A Report for

State of California Secretary of State

VoteCal Feasibility Study Report (v4)

20 March 2006

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1.0 Executive Project Approval Transmittal

Information Technology Project Request

Feasibility Study Report
Executive Approval Transmittal

Bruce McPherson

Department Name		
Secretary of State		
Project Title (maximum of 75 characters)		
VoteCal Statewide Voter Registration System Project		
Project Acronym	**Department Priority**	**Agency Priority**
VoteCal	1	1

APPROVAL SIGNATURES

I am submitting the attached Feasibility Study Report (FSR) in support of our request for the Department of Finance's approval to undertake 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 (AIMS).

I have reviewed and agree with the information in the attached Feasibility Study Report.

Chief Information Officer		**Date Signed**
Printed name:	Lee Kercher	
Manager of Fiscal Affairs		**Date Signed**
Printed name:	Crystal Goto	
Assistant Secretary of State, Chief of Operations		**Date Signed**
Printed name:	Janice Lumsden	
Undersecretary of State		**Date Signed**
Printed name:	William P. Wood	

2.0 IT Project Summary Package

2.1 Executive Summary

1.	**Submittal Date**	**March 20, 2006**

		FSR	SPR	PSP Only	Other:
2.	**Type of Document**	**X**			
	Project Number				

		Estimated Project Dates	
Project Title	**VoteCal Statewide Voter Registration System Project**	**Start**	**End**
Project Acronym	**VoteCal**	**08/03/06**	**12/31/09**

Submitting Department	**Secretary of State**
Reporting Agency	

Project #	
Doc. Type	FSR

Project Objectives
Program objectives for the VoteCal Project include: ■ Comply with 100% of HAVA requirements no later than 12/31/09.

Major Milestones	**Est. Complete Date**
Receive FSR Approval	04/04/06
Phase I: Requirements and RFP Development	11/16/06
Phase II: Vendor Selection and Project Planning	09/12/07
Phase III: HAVA Compliant Database	05/13/09
Phase IV: System Deployment and Training	12/31/09
Phase V: PIER Review	12/31/10
Key Deliverables	
Key Deliverables are delivered during each VoteCal Phase above:	
Phase I: RFP	
Phase II: SPR and Vendor Contract	
Phase III: Fit Gap Analysis, SRS, SDD, Interfaces, Test Results, HAVA Compliant Database	
Phase IV: End User and Technical Training	
VoteCal Acceptance	12/31/09

Project #	
Doc. Type	FSR

Proposed Solution

Section 303 of the Help America Vote Act of 2002 (HAVA) (Public Law 107-22, 107th Congress), mandates that each state implement a uniform, centralized, interactive, computerized voter registration database that is defined, maintained and administered at the state level. This database must contain the name and registration information of every legally registered active or inactive voter in the state. It must serve as the single system for storing and managing the official list of registered voters in the state.

This system must provide a functional interface for counties, which are charged with the actual conduct of elections, to access and update the registration data. Additionally, HAVA mandates the voter registration system coordinate electronically with the Department of Motor Vehicles (DMV), the Department of Health Services (DHS) and the Department of Corrections and Rehabilitation (DCR) for identification and list maintenance purposes.

The major factors driving the selected HAVA compliance solution were the specific compliance requirements, as understood by the State of California, and the need to minimize disruption to county business processes. In particular, the requirements for a uniform and centralized database to serve as the official list preclude solutions where information in county systems is simply exported to a central database subsequent to data entry. Likewise, the need to minimize disruption to county business processes discounts approaches that require replacing existing county systems.

The proposed solution addresses both of these major requirements by providing a new central State database (VoteCal) and remediating existing county election management systems (EMSs) to serve as the “front end” for maintaining VR information in the central system. The solution will permit county users to use their existing (remediated) data entry screens processes while ensuring that VR information is maintained the VoteCal database.

2.2 Project Contacts

Project #	
Doc. Type	FSR

Executive Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Undersecretary	Bill	Wood						
Assistant Secretary of State for Elections	Brad	Clark						
Manager Fiscal Affairs	Crystal	Goto						
Chief Information Officer	Lee	Kercher	916	653-7735		916	653-2151	lkercher@ss.ca.gov
Project Sponsor	Janice	Lumsden						

Direct Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Primary Contact	Lee	Kercher	916	653-7735		916	653-2151	lkercher@ss.ca.gov
Project Manager	Linda	Wasik	916	653-0472		916	653-2151	lwasik@ss.ca.gov

Document Prepared by Gartner Consulting October 2004
Document Revised by Secretary of State July 2005
Document Revised by Secretary of State March 2006

2.3 Project Relevance to State and/or Department/Agency Plans

Project #	
Doc. Type	FSR

1.	**What is the date of your current Operational Recovery Plan (ORP)?**	**Date**	10/2000
2.	**What is the date of your current Agency Information Management Strategy (AIMS)?**	**Date**	12/2000
3.	**For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.**	**Doc.**	n/a
		Page #	

		Yes	**No**
4.	**Is the project reportable to control agencies?**	**X**	
	If YES, CHECK all that apply:		
X	**a) The project involves a budget action.**		
X	**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.**		
	c) The project involves the acquisition of microcomputer commodities and the agency does not have an approved Workgroup Computing Policy.		
X	**d) The estimated total development and acquisition cost exceeds the departmental cost threshold.**		
	e) The project meets a condition previously imposed by Finance.		

2.4 Budget Information Update

Project #	
Doc. Type	FSR

	No	Yes
Budget Augmentation Required?		X

If YES, indicate fiscal year(s) and associated amount:

	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	
General Fund	0	0	0	0	0	

PROJECT COSTS

		FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11		TOTAL
1.	**Fiscal Year**							
2.	**One-Time Cost**	$2,391,022	$6,915,259	$36,134,861	$9,357,010	$0		**$54,798,153**
3.	**Continuing Costs**				$4,793,608	$9,587,215		**$14,380,823**
4.	**TOTAL PROJECT BUDGET**	$2,391,022	$6,915,259	$36,134,861	$14,150,618	$9,587,215		**$69,178,975**

SOURCES OF FUNDING

5.	**General Fund**							
6a.	**Redirection (Staff)**							
6b.	**Redirection (Existing system)**							
7.	**Reimbursements**							
8.	**Federal Funds**	$2,391,022	$6,915,259	$36,134,861	$14,150,618	$9,587,215		**$69,178,975**
9.	**Special Funds**							
10.	**Grant Funds**							
11.	**Other Funds**							
12.	**PROJECT BUDGET**	$2,391,022	$6,915,259	$36,134,861	$14,150,618	$9,587,215		**$69,178,975**

PROJECT FINANCIAL BENEFITS

13.	**Cost Savings/Avoidances**							
14.	**Revenue Increase**							

2.5 Vendor Project Budget

Project #	
Doc. Type	FSR

Vendor Cost for FSR Development (if applicable)	$174,295
Vendor Name	Gartner Consulting

VENDOR (System Integrator) PROJECT BUDGET

1.	Fiscal Year	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11		TOTAL
2.	Primary Vendor Budget	$	$700,000	$28,714,997	$5,369,313	$		**$34,784,310**
3.	Project Management Budget	$306,000	$306,000	$306,000	$153,000	$		**$1,071,000**
4.	IV&V Budget	$912,950	$995,945	$995,945	$497,973	$		**$3,402,813**
5.	Independent Project Oversight	$206,250	$225,000	$225,000	$112,500	$		**$768,750**
6.	Other Contract Services	$716,848	$1,005,504	$1,080,000	$2,243,539	$2,930,077		**$7,975,968**
7.	TOTAL VENDOR BUDGET	$2,142,048	$3,232,449	$31,321,942	$8,376,324	$2,930,077		**$48,002,841**

2.6 Risk Assessment

Project #	
Doc. Type	FSR

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

General Comment(s)
The VoteCal Project Management Team has developed a Risk Management Plan that is detailed in Section VII of this Feasibility Study Report. The Risk Management Plan is based on State Information Management Manual (SIMM) guidelines. Key components include: ■ Identification of roles and responsibilities for the various parties involved in Risk Management, including the Executive Steering Committee, Project Management Team, and Independent Project Oversight and IV&V vendors. ■ The Risk Management Plan will be used on an ongoing basis to identify risks, quantify the potential impact of each identified risk, present mitigation plans and enact appropriate risk responses. Mitigation measures and contingency plans will be developed and implemented as high-priority risks are identified and monitored. ■ Initial identification of a risk management process, to be supplemented by the System Integration vendor who will be required to develop a Risk Management Plan within 30 days of contract execution. It is expected that the State will work with the System Integration vendor to develop a single risk management process that will cover all areas of project risk. ■ Preliminary development of a Risk Management Worksheet identifying risks identified by SOS to date. The Risk Management Worksheet was completed to provide a risk assessment based on the identification, analysis, quantification, and prioritization of key project risks.

3.0 Business Case

The purpose of this section is to provide a clear understanding of the California Secretary of State's (SOS) voter registration business environment. This section of the FSR describes the State's voter registration program and its major functions, identifies internal and external customers, and articulates the business problems and opportunities as well as the desired objectives of the proposed solution. This section also identifies the requirements that the proposed solution must fulfill in order to meet SOS's business needs related to compliance with federal HAVA voter registration requirements.

This business case comprises the following sub-sections:

Table 1. Business Case Sub-Sections

3.1 Business Program Background
3.1.1 Program Description
3.1.2 Business Process Description
3.1.3 Impact of the Proposal
3.1.4 Customers and Users
3.1.5 Program Experiencing the Problem
3.1.6 Conditions Creating the Problem
3.2.1 Business Problems
3.2.2 Business Opportunities
3.3.1 Program Objectives
3.3.2 Program Process Analysis
3.4.1 Voter Registration System Conceptual Model
3.4.2 Business Functional Requirements
3.4.3 Infrastructure Requirements
3.4.4 Technical Requirements

3.1 Business Program Background

3.1.1 Program Description

The program to be supported is the registration of voters, administered jointly by the Secretary of State Elections Division and county election officials. The Elections Division's primary mandate is to ensure that state and federal elections laws are fairly and uniformly administered; that every eligible citizen has barrier-free access to participate in the electoral process; and that the process remains open and free from fraud. California's voter registration program is fundamental to that effort: voter registration is the mandatory first step to participation. Maintaining accurate records of all legally registered citizens is critical to ensuring the integrity of all official elections conducted in this state. To fulfill the purposes of the voter registration program the state and local elections officials:

- Distribute voter registration cards through many channels including local advocacy groups, online access, and other state agencies
- Process voter registration cards
- Verify voter eligibility
- Notify voters of their voter registration status
- Update voter registration records with data received from multiple sources, including returned voter registration cards, direct communication from registrants, and electronic data received from other agencies

The information collected and maintained through the voter registration program supports a wide range of election management activities including:

- Determining precinct boundaries,
- Establishing polling places,
- Verifying petition signatures,
- Mailing election information to registered voters,
- Providing voter information to courts for jury pools,
- Qualifying candidates for the ballot, and myriad others.

Currently the official voter file is maintained by the elections official of each of the 58 counties. The Secretary of State (SOS) maintains a statewide database of all active voters, supported by the Calvoter statewide voter registration and election management system. The Calvoter registration database is primarily used to aid county officials in their list maintenance activities. It contains a mirror image of the county voter records, kept current by daily updates from the counties. New voter records cannot be entered directly into Calvoter. Adds, changes, and deletes of voter information identified by the

Calvoter system cannot be applied to that database. Calvoter is updated once the counties have researched the changes, applied them to their databases and then sent them to the Calvoter system in an update. County data cannot be directly updated from state data; any changes or corrections made to state data will be overwritten by county updates.

Section 303 of the Help America Vote Act of 2002 (HAVA) (Public Law 107-22, 107th Congress) mandates that each state implement a uniform, centralized, interactive, computerized voter registration database that is defined, maintained and administered at the state level. This database must contain the name and registration information of every legally registered active or inactive voter in the state. This system will constitute the official record of all registered voters. Unlike the state's current system, the state database must serve as the single system for storing and managing the official list of registered voters in the state.

This system must provide a functional interface for counties, which are charged with the actual conduct of elections, to access and update the registration data. Additionally, HAVA mandates the voter registration system coordinate electronically with the DMV, DHSand DCR for identification and list maintenance purposes.

3.1.2 Business Process Description

The following overview describes the State's voter registration functions and processes. This overview includes a brief description of the manual and automated processes that support them.

Voter Registration Process

The registration process begins with the individual voter completing and signing an affidavit of registration and delivering it to the county elections official or the Secretary of State by any of several delivery mechanisms, including:

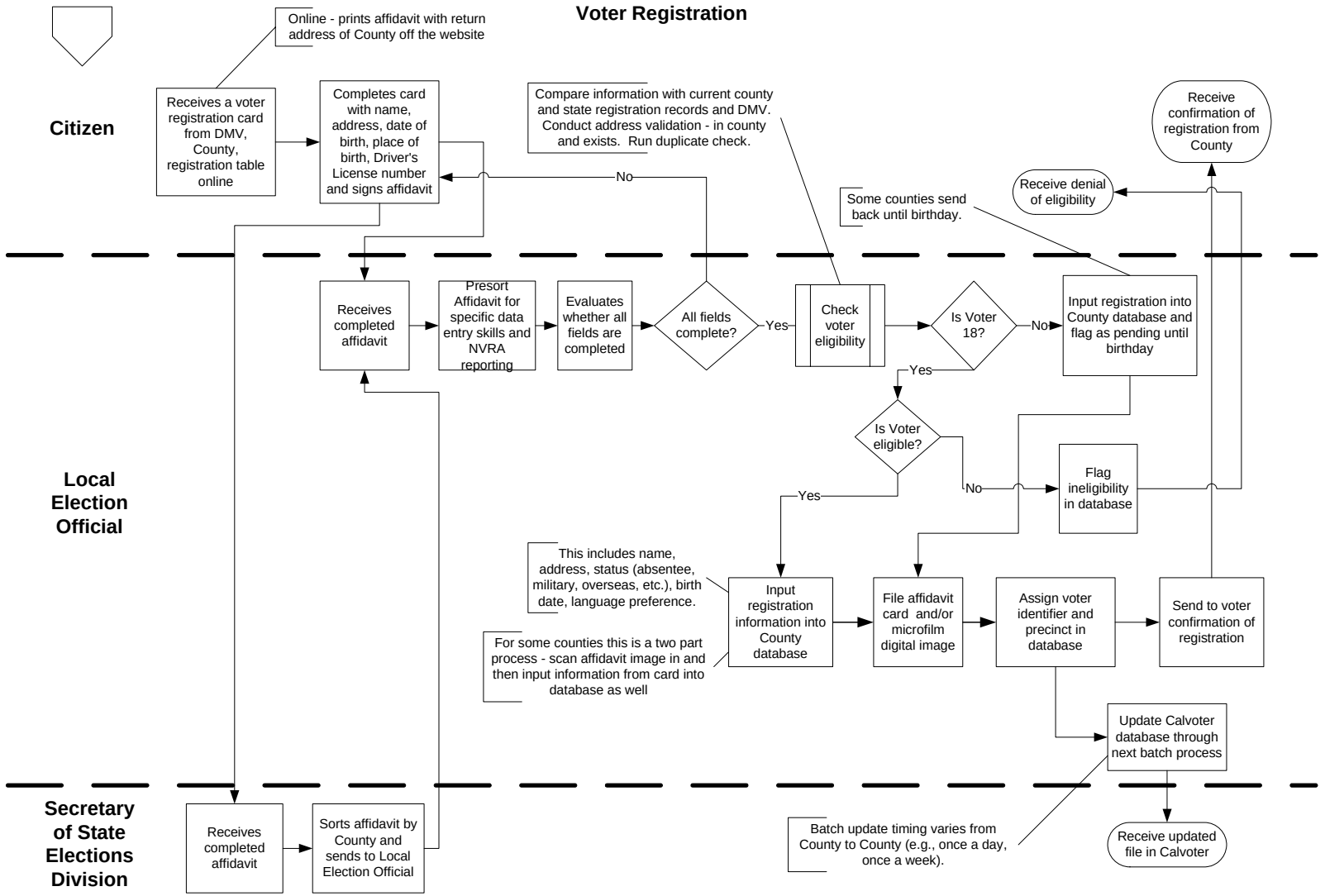
- Personal delivery to the county elections official or the SOS (SOS delivers to appropriate county).
- U.S. Postal Service delivery to the county elections official or the SOS (SOS delivers to appropriate county).
- Third party delivery by registration drives or political campaign staff.
- Through the DMV program mandated by the National Voter Registration Act (NVRA).
- Through registration at federal, state and local agencies providing food stamps, services to the disabled, or through the Aid to Families with Dependent Children, Women/Infants/Children programs.
- Alternative mail delivery services.

Voter information is keyed or scanned into the county databases using the voter's residence address to determine in which precinct and political subdivisions the voter resides. Information in the voter file is used for a variety of purposes, including:

- Determining a voter's eligibility to participate in a particular election, as well as the appropriate ballot style
- Processing of absentee, provisional and fail-safe ballots
- Calculating precinct size and drawing precinct lines
- Determining district boundaries for political subdivisions within jurisdictions
- Producing precinct rosters, absent voter and other lists
- For sales of precinct lists, walking lists, mailing lists/labels and other voter information to individuals and organizations eligible to purchase these items
- Conducting county residency confirmation, sample ballot, absentee ballot, and other mailings
- Hiring precinct workers, who must be registered voters
- Verifying that candidates are registered with the party and residents of the jurisdiction in which they are seeking nomination/election
- Jury pool selection
- Miscellaneous communications with voters

The following figure depicts the steps involved in the voter registration process.

Figure 1. Current Voter Registration Process



Voter Registration List Maintenance

Duplicate and invalid registrations are identified using any or all of the following means:

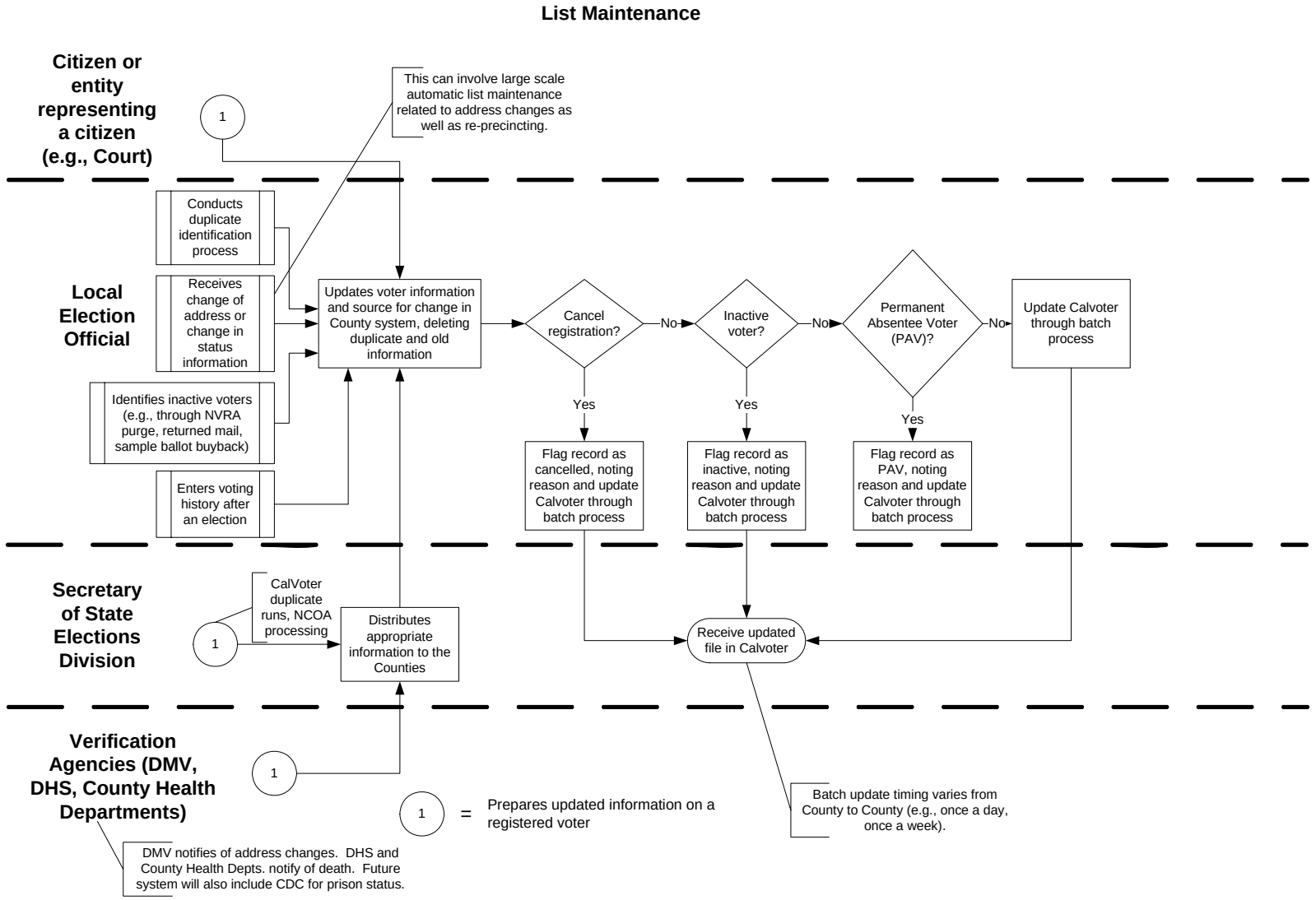
- Residency confirmation mailings
- Use of the National Change of Address (NCOA) information provided by the US Postal Service (USPS) through private vendors or through Calvoter and the Employment Development Department
- Notification from the State Registrar of Vital Statistics, the county Registrar of Births and Deaths, and/or through Calvoter from the State Department of Health Services of the death of a registrant
- Change of address notification and other voter information from the DMV and other state and federal agencies as designated under the NVRA
- Notification from other jurisdictions that a voter has reregistered in a new location
- Direct notification from individual voters that they have moved to another jurisdiction or otherwise changed their registration information
- Notification from state and federal courts, or notification through Calvoter from the state Department of Corrections and Rehabilitation, of individuals convicted of felonies and sentenced to prison
- Receipt of any official mailing returned by the US Postal Service as undeliverable

The California Elections Code requires that each voter's residence address, telephone number, precinct number and prior registration information, if any, be confidential and prohibits disclosure of this information except to those authorized by law to have access to it.

Currently the official voter file is maintained by the elections official of each of the 58 counties. The Secretary of State (SOS) maintains a statewide database of active and inactive voters, supported by the Calvoter statewide voter registration and election management system. It contains a mirror image of the county voter records, kept current by daily updates from the counties. New voter records cannot be entered directly into Calvoter; any adds, changes, and deletes of voter information identified by the Calvoter system cannot be applied to the database until confirmed by the counties, posted into their election management system and then updated to Calvoter. Changes made directly to data in Calvoter would be overwritten and lost when the counties send updates to Calvoter.

The following figure depicts the steps involved in the voter registration list maintenance process.

Figure 2. Current List Maintenance Process

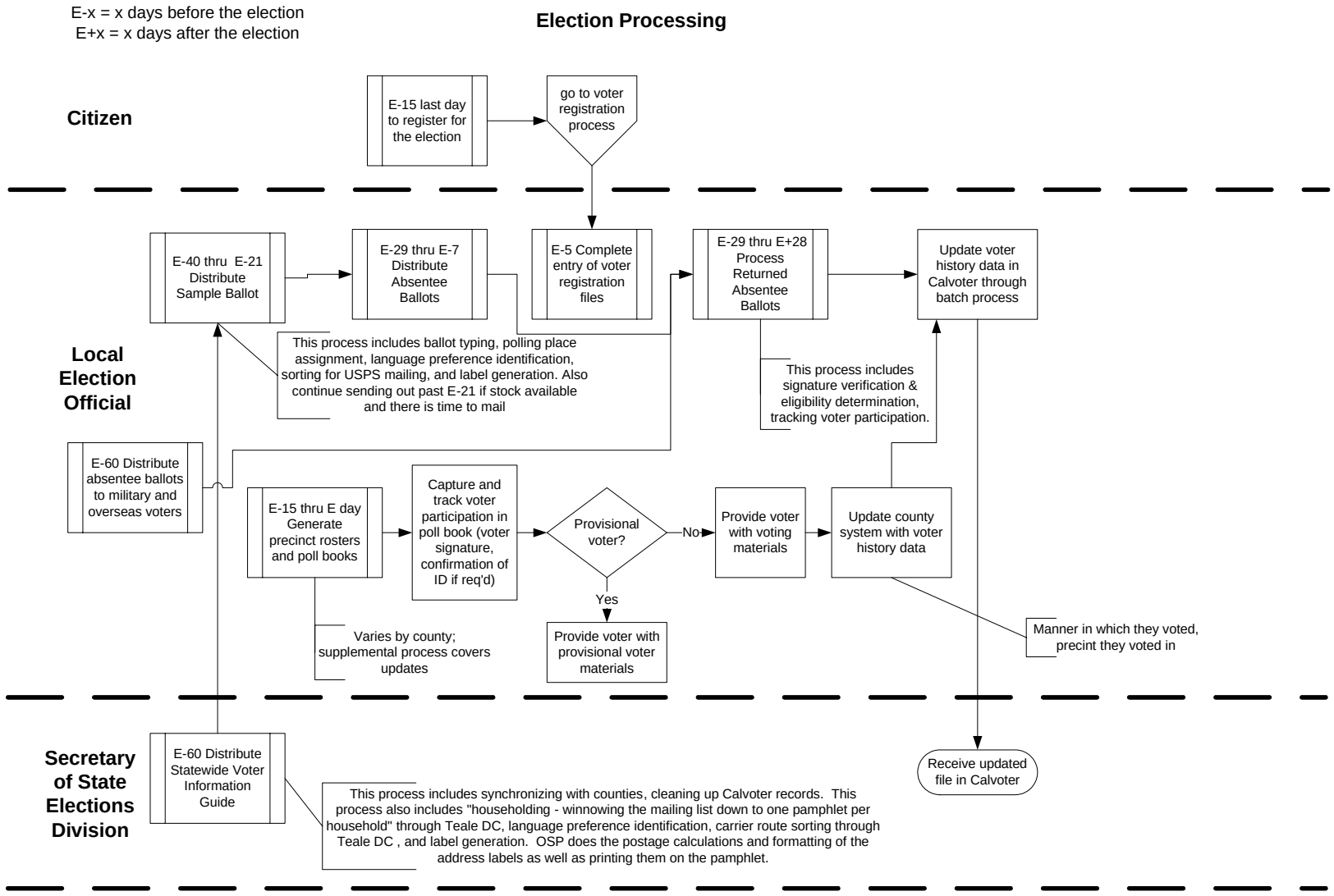


Election Processing

Voter registration information is critical to election processing activities conducted by the state and county election officials. This information must be made available to election officials 24 hours a day, seven days a week during critical election cycles that require the mailing of voter information guides and ballot materials, printing of precinct rosters and poll books, processing of absentee ballots, and tracking of voting history.

The following figure depicts the steps involved in the election processing effort that most directly relate to the voter registration data.

Figure 3. Current Election Processing Process



3.1.3 Impact of the Proposal

The proposed solution will affect all SOS Elections Division staff, county elections staff, customers, and key stakeholders. Currently, each county elections office uses different systems, tools and manual processes to conduct voter registration and maintain lists of registered voters. While all county elections offices interface with the Calvoter system, they do not use the system in the same way to maintain their voter registration lists. Non-standard processes and a decentralized voter registration list maintenance approach result in non-uniformity of data and the inability to meet federal HAVA voter registration requirements. The proposed solution will enable the state to comply with HAVA requirements, reduce reliance on manual processes and increase standardization of county business processes and voter registration data. It will allow the State to maintain one single voter registration list including the historical profile of each registered voter. Processes for verifying voter eligibility and list maintenance functions will be built into the system, reducing the need for extensive and time consuming list maintenance activities. The proposed solution will also reduce administrative and mailing costs due to improved list accuracy (i.e., one voter, one record).

3.1.4 Customers and Users

Customers of the State's voter registration program include voter registrants and purchasers of the data. Users of the State's voter registration data include customers, internal SOS staff and management, local county election staff, external stakeholders, and partner agencies. Currently, local county election staff interface with SOS through the Calvoter system. Interfaces between SOS and its other customers and data users rely primarily on data extracts on electronic media such as CDs. Descriptions of customers and users and their need for State voter registration data are provided below.

Customers—include voter registrants who rely on SOS and county elections officials to process their voter registration affidavits quickly and accurately so that they may vote in federal, state and local elections. Customers also include purchasers of voter registration data including:

- Candidates for federal, state, and local office
- Political parties
- Statewide Database Project at UC Berkeley (for redistricting)
- Ballot measure proponents/opponents
- Journalists
- Academic researchers

These customers rely on the accuracy and timeliness of current and historic voter registration information for mailings, redistricting, media publications, and academic studies.

SOS staff (system end users) and management—rely on system information to perform daily work activities in support of mandated voter registration and election management responsibilities. SOS Elections Division managers rely on system information to ensure that voter eligibility is granted to those legally entitled to vote. Elections fraud investigators rely on system information to validate voter eligibility as well as proper use of registration data sold to program customers.

County Elections staff (system end users) and management—rely on Calvoter system information to perform daily work activities in support of mandated voter registration and election management responsibilities. Staff uploads mandated information from their local election management systems in compliance with State requirements. Counties have already been required to upgrade their local Election Management Systems (EMS) to meet most of the data standard and business process requirements of HAVA. It is likely that county elections officials will need to modify their local EMS to interface with the new statewide voter registration database system, although most data element and standardization changes have been completed.

External stakeholders—include the Legislative Data Center, judicial districts, and other state and local governmental agencies interested in voter registration information. For example, judicial districts use voter registration data for jury pool processing.

Partner agencies—include DMV, DHS, and DCR. Currently DMV and DHS exchange information with SOS regarding address and death verification information related to voter registrants. HAVA requires the State use DCR data to purge from the active voter list felons as defined by the California Elections Code, thus DCR must be added to existing list maintenance processes. In addition, the State must now verify with DMV the validity of any Driver's License Identification or the last four digits of the Social Security Number provided by a registrant. The current Calvoter system has been modified to obtain and process this external agency data. These interfaces must be adapted to the new voter registration system, and may require some restructuring of agency systems to comply with the new system.

3.1.5 Program Experiencing the Problem

The SOS Elections Division and county elections officials experience the problems identified in Section 3.2, Business Problem or Opportunity. Since voter registration information provides the core for election management processes, these problems are not isolated to a specific business unit, geographic location or business function. All voter registration activities and associated election management activities are impacted by the HAVA statewide voter registration database requirements.

3.1.6 Conditions Creating the Problem

The State will not be able to fully meet HAVA statewide database mandates (described earlier in Section 3.1.1) due to three primary conditions that are at the core of the business problem:

1. Responsibility for maintaining the State's official voter registration records is being transferred from county elections officials to the Secretary of State,
2. Existing systems are unable to provide required functionality, and
3. Inadequate existing infrastructure to support potential solutions.

Transfer of List Ownership from Counties to the State

- ***Responsibility for List Maintenance is being transferred from the Counties to the State –*** Counties currently maintain their own voter registration lists and use the State Calvoter system to assist with list maintenance activities. Counties currently maintain these lists within their election management systems. At this time, 57 counties use or are converting to one of 5 commercial election management systems. The remaining county uses an internally-developed system. SOS would like to implement a new system that works with adaptable existing county systems and has as minimal impact as possible on existing county business processes to reduce the cost and risk of implementing the new state system.

> ***"The State (through SOS) shall implement a computerized statewide voter registration list that is: single, uniform, official, centralized, interactive, defined, maintained and administered at the State level, contains name and registration information of every legally registered voter in State."***
>
> ***HAVA Section 303(a)(1)(A)***

Incorrect System Design

- **Existing systems are unable to provide a single statewide database—**the existing Calvoter system was originally designed to help support counties in their list maintenance efforts, providing them with tools and services that help identify duplicates and outdated or inaccurate addresses. This system was designed to reflect and analyze the voter registration data stored in the 58 county voter registration databases; it cannot be modified to be a single, official uniform voter registration list on behalf of the State.
- **The existing state system cannot be authoritative as required by HAVA—** HAVA requires a single state voter registration list. The Calvoter system, as modified for interim compliance with HAVA, can only reflect the data in county lists, and will constitute an exact replica of county data for only a few mintues each morning after county updates to the state data have been applied and

before counties begin processing new voter registration transactions. Calvoter does not provide the user interfaces required to support routine voter registration activities, and only through the use of complex and difficult-to-enforce business rules can the state ensure that voter registration decisions using county data are the same that would be made using state data.

- **Inability to ensure unique voter registrations as required by HAVA—**HAVA requires that each voter be assigned a unique identifier, so that the database can ensure that each voter is registered only once in the state. The interim modifications to Calvoter have added support for this unique identifier, but because the state voter registration system still consists of 58 county systems, the state cannot ensure that the voter registration is unique. Calvoter cannot prevent duplicate registrations, and can only be used to identify duplicates and to notify the counties involved to correct the duplication.

3.2 Business Problem or Opportunity

3.2.1 Business Problems

The existing Calvoter system was augmented during late 2005 with the development of a series of external automated processes. These processes, known collectively as the interim enhancements, were added to achieve an interim level of compliance as required by agreement with the United States Department of Justice to avoid threatened litigation for the state's potential failure to meet HAVA voter registration database requirements by the statutory January 1, 2006 deadline. These augmentations include:

- Establishment of interfaces to the DMV and Social Security Administration (SSA) to support verification of unique identifiers provided by registrants.
- Implementation of a process to obtain and apply ineligible felon and parolee information from the state Department of Corrections and Rehabilitation
- Enhancement of the existing process to obtain and apply death records from the state Department of Health Services
- Creation of new automated processes to identify non-standard and invalid county data and to notify counties of required corrections
- Enhancement of existing processes to support the use of NCOA data to check all registered voter addresses on a monthly basis
- Addition of new data elements to the state database to store and process information required by HAVA and the NVRA
- Modification of Calvoter to load inactive voter records from the counties, and to edit those records from voter information guide address lists and from public service request publications of registration data
- Automation of processes to upload county data changes at the end of each business day to ensure daily currency of the Calvoter database
- Modification of adaptable existing county voter registration systems to include new required data elements, to support verification of voter identification through

DMV and SSA, to upload active and inactive records each day, and standardize data coding and formats.
- Migration of existing non-adaptable county voter registration systems to modified systems.

The existing Calvoter system, with the interim enhancements, still presents a number of business problems that prevent SOS from meeting HAVA requirements. These problems include the inability to meet HAVA general system requirements, list maintenance requirements or registrant data verification requirements. The existing system also has several technical issues that must be addressed.

These problems are described in detail below.

Inability to Meet HAVA General System Requirements

- ***Single, Uniform, Official, Centralized, Interactive, Computerized List—*** *HAVA Section 303(a)(1)(A)* requires that the State (through SOS) implement a computerized statewide voter registration list that is: single, uniform, official, centralized, interactive, defined, maintained and administered at the State level, and contains the name and registration information of every legally registered voter in the State. The current Calvoter system does not meet any of these requirements. While Calvoter does contain a complete list of active and inactive registered voters, this list is also maintained in pieces within separate county voter registration systems. Counties update their registration information and periodically update the central Calvoter system in a manner that does not ensure the Calvoter information and county information are synchronized at all times. As a result, although the SOS maintains the "official" list, this list would probably be different from the whole of the lists maintained by the counties at any given moment.

  The Calvoter system cannot be considered interactive. Counties upload and download information from the system using batch processes.

  The data maintained within the Calvoter and county systems is not maintained in a uniform manner. Each county captures data in a variety of ways and has different definitions for the status of voters. For example, one county may store cancelled voters in their system, while another purges them. In addition, one county may parse addresses into separate fields, while another county maintains the information in one text string. The interim enhancements enforce standards for how data that is uploaded to Calvoter; it cannot, however, ensure that data is actually stored in the county system in the same form, or that the records stored in the county system are all and only those records reflected in Calvoter.

  In addition, the Calvoter system cannot be considered interactive. Counties upload and download information from the system using batch processes. In some cases, counties have no direct connection between the Calvoter system

and their own election management systems. They upload and download information to disks/CDs and then update Calvoter or their own election management files. As a result, there is a significant time delay between when Voter Registration information is updated and when these updates are applied to the central State database. The interim enhancements added processes to ensure that Calvoter exactly reflect county systems at the beginning of each business day, however, this requirement is deliberately bypassed during the period surrounding federal elections that are closely followed by local elections.

The new VoteCal system will address all these issues, allowing California to comply with HAVA general system requirements. In addition, counties and their vendors will be required to modify their specific election management systems and business processes in order to support this new system and comply with federal HAVA mandates.

Inability to Meet HAVA List Maintenance Requirements

- ***Data Accuracy and Timeliness —*** HAVA Sections Section 303(a)(2)(A) and Section 303(a)(4) require the system to include provisions to ensure voter registration records are accurate and updated regularly. List maintenance shall be performed by "the appropriate State or local election official", in accordance with NVRA provisions. Each county applies different processes and timelines to their list maintenance activities, since there are multiple voter registration processes and different data validation rules in each county. Some counties conduct list maintenance activities and update their records on a real-time basis while others do so on a schedule that suits their particular business needs. SOS can use Calvoter with the interim enhancements to monitor county data, and through the data, the county business processes. However, the existing Calvoter environment cannot be used to enforce county business processes through the enforcement of data standards in the county systems.

  The new VoteCal system will require counties to enter their voter registration data directly into the State system, which will improve the timeliness of data entry into the single database. List maintenance activities will be standardized to improve data accuracy as well. As new voter registration information is entered into the State system, the system will automatically detect duplicate voters and allow staff to combine duplicate records as appropriate, reducing the percentage of duplicate/inaccurate records.

  Each county applies different processes and timelines to their list maintenance activities, since there are multiple voter registration processes and different data validation rules in each county.

- ***Removing Ineligible Voters from the List—*** HAVA Sections 303(a)(4)(A) and 303(a)(2)(A)(ii) require reasonable effort be made to remove ineligible voters from the voter registration list. For removing ineligible voters from the list, the

State shall coordinate with: the DMV Motor Voter for address changes, DHS for death notification, and DCR for felony status. Calvoter currently receives and forwards to counties for processing information from DMV and DHS and DCR. The information from these sources is currently forwarded to the counties for processing; however, no mechanism exists to monitor or enforce those county processes.

- ***Eliminating Duplicate Records and Ensuring Data Integrity—*** HAVA Section 303(a)(2)(B) requires list maintenance must be conducted in a manner that insures: All legally registered voters are in the computerized list; only voters not legally registered or not eligible to vote are removed from the list; and duplicate names are eliminated from the list. In addition HAVA Section 303(a)(4) requires the State employ safeguards to ensure legally qualified voters are not removed in error. List maintenance activities are to be conducted in accordance with NVRA provisions. At this time, the State cannot meet these requirements. As detailed earlier, counties use different voter registration processes and apply different data validation rules. They also apply different list maintenance activities at different times during the year. As a result, the amount of duplicate or erroneous registrations residing within county systems ranges from 1% to 52% (as reported by counties in a recent project survey). While most respondents indicated less than 10%, these figures demonstrate that existing processes do not enable the State to meet HAVA requirements. The interim enhancements allow the state to monitor the data uploaded by counties to Calvoter, and to monitor county business processes and data standards through that data, but cannot directly monitor nor enforce business processes or the data in the county systems.

  The new VoteCal system will automate the duplicate check function, using the unique identifier assigned every voter to detect duplicate records within the database whenever new data is entered. This functionality will standardize the removal of duplicate records from the system and improve data integrity.

Inability to Meet HAVA Registrant Data Verification Requirements

- ***Assignment of a Unique Identifier—*** HAVA Sections 303(a)(5)(A)(i) – (iii) require all new (and renewing) registrants to provide their driver's license number (DL#). If they have no DL#, they must provide the last 4 digits of their Social Security Number (SSN). If they have neither DL number nor SSN, the system must assign them a unique identifier to use as a "voter registration ID number". No registration is valid unless/until the State verifies these ID numbers. The interfaces to DMV and SSA to support the unique identifier were added with the interim enhancements, as were processes to require the counties to assign a unique identifier to all new and existing voter records. However, because the counties continue to maintain the 58 individual voter registration databases, it is not possible to ensure that voters are unique across the state, nor to identify duplicate voters upon registration. The state can use Calvoter to identify duplicate voters using the unique identifier after the data is uploaded from the

counties, and can notify the counties of the need to remove the duplicate record, but can neither prevent duplicates from being added in the first place nor enforce their removal.

Technical Problems

- ***Limited System Support—*** Calvoter is currently maintained by two vendors: Elections Systems and Software (ES&S) is responsible for the core system application, and Natoma Technologies is responsible for scheduling the batch processes necessary to perform list maintenance activities. Calvoter was built using proprietary code that prevents SOS staff and other vendors from making system modifications. ES&S no longer markets the StateProfile product that underlays Calvoter, and no other customer uses that product, as it is not compliant with HAVA. Consequently, vendor knowledge of the product is deteriorating as technical staff have been reassigned to current products, and the vendor no longer makes routine changes to the product to support evolving statutory and regulatory requirements. The new system will either be built using a current and viable commercial product, or will be developed as a custom system for the SOS. In either case, the state will require the deposit of all custom source code with the state and all proprietary code in escrow to ensure the ability of the state to assume or reassign support for the product if the developing vendor is unable or unwilling to provide suitable support. During the life of the product, the SOS will also use standard contract provisions and contract oversight processes to ensure acceptable vendor maintenance and operations performance.
- ***Inability to Comply with HAVA Technical Requirement*** - HAVA Section 303(a)(1)(A)(vii) requires the SOS to provide such support as may be required so that local election officials are able to enter information as described in clause vi. (on an 'expedited basis'). Since the State does not maintain control over the election management systems that county officials use currently to enter data, SOS cannot comply with this requirement. The new VoteCal system will be integrated with the data entry process and will be supported by the appropriate technical resources, allowing the State to comply with this HAVA requirement.

  Calvoter was built using proprietary code that prevents SOS staff and other vendors from making system modifications. SOS must therefore rely on a single vendor for system support.
- ***Inability to Comply with HAVA Security Requirement*** – HAVA Section 303(a)(3) requires the appropriate State or local official to provide adequate technological security measures to prevent the unauthorized access to the computerized list. At this time, the State cannot comply with this security requirement given the diversity of election management systems and the distribution of management of those systems to the counties. As part of this

project, SOS will work with counties to ensure appropriate security measures are put into place to protect data residing within their systems as they execute election management activities. In addition, the new VoteCal system will comply with this requirement.

3.2.2 Business Opportunities

SOS has identified the following business opportunities that can be pursued by implementing the proposed solution:

- ***Automate Existing Inefficient Processes*** – The new system will automate processes such as duplicate checks and the updating of addresses from DMV's Motor Voter program. Automation of these processes will free up staff time currently devoted to less efficient list maintenance activities. In addition, the implementation of a centralized system will eliminate the tasks related to uploading and downloading data to and from Calvoter. Finally, the system will be designed to produce mailing labels for election-related materials directly through the system rather than conducting a multi-step process through existing Department of Technology Services systems to prepare an acceptable mailing list.
- ***Improve Public Access to Information—***The new system will enable registered voters to access their registration information via the Internet, including the status of their registration and their polling location. This Internet access will reduce the number of calls made to elections offices that must be handled by staff, freeing them up to conduct other activities.

3.3 Measurable Business Objectives

3.3.1 Project Objectives

- Taking into consideration the business problems and opportunities discussed above, SOS has identified a single key objective for the project, although that objective has many components: full compliance with HAVA requirements for voter registration databases, as interpreted and enforced by the US Department of Justice.

3.3.2 Program Process Analysis

As noted earlier in Section 3.2, Business Process Description, a number of factors contribute to the State's inability to fulfill federal HAVA statewide voter registration database requirements. State and Local County Election Officials will be required to modify their current business processes in order to comply with HAVA requirements. See Section 3.1.2 for a complete description of these processes.

3.4 Business Functional Requirements

3.4.1 VoteCal Conceptual Model

This section describes the essential characteristics that must be present in the proposed solution to satisfy the objectives described above. A conceptual model of the VoteCal solution is presented first, followed by functional requirements, infrastructure requirements, and a traceability matrix demonstrating how these requirements help address the business objectives identified in Section 3.3.

Interface Layer

The interface layer depicts the key segments of VoteCal data providers and users: county elections staff, partner agencies, customers and external stakeholders, as described in section 3.1.4 above. These entities will provide and access data using a variety of methods including online, diskette/CD transfer, in person, by mail, by phone and by fax. The new system should enable SOS to conduct transactions efficiently and effectively, no matter what the method used to exchange data.

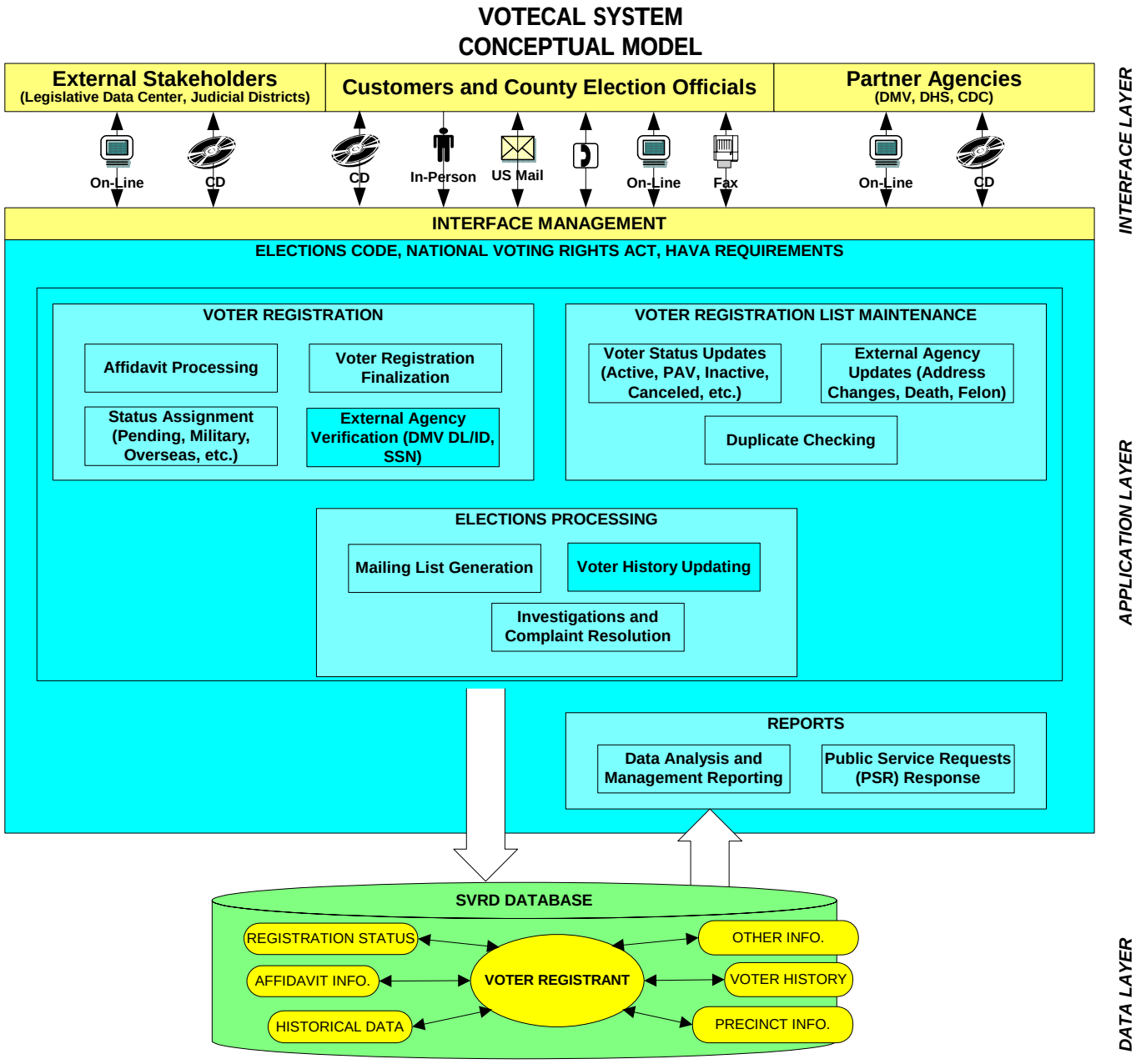
Application Layer

The application layer depicts SOS business units and internal processes. Functions are divided into three primary business areas: voter registration, voter registration list maintenance, and election processing.

Data Layer

The data layer comprises all voter registration data. This layer currently is supported by limited automation through systems, but relies heavily on county manual processes and hard copy documentation.

Figure 4. Statewide Voter Registration Database Conceptual Model



Source: Gartner, August 2004

3.4.2 Business Functional Requirements

The following is the list of the key business functional requirements for the new system.

I. General Business

a) Ability to serve as the single system for storing and managing the official list of registered voters throughout the state.
b) Ability to maintain one record for each registered voter including the entire history and current status of that voter.
c) Ability to archive data automatically based on business rules.
d) Ability to override system (e.g., perform a transaction inconsistent with established business rules) when required.
e) Ability to adjust edits/business policies that govern the acceptance/correctness of data and the ability to change in response to changes in law and policy.

II. Voter Registration

1) Affidavit Processing

a) Ability for local election officials to enter all voter registration information electronically into the list within twenty-four (24) hours of the time the information is provided to the official.
a) Ability to track and maintain voter registrant information provided on the registration affidavit, including NVRA tracking number.
b) Ability to capture and store a graphic image of the signature on an affidavit.
c) Ability to capture and store a graphic image of the entire registration affidavit.
d) Ability to track and maintain voter registration status – pending, active, inactive, canceled.
e) Ability to assign categories to each voter as appropriate – military, overseas, permanent absentee voter (PAV).
f) Ability to support eligibility determination of voter registrants (e.g., voter is at least 18 by date of next election).
g) Ability to support exception processing of registrations that do not process completely and automatically, allowing election officials to resolve any issues in order to accept the registration or officially deny it (e.g., missing/invalid information).
h) Ability to determine whether a registrant is a “first time voter who registered by mail” and if so, flag for ID verification at the polls if the registration information cannot be properly matched against existing DMV data.
i) Ability to notify user when attempted add or update fails.

2) External Agency Verification

a) Ability to record and track verification of whether any supplied DL/ID# or the last 4 digits of the social security number (SSN) are valid or not valid based on DMV records. Ability to verify the absence of a DL/ID# and/or SSN when so indicated by a registrant.

3) Voter Registration Finalization

a) Ability to assign a unique identifier to every registered voter (i.e., DL/ID#, or last 4 digits of SSN+date of birth, or identifier assigned by the system from provided demographic data. This assigned identifier must be unique within the system, and must be repeatably generated from provided information).

b) Ability to identify/record and track the registrant's home precinct based on county precinct/district files.

c) Ability to notify the county of the validation of a new registrant.

d) Ability to notify a county if a voter has transferred his/her registration to another county.

e) Ability to support creation and mailing of the Voter Notification Card (VNC) to the voter to confirm that their registration has been accepted.

III. Voter Registration List Maintenance

1) Voter Status and Classification Updates (Active, Inactive, Canceled, PAV, etc.)

a) Ability to identify and track active voters.

b) Ability to identify and track inactive voters per Elections Code §2226.

c) Ability for an election official to cancel a voter registration based upon specific business rules (e.g., voter request, death notification, mental incompetence, felon status).

d) Ability for an election official to inactivate an active voter, cancel an active or inactive voter, and reactivate an inactive or canceled voter.

e) Ability for an election official to capture and track registrants as they apply for and are granted Permanent Absentee Voter (PAV) status.

f) Ability for an election official to cancel PAV status if a voter fails to vote during an election.

g) Ability for an election official to update a voter record reflecting military or overseas classification.

h) Ability for an election official to update a voter record reflecting confidential status (e.g., ensuring record cannot be read, printed, etc. by any unauthorized entity).

2) External Agency Updates (Address Changes, Death, Felon Status)

a) Ability to receive and validate address change records (e.g., confirm with voter address change applies to voter registration) and new registrations from

DMV and update records accordingly where a match can be determined at an acceptable confidence level. Where a match cannot be determined at an acceptable confidence level, notification will be sent to the appropriate county for follow-up and determination.

b) Ability to receive death notification from DHS and automatically update records accordingly where a match can be determined at an acceptable confidence level. Where a match cannot be determined at an acceptable confidence level, notification will be sent to the appropriate county for follow-up and determination.

c) Ability to receive felon status notification from DCR and update records accordingly where a match can be determined at an acceptable confidence level. Where a match cannot be determined at an acceptable confidence level, notification will be sent to the appropriate county for follow-up and determination.

3) Duplicate Checking

a) Ability to perform duplicate check to identify existing potential duplicate records at time of data entry for new registration transactions.

b) Ability to perform statewide searches for duplicate voter records and prompt for prior voter registration profile based on a variety of user defined criteria including phonetic, transposition and “like spelling” matches.

c) Ability to combine data from two or more records representing the same person.

4) Coding Accuracy Support System (CASS) Standardization

a) Ability to ensure that the registrant address used for mailing voter materials conforms to US Postal Service (USPS) standards for optimum mailing rates.

b) Ability to ensure that in rural areas where USPS standards are not sufficient, registrant address conforms to a standard acceptable by all county agencies.

5) County List Maintenance

a) Ability to process bulk voter registration record updates from counties (e.g., reprecincting, street name changes) and update the State official voter registration records accordingly.

6) Precincting

a) Ability to automatically update voter registration information for affected voters when precinct information changes.

b) Ability to map a voter and his/her precinct to various districts.

IV. Elections Processing

1) Mailing List Generation

a) Ability to support mailing of the statewide voter information guide to registered voters (e.g., reducing addresses on the mailing list to one pamphlet per

household, language preference identification, distinguishing in-State or out-of-State).

2) Voter History Updating

a) Ability to record and track whether a voter voted in an election (State, federal, and local elections).

b) Ability to record and track how a voter participated in an election – absentee, early voting, polling place, provisional, failsafe, Decline to State (DTS) voter voting partisan ballot.

c) Ability to capture and store provisional voting data (i.e., was the vote counted and, if not, why not) from the county EMS systems for reporting in a statewide "free access system" as required by HAVA.

3) Complaint Resolution and Investigations

a) Ability for State and local law enforcement officials to access and analyze data to conduct investigations and resolve complaints and allegations of illegal activities around the election process (e.g., whether an individual voted multiple times in a given election and identifying fraudulent registration activity).

V. Reports

1) Data Analysis and Management Reporting

a) Ability to maintain a computerized statewide voter registration list that is single, uniform, official, centralized, interactive, defined, maintained and administered at the State level, and contains the name and registration information of every legally registered voter in the State.

b) Ability to generate the official voter registration list for the conduct of all federal, State and local elections in the State.

c) Ability for voter registration staff to establish data views, registrant status information, and statistical calculations to inform the decision-making process.

d) Ability to sort voter registrant data by location, birth date, and other information (e.g., last name, first name, voter registration number).

e) Ability to compile and report on voter registration changes by registration source (e.g., DMV, SOS, county) in compliance with National Voter Registration Act (NVRA) requirements.

f) Ability to compile and report on voter registration statistics by party and political district at specific times in compliance with Elections Code §2187.

g) Ability to compile and report on registration data to the California State Legislature for redistricting purposes.

h) Ability to compile and report registration data to judicial districts for use in compiling jury wheels (i.e., juror pools).

i) Ability to prepare ad hoc reports based on any data stored in the system.

2) Public Service Requests (PSR) Response

a) Ability to compile and provide extracts of voter registration data in a variety of formats (e.g., electronic, mailing labels, precinct walking lists) to qualified users in compliance with Elections Code §2194. These may include all or part of the registrant data as appropriate and legally qualified; for example, a candidate for a district is only entitled to the registrants within that district.

b) Ability to record and track data on purchasers/users of registration data.

3) Registrant Inquiries

a) Ability for the public to access information related to their voter registration status (e.g., whether they are registered, party affiliation, etc)

b) Ability for public (e.g., provisional voters) to access information on the status of their provisional ballot.

3.4.3 Infrastructure Requirements

The following is a list of infrastructure requirements that will be needed to support the VoteCal system. The infrastructure requirements below represent the technical components and capabilities that are required to support the voter registration program. A more comprehensive list of technical requirements is provided in the next section.

1) System Architecture and Platforms

a) The system architecture and platforms must be compatible with technologies currently supported by the Department of Technology Services and that the Department plans to continue to support through the project maintenance and operations phase. SOS anticipates that the vendor selected to develop and implement the system will provide maintenance and operations support for the VoteCal system for a defined term after implementation. Prior to the end of that term, SOS will determine whether to transition maintenance and operations to staff or to a successor contractor.

b) The solution must be capable of supporting multiple office applications simultaneously to enable worker multi-tasking.

2) Technical Support

a) Provide the State and counties with the ability to select appropriate IT training for staff.

b) Enable the State and counties to select external support providers (ESPs) to support the technical operating environment through third-party maintenance and operations, where appropriate.

3) System Interfaces

a) Facilitate the ability to share data between the SOS and validation agencies DMV, DHS, and DCR.

b) Provide the ability to communicate with and access data from existing county systems and client server databases over a secured connection conforming to IEEE security standards.

c) Provide the ability to receive and process change of address data from a US Postal Service NCOA system.

3.4.4 Technical Requirements

The VoteCal system must be built using technologies and standards that meet the goals and vision documented in SOS's Information Management Strategy Plan, current State policies and procedures, the e-government initiative and industry best practices. Some of these requirements include, but are not limited to:

1) Accessibility

a) System must provide the ability to access any information via local access and remote access.

b) System must provide multi-user access to all functions within the system.

c) System must provide on-line secure access via web-enabled technologies by authorized external stakeholders

d) System must provide on-line secure access via web-enabled technologies by the general public allowing them to:
   i. Register to vote (link to existing application)
   ii. Check their own current registration status (new Votecal interface)
   iii. Request absentee ballot for upcoming election (or permanent absentee status) (link to existing application)
   iv. Identify their voting system equipment and procedures for upcoming election (link to existing county applications)
   v. Determine their polling place for upcoming election (link to existing county applications)
   vi. Determine the status of their provisional ballot per the HAVA requirement for a "free access" system (new Votecal interface)

e) System must provide real time access to VoteCal system information from Secretary of State's office.

f) System should provide real time access to VoteCal system information from the county local election offices.

2) Application

a) System must provide a Web-based user interface for all system applications and modules used by external users.

b) System must co-exist in an environment that includes multiple applications and must provide interoperability with third-party applications.

3) Audit

a) System must provide the ability to generate an audit report for all records and transactions. All changes to records must be recorded to show the user, time and interface used to make the change.

b) System must provide audit-tracking reports for user access and usage logs.

4) Interfaces

a) Interface design must conform to industry standards.

b) Interface design should be as intuitive as possible.

c) System must provide continuous immediate access from existing county election management systems to electronically:
   i. Add or update registrant information.
   ii. Modify registration status.
   iii. Search and view registrant details, including history, voting history and district assignment.
   iv. Retrieve/download registrant data for use in their local election management system.

d) System must provide an interface to DMV databases to:
   i. Validate new registrant identity.
   ii. Validate DL/ID# against DMV records or confirm absence of DL/ID#.
   iii. Validate the last four digits of the SSN if DL/ID# is not available (per DMV/SSA agreement).
   iv. Accept new registrant data and registrant data address updates.

e) System must provide an interface with DCR to access data that allows SOS to identify imprisoned felons and felons on parole who are not entitled to vote.

f) System must provide an interface with DHS to access data that allows SOS to identify registrants who have died. System must provide the ability to load the system with records of already-deceased state citizens.

g) System must provide an interface to access US Postal Service National Change of Address (NCOA) data and update existing voter records as appropriate.

5) Database Management

a) System must provide data import functionality to receive standard format data from external parties.

b) System must provide tools to support database backup and recovery procedures.

c) System must provide capability to purge records from the system to archive, and provide a mechanism to review archived records and restore records to the database from the archive.

6) Electronic Data Export

a) System must have ability to export data to external stakeholders (e.g., DMV, law enforcement, U.C. Berkeley Statewide Database Project, and other public entities) in electronic format.

7) Help Functionality

a) System should provide online help at the module, function/screen, and field levels.

b) System should provide online user documentation that is indexed and searchable.

8) Network

a) System must use industry standard network protocols.

9) System Security

a) System must be implemented with a security infrastructure and tools for protection of programs and data from intentional unauthorized access attempts as well as security breaches due to accidental causes.

b) System must ensure all electronic communications and data exchanges between the registration system and county users or other agencies must be secure and free from eavesdropping or alteration.

c) System must provide an efficient, flexible way to control and administer multiple levels of user access.

d) System must provide each county with read/write access to the registrant data for their county, but only read access for registrant data in the rest of the State.

10) System Performance

a) System must provide sufficient performance to support peak workloads during periods of high voter registration activity, such as the period just before and after elections. The system must also provide sufficient performance to ensure that any routine processes that must occur during periods the system is unavailable for users can complete within the available window.

11) System Availability

a) System must operate on a 24x7 basis except during required maintenance periods and any unavailability due to off-hour batch processing.

b) System must be designed and configured to reduce or eliminate single points of failure so that the probability of outages during key production periods, such as during election cycles, approaches zero.

12) System Administration

a) Application must include some kind of functionality for tracking county contacts, resources, configuration, and participation (similar to existing Calvoter administration functionality).

b) Application must include modules for monitoring/tracking county processing of pending transactions (exception handling).

4.0 Baseline Analysis

The purpose of this section is to provide a clear understanding of the technical environment that supports the current system (Calvoter). In addition, it is intended to describe the manner in which the functional units within each county that are affected by this study utilize their proprietary systems to perform their job duties. This section builds upon the Business Case provided in Section 3, and supports the need to implement the Proposed Solution described in Section 5.

Table 2. Baseline Analysis Sub-Sections

4.1 Current Method
4.1.1 Objectives of the Current System
4.1.2 Ability to Meet Workload
4.1.3 Internal User Satisfaction
4.1.4 External User Satisfaction
4.1.5 Technical Satisfaction
4.1.6 Data Input and Output
4.1.7 Data Characteristics
4.1.8 Security, Privacy and Confidentiality
4.1.9 Equipment Requirements
4.1.10 Software Characteristics
4.1.11 Internal and External Interfaces
4.1.12 Personnel Requirements
4.1.13 System Documentation
4.1.14 Failures of the Current System
4.2.1 Expected Operational Life
4.2.2 External Systems(s) Interface(s)
4.2.3 State-Level Information Processing Policies
4.2.4 Financial Constraints
4.2.5 Legal and Public Policy Constraints
4.2.6 Department Policies and Procedures Related to Information Management
4.2.7 Anticipated Changes in Equipment, Software or the Operating Environment
4.2.8 Availability of IT Personnel
4.3.1 Desktop Workstations
4.3.2 LAN Servers Printers
4.3.3 Network Protocols

4.3.4 Application Development Software
4.3.5 Personal Productivity Software
4.3.6 Operating System Software
4.3.7 Database Management Software
4.3.8 Application Development Methodology
4.3.9 Project Management Methodology

4.1 Current Method

This section describes the current methods that are used to support Calvoter, the State's current voter registration system. The California Secretary of State (SOS) developed the Calvoter system for use by the SOS Elections Division (ED) and the state's 58 county registrars of voters. This system was augmented during the fall of 2005 to provide an interim level of compliance with HAVA requirements as interpreted by the US Department of Justice. These augmentations are collectively known as the interim enhancements. Each county maintains its jurisdiction's voter registration information in its county election management system (EMS). At the end of each business day in which changes were made to voter registration data, each county extracts either all registration data or the changes in its registration data since its last extraction. These files are formatted in the standard Calvoter transaction format for upload and import into the Calvoter database.

This Current Method section provides an understanding of the statewide voter registration technical environment. It also describes the software applications and information systems that support the State's current voter registration processes. Subsequently, it will provide further information about the characteristics of the data in the system, the exchange protocol for this data, and the various interfaces that encompass the validation process of the system. The table below provides a basic overview of the steps currently involved in the State's voter registration process.

Table 3. Current Voter Registration Processes for the State of California

Steps for Voter Registration Using Calvoter
1. County registers voters in their local system (manual/scanning/electronic process)
2. County copies updated records or full file into county Calvoter workstation
3. State processes county data to verify data content and standardization, and sends notices to counties of deficient records
4. Voter records without flaws preventing voter registration are loaded in Calvoter and used for identification of possible duplicate registrations, as well as assisting in processing of DMV and NCOA change of address, DHS death record data, and DCR felon data.

4.1.1 Objectives of the Current System

The primary objective of the current Calvoter system is to provide an automated means for counties to identify duplicate registrations across county boundaries in their voter registration rolls.

Secondary objectives of the system include:

- Pass through electronic distribution of registration changes from DMV, DHS and DCR to county election offices in compliance with the National Voter Registration Act (NVRA)
- Upon county request, process county registrant data against the US Postal Service NCOA database to identify registrants that have moved
- Production of the mailing labels for the Statewide Voter Information Guide distribution prior to every statewide election
- Aggregation of county supplied registration statistics for the periodic Report of Registration as specified in Elections Code §2187
- Identification of possible duplicate voting for further investigation
- Extraction and sale of voter registration data to legally qualified users and other governmental agencies
- Verification of county data compliance with data standards and voter registration business processes
- Verification of drivers license and social security number information provided by voters

4.1.2 Ability to Meet Workload

Meeting Requirements for Calvoter System

Currently in California, each county is responsible for maintaining the official record of registration for that county. Because updates to the Calvoter database rely on periodic updates from the county systems, the accuracy of the data can vary substantially from county to county.

Still, the current Calvoter system adequately meets most of the requirements for which it was developed. Weekly statewide duplicate checks identify potential duplicate registrations for research and possible deletion by county election officials. The system receives daily files of residence address changes from DMV and parses this data, passing it on to the appropriate county for review and processing by that county. Similarly, periodic files of death records from the DHS and of felon records from DCR are parsed and passed to the counties for review and processing.

While the system is used to perform basic "house-holding[1]" and generation of initial extracts for the Voter Information Guide mailing, extensive additional processing is required outside of the Calvoter system to generate the final mailing labels in a format that meets the USPS mailing regulations and the requirements for optimal postage rates. The system is used to compile the Reports of Registration (ROR); however,

[1] House-holding is the process of ensuring that only one informational piece of literature is sent to each household even though more than one person is shown on the database at that address.

external processes are employed for final production formatting due to the system's report formatting limitations. It should also be noted that due to the intrinsic inaccuracy of the registrant data in Calvoter, these statistics cannot be compiled directly from the registrant data within Calvoter. Instead, the system must rely on the counties to compile their statistical breakdown and transmit those numbers to SOS for entry into the separate ROR module.

Finally, a copy of the database is made several months after each election to research and identify potential duplicate voters. However, many potential duplicate voters who have moved and reregistered between the actual election and the time this copy is drawn are excluded from the duplicate voter search. Calvoter only stores information for current registrations as received from the counties, so voting history records associated with voters who are deleted by one county because they have moved to another cannot be transferred to the new county and are consequently lost.

Limitations of Calvoter for HAVA Compliance

The Calvoter system is incapable of meeting HAVA's additional workload requirements. HAVA mandates a "single, uniform, official, centralized, interactive" statewide registration database system that is "defined, maintained and administered at the State level." Further, HAVA requires that this system shall serve as the single system for storing and managing the official list of registered voters in the State and shall serve as the official list for conducting all statewide elections. Calvoter's limitations as related to HAVA requirements include:

- **Frequency of data processing –** The Calvoter system was designed as a batch system. Counties upload their registration data on a periodic basis. Processing is performed on a batch basis. This does not meet the "interactive" requirement of HAVA.
- **Non centralized database –** The system is distributed rather than centralized; i.e., each county maintains the official records for that county and sends only portions of its registration data to Calvoter. Because each county employs its own voter registration system, the data is heterogeneous rather than uniform as required by HAVA. Enforcement of data standards for data uploaded from county systems to Calvoter does not directly affect the quality of data actually stored in the county systems.
- **Inability to maintain "all" registered voter records –** Calvoter stores only the most relevant data obtained from uploads of county data. A HAVA-complaint system must store the complete voter registration data for all active and inactive voters, as well as historical data for previously registered voters.

4.1.3 Internal User Satisfaction

After five years of history and experience, both county and SOS users have come to appreciate the benefits and limitations of the Calvoter system. However, both recognize that Calvoter was designed and implemented prior to the HAVA requirements and cannot meet those requirements. The adoption of a new statewide voter registration system is necessary to meet them.

4.1.4 External User Satisfaction

Counties throughout California were initially apprehensive about accepting a statewide system to help manage voter registration and validate voter records. However, due to the successful implementation of Calvoter and the direct benefits experienced by the counties from the system, the consensus among counties has been a satisfactory rating for the current Calvoter system.

The SOS has established a vendor and county advisory council for the statewide voter registration database, and has been working with that group since early 2004 to develop and enhance system requirements. Although there was considerable skepticism from some of the council members regarding the need for a completely new system, the clear and detailed statement by the US Department of Justice that the existing Calvoter system is not and cannot be made to be fully compliant with HAVA was compelling to nearly all county representatives.

During the implementation and testing of the interim enhancements to Calvoter to meet the requirements of an agreement with US DOJ, the SOS has extended its working relationship on voter registration issues to all 58 counties. Counties are given direct access to the Calvoter project team to answer questions and to provide technical assistance. Periodic conference calls are provided with all counties and their vendors to review changes and to discuss common concerns. The major county vendors have been actively recruited to assist their counties with the use of the existing systems to meet new HAVA and state regulations, and to propose modifications to both the state and county systems to improve functionality and reduce the impact of the new requirements. All of these efforts have assisted in the transition to state control of voter registration business processes that is inherent in the HAVA requirements.

Some counties have resisted providing connectivity between their Local Area Networks (LAN) and the Calvoter Wide Area Network (WAN) due to security concerns. These security concerns must be noted and addressed in the design and business requirements of the new VoteCal system, especially with the HAVA mandated functionality of the system (e.g. voter registration records being directly entered into a centralized VoteCal database). SOS is confident that current security systems and technologies are fully adequate to safely implement the VoteCal solution, especially with the continued use of the state private Calvoter WAN.

4.1.5 Technical Satisfaction

The original Calvoter system was limited in functionality, and because the underlying product was no longer marketed by its manufacturer, requests from state or county users for enhancements were difficult or impossible to satisfy. The interim enhancements included installation of an auxiliary system architecture that allows the extension of Calvoter functionality through technical processes established outside of

the Calvoter proprietary core. Substantial enhancements to usability and functionality have been applied through this architecture.

The main technical issue that counties have voiced with Calvoter is performance, in reference to the speed of response, when conducting transactions for data transfers over the WAN. Likewise, the main concern for the new system is the occurrence of unscheduled downtime of the network and/or system, especially if such incidents occur near election time. Since HAVA requires counties to enter voter registration adds/changes directly into the statewide database, system downtime near election deadlines could have disastrous consequences, up to and including disenfranchising otherwise qualified voters. The interim enhancements included augmentation of the existing redundant system infrastructure. The implementation of the VoteCal single database and the potential impact of state outages on county processes, will require provision for high availability in the system design and implementation.

4.1.6 Data Input and Output

Currently counties enter voter registration data into their system either by key entry or optical scanning with character recognition. Eventually batch files are created by their election management system and uploaded to the Calvoter system. The interim enhancements include new processes to validate the county data against data standards and to verify voter eligibility information. Deficient and unacceptable records are returned as batch files to the counties for correction. The enhancements also provided an upgraded automated interface to DMV and SSA to verify voter identification information. County EMS systems send batch files of new voter identification information for verification, and the new system returns files of verified or rejected identifications for processing by the counties.

Batch processes are also used to transfer data files from DMV, DHS and DCR to the Calvoter system and convert the files from their native formats to an acceptable format for further processing by the Calvoter application. The Calvoter system then attempts to match each record against existing records in the Calvoter database. The records are parsed into files for the appropriate county together with the registration ID of any matching registrants that are found. These files from the Calvoter database are transferred to the counties via a batch process where counties must evaluate the notices and make appropriate changes to their voter registration records.

County Practices

Most counties periodically create extracts from their system as tab-delimited text files that contain transactions to update the Calvoter system with the changes that have occurred since the previous extract was created. Some of the county registration systems do not support the transaction update, those counties must instead send a full copy of all their registration records that entirely replaces the records for that county in the Calvoter database.

Suggested changes to county data from DMV, DHS, DCR, and National Change of Address processing, as well as the system duplicate checks, are packaged into return

files and sent to the counties for review and appropriate action. While some counties receive these notices as electronic transactions for direct import into their system, most receive them as printable reports that must be processed manually because their registration system does not support the electronic transaction import.

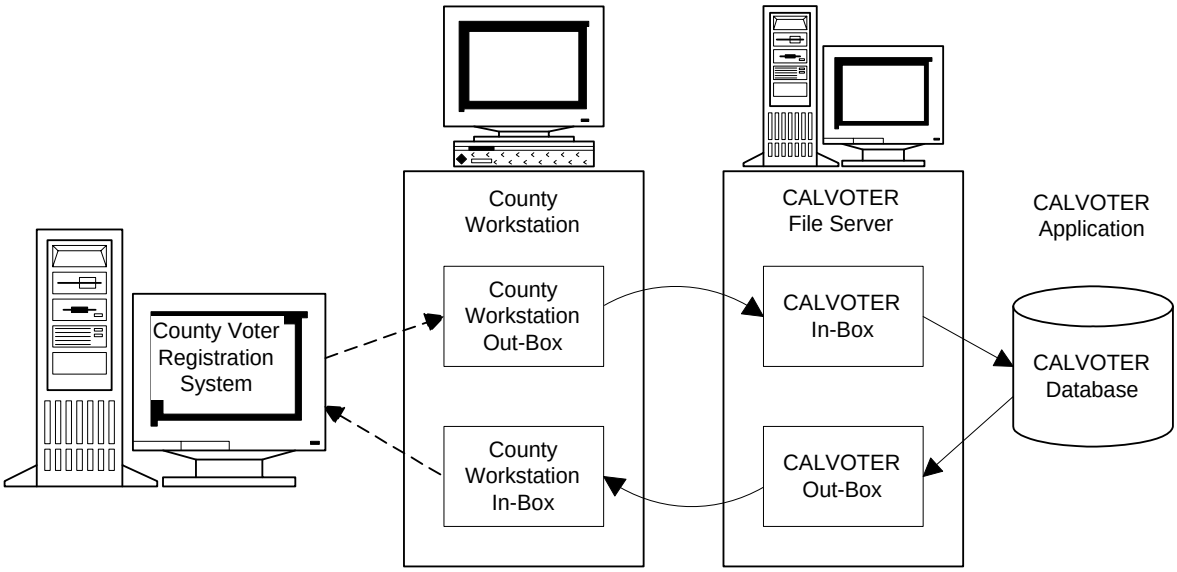
Data Exchange Protocol

Data exchanged between the Calvoter system and the counties is sent in tab-delimited text files based on the negotiated interchange format of 95 predefined fields. Due to the need for negotiation and agreement on a standard format, this format is not easily changed to meet new data requirements.

Data transfers between the Calvoter system and the counties, as well as other agencies, are handled by a system of scheduled FTP batch processes. Applications that reside on the Calvoter file server control the flow of Calvoter files into, and out of, designated directories on the county workstations ("In-Box" and "Out-Box" directories). Calvoter files consist of registrant transaction files, voting history files and precinct/district files. The designated Calvoter System Administrators are the only individuals with authority to process these files into the Calvoter database.

Figure 5 depicts the file transfer process to, and from, the county voter registration systems and the Calvoter database.

Figure 5. Data Exchange Diagram



System Limitation

While counties have a Windows-based Calvoter interface available for their use, it is limited to the following functions:

- Ability to search and view registrant records across the entire state

- Direct key entry of Report of Registration (ROR) statistics

The system has no direct ad-hoc reporting capability. The few reports built into the system are pre-programmed and can only be modified or reformatted by the vendor. There is limited capability to filter the data in these reports.

4.1.7 Data Characteristics

Currently the Calvoter system only stores voter registration data for the approximately 15 million active registered voters. Inactivation of a registrant at the county level deletes all record of the registrant from the Calvoter system entirely.

Calvoter captures history of a voter's participation in previous statewide elections. However, the amount of historical data varies from county to county. Some counties have submitted data as far back as 10 years, while others do not capture historical data at all. Currently, when a registrant is deleted from the system (for instance when a registrant moves from one county to the next), all historical data for that voter is permanently lost.

Data consistency is an issue. Standards have been assigned for many fields that are not validated or enforced by the system. These fields include:

- Name suffix and prefix
- Gender
- Residence address information
- Mailing address information
- Place of birth

For example, if the Street Address field is meant to have 70 standards for street name (e.g. Blvd, Rd, Road, St, etc.) there may be up to 350 different variations in the system. Further, depending on the capabilities of the county registration system, many fields are simply not populated.

4.1.8 Security, Privacy and Confidentiality

Access to the application and its capabilities to review confidential data is strictly controlled by user account and assigned roles and enforced with encrypted passwords. A 60-day timeout is enforced on user passwords. Security roles are fully customizable to ensure individuals are restricted to the appropriate level of information.

County access to the Calvoter system, as well as transmission of data, is restricted to the private Calvoter WAN that is administered by the Department of Technology Services. Many of the counties have chosen to deploy the application to their users by providing connectivity from their LANs to the Calvoter WAN; however, the method of connecting is restricted to one of the approved secure methods. The Calvoter system is not accessible via the Internet.

4.1.9 Equipment Requirements

The Calvoter server at the SOS office has the following characteristics and capacity:

- Digital Equipment Corporation (DEC) AlphaServer 8200 5/440 Dual-Processor System
- 437 MHz
- 5-slot System Bus
- System I/O module with one I/O channel, two twisted pair 802.3/Ethernet ports, and three FWD SCSI ports
- 2 GB RAM
- 120 GB disk storage
- 2.1 GB SCSI disk
- 600 MB CD ROM Drive
- Internal Storage Drawer
- Two SCSI RAID Array Controllers

Each of the 58 counties has installed on its premise a workstation provided by, and the property of, the SOS. Counties must use these workstations to exchange voter registration records with the SOS office. These machines were installed in 2001,and are of little current utility or value. The characteristics and capacity of these workstations are listed below:

- Pentium Pro
- 200 MHz
- 32 MB RAM
- 256 Kbytes cache
- 2 GB disk storage
- 3Com Card 10-Base-T Ethernet card

4.1.10 Software Characteristics

The core of the Calvoter system is the Central Voter Registration Database, a proprietary client server application owned by Election Systems & Software (ES&S). A separate application, System Scheduler and Monitor, was custom developed by Computer Resources Group/Radian International to schedule and manage the FTP transfer of data files between the Secretary of State and the counties. Additionally, this application handles the transfer of files from other State agencies and then converts the data from its native format to the Calvoter transaction format. Additional details regarding the software used on desktop workstation is provided in “Section 4.2 Technical Environment”. The basic components of the system software characteristics are as follows:

- DBMS: Oracle (v. 9i)

- Data processing: modules written in Brio SQR
- Front-end interface: developed in PowerBuilder

4.1.11 Internal and External Interfaces

The primary interface with counties is the exchange of batch data files in the Calvoter file formats via FTP transfer. The internal interfaces include the SOS Elections Division staff and the SOS IT Division. Both divisions' responsibilities are listed in Table 5. External interfaces include:

- Access by the 58 counties to conduct file transfers
- Other state agency access in order to help validate the voter registration records

Table 4. Overview of Internal and External Interfaces

Internal	
SOS Elections Division staff: ■ Use Calvoter to carry out their election-related responsibilities ■ Responsible for batch imports and exports, as well as data processing SOS Information Technology Division staff who are responsible for maintaining the Calvoter infrastructure	The 58 counties who use Calvoter through their county workstations
Voter registration changes (additions, corrections and deletions)	Deficient and ineligible voter registration records
	DMV change of address information
Voter participation history	Death certificate information
Report of Registration statistics	Felon and parolee information
New registrant identification data	Identification verifications from DMV and SSA
Precinct to district mapping	NCOA address updates
	Potential duplicate registrant notices

Accessing Calvoter from Workstations

There is also a Windows-based GUI[1] that can be installed for accessing the system from workstations with access to the Calvoter WAN. Both SOS and county staff use this interface. Capabilities are restricted based on the individual user's assigned security roles, but may include:

[1] Graphical User Interface

Table 5. User Interfaces Capabilities

Capabilities assigned based on the individual user's security roles		
	SOS Access (Y/N)	**County Access (Y/N)**
Research and review registration data and voter participation history	X	X
Key data entry of Report of Registration statistics	X	X
Generate and print Report of Registration reports	X	
System configuration	X	
Initiate and monitor file processing (county and agency files)	X	
Review file processing errors	X	
Create various data extracts	X	
Review system security logs	X	
Access the System Scheduler & Monitor for scheduling file transfers	X	

External State Interface

In Calvoter, SOS level interfaces capture the data supplied from the DMV, DHS, DCR and the National Change of Address (NCOA) data from the Employment Development Department (EDD). This data is converted into Transaction Records that are loaded into the Calvoter Database.

For DMV, DHS and DCR, data is transferred to the SOS via the LAN connection to the Department of Technology Services Data Center and then a list of automated programs:

- Transfers the data to SOS
- Loads the data into temporary SQL Server tables
- Reformats the data into Calvoter formats and performs data validation
- Loads the data received into temporary Oracle tables
- Re-formats the data into a file of transaction records to be loaded into the Calvoter database
- Informs the Systems Administrator that a new file of transaction records are ready to be loaded

This is an automated process that triggers when data from DMV, DCR and DHS is available to be loaded.

The DMV, DHS and DCR data, in transaction record format, is then processed through Calvoter to match against existing registrants. When a match is found, the registrant ID number is included in the transaction record field for that data item. If no match is found, the field is left blank. The balance of the transaction record contains the data received from the DMV, DHS or DCR. All transaction records for DMV, DHS and DCR data are then sent to the appropriate county.

For NCOA processing, an extract of county registrant data is created from the Calvoter database and then FTP'd directly to EDD. The results returned from EDD are transferred back via FTP as well. The return data is evaluated against the registrant data in Calvoter and then transferred to the respective county as appropriate.

Table 6. Calvoter Interfaces with External Agencies

Interfaces are limited to FTP transferred files in predetermined formats:
DMV: daily transfer of Change of Address data from DMV to SOS; periodic transfer of licensees & their ID number (DC Huge) from DMV to SOS.
DHS: periodic transfer of death certificate information from DHS to SOS
DCR: monthly transfer of felon and parolee information from DCR to SOS
EDD: County extracts are created from Calvoter and sent to EDD for NCOA processing so that the entire Calvoter database is processed monthly, except for a 90-day freeze prior to each election. The return data is sent back to SOS for processing through Calvoter.

County Interfaces

The second key component of Calvoter is the county interface. The county interface handles all functionality associated with the management of transaction records that are stored and processed on the county workstations.

Each of the 58 counties has a county workstation installed on its premises that has been provided by, and is the property of, the SOS. The county workstations provide a point of access to Calvoter by county staff. These workstations provide the following capability:

- Storage of transaction records
- Inquiry into the Calvoter database for registrant search
- Manual entry of ROR statistics (if not sent using transaction records).

Each county has its own system for managing its voter registration data independent of the Calvoter database and the county workstations. The systems that the counties use, or are expected to be using, during the development of VoteCal are listed below.

Table 7. Existing County Voter Registration Software Product

3	ES&S – develop and support Mega Profile
27	DFM Associates – develop and support EIMS
19	DIMS – develop and support DIMS Net2000
4	DIS – develop and support Rosetta Version 8.1
3	Sequoia Pacific – develop and support Integrity System
2	Non-COTS systems developed specifically for and supported by the individual county staffs or their contractors

4.1.12 Personnel Requirements

The table below illustrates the required personnel to operate the Calvoter system. The following positions are employees in the Elections and IT Divisions of SOS.

Table 8. Election and IT Staffing

Election Specialist	0.75 PY
Associate Governmental Program Analyst	0.25 PY
Staff Services Analyst	1.5 PY
Systems Software Specialist 3 (Database Administrator)	0.25 PY
Staff Information Systems Analyst (Unix Administrator)	0.25 PY
Staff Programmer Analyst Specialist	0.20 PY

4.1.13 System Documentation

The following documents regarding the Calvoter system were created in the initial project development:

- Software Requirement Specifications (SRS) for the database, include the county and the state agency interfaces
- Software Design Descriptions (SDD) for the county and the state agency interfaces
- System Manual that details information regarding functions, requirements, and operations of the system

While these documents are very thorough and complete, they have not been revised as the system has evolved.

Additionally, the vendor for the proprietary core application does publish a high-level "user's guide" that explains operation of the GUI interface. This document has been revised as the program has been updated.

4.1.14 Failures of the Current System

The current Calvoter system does not meet the mandated requirements of HAVA for a "single, uniform, official, centralized, interactive computerized statewide voter registration list defined, maintained and administered at the State level." The word "list" in this requirement is generally being defined as a database. Key requirements from HAVA that it does not meet are:

- Calvoter does not provide a single list; the 58 county databases can and do diverge from the data in Calvoter, both in the voters registered and in the information stored about each voter. Decisions regarding eligibility, such as counting a provisional ballot, are made by reference to the county systems; only through the enforcement of complex business processes can the state attempt to ensure that those decisions are the same as would be made by reference to Calvoter.
- Calvoter, through the interim enhancements, now includes a unique identifier assigned to each record. However, because Calvoter is a compendium of the county lists, it is not possible to ensure that each voter is unique in the system; a voter could appear in all 58 county lists, and Calvoter would be unable to determine conclusively which instance was valid.
- Calvoter is designed to identify duplicate voters through a variety of means, including the unique voter identifier, but it cannot enforce the removal of duplicates. Instead, possible duplicates are identified for the counties, who are requested to research and purge those records found to be duplicate before uploading the corrected file to Calvoter
- Uniformity of data in Calvoter is enforced through the interim enhancements; however, this does not force the data actually stored in the county systems to conform to those standards. Calvoter continues to accept non-standard data to prevent disenfranchising existing voters until counties can correct the data in their systems.
- Calvoter does not meet the security and availability requirements of HAVA, and as it is based on a no-longer-marketed proprietary product, cannot be modified to do so.

Additionally, the current system is limited in its technical architecture in several key elements:

- There is no interface for counties to access the registration data with their current election management systems for conducting elections.
- Because the source code is proprietary, the entire election process in California would be dependent on a single vendor that has limited ability to support the product that is no longer marketed nor used by any other entity.

- The GUI user interface for the Calvoter application must be installed on every workstation accessing the system. It also requires installation of the Oracle client. As the number of connected users will greatly increase, version control with the deployment of new versions would become very burdensome.

4.2 Technical Environment

This section provides a detailed description of the technical environment affecting the Calvoter system and infrastructure. It includes a description of the general technical environment, policies and procedures that must be considered, staffing requirements, and any relevant policies and legal constraints that must be recognized. It also provides a description of the technical resources and staffing requirements needed to support the current Calvoter system.

The VoteCal application will require an extended implementation that will interact with not only county election officials, but also with several other state agencies, including DMV, EDD, DCR, and DHS. The specific technical environment for the VoteCal solution will be determined through the business-based procurement process; however, SOS will require that the system be built upon platforms within the supported product portfolios at the state Department of Technology Services.

Additional and redirected staff will be needed in the Information Technology Division to work with the software vendor to develop, test, implement, administer and maintain the new system. This staff will largely be obtained during the project implementation phase through staff augmentation contractors.There will also be some changes in the operating procedures for the Elections Division. Both state and local elections officials will need additional training to use the system to its fullest potential for day-to-day operations. As a result, the Elections Division will require additional staff to administer the system, train additional end-users, and assist with the resolution of system problems.

Table 9. Current Calvoter System Infrastructure

SOS Desktop workstations	Windows 2000 OS
County Workstations	*See Section 4.1.9*
LAN Servers	HP Tru64 Unix
Network Protocols	TCP/IP
App Development	Powerbuilder, SQR, PLSQL
DBMS	Oracle
App Development Methodology	SDLC
Project Management Methodology	SIMM Project Management

4.2.1 Expected Operational Life

The current Calvoter system is expected to continue operations until the proposed VoteCal system is completed and implemented. The proposed VoteCal solution

(discussed in Section 5) will incorporate all of the functionality currently available in Calvoter and therefore, once it is fully installed and has gone “live” it will fully replace the current system.

4.2.2 External System(s) Interface(s)

See Section 4.1.11, Internal and External Interfaces.

4.2.3 State-Level Information Processing Policies

According to the State Administration Manual for Information Management Planning, each agency identifies opportunities to improve program operations through strategic uses of information technology. Each agency also establishes and maintains an information technology infrastructure that supports the accomplishment of agency business strategies, is responsive to agency information requirements, and provides a coherent architecture for agency information systems.

The Calvoter infrastructure will not allow SOS to meet HAVA requirements, and SOS is not positioned to provide a “coherent architecture,” given the current environment of Calvoter and the variety of county election management systems.

4.2.4 Financial Constraints

In order to ensure that all states are able to successfully meet HAVA, the Federal government has provided one-time funding to meet the listed requirements of the Act.

4.2.5 Legal and Public Policy Environment

In 1993, Congress passed the National Voter Registration Act (NVRA), also known as "Motor Voter." The purpose of NVRA is to make voter registration as simple and convenient as possible for all eligible voters, allowing citizens to register to vote simultaneously with obtaining a driver's license, applying for social welfare or rehabilitation services, or entering the armed services. In 1995, the Legislature passed a bill that mandated the Secretary of State's office to create a statewide voter registration database, which lead to the development of the Calvoter system.

In response to the problems that surfaced in Florida during the 2000 presidential election, Congress passed the Help America Vote Act (HAVA) in October 2002. This federal law mandated that each state meet HAVA mandates by January 1, 2004 or request extension to January 1, 2006. The Office of the Secretary of State applied for and was granted an extension to January 1, 2006.

4.2.6 Department Policies and Procedures Related to Information Management

The SOS has an e-mail policy, an Internet policy, and a PC policy that are posted on the SOS Intranet and is available for employee review. The Office of the Secretary of State follows the SAM (Statewide Administrative Manual) guidelines for Information Technology. Any vendor selected to work on this project will be asked to review and adhere to these policies.

4.2.7 Anticipated Changes in Equipment, Software, or the Operating Environment

The only changes to SOS systems planned by the SOS IT Division Staff are completing the upgrades to their server farm from Windows 2000 to Windows 2003 and the migration of existing Hewlett-Packard (formerly Digital) Tru64 Unix to RedHat Linux.

4.2.8 Availability of IT Personnel

The Calvoter system support is provided by the Information Technology Division (ITD), which consists of 35 full-time state staff plus consultants. Services provided by ITD include:

- Application development and maintenance
- Telecommunications and networking
- Hardware and software installation and management
- Help desk support
- IT procurement and contracting
- Database management
- Web support

In terms of the current Calvoter System, a team of ITD staff and consultants dedicate part or all of their time in support of the application. Two part-time consultants and one full-time state staff support the application layer. One part-time consultant and one part-time state employee support the fifty-eight (58) county application/infrastructure layer.

The county WAN consists of fifty-eight (58) nodes supported through ITD and the Department of Technology Services with one part-time state staff. Requests for application fixes or enhancements go through the helpdesk. Common support requests include password resets, problems with printing, small application and process changes, system problems and creation of new data elements based on legislative changes.

4.3 Existing Infrastructure

This section describes the Secretary of State's and the Calvoter System's existing infrastructure and technical architecture to provide a context in which the proposed solution will be implemented.

4.3.1 Desktop Workstations

The tables below display the typical new workstation configuration for staff at the Secretary of State's offices as well as the configuration for the Calvoter workstations at the counties.

Table 10. Current Desktop Workstations

Dell OptiPlex GX270, small desktop
2.80 Ghz
Pentium 4
512MB Memory
Dell UltraSharp 1901FP Flat Panel Monitor
64MB, nVidia, GeForce 4MX graphics card
Floppy drive
Integrated Intel Gigabit NIC, 10/100/1000
48X/32X/48X CD-Rewritable Drive
Integrated Sound Blaster
Internal Chassis Speaker Option
40GB EIDE, 7200 RPM hard drive

Table 11. Current County Calvoter Desktop Workstations

Pentium 3
800 Mhz
256 MB Memory
10GB hard drive
17" monitor

Printers

SOS printers are either locally attached to workstations or network printers. SOS does not have post-script printers. The size and speed of the printer is based on the users' needs.

4.3.2 LAN Servers

Access to or by Calvoter is as follows:

- For SOS staff, via the LAN
- For DMV, DCR and DHS data, via the WAN connection to the Department of Technology Services
- For NCOA, via an FTP connection to the Employment Development Department (EDD)

The SOS Elections Division staff uses Calvoter to fulfill their elections related responsibilities and to conduct batch imports and exports of voter registration files for Calvoter. The SOS IT Division staff is responsible for maintaining this network along with Calvoter.

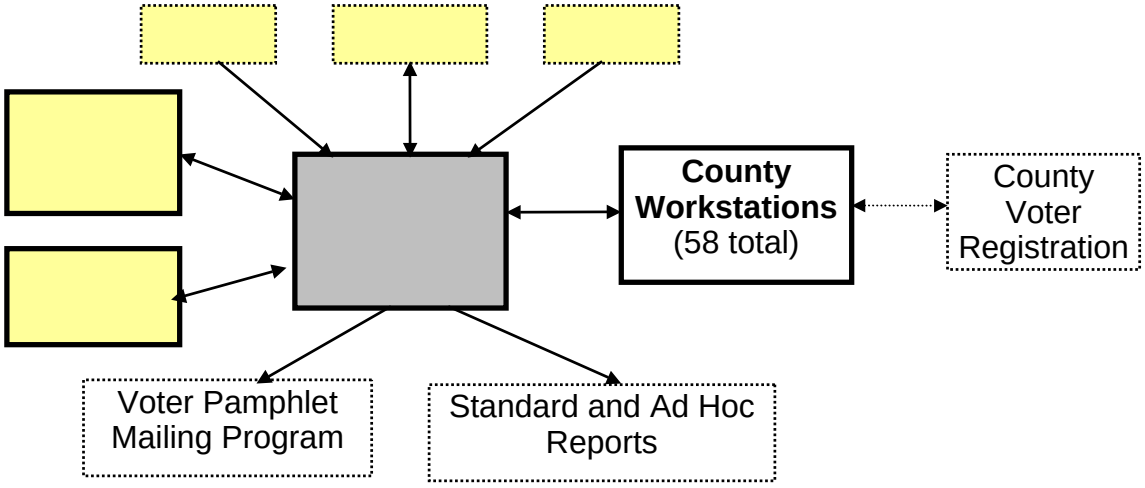


Figure 6. LAN/WAN Diagram

4.3.3 Network Protocols

There are a variety of standards employed in the network area due to the nature and complexity of data communications. In most cases, no single vendor or product can provide all of the services needed to support a complex network. The specific standards established at SOS include TCP/IP as the standard transport protocol for network traffic both inside and outside of the Agency. The ITD supports SNA and TCP/IP data communications to TCP/IP connectivity to the Department of Technology Services Data Center and TCP/IP connectivity to external business clients. DHCP[1] is used for TCP/IP addressing on all SOS LAN connected workstations. Currently, Microsoft Windows Server 2K is used for networked fileserver services. All SOS servers are statically addressed.

[1] Dynamic Host Configuration Protocol is software that automatically assigns IP addresses to client stations logging onto a TCP/IP network

SOSPROD is connected to the SOS network through a Fiber Distributed Data Interface (FDDI) link and all cabling within the SOS building is Category 5 which is capable of 100Mbs transfer using CDDI[1] or related technology.

The Calvoter network security architecture is shown in Figure 7. The Calvoter system is protected by two firewalls. These firewalls separate the network into three environments:

1. *The External Network* - which is the network available to the internet community;
2. *The Semi-trusted Environment* - which exists between the two firewalls;
3. *The Closed Environment* - which is the internal SOS LAN within the internal firewalls.

The outer firewall is connected to the external network through a router, which restricts incoming network traffic to selected addresses or subnet masks. Between the two firewalls, in the semi-trusted environment, are two NT servers used by Calvoter for user and workstation authentication. These servers act as proxy servers for SQL*Net, FTP services, and e-mail.

Cisco brand routers are used for all WAN connectivity and Cisco brand switches for LAN connectivity. This configuration prevents anyone in the external network from directly accessing the Calvoter system.

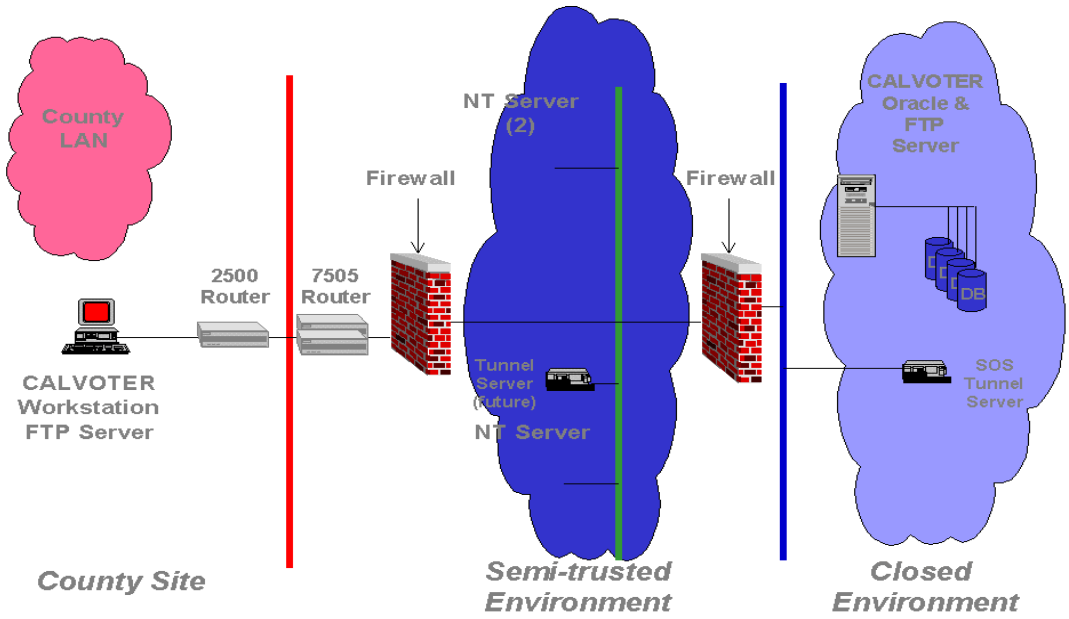
The WAN is divided into three physical parts show in Table 13 below.

Table 12. WAN Usage

County Network ■ TCP/IP Network ■ Cisco Router, Model 2508 ■ 56 Kb dedicated Frame-relay link (48 counties) or T1 (10 counties)
PAC Bell Frame-Relay Cloud
SOS Network ■ TCP/IP Network ■ Cisco Router, Model 7505 ■ Three T-1 connections

[1] Copper Distributed Data Interface is a version of FDDI that uses UTP (unshielded twisted pair) wires rather than optical fiber.

Figure 7. Calvoter Security Architecture



County Access

Each County Workstation communicates with the Calvoter Database Server over a WAN. This WAN is a secure private network provided by the SOS and dedicated to data communication among the Elections Division and each of the county registrar of voters for the purpose of managing voter registration data.

Accessing the Calvoter Registration database (CVRDB) from a county workstation is a multi-step process. This process can be illustrated through an example of querying the Calvoter database from a county workstation. The query is first generated on the workstation through the CVRDB. The county workstation communicates over the network through the first firewall to access the SQL*Net Proxy server, which is part of the semi-trusted environment. The SQL*Net Proxy server then communicates through the second firewall to the Calvoter database server, and sends the query to the Oracle DBMS. The Oracle DBMS executes the query on the Calvoter database and sends the results back to the SQL*Net Proxy server. The Proxy server, in turn, forwards the results to the requesting county workstation. The results of the query are then displayed in the CVRDB on the workstation. At no time do the county workstations have direct access to the SOS LAN. The router restricts network traffic into the semi-trusted environment to selected IP addresses or subnet masks.

4.3.4 Application Development Software

The following table provides the information regarding the Application Development Software that the Secretary of State's office uses for their various current applications.

Table 13. Application Development Software Description

Cal-Access AMS Cal-Access CARES Cal-Online Ca-Filer	 PowerBuilder 7.03, build 10135 Oracle PL/SQL .NET Platform SP2 IIS 5 ASP ASP, IIS 5 .NET Platform SP2 IIS 5 C++, Pro C	
DB-Search	.NET Platform SP2 IIS 5 C+ Oracle PL/SQL	
Calvoter 1	PowerBuilder 9 SQL 8.2 Perl Java Oracle PL/SQL	PowerBuilder 9, SQR 8.2, Perl, Java, Oracle PL/SQL
Calvoter 2	JDK 1.4.1 Corba Crystal Report 8.5 Oracle PL/SQL Perl	
Domestic Partners	PowerBuilder 7.03, build 10135	
Notary NAP Security Module	 PowerBuilder 7.03, build 10135 Powerbuilder 5 with Object Start	
PeopleSoft	SQR 4.3.4 MicroFocus COBOL 2.11 (server) BEA Tuxedo 6.5 PeopleTools 7.63	
SO E-File	ASP Crystal Reports 9.0	
BPA	ASP Crystal Reports 8.5 Visual Basic 6.0 BEST Argent Scheduler ExceedZip	

	MS Word 2000 - SP1 MS Excel 2000 - SP1 UeWI Intelligent NameSearch Kofax Ascent RightFax Verisign PayFlow Pro Software Artisans File Upload	

4.3.5 Personal Productivity Software

The following table provides a description of the personal productivity software used by the typical SOS workstation computer.

Table 14. Personal Productivity Software

Internet Explorer 6.0
Microsoft Office 2000 (Word, Excel, Power Point, Access & Outlook) with SP3
Acrobat Reader 6.0.1
WinZip 9.0
Visio Viewer
MS Project 2000 (used on some workstations)
MS Visio (used on some workstations)

4.3.6 Operating System Software

The following table provides a description of the operating system software for the typical SOS workstation computer.

Table 15. Operating System Software Environment

Windows 2000 with service pack 4
Internet Explorer 6.0
Oracle 9.2.0.1.0
Java 1.4.2
Remedy Client 6.0
Rumba 7.0
Microsoft SNA client 4.0
Citrix Client 7.1
Altiris
McAfee

4.3.7 Database Management System

All Oracle databases are Oracle 9.2.0.4.

4.3.8 Application Development Methodology

SOS does not currently have a standard Application Development Methodology in place that would constrain the vendor development of a new VoteCal database. The vendor will be required to utilize a robust, standard methodology.

4.3.9 Project Management Methodology

The SOS has adopted the State's Project Management Methodology as its standard, as described in Section 200 of the Statewide Information Management Manual (SIMM). HAVA project management will ensure that the selected vendor's approach addresses the activities recommended in the SIMM. More information is provided in the Project Management Plan section of this FSR.

5.0 Proposed Solution

This section identifies the alternative that best satisfies the objectives and functional requirements as outlined in Section 3 of this FSR. Alternatives considered and details on all facets of the proposed solution are described in the sub-sections outlined below.

Table 16. Proposed Solution Sub-Sections

5.3.1 Alternatives Descriptions
5.3.2 Evaluation of Alternatives

5.1 Solution Description

Section 303 of the Help America Vote Act of 2002 (HAVA) (Public Law 107-22, 107th Congress), mandates that each state implement a uniform, centralized, interactive, computerized voter registration database that is defined, maintained and administered at the state level. This database must contain the name and registration information of every legally registered active or inactive voter in the state. It must serve as the single system for storing and managing the official list of registered voters in the state.

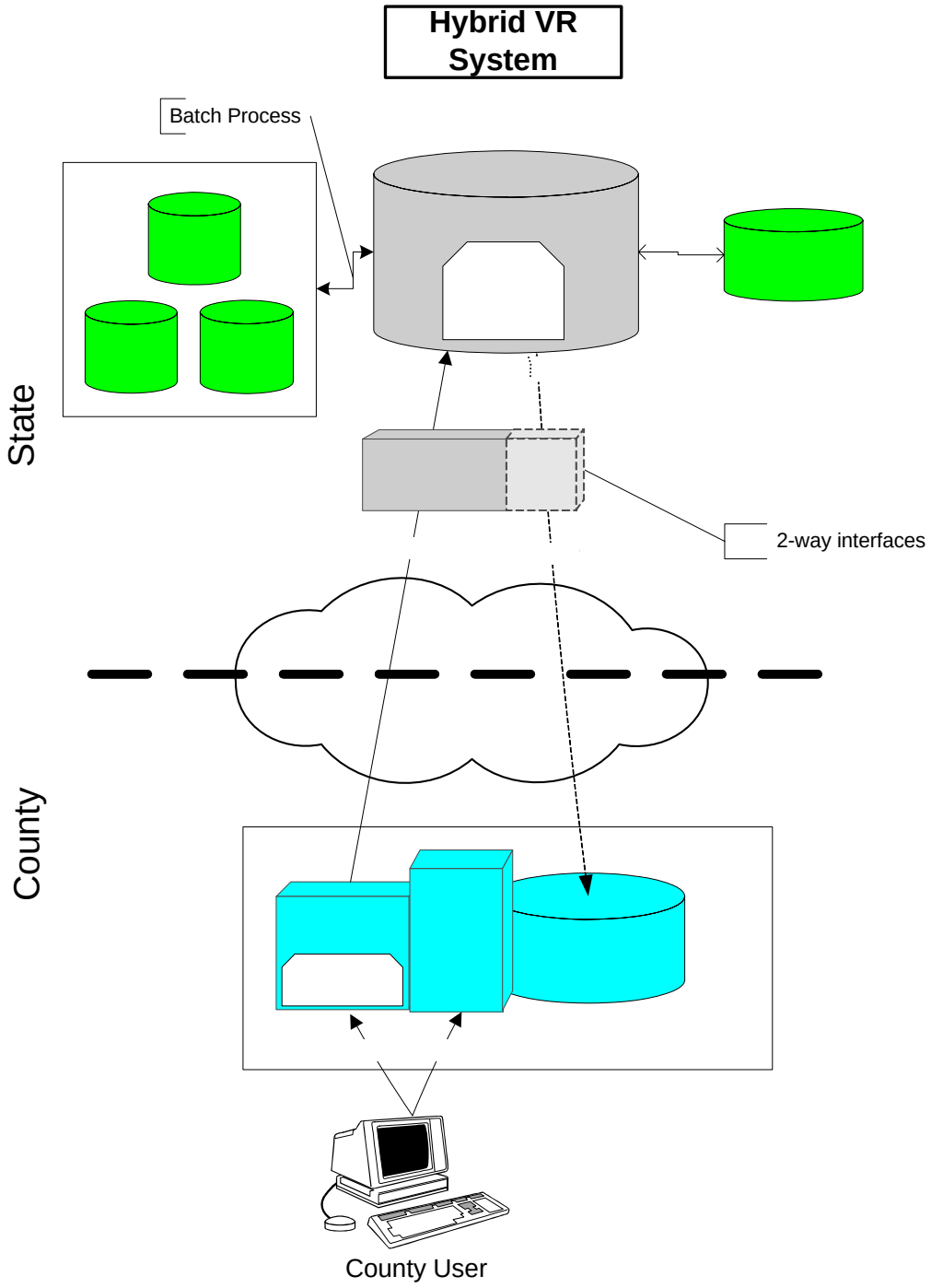
This system must provide a functional interface for counties, which are charged with the actual conduct of elections, to access and update the registration data. Additionally, HAVA mandates the voter registration system coordinate electronically with the DMV, DHS and DCR for identification and list maintenance purposes.

The major factors driving the selected HAVA compliance solution were the specific compliance requirements, as understood by the State of California, and the need to minimize disruption to county business processes. In particular, the requirements for a uniform and centralized database to serve as the official list preclude solutions where information in county systems was simply exported to a central database subsequent to data entry. Likewise, the need to minimize disruption to county business processes discounts approaches that require replacing existing county systems.

The proposed solution addresses both of these major requirements by providing a new central State database (VoteCal) and remediating existing county election management systems (EMSs) to serve as the “front end” for maintaining voter registration (VR) information in the central system. The solution will permit county users to use their existing (remediated) data entry screens processes while ensuring that VR information is maintained in the VoteCal database.

A high-level diagram of the proposed solution is provided in Figure 8. In the diagram, specific technologies or products have not been identified. Instead, SOS will conduct a business-based procurement process to select a System Integration (SI) vendor. Each proposing SI vendor, as part of its RFP response, will propose a system architecture and products that it feels best meet the State’s VoteCal business requirements.

Figure 8. Proposed Solution



The proposed solution incorporates four major components as described in the table below:

Table 17. Major Components of Proposed Solution

1	VoteCal Database Application
2	Interfaces to External State Agencies
3	Modification to Existing County Systems
4	Integration of VoteCal and County Systems

- **VoteCal Database Application** – A new VoteCal database and application will be procured to capture additions or changes to VR records as they are entered using the entry screens in existing county systems that will be remediated to directly interact with the VoteCal database. The VoteCal database application will possess functionality for assigning unique identifiers, detecting duplicate VR records and detecting other types of validation errors. The database must maintain registrant voting histories, track permanent absentee ballot status, and assist list maintenance efforts by recording contact letter and response information. The database must contain information about identification credentials provided and verified to assist poll workers in poll site identification checks. The database will have a user interface for SOS staff to configure and manage the application.
- **Interfaces to External State Agencies** – The VoteCal database will be connected to external state organizations, including the DMV, DHS, and DCR for voter registration identification and list maintenance purposes. These interfaces will be on-line or batch depending on the business function.
- **Modification to Existing County (EMS or VR) Systems** – Existing county EMSs will be remediated to ensure that county users interact directly with VoteCal for all additions and updates to VR information. Updates to VR information will make use of the remediated screens in the county systems, but record updates will be applied directly to the VoteCal database. This will create a one-way information flow wherein any change (i.e., add, change or deletion) to VR information will be applied first to the VoteCal database and any downstream system (e.g., county EMS) will obtain VR information from the VoteCal system as the exclusive source. County systems will be remediated to ensure that all VR information is derived from VoteCal. New fields and code-tables and edit-rules will be established to bring county data entry screens into alignment with statewide VR data definitions and data edits. New logic will be established in county systems to deal with exception processing arising from integration and validation errors.

  There are currently 7 different EMS systems in use in the 58 counties. Five of these are commercial products; one was internally developed and one

was commercially developed for a single county. The county using an internally-developed and maintained EMS system will be converted to use a commercial product. The system integration contractor will be required to propose through the procurement process how it will modify the commercial systems to be compliant with VoteCal, and will be given the option of converting all counties using one or more of the commercial EMS systems to a different commercial product already in use in the state, instead of remediating that product to conform to VoteCal requirements. It is anticipated that at least 2, and as many as 12 counties, may be converted if the successful integration bidder shows that best value is provided by converting those systems. The system integrator will be required to perform all conversion tasks for the systems it chooses to convert rather than remediate, and to obtain contracts for all necessary licenses. The system integrator will be responsible for technical support and maintenance of the systems it chooses to convert through the Maintenance and Operations period of the overall contract.

- **Integration of VoteCal and County Systems** – Middleware technology may be used to facilitate immediate connectivity between the county systems and VoteCal and to provide recoverability in the event of network failures.

It is intended that the future business process will be largely similar to the current business processes. County users will continue using their existing data entry screens to add and maintain voter registration records in VoteCal. County users will need to adapt business processes to use common data definitions and code tables established by the State for VR information. County business processes will also be adapted to deal with exceptions that result from changes to VR information that are initiated within the VoteCal database (e.g., assignment of unique number, detection of ineligible voter). Many of these business process changes have already begun implementation through the interim enhancements and will be complete before the VoteCal implementation begins.

Business processes at the SOS will also be largely similar to existing processes, but will need to be adapted to accommodate the new VoteCal database as well as additional data validations and updates from external agencies. Ultimately, the SOS will have responsibility for voter registration process oversight and policy enforcement. The transfer of this responsibility from the counties to the State has already begun with the interim enhancements and will be at least partially complete before the VoteCal implementation. The State, ultimately through the Department of Technology Services, will also need to support the new integration technologies introduced as a result of this project.

5.1.1 Hardware

The proposed solution will require new hardware to support the VoteCal database application and the integration infrastructure. During the months immediately preceding and following each election, county registrars are required to process

large numbers of applications in a short period of time or risk failing to register all applicants in time to vote. This requirement for high availability (i.e., minimal downtime) means each of these production installations will likely require primary and "failover" servers. The VoteCal database application will require new hardware to support the database server and the web server. The VoteCal application may also require new hardware for the development, integration, testing, training and help desk environments.

Certain counties may require replacement of VR systems (See Section 5.1.5). These systems will also require new or additional hardware to operate. It is not expected that the remediation of existing EMS to conform to VoteCal will require changes to the hardware environment for county servers or workstations. It is expected that the Calvoter county workstations will not be needed in the VoteCal environment; as these devices have already exceeded their normal useful life, they will be surveyed at the completion of the VoteCal implementation.

5.1.2 Software

Software for the proposed solution includes the new VoteCal database and remediation to the counties' current VR applications.

- **VoteCal Database –** The State will procure a new VoteCal database to receive updates to VR information from the data entry screens in the remediated county systems. VoteCal will also serve as the central hub for integrating with external agencies (e.g., DMV, DHS, and DCR) and exporting VR information to county systems. The State will not require that the new VoteCal database be a commercial off-the-shelf (COTS) application.
- **County EMS/VR Systems –** The county systems used for maintaining VR information are predominately election management systems that include VR functionality. Currently there are 7 such systems for California's 58 counties. These systems will need to be remediated, or replaced with other remediated, systems to store common data definitions and code tables and apply State-defined edit rules. They need to be remediated to interact directly with VoteCal to ensure that all changes to VR information flow directly into VoteCal, whether they are initiated via VR data entry screens, initiated indirectly as a result of another update, or initiated via a batch process. The county VR/EMS system will also need to be remediated to ensure that all transactions, reports and other functionality that require VR information use VoteCal data derived solely from the VoteCal database.
- **Middleware Technology –** Specialized application integration technology (e.g., "integration broker") may be procured to facilitate the HAVA-mandated immediate connectivity between the county systems and the State system and to provide recoverability in the event of network failures. This "middleware" technology will provide connectivity, transaction queuing, intelligent routing and recovery capabilities. The middleware may also provide data transformation and metadata management capabilities, but this is not an absolute requirement. There are several vendors and

products in this market and the system integrator will be required to use a commercial product if middleware is included in the proposed system architecture.

5.1.3 Network

The proposed VoteCal environment will use the existing CalVoter frame-relay network provided and maintained by the Department of Technology Services Data Center. The existing network may not be able to support the bandwidth requirements of the VoteCal system; however, it is expected the required upgrades to carrier services and/or hardware can be accommodated within the existing network architecture.

5.1.4 Technical Platform

While the SOS has not identified a specific technical platform, any solution proposed by the SI vendor must comply with Department of Technology Services technical architecture standards and other standards as documented in the Statewide Administrative Manual (SAM) and Statewide Information Management Manual (SIMM).

5.1.5 Development Approach

External service providers will undertake development activities:

- The VoteCal database can be custom-developed, a COTS application or a derivative of a COTS application. A COTS solution will be considered, but the unique requirements of the state, which include unique voting rules, more demanding integration requirements, and a greater scale of operations than other states may preclude the use of a COTS solution.
- The applicable county system vendor will remediate existing county EMS systems to meet project requirements. Some reduction in the total number of different EMS applications may occur during the project (See Section 5.1.6).
- An SI vendor will be retained to oversee the entire effort in collaboration with SOS. This vendor will be responsible for coordinating the activities of subcontractors working on the project. This includes working with county system vendors to ensure the timely completion of application enhancements. The SI vendor will also be responsible for implementing the integration infrastructure that will provide connectivity between the VoteCal database and county systems (See section 5.1.2).

The SI vendor will use their own project management, application implementation and application development methodologies to complete these efforts and the robustness of these methodologies will be a primary consideration in the vendor selection process.

5.1.6 Integration Issues

The major integration issues in the effort include the following:

- Remediating county systems to interact directly with VoteCal for all updates to VR information (See Section 5.1.2). The changes to county systems are expected to be fairly complex and the SI vendor will work with county application vendors to remediate their systems to become VoteCal compliant. If through the procurement process it is determined that it is not feasible to convert some of the existing commercial EMS systems to interact with VoteCal, the SI vendor will be required to perform all tasks and provide all hardware and software necessary to convert the counties using those EMS to a VoteCal-compliant commercial EMS. The SI vendor will be required to convert the single remaining non-commercial system. It is anticipated that the SI vendor will choose to convert up to 11 counties using less-used commercial EMS's may also be converted.
- Establishing interfaces with external agencies to validate and update VR information (See Section 5.1). The SI vendor will need to work with the applicable external agencies to define acceptable data definitions and update protocols and ensure that any actions that need to be taken by these agencies is coordinated with the overall project schedule. These interfaces are already in place and working with the interim solutions, but while it is anticipated that the existing interfaces will be satisfactory for the VoteCal environment, the project plan and cost estimates still include provision for redeveloping these interfaces so as not to unnecessarily constrain the overall VoteCal solution architecture.
- Providing infrastructure to support HAVA-required real-time integration between the various systems. To facilitate this tight level of integration, the project anticipates implementation of specialized middleware (See Section 5.1.2). The SI vendor will be responsible for overseeing the implementation of the integration infrastructure (i.e. middleware and associated hardware) and working with county vendors to ensure that they can properly connect to this infrastructure. Due to the need to keep data in the county systems tightly integrated with the VoteCal database, the integration infrastructure will need to be highly available (i.e., very little downtime). The SI vendor will be responsible for configuring the integration infrastructure and taking other necessary measures to support this need.

5.1.7 Procurement Approach

A multi-step procurement approach will be used for the selection of a SI vendor to design, develop, and deploy the new VR solution. Details of this procurement are as follows[1]:

- A traditional business-based RFP will be used for the selection of the SI vendor who will oversee implementation of the new VoteCal solution. Responsibilities include:
  - The vendor will be responsible for providing the VoteCal database that will be integrated with all other systems (See Section 5.1.2).

[1] Additional details are contained in the IT Procurement Plan

Implementation includes solution deployment, data conversion, testing and other related activities. The vendor will be allowed to propose systems that conform to either the proposed solution or the alternative, "Front-End Voter Registration" solution described in alternative 2 (Section 5.2) if it can show that that solution provides best value. The Secretary of State has determined that either solution can be fully compliant with the HAVA statute, and either would present acceptable levels of impact to the county business processes, although the proposed solution remains the preferred alternative.

- The vendor will also be responsible for providing application maintenance and support. To do this, the vendor can provide its own solution or subcontract this out to an application vendor.
- The vendor will also be responsible for implementing the integration infrastructure that will connect the State system to the county system and external agencies. The State will specify the requirements of the integration infrastructure (See Section 5.1.2) and will permit the vendors to propose the solution that they feel best meet these requirements.
- The vendor will be responsible for hosting and supporting the application and the integration infrastructure, but hardware will reside at Department of Technology Services.
- The vendor will be responsible for negotiating and contracting for the implementation of the changes that will be required in commercial county EMS systems (See Section 5.1.2) to support the new solution.
- The vendor will be responsible for the conversion of counties to use remediated EMS systems when the county currently uses a non-commercial EMS product, or where it is not feasible to convert the existing commercial EMS system.
- The vendor will be responsible for managing the progress of county vendors in remediating county systems, and for overall delivery of a completed solution. The vendor will also be responsible for overseeing the acceptance testing process.

- The SI vendor will negotiate with county VR/EMS vendors to make changes that will be required in county systems subsequent to the documentation of these requirements (as noted above). The systems integration contractor will be responsible for the costs of bringing the county systems into compliance.
- The Secretary of State intends to include the time required to implement a HAVA compliant system among the best-value considerations for proposal selection. Because the state was unable to achieve full compliance with the

HAVA voter registration database requirement before the date (January 1, 2006) required by HAVA statute for compliance, the SOS entered into an agreement with the US Department of Justice for a plan to achieve an interim level of compliance to avoid threatened litigation by the Department. The terms of that agreement include a requirement that the SOS apply best efforts to achieving full compliance as described in this project plan as soon as possible. Consequently, the SOS intends to provide, by assigning greater value to proposals with the earliest promised delivery date, incentive for rapid development and delivery. The SOS also intends to include appropriate financial penalties for the selected vendor if it fails to meet the delivery target used in assigning value to its proposal.

Separate vendors (i.e., not the SI vendor) and consultants will be retained to perform project support, independent project oversight and independent verification and validation during the overall project.

The Department of General Services (DGS), SOS, project support consultants, and the project oversight vendor will support these procurement activities as appropriate.

5.1.8 Technical Interfaces

The VoteCal database system will include the following external interfaces:

- The most critical internal interface will be the real-time integration between VoteCal and county VR systems. The requirements for this integration are discussed in Section 5.1.2 and Section 5.1.6.
- The VoteCal system will also need to be interfaced to a number of external systems to validate VR information (See Table 19).

Table 18. Internal and External Interfaces

Bi-directional real-time interfaces with county VR systems to exchange VR information.	Interface with DMV to validate driver license and, through DMV, to the Social Security Administration for Social Security information.
	Interface from DHS to receive agency records on deaths.
	Interface from DCR to receive information on felons.
	Interface from Department of Motor Vehicles to receive change of address information.
	Interface with a U.S. Postal Service NCOA system (currently EDD) to validate and correct address information.

5.1.9 Testing Plan

Testing for the new VoteCal database system will include unit, system/ integration, acceptance, load and performance testing, and other testing procedures recommended by the SI vendor and the project oversight/IV&V team. A test plan will be a key early deliverable of the SI vendor. For test execution, the SI vendor will be required to develop comprehensive test scripts, provide tracking and reporting of test results, and implement error resolution procedures. Additionally, the IV&V vendor will perform independent testing and auditing of the VoteCal system.

The SI and county EMS vendors will also need to assist county technical experts and users by supplying common test scripts that can be customized to meet the workflow of each county EMS system.

5.1.10 Resource Requirements

The proposed solution requires redirection of current staff, plus skills that will require assistance from external service providers. Contractor requirements include:

- An SI vendor to manage the overall implementation of the solution, including managing the activities of county system vendors (See Section 5.1.7). This vendor will also be responsible for implementing and maintaining the VoteCal database, external State agency interfaces, and the integration infrastructure that will connect the county systems to the VoteCal database. Some of the vendors who indicated in their response to the Request For Information that they would be interested in serving as the system integration vendor for this product are also providers of commercial county EMS systems. It is expected that those vendors would be allowed to participate in the procurement if they meet all other requirements for participation.
- County VR/EMS system vendors who will need to enhance their systems to interact with the VoteCal database using the integration infrastructure (See Section 5.1.2). Certain county system EMS vendors may also be required to implement their voter registration systems in counties when it is more feasible to convert rather than upgrade the existing systems to meet VoteCal requirements.
- Separate vendors to provide project support, independent project oversight, and IV&V of the implementation project.

A summary of the external skills required for the proposed solution is shown in Table 20 below. Refer to the Economic Analysis Worksheets for cost information.

Table 19. External Skills Required for Project

SI vendor to oversee the overall implementation and manage activities of other vendors, including ■ Implement the new central State application and provide ongoing maintenance and support for this application ■ Implement the integration infrastructure ■ Upgrade the network infrastructure ■ Host the application and the integration infrastructure ■ Data conversion and integration ■ Training of SOS users ■ Training of County users
County vendors to remediate county systems and implement voter registration applications in smaller counties
Independent project oversight consultant to review project process and report to Department of Finance
IV&V vendor to provide technical review and verification of project deliverables
Additional project support vendors to provide procurement, technical and administrative support

The following internal staffing resources are anticipated for the procurement, modification, and implementation of the proposed solution. The positions will be filled internally except for the SOS Project Manager. The specific number of resources, fiscal year and cost details are available in the Economic Analysis Worksheets.

Table 20. Internal Resources Required for Project

Project Sponsor and Executive Steering Committee Members
SOS Project Manager
Business Process Managers and Subject Matter Experts
IT Subject Matter Experts
SOS Information Security Officer
County business and IT subject matter experts (See Section 5.1.14)
Subject matter experts from external agencies (e.g., DMV, DCR, DHS…etc.)

5.1.11 Training Plan

Comprehensive technical and operational training resources are imperative to the success of the project. Accordingly, the SI vendor will develop and deliver training with specialized training practitioners, tool sets that are specifically designed to complement the larger HAVA solution, and a measurement-based learning approach. Additionally, the SI vendor will coordinate with county EMS vendors and staff to ensure that end user training requirements are met. IT staff and end user training needs are identified in Tables 22 and 23 respectively. The selected

SI vendor will be required to include biographies of its trainers in its proposal and submit its training plan to SOS for approval.

Table 21. IT Staff Training Needs for Project

VoteCal database application configuration and administration
Maintenance of system interfaces
Configuration, administration and trouble-shooting of applicable middleware tools

Table 22. SOS and County User Training Needs for Project

VoteCal database application usage (SOS users)
EMS application usage for new functionality in EMS applications (County users)

5.1.12 Ongoing Maintenance

The proposed solution requires additional services for application maintenance and support. Existing county and SOS services will be used for help desk and distributed computing. Details are as follows:

- **Applications Maintenance and Support –** The SI vendor will provide applications maintenance and support for the VoteCal database and these services will be included in the procurement. Maintenance and support of county applications will largely remain unchanged (i.e., this responsibility will continue to reside primarily with each county and its current vendors).
- **Help Desk –** SOS will provide first-level (i.e., call triage) support, with escalation of VoteCal issues to the applicable vendor.
- **Distributed Computing –** The counties and the SOS will continue to provide their own desktop computers and local network infrastructure (i.e., LANs) as well as technical support for these areas.

5.1.13 Information Security

The system must be implemented with security infrastructure and tools for protection of programs, data and infrastructure from intentional unauthorized access attempts as well as security breaches due to accidental causes. All electronic communications and data exchanges between the VoteCal system and county users or other agencies must be secure and free from eavesdropping or alteration. The VoteCal database must provide an efficient and flexible way to control and administer multiple levels of user access. Each county must be provided with read/write access to the registrant data for their county and read access only for registrant data in the rest of the state. The system must allow for multiple levels of user access in the counties.

The SOS has an e-mail policy, an Internet policy, and a personal computer (PC) policy that are posted in the SOS intranet and available for employee review. SOS follows the SAM guidelines for Information Technology. The system and processes must adhere to these policies and guidelines. The SOS Information Security Officer will be responsible for ensuring that the system is designed, implemented and maintained in compliance with these policies.

The SOS intends to require that all private, confidential or sensitive data be encrypted whenever it is stored on portable media, and whenever it is transmitted outside of the trusted Secretary of State environment, as determined by the Secretary of State Information Security Officer. The Secretary of State also intends to provide optional costs through the procurement for encrypting all personal voter registration data wherever stored in the state VoteCal system database, and may propose to accept that option if feasible.

5.1.14 Confidentiality

The VoteCal database contains data elements that are confidential in nature, such as drivers license numbers, California identification numbers and partial social security numbers. The records for certain voters are also confidential (i.e. “confidential voters”). The proposed system will be configured to ensure maximum confidentiality for these and other elements. The security measures will include encryption of all in-transit data and logging of all occasions when users access or update VR information.

5.1.15 Impact on End Users

Enabling users to use their existing county VR/EMS systems to add or maintain information in the VoteCal database will limit the impact on end users. However, process changes to introduce common VR data, common data edits and validation rules will require changes to existing procedures and documentation. All end users will also be impacted by additional updates and validations with external agencies and will need to adopt new procedures to handle exceptions that result.

End users will be involved in system testing and selected users will be called upon to perform acceptance testing of the remediated county applications. Due to the integration of VR logic and other functions within the EMS systems deployed in many counties, the changes to data definitions, code tables and edit rules may impact modules outside of VR. This will require additional acceptance testing to ensure that other modules have not been adversely affected.

In addition, the systems in some counties may not be able to be remediated to meet VoteCal requirements and this may require implementation of replacement EMS/VR systems (See Section 5.1.6).

To address these and other issues, the project plan envisions development of a training strategy and change management plan early in the project, specific to the needs of each county. The change management plan is expected to include a change readiness assessment and development of a specific plan and

deliverables to assist end users in moving to the new environment. It is expected that the training strategy will identify end users that will need training and will establish specific goals, approaches and deliverables for accomplishing this training.

Because county participation in the development and implementation effort and in the long term use of the VoteCal system are essential to the success of the project, the SOS has begun and will continue to place special attention and assistance to the counties in ensuring that their needs are identified and included in the project, and to identify and correct problems or concerns as quickly as possible. To this end, the SOS has:

- Established an advisory council of representative counties and their vendors to provide guidance throughout the project planning and implementation phase
- Implemented periodic conference calls with all counties and their vendors to discuss problems in implementing the business process changes
- Established a listserv for use by counties in raising and discussing issues with their peers
- Published and maintained a Frequently Asked Questions section regarding implementation of the business process changes
- Included the need to minimize the impact on county business processes as one of the basic principles in designing and specifying the VoteCal environment
- Published frequent notices to the counties on voter registration requirements

These activities have led to substantial awareness by counties of the HAVA requirements and of the state's increased role in voter registration activities. The effectiveness of these efforts has been shown by the high degree of cooperation shown by the counties and their vendors in the implementation of the interim enhancements within an extremely short time that began in November 2005 and will complete by the June election.

These interim enhancements included implementation of many of the major business process changes; much of the most dramatic changes to the counties have already occurred. These include:

- The involvement of SOS in establishing and enforcing detailed regulations for the registration of voters and for maintenance of voter rolls
- The enforcement of the HAVA requirement to obtain and verify drivers license or social security identification data from each voter before registration
- The enforcement of HAVA requirements for determining when voters must show identification at the polling place, and for ensuring that this identification takes place
- The enforcement of data format standards

- The use of the database to enforce list maintenance activities by recording the date when key activities take place on each record
- The analysis of data contained in the state voter registration database to evaluate county effectiveness in complying with business processes and data standards

In addition, the impact of migrating to a new EMS has already been absorbed by 8 counties that used single-customer or lesser-used products; the total number of counties that may now face migration in the VoteCal project has thus been reduced from 20 to 12, and as much of the work in adapting to the HAVA requirements was accomplished during the interim enhancement effort, the remaining vendors are more likely to be able to accommodate the VoteCal requirements.

This emphasis on including counties in the planning processes, maintenance of robust and varied communication strategies, and a sensitivity to the impact of project decisions and activities on counties will be continued throughout the project, both through explicit inclusion in the state/vendor project and change management plans, and through focused attention throughout the risk management process.

5.1.16 Impact on Existing Systems

The new VoteCal database system will replace the existing Calvoter application, and existing county EMS systems used for VR will need to be remediated or replaced to meet VoteCal requirements (See Section 5.1.2 and Section 5.1.6).

Due to the mission critical nature of county election systems, the implementation approach requires that these systems continue to operate in parallel during the migration period and until the upgraded systems have met all acceptance testing requirements and are in full production mode.

5.1.17 Consistency with Overall Strategies

The proposed solution is consistent with the objectives of SOS's Agency Information Management Strategy (AIMS),

5.1.18 Impact on Current Infrastructure

The existing wide area network (See Table 13) may not be able to support the bandwidth requirements of the new VoteCal system for some counties, and the procurement will include upgrading or replacing these services if necessary to meet the needs of the new solution. At this time, SOS anticipates that the existing Calvoter network will be sufficient for all but the largest counties; the ten largest counties already are served by network facilities that can be upgraded to increase bandwidth several-fold with minimal changes to the infrastructure.

New servers will be used to implement the state portion of the VoteCal system. Counties converted to new EMSs will probably require new server hardware, and

may require new workstation equipment. It is not expected that remediation of existing county EMS systems will require changes to county workstation or server hardware. The migration of eight counties to new EMS during the interim enhancement efforts has shown that such migration can be completed at relatively low costs and with acceptable levels of disruption to the affected counties.

5.1.19 Impact on Data Centers

Servers and other hardware for the VoteCal database and integration infrastructure will be housed in Department of Technology Services facilities but will be managed and operated by the SI vendor through the contracted Maintenance and Operations period. These services will be included in the procurement (See Section 5.1.7 and Section 5.1.12). An external service provider will also provide disaster recovery services and this too will be included in the procurement.

5.1.20 Data Center Consolidation

The solution will be implemented on servers residing at Department of Technology Services facilities. The wide area network for the VoteCal system will be provided and operated by the Department of Technology Services.

5.1.21 Backup and Operational Recovery

The new infrastructure will support the Department's current disaster recovery routines and will be in compliance with the State's Operational Recovery Plan (ORP) standards.

5.1.22 Public Access

The VoteCal database must enable registered voters to access their registration information via the Internet, including the status of their registration and their polling location. This will require specific measures to ensure the security and confidentiality of voter registration information (See Section 5.1.13 and Section 5.1.14), and must comply with applicable Americans with Disabilities Act requirements.

5.1.23 Costs and Benefits

The estimated one-time costs of implementing the proposed solution are $54,798,153. Annual ongoing costs are estimated to be $9,587,215. Cost details are documented in Economic Analysis Worksheets. This includes the following:

- Acquire and implement the VoteCal database including converting and integrating the existing county databases into a single, uniform database.
- Implement the integration infrastructure.
- Remediate county systems (See Section 5.1.2).
- License and implement between 2 and 12 existing (used in other counties) EMS's in counties where current systems are not robust enough to be upgraded to meet project requirements (See Section 5.1.6).

- Ongoing costs for one complete year.

The overriding benefit arising from the project is to enable California to comply with federal HAVA requirements. Additional ancillary benefits to counties or SOS may be achieved over time, such as improved efficiency in regard to list maintenance activities and reduced duplicate and erroneous records (See Section 3 – Business Case).

5.1.24 Sources of Funding

In order to ensure that all states are able to successfully meet HAVA requirements, the Federal government has provided one-time funding to assist California in meeting the listed VR requirements of the act.

5.2 Rationale for Selection

The proposed solution provides the State with the most effective means of meeting HAVA requirements, while controlling project cost, timeframes and risks. Specific considerations are as follows:

- **Benefits –** The proposed solution meets HAVA requirements by permitting county users to use existing county systems (with remediation) to add or maintain VR information in the VoteCal database. Permitting county users to continue to use their existing data entry screens minimizes disruption to county business processes and provides the best benefit to the State of any viable alternative.
- **Cost –** While comparable in cost to the "front end" approach that was also considered, the proposed solution avoids the significant costs that would be associated with implementing a single (monolithic) statewide system for VR and election management.
- **Time –** The proposed solution can be implemented faster than either of the other alternatives because the scope is tightly centered on VR and the significant training requirements of implementing completely new VR processes are avoided.
- **Risk –** While the proposed solution involves significant technical changes and requires participation from numerous county vendors, the proposed solution avoids complete business process changes, which are considered the most risky element of the project. The proposed solution also avoids the problem of having to "carve out" the VR functionality from the counties' election management systems that would be required for the "front end" approach and would be fairly risky given the integrated nature of these systems. To mitigate this risk, SOS intends to allow bidders to propose solutions based either on the proposed solution or on Alternative 2; both are believed to be compliant with HAVA requirements, and while the proposed solution is preferred because of its lower impact on county business processes, the level of impact of Alternative 2 is also acceptable. The overall best-value proposal, including consideration of impact on county operations, will be selected and proposed in the Special Project Report that will be submitted and approved before contract award.

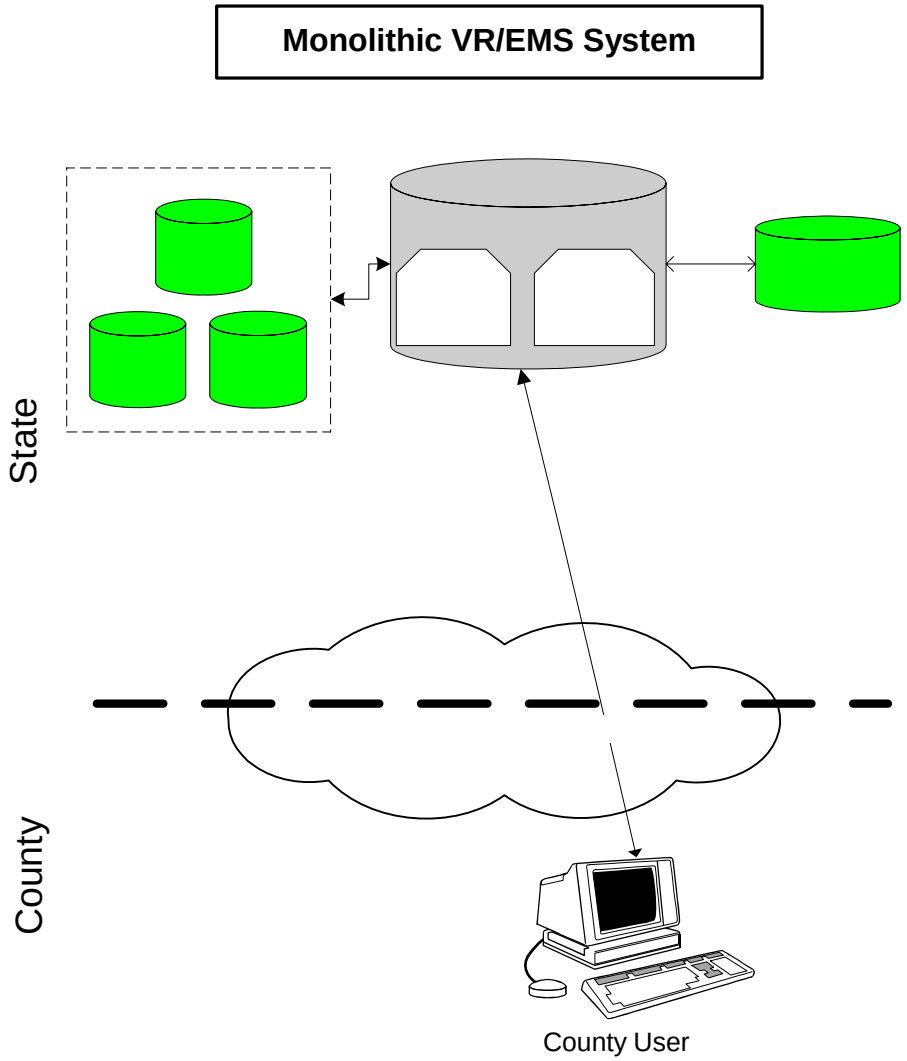
5.3 Other Alternatives Considered

Table 23. Other Alternatives Considered

1	■ Monolithic Voter Registration/Election Management System
2	■ Front End Voter Registration System

5.3.1 Alternatives Descriptions

Alternative 1: Monolithic Voter Registration / Election Management System (VR/EMS)



Description

The monolithic VR/EMS system involves implementing a single, statewide election management and voter registration system for use across the State of California.

All counties would standardize on a single EMS and counties would adopt common statewide processes for VR and elections. Any other local county systems requiring EMS or VR information to function would be connected to central system via one-way electronic interface from the central system to the local systems.

To implement this alternative a new voter registration and election management system would be procured. Connectivity would be established that enabled all county users to access the central system. All counties would standardize on a single EMS. One-way interfaces would be established to export information from the central system to other county systems that required EMS or VR information to provide functionality beyond that of VoteCal.

Table 24. Monolithic VR/EMS System Advantages vs. Disadvantages

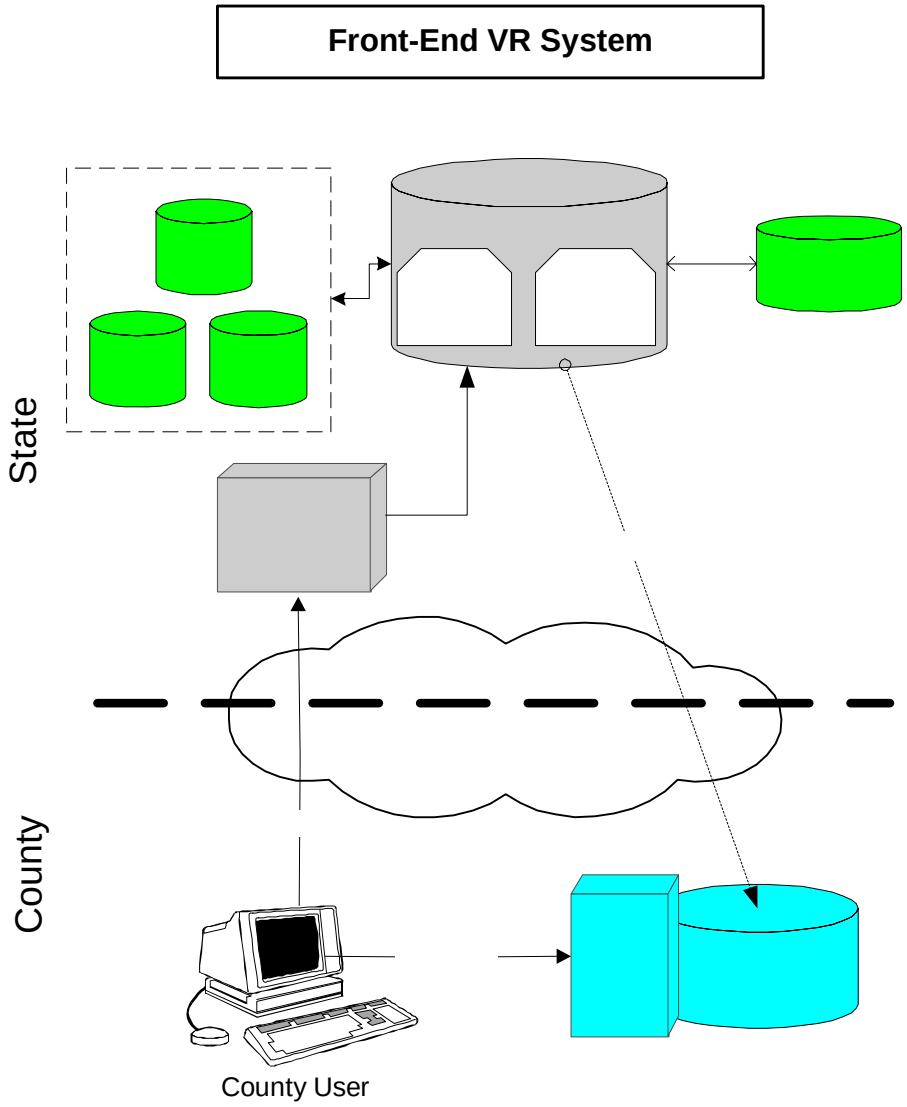
Benefits ■ Good fit to HAVA requirements ■ This option would provide robust technical quality due to simplicity of technical design. ■ This option has low technical risk and requires minimal dependence on county vendors.	**Cost** ■ The large scope, which includes all voter registration and election management processes, drives the greatest acquisition and implementation cost. ■ This option would be most costly to the State, with particularly large impact on ongoing costs. Savings in counties may offset some of these costs. **Time** ■ Increased scope drives bigger and more time-consuming project than any other alternative considered. **Risk** ■ Significant implementation, business and public relations risk due to process changes. ■ Very large impact to county business processes.

Recommendation

This monolithic option is not a viable alternative for the State's complete voter registration requirements.

While the monolithic approach would be a good fit to HAVA requirements, it would result in unacceptably large impacts on county business processes, and transfer substantial county workload to the state. The larger scope of the project would also significantly inflate project cost and increase execution timeframes. It would require the State to share responsibility for election processes far beyond that contemplated by HAVA. This project would be high risk for failure to due to difficulties in finding a single solution that met the needs of all 58 counties, plus the significant training and change management risks that would be encountered.

Alternative 2: Front-End Voter Registration System



Description

In the Front-End VR System alternative, counties would use new standard statewide screens and/or applications to add to or maintain their voter registration lists directly in the statewide VR database. Information from the central system would be exported to county VR systems. County vendors would be asked to disable functionality for updating VR information in county systems to prevent county users from attempting to use the wrong system. However, county EMS users would still be able to view and query VR information in their local systems. If this alternative were adopted, county personnel would need to learn a new, statewide application and process for voter registration entry and update.

To implement this approach a new system would be procured to serve as the front-end system. Front-end editing and verification would be handled by the statewide application. Precinct and address information would be maintained in county systems and exported to the State system via a one-way electronic interface. One-way interfaces would be established to export VR information from the central system to county systems. Updates would take place at least daily. New or upgraded import programs would be developed for all county systems that require VR information. New fields and code-tables would be established, as necessary, to bring county systems into alignment with statewide VR data definitions and information gathering requirements.

Table 25. Front End VR System Advantages vs. Disadvantages

Benefits ■ Adequate fit to HAVA requirements. ■ Simple approach controls overall project duration. ■ Tighter technical scope controls implementation costs. ■ Lower costs for ongoing county system maintenance than the proposed alternative.	**Cost** ■ Moderate cost to procure central system and build interfaces. ■ Cost for training and change management higher due to need to implement new VR processes. **Time** ■ Need for county users to use new system requires more time for training and change management. **Risk** ■ County VR processes would be impacted, as they would need to use the new central system to maintain VR information. ■ Significant business risk due to need for counties to change VR processes and adopt the new system. ■ Significant technical risks due to need to "carve out" VR functionality from integrated EMS systems currently deployed in counties.

Recommendation

This alternative is not as good a fit to the State's requirements as the Hybrid VR system (proposed solution); however, the SOS believes that the bidders may provide bids for systems using this approach that present best overall value to the state.

The need to completely change VR processes in the counties would prevent the State from minimizing impact to county business processes, which is a critical project requirement. While costs are comparable to the hybrid solution, the specific costs would be incurred for training and change management would be higher than the proposed solution. These same factors would make the project more time consuming to implement than the hybrid alternative.

The greatest disadvantage is project risk. While the technical risk of a front-end style solution is not significant in general, it would be difficult in the State's specific case because the VR functionality would need to be carved out of the existing integrated EMS systems. The front-end approach also involves significant functional, business and public relations risks due to the extent of the changes that would be required in county business processes, which would have to be completely revamped to make use of the new solution. On the other hand, once those changes have been made, the costs for ongoing maintenance of the county systems may be substantially lower than for the proposed alternative, as the likelihood of significant future changes to the system is relatively low.

5.3.2 Evaluation of Alternatives

A summary assessment of each of the alternatives is shown in Table 27. The table shows the underlying criteria in each major category (e.g., benefits, cost, time, and risk) and how each alternative ranked in each category.

Table 26. Assessment Summary

The Monolithic option was the least favorable, and was not considered viable, due to the large project scope, which would cause significant cost and risk and would require considerable time to implement. The Front-End VR System and the Hybrid VR Solution were roughly comparable in terms of cost, execution timeframes and risk, but the Hybrid VR solution had a clear advantage in terms of benefits as it alone meets the key requirement of minimizing impact to county business

processes. This was the deciding factor in driving the recommendation to use the Hybrid approach.

6.0 Project Management Plan

The Secretary of State (SOS) recognizes that a structured approach to project management is required to ensure the successful implementation of the VoteCal proposed solution. The following table provides an outline of the Project Management Plan components to be described in this section.

Table 27. Project Management Plan Sub-Sections

6.3.1 Overall Project Organization
6.3.2 Elections Division Organization
6.3.1 Elections Division as Part of SOS
6.3.1 SOS Information Technology Division
6.5.1 Project Scope
6.5.2 Project Assumptions
6.5.3 Project Phasing
6.5.4 Roles and Responsibilities
6.5.5 Project Schedule

6.1 Project Manager Qualifications

6.1.1 State Project Management Team

An experienced project manager is critical to the success of any project. It is the project manager's responsibility to ensure the project comes in on time, within budget and meets functional requirements. The project manager responsible for the VoteCal implementation should have, at a minimum, the following qualifications:

- Previous experience managing IT projects of similar size, scope, and complexity
- Knowledge of team leadership principles
- Previous vendor oversight experience
- Knowledge of risk management planning

SOS does not have a current resource with these skills that can be fully allocated to the project. Therefore, the SOS IT Division has contracted with an experienced project manager who meets these requirements. In this way, SOS can leverage the knowledge of the project manager to reduce the overall risk of the project.

This State Project Manager will work with the SOS Elections Project Lead and the SOS IT Project Lead. The SOS Elections Project Lead will represent Elections Division program concerns and provide technical, functional and program knowledge. The SOS Elections Project Lead will also oversee specific VoteCal quality assurance activities, training and deployment, and serve as the main contact with county liaisons. The SOS IT Project Lead will provide the IT Division with project leadership and will coordinate activities that involve SOS IT staff.

Together, this team will act as the VoteCal Project Management Team, responsible for managing the day-to-day activities of State project responsibilities, as well as working with and overseeing the selected System Integration vendor's project manager(s).

System Integration Vendor Project Manager

The selected System Integration (SI) vendor will provide a project manager for that portion of the project involving design, development, and deployment of its proposed products and solutions. This manager will be experienced in managing projects of this size and complexity involving the products and solutions selected. Further SI vendor project manager requirements will be defined in the SI vendor RFP.

Independent Project Oversight

SOS will engage the services of an independent consultant to ensure that the best management practices are employed and that anticipated outcomes are achieved

through regular audit and oversight activities. The project oversight vendor will conduct activities including the review of project processes and deliverables, attendance at specified meetings, and development of the required Independent Project Oversight Reports that are submitted regularly to the SOS and the Department of Finance.

6.2 Project Management Methodology

SOS will comply with the State's Project Management Methodology as defined in SIMM Section 200, or a comparable standard. This will be a requirement in the RFP. As a result, the project will adhere to the State's methodology, including:

- Completion and acceptance of project charter/statement of work
- Development of comprehensive business and technical requirements
- Development of activities/work breakdown structures
- Clearly defined project roles and responsibilities
- Development of detailed project schedule, including milestones and deliverables
- Completion of a quality assurance (QA) plan
- Completion of a risk management plan
- Ongoing project performance review and project plan updates
- Completion of a Contract Management Plan
- Completion of a Communications Plan
- Comparison of planned and actual progress-to-date
- Completion of project closeout.

The VoteCal project team will work closely with the selected SI vendor to ensure the vendor consistently meets project schedule and deliverable expectations.

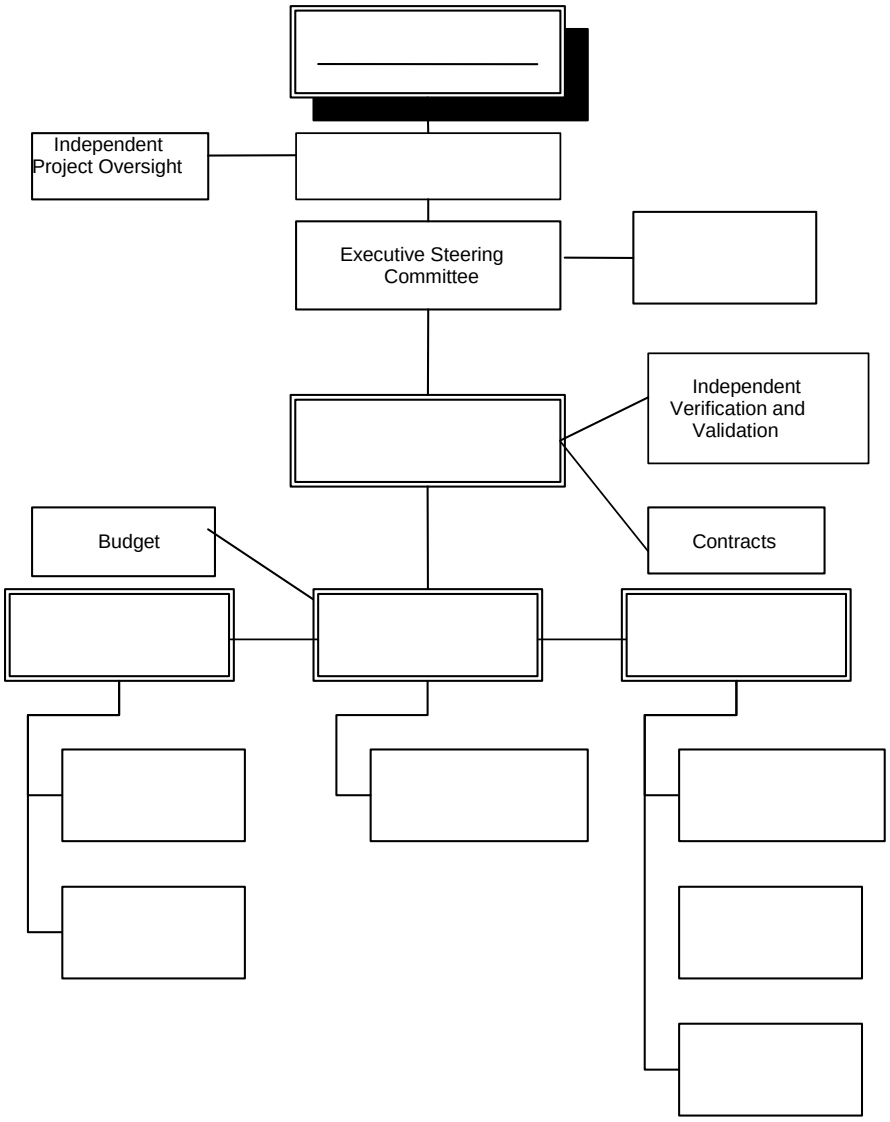
6.3 Project Organization

The VoteCal Project will involve numerous stakeholders in the planning, decision-making, issue resolution, implementation, tracking, and reporting processes related to project activities. The following organization charts and supporting descriptions detail roles and responsibilities and how these stakeholders will be organized to facilitate participation and effective tracking and reporting of VoteCal activities.

6.3.1 Overall Project Organization

The proposed project organization structure is presented in Figure 9. This organization structure includes individuals responsible for project oversight and management of day-to-day activities.

Figure 9. Project Organization Chart



- The **Project Sponsor** assumes project ownership, is the highest possible level of project review at SOS and provides policy leadership and oversight as needed. The Project Sponsor sits on the Executive Steering Committee.
- The **Executive Steering Committee** is comprised of senior members from SOS executive and business units, and members of the SOS IT

organization. The Project Director chairs it. The Steering Committee is responsible for oversight of the project, ensuring that deliverables and functionality as defined in the FSR and subsequent project plans are achieved. The Steering Committee reviews and resolves project issues not resolved at lower levels and provides advice and insight into project management issues. . Finally, the Steering Committee is responsible for assuring that adequate resources are made available to the project team for successful completion of the project.

- The **Stakeholder Advisory Committee** consists of key county participants and other external stakeholders impacted by the VoteCal project. The Stakeholder Advisory Committee will be informed of pending project plans and decisions affecting counties and other stakeholders and will be provided opportunity to advise and comment on those plans and decisions before they are finalized. The committee will also be kept informed of project progress and status to ensure stakeholders adequate time to perform conforming activities.
- **Independent Project Oversight** will ensure that best management practices are employed and that anticipated outcomes are reached through regular audit and oversight activities. An outside vendor, who reports directly to the Executive Steering Committee, will provide project oversight.
- The **Project Director** will have ultimate responsibility for the overall success of the VoteCal project. This individual will lead the project management team and have decision-making authority related to project management decisions. SOS staff responsible for budget and contract management will report directly to the Project Director.
- The **State Project Management Team** is comprised of the State Project Manager, Elections Division Lead and IT Division Lead. This Project Management Team plans, directs, and oversees the day-to-day activities of state program and IT staff. Additionally, this team serves as the principal interface with the SI vendor, ensures that project management practices are being employed appropriately, responds to change requests and coordinates project activities. A Project Administrator will directly support this team.

    - **Project Manager:** SOS will retain a contract project manager throughout the life of the project. The project manager will have at least 10 years experience managing large IT projects, including at least 5 years managing such projects in state government. The project manager will have served as project manager from development through implementation on at least two projects of at least $20 million total costs, at least one of which must involve applications development, and at least one of which must have been within California State Government.

    - **IT Project Lead:** The IT project lead will be the manager of one of the two applications development and support units at the Secretary of

State; currently those positions are classified and filled as Senior Information Systems Analyst (Supervisor). The assigned manager will have ongoing responsibility for the support of Elections Division applications, and will have at least 10 years experience in managing customer applications within state government. The incumbent will have served in a key role on at least 2 multi-million dollar application development projects within state government.

- **Elections Division Lead:** The Elections Division Lead will be the administrator of the existing voter registration system, Calvoter. The incumbent will have at least 5 years experience with voter registration support for the state and counties, and will have direct experience with automated voter registration systems. The incumbent will have at least 10 years experience with information technology, including at least 5 years with or for the State of California.

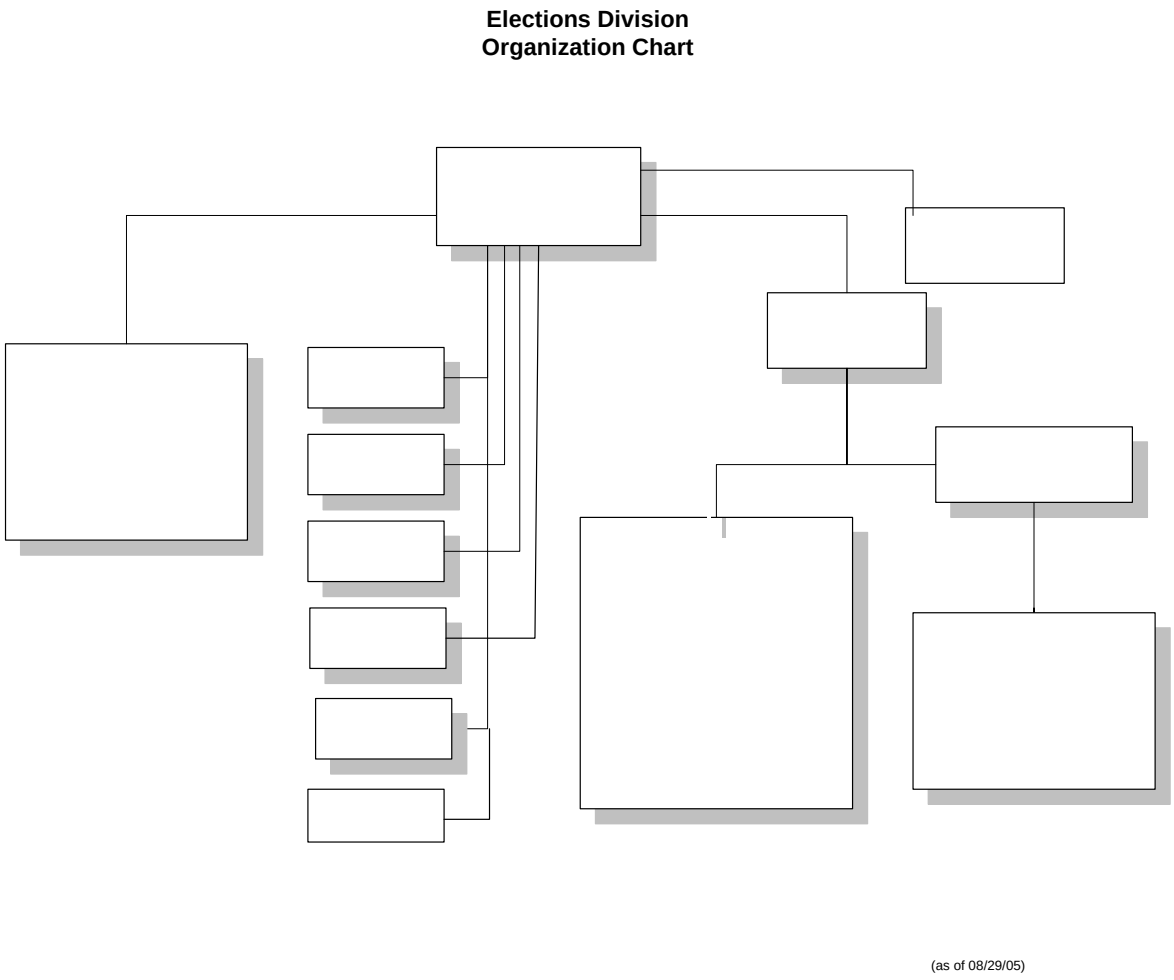
- **Independent Verification and Validation Vendor (IV&V)** will report to the State Project Director and provide technical review and verification of project deliverables, as well as independent testing and auditing of project deliverables against requirements.

A further description of roles and responsibilities is provided in Section 6.5.4.

6.3.2 Elections Division Organization

Staff from the Elections Division will be involved in all phases of the VoteCal project, including requirements definition, testing, training, change management, and implementation. The organization chart in Figure 10 presents the organization of the Elections Division.

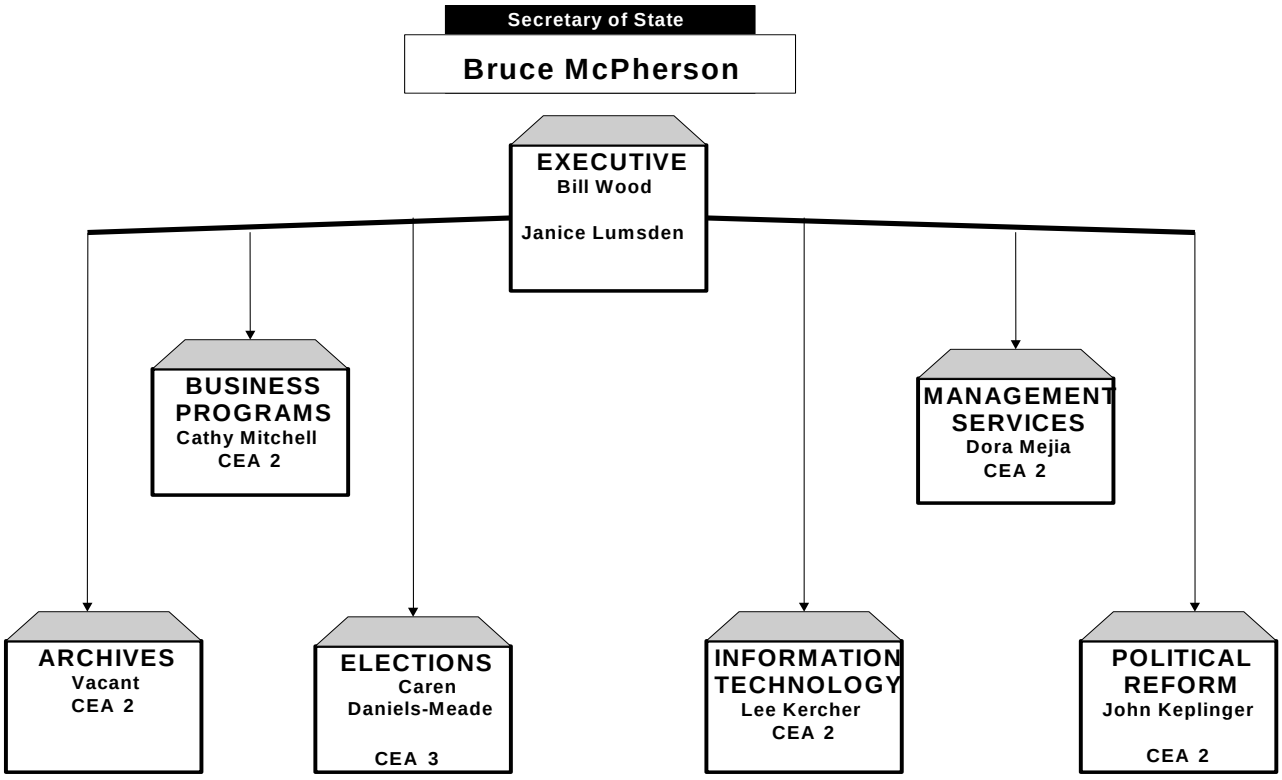
Figure 10. SOS Elections Division Organization



6.3.3 Elections Division as Part of SOS

The Elections Division is a division within the Office of Secretary of State. The organization chart in Figure 11 shows how Elections Division fits within the overall structure of SOS.

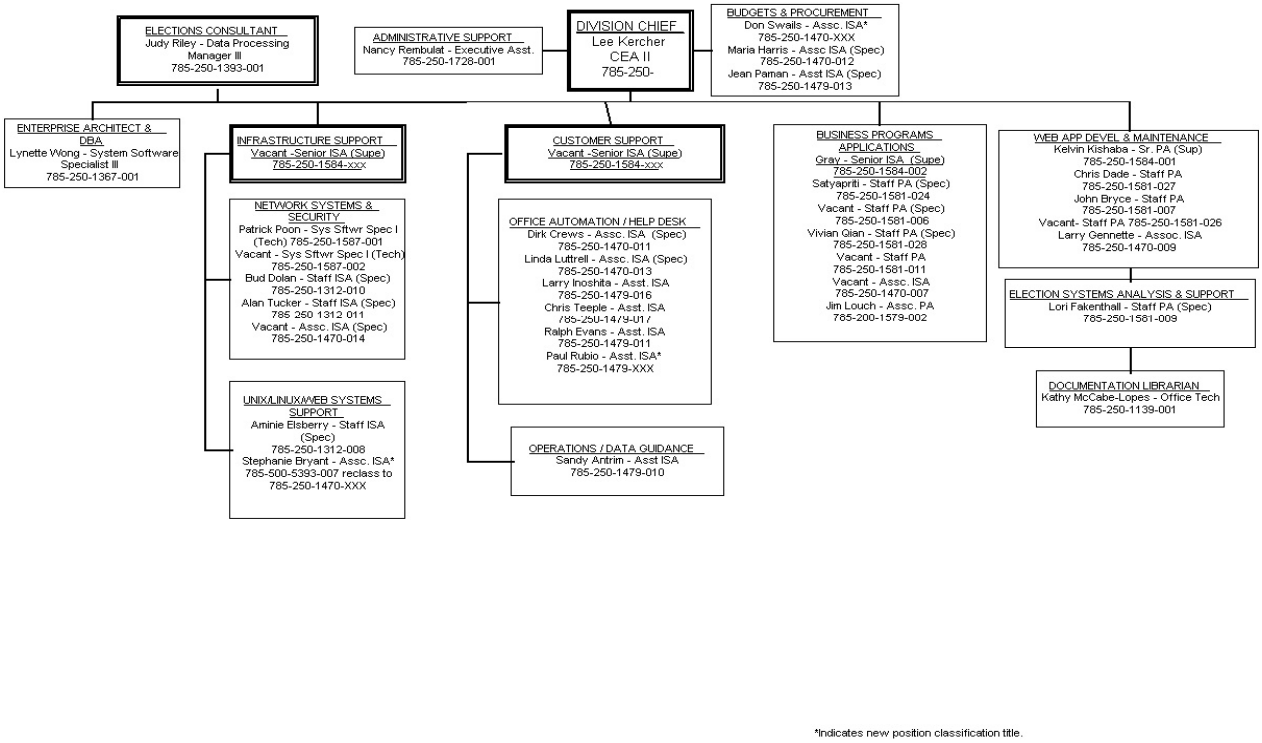
Figure 11. Secretary of State Organization



6.3.4 SOS Information Technology Division

The Information Technology Division (ITD) will be closely involved in the VoteCal project. The Chief Information Officer is Project Director and a Steering Committee member. Additionally, ITD has hired a project manager to support the project full time, and has designated a separate full-time project lead. Other ITD staff will participate in all phases of the project as appropriate. The chart in Figure 12 depicts the ITD organizational structure.

Figure 12. SOS Information Technology Division Organization



6.4 Project Priorities

Managing a project requires balancing three factors: Resources, Scope, and Schedule. These factors are interrelated; a change in one of them causes the others to change. For the VoteCal project:

- *Resources* are improved, meaning that additional resources can be added to the project (accomplished mainly through contracts with external service providers).
- Project *scope* is accepted, meaning that while there may be limited flexibility regarding features that might be added or omitted as the project evolves, HAVA requirements must be followed.

- The project *schedule* is constrained due to federal deadlines regarding implementation of a statewide voter registration database.

Table 29 summarizes these components.

Table 28. Project Priorities

Resources		
Improved	Accepted	Constrained

6.5 Project Plan

6.5.1 Project Scope

The scope of the VoteCal project is the development, testing, and implementation of a California statewide voter registration system that will meet federal HAVA mandates and functionality requirements defined by SOS. The scope of this project includes the following:

- Develop the Request for Proposal (RFP), the Information Technology Procurement Plan (ITPP), and any Special Project Reports (SPR) to procure and contract with a prime SI vendor to develop, integrate, deploy, and support the proposed solution.
- Develop the Request for Proposals to procure and contract for external services (e.g., project management assistance, procurement assistance, project oversight, IV&V, technical assistance).
- Develop the VoteCal database and application.
- Develop interfaces to other State agencies (DMV, DHS, DCR) to support registration verification and list maintenance requirements.
- Modify and integrate the existing county Election Management Systems to interact with the VoteCal System, or move counties to remediated EMS.
- Convert and integrate voter registration and related data from the 58 different county databases into the single, uniform statewide VoteCal database.
- Integrate all components of the VoteCal System to provide the mandated official statewide voter registration list.
- Deploy VoteCal system to end-users.
- Provide training to VoteCal end-users on the new system.
- Prepare Post Implementation Evaluation Report.

6.5.2 Project Assumptions

The following assumptions have been made in the development of this FSR:

- An SI vendor will be selected that can support and maintain the new system after implementation.

- Sufficient SOS resources are not available to support this major effort; therefore, additional staff positions and contract services are required for both one-time and ongoing activities.
- Although Department of Technology Services facilities will be used to house the VoteCal System, SOS will own the system and the contracted SI vendor will wholly support the system.
- The functionality of the proposed system must meet HAVA legal mandates.
- HAVA compliant database must be implemented by January 1, 2006. Although the statute does not specify penalties for failure to comply by the January 1, 2006 deadline, the US Department of Justice has notified the Secretary of State that it is "prepared to move forward with enforcement action under HAVA as appropriate to ensure compliance with HAVA's requirements". SOS will implement interim measures using a combination of technical and procedural solutions to achieve partial compliance until the VoteCal system can be completed.
- The VoteCal FSR will be approved by April 4, 2006; an additional SPR will be developed after determination of the selected SI vendor.
- The selection of an SI vendor and subsequent contract signing will be completed by September 12, 2007.
- The proposed VoteCal solution will replace at least all existing Calvoter functionality.
- The existing wide area network is not expected to be able to support the requirements of the VoteCal system.
- The current county and SOS desktop hardware and software environment appears adequate to support VoteCal system requirements. No additional desktop upgrades will be required except where small county voter registration systems may need to be replaced/upgraded.
- Technical staff and end users will receive training to support the new VoteCal system.
- The project will adhere to a strict schedule in which all milestones must be met.
- There will be timely review and feedback on all project deliverables by reviewers.
- Problem/issue resolution will be handled on a timely basis.
- Proactive risk management strategies will be employed to minimize risk and ensure timely completion of the project.
- All vendor contracts and procurements will be accomplished within planned time lines.

6.5.3 Project Phasing

The project will be implemented according to the phases outlined in Table 30:

Table 29. Overview of Project Phases

1	**Requirements and Request for Proposal (RFP) Development** ■ Definition of requirements to include functional, technical, implementation and service support ■ Development and approval of an ITPP ■ Development and issuance of RFPs for SI vendor, project support consultants, and project oversight and IV&V vendors ■ Assessment of project support and vendor responses and subsequent selection for both the IPOC and IV&V vendors
2	**Vendor Selection and Project Planning** ■ Assessment of SI vendor RFP responses and subsequent selection ■ Update of FSR/SPR and review and approval by DOF ■ Completion of SI vendor contract signing and initial project planning to outline resource and time requirements and identify milestones
3	**HAVA Compliant Database** ■ Detailed requirements gathering and specification ■ Design and development of required VoteCal database and application functionality ■ Design and development of required State agency interface functionality ■ Design and development of required changes to county EMS systems ■ Design and development of required integration between county systems and VoteCal ■ Analysis of existing data, design and development of data conversion programs ■ Deployment of server hardware environment ■ Deployment of VoteCal network environment ■ Testing and integration of complete solution
4	**System Training** ■ Training of SOS technical staff ■ Training of Elections help desk ■ Training of IT help desk ■ Training of remaining users

In addition to the major phases described above, SOS understands that the phasing of the system development (Phase 3) reduces project risk and ensures that core business functionality is implemented early. SOS will require in RFP responses that Bidders propose a phased implementation of functionality to meet these goals.

6.5.4 Roles and Responsibilities

The following section defines the roles and responsibilities of the key participants in the VoteCal project. Table 31 highlights the roles and responsibilities of the key parties. Additional details regarding the specific roles and responsibilities of each party are provided immediately following the table, and will also be presented in the Project Charter to ensure they are understood and accepted by all involved.

Table 30. Project Roles and Responsibilities

Project Sponsor	Assures project ownership at the highest possible level within SOS and provides policy leadership and oversight as needed.
Executive Steering Committee	Responsible for oversight of the VoteCal Project, ensuring that deliverables and functionality are achieved as defined in the FSR and subsequent project plans. Reviews and resolves project issues not resolved at lower levels and provides advice and insight into project management issues.
Stakeholders Advisory Committee	Provides effective input to the Secretary of State on behalf of members' respective organizations and the at-large elections community into the planning, development and implementation of the VoteCal statewide voter registration database, thereby helping to ensure the system's successful implementation and deployment. Will be informed of pending project plans and decisions affecting counties and other stakeholders and will be provided opportunity to advise and comment on those plans and decisions before they are finalized. The committee will also be kept informed of project progress and status to ensure stakeholders adequate time to perform conforming activities.
Project Director	Responsible for overall success of the project and accountable to the Executive Steering Committee for project outcomes. Works directly with Project Managers to ensure agreed project management practices are being employed for project success and works with the Project Steering Committee to coordinate VoteCal with other related efforts and to resolve inter-Division and inter-project issues.
Project Management Team	Plans, directs, and oversees the day-to-day activities of state staff. Serves as the principal interface with the SI vendor and county liaisons. Ensures that project management practices are being employed appropriately and responds to change requests and coordinates project activities.
Project Team	Responsible for carrying out day-to-day activities across all program and technical phases of the project. The Project Team will be responsible for conducting or directly managing daily activity such as quality assurance, testing, training, deployment, and other activities to ensure that planned project objectives are achieved in accordance with the approved project plan.
System Integration Vendor	Responsible for development of the various components of the VoteCal solution as well as overall success of the deployment, including integration with state agency interfaces and county election management systems.
Independent Project Oversight Consultant	Reviews project process and deliverables, attends regularly scheduled meetings and develops monthly Independent Project Oversight Reports.
IV&V Vendor	Provides technical review and verification of project deliverables, as well as independent testing and auditing of project deliverables against requirements.

Project Sponsor

The project sponsor is the Assistant Secretary of State, Chief of Operations. The project sponsor assures project ownership at the highest possible level in SOS, provides policy leadership, and reviews and resolves policy, fiscal, and resource allocation issues that cannot be resolved at lower levels.

Executive Steering Committee

The Executive Steering Committee is comprised of senior members from SOS executive and business units, and from the IT organization. The Executive Steering Committee performs the following functions:

- Responsible for oversight of the VoteCal Project, ensuring that deliverables and functionality are achieved as defined in the FSR and subsequent project plans
- Ensures inter-division coordination by establishing and sponsoring collaboration across department organizational boundaries
- Reviews and resolves project issues not resolved at lower levels
- Provides advice and insight into project management issues
- Responsible for executive level oversight of control agency reviews, quality control inspections, testing measurements and other observation processes to ensure that planned project objectives are achieved in accordance with the approved project plan
- Manages Independent Project Oversight contract and is its primary customer
- Ensures adequate resources are allocated to the Project Team for successful completion of the project.

Project Director

The Project Director is accountable to the Executive Steering Committee for project outcomes. The Project Director performs the following functions:

- Works directly with Project Managers to ensure agreed project management practices are being employed for project success and works with the Executive Steering Committee to coordinate VoteCal with other related efforts and to resolve inter-Division and inter-project issues
- Facilitates resolution of all issues and monitors and optimizes resource allocations
- Approves and manages changes to requirements, scope, and risk and monitors and documents actual project progress against the planned activity schedules
- Reports project status and responds to inquiries and is the principal spokesperson for the project
- Serves as primary interface with the state Project Management Team and staff
- Oversees and controls contract and budget management functions.

Project Management Team

The state Project Management Team plans, directs, and oversees the day-to-day activities of state and SI vendor staff. The Project Management Team performs the following functions:

- Serves as principal interface with SI vendor management team in the development and integration of the VoteCal solution
- Directs and leads program and IT staff and contractors to ensure state responsibilities are accomplished in a correct accurate and timely manner
- Ensures adopted project management practices are being employed as appropriate to specific tasks and acts as principal point of contact for resolution of issues
- Responds to change requests and coordinates project activities with other VoteCal efforts and acts as the principal spokesperson for the objectives and status of the VoteCal solution
- Ensures deliverables meet agreed-upon requirements and satisfy testing and quality assurance standards
- Ensures Project Oversight and IV&V recommendations are properly implemented in the project

Project Team

The Project Team, which includes SOS program and IT staff and the Technical Architect, will be responsible for carrying out day-to-day activities across all phases of the project, including:

- Assists with various procurement tasks such as defining technical and functional requirements, developing the RFP, conducting the analysis and evaluating SI vendor proposal responses
- Ensures that all required functionality is included in the VoteCal solution by lending business, process, and technical knowledge to the SI vendor so that the solution can fully support VoteCal needs and requirements
- Ensures that the completed solution meets the functional and technical requirements defined within the contract through extensive unit, stress and additional system testing
- Addresses change management concerns and oversee the technical development and system deployment of the VoteCal solution
- Plans, develops and delivers training to technical staff and end users
- After deployment, supports solution on an ongoing basis with the goal of ensuring the proper functioning of the VoteCal solution

System Integration Vendor

The SI vendor will be responsible for development of the VoteCal solution as well as overall success of the implementation. The SI vendor will ensure successful

end-to end processing of voter registration activity and all associated functions and will be ultimately responsible for delivering an integrated, functional solution to support HAVA and SOS requirements within the required time frame. Specific responsibilities include:

- Creates overall project plan, system design, testing and training approach, risk mitigation measures, and quality assurance for VoteCal solution
- Develops, implements and supports the VoteCal database and application
- Develops, implements and supports the necessary VoteCal state agency interfaces, including oversight of project activities conducted by outside agencies
- Coordinates with and oversees county vendors during modification and development of county election management systems for integration into the VoteCal system
- Develops, implements and supports the integration across all VoteCal components to ensure that the official voter registration list is maintained at the state level as per HAVA and SOS requirements
- Manages the conversion and integration of county registration data into the single VoteCal database

Independent Project Oversight Consultant

The Independent Project Oversight Consultant will report directly to the Steering Committee (and also to Department of Finance) and provide the following functions:

- Reviews project planning deliverables to ensure they are sufficient and meet applicable project standards
- Reviews ongoing project processes and activities
- Identifies project risks and monitor the project risk management process
- Develops Independent Project Oversight Reports and deliver to both SOS and Department of Finance
- Offers suggestions for problem and issue resolution
- Monitors county involvement and satisfaction with the process, and reports issues on an expedited basis as they are identified

IV&V Vendor

An IV&V vendor will be selected as part of this project. The role of the IV&V vendor will include not only the technical review and verification of project deliverables, but also the independent testing and auditing of project deliverables against requirements. The IV&V vendor will provide the following functions:

- Reviews project deliverables for quality assurance and adherence to project plan and project objectives

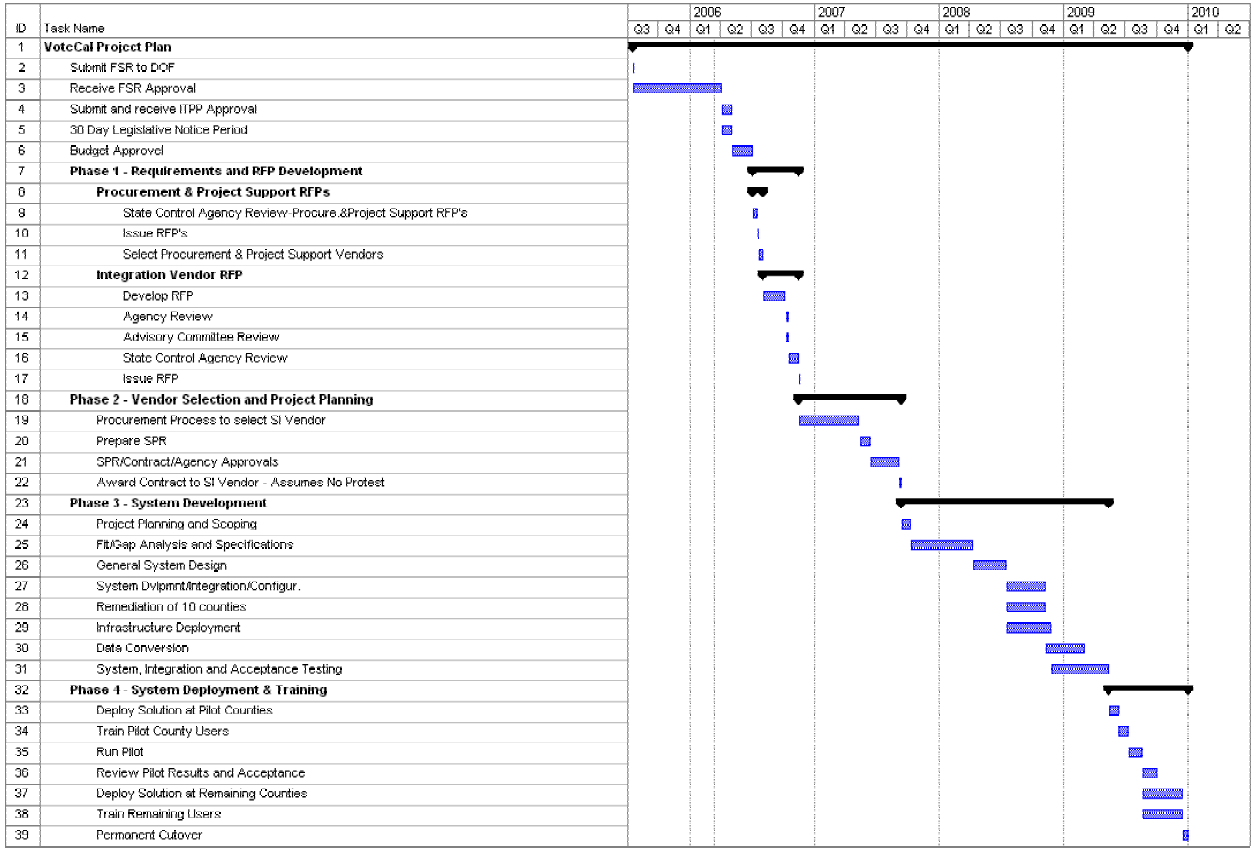
- Provides independent testing and review of technical specifications and functionality
- Offers suggestions for problem and issue resolution

6.5.5 Project Schedule

On page 102, a preliminary project schedule is provided. The project will be based on the selection of a solution and vendor through a business-based procurement process. SOS will require that bidders provide a detailed project implementation schedule, including their recommended phasing of HAVA compliant components, as part of their response to the RFP.

Although SOS has identified a selected alternative in this FSR, that selection was made solely to support the estimates of costs, schedule and resource requirements included in this report. The actual project requirements and schedules will depend upon the specific solution selected.

Fig. 13 Proposed Project Schedule



ID	Task Name
1	**VoteCal Project Plan**
2	Submit FSR to DOF
3	Receive FSR Approval
4	Submit and receive ITPP Approval
5	30 Day Legislative Notice Period
6	Budget Approval
7	**Phase 1 - Requirements and RFP Development**
8	**Procurement & Project Support RFPs**
9	State Control Agency Review Procure.&Project Support RFP's
10	Issue RFP's
11	Select Procurement & Project Support Vendors
12	**Integration Vendor RFP**
13	Develop RFP
14	Agency Review
15	Advisory Committee Review
16	State Control Agency Review
17	Issue RFP
18	**Phase 2 - Vendor Selection and Project Planning**
19	Procurement Process to select SI Vendor
20	Prepare SPR
21	SPR/Contract/Agency Approvals
22	Award Contract to SI Vendor - Assumes No Protest
23	**Phase 3 - System Development**
24	Project Planning and Scoping
25	Fit/Gap Analysis and Specifications
26	General System Design
27	System Dvlpmnt/Integration/Configur.
28	Remediation of 10 counties
29	Infrastructure Deployment
30	Data Conversion
31	System, Integration and Acceptance Testing
32	**Phase 4 - System Deployment & Training**
33	Deploy Solution at Pilot Counties
34	Train Pilot County Users
35	Run Pilot
36	Review Pilot Results and Acceptance
37	Deploy Solution at Remaining Counties
38	Train Remaining Users
39	Permanent Cutover

6.5.6 Communications Plan

The SOS will develop and implement a communications plan to ensure that all stakeholders and project participants are aware of project responsibilities and project related process and procedure changes. The communication plan will also be operated to ensure that stakeholder concerns are properly communicated to the project team, and related issues are effectively managed. The Communications Plan will be the responsibility of the Elections Project Lead, working in conjunction with advisory council and the existing SOS structure for communications with counties and other stakeholders.

The communications plan will include special provision for and emphasis on maintaining current and robust communications between the state and the counties. In addition to ensuring that counties are informed of state plans and given real opportunity to comment on those plans, the communications plan will also include mechanisms to escalate county problems and concerns past the daily project management structures to the steering committee.

6.5.7 Contract Management Plan

The SOS will develop and implement a contract management plan to ensure that all project activities are consistent with the provisions of contracts with the integration vendor and with other agreements with service providers such as the Department of Technology Services and public communications carriers. The contract management plan will also be implemented to ensure that unanticipated activities that are identified as necessary for project success are properly added to the appropriate contract, and that all other contract amendments are managed according to standard project management principles and practices. The SOS intends to establish a full time position to serve as the project contract manager; this position will continue throughout the production life of the developed application. During the project, the contract manager will report to the project manager.

6.6 Project Cost Management

Project costs will be managed and tracked throughout the life of the project to ensure compliance with federal guidelines for use of HAVA funds, state spending requirements and the terms of the project approval. Overall Responsibility for Project Cost Management will be assigned to the SOS Budget Officer, with task responsibility for record keeping, reporting, and enforcement of standards performed by the Project Cost Manager, which will be assigned to the Information Technology Division Budget Manager.

Processes will be continued from those implemented during the interim enhancements project to funnel all spending activities from request through payment through the Project Budget Manager. The Budget Manager will maintain realtime records of all spending actions that will allow the identification of planned, encumbered and paid costs by fiscal year, development v. continuing, staff v. OE&E, and OE&E by EAW categories as defined in the approved project FSR. The Project Cost Manager will be responsible for reporting to the Project Steering Committee any request to exceed, or at a rate projected to exceed, the level of spending approved in the project.

All project staff and contractors will maintain timesheets with sufficient detail to identify time spent on project activities, and time spent on activities that are to be reimbursed by HAVA funds. These timesheets will be maintained by the Project Cost Manager, and approved and retained by the SOS HAVA Coordinator.

6.7 Project Monitoring

Project status will be tracked and reported on an ongoing basis. Regularly scheduled status meetings including the project managers, project team members and the SI vendor will be held to discuss project progress, issues/issue resolution and next steps. Executive Steering Committee meetings will be held on a regular basis to discuss project progress, change requests and open issues. Independent/objective input will be provided to the Steering Committee by the Project Oversight consultant. The following standard reporting mechanisms will be used:

- Status reports
- Issues lists
- Risk management updates

SOS will undertake a “top-down” and ”bottom-up” approach to project quality. The Executive Steering Committee will provide “Top-down” project oversight. The composition of the Steering Committee ensures broad and balanced oversight, as it includes executive, program and IT staff. The project management team, project oversight vendor and the IV&V vendor will provide “bottom-up” project oversight.

Independent project oversight will be provided by an outside vendor through regular audits of project progress against stated objectives and deliverables. The vendor will provide these reports to the Agency and the Department of Finance as required.

In addition, a Project Information Toolbox (PIT) will be developed as a single location to store, organize, track, control and disseminate all information and items produced by, and delivered to, the project. The PIT will include a file structure with defined access and permissions. It will also include an interface, such as a Web page, where individuals can obtain project information, the latest documentation, and input issues or comments to the project team. Some beginnings of this structure are currently in place (e.g., project Web sites, file structures) and additional PIT functionality can be developed when necessary for proper project control and communications.

6.8 Project Quality

In order to ensure that the project meets identified business and technical objectives and requirements, SOS will develop a Quality Assurance/Risk Management Plan based on the State's Project Management Methodology. The plan will have the following elements:

- Measurable objectives and functional requirements
- Acceptance testing plan
- Regularly scheduled audits/reviews of key tasks
- Identification of quality assurance responsibility with the project Steering Committee
- Use of project oversight or IV&V services as required

6.9 Change Management

The VoteCal project management team will develop a change management plan and process and use the Project Director for the review and acceptance/rejection of change requests. For any decisions that cannot be made by the Project Director the Executive Steering Committee will be used.

In the change management plan, change requests will be:

- Drafted by the Project Team (both developers and end users)
- Communicated to the counties, when affected, in time for effective comment
- Reviewed and edited by the Project Managers
- Decided by the Project Director with direction from the Executive Steering Committee if necessary (if they impact scope, schedule or cost)
- Implemented by the Project Team

6.10 Authorization Required

There is no special authorization required beyond the standard State processes as defined in SIMM guidelines and DGS.

7.0 Risk Management

In order to reduce the overall risk of the VoteCal project, the SOS has developed the following risk management approach. The approach is based on State Information Management Manual (SIMM) guidelines and includes the components listed in the table below.

Table 31. Risk Management Plan Sub-Sections

7.1.1 Responsible Parties
7.1.2 Risk Management Process
7.2.1 Risk Assessment
7.2.2 Risk Identification
7.2.3 Risk Analysis and Quantification
7.2.4 Risk Prioritization
7.2.5 Risk Response
7.2.6 Risk Acceptance
7.2.7 Risk Mitigation
7.2.8 Risk Sharing
7.3.1 Risk Tracking
7.3.2 Risk Control

7.1 Risk Management Approach

The methodology of the Risk Management Plan will be consistent with the State of California's Project Management Methodology and the Department of Finance's Information Technology Project Oversight Framework. The following sub-sections detail the parties who will be responsible for risk management and the process they will follow.

7.1.1 Responsible Parties

The SOS realizes that risk management is a dynamic process that occurs throughout the project life cycle. Therefore, several parties will be responsible for developing and implementing the Risk Management Plan, including the Project Steering Committee, SOS Project Management Team, and the System Integration Vendor Project Manager. The Independent Project Oversight Consultant (IPOC) and Independent Verification & Validation (IV&V) vendor will be responsible for helping identify risks and forwarding their recommendations related to risk mitigation to the SOS VoteCal Project Executive Steering Committee and Project Management Team as appropriate. The System

Integration Vendor Project Manager will be responsible for managing the risk management process and reporting to the State Project Management Team. The specific roles of these parties are described in more detail below.

- **Executive Steering Committee –** The Steering Committee will be responsible for ensuring that project goals and objectives are met, and for resolving issues as they arise. The Committee will be responsible for providing the project team with resources (time, staff or funding) necessary to help avoid or mitigate risks as needed. The Committee will also be responsible for elevating risks to the DOF when appropriate, consistent with this plan.
- **Project Director –** The Project Director, who also sits on the Executive Steering Committee, will have overall responsibility for the implementation of the VoteCal project. The Project Director will approve the Risk Management Plan and will work with the Project Management team and Vendor Project Manager to develop the process for tracking and managing issues and risk factors. The Director will also be responsible for elevating risks to the Steering Committee when appropriate, consistent with this plan
- **State Project Management Team –** The State Project Management Team will be responsible for working with the Vendor Project Manager, IPOC, IV&V vendor, and project team members to identify risks. They will also monitor project risks, develop mitigation measures and contingency plans, and implement those contingency plans when necessary.
- **System Integration Vendor Project Manager –** The System Integration Vendor Project Manager will be responsible for developing and submitting to SOS a baseline risk management plan. This baseline Risk Management Plan will be developed using the risk management plan elements provided in this FSR as a starting point. The vendor will be asked to work with the SOS Project Management Team to implement and update this risk management plan throughout the project life cycle.
- **IPOC and IV&V Vendors -** The project will employ an IPOC vendor and an IV&V vendor to provide insight from an IT professional and industry standards perspective. The additional review of project processes and deliverables by these resources is intended to provide a third-party, independent assessment of project risk areas with appropriate findings and recommendations.
- **Project Team:** All members of the Project Team will be involved in identifying potential risks and working with the Project Managers to develop contingency plans.

7.1.2 Risk Management Process

The SOS risk management process includes further development of this Risk Management approach in accordance with the State's Project Management Methodology. The System Integration Vendor will submit an updated Risk Management Plan to the SOS within 30 days of project initiation. This plan will be used on an

ongoing basis to identify risks, quantify the potential impact of each identified risk, present mitigation plans for each identified risk, and enact appropriate risk responses. Mitigation measures and contingency plans will be developed and implemented as high-priority risks are identified and monitored. Project reserves (i.e., time, personnel, funding) will be allocated at the discretion of the Project Director and/or Project Steering Committee as appropriate.

The following risk management worksheet will be used as the starting point for identifying and prioritizing risks as the basis of the Risk Management Plan.
Risk Management Worksheet.

7.2 Risk Management Worksheet

Table 32. Completed Risk Management Worksheet

Stakeholder Participation				
Unanticipated lack of participation by one or more of the State validation/list maintenance interface Agencies (DMV, DHS, DCR)	Low - .20	State agencies will support the Secretary in complying with federal HAVA mandates.	The Project Director and Steering Committee will communicate regularly with Agency leadership to help facilitate cooperation. SOS will fund the development of interfaces and additional resources required by Agencies to achieve project objectives.	Adjust schedule as necessary.
Unanticipated lack of participation by one or more of the counties	Low —.20	All counties will be impacted by the new system and should be involved in the design and analysis, implementation, and testing phases. It may be difficult to coordinate the involvement of these stakeholders.	The County Advisory Committee will be used to facilitate planning between the State and county project participants. A communication plan will be developed and implemented.	Re-sequence deployment to those units best equipped for immediate implementation. Adjust schedule as necessary.
Governance				
Lack of effectiveness of Secretary of State and/or Steering Committee decision-making processes	Low - .20	Secretary and Steering Committee view project as a #1 priority. Review and approval process does not meet project timelines.	Schedule meetings in advance ensuring full participation. Provide materials in advance to facilitate decision-making process. Conduct one-on-one discussions in the event a meeting is not well attended.	Adjust schedule as necessary.

Need to address IPOC or IV&V concerns.	Low - .20	DOF may require additional work as a result of concerns.	Contract with an IPOC early in the project life cycle to ensure best practices are applied early facilitating project success.	Adjust schedule as necessary.
Lengthy IPOC or IV&V evaluation and reporting process impacts project schedule	Low - .20	Evaluation and reporting process does not fit within established project schedule.	Factor IPOC and IV&V reviews into project schedule. Have IPOC and IV&V work on-site as much as possible.	Adjust schedule as necessary.
Project scope changes that require additional review/approval by DGS and DOF.	Low - .20	DGS and DOF will require additional time in order to review and approve any scope changes.	Ensure the scope of the project is clearly defined and agreed to by the vendor.	Adjust schedule as necessary
Effectiveness of County Advisory Committee decision-making process	Low - .20	Counties may not be able to achieve consensus related to project implementation issues. Counties may disagree with SOS vendor regarding project scope, requirements, system specifications, etc. Counties may not have the resources available to participate.	Ensure Counties are involved early in the process. Define meeting schedule and decision-making process in advance. Implement communications plan. Use a variety of means to facilitate involvement including video-conferencing, teleconferencing, etc.	Adjust schedule as necessary.
Staffing				
Access to skilled State IT workers	Medium —.50	Skilled SOS IT staff may not be available to support this project due to competing priorities. Skilled DHS, DMV and DCR IT staff may not be available to support this project due to competing priorities.	Define in advance skill sets required at each phase of the project. Coordinate with the SOS CIO to ensure necessary ITD staff members are available. Coordinate with DHS, DMV and DCR CIOs to ensure necessary IT staff members are available.	Train existing State IT staff in new technologies. Hire contractors to ensure sufficiently skilled IT staff are available.
Access to skilled County IT workers	High - .80	Skilled County IT staff may not be available to support this project due to competing priorities.	Define in advance skill sets required at each phase of the project. Coordinate with County IT leadership to ensure necessary IT staff members are available.	Provide funding to support training of existing County IT staff in new technologies. Provide funding to hire contractors to ensure sufficiently skilled IT staff are available.

Availability of sufficient State vendor resources	Medium - .50	Given the need for many states to comply with HAVA requirements at the same time and the timing of California's project, vendors may not have sufficient resources available to support California's project.	Define in advance the resources required to support California's project. Implement reward/penalty structure in the contract.	Adjust schedule as appropriate.
Availability of sufficient county vendor resources	Medium - .50	County vendors may not provide sufficient project support.	Define in advance the resources required to support the VoteCal project. Set up a funding mechanism for the county vendors	Adjust schedule as necessary.
Availability of sufficient county elections personnel throughout the life of the project	High - .80	County elections staff has been reduced due to budget cuts. County elections staff first priority is to support current elections.	Define in advance the resources required to support the VoteCal project. Ensure the project schedule is built taking into account elections cycles. Hire temporary help and cross train existing County staff in elections functions to enable experienced staff to focus on project implementation tasks.	Adjust the schedule as necessary.
Continuity of State business project personnel throughout the life of the project	Low —.20	SOS Elections Division staff will have competing priorities throughout the project's life-cycle (e.g., conducting elections).	Create detailed estimates of resource demands in advance. Ensure the project schedule is built taking into account elections cycles. Hire temporary help and cross train existing SOS staff in elections functions to enable experienced staff to focus on project implementation tasks. Communicate resource demands to senior executives as early as possible. Coordinate with the Steering Committee to ensure necessary SOS staff are available.	Adjust the schedule as necessary.

Schedule				
County vendor inability to implement necessary changes in order to meet project timeline	Med - .50	County vendors may not have the resources available to meet the project timeline.	Review and identify resource availability at the start of the project and obtain agreement from the vendor s to provide these resources.	Adjust the schedule as necessary.
Short time frame for implementation	Low —.20	The current project schedule is based upon recent experience with comparable projects in the state; time frames allowed for most project activities are reasonable, and have been adjusted for competing activities, such as statewide elections. County activities are essential at certain steps in the project; while reasonable estimates of the time required to perform these activities, not all competing requirements at the county level are known, nor is overall availability of county resources.	Review and identify resource availability at the start of the project and obtain agreement from all stakeholders to provide these resources. Hire temporary staff or cross train existing SOS and county elections staff to back-fill existing positions.	Adjust the schedule as necessary.
Cost				
Underestimated costs	Medium —.50	The cost of the project could be underestimated based on the fact that vendor estimates are based on assumptions that are made before entering the actual environment. A selected vendor may issue change order requests to recover these underestimated costs. Complexity of the project may result in unanticipated costs.	Develop conservative cost estimates that take into consideration the complexity and risks associated with this project.	Request additional funding.

Risk				
Technical				
Inability for some existing county systems to connect to the middleware infrastructure in an effective manner	High - .80	Approximately 10 small counties do not have robust enough systems in place that can interface with the proposed solution.	Implement an alternative election management system within these counties.	Adjust schedule as necessary. Adjust budget as necessary. Adjust staffing as necessary.
Complex architecture	High - .80	Numerous technical components between the State database, the integration broker middleware, network infrastructure, variety of county election management systems, and interfaces between State system and partner agencies, creating multiple points of failure.	Contract with a vendor demonstrating significant experience working with similar complexity. Contract with a vendor proposing proven technical approaches. Devote sufficient resources and time to testing.	Adjust schedule as necessary. Adjust architecture as necessary.
Data Conversion				
Data quality and purification	High —.80	Data conversion will be a problem due to the quality of data residing in existing systems.	Develop a formal plan for data analysis, conversion and integration. Institute a formal data quality assurance and improvement process. Create meaningful metrics for measuring data quality, including criteria for acceptance of the data prior to system implementation. Actively assess and improve data quality up to system implementation and thereafter.	Adjust schedule as necessary.
Data synchronization	Medium —.50	Data synchronization will be a challenge given the variety of business processes and data models within each county.	Facilitate a consensus-based resolution of this issue with the data synchronization team. Build a common data dictionary. Develop clear data synchronization standards. Automate data synchronization to the maximum extent possible.	Adjust schedule as necessary.

Risk				
Internal				
Interrupting business operations	Medium —.50	Elections operations could be interrupted during the transition from the old to the new system.	Run parallel systems.	Conduct business using the old system.
External				
County resistance to change.	Medium - .50	Counties have expressed concerns related to California's interpretation of HAVA requirements (e.g., related to batch processing).	The County Advisory Committee will be used to facilitate communication and issue resolution between the State and county project participants. A communication plan will be developed and implemented.	Adjust schedule as necessary.
Public relations	Medium - .50	Given the timing of project implementation surrounding elections cycles, more scrutiny will be paid to this project. The Secretary of State views this as a very high priority. The federal government views this as a very high priority.	A communication plan will be developed and implemented. The County Advisory Committee will be used to facilitate communication.	Adjust schedule as necessary. Add additional resources to the project as necessary to ensure project success. Adjust scope as necessary to ensure project success and ability to meet HAVA requirements.

7.2.1 Risk Assessment

The risk management worksheet was completed to provide a risk assessment based on the identification, analysis, quantification, and prioritization of key project risks. The method used to determine, analyze and prioritize the risks is outlined below.

Assessment Approach

In order to assess the risks involved in the implementation of the VoteCal solution, four broad risk areas were examined. The risk areas examined are project management, financial risk, technology risk, and change management/operational risk. A preliminary assessment of the primary risk areas is outlined in the following table.

Table 33. Primary Risk Areas for the VoteCal Project

Project Management Risk	Medium
Financial Risk	Medium
Technology Risk	High
Change Management/Operational Risk	Medium

This table shows the project management, financial, technology, and change management/operational risk levels at the current phase of the project. Medium levels of risk in Project Management, Financial and Change Management/Operational areas are attributed to project complexity and a short implementation timeframe. The high level risk associated with technology is due to the complex technical architecture associated with the proposed solution. SOS is accepting this high risk in exchange for lowering risks associated with stakeholder buy-in and impacts on existing county election management systems and associated business processes. A discussion of each area follows:

- Project management risk is medium due to staffing and schedule risks that should be monitored to ensure the project remains on schedule and on budget. Specific staffing risks include challenges accessing skilled State and county IT workers for the project from the SOS and the counties. Schedule risks are considered low because SOS has determined that the project cannot be completed in time to meet the HAVA statutory deadline, and will implement interim measures towards partial compliance. The schedule for this project has been based on recent experience with comparable projects in the state, and was designed to minimize schedule risk. Early planning and implementation of preventive measures will help ensure these risks are mitigated early in the project lifecycle.
- Financial risk is medium due to the complexity of the project and difficulty estimating an accurate budget as a result. The proposed solution involves implementation of an integration message broker COTS product and the development of interfaces to three State agencies and up to six different election management systems in 58 counties. The most unpredictable costs associated with the project are related to the costs associated with working with the variety of county system architectures and data models.
- Technology risk is high since the proposed solution involves design and implementation of a complex architecture. The solution is made up of many different components that must provide for immediate synchronization of data in order to support the election processes.
- Change management/operational risk is medium due to the inability of SOS to control or predict the behavior of counties and their participation in the project or the behavior of the media as it scrutinizes the project. These risks will be

monitored appropriately and key stakeholders will be incorporated into all phases of project implementation.

The active participation and cooperation of county elections officials and their staffs are essential to the success of this effort. The project, as it serves as vehicle to implement HAVA mandates, will impose significant policy and procedural changes on the voter registration activities of the counties. In addition, the project will require the counties to implement substantial changes to the voter registration portion of the automated elections management systems in a timely manner. In order to ensure that counties provide the necessary support for this effort, the Secretary of State's risk management plan for county participation includes the following components:

Proactive state efforts

The state will be taking proactive steps in partnership with counties to mitigate risks and enhance the prospect for success of this project, including:

- Training county personnel in procedures and technology, as well as providing other state-sponsored technical support as required by the Help America Vote Act of 2002 (Section 303 (a)(1)(A)(vii).

- Continuing use of the joint county-Secretary of State advisory committee as a venue for dialogue, information-sharing and problem-solving.

- Maintaining processes established during the interim enhancements efforts to include all counties in notification and discussion of planned changes and to allow input into key project decisions

Incentives

The state will emphasize the positive operational and functional benefits of a statewide voter registration database, including:

- Removing ineligible or nonexistent voter files from local EMSs quickly by providing counties with the ability to assign voters a unique identifier that positively identifies voters statewide. This should result in savings to a county when it no longer incurs the cost of printing and mailing voter education materials (e.g. the sample ballot) to voters who have moved, died or otherwise become ineligible during the four-year cycle when those voters remain on the voter files as "active voters." California has an extremely mobile population, with an estimated 20 percent of residents moving annually, so the list of "active voters" can quickly become outdated.

- This functional capability will also help reduce the size of the "inactive voter file" being maintained by counties. An estimated 5 million records are maintained locally for inactive voters - those who have not voted in two consecutive general elections for federal office. "Inactive voters" are nonetheless "eligible," so planning for an election must currently include the contingency of accommodating these voters.

- Reducing the local cost of list maintenance efforts by relying on a National Change of Address program employed by the state.

- Improving the accuracy of voter files, which reduces the risks associated with conducting an election (e.g. failing to print an adequate supply of ballots) and protects the integrity of the electoral process.

- Should it become necessary to migrate a county from its existing EMS, the county would benefit from improved administration of elections by establishing a more sophisticated local EMS with automated, labor-saving features (e.g. automated precincting and ballot styles).

Monetary

At least $264 million in HAVA funds are earmarked specifically and exclusively for Title III compliance, including establishing a statewide voter registration list. Those funds are intended to offset the cost of not just the statewide voter registration list mandate, but also to upgrade voting systems and numerous other new federal requirements. The implications of US Department of Justice, the designated entity responsible for HAVA enforcement, has informed the Secretary of State that the effort to meet the statewide voter registration list requirement is a pre-eminent concern and the requirement should receive its appropriate share of resources.

The Secretary of State has included in the plans for this project sufficient funding to support the direct expenses of the counties in modifying or replacing their Election Management Systems to meet the requirements of the VoteCal system. The California Secretary of State is responsible for allocating HAVA funds and is prepared to withhold county funding for other HAVA requirements, if necessary, to ensure compliance.

Legal

The mandates for HAVA compliance are clear and the Secretary of State is responsible for ensuring that California complies with the law. California's compliance with federal law is contingent upon county compliance; California is prepared to take all actions necessary to compel county compliance under the law if necessary.

Regulations that articulate the counties' operational and procedural requirements will be promulgated. Included in those regulations will be the requirement for a county to certify its compliance with regulatory and statutory requirements. This will provide the state with a further legal avenue to ensure compliance.

7.2.2 Risk Identification

Risks for the VoteCal project were identified through the use of project team brainstorming, historical information, County workshops, County Advisory Committee meeting discussions, and initial vendor information. The following risk areas were identified:

- Project Management
  - Stakeholder Participation
  - Governance
  - Staffing
  - Schedule
- Financial Risks
  - Cost
- Technology Risks
  - Technical
  - Data Conversion
- Change Management/ Operational Risk
  - Internal
  - External

As new risks are identified during the life of the project, they will be fit into these categories or new categories as appropriate. The Project Management Team will meet bi-weekly to review new risk assessments as well as ongoing risk efforts to:

- evaluate and determine the risk exposure and severity,
- identify appropriate action to avoid or mitigate the risk, and
- when appropriate, elevate the risk assessment and response to the Project Director or Steering Committee

The Project Management Team will meet with the System Integration Vendor Project Manager, IPOC, and IV&V vendor to review and modify the Project Risk Management Plan at the beginning of each project stage.

7.2.3 Risk Analysis and Quantification

Project risks will be tracked and analyzed on an ongoing basis, and discussed as part of regular project management meetings. Risks will be analyzed based on the type of risk, probability of the risk occurring, the ability to mitigate the risk and the potential effect of the risk.

The section below describes the relevant factors that will be evaluated in order to determine the level of severity of the risk and what priority should be assigned to each risk.

	HIGH	MEDIUM	LOW
HIGH	*High*	*High*	*Medium*
MEDIUM	*High*	*Medium*	*Low*
LOW	*Medium*	*Low*	*Low*

	HIGH	MEDIUM	LOW
HIGH	***High***	***High***	*Medium*
MEDIUM	***High***	*Medium*	*Low*
LOW	*Medium*	*Low*	*Low*

7.2.4 Risk Prioritization

Given that this is a project of high criticality, risk handling will be based on Risk Severity and will conform to the following guidelines:

- **Low Risk Severity-** Risk assessment and management will generally be handled by the Project Management Team. The Project Management Team may choose to escalate the Risk handling to the Project Director if the situation warrants.

- **Medium Risk Severity-** After initial assessment, the Project Management Team will escalate the risk to the Project Director and Project Executive Steering Committee with a recommendation for mitigation of the risk.
- **High Risk Severity-** The Project Executive Steering Committee will inform the Department of Finance within 15 days of determination that the risk qualifies as High Severity.

Based on the current risk analysis, each risk has been prioritized and ranked. Those risks with high priority will receive a greater degree of attention from the project team and resources. Low-priority risks will be monitored on a regular basis. Based on the risk analysis and quantification completed (See earlier Risk Management Worksheet), the following high preliminary risks have been identified in priority order:

- Technology – Technical
  - Inability for some existing county systems to connect to the middleware infrastructure in an effective manner
  - Complex architecture
- Project Management – Schedule
  - County vendor inability to implement necessary changes in order to meet project timeline
- Technology – Data Conversion
  - Data quality and purification
- Project Management – Staffing
  - Access to skilled County IT workers

7.2.5 Risk Response

As the project proceeds and risk events occur, appropriate risk response actions will be implemented. Preventative and contingency measures have been identified for each risk in the risk management worksheet.

7.2.6 Risk Acceptance

SOS accepts the risks identified in the Risk Management Worksheet.

7.2.7 Risk Mitigation

Preventive measures will be taken in each of the risk areas to mitigate the chances of risk occurrence. These measures are identified in the risk management worksheet. As new risks are identified throughout the project life cycle, appropriate preventive measures will be developed. Key risk mitigation strategies include advanced planning related to anticipated resources, contracting for project oversight services early in the

project life cycle, ensuring the project schedule takes into account elections cycles, and ensuring executive involvement and support for the project.

7.2.8 Risk Sharing

Efforts to share risks will be set in place by contracting with a reputable and competent integration vendor to develop and implement the solution. Service-level agreements and other contractual stipulations will be established to share the risk of the project as much as is appropriate.

7.3 Risk Response and Control

7.3.1 Risk Tracking

As stated above, the solution vendor will be required to complete a full Risk Assessment and Risk Management Plan as one of its initial deliverables. The Plan shall include a system for tracking identified risks through all phases of the project.

The risk tracking system will include a database tool that:

- Assigns a unique number to each risk
- Tracks the assigned ratings, as well as efforts to mitigate the risk
- Will provide the capability to review and report on risks to the rest of the Project Team

The VoteCal project team will briefly meet each morning to review the ongoing status of the project, the tasks and assignments of the day, as well as identifying any risks on the horizon.

The Project Management Team will meet bi-weekly to review the Risk Plan and ongoing efforts to mitigate risk, as well as to assess any new risks identified.

The Project Steering Committee will meet weekly to review the ongoing project status. Risk assessment and management will be a permanent agenda item with discussion to be led by the SOS Project Manager.

The SOS Project Manager and the project team shall have authority to take action to mitigate risks that are determined to have low severity. Medium and High severity risks must be escalated to the Project Director and/or Executive Steering Committee. For High severity risk, notice will also be provided to the Department of Finance.

7.3.2 Risk Control

Risk control is necessary to help prevent failure on a project. The project team will ensure the Risk Management Plan is executed so that it can respond to risk events before they become serious problems. As risk events occur, the project team will

implement the appropriate contingency plans to ensure the success of the project. The Risk Management Plan will be updated as anticipated risk events occur or are surpassed, and as actual risk events are evaluated and resolved.

8.0 Economic Analysis Worksheets

The VoteCal Economic Analysis Worksheets are in a separate Microsoft Excel workbook. Included in this workbook are the following worksheets:

- Standard Department of Finance Summary Worksheets
  - EXIS – Existing System/Baseline Cost Worksheet
  - Alt (P) – Proposed Alternative, Hybrid Voter Registration System
  - Alt (1) – Alternative #1, Voter Registration Front-End
  - SUM3 – Economic Analysis Summary
  - FUND – Project Funding Plan & Adjustments, Savings, and Revenues Worksheet
- VoteCal Detailed Worksheets
  - IT Costs Alt P – additional details and costs of proposed alternative in similar format to Alt (P)
  - IT Costs Alt 1 – additional details and costs of alternative #1 in similar format to Alt (1)
  - SI Costs Alt P – detailed system integrator costs for proposed alternative
  - SI Costs Alt 1 – detailed system integrator costs for alternative #1
  - SOS Staff Alt P – detailed SOS staffing requirements for proposed alternative
  - SOS Staff Alt 1 – detailed SOS staffing requirements for alternative #1
  - Interface Costs – identification and costs of required State agency interfaces
  - Space Costs – identification and costs of office space and equipment for VoteCal vendor and SOS staff
  - Adv Cmt Costs – detailed travel costs for Stakeholder Advisory Committee participants
  - Elections Exist – detailed existing Elections Division costs for Calvoter and overall
  - IT Costs Exist – detailed existing technology and IT staff costs for Calvoter

Each VoteCal detailed worksheet is linked and together they feed the appropriate standard DOF summary worksheets. All worksheets contain source information as well as assumptions that have been used to determine specific costs and cost items.