later date (GC § 18938).	Exams Admin
B16.	Allow exam phases that are increasingly exclusive (e.g., phase one must be passed to qualify the individual to take phase two) or phases that are independent of each other (i.e., all phases are taken regardless of an individual's performance on any one) (GC § 18936).	Exams Admin
B17.	Provide capability to add new scoring preferences or revise the current scoring structure and maintain a history of all previous preferences and score structures (GC §§ 18935, 18951, and 18973).	Exams Admin
B18.	Allow the system to retrieve default classification information from an external system when creating exam bulletins.	Exams Admin
B19.	Ensure that servicewide exams are approved by SPB prior to allowing departments to create an exam control record.	Exams Admin
B20.	Support user designation of geographic regions, which may be based on jurisdictional boundaries (e.g., city and county) (GC § 18902).	Exam Cert Applicant
B21.	Collect and store information related to a specific scheduling template for use as the basis for scheduling the exam (e.g., length of exam phase, type of exam phase, number of days exam will be given, lunch and other break information, number of panel members, members and location of a panel, and number of panels) (GC § 18900).	Exams Admin
B22.	Allow the testing department(s) to select any number of predefined or new proficiencies and qualifications for each exam instance. These proficiencies and qualifications must also be available as selection criteria when a hiring list is generated (GC § 18931).	Exams Admin
B23.	Allow the testing department(s) to create an exam bulletin entering all data and store the information for later use, reuse a previously published bulletin, or use existing predefined information. Allow the bulletin to be posted directly to SPB and other websites and generate notices to applicants that the exam has been scheduled (GC § 18933).	Exams Admin

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B24.	Allow for automatic email distribution of exam bulletins to departments, interested applicants, and outside organizations, to include the University of California system, the California State University system, community colleges, community-based organizations, etc., when the bulletin is posted.	Exams Admin
B25.	Provide for multiple time bases (e.g., full time, part time, and intermittent).	Exams Applicant
B26.	Provide for testing language proficiency in multiple languages and record and store the results.	Exams Applicant
B27.	Allow maintenance of standard language clauses that can be modified or deleted when generating standard form letters and notices. Allow users to select specific language for inclusion in routinely generated letters (CCR title 2, division 1, § 209).	Cert
B28.	Limit access to applicant, exam, and other confidential data to authorized personnel only.	Admin
B29.	Allow the system to automatically schedule candidates to test sites based on proximity to candidate's work or home and allow manual scheduling.	Exams Admin
B30.	Collect and retain candidate job preferences and allow candidate to update job preference information online.	Exam Applicant
B31.	Capture job preference information and job-related criteria (e.g., location and time base) from applications.	Applicant
B32.	Allow applicants to view available exams by job duties, MQs, classification, location, tenure, and time base.	Applicant
B33.	Capture applicant's demographic data for reporting purposes without the administration of the exam in generic terms for statistical annual reporting (GC §§ 18573 and 19792).	Applicant Reports
B34.	Allow for applicants to complete and submit an online application and the system to automatically fill those fields that are already known to the system (e.g., address and testing location closest to the applicant).	Applicant
B35.	Ensure that there is adequate space to capture long addresses for all applicants including foreign addresses (a minimum of 120 characters).	Admin
B36.	Allow simultaneous input of data in electronic format, including input from the Internet or submission of scanable forms for applicant information (GC §§ 18934 and 18900).	General

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B37.	Perform validation and verification of applicants' eligibility for extra points and terminations with fault, and report the outcome of that verification process (GC §§ 18951, 18954, 18973, and 18935).	Exams Admin
B38.	Retain exam history to determining if an applicant is prohibited from testing for a specific period of time. Some applicants cannot retest until a sufficient amount of time has passed (MSM § 5720).	Exams Admin
B39.	Prevent applicants from taking an exam prior to a specific time frame. (Some business rules require a period of time to have passed prior to an individual being able to retake an exam.)	Exams Admin
B40.	Provide accurate tools for performing exam item analysis for purpose of generating statistical reports on exam results (e.g., determine if the discriminators for tests are effective).	Exams Reports
B41.	Provide security of confidential data and allow candidates to update their own information.	Admin
B42.	Validate that an applicant is eligible to take an exam and, if not eligible, generate a notification to the testing department of the applicant's ineligibility.	Exams Admin/Applicant
B43.	Generate notification to online applicants of ineligibility to take the exam and reason.	Exams Applicant
B44.	Provide verification of prior scores in user-designated areas. As designated by authorized personnel, allow for waiving the applicant from retesting in specific areas (GC § 18938).	Exams Admin
B45.	When an applicant self certifies the MQs for an exam, indicate accurately on the hiring list that MQ evidence is required before hiring.	Cert
B46.	Store exam scores for a period of time specified by testing department(s) without compromising performance.	Exams Admin
B47.	Allow the testing department(s) to easily locate an individual application without compromising performance (CCR, title 2, § 174).	General

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B48.	<p>Automatically generate exam correspondence via email and hard copy. Allow departmental users to modify standard letters without affecting the underlying template. Allow the user to preview, recall, and delete record of notices from applicants. Also save changes to templates and store modified templates as new templates in a library for later use. Some of the types of materials required by CCR, title 2, § 209 are as follows:</p> <ul style="list-style-type: none"> • Notice to appear. • Notice of rejection. • Notice of exam results. • Contact letters. • Failure to qualify for exam. • Employment list extension notices. • General information eligibility notices. • List abolishment notices. • Mailing labels. 	Applicant Exams
B49.	Allow for multiple types of phases within a single exam (e.g., written and QAP) with the ability to score each phase independently or provide an overall score.	Exams Admin
B50.	Provide a graphical user interface for scheduling applicants function without compromising performance.	Exams Admin
B51.	Allow entry and tracking of scheduling accommodation requests to take an exam (e.g., accommodation requests allowing exceptions based on religious beliefs or disability). (GC § 18940.) Allow for notifications for exam analyst via email when an applicant indicates a need for accommodations.	Exams Applicant
B52.	Allow individual candidates, more than one candidate, or all candidates scheduled for a specific exam time and date to be rescheduled and generate notices to the rescheduled applicants of the new date, time, and location, as well as allowing applicants to unreschedule themselves for an exam before the exam time and date. (GC § 18900.)	Exams Admin/Applicant

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B53.	<p>Capture and retain the following information related to exam sites for reuse in other exams: (GC § 18900.)</p> <ul style="list-style-type: none"> • Location of test sites, including site address, and room numbers. • Number of testing stations in each room. • Special accommodations available by room. • Times available. • Contact information for facility. • Ability to view if location is already booked and disable further use of facility if already booked for a specified time/date. 	Exams Admin
B54.	<p>Allow for the creation of a tentative exam phase schedule, which may be accepted, revised, or rejected. (GC § 18900.)</p>	Exams Admin
B55.	<p>Allow for the scheduling of applicants for exams based on a variety of factors (e.g., location of exam site, proximity of exam site to applicant home or work site, time base, tenure, type of exam, required physical accommodation, number of candidates to be tested at one time, facilities availability, and length of test phase). (GC § 18900.)</p>	Exams Applicant
B56.	<p>Allow departments to create and securely store online exams for future use in variable formats (e.g., multiple choice).</p>	Exams Admin
B57.	<p>Allow departments to create online exams that allow the questions to be varied for each offering.</p>	Exams Admin
B58.	<p>Provide immediate test results to online exam candidates.</p>	Applicants Exams
B59.	<p>Allow standardized scoring with different versions (books) of the test.</p>	Exams Admin
B60.	<p>Calculate exam scores after all information for all exam phases is entered to determine candidate eligibility and separately produce a switch for departments to release the scores to the public (GC § 18936).</p>	Exams Admin
B61.	<p>Allow for the scoring of low fidelity items where distracters receive different points and applicants record more than one response per item.</p>	Exams Admin
B62.	<p>Record scoring data for any exam phase, with each phase weighted separately, and generate reports, including demographic histograms, item analyses, and raw score tabulations (GC §§ 18933 and 18930).</p>	Exams Admin

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B63.	Provide the ability to change exam criteria (e.g., the number of phases, phase weighting, or phase type) at any time after an exam has been established, including during or after an exam phase has been administered, after all phases have been administered, or after scores have been entered, and store the historic transactions (e.g., who did what and when) in an accurate report accessible by the end user without compromising performance (GC § 18937).	Exams
B64.	Capture and store information to identify individuals approved as eligible for veteran's preference points without requiring that the individual be an exam applicant (GC § 18976).	Applicant
B65.	Maintain a list of individuals with veteran's preference, even if they are not a current or former employee of the state.	Applicant
B66.	Provide system access security to ensure that no unauthorized user is able to request, view, download, or gain access to any listing to which he or she is not entitled based on business rules (GC § 18573).	General
B67.	Apply appropriate business rules to eligibility and cert. Allow lists to be stored, maintained by nontechnical staff, and applied as required.	Admin
B68.	Based on employee history, determine an individual's eligibility for placement on the SROA/reemployment lists and post the individual to the appropriate list(s) accurately (GC § 18903).	Applicant Cert
B69.	Allow eligible list creation based on test scores and user-defined criteria (GC § 19057.2).	Cert
B70.	Maintain a list of state employees that are in jeopardy or have been laid off.	Cert
B71.	Provide for multiple cert methods to be specified for a hiring list.	Cert
B72.	Allow for changes in the selection and ranking criteria governing list generation (GC §§ 19057-19057.4).	Cert

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B73.	<p>Allow an accurate list to be generated based on the following user-entered parameters without compromising performance (GC § 19057 and 19801):</p> <ul style="list-style-type: none"> • Class code (may include using a class code from a department other than the user's department if positions are appropriate). • Agency code. • Departmental code (may be other than user's department). • List type. • Geographic region of work site. • Other geographic indicators. • Language fluency. • Additional proficiencies/qualifications. • Number of individuals to include. • Number of ranks to include. • Tenure, including number of months for limited term. • Time base, including full time, part time, or intermittent (specify number of hours per week to be worked). • Social security numbers (may be multiple entries) or other unique identifier. 	Cert
B74.	Maintain and allow end user access to accurate and complete exam history of applicants by classification in accordance with SPB records retention schedule.	Admin
B75.	Automatically determine which cert rules apply based on classification and exam type.	Cert
B76.	Automatically and correctly update eligible lists based on personnel actions (e.g., hiring, list clearances, and separations).	Cert
B77.	Allow for the establishment and maintenance of employment, SROA, and reemployment lists.	Cert
B78.	Allow definition of effective and expiration dates for all eligible lists and allow for a list expiration date to be extended up to a maximum or extended indefinitely, in accordance with business rules (GC § 18901).	Exams Cert
B79.	Allow admin user to freeze eligibility for specific dates (GC § 18939).	Applicants
B80.	Allow lists to be merged (GC § 18939).	Exams

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B81.	Allow names on a hiring list to be removed when the person leaves for military service and be reinstated to the same list or a similar list when they return and keep the transaction history of actions taken.	Cert
B82.	Allow the cert list to be revised, cancelled, and reissued an unlimited number of times by SPB, based on business rules (GC § 18901.5).	Cert
B83.	Allow the recreation of a list by SPB users, based on classification and date parameters for a point-in-time view (GC § 18901.5).	Cert
B84.	Allow the removal of an individual's name from a list if individual is found to be ineligible for employment (GC § 19583.1).	Cert Exams
B85.	Allow the testing department(s) or SPB to modify any field contained in the eligible list file and track and retain a history of all changes, who made the change, and date of change (GC § 18901).	Admin
B86.	Allow users with appropriate access security to reactivate any list after the expiration date has passed (GC § 18901.5).	Exams
B87.	Ensure that cert list eligibles are ranked, listed, and certified consistently with the appropriate cert rules and applicable civil service rules and laws (GC §§ 19057-19057.4).	Cert
B88.	Require departments to enter list clearance information to close out the hiring list.	Cert
B89.	Provide reports for hiring list that have not been closed out within 90 days.	Cert
B90.	Prior to removing a newly appointed individual from the employment list, ensure contact outcomes have been entered for eligible individuals as defined on the hiring list (GC §§ 19057-19057.4).	Cert

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B91.	<p>Maintain the following types of employment lists and allow for creation of additional types of lists (GC §§ 18904 and 19504):</p> <ul style="list-style-type: none"> • SROA. • Reemployment (subdivisional, departmental, general). • Promotional (subdivisional, departmental, multidepartmental, servicewide). • Preferred limited term. • Departmental open. • Multidepartmental open. • Servicewide open. • Limited Exam and Appointment Program (LEAP). 	Cert
B92.	<p>Update the eligible lists to reflect the information contained in the employment history file (e.g., the date the person was hired into a new position, change of address, and job transfers) (GC § 18901).</p>	Applicant
B93.	<p>Automatically remove subject employee from all promotional lists after the employee leaves state service. If the employee reenters state service within six months with a permanent appointment, reestablish the employee's name on the promotional list and store the history of the transaction (CCR title 2, § 240).</p>	Cert
B94.	<p>Automatically remove the employee from all lists after he or she has been reported to have been terminated from state service by SCO. Allow the employee to be reestablished on the list if the employment action appeal is upheld and reinstatement of list eligibility is stipulated.</p>	Cert
B95.	<p>Automatically remove the employee from the applicable eligible list when an individual is appointed to a position from a hiring list.</p>	Cert
B96.	<p>When an individual transfers to a position (instead of being appointed from a cert list), automatically remove the subject employee from the applicable eligible list and/or prevent the subject employee from applying for future exams for that class.</p>	Cert
B97.	<p>Apply proper cert rules in accordance with applicable business rules.</p>	Cert
B98.	<p>Allow for accurate creation of partial cert lists in accordance with applicable business rules.</p>	Cert
B99.	<p>Allow for hiring list cut off by ranking or specific number of eligibles specified by the user.</p>	Cert

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B100.	Permit search by unique user identification number to ensure job applicant is reachable on hiring list.	Cert
B101.	Retain history to determine the actual names and rankings of eligibles on any list at any point in time.	Cert
B102.	Produce accurate informal and formal hiring lists by various filter criteria based on cert request details.	Cert
B103.	Accurately collect eligibles contacted and hiring results per hiring list.	Cert
B104.	Update eligible records to reflect changes in the employment history file and to reflect other personnel actions.	Applicant Cert
B105.	Require departments to enter hire information about a new hire from a cert list.	Cert
B106.	Provide a robust report generator capable of performing flexible, interactive queries in the database without affecting online transaction performance.	Reports
B107.	Collect and track applicant and test information on individuals not currently in state service (e.g., public and out-of-country individuals) (GC § 18900).	Applicant

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B108.	<p>Pursuant to GC § 19792, generate, on-demand, summary reports containing any combination of the following information related to employees of the state:</p> <ul style="list-style-type: none"> • Age. • Agency. • Application screening outcomes. • Appointment date. • Civil service status. • Classification. • County. • Disability. • Ethnicity. • Exam outcome by phase or total. • Exam or series exam. • Full-time, seasonal, and other status (any, some or all may be selected). • Gender. • In-service appointments. • Job category. • List type (for appointments)/non-testing classes. • New hires. • Occupational group. • Pay scale/monthly salary/annual salary. • Promotion. • Separation date. • Temporary authorization. • Department. <p>Reports may use any of these data elements as the primary, secondary, or tertiary sort criteria. When selecting sort criteria, the entire dataset must be sorted. Subtotals may be required of any sort category.</p>	Reports
B109.	Allow authorized personnel to generate reports related to ethnicity, gender, and disability data by exam or classification without compromising performance.	Reports
B110.	Generate reports and notices required to ensure that the system is processing candidates appropriately based on civil service rules.	Reports Exam
B111.	Permit the business rules to be modified by authorized end users at different departments with applicable start and end dates for a specific rule.	General
B112.	Provide an open architecture, not proprietary software.	IT

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B113.	Make exam screens customizable by authorized departmental users so that departments can create screens specific to their types of exams held and their workflow.	Exams
B114.	Maintain selection business rules for creation of hiring lists through tables that can be updated by authorized individuals while retaining previous data for history and audit purposes.	Cert
B115.	Provide look-up lists for classifications or test locations and also allow for searching for exams statewide.	Exams
B116.	Provide tools to monitor the system performance.	IT
B117.	Conform to the State Information Security Guidelines and allow for data encryption.	IT
B118.	Provide password protection allowing only those individuals that require access to the system. Provide a secured password and be able to set levels of access based on a variety of criteria (e.g., department, position).	Admin
B119.	Permit SPB staff the ability to directly receive and transfer information among remote offices and off-site locations using current equipment.	Admin
B120.	Produce required reports as needed, on demand, or at scheduled intervals.	Reports
B121.	Perform audits of the system data for up to a specified length of time and produce a report of the number of hires and the number of positions for which the hiring list was ordered.	Reports
B122.	Allow the admin user to specify the number of contact letters to be generated including specific ranks/sequences to fill a vacancy from the hiring list.	Cert
B123.	Produce contact letters to eligible candidates on request via email and hard copy.	Cert
B124.	Produce general notices via email and hard copy as required, including extension of lists, status updates, change of information, abolishment of lists, etc.	Exams
B125.	Limit the number of names on LEAP cert lists produced to a maximum number to be specified by authorized end users.	LEAP

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B126.	Provide access security to ensure that personal information about applicants' login sessions is not inappropriately disclosed, including ensuring that, after initial data entry, data is not displayed when the applicant record is accessed or modified, either during self-service or departmental processing, including a time out after a certain period of inactivity (Civil Code § 1798 and GC § 19705).	Applicant
B127.	Make specified lists available online for all departments to view. Also, allow departments to perform flagging on specified lists	Exams
B128.	Generate reports of appropriate hiring lists (e.g., lists of equivalent classifications).	Cert
B129.	Provide analytical tools to perform exam item analysis and raw score tabulations reports on demand.	Reports Exam
B130.	Allow cert lists to be filtered by specific criteria for the vacancy being filled.	Cert
B131.	Provide the ability for skills to be weighted based on relative importance for a specific position (e.g., 70 percent network support and 30 percent application development) and create eligible lists utilizing these test weights.	Exams
B132.	Provide the ability to modify the system as business rules change.	Admin
B133.	Provide for eligible list disclosure (SPB Rule 250, MSM § 8000).	Exams
B134.	Provide the ability for withholding individuals from eligible lists (GC § 18935).	Exams Admin
B135.	Allow flagging of individuals on an eligible list based on applicable business rules.	Exams
B136.	Allow ordering of correct commitment cert lists in accordance to GC.	Cert
B137.	Allow tracking of applications submitted, determine if met MQs, and process exam via a web based interface.	Exams Admin
B138.	Provide the ability for an analyst/manager to track exam planning throughout the process.	Exams Admin
B139.	Provide exam progress capability so applicants can find out where they are in the exam process.	Exams Applicant
B140.	Provide SPB with the ability to restrict access to an exam at any point during the administration.	Exams Admin
B141.	Allow accurate audit trails of all transactions throughout system including what was updated, when it was updated, and by whom. Allow search capability within audits.	Reports

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B142.	Allow departments access to statewide eligible records once exam has completed.	Exams
B143.	Allow admin users to control the amount of information released to public users.	Applicants
B144.	Allow hiring list to remain static excluding applicant contact data even if information is changed elsewhere in the system.	Cert
B145.	Allow the ability to close scheduling at any time for an exam.	Exams Admin
B146.	Allow reports to be generated on one screen or on many pages. Reports with more than one page should allow for printing with page ranges.	Reports
B147.	Allow schedule related reports to be generated by panel member, location, or date.	Exams Admin
B148.	Allow development of eligible disclosure lists for public and departmental usage which are to be consistent with the cert rule and exam type (e.g., open and promotional).	Exams Admin/Applicant
B149.	Allow departments to create select preference/skill flags and public users to select them during the exam process. Select flags must also appear on the cert list with the ability to function as a filter on a cert.	Exams Cert
B150.	Allow all or select applicants to be flagged with accept flags with the option to remove them at a later time. Accept flags must also appear on the cert list.	Exams Cert
B151.	Allow SPB to update processing department at any point during an exam.	Exams
B152.	Allow LEAP hiring list to be automatically generated (if available) when a hiring list for the corresponding classification is requested.	Cert
B153.	Allow applicants to maintain their online profile independently.	Applicant
B154.	Allow for the ability to extend hiring lists and the ability to fine tune the amount of time a given security group can increase the hiring list life for.	Cert
B155.	Allow for the ability to create partial certs for all eligible classifications.	Cert
B156.	Store reports stating which eligibles contact letters were emailed or printed.	Reports
B157.	Allow for the ability to email contact letters.	Cert
B158.	Allow department users to view but not edit the scores of applicants who are attached to an openly available list processed by SPB.	Admin

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B159.	Allow for authorized admin departments to transfer eligibility of one applicant to another eligible list with a different class code.	Exams
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3.5 TECHNICAL FUNCTIONAL REQUIREMENTS

The following technical requirements reflect the technical needs of the exam and cert system.

Req #	Technical Requirement Text	Required/ Optional
T-1	The proposed solution shall be web based.	Required
T-2	The proposed solution shall support modern web browsers including Internet Explorer 8, Firefox 3.6, Safari 5.0, Chrome 11.0, or greater versions.	Required
T-3	The proposed solution shall use the Microsoft .Net Framework version 4.0 or greater. Requires Visual Studio 2010.	Required
T-4	The proposed solution shall use Microsoft Structured Query Language Server version 2008 R2 or greater as its data repository.	Required
T-5	All web content on publicly available web sites shall conform to Web Content Accessibility Guidelines 2.0, W3C World Wide Web Consortium Recommendation 11 December 2008, Level A and Level AA Success Criteria (GC § 11135).	Required
T-6	The proposed solution shall run on servers using Microsoft Windows Server version 2008 R2 or greater as its operating system.	Required
T-7	The proposed solution must conform to the Information Practices Act of 1977, State Information Security Policy and Government Online for Responsible Information Management (SAM §§ 5300–5360, Civil Code 1798, and GC § 19705).	Required
T-8	The proposed solution must provide architecture compliant with the Office of Technology Services and California Technology Agency security standards such that SPB avoids the use of internet security and acceleration servers.	Required
T-9	The proposed solution must have a consistent visible naming convention for all user interface artifacts for the purpose of identification in trouble shooting.	Required
T-10	The proposed solution must provide human understandable error messaging.	Required

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T-11	The proposed solution must provide a single entry sign-on for SPB and departmental human resource staff.	Required
T-12	The proposed solution must provide consistent menus and screens with a common look and feel throughout the application consistent with industry best practices and the state's usability standards.	Required
T-13	The proposed solution shall provide comprehensive electronic context-sensitive help function that can be accessed either from the function in question or independently from a menu. The solution will allow non-technical SPB users to create and maintain the content. The other functions to assist the user shall include: <ul style="list-style-type: none"> • Provide a help table of contents, multiple (up to 99) index levels, and full text search; • Provide ability to cross reference and ability to link to access to regulations, policy, and procedures by issue; • Track who added or edited content and when those changes were made; • Provide ability for users to have online access to the user's manual. 	Optional
T-14	The proposed solution must provide capacity for concurrent user loads experienced by existing systems, either internal or external, with acceptable performance.	Required
T-15	The proposed solution must provide for a growth capacity of at least 30 percent in users over a 5-year period without degrading performance and response time.	Required

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BASELINE ANALYSIS

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4.0 INTRODUCTION

This section describes the state's examination (exam) and certification (cert) processes greater detail. While representing the exam and cert processes in California, the following process descriptions are at a high level and are not inclusive of all nuances for every situation; exceptions do exist.

The exam and cert processes are described under the following sections:

- Current Method.
- Technical Environment and Existing Infrastructure.

4.1 CURRENT METHOD

4.1.1 EXAM AND CERT SYSTEM OVERVIEW

The State Personnel Board (SPB) is responsible for California's civil service system. Within the framework established by the State Constitution, SPB oversees the merit employment system and resolves personnel action appeals.

Exams

There are generally three major categories of examinations: Career Executive Assignment examinations, those associated with a specific vacant position within a department, and those that are offered continuously for a general classification. SPB has statutory responsibility for exam administration and has delegated some exam authority to departments to administer their own exams. Generally, departments administer their own examinations; however, some larger departments may administer exams on behalf of smaller departments. With approval from SPB, departments may also choose to administer exams jointly.

Departments administer exams to establish a list of qualified candidates who have passed the exam. A department does not need prior approval from any outside agency to initiate the exam process; however, SPB approval is necessary in some instances. An example of this is when multiple departments want to administer an exam jointly or when a department wants to conduct an exam for a servicewide class. A servicewide class is a class such as the Office Technician, which is utilized by almost all departments. SPB directly administers these exams, many on an ongoing basis, regardless of current vacancies to ensure an adequate candidate pool exists for high volume classifications.

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Departments process their exams through the Legacy Exam System, the JobAps System (JobAps), or an external process. In addition, the SPB Web Team also processes online examinations for many departments.

Eligible Lists

Eligible lists are comprised of individuals who passed an exam for a specific classification. Eligibles appear on the lists in rank order. The types of eligible lists are as follows:

- Open and/or promotional eligibles lists are comprised of individuals who have passed a competitive exam. Open exams allow both non state employees and state employees to compete. Promotional exams are limited to current state employees.
- Reemployment eligible lists are comprised of state employees who have been laid off.
- State Restriction of Appointments (SROA) eligible lists are comprised of state employees facing layoff.

One or more eligible lists along with specific filter criteria (e.g., department, location, classification, applicable laws/rules applied) are used to create cert lists.

Cert Lists

In order for any department to legally make a hire, a cert list must be created. These lists identify a group of individuals as “certified” to be eligible for employment. The Government Code and California Code of Regulations prescribe specific conditions under which a department may hire an individual into a civil service classification. To ensure all qualified eligibles including reemployment and SROA eligibles are considered, JobAps is the system of record for all certifications. All hiring actions are recorded in JobAps to keep eligibility lists up to date. Therefore, if a department chooses not to use SPB systems, they must enter their exam results and candidate information into JobAps.

When a department wishes to make a hire, a cert list is ordered listing those who are eligible to be hired based on their qualifications for the vacancy. The department will contact and interview eligibles in order to make a hire from the cert list. If a hire is not made, the cert list is either abolished or expires.

SPB systems do not allow for the creation of a skills-based cert which matches a candidate’s experience to a specific vacancy, such as matching an Associate

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Information Systems Analyst candidate with a background in writing business requirements to an Associate Information Systems Analyst vacancy requiring the candidate to have business analyst skills.

4.1.2 CURRENT PROCESS DESCRIPTION AND WORKFLOW DIAGRAMS

Overview – Exam and Cert Processes

The first step in the exam process is determining the necessity for an exam through evaluating the condition of existing eligible lists and the expected number of hires to be made.

If an exam is needed, the testing department must decide which system to utilize:

- 1) The Legacy Exam System.
- 2) JobAps.
- 3) The SPB Web Exams System.
- 4) An external process.

Regardless of which system is selected to administer the exam, the following processes must be completed:

- 1) Post an announcement for the exam (exam bulletin) on JobAps public portal.
- 2) Eligible records must be in JobAps

Note: As of September 28, 2009, JobAps became the system of record for cert and the Legacy Cert System became a supporting system.

The following diagrams (Figure 4-1, Figure 4-2 and Figure 4-3) illustrate the context for the existing systems followed by the detailed processes.

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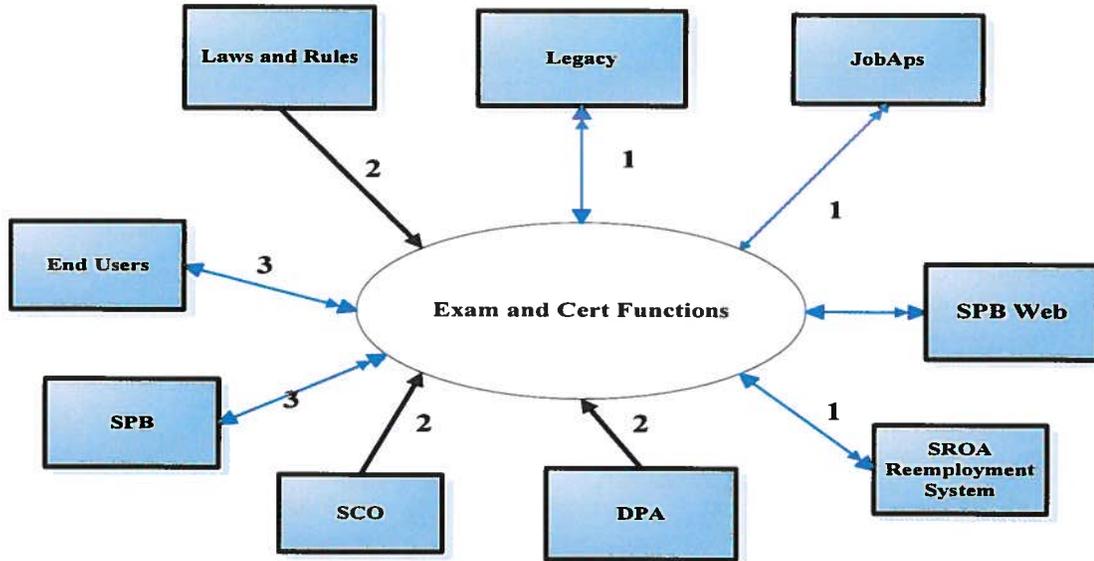


Diagram Key:
1) Systems
2) Influence
3) Users

Figure 4-1 Exam and Cert Functions

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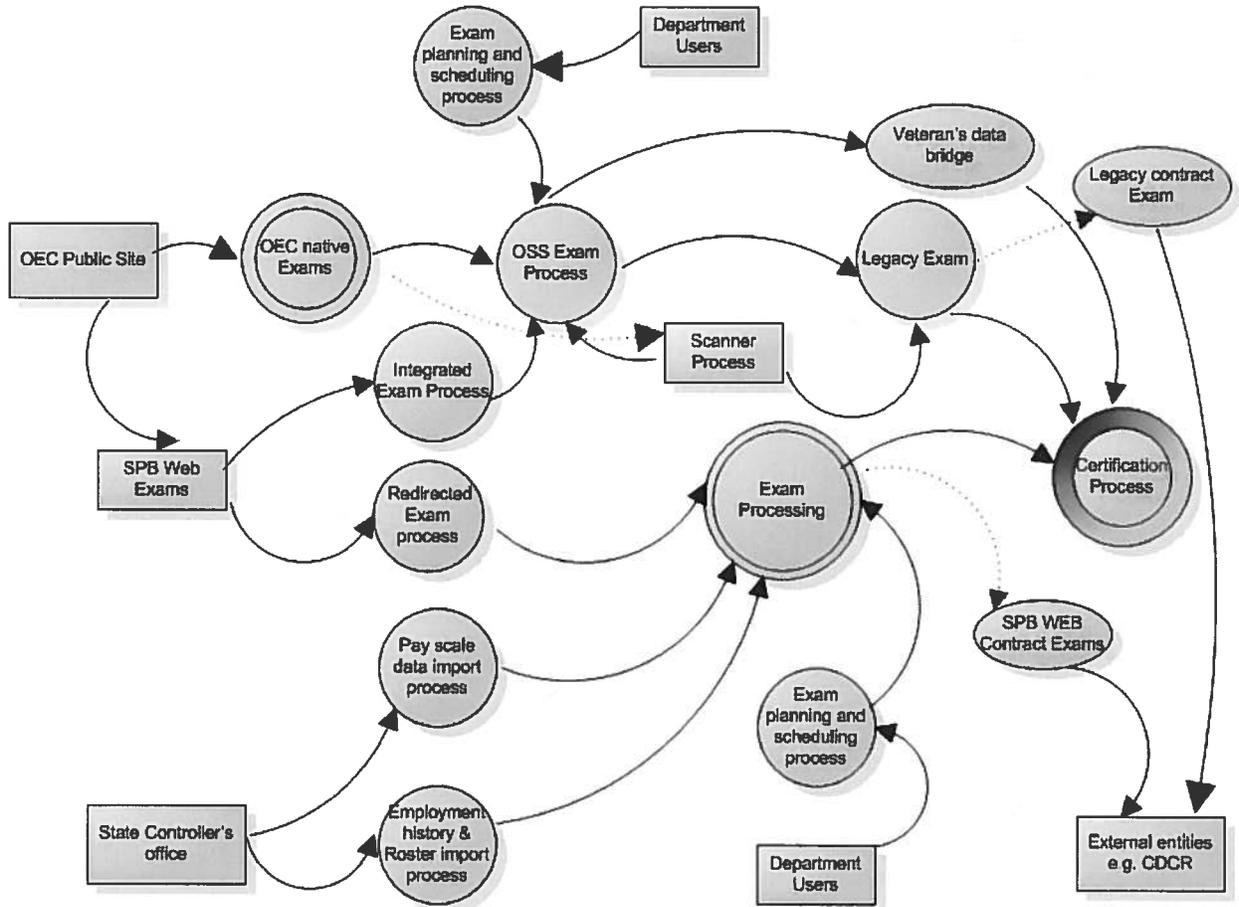


Figure 4-2 Data Flow in Exam System

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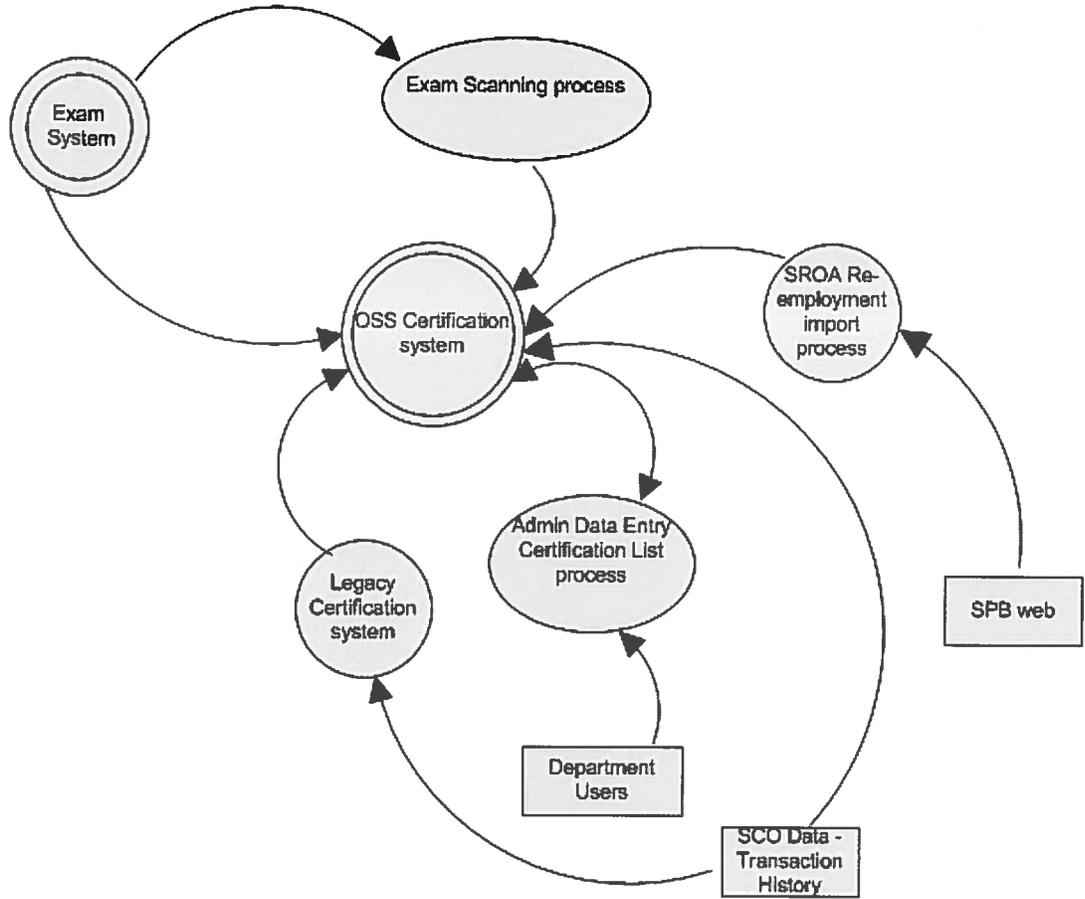


Figure 4-3 Data Flow in Cert System

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Create an Exam

1. **Plan an Exam**

Departments may contract with SPB or partner with other department(s) to administer an exam. Departments are encouraged to complete an exam plan prior to conducting an exam. If a multidepartmental exam is planned, one department assumes control over the exam process. Servicewide exams are administered by SPB. However, SPB can authorize a department to conduct a servicewide exam under certain circumstances.

Various aspects of an exam determine which exam system would be optimal:

- Online application submittal – SPB Web Exams System and/or JobAps.
- Series exam – Legacy Exam System and/or SPB Web Exams System.
- Scanned written test – Legacy Exam System or JobAps.
- Scanned written test with complex scoring – Legacy Exam System.
- Multiple panels – Legacy Exam System.
- Large number of applicants and complex components – Legacy Exam System.

2. **Setting up the Exam**

Departments decide the exam test type and test components, which determine the business rules the system(s) will use in processing scores.

3. **Post Exam Bulletin**

A customizable exam bulletin advertising the exam is created in JobAps.

4. **Receive and Screen Applications**

Applications are submitted for an exam either online or by mail. Online applications are captured by SPB Web Exams System or JobAps. Paper applications must be manually entered in to the Legacy Exam System and can be entered into the SPB Web Exams System or JobAps. SPB Web Exams System and JobAps store previous applicant data, allowing for expedited application entry. Applications are managed within any of the systems and notated as accepted or rejected.

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5. Create and Send Notices

Regardless of system used, notices are created and sent throughout the exam process to communicate with the applicant.

The diagram on the following page summarizes the process of creating an exam (Figure 4 - 4).

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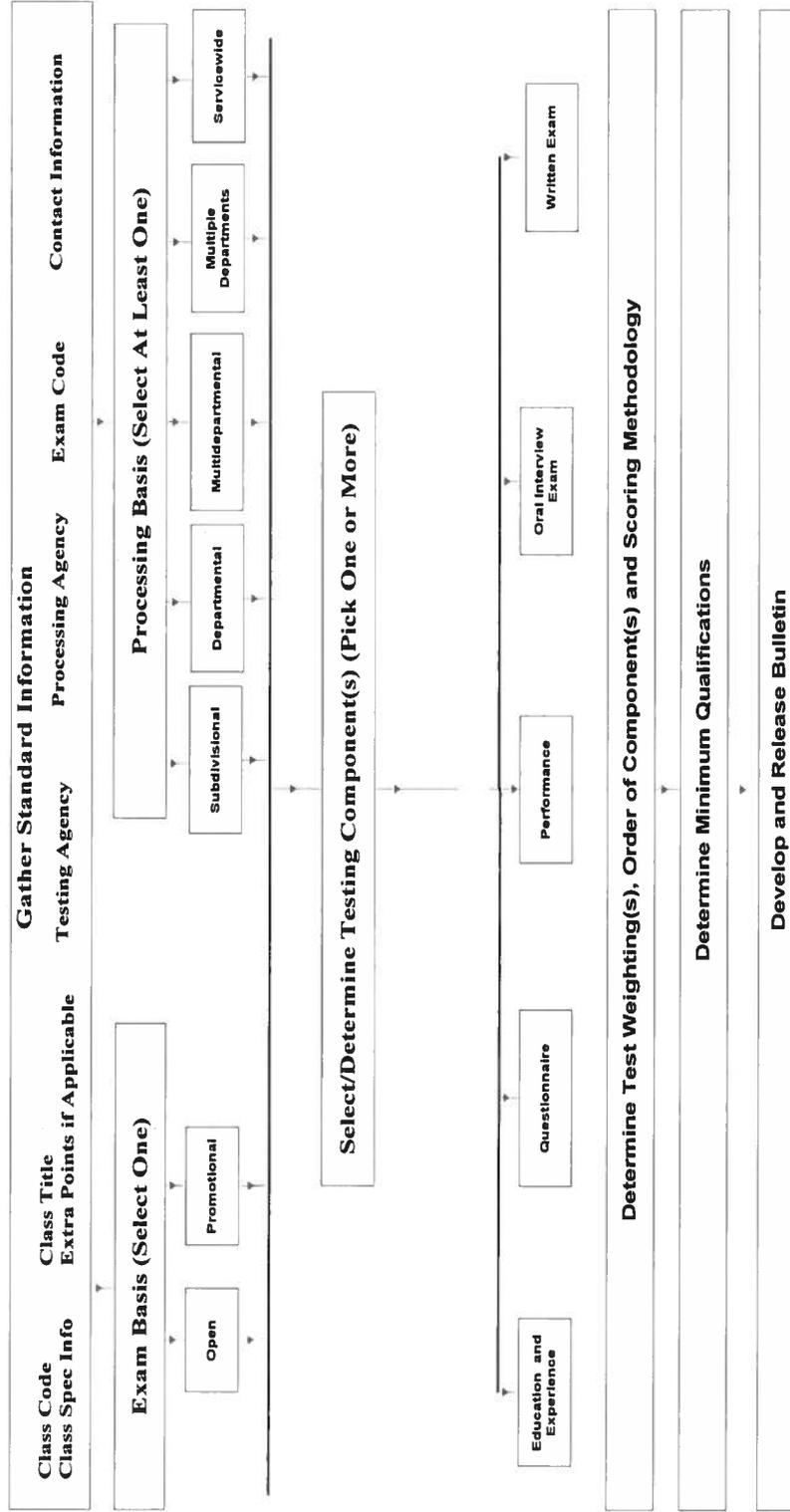


Figure 4-4 Steps in Creating an Exam

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Administer Exam

1. Identify Test Component(s)

Exams have one or more test components. While components are determined by the testing department, they normally fall into the following general categories:

- Education and experience.
- Questionnaire.
- Performance.
- Oral interview exam.
- Written exam.

Each component has its own scoring process and the results are processed through a final scoring process for the exam.

2. Schedule Test Component(s)

The testing department determines the locations at which a test will be given and creates an exam schedule. The system generates a notice to appear for each scheduled applicant and generates various reports for exam processing.

3. Administer Test Component(s)

Online assessment exams are administered via the Internet. For traditional exams, candidates appear before a panel. The test is administered and the raw score data is collected.

4. Score Test Component(s)

Score data is entered into the processing system in two different ways:

- Uploaded from an external system, such as scanned data or electronically collected data.
- Hand entered into the system from a scoring panel's written records.

Once the raw score data is loaded, various reports and statistics are analyzed to establish validity of the testing items. After the data has been reviewed, the testing department continues to the next component or processes the final exam scores.

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5. Finalize Exam and Create Eligibility List

After completing the scoring processes for each testing component, the final exam scoring is calculated. Each component has a percentage weight towards the final score, which must total 100%. After the pass points have been applied, the final scores may be normalized.

Once the final base score has been calculated, extra points as described below added to the final scores of successful candidates if applicable.

- Career Credits - the system checks a candidate's job history on the State Controller's Office (SCO) employment history file and applies the appropriate credits. Some candidates cannot be automatically verified and require a manual check.
- Veteran's Preference Points - SPB maintains a separate file that contains relevant data for all individuals who have approved veteran's preference point eligibility. Some candidates cannot be automatically verified and require a manual check.
- Seniority Credit - Seniority points are manually verified and processed.

Various reports are produced for the final audit of the exam before creating the eligible records and eligible list. After auditing exam material and scoring processes, the eligible list is created, and candidates receive notice of their final results.

Eligible lists are maintained in JobAps. Eligible lists are dynamic and change frequently due to new eligible records being added and eligibles being hired off of the list.

The diagram on the following page summarizes the process of administering an exam (Figure 4- 5).

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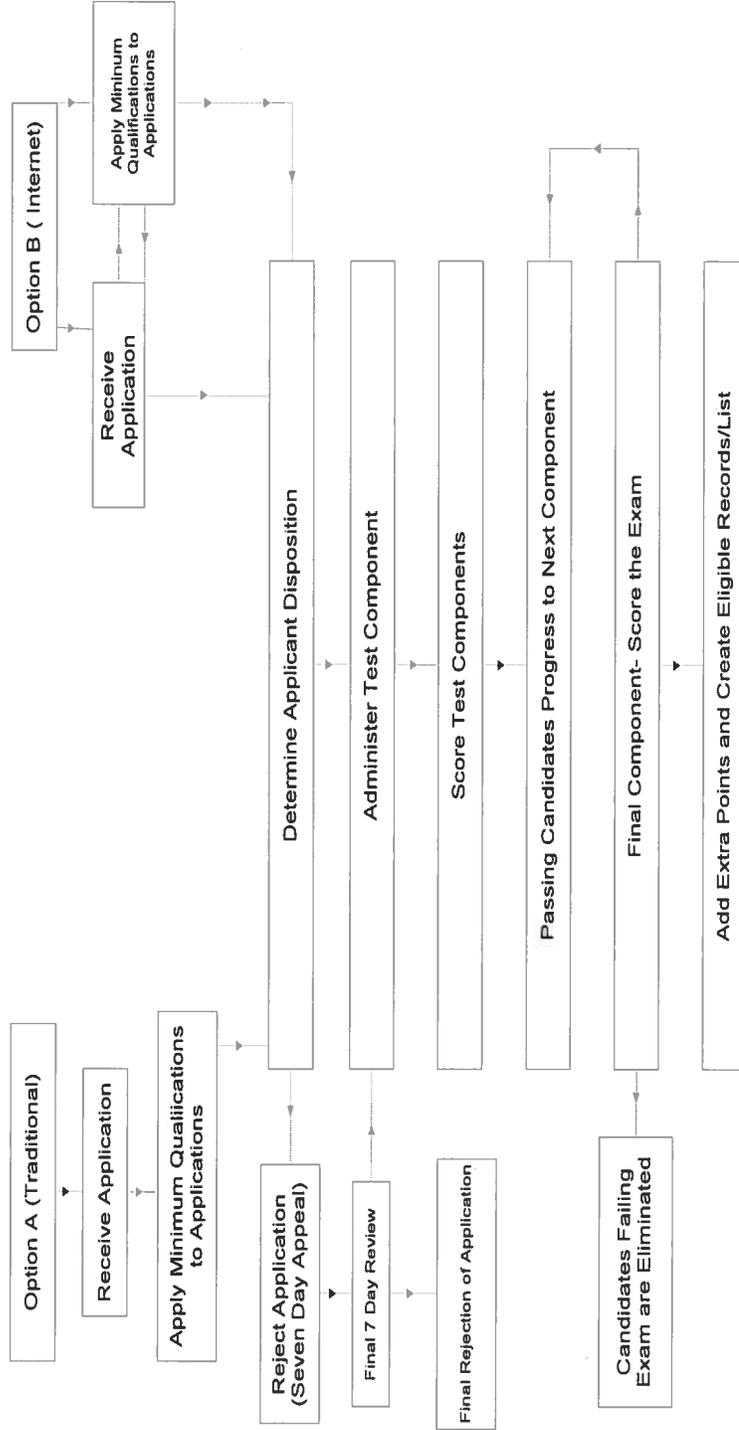


Figure 4-5 Steps to Administer an Exam

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Cert Process

When a department has a vacancy, a certified list of eligibles (a cert list) may be ordered. The cert list is a static list of eligibles for a vacancy at the time the list is ordered. The cert list is a collection of various eligible lists filtered with vacancy specific criteria. Because of this, an applicant on an eligible list may not be on a cert list. Multiple or single eligible lists may make up a cert list.

1. **Create a Cert List**

When a cert list is requested, the department must enter the specifics of the position. Once filtering criteria are applied, a cert list is generated. Current filters used include:

- Department (mandatory).
- Classification (mandatory).
- Geographical location of work site (mandatory).
- Tenure (mandatory).
- Time base (mandatory).
- Language fluency.
- Work type preferences.
- Skills-related performance indicators.
- Additional proficiencies.
- Appropriate substitutions.

2. **Process a Cert List**

Once the cert list is created, the hiring department may contact any and/or all eligibles to ascertain their interest in a specific position. Departments notate their contact results on the cert list. Hiring interviews are conducted for the most qualified. If a job-person match is determined, a job offer is made and accepted. The applicant is denoted as having been hired on the cert list and removed off of the eligible list; the cert list is then closed, completing the cert list life cycle.

3. **Maintain Eligible Lists/Records**

Eligible lists require maintenance subject to the laws and rules governing California civil service. Various eligible lists are:

- Reemployment (subdivisional, departmental, general).
- SROA (general, Injured State Workers Assistance Program, Next Step).

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- Promotional (subdivisional, departmental, multidepartmental, multiple departments, servicewide).
- Open (subdivisional, departmental, multidepartmental, multiple departments, servicewide).
- Limited Exam and Appointment Program.

Transfers of eligible records from one eligible list to another are performed in accordance with SPB laws and rules. This is a manual process.

An extract of the employment history from SCO is matched against the eligible records to update contact information and current employment status for current state employees.

The diagram on the following page summarizes the process of creating a cert list (Figure 4.6).

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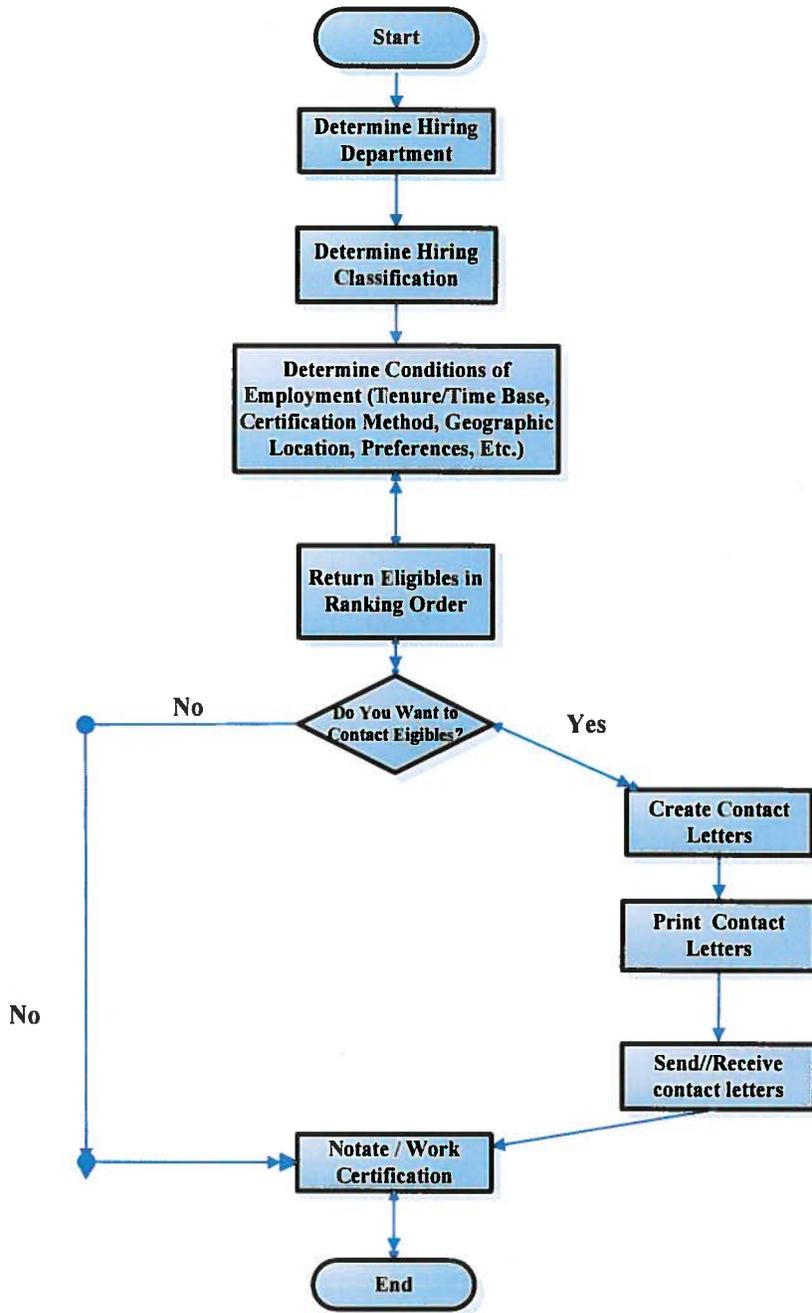


Figure 4-6 Creation of Cert Lists

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Produce Reports

SPB uses statistical analyses through the exam and cert processes to produce reports for auditing exams and appointments. Auditing exam and cert functions also ensures all civil service rules, laws, and regulations are being followed in addition to compliance with federal and other state reporting requirements. The systems have general reports departments use to perform the following functions:

- Audit the exam process.
- Audit the outcome of each exam phase.
- Audit the appointment processes overall.
- Generate statistics for various inquiries and reports.
- Assess current status of a list to determine if additional exams are needed.
- Evaluate the outcome of appointment practices.
- Audit notifications to applicants of scheduled exam times and sites.
- Facilitate administration of the exam.
- Audit the outcome of a specific hiring process.

Reports are available ad hoc and on demand. Any nonexistent stored report requires development of a custom report.

Maintain and Support System

1. Receive Request for Support

SPB Information Technology (IT) or Exam Unit staff are notified by departments regarding system issues. This usually occurs via an email or telephone call.

2. Identify Malfunction and Repair as Necessary

If the error is with the Legacy Exam System, the Legacy Cert System, the SPB Web Exams System, or the SROA and Reemployment System, the request is investigated and the problem is analyzed and repaired.

If the error is with JobAps, the request is investigated and the problem is analyzed and reported to the vendor.

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3. Support Interfaces

The existing systems receive weekly employment history data from SCO in the form of a "T-log" file (a transaction file created for all the payroll transactions reported). This file is the source of the recent hires and is used to update the certified list file. Other department interfaces include the Department of Personnel Administration's pay scale file and classification specifications. The pay scale file that is used to update exam bulletins and classification specifications are used for promotional eligibility and career credit checks.

4. Request Data Center Exam Service Support for Connectivity and Application

Office of Technology Services (OTECH) staff supports the infrastructure and hardware of the exam and cert system that is on the mainframe. This group also provides the connectivity to the various user departments when requested and support the nightly job runs for the system and tape data transfers.

In addition, OTECH hosts and supports the systems environment for JobAps. This includes the web servers, routers, switches, database servers, and storage area network (SAN) storage.

The SPB Web Exams System and the SROA and Reemployment System are both hosted locally within SPB's site at 801 Capitol Mall.

5. Administer Security and User IDs

SPB provides security support for SPB user IDs. OTECH is responsible for providing security support to departments that do not have their own security administrator. Departments with their own security administrator support their user IDs to this system.

In JobAps, departmental users create their own user ID and passwords. SPB grants administrator rights to the departmental administrators. The department administrators grant rights to internal department users based on requirements and classification.

The SPB Web Exams System and the SROA and Reemployment System maintain their own sets of user IDs for departmental users.

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A departmental user may have up to four user IDs, for these five systems, in order to support the department's exam and cert needs.

6. Maintain User Interface and Online Screens

The SPB Web Unit staff maintain the online screens for the SPB Web Exams System and the SROA and Reemployment System and makes modifications when required. The JobAps vendor maintains the online screens for JobAps and makes modifications when requests are made.

7. Develop and Maintain Custom Applications and Reports

Custom applications and reports are developed and maintained by SPB IT staff for the Legacy Exam System, the Legacy Cert System, the SPB Web Exams System, and the SROA and Reemployment System, as all of these are custom-built systems using various development technologies.

Though JobAps is a modified off-the-shelf system (MOTS), it does not readily provide users with the ability to generate ad hoc reports. Therefore, SPB IT staff occasionally have to generate custom reports via the backend database, or request vendor assistance to generate custom reports.

Customized exams, requested by various departments through SPB Exam Services Unit, are programmed by SPB IT staff.

4.1.3 Current Workload Statistics

The following are the current exam and cert system workload statistics.

Exhibit 4-1: BUSINESS TRANSACTION VOLUME INFORMATION

<i>Description of Transaction Volume</i>	<i>Volume Number</i>
The key volumes for the state are shown below. All volumes are approximate.	
Number of exams offered annually	2,800
Number of online exams offered annually	120
Number of applicants annually	480,000
Number of cert lists created annually	32,400
Current number of civil service classifications	4,600
Current number of users of the exam and cert systems	1,300
Current number of users of the online state application	281,200

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**Exhibit 4-2: SPB EXAM AND CERT LIST CURRENT
WORKLOAD STATISTICS**

<i>Workload Description</i>	<i>Volume Number</i>
Average number of exams conducted per month	230
Average number of certified lists created per month	2,700
Average number of monthly manual interventions	6,700+
Average number of hours SPB staff spend monthly responding to user department questions	680

4.2 TECHNICAL ENVIRONMENT AND EXISTING INFRASTRUCTURE

This section covers SPB IT and infrastructure and current systems.

4.2.1. SPB PERSONNEL REQUIREMENTS

A total of 18.5 positions are required to administer and maintain the exam and cert systems and perform compliance reporting and data recordation activities.

Three and a half positions are IT personnel assigned to support the current systems and infrastructure in the following roles:

- Network administration - Systems Software Specialist II: (1)
- Database administration - Staff Programmer Analyst Specialist: (1)
- Maintenance support - Associate Programmer Analyst Specialist: (1)
- Ad hoc report development - Associate Information Systems Analyst: (0.5)

The remaining positions are program staff responsible for performing administrative functions that support the exam and cert systems in the following role:

- Administrative functions – (4) Associate Personnel Analysts, (6) Staff Services Analysts, (2) Personnel Technician IIs, and (3) Staff Services Manager Is.

4.2.2. CURRENT EXAM AND CERT DIVISION COMPUTING ENVIRONMENT

The SPB computing environment is partially housed at OTECH, and partially in house. Hosted systems leverage the mainframe, powerful web servers, database servers, routers, switches, internet security and acceleration servers, and SAN storage. The in-house computing environment is comprised of Microsoft-based

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file and print servers, Exchange, Active Directory, virtual machine software, web and application servers, database servers, and SAN storage.

4.2.3 WORKSTATIONS AND NOTEBOOKS

The exam and cert business functions are enterprisewide. Currently, user departments use dumb terminals or computers to access the mainframe. State departments have a variety of workstation configurations and all must be able to access the systems with minimal impact to their current work environment.

4.2.4 CURRENT EXAM AND CERT DATA ARCHITECTURE

The exam and cert files reside on a processor at OTECH. Departments choosing to use the online exam and cert systems access the applications through the OTECH menu.

The exam file has approximately 325,000 records in a virtual storage access method (VSAM) database. The cert file contains approximately 360,000 records and is also in a VSAM database. SPB also maintains the veteran's credit file, used to determine if an applicant is eligible to claim veteran's preference points and a prior score file that holds scores for specific written, typing, and bilingual fluency exams. Additionally, SPB maintains test administration files for exams given on the Internet. The data has a growth rate estimated at 20% annually.

Civil service pay scales are maintained in an integrated database management system database. The data contains current and historical information needed to process payroll for over 6,000 state civil service and exempt classifications within the state and increases in size by approximately 15% annually.

4.2.5 CURRENT SYSTEM MISSING FUNCTIONALITY

JobAps is experiencing data integrity and performance issues and is missing a significant amount of required functionality. Given its deficiencies, the system is currently being supplemented by three systems, the Legacy Exam System, the Legacy Cert System, and the SPB Web Exams System, two of which were to be decommissioned once JobAps was implemented. In addition, a new SROA and Reemployment System was built to address additional limitations of JobAps. However, the support of legacy and other systems does not adequately address the state's business needs and in fact adds to JobAps' performance issues.

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SECTION 5

PROPOSED SYSTEM

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5.0 INTRODUCTION

In September 2009, the State Personnel Board (SPB) implemented the JobAps System (JobAps), a proprietary web-based modified off-the-shelf system (MOTS). JobAps was planned to replace two systems used for processing examination (exams) and certifications (certs) to expedite the selection process to better meet the state's hiring needs and to create a one-stop shop for state job seekers. Currently, the system does not meet expectations of the SPB or the departments throughout the state which use this system to conduct their exam and cert processes. In addition, the system is experiencing data integrity and performance issues, and is missing a significant amount of required functionality.

Release one, which was intended to fix JobAps' most critical deficiencies, was originally due to be delivered, tested, and implemented by mid February 2011. The release was unsuccessful. SPB, with the approval of the State and Consumer Services Agency (SCSA) and the California Technology Agency, has abandoned efforts to stabilize JobAps and chosen a recommended path forward to provide exam and cert services to departments throughout the state.

The SPB team has recommended a solution that meets the business and technical needs related to statewide hiring and provides the state with the best value to meet those needs. This section presents the recommended solution and a discussion of how its implementation will affect the state's personnel and organization. Additionally, it discusses the rationale for the selection. The section is organized under the following headings:

- Description of the Recommended Solution.
- Rationale for Selection.
- Other Alternatives Described/Considered.

5.1 DESCRIPTION OF THE RECOMMENDED SOLUTION

SPB recommends a solution which would fully decommission JobAps at the end of one year. SPB will then move on to decommission and replace other related systems while adding needed functionality. This effort can be accomplished within SPB's existing resources and will not require SPB to pursue a budget change proposal for additional funding. The ultimate goal of the recommended solution is to integrate the five existing systems into a single system solution.

There are four phases to the recommended solution. In the first phase, SPB will decommission JobAps' exams function and revert to the Legacy Exam System, while maintaining the JobAps cert function. The Legacy Exam System is generally reliable and offers better system performance than JobAps. Most

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departmental users are familiar with this system. Continuing to use JobAps' cert functionality will avoid the need to revert to mainframe technology for cert. However, there are issues with the cert function that would require departments to continue workarounds already in place to address defects until the JobAps cert component is replaced.

In the second phase, SPB will decommission JobAps cert function and move to a custom built cert system. This phase will greatly increase the reliability of the reporting features used by departments when creating cert lists. At the end of this phase, the total number of systems for exam and cert will be reduced to four.

In the third phase, SPB will decommission the Legacy Exam System. This phase will also merge the existing exam instances of SPB Web Exams System into the recommended solution. This phase will allow for real-time processing of the exams and eliminate the need for any batch processing to occur. At the end of this phase, the total number of systems for exam and cert will be reduced to one.

In the fourth phase, SPB will enhance the custom-built system to provide greater flexibility to the system and tailor the additional features to specific business needs.

With its in-house expertise, SPB will be able to build a better product to meet the state's complex hiring processes. This product will have the ability to accommodate SPB's current needs and allow for future growth to meet the state's evolving hiring needs while adhering to industry standards in technology. The system will be implemented in a phased-in approach and will be built in a modularized fashion to make it adaptable to future changes in technology.

5.1.1 SOLUTION HARDWARE, SOFTWARE, AND TECHNICAL ARCHITECTURE

Key design features of the system architecture are n-tier architecture, Microsoft structured query language (SQL) database, and Microsoft.NET with C#. The system will be hosted at OTECH across dedicated load-balanced servers.

The recommended custom-built system will:

- meet the state's business and system requirements,
- be compliant with the state's accessibility standards,
- be fully supported and maintained by SPB.,
- allow the solution to be completely platform independent,
- allow users to access the system using any client that supports a browser, and
- be customizable to meet SPB's workflow requirements.

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The recommended solution will satisfy the following requirements:

- Business functionality.
- Accessibility.
- Security.
- Data integrity.
- Performance.
- Compliance with the California Technology Agency and Office of Technology Services (OTECH) policies.
- Stability.
- Scalability.
- Maintainability.

5.1.2 INTEGRATION ISSUES

There are two integration issues that must be addressed for the custom-built system. The first challenge is to integrate the five existing systems into one entity for exam and cert processing. The second issue that must be addressed is the integration to the 21st Century Project Human Resource (HR)/Payroll System, done in Systems, Applications, and Products (SAP). This interface is required to validate the state employee applicants' information and appointment status. Integration will be required; however, the 21st Century Project implementation is not scheduled to occur for two years. Therefore, a workaround will be required until the HR SAP system is available. The recommended solution will allow for integration with most major HR products, including SAP. Therefore, this integration will likely not require significant effort to implement. The SPB solution can be implemented as stand-alone system until the new HR system is implemented. SPB currently receives a T-Log tape from the State Controller's Office (SCO) weekly. SCO has committed to support existing processes until the new system is implemented. SPB is working intimately with SCO to ensure that SPB's processes adjust to the new system when implemented.

5.1.3 TECHNICAL INTERFACES

The recommended business solution will integrate with the existing SPB infrastructure and OTECH. User departments will also use the existing connectivity to the data center. No other technical interfaces have been identified.

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5.1.4 TEST PLAN

This project will follow the Acceptance Test Plan as it was developed for the jobs.ca.gov stabilization effort of 2010 and 2011. This plan provides the framework for all the testing processes that will be used to verify that the delivered application successfully meets the requirements as specified in the software requirements specification.

5.1.5 RESOURCE REQUIREMENTS

The one-time costs for this option are 5.5 staff and \$3.1 million over four years. The ongoing costs for OTECH and staff for this option are projected at \$850,000 per year. JobAps will be fully decommissioned at the end of one year and the software maintenance costs paid to JobAps would be eliminated.

5.1.6 TRAINING PLAN

SPB will provide a user, system administrator, and application development training program geared around the application and tailored to SPB user staff prior to system implementation. In addition, SPB will ensure that SPB program staff are prepared to respond to user questions as they arise. The detailed Training Plan and all training material will be developed by SPB.

5.1.7 OPERATIONS AND ONGOING MAINTENANCE

The Operations and Ongoing Maintenance Plan for the new exam and cert system will be finalized by SPB as part of their implementation. The remainder of this section documents the operations plan outline.

The following high-level procedures will be further expanded with additional detail that includes related tasks and activities to comprise a comprehensive complete operations plan. Continuous improvement of the processes and the procedure documentation will enhance the efficiency of the operation and the proficiency of operations personnel.

System Preparation and Set-up Procedures

The SPB will document primary steps and areas of focus for system start up and shut down. Hardware procedures will contain specific information dealing with the database servers, firewall servers, and web/application servers. Server software procedures will outline any special requirements of system start up and shut down (e.g., closing open files, notifying users of shutdown, and sequence of startup/shutdown events).

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Standard Operating Procedures

- Primary hardware.
 - Dell power edge servers.
 - Virtual machine software
- System software.
 - Windows 2008 server.
 - Windows 2008 SQL server.
- Application software.
 - Internet Information Services.
- Support utilities.

Monitoring Procedures

Documentation will be provided outlining system performance and monitoring. These procedures will focus on elements of the system that should be monitored including user response times, page rates, capacity, and growth trends. Procedures will also list the various system tools that are available to aid the administrator in performance monitoring and tuning. Procedures for usage of these tools are included in standard operating procedures.

Offline Procedures

Offline procedure documentation including activities such as: database maintenance procedures for database backups, reorganizations, database structure checks, index rebuilds, etc., will also be provided. Data restoration procedures will be provided that outline how to restore server file systems and database backups. Server utility processes, such as defragmentation and virus scans, will be documented. Restoration procedures are outlined in the SPB Data Recovery Plan.

Periodic Procedures

SPB follows the document retention schedules for the exam and cert systems. Server updates are performed weekly in accordance with Microsoft release standards.

5.1.8 INFORMATION SECURITY

The new exam and cert system will contain confidential information. Given the nature of SPB's security capabilities, together with the security mechanisms

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typical of the various components proposed as the new system, security will be greatly enhanced.

Security and Confidentiality

The SPB will document security procedures relating to operational maintenance of the application, and will outline the process for adding new users/groups and creating new rules.

Network security processes will be documented. These procedures will outline adding new users/groups and making sure that users have appropriate rights for their job functions.

Application security processes will be documented. These procedures will outline the use of the internal application security. These functions include user/group additions, changing permissions for application access, changing permissions for screen access, and changing permissions for field-level access.

Database security processes will be documented. These procedures will outline the use of SQL server database security. These functions include user-profile management and changing object level permissions.

On-demand Procedures

The SPB will document open database connectivity access procedures and ad hoc reporting via third party tools. Other on-demand procedures may include procedures relating to restricted access functionality that may be performed by a systems administrator such as deleting a record or modifying restricted records.

Failure/Recovery and Emergency Procedures

Procedures for disaster recovery are outlined in the SPB Disaster Recovery Plan.

Diagnostic Features

The application selected will be required to provide documentation of diagnostic capabilities and the procedures for usage. These procedures will outline the use of built-in system utilities for diagnosing hardware-related problems. System software diagnostics procedures will outline the use of built-in operating system utilities for diagnosing system software and file system errors. Application software diagnostics procedures will outline the use of utilities provided with the application software for diagnosing internal application-specific problems.

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Maintenance of Documentation

Configuration management changes such as the addition of new hardware or software components may alter the procedures established in the initial Operations Plan. The configuration management/change control process will trigger the appropriate corresponding changes to the Operations Plan procedures.

Staffing Requirements

SPB staffing requirements to perform operations functions related to the recommended solution will be the same number of resources to maintain the old fragmented legacy systems. The recommended solution will be robust and requires different skill sets in the following areas: database administration, system security, application support, and system administration. However, due to the diversity of skill requirements to perform some of these activities, SPB will involve individuals to ensure a back-up team is fully trained in the event the primary responsible staff is unavailable.

General oversight and monitoring of system hardware and software will demand a minimal number of hours per day on an ongoing basis. A computer operator-level individual following the documented procedures can perform these activities.

System Security Features

The recommended solution will be required to meet specific system security requirements including:

- Access controls, which safeguard the confidentiality of the records, prevent access by unauthorized persons, and protect data according to the right of privacy laws.
- Protected logons and forced logoffs within applications and workstations which are inactive for a defined period of time.
- Security audits, transaction audit trails, and security log audit reports that can be generated upon request.
- System access security.
- The applications in the recommended system will have multiple levels of system and database access security.

Database Integrity

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SPB will provide tools to monitor and maintain database integrity as part of their proposed solution.

5.1.9 CONFIDENTIALITY

The recommended system will provide security controls within the system that will ensure confidentiality by allowing users access based on their assigned roles (for user departments conducting their own exams) and login credentials. Users will be required to agree to the terms and conditions of SPB system security based on their individual roles and responsibilities for accessing the system.

5.1.10 IMPACT ON END USERS

All State of California personnel offices will be significantly impacted by the new system. They will have immediate access to an automated system to create new exams, create and submit applications, request a cert list, and look up scheduled exams. Since the impact will alter the end users existing processing and information access procedures, the procurement process will require SPB to propose a training program to educate all levels of users on the functionality and productivity enhancements offered by the system.

Benefits will be realized with the implementation of this new solution statewide, such as the elimination of outdated manual processes, reduction in the cost and time required for exam administration, real-time exam results for hiring departments, integration of existing systems, and a reduction in the number of exam complaints.

5.1.11 IMPACT ON EXISTING SYSTEMS

The new exam and cert business solution will meet the needs of SPB and user departments. Most notably, impact to existing systems will be in the area of consolidation. The five systems currently in use will become a single system for exam and cert. The wide area network will be impacted by the recommended solution since traffic is minimized by having all users access the system through standard web browsers over the Internet. Additionally, the system will be faster and more reliable based on the reduced throughput of having all functionality running on a single system.

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5.1.12 CONSISTENCY WITH OVERALL STRATEGIES

Building a solution in house is consistent with the overall information systems strategies of SPB and with the state data center consolidation strategy. Additionally, the solution will support the statewide e-business initiatives.

5.1.13 IMPACT ON CURRENT INFRASTRUCTURE

Existing hardware currently in use will be used for the recommended solution; therefore, no additional hardware will be needed. The recommended solution will also eliminate the need for the prior systems. The resources used to maintain the prior systems will be redirected and absorbed within the recommended solution.

5.1.14 IMPACT ON OTECH AND SPB

Based on the server consolidation for the State of California, the recommended solution will ultimately be hosted at OTECH. SPB staff will support the applications and databases.

5.1.15 BACKUP AND OPERATIONAL RECOVERY

Backup and recovery will be performed as outlined in the SPB Disaster Recovery Plan. The SPB will provide a complete Operations Plan (including backup and operational recovery) for the new application as one of their project deliverables. The Operations Plan will be a dynamic document with the mechanisms in place to review and update the document on an ongoing basis. The SPB will work in an effort of continuous improvement of the processes and the procedure documentation will enhance the efficiency of the operation and the proficiency of operations personnel. Pursuant to the SPB Disaster Recovery Plan, the exam and cert system shall be back online in 30 days pending any disaster. The system is rated at a medium level of criticality in the event of a disaster.

5.1.16 PUBLIC ACCESS

Public access to the recommended system will be through the web via various browsers that allow access to the applications. Applications include: exam schedules, job openings, user status, and/or exam results.

5.2 RATIONALE FOR SELECTION

This project has statewide impact in that all departments must comply with the civil service laws and hiring practices. The recommended solution will satisfy the business requirements not currently met by the product. The recommended

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solution will streamline the process for both user departments in scheduling and conducting exams as well as improve the hiring process. From the public or state civil service employee perspective, it will provide faster turnaround of exam results and allow applicants to perform many self-service activities.

The recommended solution will provide costs benefits in terms of implementation and maintenance. Since the solution will be supported by SPB staff, there are no outside costs involved in the maintenance of the system. Additionally, developing the system in house will provide the cost benefits of not having to rely on outside factors to initiate, implement, and maintain a solution.

SPB's recommended solution, fully meets all of the identified objectives and functional requirements. The choice of an in-house solution greatly reduces the timeframe for implementation and the risk commonly associated with introducing a new unproven solution. The recommended solution will provide user security and data integrity at the application and database levels.

The recommended solution will provide a real-time, web-based experience to all users.

5.3 OTHER ALTERNATIVES CONSIDERED

There were three alternatives considered to solve the business problem, continue with the effort to stabilize JobAps, go back to prior systems, and pursue the custom build of a new system. These alternatives are discussed in the remainder of this section.

Alternative 1 - Continue with the Effort to Stabilize JobAps

Advantages

1. The state has invested approximately \$5 million in JobAps.
2. JobAps has some functionality that was not available in the prior systems such as allowing users to create their own profiles and apply for exams online.
3. JobAps does allow for the real-time processing of exam and cert information.
4. SPB and department staff are familiar with JobAps as it has been in existence for 18 months.
5. SPB can accomplish this option within existing resources.

Disadvantages

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1. The vendor has proven that it cannot successfully stabilize the system. Pending issues with the system include, but are not limited to, the following:
 - Inaccessible and inaccurate audit functionality.
 - Scoring errors which could lead to illegal appointments.
 - Inaccurate applicant feedback, including incorrect rankings.
 - Poor performance in processing reports, uploads and downloads of information, and screen loading.
 - Limited scheduling functionality.
 - Lack of reporting capabilities.
 - No applicant session time outs.
2. SPB receives numerous complaints from departments related to performance, data integrity issues, and lack of functionality.
3. SPB and departments manually process tasks outside the system, creating additional workload for the state.
4. The database is not normalized, which creates data integrity and performance issues.
5. The majority of JobAps is coded using classic active server pages, which is a sunset product of Microsoft and thus not supported.
6. There are architectural issues with this application.
7. The current agreement for maintenance fees is through August 2012 at a cost of \$300,000 for the maintenance period of September 1, 2011 through August 31, 2012. JobAps indicated in the original contract that maintenance would increase by \$100,000 per year after the contract period; therefore, the cost of maintenance after August 2012 is unknown and also subject to negotiation.

In summary, alternative 1 was not selected based on several factors. These factors included: time, monetary costs, reliability, track record of vendor compliance, and the stability of the existing system.

Alternative 2 - Go Back to Prior Systems

Advantages

1. The prior systems are generally reliable and offer better system performance.
2. Most departmental users are familiar with the prior systems.
3. This option is relatively quick to implement and requires minimal resources.
4. SPB can accomplish this option within existing resources.

Disadvantages

1. The current functionality allowing users to create their own profiles and apply for exams online will be lost.

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2. The prior cert system is mainframe technology and can only accommodate overnight batch processing. The exam bulletins would also be subject to overnight batch processing.
3. There is an insufficient number of knowledgeable mainframe staff to support the legacy systems.
4. The systems are fragmented and are over 30 years old.

In summary, alternative two was not chosen as a viable solution based on the following factors: batch processing (not real-time processing), reliance on three systems to handle cert and exam, and limited functionality because the systems are not web based.

Alternative 3 - Custom Build of a New System

Advantages

1. With its in-house expertise, SPB will be able to build a better product to meet the state's complex hiring processes. This product would have the ability to accommodate SPB's current needs and allow for future growth to meet the state's evolving hiring needs while adhering to industry standards in technology.
2. The system will be implemented in a phased-in approach and will build from SPB's prior systems in a modularized fashion to make it adaptable to future changes in technology.
3. The legacy exam systems are generally reliable and offer better system performance than JobAps.
4. Most departmental users are familiar with the Legacy Exam System and the SPB Web Exams System.
5. The cert defects in JobAps account for 38 percent of the total number of JobAps' defects. These defects have been in existence since it went live and workarounds have been created for the majority of issues.
6. SPB can accomplish this option within existing resources.

Disadvantages

1. This option takes longer and is more costly to implement than going back to the prior systems with or without the additional functionality.
2. SPB will be reliant on JobAps, which has proven to be unreliable, to maintain cert system. However, this will only be for one year period.
3. Technology changes over years of development.

In summary, this solution was chosen as the recommended solution based on several factors. These factors include: benefits for building and maintaining a system in house, real-time availability, consolidation to a single system, simplicity

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of integration among the five existing systems, user and departmental benefits, and the reduced development time based on SPB staff's knowledge of existing systems.

SECTION 6

PROJECT MANAGEMENT PLAN

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6.0 INTRODUCTION

Project management is a key factor in ensuring the successful accomplishment of a defined project. Project management is the discipline of planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives.

This Project Management Plan (PMP) provides the approach to effectively manage the Examination (exam) and Certification (cert) Online System (ECOS) Project. The framework for project management includes:

- Project Initiation,
- Project Planning,
- Project Execution,
- Project Control, and
- Project Closeout.

The figure below provides the project management framework that will be followed on the project:

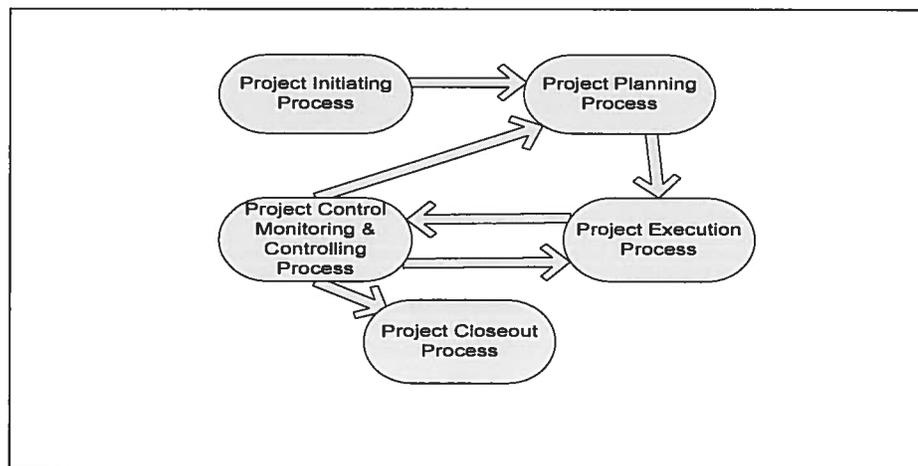


Figure 6-1: The ECOS Project Framework

The process groups identified in figure 6.1 are described below:

Initiating Process

The initiating processes include the work of formally defining and authorizing a new project or project phase. The process group links the project to the performing organization's strategy and ongoing work.

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Planning Process

The planning process includes the work of defining and refining project objectives, and planning the specific course of action required to attain the objectives and scope that the project was undertaken to address.

Monitoring and Controlling Process

The monitoring and controlling process includes the work of regularly measuring and monitoring progress to identify variances from the PMP so that corrective action can be taken when necessary to meet project objectives.

Executing Process

The executing process includes the work of integrating the management of people and utilization of other resources to carry out the PMP.

Closing Process

The closing process includes the work of formalizing the acceptance of the project's product, service, or result and bringing the project or a project phase to an orderly end. Decommissioning the old systems currently in production is part of the closing processes as well.

6.1 PROJECT MANAGEMENT METHODOLOGY

The project management methodology is based on the guidelines in the Statewide Information Management Manual Section 200 and the Project Management Body of Knowledge, maintained by the Project Management Institute. The project management methodology also includes the California Project Management Methodology framework. Additionally included are industry best practices and lessons learned from prior state projects. The project management approach incorporates the principles of these methodologies and includes the following activities:

- Maintenance of a detailed, integrated project schedule and identification of the critical path of activities for the phases, timeframes, responsible parties, dependencies, milestones, and deliverables.
- Monitoring of planned versus actual performance, schedule, and budget.
- Utilization of industry standard issue and change management processes.
- Development of a Risk Management Plan and performance of frequent project risk assessments (as defined in section 7.0).
- Definition of a structured approach for reviewing and approving deliverables.
- Adherence to the California Technology Agency's reporting requirements.

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6.2 PROJECT ORGANIZATION

The project will use a project management approach that consists of a single Project Manager responsible for the project's core team. The Project Manager will report to the Project Director. The Project Director will receive direction from an Executive Steering Committee which consists of selected members from the State Personnel Board (SPB).

This approach to project management will also facilitate improved communication between the Project Team and management. To assist in this area, a Project Communications Plan will be developed to address how all entities will coordinate with each other and external stakeholders throughout the course of the project.

A description of each participant's responsibilities during the project is included in section 6.3, roles and responsibilities. Figure 6.2 provides a view of the project organization as described above.

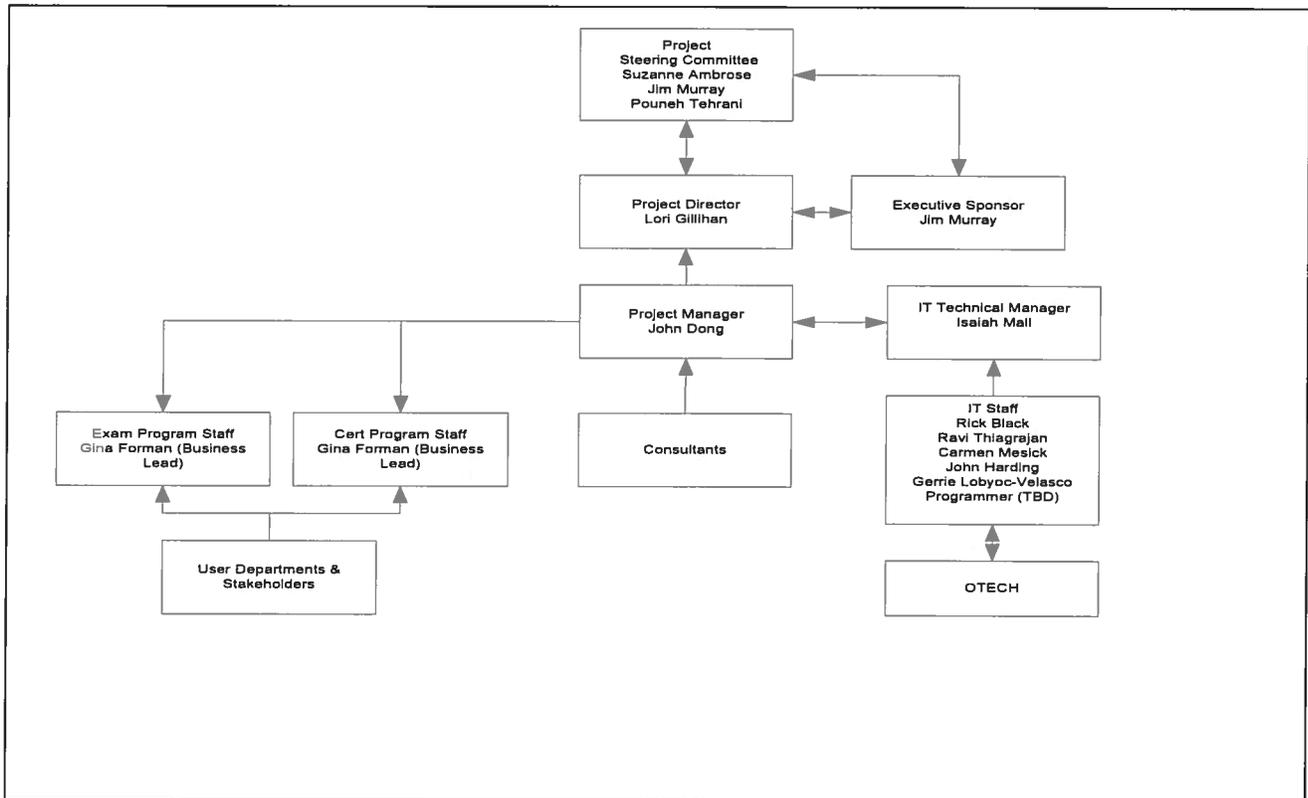


Figure 6-2: ECOS Project Organization

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6.3 ROLES AND RESPONSIBILITIES

In order to provide all project participants with a clear understanding of the authority and responsibilities for successful accomplishment of the project, this feasibility study report (FSR) defines the roles and responsibilities of key participants of the project. Table 6-1 identifies each key participant and their responsibilities on this project:

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Table 6-1: ECOS Project Team Roles and Responsibilities

Role	Responsibilities
Executive Steering Committee:	<ul style="list-style-type: none"> • Provides advocacy for the project. • Oversees organization funding. • Provides policy direction to the project. • Provides direction to the Project Director. • Makes key business decisions.
Project Executive Sponsor	<ul style="list-style-type: none"> • Supports project activities. • Provides advocacy to external business users and stakeholders. • Provided policy guidance and interpretation for business rules. • Resolved issues with stakeholders to keep the project on time and within budget and scope.
Project Director	<ul style="list-style-type: none"> • Provides advocacy for the project. • Oversees project funding. • Provides policy direction to the project. • Facilitates communication between Executive Steering Committee, Executive Sponsor, Project Manager, and Project Team. • Resolves significant issues identified by the Project Manager. • Approves the final scope of the project and Risk Management Plans. • Provides project resources. • Reviews and approves escalated project changes. • Coordinates policy for uses of system data.

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<p>Project Manager</p>	<ul style="list-style-type: none"> • Provides leadership for the project. • Performs day-to-day project coordination. • Coordinates project direction with the Project Director. • Participates in Executive Steering Committee meetings. • Facilitates communication about the project to the Project Director and Project Team. • Implements policy direction as defined by the Project Director. • Provides support to the key business decision makers of the project. • Resolves issues identified by the Project Team – escalates issues to be resolved by Project Director when needed. • Contributes to the Risk Management Plan. • Manages project resources. • Reviews, approves, and escalates project changes. • Performs prioritization and decision making on the project. • Develops monitors and updates the PMP. • Develops and maintains the project schedule. • Oversees, tracks, monitors, and reports on project status including schedule, scope, budget, and risk. • Enforces corrective action plans, if appropriate. • Manages requirements traceability throughout the system development life cycle. • Coordinates project work efforts of the Project Team. • Facilitates the change management process. • Facilitates the risk and issue management process. • Resolves project issues. • Reviews and approves Project Work Plan and deliverables. • Oversees the Post Implementation Evaluation Review (PIER).
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IT Technical Manager	<ul style="list-style-type: none"> • Provides SPB information technology (IT) resources to the project. • Participates in Executive Steering Committee meetings. • Serves as the Project Architect.
Business Team	<ul style="list-style-type: none"> • Defines business requirements. • Develops business documentation. • Works with the DD&I Team to communicate business policy, process, and functional needs. • Assists the DD&I Team to define data elements, relationships, and definitions. • Participates in system design and development walkthrough sessions. • Develops test scenarios and acceptance criteria for user acceptance testing (UAT). • Participates in UAT. • Works with DD&I Team as they develop user manuals, address user questions and issues (e.g., help desk), develop training manuals, and conduct training sessions.

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<p>Design, Development and Implementation (DD&I) Team</p>	<ul style="list-style-type: none">• Defines data elements, relationships, and definitions.• Conducts data model walkthrough sessions.• Conducts system design and development walkthrough sessions.• Designs and develops the system environment, as defined by the functional requirements and business needs.• Determines technology architecture required for system interfaces.• Designs, tests, and documents system interfaces.• Develops and validates security requirements.• Participates in testing security components.• Conducts unit and system integration tests.• Works with the Business Team in the development of UAT test scripts.• Facilitates UAT.• Works with the Business Team to develop user manuals, address user questions and issues (e.g., help desk), develop training manuals, and conduct training sessions.• Confirms data conversion approach (if applicable).• Develops data conversion tools (if applicable).• Coordinates data cleanup (if applicable).• Implements the final solution.• Develops a Decommission Plan for the legacy and other systems.• Executes the Decommission Plan.
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6.4 PROJECT MANAGER QUALIFICATIONS

The experience profile SPB requires for its Project Manager, in terms of relevant experience and qualification, is as follows:

- A minimum of ten years project management experience.
- A minimum of ten years of IT experience.
- Successful large-scale system implementations experience.
- Experience in managing and conducting analysis of end-user and technical staff requirements.
- Experience in installation, configuration management, testing, and system documentation processes; and in maintenance and operations support of network applications for governmental systems.
- Familiarity with state procurement policies and procedures.

SPB will redirect John Dong, Project Manager, from the Jobs.ca.gov Stabilization Effort to the project on a full time basis. Mr. Dong has over 30 years of experience in the IT field including more than 15 years performing as a Project Manager/Project Portfolio Manager. Mr. Dong's project management experience includes the management of the California Public Employee Retire System Year 2000 Project, along with numerous investment technology projects valued at over \$65 million.

As a technology project manager, Mr. Dong has experience with the design, configuration, and development of technically advanced business solutions, and possesses the management skills required to successfully complete a project of this magnitude and complexity. The Project Manager has a state staffing classification of Data Processing Manager III. The Project Manager will be reporting to the SPB Project Director.

6.5 PROJECT PRIORITIES

All projects have three core components that must be managed:

- Schedule.
- Scope.
- Resources.

Each of these is interrelated. That is, a change in any one component will almost certainly impact the others. Prior to beginning the project, it is essential to determine the relative importance and flexibility of each. For the project, this is documented in the following table:

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Table 6-2: ECOS Project Tradeoff Matrix

Schedule	Scope	Resources
Improved (Can be adjusted)	Accepted (Is somewhat flexible)	Constrained (Not flexible)

6.6 PROJECT PLAN

Project planning defines the project activities to be performed, products to be delivered, and how the activities will accomplished. Project planning helps define each major task, estimate the time and resources required, and provide a framework for managing review and control. The project planning activities and goals include defining:

- The scope of the effort.
- The project's assumptions and constraints.
- The project approach (e.g., phasing).
- The Project Team's roles and responsibilities.
- The project schedule.

This section provides an overview of each of these areas.

6.6.1 PROJECT SCOPE

The scope of the project is to implement an in-house, custom-built, web-enabled system to replace the five fragmented systems (the Legacy Examination System, the Legacy Certification System, the SPB Web Exams System, JobAps, and the SROA/Reemployment System) currently used to support the state's examination and certification functions. It will improve both hiring departments' and job seekers' abilities to use the system successfully without the performance and data integrity issues they are currently facing with the current conglomeration of systems, ultimately ensuring the state has an adequate workforce to perform critical operations to ensure the safety and welfare of the citizens of California.

The project will not eliminate the need for SPB oversight of day-to-day IT departmental processes, nor diminish the requirements for analysis, approval, and technical assistance required for maintenance and operations. However, the project will allow skilled SPB staff to spend more time on analytic activities and less time on system support and error correction. The project will also enable the system to support the statewide enterprise IT classification initiative and provide the ability to perform exams and create cert lists based on skills.

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6.6.2 PROJECT ASSUMPTIONS

We have identified three classifications of project assumptions as follows:

General Assumptions

- Existing funds and reimbursements will be the source of funding for this project.
- Any changes to these baseline requirements will require review by SPB management, for impact assessment of potential changes to the schedule and scope of the project.
- This project is the highest priority of SPB.

Project Management Assumptions

- Dedicated Personnel:
 - Selected SPB business owners as well as IT staff will have a percentage of their time dedicated to this project.
 - Executive sponsorship will maintain a high priority for this project throughout its life cycle.
 - SPB will commit staff resources to provide initial and ongoing training for SPB clients.

Budget Provision Assumptions

- SPB will budget for ongoing maintenance and support costs.
- SPB will budget for hardware and operating system upgrades and maintenance for five years.
- SPB will commit resources to maintain compliance with ongoing civil service system requirements.

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6.6.3 PROJECT SCHEDULE DATES

The proposed project schedule is outlined in the table below. This schedule will require adjustments once the FSR is approved.

Table 6-3: ECOS Project Phase, Schedule and Deliverables

Task Name	Start	Finish	Deliverables/Milestone
Project FSR	April 2011	Aug 2011	<ul style="list-style-type: none"> • Complete/Approved FSR.
Project Initiation and Planning	Aug 2011	Sept 2011	<ul style="list-style-type: none"> • Develop Project Schedule. • Develop Project Management Plan. • Develop Risk Management Plan. • Develop Communications Plan. • Develop Change Management Plan (CMP).
Requirements and Design Phase	Aug 2011	Dec 2011	<ul style="list-style-type: none"> • Develop Requirements Definition Document. • Develop Architectural Design Document. • Develop Systems Design Document.
Phase One	Aug 2011	Jan 2012	<ul style="list-style-type: none"> • Migrate Exams Off of JobAps. • Convert JobAps Exam Data. • Clean Up JobAps Exam Data.
Phase Two	Feb 2012	Sept 2012	<ul style="list-style-type: none"> • Develop New Certification System. • Perform UAT. • Develop Cert Documentation. • Perform Training. • Implement New Cert System.

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Task Name	Start	Finish	Deliverables/Milestone
Phase Three	Oct 2012	July 2014	<ul style="list-style-type: none"> • Develop New Examination System. • Perform UAT. • Develop Exam Documentation. • Perform Training. • Implement New Exam System.
Phase Four	Aug 2014	Dec 2014	<ul style="list-style-type: none"> • Develop AD-Hoc Reports & Change Control Items. • Perform UAT. • Finalize All Documentations. • Perform Training. • Implement Remaining System.
Post Project Phase	Jan 2015	Aug 2015	<ul style="list-style-type: none"> • Develop Decommission Plan. • Execute Decommission Plan. • Develop Lessons Learned Document. • Complete PIER.

6.7 PROJECT MONITORING

The Project Manager will continually monitor project progress during the life of the project and keep the Project Director informed of the project status and issues. Key components of this monitoring will include:

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Weekly Project Team Meetings

These weekly meetings are designed to enhance project communications between the core Project Team members and will include discussions regarding the project schedule, deliverable status, upcoming meetings, risks, and issues.

Weekly Project Status Reports

These will be distributed to the core Project Team members. They will report on project activities from the previous week, activities planned for the next week, current project schedule and deliverable status, open issues, and risks.

IPOC Project Participation

The ECOS Project will include IPOC oversights which are designed to monitor the project for the California Technology Agency. IPOC will continually perform risk assessment and provide findings (if any) to the Technology Agency.

Weekly Project Director Meetings

These weekly meetings are designed to enhance project communications between the Project Manager and the Project Director. This will include discussions regarding the project schedule, deliverable status, risks, and issues.

Monthly Project Management Meetings

These meetings are designed to keep the Project Executive Sponsor informed about the project and will include discussions regarding the project schedule, deliverable status, upcoming meetings, risks, and issues.

Monthly Project Status Reports

The Quad Report that was used in the Jobs.ca.gov Stabilization Effort will be the template used to distribute project activities performed by the Project Team members including: accomplishments during the month, activities in progress, upcoming activities for next month, schedule and deliverable status, open issues, and risks to the Project Director as well as the State and Consumer Agency and the California Technology Agency.

6.8 PROJECT QUALITY

Quality is defined as the delivery of a work product or deliverable that satisfies the requirements and objectives of the project that is correct and complete. In order to

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ensure that the product delivered by the DD&I Team meets specified business and technical objectives and requirements, the project will use the following approach to minimize the risk of receiving a work product or deliverable of poor quality:

- The Project Manager, in collaboration with the Business Team and with the support of the DD&I Team, will work to ensure that the expectations for each deliverable are well defined in advance and that any documents supporting this project are signed off by all parties.
- The Project Team will review all major milestone deliverables produced by the DD&I Team to ensure that defined standards and methodologies are met.
- The Project Manager along with the Project Team will review the requirements traceability matrix at various stages of the project to ensure all requirements are met.
- Walkthroughs of the systems architecture and design specifications, test plans, test scripts, test results, training plans, etc., will be held at various stages of the project with all parties present.

6.9 CHANGE MANAGEMENT

Change is an inevitable occurrence during any project and responsible project management plans for change. A change is defined as any alteration to the scope of the project including requirements, hardware, software, application, network, operations or environment which adds to, deletes from, or in any way modifies the scope of work. In order to effectively manage change for the project, the Project Manager will use a CMP to define the process, procedures, and outputs for all change-related project activities. The plan will also identify the parties responsible for identifying, resolving, supporting, and making project changes. The major goal of this change management strategy is to ensure changes are made using standardized methods and procedures which minimize negative impacts and maximize positive impacts to the requirements, design, development, implementation, and maintenance of the system. The Change Management process provides the capability to identify, document, manage, and resolve all project related changes. The plan is designed to:

- Minimize project risk.
- Provide documentation for all changes.
- Minimize disruption to the project due to rework.
- Measure project volatility.
- Provide open disclosure of changes.
- Communicate changes to stakeholders.
- Maximize system/application value.

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- Minimize unanticipated impacts to schedule and/or budget.

The implementation of a CMP ensures that all changes are evaluated for potential scope, cost, and schedule impacts. The process allows decision makers the opportunity to evaluate changes in a systematic manner which becomes a component of the overall project risk management strategy. Without a method for evaluating, prioritizing, and implementing changes, schedule delays, poorly defined requirements, and/or cost overruns are potential results for any system development effort. Alternatively, a well-defined and properly utilized change management process reduces risk and increases the likelihood of project success.

The change control process to be followed on the project will provide a mechanism for the review and approval of changes or additions to the scope, requirements and design of the system. This process will allow the Project Management Team to jointly discuss, review, prioritize, and approve changes to requirements and design through all phases of the project from initiation through testing, implementation, and maintenance.

The change control process will track and handle all proposed changes to the system software and hardware. All requested changes will be presented to a Change Control Board for approval. This process ensures that changes are documented and applied in a controlled manner with participation from relevant project personnel from initiation through closure. The CCB will be comprised of members from both the Business Team and the DD&I Team.

6.9 COMPLEXITY ASSESSMENT

See attached documents on the following pages.

Project Name: Examination and Certification Online System (ECOS)

Technology Agency Project #:

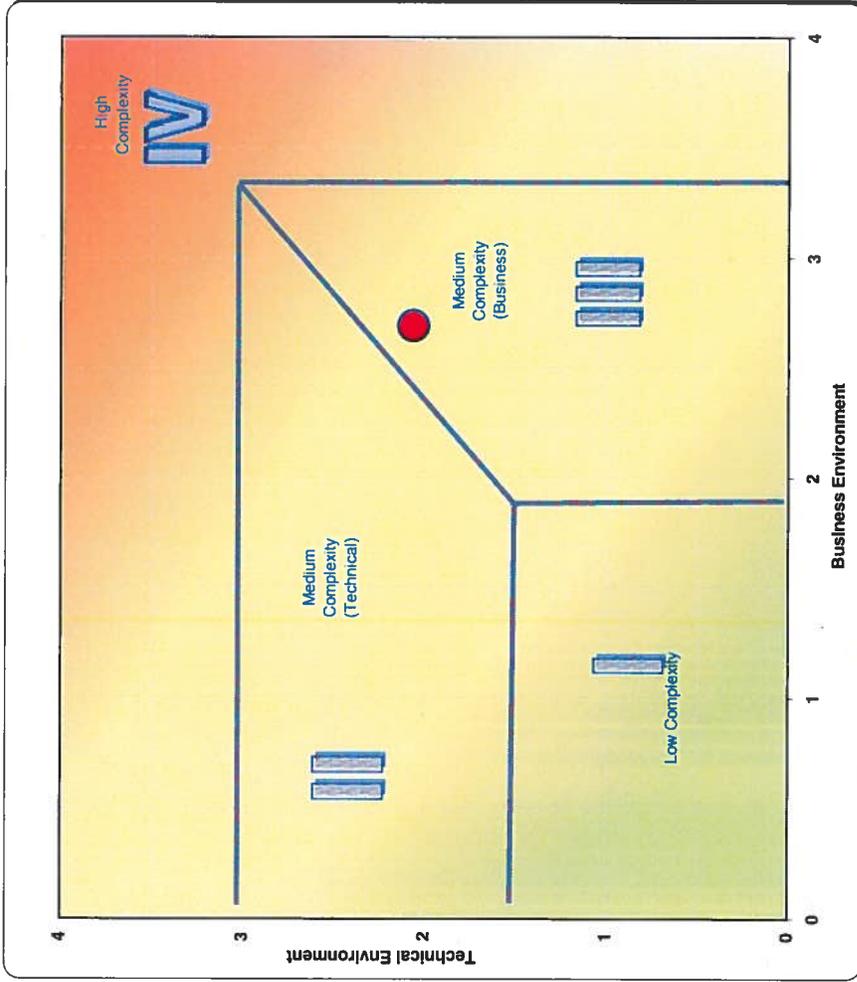
Department: State Personnel Board (SPB)

Revision Date: 6/8/11

Complexity Assessment

Complexity Diagram

Instructions: Plot your project in the appropriate complexity zone.
[Note: Your project will be plotted automatically in this worksheet, using the values computed in the previous tables.]



Scores
Business Complexity
Technical Complexity

Project Name: Examination and Certification Online System (ECOS)

Technology Agency Project #: _____

Department: State Personnel Board (SPB)

Revision Date: 6/8/11

Complexity Assessment

Suggested Project Manager Skill Set Guidelines

Complexity	Duration		Budget		Resources	
	<input type="checkbox"/>					
Zone 1	<input type="checkbox"/>	< 6 months	<input type="checkbox"/>	<\$500K	<input type="checkbox"/>	< 5
Zone II, Medium Zone III, Medium	<input type="checkbox"/>	< 1 year	<input type="checkbox"/>	<\$1M	<input type="checkbox"/>	<10
Zone II, High Zone III, High	<input type="checkbox"/>	>1 year; < 3 years	<input type="checkbox"/>	>\$1M; <\$5M	<input type="checkbox"/>	11 – 20
Zone IV	<input type="checkbox"/>	>3 years; <10 years	<input type="checkbox"/>	>\$5M; <\$100M	<input type="checkbox"/>	21 – 40
	<input type="checkbox"/>	>10 years	<input type="checkbox"/>	>\$100M	<input type="checkbox"/>	40+

PM Level: 2
Experience: 3 – 5 years as a key team member on a medium or large IT project or as a Project Manager on small or medium IT project. Technical experience commensurate with the proposed technology.

Professional Knowledge: Strong working knowledge of the CA-PM, department's methodology, Software Development Life Cycle. Familiar with CA Budgeting, Procurement and Contracting processes.

For Oversight Purposes:
Zone I = Low Criticality/Risk
Zones II and III = Medium Criticality/Risk
Zone IV = High Criticality/Risk

Assess the complexity of the project periodically: every two - three months and/or at the conclusion of each phase

SECTION 7

RISK MANAGEMENT PLAN

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7.0 RISK MANAGEMENT PLAN

Project risks are factors that can jeopardize the successful accomplishment of project goals. Risk management is the systematic process of identifying, analyzing, tracking, mitigating, and responding to project risks.

The project risk management processes will comply with the California Technology Agency's Project Management Methodology. The State Personnel Board's (SPB) approach is based on best practices for early detection, through analysis, appropriate and swift response, as well as continuous project lifecycle monitoring.

The project will also comply with the California Technology Agency's information technology (IT) project framework as detailed in the Statewide Information Management Manual (SIMM 45). This framework details how project oversight will be managed on State of California IT projects.

This Risk Management Plan (RMP) will minimize the risks associated with the project. The department's approach to risk management on the project will include:

- Development of a RMP that adheres to the project management framework outlined in section 6.0 of this feasibility study report (FSR).
- Identification of project issues and risks by the Project Team and Project Director.
- Development of preventative risk mitigation (or avoidance) strategies and contingency measures to avoid or minimize the impact of these issues and risks.
- Continuous monitoring of identified issues and risks through ongoing communications and reporting mechanisms throughout the life of the project.

This section discusses the:

- Risk Management Team (RMT).
- Risk Management Approach.
- Current Known Risks to the Project.

7.1 RISK MANAGEMENT TEAM

The Project Manager will have overall responsibility for risk management on the project and will be supported in this responsibility by a Risk Management Team as outlined below. The RMT will include the following key individuals:

- Project Manager - Has overall responsibility for the project. The Project Manager will: help identify project risks; review, approve, and maintain the RMP; regularly review the Project Management Log (RML); and meet regularly with the Project

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Director. The Project Manager will have primary responsibility for monitoring and reporting on project risks, developing risk mitigation strategies and plans, and ensuring strategies and plans are implemented appropriately.

- Executive Steering Committee – Will receive reports of all high probability risks and may be called upon to assist with mitigation.
- Project Director – Will receive reports of all risks and may be called upon to assist with mitigation and contingency planning.
- Project Team Members – Project Team members will be responsible for identifying risks and recommending risk mitigation plans. Team members will have experience with existing programs, knowledge of data collection within the department, or other relevant IT experience.

7.2 RISK MANAGEMENT APPROACH

The Project Manager, with support from the RTM, will be responsible for risk assessment on the project. This consists of identifying, analyzing, quantifying, and prioritizing project risks. Above all, the notion of early detection and intervention combined with taking prompt and corrective action is paramount to a successful risk management approach.

The Project Manager will determine the probability that specific risks will occur and evaluate their potential impact. This will be an ongoing process throughout the lifecycle of the project.

The six steps in risk assessment, which are discussed in more detail in the subsections below, are:

- Identify the risk.
- Analyze the risk.
- Plan for risk mitigation.
- Implement risk mitigation strategy.
- Track and control identified risks.
- Communicate and coordinate risk management.

7.2.1 RISK IDENTIFICATION

Identification of project risks is the first step in risk assessment. It is the responsibility of all members of the Project Team and consists of identifying risks as early as possible in a project. Initially, this will be based on an understanding and analysis of project requirements and challenges, in light of previous experience with similar projects. As the project progresses and more specific experience is gained with people, organizations, technologies, and the business environment associated with the system,

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additional risks will be identified and the probability estimates of others may be changed. Crucial to risk identification will be the input of Project Team members and other stakeholders who will be encouraged to recognize and report risks as soon as possible. This will occur through formal communications such as telephone calls and emails. The Project Manager will document and evaluate risks identified by the Project Team members and stakeholders.

7.2.2 RISK ANALYSIS

Once a project risk is identified, the Project Manager, in consultation with the RMT, will evaluate the likelihood of the risk event occurring and the probable outcomes associated with the risk event, in order to determine its potential impact on the success of the project. The RMT may recommend assignments of risk impact, timeframe, and probability as well as recommended risk mitigation actions. The result of risk analysis is a set of confirmed project risks that have been verified, evaluated (including probability), classified, prioritized, and documented.

The five steps in risk analysis, which are discussed in more detail in the subsections below, are:

- Determine the impact of the risk.
- Determine the probability of the risk occurring.
- Determine the timeframe for responding to the risk.
- Determine the exposure to the risk.
- Determine the severity of the risk.

Determine Risk Impact

The RMT is responsible for determining the risk impact, which involves considering the consequences that the risk would have on the project if the risk were to materialize. The criteria for risk impact in the table below is a guide for this step, expressed in terms of high, medium, or low.

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Table 7-1: Criteria for Risk Impact

IMPACT	CRITERIA: RISK CONSEQUENCES INCLUDE:
High	<p>Risk consequences include one or more of the following:</p> <ul style="list-style-type: none"> • Significant schedule delay. For example, delay in a critical path activity by more than 2 months or by more than 10 percent of the overall project schedule. • Significant cost increase. For example, project budget increase by more than 10 percent of the overall project costs. • Significant resources change. For example, loss of more than 20 percent of personnel, or loss of more than 10 percent of key management personnel assigned to the project. • Significant scope changes. For example, major objectives of the project are dropped or increased. • Significant political repercussions. For example, noncompliance with current legislation or state laws governing hiring. • Significant impact to the ability to meet the needs of stakeholders. For example, lack of communication, or miscommunication with exam and cert users will result in the system not being accepted.
Medium	<p>Risk consequences include one or more of the following, but do not include and consequences previously identified above under high:</p> <ul style="list-style-type: none"> • Moderate schedule delay. For example, delay in a critical path activity by more than 1 month or by 5- 10 percent of the overall project schedule. • Moderate cost increase. For example, project budget increase by 5-10 percent. • Moderate resources change. For example, loss of more than 10-20 percent of personnel, or loss of 5-10 percent of key management personnel assigned to the project. • Moderate scope changes. For example, a number of non-major objectives of the project are dropped or increased. • Moderate political repercussions. For example, moderate dissatisfaction of political parties or special interest groups. • Moderate impact to the ability to meet the needs of stakeholders. For example, lack of communication, or miscommunication with exam and cert users will results in the system not being accepted.

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Low	<p>Risk consequences include one or more of the following, but do not include and consequences previously identified above under high or medium:</p> <ul style="list-style-type: none"> • Minor schedule delay. For example, delay in a critical path activity by less than 2 weeks, or delay in a noncritical path activity by less than 1 month. • Minor cost increase. For example, project budget increase by less than 5 percent. • Minor resources change. For example, loss of less than 10 percent of personnel, or loss of less than 5 percent of key management personnel assigned to the project. • Minor scope changes. For example, 1 or 2 minor objectives of the project are dropped or increased. • Minor political repercussions. For example, minor dissatisfaction of political parties, or special interest groups. • Slight impact to the ability to meet the needs of stakeholders. For example, lack of communication, or miscommunication with exam and cert users will results in the system not being accepted.
-----	---

Determine Risk Probability

The RMT is responsible for determining the risk probability, which involves considering the likelihood of the occurrence of the risk. The criteria for risk probability in the table below is a guide for this step, expressed in terms of high, medium, or low.

Table 7-2: Criteria for Risk Probability

Probability	Criteria: The likelihood of the risk event is:
High	Certain or very likely to occur.
Medium	Equally likely to occur as to not occur (50/50 chance).
Low	Not likely, probably will not occur.

Determine Risk Timeframe

The RMT is responsible for assigning the timeframe within which action must be taken to successfully mitigate the risk. The criteria in the table below should be used as an aid for assigning the risk mitigation timeframe, expressed in terms of long, medium, or short.

Table 7-3: Criteria for Risk Mitigation Timeframe

Timeframe	Criteria: Action must be taken within ...
Long	Greater than six months.
Medium	Three to six months.
Short	Less than three months.

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Determine Risk Exposure

The RMT is responsible for determining the risk exposure, which is derived from the impact and probability of the risk. This information is used in conjunction with timeframe to prioritize risks for mitigation and escalation. Risk exposure is determined for each project risk and is done so by finding the intersection of that risk's impact and probability in the matrix presented in the table below (the bold lines outline the exposure determinations. For example, a risk with a medium impact and a high probability results in a high in terms of risk exposure).

Table 7-4: Risk Exposure Matrix

		Probability		
		HIGH	MEDIUM	LOW
Impact	HIGH	HIGH	HIGH	MEDIUM
	MEDIUM	HIGH	MEDIUM	LOW
	LOW	MEDIUM	LOW	LOW

Determine Risk Severity

RMT is responsible for determining the risk severity, which is a derivative of risk exposure (from table 7-4 above) and risk mitigation timeframe (from table 7-3 above). Risk severity will be used to determine the relative priority of the identified risks in the planning step below. Determine risk severity for each risk from the intersection of that risk's exposure and timeframe in the matrix below (the bold lines outline the severity determinations. For example, a risk with a short timeframe and low exposure results in a medium in terms of risk severity).

Table 7-5: Risk Severity Matrix

		Exposure		
		HIGH	MEDIUM	LOW
Timeframe	SHORT	HIGH	HIGH	MEDIUM
	MEDIUM	HIGH	MEDIUM	LOW
	LONG	MEDIUM	LOW	LOW

7.2.3 RISK PLANNING

An integral part of planning for risks on a project is taking ownership of risk mitigation. Risk planning involves prioritizing risks for the Project Team's attention, assigning risk ownership, developing risk action plans, developing contingency plans, reviewing and

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approving risk mitigation and contingency plans, and recording risk information changes in the RML.

The six steps in risk planning, which are discussed in more detail in the following subsections, are:

- Determine the impact of the risk.
- Assign an owner to the risk.
- Develop an action plan for the risk.
- Review and communicate the risk status with team and management.
- Approve an action plan for risk mitigation.
- Maintain the RML.

Determine Risk Priority

RMT is responsible for determining and assigning the priority of each risk based on the severity of the risk as determined earlier in this section of the FSR. Risk severity involves a determination of the importance of the risk based upon:

- The potential impact of the risk on the project.
- The probability of occurrence.
- The timeframe for mitigation actions.

Project risks should be grouped and ranked in risk severity order. That is, risks with high severity should be ranked in relative order of importance to the project, then medium severity risks and finally low severity risks. The priority (or ranking) allows the Project Team to focus efforts on those risks that have the greatest potential impact, highest probability, and/or shortest timeframe for mitigation first.

Assign Risk Owner

The Project Manager is responsible for identifying an owner for each risk. The Risk Owner is a Project Team member who will have primary responsibility for developing the risk response strategy and action plan. While a Risk Owner may have several risks that they own, each risk should have only one owner.

Develop Risk Action Plan

The Risk Owner, in cooperation with the Project Manager and other Project Team members, is responsible for developing the recommended action plan for a given risk. The Risk Action Plan consists of a risk response strategy, action items, and triggers. In most cases, it should also include a contingency plan should the perceived risk become an actual risk.

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Possible strategies for responding to a risk include the following:

- Observe – No action is taken at this time. Continue to monitor the identified risk area for changes.
- Research – More information is needed to define the risk and develop a risk strategy.
- Mitigate – Develop and implement a plan to avoid, reduce, or eliminate the impact of the risk or the probability of the risk occurring.
- Accept – Accept the consequences if the risk were to actually occur.

The Project Team will seek to develop responsive actions that are designed to mitigate (avoid, eliminate, or reduce) the risk, rather than recommend acceptance of a risk, for at least high and medium priority risks. There may be circumstances when it is acceptable to just watch or research medium and low risks.

The action items outlined in the action plan are activities to be performed before the risk occurs. Each action item will be assigned to a member of the Project Team with a due date.

Trigger points/events are also a key part of any action plan. A trigger is an indicator that a risk has occurred or is about to occur (e.g., increased probability or shortened timeframe). Triggers are warning signs or conditions that are defined during the planning step and tracked throughout the project so that the appropriate action steps or contingency plans are put into action when necessary.

For high severity risks (those with major impact to the project's objectives, schedule, or cost), the Risk Action Plan should also include a contingency plan to be executed in the event mitigation fails or an accepted risk occurs. The contingency plan defines actions to be taken when the consequence of the risk is imminent or has occurred.

Risk Review with Team and Update Project Director

The Project Director and Project Manager are responsible for reviewing the risk with the RMT and the Risk Owner to validate all of the risk information identified at the time of the review, including the risk impact, risk probability, risk timeframe, and recommended action plan. The result of this step is to validate the risk as a confirmed risk and to confirm or modify the recommended action plan for input to approve Risk Action Plans. The Project Director and the Project Manager are responsible for informing the Executive Steering Committee of confirmed high risks and their status on an ongoing basis. Extracts from the RML may be used for this purpose.

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The primary forum for reviewing risks will be the weekly Project Team meeting where the Risk Owner will lead the discussion of the project related issues and risks. Additional meetings may be conducted as needed.

Approve Risk Action Plans

The Project Manager and the Risk Owner approve the Risk Action Plan for each defined risk.

Update RML

The Project Manager is responsible for updating RML information for confirmed risks based on risk planning results. Perceived risks that are not confirmed as valid project risks during this step will be archived and no longer tracked during the project.

7.2.4 IMPLEMENT RISK MITIGATION

The purpose of risk mitigation implementation is to actively mitigate risks on the project. Implementation involves the execution of Risk Action Plans and recording risk information changes in the RML.

Execute Action Plans

The Risk Owner is primarily responsible for the execution of the Risk Action Plan according to the timeline (due dates for action items) developed during the planning step. Ultimately, however, the Project Manager is responsible for ensuring that this activity is completed and done so within the time period allotted for this activity.

Other Project Team members may be responsible for performing some of the action items, doing so in coordination with the Risk Owner and Project Manager.

Update RML

The Project Manager is responsible for updating the status of risk action items in the RML based on information provided by the Risk Owner and/or the Project Team Member executing the action plan for a specific project risk. During the track/control steps, the Project Team will review these updates to the RML.

For high severity project risks, the Risk Owner must update the RML at least weekly, or preferably as soon as action plan activities are completed, so that the Project Director and the Project Manager have up-to-date status information available. Updates to the status of action items for medium and low severity project risks must be performed prior to schedule project status meetings. Updates should include the following:

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- Status of action items.
- Notes on significant events related to this risk.
- Person executing the action item.
- Date action item was executed.

The primary forum for reviewing risks will be the weekly Project Team meeting where the Risk Owner will lead the discussion of the project related issues and risks. Additional meetings may be conducted as needed.

7.2.5 RISK TRACKING AND CONTROL

Risk tracking and control ensures that all steps of the risk management process are being followed as identified in the RMP and, as a result, project risks are being mitigated. Risk tracking and control involves the oversight and tracking of project risk mitigation execution, re-assessment of individual project risks, reporting project risk status, and recording project risk information changes in the RML, as risks evolve during the lifecycle of the project.

The Project Manager will track and control project risks using the RML, which includes:

- Assigning a unique number to track the risk.
- Creating a title to identify the risk.
- Describing the risk (also known as the risk statement).
- Categorizing the impact of the risk (high/medium/low).
- Determining the probability of the risk occurring (high/medium/low).
- Estimating a timeframe for responding to the risk (long/medium/short).
- Determining the exposure of the risk (high/medium/low).
- Determining the severity of the risk (high/medium/low).
- Prioritizing the risk.
- Logging the origination date the risk was first identified.
- Documenting the contact (person/organization) that initially identified the risk.
- Assigning owner of risk.
- Logging assigned date.
- Assigning a risk trigger date.
- Developing a risk response strategy.
- Developing a RMP.
- Describing the current status of risk.

The RML will be a key tool in tracking, managing, and reporting on project risks. The RML will identified risks into the following categories:

- Resources.

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- Schedule.
- Scope.
- Stakeholders.
- System.
- External environment.
- Organization.

Risk Tracking

The Project Manager is responsible for updating the status of risk action items in the RML based on information provided by the Risk Owner and/or the Project Team Member executing the action plan for a specific project risk. During the track/control steps, the Project Team will review these updates to the RML.

At the present time, one specific tool that is in keeping with risk tracking and control as discussed here is the development of a RML that contains all of the information discussed in this section of the RMP.

Reassess Risks

The Project Manager will reassess the risk information in the RML to determine if any changes are needed to risk priority or timeframe based upon current project events or changes to other risks. At a minimum, reassessment of risk information in the RML will be performed on a monthly basis. However, reassessment may be performed more frequently as needed.

Report Risk Status

The Project Team members will report project risk status at the recurring project status meetings. Project risk status reporting will focus primarily on high and medium priority risks. The Risk Owner may recommend changes in the schedule or assignment of action items and risk probability, impact, or timeframe for consideration by the Project Team. Information presented at the project status meetings will include the status of risk mitigation action plans, changes in risk priority, as well as any new project risks identified.

Maintain RML

The Project Manager will maintain the project risk information in the RML, by updating risk impact, probability, timeframe, exposure, severity, and priority. The Project Manager will also update the status of risk action plan tasks. Newly identified project risks will be added to the RML and updated or archived as needed.

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7.2.6 RISK COMMUNICATION AND COORDINATION

Project Team members must communicate with each other to coordinate risk management activities within the context of the overall Project Management Plan. The escalation of risks to the Executive Steering Committee and external oversight agencies is also included in this communication and coordination activity.

Risk Reporting and Escalation

Those responsible for project risk reporting include Project Team members and the Project Manager. Internal and external reporting and escalation of project risks and risk mitigation status is performed as indicated below:

- All verified high risks are reported to the Executive Steering Committee,
- All verified IT risks are reported to the Project Director and the Chief Information Officer, and
- Any verified high or medium risks that include security concerns are reported to the Information Security Officer of the department.

Approve Risk Resolution

When a project risk is no longer a threat to the project as a result of successful risk mitigation, avoidance or changes in the project environment, it will be considered resolved. The Project Director approves resolution of all high severity project risks and directs the Project Manager to move them to the archived RML. Resolution of any medium and low severity project risks is approved by the Project Manager and they are also moved to the archived RML.

Update Project Risk Database

The Project Manager will update the RML to indicate the status of all project risk action items and also indicate when the associated project risk has been resolved.

7.3 CURRENT KNOWN RISKS TO THE PROJECT

The following table below contains our current risk analysis and mitigation strategies of the potential project risks as of the writing of this document.

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Table 7-6: Known Risks of the Project

Risk Description	Probability	Severity	Preventive / Contingency Measures
Project implementation costs more than expected.	Low	Medium	<ul style="list-style-type: none"> • Cost monitoring through effective project management. • Develop a Change Management Plan that includes a Change Control Board to control potential scope creep and manage scope changes.
Budget cuts.	Low	Medium	<ul style="list-style-type: none"> • Redirect funding from other areas. • Partner with other stakeholders to share resources.
Departure or limited availability of IT and business staff with the required subject matter and technical expertise may delay or prevent project implementation.	High	High	<ul style="list-style-type: none"> • Identify key personnel and potential backups early in the process. • Provide realistic estimates of the time that will be required to implement the project. • Do not schedule implementation of the system to coincide with other major projects or resource demands. • Ensure knowledge is transferred between team members and subject matter experts and documentation is clear. • Bring in consultants as a contingency to replace IT staff.
Consolidation of the Department of Personnel Administration and SPB into the new department of CalHR.	High	Medium	<ul style="list-style-type: none"> • Communicate Project Plan w/CalHR management. • Provide CalHR management project updates as appropriate. • Develop a plan to transition the system to CalHR upon implementation.
Delays in providing services to the project from OTECH.	Medium	High	<ul style="list-style-type: none"> • Provide service requests well in advance of due dates. • Communicate with OTECH representatives on the project and the needs well in advance.

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SECTION 8

ECONOMIC ANALYSIS WORKSHEETS

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SECTION 8: ECONOMIC ANALYSIS

8.0. INTRODUCTION

The purpose of this section is to document the cost and resource analysis conducted during the feasibility study process for the Examination and Certification Online System (ECOS) Project. This information provides a record of the research and estimation of the costs of the following:

- The Current Systems.
- The Proposed Solution.
- The Other Alternative Solutions.

Information on these follows, as does and comparative economic analysis of the alternatives and a funding plan for the proposed solution.

8.1. EXISTING SYSTEM COST WORKSHEET

Typically, this worksheet documents the current and projected operations/maintenance costs of the current method of operation to provide a costs baseline and reflects the costs of maintaining that existing system and program processes if the proposed solution is not implemented.

8.2. PROPOSED SOLUTION COST WORKSHEET

The cost worksheet for the proposed solution documents the projected one-time costs (such as development and/or acquisition costs), continuing costs (costs for maintenance and operation), as well as the impact to program costs of the proposed solution.

8.3. SPECIALIZED CONTRACT RESOURCES COSTS

The specialized contract resources described below will be SPB's contingency plan to address workload issues and stay within the project schedule.

- Developers – to design, develop, and implement the components of the ECOS system.

Costs for the specialized contract resources were calculated based on estimated costs for specific tasks averaged from recent vendor proposals to state departments in response to related services identified in vendor solicitations.

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8.4. ECONOMIC ANALYSIS SUMMARY

This is automatically calculated to compare the estimated costs of the proposed solution to the other considered alternatives (and the existing system).

8.5. PROJECT FUNDING PLAN

This worksheet documents the estimated resources needed for the designing and developing the proposed solution and the necessary budget actions anticipated to support the implementation and ongoing support of the proposed solution. Because this is not a new program, redirected staff has been included for this project.

EXISTING SYSTEM/BASELINE COST WORKSHEET

All costs to be shown in whole (unrounded) dollars.

	FY 2011/12		FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		TOTAL	
	PYS	Amts	PYS	Amts	PYS	Amts	PYS	Amts	PYS	Amts	PYS	Amts
Continuing Information												
Technology Costs												
Staff (salaries & benefits)	3.5	381,841	3.5	381,841	3.5	381,841	3.5	381,841	3.5	381,841	17.5	1,909,205
Hardware Lease/Maintenance		0		0		0		0		0		0
Software Maintenance/Licenses		300,000		400,000		500,000		600,000		700,000		2,500,000
Contract Services		0		0		0		0		0		0
Data Center Services		540,000		540,000		540,000		540,000		540,000		2,700,000
Agency Facilities		136,408		136,408		136,408		136,408		136,408		682,040
Other		238,207		238,207		238,207		238,207		238,207		1,191,035
Total IT Costs	3.5	1,596,456	3.5	1,696,456	3.5	1,796,456	3.5	1,896,456	3.5	1,996,456	17.5	8,982,280
Continuing Program Costs:												
Staff	15.0	1,267,486	15.0	1,267,486	15.0	1,267,486	15.0	1,267,486	15.0	1,267,486	75.0	6,337,430
Other		209,859		209,859		209,859		209,859		209,859		1,049,295
Total Program Costs	0.0	1,477,345	15.0	1,477,345	15.0	1,477,345	15.0	1,477,345	15.0	1,477,345	60.0	7,386,725
TOTAL EXISTING SYSTEM COSTS	3.5	3,073,801	18.5	3,173,801	18.5	3,273,801	18.5	3,373,801	18.5	3,473,801	77.5	16,369,005

ECONOMIC ANALYSIS SUMMARY

All costs to be shown in whole (unrounded) dollars.

	FY 2011/12		FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		TOTAL	
	PYs	Amts	PYs	Amts								
EXISTING SYSTEM												
Total IT Costs	3.5	1,596,456	3.5	1,696,456	3.5	1,796,456	3.5	1,896,456	3.5	1,996,456	17.5	8,982,280
Total Program Costs	0.0	1,477,345	15.0	1,477,345	15.0	1,477,345	15.0	1,477,345	15.0	1,477,345	60.0	7,386,775
Total Existing System Costs	3.5	3,073,801	18.5	3,173,801	18.5	3,273,801	18.5	3,373,801	18.5	3,473,801	77.5	16,369,005
PROPOSED ALTERNATIVE												
In-House Custom Build Exam & Cert Online System												
Total Project Costs	6.0	984,122	6.0	1,009,122	6.0	784,122	7.5	1,135,950	3.5	791,841	29.0	4,705,157
Total Cont. Exist. Costs	18.5	3,073,801	18.5	2,773,801	18.5	2,773,801	17.0	2,396,973	15.0	1,851,960	87.5	12,870,336
Total Alternative Costs	24.5	4,057,923	24.5	3,782,923	24.5	3,557,923	24.5	3,532,923	18.5	2,643,801	116.5	17,575,493
COST SAVINGS/AVOIDANCES	(21.0)	(984,122)	(6.0)	(609,122)	(6.0)	(284,122)	(6.0)	(159,122)	0.0	830,000	(39.0)	(1,206,488)
Increased Revenues	0	0	0	0	0	0	0	0	0	0	0	0
Net (Cost) or Benefit	(21.0)	(984,122)	(6.0)	(609,122)	(6.0)	(284,122)	(6.0)	(159,122)	0.0	830,000	(39.0)	(1,206,488)
Cum. Net (Cost) or Benefit	(21.0)	(984,122)	(27.0)	(1,593,244)	(33.0)	(1,877,366)	(39.0)	(2,036,488)	(39.0)	(1,206,488)		
ALTERNATIVE #1												
Continue with the Effort to Stabilize JobAps												
Total Project Costs	6.0	1,061,790	6.0	1,061,790	6.0	890,430	6.0	890,430	6.0	890,430	30.0	4,794,870
Total Cont. Exist. Costs	18.5	3,073,801	18.5	3,173,801	18.5	3,273,801	18.5	3,373,801	18.5	3,473,801	92.5	16,369,005
Total Alternative Costs	24.5	4,135,591	24.5	4,235,591	24.5	4,164,231	24.5	4,264,231	24.5	4,364,231	122.5	21,163,875
COST SAVINGS/AVOIDANCES	(21.0)	(1,061,790)	(6.0)	(1,061,790)	(6.0)	(890,430)	(6.0)	(890,430)	(6.0)	(890,430)	(45.0)	(4,794,870)
Increased Revenues	0	0	0	0	0	0	0	0	0	0	0	0
Net (Cost) or Benefit	(21.0)	(1,061,790)	(6.0)	(1,061,790)	(6.0)	(890,430)	(6.0)	(890,430)	(6.0)	(890,430)	(45.0)	(4,794,870)
Cum. Net (Cost) or Benefit	(21.0)	(1,061,790)	(27.0)	(2,123,580)	(33.0)	(3,014,010)	(39.0)	(3,904,440)	(45.0)	(4,794,870)		
ALTERNATIVE #2												
Go Back to Prior Systems (Legacy)												
Total Project Costs	6.0	719,070	3.5	511,841	3.5	511,841	3.5	511,841	3.5	511,841	20.0	2,766,434
Total Cont. Exist. Costs	18.5	3,073,801	15.0	1,851,960	15.0	1,851,960	15.0	1,851,960	15.0	1,851,960	78.5	10,481,641
Total Alternative Costs	24.5	3,792,871	18.5	2,363,801	18.5	2,363,801	18.5	2,363,801	18.5	2,363,801	98.5	13,248,075
COST SAVINGS/AVOIDANCES	(21.0)	(719,070)	0.0	810,000	0.0	910,000	0.0	1,010,000	0.0	1,110,000	(21.0)	3,120,930
Increased Revenues	0	0	0	0	0	0	0	0	0	0	0	0
Net (Cost) or Benefit	(21.0)	(719,070)	0.0	810,000	0.0	910,000	0.0	1,010,000	0.0	1,110,000	(21.0)	3,120,930
Cum. Net (Cost) or Benefit	(21.0)	(719,070)	(21.0)	90,930	(21.0)	1,000,930	(21.0)	2,010,930	(21.0)	3,120,930		

PROJECT FUNDING PLAN

Department: State Personnel Board

All Costs to be in whole (unrounded) dollars

Date Prepared: 6/8/2011

Project: Examination & Certification Online System (ECOS)

	FY 2011/12		FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		TOTALS	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
TOTAL PROJECT COSTS	0.0	984,122	6.0	1,009,122	6.0	784,122	7.5	1,135,950	3.5	791,841	23.0	4,705,157
RESOURCES TO BE REDIRECTED												
Staff	6.0	759,122	6.0	759,122	6.0	759,122	6.0	759,122	0.0	0	24.0	3,036,488
Funds:												
Existing System		225,000		250,000						0		500,000
Other Fund Sources		0		0		0		0		0		0
TOTAL REDIRECTED RESOURCES	6.0	984,122	6.0	1,009,122	6.0	784,122	6.0	759,122	0.0	0	24.0	3,536,488
ADDITIONAL PROJECT FUNDING NEEDED												
One-Time Project Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Continuing Project Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
TOTAL ADDITIONAL PROJECT FUNDS NEEDED BY FISCAL YEAR	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
TOTAL PROJECT FUNDING	6.0	984,122	6.0	1,009,122	6.0	784,122	6.0	759,122	0.0	0	24.0	3,536,488
Difference: Funding - Costs	6.0	0	0.0	0	0.0	0	(1.5)	(376,828)	(3.5)	(791,841)	1.0	(1,168,669)
Total Estimated Cost Savings	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
FUNDING SOURCE*												
General Fund	68%	702,371	68%	686,203	68%	533,203	68%	516,203	0%	0	0%	2,437,980
Federal Fund	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Special Fund	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Reimbursement	32%	281,751	32%	322,919	32%	250,919	32%	242,919	0%	0	0%	1,098,508
TOTAL FUNDING	100%	984,122	100%	1,009,122	100%	784,122	100%	759,122	0%	0	0%	3,536,488

*Type: If applicable, for each funding source, beginning on row 29, describe what type of funding is included, such as local assistance or grant funding, the date the funding is to become available, and the duration of the funding.

