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A Public Consulting Group Company

State of California

Governor's Office of Emergency Services

Response Information Management System (RIMS) Replacement

Feasibility Study Report

November 7, 2008

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Modifications to the FSR

Revision History	Date	Description	Creator
V 1.0	10/31/08	Final	Eclipse Solutions
V 2.0	11/24/08	Revisions following DOF Meeting	Eclipse Solutions

1. Project Approval Transmittal

Information Technology Project Request **Feasibility Study Report** **Executive Approval Transmittal**	

Department Name		
Office of Emergency Services		
Project Title (maximum of 75 characters)		
Response Information Management System (RIMS) Replacement FSR		
Project Acronym	***Department Priority***	***Agency Priority***
RIMS Replacement FSR		

Approval Signatures

California's Office of Emergency Services (OES) is submitting the attached Feasibility Study Report (FSR) in support of our request for the Department of Finance's approval to undertake this project.

The Agency Information Officer certifies 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).

OES has reviewed and agrees with the information in the attached Feasibility Study Report.

Chief Information Officer		***Date Signed***
Susan P Plantz		11/6/08
Printed name:	Sue Plantz	
Budget Officer		***Date Signed***
		11/7/08
Printed name:	Peggy Okabayashi	
OES Director		***Date Signed***
Thomas E McCarthy Jr		11/7/08
Printed name:	Henry Renteria	

2. Information Technology Project Summary Package

2.1. Section A: Executive Summary

1.	Submittal Date	10/31/08

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

			Estimated Project Dates	
3.	Project Title	Response Information Management System (RIMS) Replacement FSR	Start	End
	Project Acronym	RIMS Replacement FSR	06/2010	05/2011

4.	Submitting Department	Office of Emergency Services
5.	Reporting Agency	

6.	Project Objectives
	The objective of this project is to improve California's coordination and communication in order to protect public safety in the event of an emergency/disaster. This is to be accomplished by streamlining OES RIMS operations with a complete emergency incident management system that increasing situational awareness and resource management. To support this primary objective, the following additional objectives exist: • Facilitate the assimilation of information from a variety of sources into a central view to improve State level Intelligence for the overall emergency/disasters to support decisions regarding public safety • Build business rules to support SEMS escalation decision points to streamline information flow and improve timeliness of situational awareness • Reduce duplicate data entry of Local Government to provide situational awareness and request resources by: o Integrating to established Local Government systems o Establishing a framework to integrate to other systems

7.	Major Milestones	Est. Completion Date
	FSR project approval	01/2009
	Requirement & RFP	06/2009
	Procurement	03/2010
	Development and Implementation	02/2011
	Final Acceptance	03/2011
	Approved Post Implementation Evaluation Report (PIER)	06/2011

6.	Project Objectives
	o Increase familiarity with the system by: o Providing a system that can be used to manage local events o Provide a tool that supports daily functions such as duty logs o Provide mobile access so that event information can be quickly updated from the field

7.	Major Milestones	Est. Completion Date

8.	Proposed Solution
	The solution is anticipated to be a combination of customized integration with a commercial product solution. OES will procure the services of a vendor who will be responsible for providing the software and all services required to design, develop, implement and support the RIMS solution. In addition to providing the software and all implementation and support activities, the vendor will be responsible for the following services: • Project Management • Requirements Finalization and Traceability Business Process Change Management • Interface Development • Support for User Acceptance Testing (UAT) – The vendor will support the OES UAT efforts by ensuring appropriate testing scripts, data, and processes while responding as needed to UAT results. • Training of OES Business and Technical Staff Knowledge Transfer including documentation • Implementation and Deployment • Post-Implementation/Warranty Support

Key Deliverables	
Analysis	**09/2009**
Programming	**11/2010**
Testing	**01/2011**
Training	**11/2010**
Implementation	**02/2012**

2.2. Section B: Project Contacts

Project #	
Doc. Type	**FSR**

Executive Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
OES Director	Henry	Renteria	**916**	**845-8510**				Henry.Renteria@oes.ca.gov
Budget Officer	Peggy	Okabayashi	916	845-8319				Peggy.Okabayashi@oes.ca.gov
CIO	Sue	Plantz	916	845-8552				Sue.Platz@oes.ca.gov
Project Sponsor	Tom	Maruyama	916	845-8335				Tom.Maruyama@oes.ca.gov
Direct Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Doc. prepared by	Eclipse Solutions		916	565-8090				
Primary contact	Lisa	Howard	916	565-8090				Lisa.Howard@eclipsesolutions.com
Project manager	Lisa	Howard	916	565-8090				Lisa.Howard@eclipsesolutions.com

2.3. Section C: Project Relevance to State and/or Departmental Plans

1.	**What is the date of your current Operational Recovery Plan (ORP)?**	**Date**	**10/2007**
2.	**What is the date of your current Agency Information Management Strategy (AIMS)?**	**Date**	**07/2008**
3.	**For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.**	**Doc.**	**Not in AIMS**
		Page #	

Project #	
Doc. Type	**FSR**

		Yes	**No**
4.	**Is the project reportable to control agencies?**	**X**	

If YES, check all that apply:	
X	• **The project involves a budget action.**
	• **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.**
	• **The project involves the acquisition of microcomputer commodities and the agency does not have an approved Workgroup Computing Policy.**
X	• **The estimated total development and acquisition cost exceeds the departmental cost threshold.**
X	• **The project meets a condition previously imposed by Finance.**

2.4. Section D: Budget Information

Budget augmentation required?		
	No	X
	Yes	

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

FY 08/09	FY 09/10	FY 10/11	FY 11/12

PROJECT COSTS

1.	Fiscal Year	2008/09	2009/10	2010/11	2011/12	TOTAL
2.	One-time cost	$77,603	$308,081	$1,293,584	$0	$1,679,268
3.	Continuing costs	$0	$0	$0	$555,088	$555,088
4.	TOTAL PROJECT BUDGET	$77,603	$308,081	$1,293,584	$555,088	$2,234,355

SOURCES OF FUNDING

5.	General Fund	$0	$0	$0	$0	$0
6.	Redirection	$10,553	$66,701	$155,034	$555,088	$787,376
7.	Reimbursements	$0	$0	$0	$0	$0
8.	Federal funds	$0	$0	$0	$0	$0
9.	Special funds	$0	$0	$0	$0	$0
10.	Grant funds	$67,050	$241,380	$1,138,550	$0	$1,446,980
11.	Other funds	$0	$0	$0	$0	$0
12.	PROJECT BUDGET	$77,603	$308,081	$1,293,584	$555,088	$2,234,355

PROJECT FINANCIAL BENEFITS

13.	Cost savings/avoidances	($77,603)	($308,081)	($1,293,584)	$79,000	($1,600,268)
14.	Revenue increase	-0-	-0-	-0-	-0-	-0-

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

2.5. Section E: Vendor Project Budget

Project #	
Doc. Type	**FSR**

Vendor cost for FSR development (if applicable)	**$198,440**
Vendor name	**Eclipse Solutions, Inc.**

VENDOR PROJECT BUDGET

1.	Fiscal Year	2008/09	2009/10	2010/11	2011/12	TOTAL
2.	Primary Vendor Budget	$0	$0	$586,850	$0	$586,850
3.	IPO budget			$26,820		$26,820
4.	IV&V budget	$0	$40,230	$40,230	$0	$80,460
5.	State Team Contract Services Support Budget	$67,050	$201,150	$454,450	$0	$722,650
6.	Other budget	$0	$0	$	$0	
7.	TOTAL VENDOR BUDGET	$67,050	$241,380	$1,108,350	$0	$1,416,780

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

PRIMARY VENDOR HISTORY SPECIFIC TO THIS PROJECT

8.	Primary vendor	
9.	Contract start date	
10.	Contract end date (projected)	
11.	Amount	$

PRIMARY VENDOR CONTACTS

	Vendor	First Name	Last Name	Area Code	Phone #	Ext.	Area Code	Fax #	E-mail
12.									
13.									
14.									

2.6. Section F: Risk Management Plan

Project #	
Doc. Type	**FSR**

RISK ASSESSMENT

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

General Comment(s)
Refer to Section 7, Risk Management Plan for a detailed description of the Risk Management Plan and the identified risks.

3. Business Case

The Governors Office of Emergency Services (OES) exists to protect public safety when an emergency/disaster grows beyond the capacity of Local government to address. Expensive, key limited resources, such as Firehawk helicopters, may be called upon by OES in response to an emergency/disaster and must be strategically applied for maximum impact on the emergency/disaster to protect life, property and the environment. Real time flow of emergency/disaster information is crucial in order to effectively perform situational analysis and call upon critical State, inter-State, and Federal level resources for the greatest public safety.

California's Standardized Emergency Management System (SEMS), requires that each state agency and/or local government (City, County, or Special District) involved in providing response or recovery services during and/or following a declared emergency/disaster prepare an After Action Report (AAR). In addition, the federal National Incident Management System (NIMS) requires states to prepare an AAR and Corrective Action Report (CAR) following a disaster or federally funded exercise. The AAR reviews public safety response and disaster recovery activities as well as suggested corrective actions.

Between 2003 and 2007, OES prepared several AARs echoing challenges with the existing Response Information Management System (RIMS). The following are a few challenges noted within the AARs:

- 2003 Southern California Fires AAR:
  - Staff had problems with the RIMS forms 'Timing out' and losing large amounts of data
  - RIMS Reliability: Problems with completing 'Duty Logs' and 'Shelter Status Reports'. Using RIMS required staff to report using fax and telephones.
- 2004 Golden Guardian AAR
  - Review/update RIMS for efficiency of use and adopt appropriate modifications to its system and forms. Provide user interface training on RIMS and applicable RIMS forms.
- 2005 Golden Guardian AAR
  - There is a heavy reliance on computer technology for reporting and distribution of information, including resource requests. When this technology works it makes things very convenient and efficient, but if the systems are down there is no apparent back-up method for carrying out the tasks. During the exercise there were technical problems that brought processes to a halt
  - There is no consistent method or automatic formatting for updating of existing RIMS reports. When viewing existing reports, the new

information can be on top, bottom, asterisked and old information may remain prominent, or may sometimes be removed completely. Each RIMS user decides and used their own method allowing confusion by readers of the report. During the exercise an important hospital incident was missed because of this.

- State Agency RIMS reports do not fall into the SEMS levels hierarchy. When viewing RIMS and trying to locate and evaluate situation, this makes deciphering which report is for your level and location (SOC, Inland REOC, Southern REOC, Coastal REOC) extremely difficult and time consuming.

- 2007 Southern California Wildfires AAR
  - The current RIMS system is inadequate for meeting the demands of today's emergency managers. RIMS is not user friendly, does not allow useful and flexible report generation, does not track resources, and does not allow input and tracking of federal and state-to-state requests.
  - Multiple points of information gathering working outside established response networks/systems resulted in a great deal of unnecessary time commitment by staff that were already over-committed
  - Inability to track emergency resources affected the state's ability to re-deploy emergency equipment

The 2007 Southern California Fires State AAR to the Governor's office noted the following recommended corrective actions:

- The RIMS System should be replaced or enhanced with a program that is intuitive, easy to navigate, and meets the needs of emergency management
- A Feasibility Study Report (FSR) will need to be written to document the results of the problem or opportunity that may be addressed using information technology and lead to the development of a state-wide data management system that will meet the current needs and demands

As a follow up to the corrective action recommendation, OES initiated a Feasibility Study Report (FSR) process to explore a complete emergency incident management system that increases situational awareness and resource management in order to improve California's public safety in the event of an emergency/disaster.

This business case provides background information on the Governor's Office of Emergency Services (OES) business program(s) and describes its need for accurate and readily accessible information so that it can mitigate against, prepare for, respond to, and recover from the effects of an emergency/disaster.

This section also identifies the fundamental business problems that challenge OES with accomplishing its mission and promotes the need to examine the

usage of other available software solution to accomplish the viable tracking of incidents/events surrounding emergencies and/or disasters.

3.1. Business Program Background

Under the authority of the Emergency Services Act, OES mitigates, responds to, and aids the response and recovery from the effects of emergencies that threaten lives, property, and the environment. In support of this scope, OES:

- Constantly monitors the occurrence of incidents within California in order to maintain a level of situational awareness and preparation for emergency response and mitigation efforts
- Serves as the primary point of communication, organization, and facilitation of resource dispatching and situational reporting for hundreds of individuals responding to a State level activation of an emergency in the State of California
- Maintains a comprehensive emergency management communications system linking State, local, and Federal agencies
- Provides comprehensive information to the public regarding disasters and emergencies
- Manages the California State Warning Center, mutual aid systems, and allocations of State agency resources
- Manages the disaster recovery process
- Conducts hazard assessments, and promotes mitigation measures by public agencies, the private sector, and the residents of California
- Provides policy guidance to the Governor on emergency management issues and disaster response strategies and represents the Governor during emergency operations

OES operates under the following mission:

> *'OES reduces vulnerability to hazards and crimes through emergency management and criminal justice to ensure a safe and resilient California'* [1]

OES accomplishes this mission through programs and outreach efforts that assist local and state government in their emergency management efforts. OES activities during an emergency can be categorized in the following four phases of emergency management.

[1] Mission found at 'Governors Office of Emergency Services Five Year Strategic Plan'

Table 1: Phases of Emergency Management[2]

Phase	Phase Description
Preparedness	Preparedness involves activities undertaken in advance of an emergency to develop and enhance response, recovery and mitigation activities; and involves actions to establish and sustain levels of operational capacity necessary to execute a full range of emergency operations
Response	The Response phase includes pre-impact, immediate impact and sustained response activities, which are described in more detail below. Response may also include short-term recovery activities to address the immediate needs of those impacted by the emergency, and short-term mitigation activities to ensure an imminent or existing emergency, and its impact does not spread beyond existing boundaries
Recovery	Recovery programs and activities provide relief to individuals and communities stricken by an emergency and restore public services to a state of normalcy. Recovery efforts include damage assessments and the actions necessary to return health and safety systems (e.g., water, electricity, and food) and services (e.g., acute health care and law enforcement) to a community's minimum operating standards
Mitigation	Mitigation activities include any sustained actions taken to reduce or eliminate the long-term risk to human life and property from natural and human-caused hazards by strengthening the resilience of California's infrastructure. This can be accomplished through preparedness measures that reduce or eliminate hazards and vulnerabilities and by taking steps to lessen the impact of events before they occur

Approximately 350[3] Emergency Operation Center (EOC) activations occur and are managed at the local level, within a city or county per year. When an incident is larger than can be addressed by local and county resources, the incident is escalated to the State and may result in an activation of a Regional Emergency Operation Center (REOC) and a State Operation Center (SOC) in order to draw on State resources. OES handles an average of 12 State level activations a year for California such as the 2008 California Wildfires which impacted over 11 counties in the State and required support from across the nation. During a State level emergency activation, OES plays a crucial role in the coordination of information and resources for efficient and effective emergency response.

The Response Information Management System (RIMS) is a critical tool supporting communication and resource coordination during the response phase of an emergency and into recovery. The system is intended to be used as the primary method to document all communication and coordination occurring through immediate response. The system should support real-time centralized analysis of emergency information to ensure resources are deployed efficiently and effectively to protect public safety.

[2] California Emergency Plan 2008 – 07-21-08 Draft

[3] Based on six activations per county per year

3.1.1. Business Process Description

OES operates under the direction of the SEMS for coordinating state and local emergency response in California. SEMS incorporates the use of the Incident Command System (ICS), the Master Mutual Aid Agreement (MMAA), existing mutual assistance systems, the Operational Area concept, and multi-agency or inter-agency coordination.[4] SEMS defines a multi-level emergency response organization that facilitates the flow of emergency information and resources. SEMS defines effective management of multi-agency and multi-jurisdictional emergencies in California by unifying all elements of California's Emergency Management Community into a single integrated system and standardizing key elements of the emergency management system. The use of SEMS is required for State Agencies and as a condition for local government agencies seeking eligibility for State funding of response-related personnel costs.

The first points of contact for an Incident/Event are customarily those individuals in the 'field', which could be local City staff and/or local agencies (such as Fire or Law Enforcement. In order to preserve public safety, it is imperative that lines of communication are sustained and remain open so that critical intelligence is gathered and the appropriate resources can be dispatched. Oftentimes, there are thousands of individuals responding to emergencies and in order to provide coordinated, seamless response activities, it is essential that OES maintains relationships with all controlling areas and agencies. In addition to the SEMS hierarchy for emergency information flow, OES may have direct contact from field level through other agencies. OES is constantly monitoring situational awareness and resource deployment in order to pre-determine State, Local Government, Other Agencies, and Field needs. To assist with the emergency response flow understanding, the following figure provides an example of a simplistic SEMS flow of response from the lowest level (Field Level) to the highest level (State). This flow is complicated during an actual event by the addition of State level interaction with other agencies and reporting from various agencies resources deployed in the field.

[4] California Emergency Plan 2008 – 07-21-08 Draft

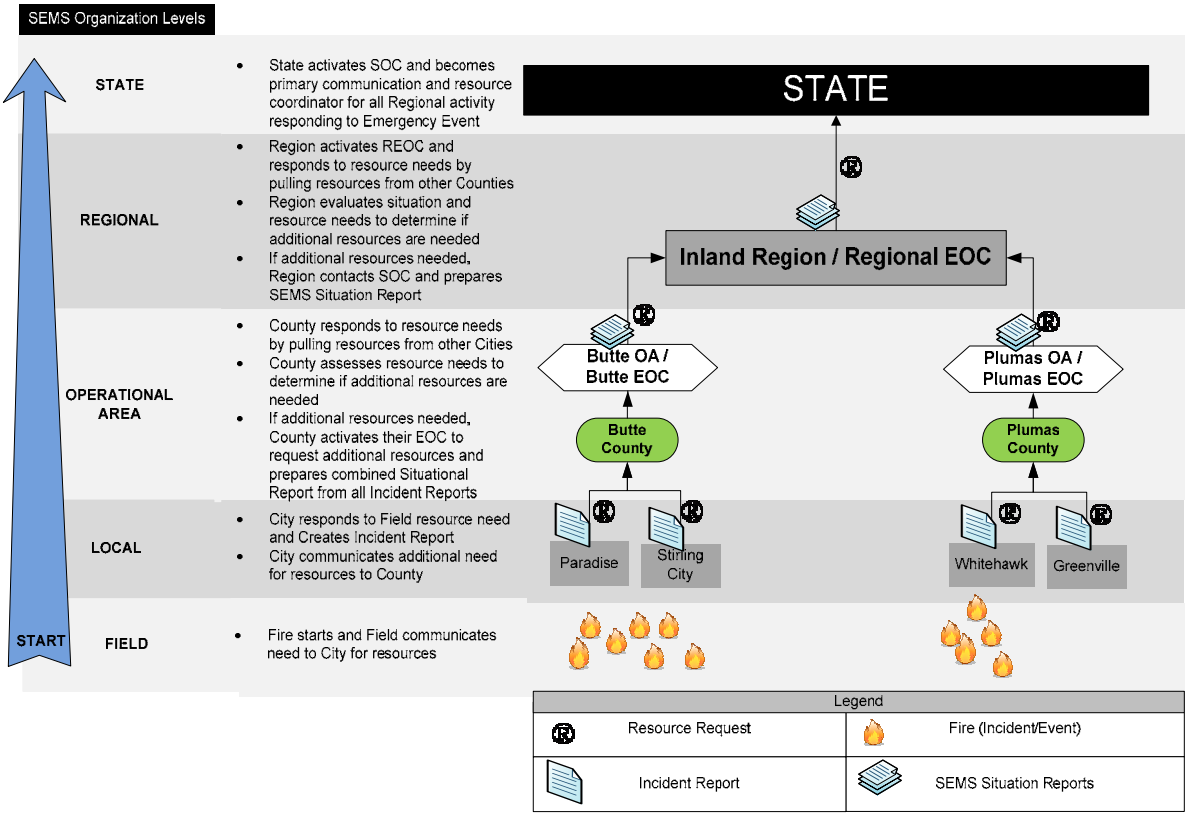


Figure 1: Emergency Response Flow Example

Although there are many direct activities and coordination efforts that are occurring during an event, there are three key functions that occur during a response:

- Emergency Activation
- Situational Reporting
- Resource Management

All three work in unison and become vital to the faultless activity that has to occur during an emergency response to ensure preservation of life, property, and the environment.

Emergency Activation

During an emergency, time and ease of communication is of critical importance. Information needs to be gathered and shared and resources garnered quickly to contain the impact of the emergency. During a State level activation, hundreds of people representing different organizations with different capabilities need to contribute to as well as benefit from a coordinated, coherent situation status. OES coordinates the incident response activities, calling upon other State entities such as The Department of Public Health (CDPH), Cal Fire or The California National Guard to marshal resources necessary to immediately respond to public

safety needs. It is critical for OES to provide seamless communication with other departments and agencies to ensure maximum effect with minimum overlap and confusion. Ready access to accurate, informative and timely information is critical as significant resources are often deployed and the deployment and tracking of the right resources at the right time directly impacts the protection of life and property.

SEMS outlines the flow-through nature of SEMS activation requirements. As an incident grows, activation of an Operational Area (OA) Emergency Operation Center (EOC) may trigger activation of the Regional EOC (REOC) which, in turn, may trigger activation of the State level EOC, known as the State Operations Center (SOC). Cities and State Departments such as CDPH also have EOCs that can activate depending on the type and scale of incident.

In some instances, such as agricultural emergencies or drought, a local emergency may be declared or proclaimed without the need for EOC activation.[5]

Situational Reporting and Resource Management are integral activities provided by OES. Resources may be prepared and deployed based on a discrete resource request or in response to situation awareness about an expanding disaster. The most direct communication path between departments takes place in the EOCs based on information received from the field where needs are recognized and resources applied. Figure 1 displays the flow of situational reporting. OES staff and executive management must have broad situational awareness across jurisdictions and some method of 'alert' when situations become critical in order to coordinate effective response with minimum overlapping and gaps.

Situational Reporting

OES has an operational responsibility to keep all stakeholders informed of incidents and events occurring across the State on a daily basis. In order to accomplish this, OES is constantly gathering and assessing situational information from Local Governments and other sources. OES then issues daily reports (and Flash reports when necessary) to a wide area of stakeholders and other key state agencies.

SEMS also requires activated Operational Areas (OAs) to provide situation and incident reports to the State. In many emergencies such as the 2008 wildfires, situation reports are compiled by local government OA's using information reported from field staff at the incident site by radio, mobile data terminals, computer aided dispatch systems and phone. Cities and other local governments report their situations to their local OAs through a variety of means, including but not limited too, verbal, email, law enforcement systems and locally administered EOC software. In the case of larger counties that manage incidents with their own EOC software, the OA must then manually compile all of the

[5] Standardized Emergency Management System (SEMS) Guidelines - SEMS Guidelines

situation reports and manually transfer the request into RIMS in order to provide the State required notification. In smaller rural counties, the OA may need to report into RIMS directly from the field. If RIMS access is not stable or the information entered by the OA is lost, there is not usually time to re-start the request and the information is communicated informally by phone.

The intent of RIMS is to support situational awareness, understanding of what is happening including the impact, risks and applied resources for both those stakeholders involved in a response as well as those not directly impacted at the moment such as nearby counties that need to stay abreast of a situation for their own preparedness.

Types of Situational Status Reports are:

- Verbal Communication – occurring at the lowest Field level as soon as an emergency occurs
- Incident Report – Occurring at the City/County level. The Incident Report is developed based upon the verbal communication coming in from the field. It is used at all levels to develop and document information and is used at all levels to document event activities.
- SEMS Situational Report – The Situational Report is created by merging the information coming in from each of the incident reports for Cities/Counties within the same Region. The process for developing the Situation Report is often time consuming, requiring manual entry to move the information from a local system into RIMS which can take local staff away from the emergency response at hand.
- Emergency Event Report – Usually created by OES Warning Center or Other OES personnel. There is only one Emergency Event Report per Emergency Event. This is the initial report that sets off activities for an event.
- State Agency Situation Report – The Agency Situational Report will be completed by any State Agency involved in State Emergency activities. Information in these reports will also be merged into the State Level Situational Report and Governor's Report.
- Governors Report – The Governor's Report includes a compilation of all Situation Reports being submitted for every region throughout the event area. The process for developing the Governor's report includes extensive manual intervention (to determine which information to pull out of RIMS and from the Regions to share with the Governor and Public).

Resource Management

During an emergency/ disaster activation, OES coordinates all emergency response resource management between counties and with outside stakeholders including State departments and the California National Guard. OES may also coordinate resources to assist Local Government response when the State level EOC is not activated. A resource is considered a person, mechanical, or commodity need. Resource requests (also known as Mission Requests) are formally communicated up through the SEMS Operational Levels using RIMS. In addition, OES can self initiate the coordination of resources to any operational areas. The REOC will work with OA's by phone to clarify mission requests and determine how the need can be met. The REOC then creates Mission Tasks in RIMS for the State governmental organization that can fulfill the need. These Mission Task numbers authorize resources to be expended and are relied upon for allocation of any reimbursement of funds following the emergency/disaster. The formal mission request submission in RIMS may occur before, during or after the informal clarification of resources conversation depending on the incident and OA. Mission requests are usually tied to a reported incident. One incident can result in multiple mission requests for different resources.

The State is one of the five designated levels in the SEMS organization. OES manages State resources in response to emergency needs to the other levels; manages and coordinates mutual aide among mutual aide regions and between the regional level and state level, and serves as the coordination and communications link with the federal response system.[6]

- SOC Director (Management) – Implements the policy of the OES Director and appropriate government code. Coordinates the joint efforts of government agencies and public and private organizations functioning at the state level. Mages the state's Joint Information Center (JIC), and coordinates public information and public affairs activities between involved agencies through the Joint Information System (JIS). Ensures that SOC coordination and support is provided to incoming State, Federal, and other agency representatives.
- Operations – Coordinates the activities of various functional branches which may be activated at the SOC, which have an operational response role to support REOCs.
- Planning/Intelligence – Collects, evaluates, and disseminates information; develops the state level Situational Report, develops the SOC Action Plan in coordination with the other functions, and maintains documentation.

[6] Standardized Emergency Management Systems (SEMS) Guidelines

- Logistics – Procures and provides facilities, services, personnel, equipment, and materials to meet the needs of REOC requests to the SOC and to support SOC and REOC logistic activities.
- Finance/Administration – Administers SOC and State regional level purchasing authority, cost accounting and other financial activities and administrative tasks assigned to other functions.

The following is a graphical depiction of the multidisciplinary information flow through the SEMS organizational levels:

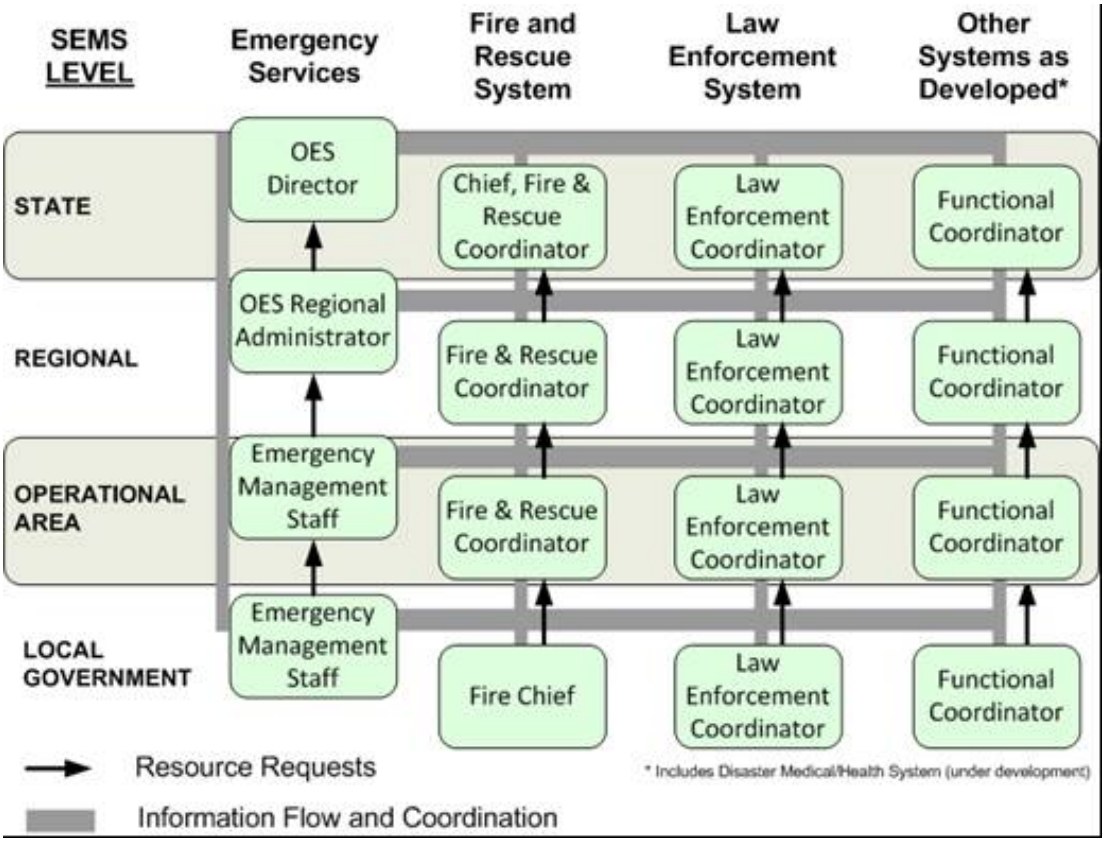


Figure 2: Discipline Specific Mutual Aid Flow

There are five SEMS organization levels ranging from the lowest level field – (often the first level of response) to the highest level State – (providing and coordinating additional resources for response). The basic flow of information through these levels is hierarchical in nature but during an actual event, information critical for decisions flows across disciplines as well as directly from the field. In addition to the disciplines depicted, the SEMS organizations need to communicate with the private sector and other state agencies. The SEMS Operational Levels are shown in Table 2.

Table 2: SEMS Operational Levels

SEMS Operation Level (highest to lowest)	Operation Level Description[7]
State	During an emergency, the State level of SEMS tasks and coordinates State Agency resources in response to the requests from the Regional Emergency Operational Centers (REOCs) and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The State level operates from the State Operation Center (SOC) and serves as the coordination and communication link between the State and the Federal disaster response system
Regional Three Regions	The regional level manages and coordinates information and resources among Operational Areas within the administrative and mutual aid regions. It is also an intermediary between Operational Areas and the State level. The regional level also coordinates overall State Agency support for emergency response activities. The emergency activities are coordinated through Regional Emergency Operation Centers (REOCs)
Mutual Aid Regions Six Regions	Mutual aid regions are established under the Emergency Services Act by the Governor, who with the advice of the State's Emergency Council, is authorized to divide the state into six mutual aid regions. The regions, numbered I-VI, have been created for the more effective application, administration, and coordination of mutual aid resources and other emergency related activities between the operational areas in the State's defined regions. Each Mutual aid region consists of a certain number of designated counties.
Operational Area 58 Counties	Under SEMS, the Operational Area (OA) means an intermediate level of the state's emergency management organization which encompasses the County and all political sub divisions located within the County (including special districts). The OA manages and/or coordinates information resources, and priorities among local governments within the operational area, and serves as the coordination and communication link between local government level and the regional level.
Local Government Within the 58 Counties	Cities, counties and special districts may operate formal EOCs to support and coordinate the overall emergency response and recovery activities within their jurisdiction. They have the primary responsibility for the protection of the health, lives, safety and property/resources of its residents
Field	The emergency response organizations that have direct control of resources and response functions at the site of an emergency. These organizations command response personnel and resources to carry out tactical decisions and activities within their jurisdiction.

[7] California Emergency Plan 2008 – 07-21-08 Draft

The five SEMS organization levels, together with tribal governments, the Federal Government and the private sector, represents all resources available within California which may be applied in the response and recovery phases.

Coordination of Activities

Key tools for the coordination of emergency response are the Emergency Operation Centers (EOCs). An EOC provides a centralized location for representatives from all impacted stakeholders to gather, monitor the event and coordinate response activities. Depending on the size of an event, EOCs may be activated at multiple SEMS levels. OES performs their coordination activities through the SOC; a centralized area reserved for commanding response and recovery activities during an activation. OES has organized California into three (3) Administrative Regions to support the operation of SEMS, the California Emergency Information Flow, Mutual Aid agreements, Fire and Rescue Mutual Aid, and Law Enforcement Mutual Aid. OES also has Fire and Law mutual aide regions that lend support to local needs through their respective system in coordination with the REOC and SOC. Pursuant to Government Code §8600, the three OES Administrative Regions (Inland, Coastal, and Southern) function out of REOCs to manage and coordinate information and resources among OAs within mutual aid regions[8]. Additionally, REOC's coordinate among the OAs and State Agencies for support during emergency mitigation, preparedness, response, and recovery activities. The Regions support 58 OAs in California. Each OA performs emergency operational support through EOCs. There are 58 + (plus) EOCs in California; one for each OA along with several cities and/or special districts operating their own EOC. The EOCs supply the support for Field levels of operation. The formal OES Support and Operational Structure are as follows:

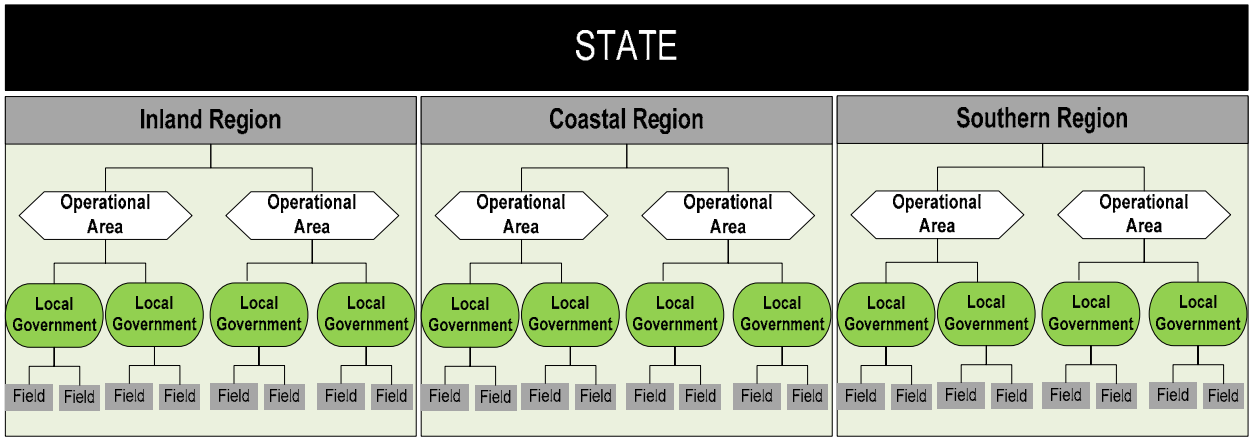


Figure 3: OES Support Structure Sample

[8] California Emergency Plan 2008 – 07-21-08 Draft

3.2. Business Problems and Opportunities

This section defines the most compelling problems that OES faces in operating within the key areas of emergency/disaster management; preparedness, response, recovery, and mitigation.

Independent analysis and discussions with stakeholders including program executives resulted in the identification of key business problems that are undermining the full achievement of OES' mission. These key problems, which when addressed represent opportunities to improve OES effectiveness, include:

1. **Local Government is unable to escalate critical, time sensitive information to the State in a traceable, efficient manner**

   The current RIMS application is not "user-friendly" for the large volume of diverse, periodic system users. As an emergency response information management tool, RIMS is not a daily operational system for the majority of users. Users collectively complain of being kicked out when trying to key critical information and difficultly locating reports that they previously submitted.

   During an emergency, people with the most critical information are working remotely and are unable to access and provide information in RIMS by mobile devices.

   Due to the user challenges, information entry into RIMS is often delayed and not near real-time. In an emergency, business is often conducted over the phone with delayed administrative entry into RIMS. Decisions made over the phone are difficult to trace and don't establish accountability for actions taken resulting in overlaps and gaps in response efforts.

   RIMS is not integrated with any of the systems currently used by local OAs. Escalation of information to the State requires users to manually translate the data from the local system into RIMS to comply with State reporting requirements.

   There are no self directed training modules available for users to familiarize themselves with RIMS when they need to use it. Users must call OES Information Technology to get system support exactly at the time they need to be focused on other matters to address the emergency at hand.

2. **During an Event, there is no common, web-based operational view to facilitate coordination and communication between SEMS Stakeholders**

   OES, OAs, and other stakeholders need to retain situational awareness as an incident grows or escalates in order to provide the appropriate level of assistance. RIMS is only used to report incidents and mission requests as required to the State. The system does not contain the history of an incident in one location so that the escalation can be traced for a more complete picture and responders can be more prepared.

   OES is constantly monitoring incidents throughout the State to examine an overall situational awareness to emergency preparation and response. During a rapidly escalating event, OES must anticipate the response needs prior to formal requests in order to secure and direct critical resources without delay. The information to complete an assessment of situation is not currently contained in RIMS.

3. **During an emergency, OES and other stakeholders do not have timely and secure access to the information necessary to coordinate efficient responses and to keep statewide stakeholders informed**

   The current RIMS architecture does not support complex, real time reporting needs for large events. A large event may impact multiple cities and counties, each of which will provide separate situation reports and mission requests. OES, Regions and Locals are unable to synthesize information across multiple incidents in an efficient manner. Significant manual effort is required to combine and coordinate reports and requests.

   There is no single accessible audit trail that captures all activities (end-to-end) from initial occurrence through complete event response. Significant manual effort is required to piece together the predecessors of an event to gain situation awareness. When public notification is required, multiple OES resources must scurry to pull and compile information thereby distracting the people that are trying to focus their attention on responding to the emergency.

   Reports and requests get dropped by RIMS and users have no tracking or notification of receipt resulting in frustration and potential delays to action. Follow-up calls are required to ensure information is received, distracting from the response at hand.

4. **During an event, the current systems and processes do not adequately support the timely and accurate communication of resource deployment decisions**

   OES administers limited resources critical to emergency response such as fire and military vehicles. The current system does not support the ability of OES to monitor the deployment of the resources to ensure they are applied most effectively to protect public safety. Cal Fire currently tracks the resources using RIMS and ROSS and needs to retain this capability. The Office of Homeland Security (OHS) is currently leading the effort to type resources following the FEMA 120 typing which will lead to additional resources needing to be tracked on a statewide level. During an activation, significant resources are deployed very quickly to contain the impact of the emergency. OES knowledge of the location, quantity and duration of resource commitment during response is critical to applying limited resources (e.g., people with specific skills and specialized equipment) most effectively to protect life, property, and environment.

3.3. Business Objectives

This section identifies the business objectives for a solution required to protect public safety.

- Facilitate the assimilation of information from a variety of sources into a central view to improve State level Intelligence for the overall emergency/disasters to support decisions regarding public safety
- Build business rules to support SEMS escalation decision points to streamline information flow and improve timeliness of situational awareness
- Reduce duplicate data entry of Local Government to provide situational awareness and request resources by:
  - Integrating to established Local Government systems
  - Establishing a framework to integrate to other systems
- Increase local familiarity of system by allowing Locals to use the State Solution to manage local events
- Provide mobile access so that event information can be quickly updated from the field
- Provide users formalized training including self directed training tools such that a user can understand how to use the system within 15 minutes
- Develop a process to geographically merge and share information with stakeholders pertinent to an event

- Provide a method to merge real time communication tools (e.g. email, text messaging, chat rooms) with shared system information
- Eliminate the need for disbursed contact lists and formats by providing a centralized repository for contact information
- Provide sequential situational view of events to support the need for seamless interaction during an event
- Provide a common operational view at any given time during an event
- Reduce time to collect end-to-end OES event response activity information for an audit
- Provide OES the ability to monitor and share resource planning and deployment information by providing users self-service visibility to resource requests, projections and deployments
- Provide OES with a mechanism to examine situations occurring throughout the state in order to anticipate pre-deployment of resources and/or response activities

3.4. Business Functional Requirements

The following table associates the functional requirements with the business objectives and problems.

Table 3: Business Functional Requirements

Problem	Objective	Functional Requirement
Local Government is unable to escalate critical, time sensitive information to the State in a traceable, efficient manner.	**FSR Objectives** Facilitate the assimilation of information from a variety of sources into a central view to improve State level Intelligence for the overall emergency/disasters to support decisions regarding public safety. Build business rules to support SEMS escalation decision points to streamline information flow and improve timeliness of situational awareness. Reduce duplicate data entry of Local Government to provide situational awareness and request resources by: • Integrating to established Local Government systems • Establishing a framework to integrate to other systems Increase local familiarity of system by allowing Locals to use the State Solution to manage local events. Provide mobile access so that event information can be quickly updated from the field.	**Information Capture and Management** The solution must support a single point of data entry, by providing users a means to either: • Electronically submit/update reports to the proposed OES system from their local systems using a standard protocol OR • Directly into the proposed OES system through a web based user interface The solution must provide a simple method for completing and submitting reports (incident, situation, mission requests, IDEs, PDAs, etc), such that information from reports can be consolidated into management reports. The solution must support the use of mobile, hand held devices access to update and/or view incidents/resources requests, situation reports, etc. The solution must allow for the collection of key information surrounding what is defined as an incident/Event for all SEMS levels of communication and will enable the tracking of multiple incidents in common locations as well as across the State. **Incident, Event and Response Management** The solution must have the ability to intelligently and electronically escalate an Incident if the initiating area needs the assistance of additional SEMS levels. The solution must support the ability to request and assign resources through all SEMS Levels of Operation.

Problem	Objective	Functional Requirement
	Provide users formalized training including self directed training tools such that a user can understand how to use the system within 15 minutes. Provide OES with a mechanism to examine situations occurring throughout the state in order to anticipate pre-deployment of resources and/or response activities.	The solution must track resource requests and how those request were met/fulfilled. The solution must map/link multiple incidents to one or more mission identifiers. The solution must be able to link a single resource assignment to multiple missions. The solution must allow for assignment (and re-assignment) of actions to a specific entity and/or stakeholder throughout the response process. The solution must provide the ability for information review and approval. The solution must track resource request and situation status The solution must track requests and any actions taken related to each request. **General** The solution must be user friendly, uncomplicated and intuitive. The solution must provide a simple, intuitive, role-based means to access and update information. The solution must provide self-serve training modules and comprehensive user help accessible through the proposed web-based system. The solution must assist users in finding information, by incorporating methods such as keyword searches, filtering, and drill-down capabilities. The solution must be able to export data from the proposed solution to other OES systems or standard Microsoft Office tools. The solution must incorporate state defined standard nomenclatures and protocols. The solution must comply with relevant federal and state regulations and guidelines.

Problem	Objective	Functional Requirement
		Security The solution must provide and maintain a role-based means to access and update information. The solution must secure unverified, confidential and personal information.
During an Event, there is no common, web-based operational view to facilitate coordination and communication between SEMS Stakeholders.	Develop a process to geographically merge and share information with stakeholders pertinent to an event. Provide a method to merge real time communication tools (e.g. email, text messaging, chat rooms) with shared system information. Eliminate the need for disbursed contact lists and formats by providing a centralized repository for contact information.	**Collaboration and Information Sharing** The solution must provide users "self-service" access to a common operational picture (operational centers activated, resource requests and situation status). The solution must provide the ability to quickly and efficiently access each area's Incidents and Resource requests and/or resources supplied. The solution must provide geographical views of open Incidents/Events. The solution must provide real time geographic depictions and maps (e.g. road closures, seismic, levee, resource assignments, etc.). The solution must provide a mechanism to apply situational intelligence to overall events and provide a depiction of that intelligence. **Communication** The solution must automatically generate electronic alerts, confirmations, assignments and notifications based on business rules (e.g. mission #s assigned, confirmation of information received, etc.). The solution must provide real-time methods of communication across operational areas (e.g. email, text messaging, etc.). **Contact Information** The solution must maintain contact information of all SEMS stakeholders. The solution must integrate contact information with communication methods such as email, text messaging, etc.

Problem	Objective	Functional Requirement
During an emergency, OES and other stakeholders do not have timely and secure access to the information necessary to coordinate efficient responses and to keep the statewide stakeholders informed.	Provide sequential situational view of events to support the need for seamless interaction during an event. Provide a common operational view at any given time during an event. Reduce time to collect end-to-end OES event response activity information for an audit.	**Reporting** The proposed solution must provide a highly functional, user-intuitive report generator that does not adversely affect transaction performance. The solution must facilitate users merging Situation Reports for all SEMS Operation Levels into an overall Event Situation Report. The solution must allow users to report on all data contained in the proposed system. The solution must produce standard SEMS/ICS reports (e.g. Situation Reports) or ad hoc reports/queries without impacting online transaction performance. The solution must allow dynamic content when generating reports/forms/letters. **Audit Trail** The solution must track and report actions occurring throughout the state on a daily basis (Warning center actions, duty logs, HAZMAT spill reports, etc.). The solution must allow warning center activities and logs to be linked to incident(s) and/or mission(s). The solution must capture and easily produce an audit trail of end-to-end reports and activities related to an event, organization, date, etc
During an event, the current systems and processes do not adequately support the timely and accurate communication of resource deployment decisions.	Provide OES the ability to monitor and share resource planning and deployment information by providing users self-service visibility to resource requests, projections and deployments.	**Resource Information** To facilitate response activities, the solution must capture statewide emergency response resource information using an agreed upon statewide standard format (e.g. FEMA 120 and OHS resource types). The solution must capture resource needs projections. The solution must provide visibility to all resource request and response actions taken, including resources deployed.

4. Baseline Analysis

4.1. Current Method

Government Code Section 8607 directs the OES, in coordination with all interested state agencies with designated response roles in the state emergency plan and interested local emergency management agencies, to establish by regulation the SEMS. The SEMS framework includes the ICS, multi-agency and inter-agency coordination, and the operational area concept. To support the need to provide an immediate, effective response to events, OES has incorporated use of information technology.

OES initially developed the RIMS application to improve its ability to respond, manage, and coordinate requests for resources, and collect, process, and disseminate information during and after an emergency/incident event. RIMS is the automation of SEMS and is NIMS compliant. RIMS currently provides the following key functions:

RIMS Current Functions	Description
Incident Logging / Tracking	Enables a City, Special District, and/or Operational Area to Log and Track an incident via text form with limited word processing functions.
Mission (Resource) Tasking	Enables Resource requesting and tracking (Mission Number Issuance) via text form with minimal resource typing and estimate of resource costing.
Incident / Escalation	Enables SEMS Levels of operation to escalate an incident to next level of mission response.
Event Creation	Enables the creation of an overall Event (umbrella of events) that links several incidents and situation reports around an emergency/disaster.
Incident / Event Reporting	Enables the manual compilation of primary reports such as Incident Reports, SEMS Situation Reports, Agency Situation Reports, and Emergency Event Report

Figure 4: High level RIMS Functions

Through the last 10 plus (+) years, RIMS has gone through a number of revisions and platform changes. This has created situational challenges that OES has had to address related to working in coordination with local response agencies and fulfilling State-level responsibilities. The evolution of RIMS is highlighted below:

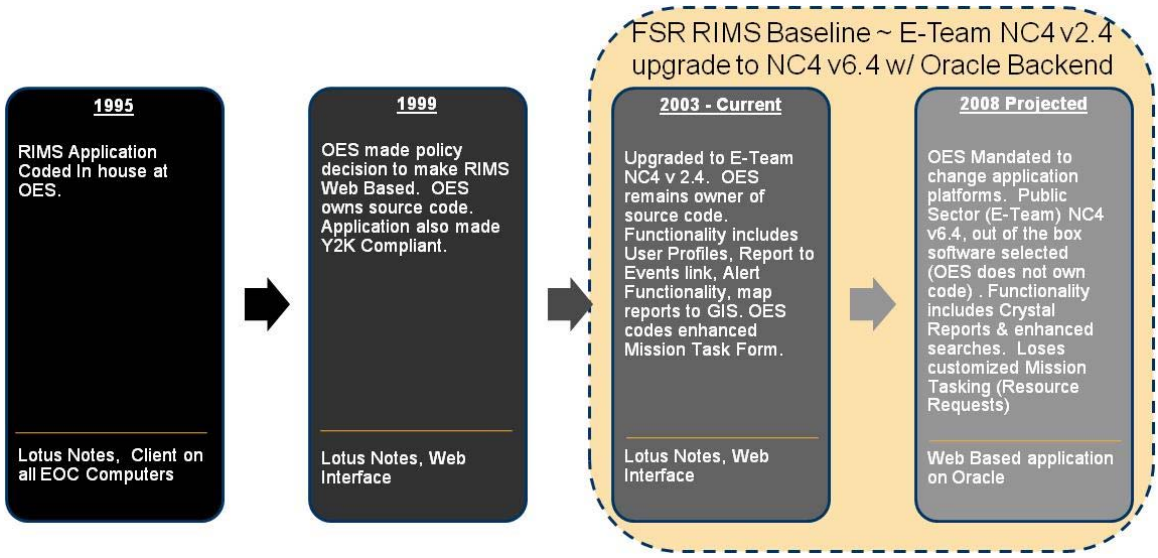


Figure 5: RIMS Application Evolution

- *1995* - RIMS was originally developed within OES through contracted resources as a Lotus Notes based application that had to be loaded onto each work station. RIMS became an integral part of OES's Information Management Strategic Plan and promoted consistent Regional interaction and training as the Region staff were direct reports to the EOCs (for OA/Local Governments). Key success factors included:
  - Upon initial implementation, RIMS was used statewide by Local Governments (Counties/Cities) as the source system for response management, resource requests, and reporting of incidents through activations into Events. Each Local Government purchased user licenses for the RIMS application
  - Statewide user groups existed to examine and manage needed changes to the RIMS application and OES operations
- *1999* - Toward 1999, OES made a policy decision to convert RIMS to a Web based application and no longer required individual licensing. The application continued to be customized; however, the changes were managed with less involvement from the statewide user group. The application continued to be the source system for statewide response activity for emergency/disasters.

- *2003 – Present* – In early 2003, OES purchased E Team (which is now owned by a company called NC4). Several upgrades had been completed to the standard E Team product. OES upgraded to version 2.4 of the product and remains the owner of the source code. OES continues to customize forms as needed by key resources (i.e. Fire Team, Law Enforcement, etc. Challenges included:
  - Several large Local Government entities (San Diego County, Los Angeles County, etc.) determined RIMS was not meeting their operational needs and began purchasing and/or developing their own solutions
  - A majority of resource requests and coordination continued to happen outside of the systems via telephone, e-mail, etc.
  - A decision was made to not renew the E Team maintenance and licensing contract due to lack of service provided to OES
- *2008 Projected* – OES is mandated by a Department of Finance (DOF) audit to change their Lotus Notes-based system to a more industry standard information processing platform. To respond to the platform change requirement, OES renewed the maintenance contract with NC4 and implemented the standard NC4 v6.4 application using Oracle Database 10g. Key operational changes related to the new application and platform includes:
  - New version of tool is Commercial-off-the-Shelf (COTS) software, and OES does not have the ability to customize the application. However, COTS carries some customization/configuration options for Forms, enhanced Security, and Crystal Report tool.
  - Some functionality was lost pertaining to Mission Tasking (Resource Requests) compared to the prior application
  - OES acquired additional servers for operability
  - OES entered into new maintenance and licensing agreements to keep the system running through the transition to a new system
  - The new version of NC4 software reflected in the economic analysis worksheets (EAWs) will address some of the stability concerns with the prior versions but will not inherently change the way information is entered into and extracted from the system. The user experience and satisfaction in this section is based on the 2.4 version.

4.1.1. Objectives of the Current Systems

The objective of OES' current system is to provide a highly accessible web-based application for real-time tracking of incidents, and escalation and monitoring of events via brief informative reports. The system also facilitates the submission of resource requests so that responding agencies that provide emergency resources can seek reimbursement.

4.1.2. Current System's Ability to Meet Program and Workload Requirements

Average turnaround time on a mission has been decreased since RIMS initial go-live in 1995. Prior to RIMS, average mission turnaround time was four to six hours. Much of this turnaround time is still dependent on verbal communication that is later followed up by entries into RIMS. The step of actually assigning a mission number that is tracked has improved response coordination

RIMS have approximately 4,500 users. At any given time, there are less than 250 active user connections. Unfortunately, E Team is on a server that also hosts the main OES website. During peak utilization, RIMS is often affected by limited bandwidth resources. This results in a poor user experience which deters local governments from utilizing RIMS during an event; precisely at the time when users should be fully engaged in incident response

4.1.3. Satisfaction with the Current System

The current RIMS system has limited basic information available for reporting about emergency events. Obtaining meaningful information requires arduous manual processes when time is of the essence. In addition, the system lacks key information needed during events such as shelter information, fire resource deployment, and other logistical details provided from organizations outside of OES.

There is significant dissatisfaction across all SEMS levels with the poor usability, stability and limited functionality of the system. Due to these limitations, there is a refusal by many of the local Operational Areas during an incident, to utilize the RIMS system beyond the OES' minimum requirements. Limitations of use mean that stakeholders not directly involved in an incident cannot rely on RIMS as a source of information and must call others to find out what is going on. OES and its stakeholders need a system that interfaces to and better facilitates resource coordination and communications with Local Governments and other State Agencies.

Agencies responsible for using RIMS feel that it is not intuitive and requires a lot of training. They see RIMS as a tedious application that lacks useful reporting and provides them with minimal support and timely information. Lack of effectiveness is compounded by the fact that RIMS is only used during

emergencies and is not part of their day-to-day operations. During an event, when local agencies rely on their experience to maintain efficiency and productivity, they must subject themselves to a State-required rarely used system that is cumbersome and does not provide immediate and apparent benefits. Conversely, the current system and processes typically require them to duplicate entries with the local systems, which increases the likelihood of user error.

It is in the best interests of public safety to improve RIMS to both have more relevance to local agency operation and to provide a system that is capable of easily integrating the data so that no or minimal user interaction is required.

4.1.4. Data Input, Related Manual Procedures, Processing and Output Characteristics

All data input is handled through the NC4 browser-based application.

The creation of Situational Reports (SITREPS*)* is largely handled outside of RIMS, and then copied into RIMS for escalation. The aggregation of SITREPS into incident rollup reports is a highly manual process, due to gleaning bits of information from free-form text containing SITREP information and communication (e-mails, etc…) from other department systems.

Mission request forms are submitted by local government to track resource requests and act as documentation for reimbursement.

The only outputs are canned reports. OES uses a handful of the existing reports but is forced to manually create rollup reports from the text-based SITREPS.

4.1.5. Data Characteristics

The bulk of the RIMS data is free-form text fields. Paragraphs describing events or resource requests comprise the majority of the system. By primarily utilizing free form text data, reporting on numbers is very difficult as there is little to no typed data that allows for easy tabulation/aggregation of metrics. This reduces the overall effectiveness of the data as reporting is handled by manually reviewing data and rewording the information to produce needed reports.

4.1.6. Provisions for Security, Privacy and Confidentiality

It is critical that the baseline system as implemented (and any future system) provide the following provisions for security, privacy and confidentiality:

- The Solution should enforce stringent access control systems based on roles. The role based access control system should be able to allow OES to dynamically assign a role to a user based on immediate needs.
- Each designated role should be able to support a minimum level of access and authority as required to fulfill that role

- The Solution should enforce separation of duties for transactions that assign and approve OES and State resources to a disaster
- The Solution should regularly go through security assessments and penetration tests to ensure the Solution remains resilient to malicious activity
- The solution should meet State and Federal security standards as defined in the SAM, and NIST 800-53 for highly critical systems
- The Solution should always communicate over TLS or encrypted communication that meets the Federal Information Processing Standards (FIPS)
- The Solution should ensure that no residual confidential data is left on any client system after the session is concluded
- The database should incorporate encrypted fields so that confidential records are encrypted while in storage
- The solution should incorporate tight controls on the network perimeter to ensure the system is protected from attackers including perimeter firewalls that provide stateful packet inspection
- The database should be protected and never allowed to directly communicate with clients and systems outside of the OES network without use of an external proxy/web interface to broker the communication

4.1.7. Equipment Requirements of the Current System

NC4 version 6.4 requires a web server to host the application (IBM HTTP Server), an application server running JBoss, a database server running Oracle 10g and a reporting server running Crystal Reports.

NC4 supports SQL Server and Oracle. Since OES uses the Linux operating system and supports other Oracle applications, they have elected to utilize the NC4 v6.4 Oracle version.

4.1.8. Software Characteristics

The software characteristics for the Office of Emergency Services' current system are described in the following table:

Table 4: Software Characteristics of Current System

System	Application Software	Database	Operating System
RIMS	NC4 E Team v6.4	Oracle 10g	Windows Server 2003
GIS	ArcIMS 9.2		

4.1.9. Existing Interfaces to Other Systems

Internal

OES utilizes ArcIMS for its GIS needs. This functionality is included with NC4 but has not yet been implemented.

External

No external interfaces exist.

4.1.10. Personnel Requirements

OES has approximately 2.5 PY IT staff that support the current RIMS application. Two of these individuals focus on hardware/network issues, while a third person provides application and user administration, and support.

OES will be contracting with an Oracle DBA to see them through the installation period for the baseline system. One state resource has been sent to Oracle training ($2,700 per person).

4.1.11. System Documentation

RIMS documentation includes limited and basic user documentation, and no system documentation.

4.1.12. Failures of the Current Systems

To date, RIMS has been beneficial to OES for the purposes of incident reporting and incident resource assignments. While RIMS does support OES business processes as they relate to SITREPS and resource requests, there is additional functionality that could augment RIMS for internal use and external adaptation.

OES requires RIMS to be a more inclusive system; a complete emergency management system. The current system does not provide OES all of the key information and analysis necessary to manage emergencies in an efficient manner to optimize public safety. By expanding the functionality of RIMS it will ultimately reduce duplication and gaps in response resources, reduce manual intervention and allow improvements to OES' incident response procedures and actions while providing accountability for lessons learned.

The following functionality is required for RIMS to adapt to growing business needs:

- Incident/Situation Reports are critical and time sensitive related to determining situational awareness and when resources are needed. Currently, the creation of rollup reports is manual and tedious as it requires users to review all Situation Reports for an event. The full integration of all situation reports is a needed functionality.

- RIMS does not support imports and exports of data to and from external systems, including public and private agencies. Import and extract functionality has been tested between like versions of NC4 v6.4 and to date have not been successful. The deficient integration functionality is further exacerbated by a lack of documentation for the interfacing model and data exchange. OES needs to determine a standard XML data format to interface with other local and private sector software (i.e. WebEOC and Donation Management Software).
- Users do not always have internet access; RIMS should be accessible through mobile phones/PDAs. With over 170 OES personnel using BlackBerry cell phone/PDAs from the field, a mobile solution is a growing business need.
- Users with intermittent exposure to RIMS find the system difficult to navigate. The system should provided self-directed role based training modules to accommodate sporadic utilization.
- RIMS should be a secured application since it stores unconfirmed information that may not accurately represent the status of an incident. Secure Sockets Layer (SSL) has not been fully implemented, which means all data is clearly visible. As well, user groups and roles should be implemented to clearly delineate accessibility and business roles. NC4 support resources do not serve the needs or meet the expectations of OES in this area.
- The solution has a single point of failure for local redundancy which is not sufficient to support disaster situations. The system should be built with local redundancy, automatic failover to replicated standby sites and 24x7 availability.
- During a disaster response, a majority of communication and coordination is handled outside of the RIMS application. RIMS does not provide any ability to forward nor send information. The system should provide real-time communications (e.g. email, messaging, and chat).
- The current system does not capture the sequence of events by date/time of occurrence. Oftentimes the information is entered and stored in random sequence. The solution should provide users a mechanism to display information related to situations/events/missions in a date-sensitive context, as well as provide a comprehensive and easily accessible operational overview for events.
- It becomes imperative to know who to contact for resources during the initial response period of an emergency. The Field/Local Government must manually determine who is capable of fulfilling a resource request. RIMS should store contact information to facilitate communication with stakeholders through the application (e.g. Notifications, emails).

- Report formats are confusing and often require printing for interpretation. The system should be capable of creating meaningful reports.
- Currently, the application does not provide a way to format, nor store the format of, text. Therefore, Situation Reports are typed in MS Word and then pasted into RIMS. An external editor is needed for creation of situation and incident reports.
- Currently the application does not provide a method to manage overall resource placement, deployment, and planning during an Event
- Currently, the application does not provide a method for overall situational analysis and depiction (i.e. dashboard) of an Event

4.2. Technical Environment

The following sections identify assumptions and constraints affecting the problem or opportunity that will impact the implementation of an acceptable solution.

4.2.1. Expected Operational Life of Proposed Solution

The expected operational life of a vendor supported application is five years. This includes maintenance and patches to expand system functionality.

4.2.2. Necessary Interaction of a Proposed Solution with Other Systems, Agency Programs, and Organizations

Presently, there is no direct data transfer supported by RIMS. All data must be entered manually through the front-end application. There is a growing need for the RIMS solution to accommodate external data sources. Additionally, Federal agencies are starting to request data from the States that will mandate export functionality.

While NC4 does support XML based data loads, the interfaces have not been developed. In order to comply with the Federal Emergency Management Agency (FEMA) and the Office of Homeland Security (OHS), as well as communicating more effectively with other state agencies, OES will need to expend resources on this initiative.

In order to support local governments and regions, the proposed solution will, at a minimum, need to provide XML dataset formats for situation reports and resource requests. This will allow external systems to generate data files containing SITREPS and resource requests and submit them to RIMS. At a minimum, the proposed interfaces will need to be standardized to account for the data in the following list of utilized emergency systems throughout the state of California (Table 5).

Table 5: Minimum Systems Integrations

Application	Operating System
Donation Management	There is a growing need to utilize donation management software for volunteer and donation resource tracking.
NC4	NC4 is being used by Santa Cruz and Stanislaus counties.
WebEOC	WebEOC is currently being used by Orange, Riverside, San Bernardino, San Diego, San Luis Obispo and Tulare counties. Fresno and Los Angeles are considering replacing their custom systems with WebEOC. As WebEOC is installed in numerous large counties, supporting WebEOC is critical to successfully integrating with local data.
ROSS	ROSS is used for tracking resources by CAL FIRE.

4.2.3. State-level Information Processing Policies

The OES will host the solution which must adhere to policies and standards set forth in the California State Administration Manual (SAM) and State Information Management Manual (SIMM). Specifically,

- SAM Chapter 5300 - Information Security (Office of Information Security and Privacy Protection)

4.2.4. Financial Constraints

OHS has provided OES a grant to assist with the development and procurement of an emergency management system.

Funds must be secured from OHS Grants for the proposed solution. The proposed solution must consider the costs associated with the full system lifecycle, including business process review, interface development, deployment, training and recurring contract and maintenance costs.

There may be financial constraints for future years due to a lack of grant funding. As a result, OES will need to consider the implications of maintenance and licensing costs on all proposed solutions.

4.2.5. Legal and Public Policy Constraints

Other legal and public policy mandates that may have implications for the proposed solution include:

- Federal Emergency Management Agency (FEMA) National Incident Management System (NIMS)
- California State Emergency Management System (SEMS)
- California Emergency Services Act
- California Emergency Plan

- Natural Disaster Assistance Act
- California Code of Regulations, Title 19
- California Disaster and Civil Defense Master Mutual Aid Agreement
- California-Federal Emergency Operations Center Guidelines: Integrating Federal Disaster Response Assistance with California's Standardized Emergency Management System
- Title 44 Code of Federal Regulations
- Information Practices Act
- Freedom of Information Act
- California Public Records Act

4.2.6. Department Policies and Procedures Related to Information Management

The proposed solution will be implemented in compliance with Office of Emergency Services' policies and procedures, including:

- State Administration Manual (SAM)
- State Emergency Management System (SEMS)
- National Incident Management System (NIMS)

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

Changes to OES' existing equipment are not anticipated. The hardware hosting NC4 was purchased in June 2008 and is considered production safe for the next five years.

A five year license agreement also ensures upgrades to NC4's application for the duration of the contract.

4.2.8. Availability of Personnel Resources

The existing 2.5 PY IT staff will be responsible for the maintenance and support of RIMS. This staff consists of 0.7 Senior Information System Analyst, 0.05 Data Processing Manager II, 0.75 Staff Programmer Analyst and 1 Associate Programmer Analyst.

4.3. Existing Infrastructure

This section briefly describes OES' existing infrastructure and technical architecture to provide a context for the proposed solution. It also identifies agency or statewide technical standards or constraints that might appropriately narrow the range of reasonable technical alternatives.

4.3.1. Desktop Workstations

RIMS is accessible through any workstation with the following web browser:

- Internet Explorer, version 5.5 or greater
- Required Settings:
  - JavaScript enabled
  - Session cookies enabled
  - SSL 2.0 or 3.0

4.3.2. Application Servers

Based on California Strategic Sourcing Initiative (CSSI) approved Windows-based server platforms, the minimum Office of Emergency Services Windows-based server standard is:

Table 6: Application Server Standard

Component	Standard
Processor:	Dual Quad Core 2.66 Xeon
Storage (Disk):	Mirrored 146GB local storage iSCSI 1.6TB raw shared storage
Memory:	4GB
Warranty:	5 Year service agreements

OES is using four blade servers to host NC4 v6.4 as follows:

- Web Server
- Application Server
- Database Server
- Reporting Server

4.3.3. Network Protocols

RIMS is a standard web application, utilizing HTTP over TCP/IP. Implementing an SSL certificate is planned for some point in the future.

4.3.4. Application Development Software

Not applicable.

4.3.5. Operating System Software

The standard operating system (OS) used is Microsoft Windows XP Professional, but RIMS will support any OS capable of running Internet Explorer 5.5 or greater.

4.3.6. Database Management Software

NC4 uses Oracle 10g for its database.

4.3.7. Personal Productivity Software

Currently OES uses the Microsoft Suite of tools for productivity.

RIMS requires Internet Explorer, version 5.5 onwards.

4.3.8. Application Development Methodology

OES application programmers currently follow a traditional waterfall style of application development — scope, design, code, test, implement and review.

This does not apply to the RIMS application since version upgrades will be provided by NC4. OES does not own the source code and will not be customizing the application.

4.3.9. Project Management Methodology

OES has recently established a Project Management Office (PMO). The main function of this office is to increase the efficiency and effectiveness of IT projects by ensuring that consistent project management standards and methodologies are applied to these projects throughout the Office. The OES PMO will follow the Project Management Book of Knowledge (PMBOK) methodologies.

5. Proposed Solution

This section describes the alternatives considered for the RIMS Solution. Each alternative is described in detail, including the development and implementation approach. This section also describes advantages and disadvantages of each alternative considered and the justification for the selected approach. In order to identify and evaluate viable alternatives, the following analysis was performed:

- Determined & Confirmed Business Needs - Conducted approximately 26 interviews with SEMS operational levels within:
  - OES operations
  - Local governments (Cities and Counties)
  - Other state emergency management agencies
  - OES private partners
- Performed Assessment of Custom Capabilities - Reviewed OES' current technical operation and its ability to support custom capabilities:
  - Interviewed OES technical staff
  - Examined existing hardware and software
- Researched Viable Alternatives - Performed research to determine if other viable emergency management software exists that meet the business needs:
  - Surveyed and received response from all of California's 58 counties regarding their current emergency management systems
  - Interviewed several different states users of emergency management systems
  - Performed marketing and vendor research
- Identified Leading Solutions & Vendors - Identified leading software products available based on market research that gathered the following information:
  - Business process supported by vendors solution
  - Technical specifications meet business needs
  - References for similar customers & successful implementations
  - Cost estimates (one-time and ongoing)
  - Proven industry experience
  - Scalability
  - Modular, expandable functionality
  - Support skill set and services
  - Maintenance and Operations (M&O) agreements

Through this analysis, it was concluded that commercially available software solutions exist that meet the business needs identified to varying degrees. The NC4 product that is currently being upgraded by OES was determined to require significantly more customization to meet the identified business needs than other products on the market. Therefore, the FSR project team considered the following alternatives as viable:

- Alternative 1, Replace RIMS – Meet OES requirements by procuring and implementing a new commercially available solution to replace the current RIMS
- Alternative 2, Enhance Existing RIMS – Add functionality and capabilities to enhance the current system in order to fulfill OES requirements

As described in greater depth in the remainder of this section, OES prefers and is proposing Alternative 1, procuring and implementing a new commercially available solution, as it is the most cost effective, lowest risk path to implementing proven approaches to meet OES requirements.

OES used internally gathered data and the results of the market analysis to model alternative deployment approaches and costs. The following sections describe the scope for vendor procurement, as well as for the development, implementation and maintenance of the selected solution.

5.1. Solution Description

OES will hire a vendor/systems integrator who will be responsible for delivery of a complete solution. A complete solution will be made up of the following components:

- Application Solution – OES anticipates implementing a commercial available software product (or possibly products) modified as necessary to meet OES needs. The product suite selected should require minimal modification. OES expects the required code modifications may include custom reports, electronic forms and interfaces/data exchanges. The vendor will bear primary responsibility for application implementation, as well as for the identification of business process changes necessary to synchronize OES and SEMS operations with application capabilities.
- Development Of The Vendor Procurement(s) - OES will hire a vendor through a competitive bid process that starts in October 2009, after the FSR has been approved by the Department of Finance (DOF) and procurement documents have been developed and approved by OES and approved by the Department of General Services (DGS). The vendor will be responsible for implementing the complete solution while working closely with the OES and key stakeholders. The vendor will be required to provide the necessary software, configuration, customization, testing, training and integration required to successfully install the solution to meet OES' business and technical requirements. In addition, the vendor will be

responsible for project management services, as well as life cycle development and deployment services including post implementation activities and warranty support.

Vendor procurement will begin in October 2009 and will end in May 2010.

An Independent Project Oversight (IPO) vendor will be hired in July 2010 and an Independent Verification & Validation (IV&V) vendor will be hired in July 2009 to ensure the quality of project deliverables through the entire life cycle of the project, beginning with procurement and ending with final acceptance.

IPO and IV&V services for the project will end in June 2011.

5.2. Solution Development and Implementation

The solution is anticipated to be a modified commercial product solution. OES will procure the services of a vendor who is responsible for providing the software and all services required to design, develop, implement and support the RIMS Solution.

In addition to providing the software and all implementation and support activities, the vendor will be responsible for the following services:

- Project Management – The selected vendor will be responsible for developing and monitoring all the project plans and associated schedules required to successfully implement the solution
- Requirements Finalization and Traceability – The vendor will work with OES staff and key stakeholders to finalize business and technical requirements and provide traceability throughout the implementation to ensure the achievement of OES goals and objectives
- Business Process Change Management – The selected vendor will identify any procedural changes needed in order to minimize customization of the software and assist OES in developing the necessary change management activities, training and manuals required to implement any new and /or changed business processes
- Interfaces – The selected vendor will be responsible for developing both interim and ongoing interfaces required to integrate the RIMS Solution required stakeholder systems
- Support for User Acceptance Testing (UAT) – The vendor will support the OES UAT efforts by ensuring appropriate testing scripts, data, and processes while responding as needed to UAT results
- Training of OES Business and Technical Staff – Several methods will be utilized to train business staff. The selected vendor will be responsible for developing all the training modules and associated materials necessary to successfully deploy and maintain the solution. The selected vendor will

also be responsible for training and mentoring OES' staff that will be responsible for training end-users throughout the State.

- Knowledge Transfer – The selected vendor will also be responsible for the transfer of knowledge required to enable OES' technical staff to maintain the RIMS Solution technical environment
- Implementation and Deployment – The selected vendor will be responsible for working with OES to develop, maintain and execute the implementation and deployment of the RIMS Solution. The vendor will work with OES to develop implementation strategies and plans to ensure the solution is deployed effectively throughout the State. This deployment includes working with counties to test and implement response information data exchanges between county systems and OES using a standard interface protocol.
- Post-Implementation/Warranty Support – The selected vendor will be responsible for providing application support for 3 months following system implementation through to final acceptance. At that point, support will be provided through a combination of OES IT staff and a multi-year Maintenance and Operations agreement with the vendor.

The development and implementation part of the project is scheduled to begin in July 2010 and to conclude in March 2011 with final acceptance in May 2011.

In order to maintain business continuity, reduce risk and quickly address the business needs, functionality will be rolled out in one phase. Although, the vendor and OES may opt to first implement the core system and then roll-out integration with county systems in a logical progression as to reduce risk and manage resource levels.

Note: Prior to rollout, the vendor project team, OES project team, OES regional trainers and OES Help Desk resources will be available to ensure implementation readiness. Pre-deployment activities will include:

- Business Process Change Management Activities – prior to rollout, change management personnel (a combination of vendor and OES) will educate staff on deployment impact and readiness
- Training – OES Trainers and contracted consultant will provide training to the staff and end-users based on their SEMS role and organization. This training includes rules that were used to determine information needed by the new system, as well as how data will be maintained and presented in the new system. This effort also includes the development and deployment of self-directed, web-based training modules to provide initial and on-going training for staff.

5.2.1. Hardware

The OES does not anticipate requiring additional servers for this project. The current RIMS servers are new and are expected to be adequate for any anticipated solution needs.

The following web, application, and database server hardware specifications are available within the current OES hardware environment and are anticipated to satisfy requirements for any selected solution:

- Dual Quad Core 2.66 Xeon processors
- 4GB of memory
- Mirrored 146GB local storage
- 1.6TB of shared storage

5.2.2. Software

OES has concluded that the application must be accessible to individuals outside of the OES network. The application will be web based.

In order to reduce cost and leverage existing OES resources, the software solution must use Microsoft SQL Server or Oracle for the database engine. The operating system can be any platform supported by Microsoft SQL Server or Oracle. The application language can be any language supported on the above operating systems.

5.2.3. Technical Platform

The application will at a minimum require three-tier architecture:

- Users will access the application through a web browser
- A web server will host the application to handle user requests
- A database server will store and provide application data

The web browser (the presentation tier) communicates with the application server which coordinates data processing with the database server. The top tier presents the data and performs minimal data manipulation. Application servers (the application tier) do most of the computing. The application servers offload data manipulation from the database servers. The database servers (the data tier) simply manage data. This includes authentication, data retrieval and storage, and backups. See Figure 6 and Figure 7 for descriptions of the proposed production environment.

All production servers will be located at OES and administered by OES staff. The corresponding development, testing and training environments will also reside at OES.

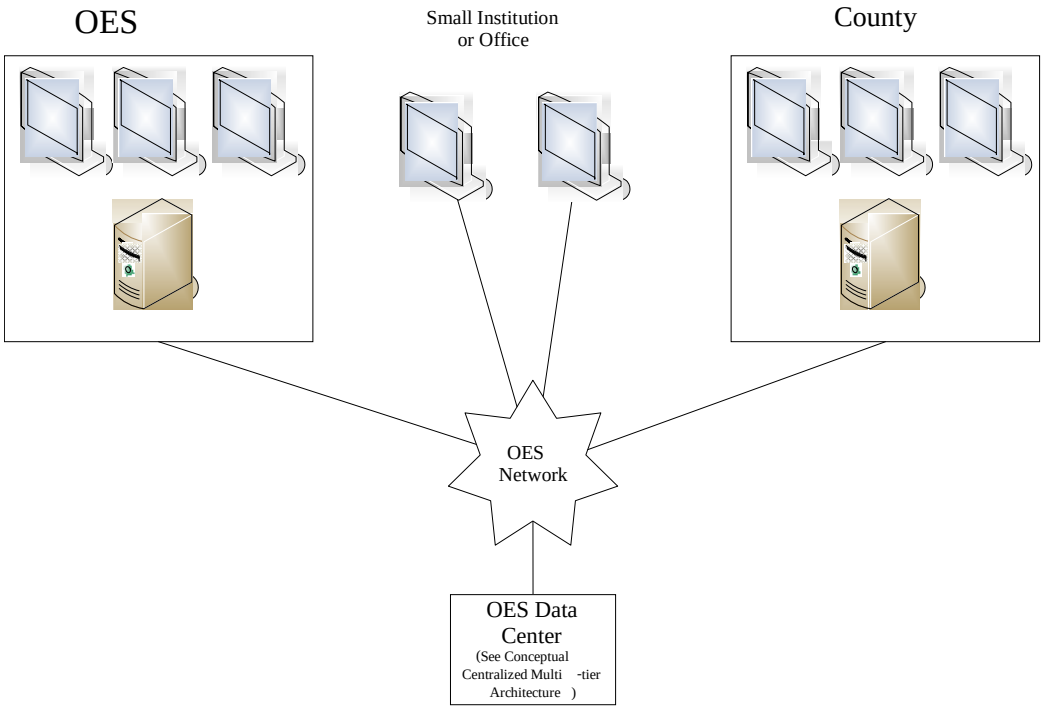


Figure 6: Conceptual Network Architecture Overview

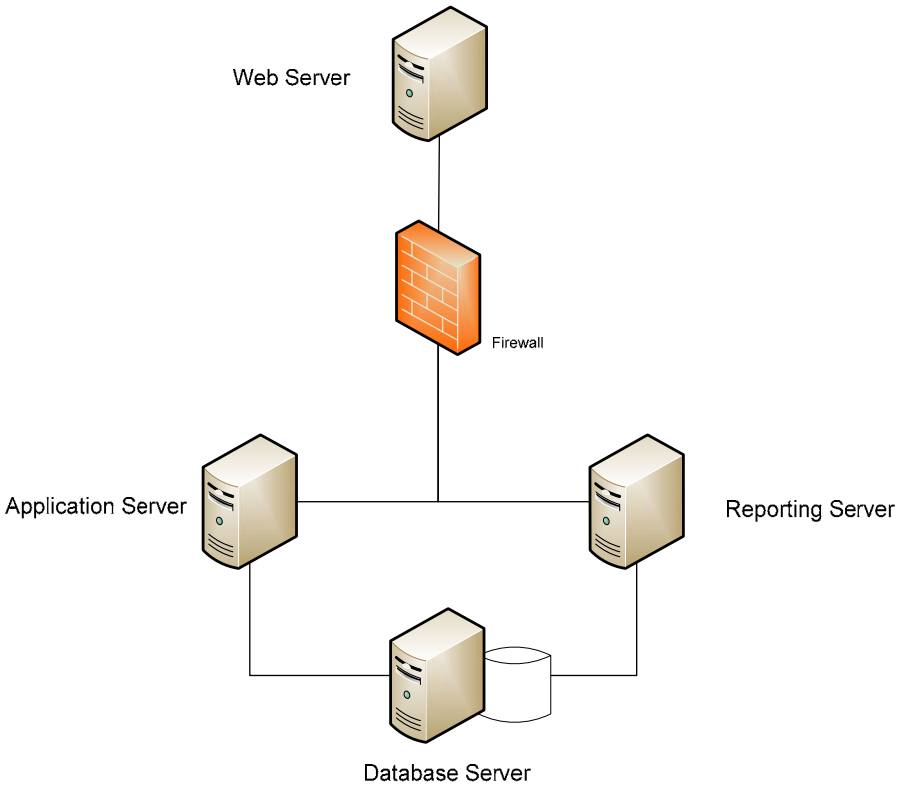


Figure 7: Conceptual Centralized Multi-Tier Architecture

5.2.4. Development Approach

Although the OES Project Manager will be ultimately responsible for approving and directing all phases of the project, OES expects that the vendor will be responsible for managing, recommending and leading most of the development approach.

Plan and Design

The vendor will work with OES to perform the following:

- Gain an understanding of the current business operations and the challenges the staff must overcome to achieve their mission
- Determine which business processes need to be re-engineered to minimize the need for customization of the application
- Hold business and technical walkthroughs to ensure the functional and technical requirements are being met
- Develop application, data and implementation strategies to minimize the impact on business operations
- Design business process change management strategies, and develop contingency plans to ensure business processes are not adversely impacted
- Utilize the data standards to facilitate data integration with the counties/locals

In order to accomplish these goals, the vendor will be responsible for the following planning and design activities:

- Develop design requirements
- Perform a detailed Fit-Gap analysis to determine where application customization is required and where process and procedural changes are needed
- Develop and maintain requirement traceability matrices
- Conduct functional business and technical walkthroughs
- Finalize configuration strategy
- Finalize business process change management strategies
- Develop database and integration strategies
- Develop solution rollout strategy

OES will carefully consider the degree of customizations/modifications to allow, as well as the method in which the vendor performs the customization. It is expected that in all but very few cases, it will be more economical to adapt business processes to the solution capabilities, rather than customize the

application. For example, a process may be changed to align with the solution's capabilities, as long as the process change does not negatively impact emergency responsiveness. OES expects no more than 10% of the solution will be modified/customized. Customization is defined as modifying software product source code. Typically, commercial products allow for state-specific requirements through the use of variable fields and business rule tables; these types of changes are not considered modifications or customizations, but rather configurations. In addition, custom reports are not considered customizations unless they require the system to capture additional information. OES will only allow modifications under the following circumstances:

- It is required by a legal mandate
- There is a compelling business need
- There is a quantifiable benefit

All modifications complicate maintainability and increase implementation and maintenance costs.

The vendor will be responsible for making the modifications, building interfaces, and developing a complete solution that meets OES' business and technical requirements.

Development

The vendor will work with OES to perform the following as needed:

- Create prototypes, as needed
- Develop business rule repositories
- Develop customized application logic
- Develop any custom applications, interfaces, and bridges
- Establish development, testing, training and production environments
- Manage software versions and change escalations between development, test, training and production environments
- Design and develop training modules and training manuals
- Design and develop testing strategies and test scenarios
- Design and develop business process change management activities necessary to successfully deploy the phased and final solution

In order to accomplish these goals the vendor will be responsible for the following development activities:

- Create prototypes of new and modified screens and reports
- Conduct walkthrough of all screens and reports

- Receive approval from the OES Project Manager of all specifications
- Finalize coding
- Develop custom applications, interfaces, and bridges
- Perform application testing
- Develop and test business process change management activities
- Develop "Training the Trainers" training material
- Develop end-user, role based training modules and training manuals
- Develop system administration guide for the complete solution (not just the baseline software)
- Train the trainers

Data Conversion

This project does not include a data conversion effort. OES has determined that the effort required to convert historical data provides no tangible benefits.

Implementation

The vendor will work with OES to perform the following:

- Define user acceptance criteria and testing process
- Assist in the training of OES staff by means of knowledge transfer
- Support business process change management activities
- Work with OES staff to complete application configuration
- Integrate OES categorizations/classifications into the application
- Deploy the new business application into OES' test, training and production environments
- Providing post-implementation application support

In order to accomplish these goals, the vendor will be responsible for the following implementation activities:

- Assisting in UAT activities
- OES staff training
- Business process change management
- Releasing software into the production environment by the configuration manager, with assistance from the vendor consultant
- Monitoring the production environment for application anomalies
- Responding and fixing application anomalies

Maintenance and Operations

OES will require that the vendor provide post-implementation application support for three months until final acceptance of the RIMS Replacement RIMS Solution is complete. In addition, OES will procure the services of a vendor for multi-year Maintenance and Operation support of the RIMS Replacement RIMS Solution.

5.2.5. Integration Issues

The vendor will be responsible for the integration of all products needed to provide a complete solution that addresses all OES business needs.

In developing interfaces, the vendor will work with OES to identify the interfaces to and from the solution that will need to be developed during the project. Development of integrations to appropriate local/county EOC solutions will be required for the following business processes:

- Incident Reports
- Situational Reports (SITREPS)
- Resource Requests

The FSR team surveyed all 58 California counties and determined that as of the time of this FSR; only 16 counties have emergency management systems. The remaining counties mainly use Microsoft Office tools and/or manual processes. Of the 16 counties that have systems, only 12 do not plan to replace their system in the near future. In addition, of these 12 counties, 8 counties use the WebEOC software product and 2 use the NC4 software product. The majority of these are large counties that must manage numerous incidents and resource requests. In addition, these counties are willing to participate in this project. At a minimum, the OES will have the vendor integrate the State to the 10 counties that are currently running WebEOC or NC4. The vendor will have to develop a standard data exchange protocol and work with the selected counties to implement the data exchange with to their WebEOC or NC4 solutions. The vendor must transfer this data exchange implementation knowledge to OES IT staff, so that OES IT staff can connect future data exchanges as other counties invest in new solutions. The interface standard will be developed so that remaining counties with other solutions can build an interface to the OES system as appropriate.

5.2.6. Procurement Approach

The OES plans to pursue a modified commercially available software product and will solicit competitive bids to acquire the solution. Procurement activities include:

- Performing requirements definition to thoroughly define the requirements of the solution
- Performing procurement development to develop a Request for Proposal (RFP) and associated evaluation strategy and plan for the solution product and systems integration services.
- OES plans to partner with California's Office of the State Chief Information Officer Office (OCIO) to perform Quality Assurance during RFP development.
- Conducting procurement for the software solution in coordination with the DGS
- Using the DGS California Multiple Award Schedule (CMAS) / Master Services Agreement (MSA), secure consulting services for the following:
    - Procurement Development and Support – The Requirements Definition and Procurement Development consultant will develop the requirements for the proposed solution and develop the procurement documents for OES and will work with the Department of General Services (DGS) to ensure quality assurance during the RFP development and selection process
    - Project Planning and Management – The Project Planning and Management consultant will manage the overall project for the OES. This individual will report directly to the OES Project Management Office (PMO)
    - Testing Support – The Testing Support consultant will work with the OES to coordinate, assist, and conduct testing efforts
    - Training and Implementation Support– The Training and Implementation Support consultant will work with OES in developing training materials, conducting training, and assisting with solution implementation
    - Independent Project Oversight (IPO) – The IPO Consulting will provide independent oversight of the project and inform OES of potential project schedule risks
    - Independent Verification & Validation (IV&V) – The IV&V consultant will provide independent verification and validation services to ensure the quality of the requirements gathering,

RFP development and procurement, systems integration effort and solution

OES will adhere to all DGS procurement guidelines including any required compliance with State of California contracting preferences and goals (e.g., the certified Small Business preference and certified Disabled Veteran Business Enterprise contracting goal). Every effort will be made to accelerate the procurement cycle, complete the award, and begin the implementation effort by fiscal year 2009/2010.

The following procurement schedule outlines a timeline of expected events leading to the RIMS Solution Contract Award. It assumes the following:

- OES will provide data standards to facilitate interface development
- OES will provide the appropriate resources to conduct requirements development and procurement development
- Procurement activities can commence upon FSR approval in fiscal year 2008/2009
- The proposed solution will meet State and OES security requirements
- Proactive risk, issue and business process change management strategies will be employed
- Necessary OES stakeholders and contributors will be available and provide feedback in a timely manner
- Appropriate OES resources are available and will be allocated to this effort
- Supporting contracts and procurements will be completed on schedule
- Changes in the Administration's priorities or OES management priorities will not negatively impact this project
- The target for implementation is fiscal year 2010/2011
- The target to complete implementation is fiscal year 2010/2011 with application warranty support ending in fiscal year 2010/2011

Table 7: Key Action Dates for the Procurement

ACTION	Date
Finalize Requirements for Procurement Document	Jul-2009
Finalize Procurement Documentation	Sep- 2009
Issue procurement documents	Oct-2009
Last day to submit questions for clarification of RFP requirements	Oct-2009
Letter of Intent to Bid due	Nov-2009
Draft proposals due	Dec-2009

ACTION	Date
Review draft proposals and confidential discussions	Jan-2010
Final proposals due	Feb-2010
Sealed cost openings	Mar-2010
Select vendor - Notice of intent To award	Mar-2010
Contract award	May-2010
Project start date	Jul-2010
System implementation begins	Dec-2010
Integration Roll Out begins	Jan-2011
Full system acceptance	May-2011

OES will evaluate each proposed solution by:

Business Viability

- Meets functional requirements with minimal modification
- Impact on OES's current business model
- Use of proven solutions – by not starting from scratch, risk of failed implementation is decreased
- Ability to support the Department's strategic direction
- Experiences – reference checks for the proposed company and their key staff

Solution Viability

- Ability to meet technical requirements (maintainability, scalability, flexibility)
- Soundness of the proposed technical architecture approach
- Ability to grow and evolve the solution
- Maintainability of the proposed solution
- Ongoing support, by both the vendor and later by IT staff

Financial Viability

- Vendor financial solvency
- Time to deliver solution
- Competitive cost

5.2.7. Technical Interfaces

The vendor will be responsible for successfully interfacing the solution with required systems.

Internal Interfaces

OES does not plan to implement internal interfaces.

External Interfaces

A data exchange will be developed to support county/local systems feeding data into the RIMS solution. The vendor will develop a single, standard data exchange protocol that will be used by all counties. This protocol will comply with OES data standards. The application will need to be able to automatically handle the receipt of standardized XML datasets which will populate information on the RIMS database. As explained in Section 5.1.5 Integration Issues, OES plans to have the vendor integrate 10 counties that have invested in one of two commercial EOC software products.

5.2.8. Testing Plan

Consultant and Technical staff (in-house and vendor) will use a well-defined, IEEE compliant testing methodology as recommended by the vendor and approved by OES. In addition, existing technical and program subject matter experts (SMEs) will be involved and responsible for review of vendor deliverables and for acceptance testing. Testing procedures will include unit, system, integration, regression and UAT.

The RIMS Replacement Project Plan will include all appropriate levels of testing considered necessary for the proposed system, including the following tasks:

- Identify the purpose and scope of tests
- Develop test cases that identify the requirement, function, module, system, and/or interface to be tested
- Identify the results that constitute a success or pass condition
- Identify the steps to be performed to verify the requirement, function, module, system, or interface to be tested
- Perform the steps that were identified to verify the requirement, function, module, system, or interface to be tested
- Perform all necessary retesting, including regression testing, of components that previously failed
- Prepare test summary reports documenting test results
- Perform UAT activities
- Perform load capacity and stress testing

- Identify required user training
- Prepare user policies and procedures
- Perform test of user training procedures
- Develop agreed upon user acceptance criteria for each phase of the project
- Develop UAT strategies and supporting test scenarios and scripts

The project will use formal software configuration management to control the baseline of the system software as testing progresses and the system becomes "production-ready".

5.2.9. Resource Requirements

The resources needed to procure, develop, and implement the proposed solution will come from a combination of OES staff, contracted consultants and contracted vendor. OES needs staff with application deployment, infrastructure installs, OES operational program knowledge and project management experience and skills.

From April 2009 through March 2010, the project team will consist of contracted consulting staff to manage and support the vendor procurement process along with input from redirected OES staff

Beginning July 2010, OES staff, contracted consultants and vendors will design, configure, develop, test, and implement the RIMS Solution, provide IPOC, and IV&V services, train staff, and assist with solution implementation. OES staffing will be a combination of contracted consultants with input from redirected OES positions. During the project, there will be focus on business process change management due to the OES' preference, when reasonable, to change business processes to align with the capabilities of the RIMS Solution. The vendor will integrate county data exchanges to the solution during the first several months of implementation.

Ongoing system support of the solution will require no new positions. The vendor will provide system support per the M&O agreement. Prior to final acceptance of the solution, the vendor transfer knowledge to OES IT staff, so that staff can successfully:

- Provide application help desk services
- Receive, analyze and process change requests from the business community
- Develop new business requirements
- Make changes to the solution based on the business requirements developed

- Test of all changes made
- Assist business staff in developing or updating training and supporting documentation for all changes
- Maintain custom modules
- Provide database and systems administration and security
- Maintain interfaces and assist counties with implementing new interfaces

The staff resources identified for the proposed solution is detailed in Section 8, Economic Analysis Worksheets.

5.2.10. Training Plan

The RIMS Solution project vendor must provide training to OES. This proposed solution assumes a "Train the Trainer" approach. OES will work with the vendor to determine the most effective method to train OES staff and end-users. This may include the following elements:

- "Train the Trainer" – Training designed for an internal system expert to support end-user training needs and provide help desk functionality
- Self-Directed Training for End-Users – The vendor will be responsible for developing self-directed, web-based training modules for all end users on application use and capability. This will include data input, data maintenance, search and retrieval, and reporting requirements by SEMS organization and functional role.
- System Administrator – Training on system maintenance, updating, access, security, configuration, and modification
- Follow-Up – During the warranty period, providing supplemental training to the project team and "train the trainers" to address questions, features, issues, and concerns of end-users

The vendor will produce supporting documentation in the form of user manuals, technical support manuals, and technical architecture documentation.

The vendor will also be responsible for the transfer of knowledge required to enable OES technical staff to maintain the technical environment, interfaces, databases, custom code/modules, security, and reporting and user access.

5.2.11. Ongoing Maintenance

OES will obtain a multi-year contract with a vendor for software licenses and maintenance of the RIMS Solution.

OES will manage all production infrastructure hardware maintenance, backup and restore activities.

OES staff will also perform the following services as part of ongoing maintenance:

- Receive and analyze requests from OES and SEMS community for changes
- Develop business requirements
- Make all changes based on business requirements
- Test all changes
- Train end-users on all changes made
- Provide Help Desk support
- Provide Infrastructure support (desktops, network)
- Maintain application and customizations
- Conduct database administration
- Maintain interfaces
- Coordinate vendor activities
- Work with vendor to implement software upgrades, patches, and bug fixes

5.2.12. Information Security

The proposed solution must meet State information security requirements as defined by the California Office of Information Security and Privacy Protection and presented at:

http://www.oispp.ca.gov/government/policy.asp

OES will need to define an appropriate security plan for implementation that includes the following:

- Organizational Security, Policies and Procedures, Strategies, People, Processes, Governance, Legal
- Adheres to State policies set forth in the State of California Security Policies in the State Administrative Manual (SAM) 4841.1 - 4841.8
- Adheres to OES information security policies

In accordance with Government Code Section 11771, OES has designated an Information Security Officer (ISO) to oversee OES compliance with policies and procedures regarding the security of information assets.

Users will continue security practices consistent with OES' requirements of log-on management, password protection, and selective access based on user identification. Access to the application will be limited to authorized users. The system must ensure that there are varying levels of role based security. Permissions will not be assigned to individual accounts. The system will grant

privileges to the user via group based permissions, based upon the user's functional group, and will restrict access to unauthorized functions/screens.

The system will also use encryption technology to protect sensitive data transmitted across the network. Since the replacement system must be web based, SSL will be used to encrypt all network traffic.

OES will host the system and provide physical security for the equipment located at OES. In addition, OES will maintain the system network, providing security for the network data and protection against viruses.

OES will perform audits to ensure OES policies, procedures, and instructions adequately address all system security issues.

5.2.13. Confidentiality

OES will review and update current confidentiality policies, practices, and agreements as needed. The proposed solution shall include comprehensive security features that support limiting access to:

- Confidential data
- Specified users and/or units based upon the confidentiality of information accessed
- Selected applications, screens, and/or data based upon user security identification
- Specified users and/or units based on organizational structure

NIMS/SEMS Compliance

The procured solution must meet State confidentiality and security requirements. The FSR market analysis found that most existing products support National Incident Management System (NIMS) compliance or are in the process of doing so.

The proposed system will contain unverified information about emergencies and disasters. Due to the nature of this content, security controls must ensure that the unverified information is not publicly available. The project must apply all applicable State and Federal confidentiality laws to ensure the emergency information is protected from unauthorized access. The proposed solution will enable the staff to comply with privacy policies defined by the California Office of Information Security and Privacy Protection and presented at:

http://www.oispp.ca.gov/government/policy.asp

The proposed solution will enable the staff to comply with appropriate rules, regulations and standards by containing the following functionality:

- Role-based access to system functions and information
- Automatic log-off

- Unique user identification
- Audit logs
- Regular application password changes

5.2.14. Impact on End-Users

The proposed solution will have the potential to more efficiently and effectively capture and display response information. Potential impacts on end-users include:

- Business process re-engineering will be required. The extent will be determined once the vendor conducts a "Fit Gap" analysis by performing an in-depth analysis of current and "desired" processes, information standards, and communication standards. It is expected that in all but a very few cases, it will be more economical to adapt business processes to the solution capabilities, rather than customize the application. For example, a process may be changed to align with the solution's capabilities, as long as the process change does not negatively impact emergency responsiveness. Business Process Change Management activities need to be implemented prior to deployment to prepare staff for the changes that will be occurring.
- Users will be required to submit information differently
- Users will have access to information to which they have not previously had access. Information may be presented differently.
- End-users must be trained on the new system, processes and standards. Users will need to learn how to effectively enter, transmit, maintain and view information.

To ensure stakeholder acceptance of the new system, OES will:

- Establish executive ownership of the solution to support its use throughout the organization and all SEMS organizations
- Gather end-user input during the development and implementation process to ensure the solution meets user expectations and that users feel a sense of ownership
- Provide training and help desk support for end-users
- Allow time for implementation of re-engineered business process

Team members will focus on communicating project progress and changes to all OES end-users and stakeholders, as well as providing training. The project will engage business process change management consulting services through the vendor to augment the more basic elements of change management, like training and early end-user involvement.

5.2.15. Impact on Existing System

The proposed solution will replace the current RIMS system.

5.2.16. Consistency with Overall Strategies

The proposed solution directly supports OES's 2008 Strategic Plan.

5.2.17. Impact on Current Infrastructure

The project will leverage and be compatible with the technology architecture currently supporting response information management at OES.

5.2.18. Impact on Data Center(s)

OES will host the production application and database servers. Since the replacement will utilize existing hardware and have a similar architecture, there is no anticipated impact on the OES data center.

5.2.19. Backup and Operational Recovery

OES will use existing backup and operational recovery procedures defined in their "Operational Recovery Plan". The Department will perform these functions for the proposed solution's application and database servers. OES will backup all data and provide Operational Recovery to re-establish connectivity or application use as necessary. The vendor project team will work with OES to make sure backup procedures and operational recovery procedures are updated.

Part of the operational recovery plan includes failing over to a replicated site located in Southern California. The failover site will abide by OES' Operational Recovery Plan to ensure that the standby meets OES' requirements.

5.2.20. Public Access

The solution will not be accessible to the public. OES will maintain strict access controls, including control of the information OES collects and shares with stakeholders.

5.2.21. Costs and Benefits

Costs

The total for the proposed solution is $2,234,355 which includes one-time costs of $1,679,268 for staff, software, hardware, telecommunications, installation, customization, training, and oversight. The ongoing costs of $555,088 account for staff, and the ongoing maintenance of the system software, hardware, and communications. The Proposed Solution Economic Analysis Worksheets can be found in Section 8, Economic Analysis Worksheets.

The table below summarizes these costs.

Table 8: Cost Summary

Item	One Time	Ongoing
Hardware/Software	$141,000	$205,221
Data Center	$2,000	$12,000
State Staff	$232,288	$232,518
Contract Services	$1,275,780	0
Other	$28,200	$105,349
Total	**$1,679,268**	**$555,088**

All costs are estimates based on assumptions made regarding the expected solution. The project will implement over multiple fiscal years. This will spread the cost of the project over multiple budget cycles.

Benefits

Specifically, the proposed solution will provide the following benefits to OES:

- Local government will be able to efficiently escalate critical, time sensitive information to the State thus improving emergency response and supporting the OES mission to protect life, property, and the environment
- The solution will provide a dashboard view of an event to improve information available for response coordination
- The solution will provide seamless communication of situation reports and resource requests from local OA's to the State without duplicate entry
- The solution will provide mobile access and resource tracking capabilities
- State and county business becomes streamlined with integrated data exchanges
- The solution is projected to be completed within the average 3 year Grant allocation timelines set by the Office of Homeland Security (OHS)
- Through implementation of a new solution, State and county agencies will establish a closer working relationship based on implementing new business and communication processes and focusing on the mutual objective of improved emergency response
- Potential cost savings outside of the OES budget are a integration development cost savings by Local OA's that purchase new systems in the future
- Customized self-directed training modules will improve user ability to get up to speed on system quickly

5.2.22. Sources of Funding

OES will fund this effort through Grants from the Office of Homeland Security. The Grants will be 100% federally funded.

5.3. Rationale for the Selection

OES has selected procurement and implementation of a new solution because of its ability to meet OES's functional requirements cost effectively within the desired implementation timeframe. The following points support the rationale for this selection:

- Viability: Review of products on the market has proven the availability of viable and cost effective solutions
- Interoperability - Through market research, OES found that the interoperability capabilities that key vendors claim have yet to be realized. Procuring a solution through an RFP will allow OES to contractually obligate a vendor to deliver this critically needed integration.
- Usability – Market research has demonstrated that there are alternative systems available with significantly better usability and user acceptance than the existing system
- Time to Implement: Although both options considered would require multi-year implementations, it is estimated that the proposed solution requires less time to achieve the required functionality
- Lower Cost: Market research suggests that a competitive procurement will likely result in cost savings over time

5.3.1. Advantages

- Market competition can result in a solution that addresses all of the key business requirements with lower one time and ongoing costs than the existing system
- Recent hardware investments could be leveraged for a different solution, reducing the barrier to entry for an alternative solution
- The solution of a competitive procurement allows OES to develop a structured vendor relationship with payment provisions for vendor performance and committed maintenance support
- A competitive procurement allows OES to take advantage of recent advances in the software market and better recognize trends with the Local Operational Areas

- A competitive procurement allows OES to lead the effort on competitive vendor software integration that is currently absent from the marketplace
- Procuring a new solution provides the OES the opportunity to obtain needed functionality and process improvement services and competitive prices, while establishing favorable terms and conditions for licensing, and M&O.

5.3.2. Disadvantages

- The products may require OES to make business process changes in order to avoid customizing / altering the core product software
- A product that uses SQL Server rather than Oracle would require OES to invest in SQL Server
- Significant effort is required to consider, procure and implement a new solution

5.4. Other Alternatives Considered

OES considered one alternative, expanding the RIMS application, to address the RIMS Solution project, which is described below.

5.4.1. Alternative #1: Expanding RIMS

Description

This section describes the alternative of expanding the current system to meet OES' functional requirements. The expansion alternative recommends hiring vendors to expand the current NC4 RIMS application by engaging existing, but unused application capabilities and by customizing the software to meet the needs of OES. Data and infrastructure requirements would remain the same as the previously discussed proposed solution.

The following descriptions detail how this alternative would be executed.

OES would hire a vendor/systems integrator who will be responsible for architecting a complete solution. A complete solution will be made up of the following components:

- Application Solution – Modifying the current NC4 product to meet the defined functional requirements. Required code modifications may include custom reports, electronic forms, mobile access, dashboard views, and interfaces/data exchanges. The vendor will bear primary responsibility for functionality implementation, as well as for the identification of business process changes necessary to sync OES and SEMS operations with application capabilities.

- Development and Implementation - OES would procure the services of a vendor who is responsible for all services required to design, develop, implement and support the RIMS Solution

In addition to providing the software enhancement, implementation and support activities, the vendor would be responsible for the following services:

- Project Management – The selected vendor would be responsible for developing all the project plans and associated schedules required to successfully implement the solution
- Requirements Finalization and Traceability – The vendor will work with OES staff and key stakeholders to finalize business and technical requirements and provide traceability throughout the implementation to ensure the achievement of OES goals and objectives
- Business Process Change Management – The selected vendor would identify any procedural changes needed to assist OES in developing the necessary change management activities, training and manuals required to implement any new and /or changed business processes
- Interfaces – The selected vendor will be responsible for developing both interim and ongoing interfaces required to integrate the RIMS Solution required stakeholder systems
- Training of OES Business and Technical Staff – Several methods would be utilized to train business staff. The selected vendor would be responsible for developing new and/or modifying all existing RIMS training modules and associated materials necessary to successfully deploy and maintain the solution. The selected vendor would also be responsible for training and mentoring OES' staff that will be responsible for training end-users throughout the State.
- Knowledge Transfer - The selected vendor would also be responsible for the transfer of knowledge required to enable OES' technical staff to maintain the RIMS Replacement technical environment
- Implementation and Deployment – The selected vendor would be responsible for working with OES to develop, maintain and execute the implementation and deployment of the RIMS Solution. The vendor would work with OES to develop implementation strategies and plans to ensure the solution is deployed effectively throughout the State. This deployment includes working with counties to test and implement response information data exchanges between county systems and OES using a standard interface protocol.
- Post-Implementation/Warranty Support – The selected vendor would be responsible for providing application support for 3 months following system implementation through to final acceptance

In order to maintain business continuity, reduce risk and quickly address the business needs, functionality would be rolled out in phases.

Note: Prior to rollout, the vendor project team, OES project team, OES regional trainers and OES Help Desk resources will be available to ensure implementation readiness. Pre-deployment activities will include:

- Business Process Change Management Activities – prior to rollout, change management personnel (a combination of vendor and OES) will educate staff on deployment impact and readiness
- Training – OES Trainers will provide training to the staff and end-users based on their SEMS role and organization

  This training includes rules that were used to determine information needed by the new system, as well as how data will be maintained and presented in the new system

Procurement Approach

Under the expansion approach, OES would prepare an RFP to select a vendor to assist OES in expanding the capabilities of the current NC4 RIMS system to meet OES needs and to identify business process changes necessary to sync OES and SEMS operations with expanded application capabilities.

IV&V services would still be required to provide project verification and validation.

Vendor Requirements

The vendor would be required to:

- Ensure that the solution meets OES's business needs, usability and performance expectations
- Ensure the new solution is designed to operate efficiently and effectively in an n-tiered client server (i.e. web services) environment
- Provide knowledge transfer, training and support to ensure OES technical staff has the knowledge and information necessary to maintain and enhance the new system

The vendor's proposal would include a detailed description of their methods for the following activities:

- Business process change management
- System design, development, and testing
- End-user and technical training
- Interface strategies
- Implementation strategies
- Acceptance testing

- Deployment methodology

Technical Discussion

An expanded NC4 for the RIMS Solution should adhere to the existing RIMS architecture as described in Section 4.

The vendor would be responsible for successfully interfacing the solution with required systems. Interfaces include support for county/local systems feeding data into the RIMS Solution. These interfaces must comply with OES data standards. The application would need to be able to automatically handle the receipt of standardized XML datasets which will populate information on the RIMS database.

Advantages/Disadvantages for Expanding RIMS

Advantages

- The State has already invested in the NC4 application and related technology infrastructure
- Despite the universal dislike for the system, some business users are familiar with the current information flow in NC4
- IT resources are developing familiarity with the NC4 system through the current upgrade

Disadvantages

- The existing system would require significant modification to meet all functional requirements but may still not meet the usability requirements resulting in little improvement to the data entry needed
- The majority of users are dissatisfied with the current NC4 RIMS system, there is a risk that enhancing the software may not resolve this issue
- Annual licensing fee is very high compared to other market alternatives
- Counties are leaving NC4 for other commercial products demonstrating a trend away from the existing state system
- OES is not satisfied with existing support from NC4

Costs

It is estimated that the development and implementation costs related to enhancing the current NC4 system are approximately $3,017,087. We estimate development time to be roughly 18 months from the time a system integrator / developer begins expansion efforts. Of the total project cost, the one-time costs would be $2,382,999 and the continuing costs would be $634,088. This solution is not viable due to the cost and needed development time to achieve OES required functionality.

6. Project Management Plan

The OES system is critical to a large, diverse user population which inherently increases project risk. The new capabilities and data requirements inherent in this project will potentially impact all stakeholders. Risks must be actively managed before and throughout the project to ensure the emergency management needs are met at all SEMS levels. In addition, the project management plan must reflect the importance of stakeholder buy-in to project success.

6.1. Project Manager Qualifications

OES will assign a Project Manager with the skills and knowledge to lead this effort through implementation. The Project Manager oversees the creation and delivery of all project deliverables to ensure the project achieves the benefits listed in the approved FSR. The Project Manager is also responsible for ensuring the vendor produces all required deliverables and that those deliverables meet OES quality standards within specified timeframes and cost constraints.

The Project Manager must:

- Have skills and abilities to represent OES and work with the project team and stakeholders throughout the project to ensure this project is successful and meets OES' business needs
- Understand the business objectives and their relation to the project's objectives
- Have high-level written and oral communication skills
- Have skills and abilities to provide status (both written and oral) to management, stakeholders and staff
- Be experienced in managing projects of this size and complexity
- Possess experience managing and monitoring projects using industry-accepted and proven methodologies such as IEEE[9] standards and Project Management Institute's Project Management Body of Knowledge (PMBOK™[10])
- Provide progress reports to the Project Sponsor and to the Executive Steering Committee

[9] Institute of Electrical and Electronic Engineers, the standards body for key software and computer technology standards.

[10] Project Management Institute's Project Management Body of Knowledge, the de facto project management standards body and their project management guidelines and tools.

- Garner project approvals, decisions and support from the Project Sponsor and Executive Steering Committee related to items such as project issues, organizational priorities and project resources
- Have technical expertise required to manage all levels of project staff effectively
- Understand project technical issues related to the solution software, hardware and architecture

6.2. Project Management Methodology

OES' Project Management Office (PMO) will provide the project management framework for the RIMS Solution project. OES' PMO follows Project Management Institute's (PMI) PMBOK™ and IEEE's standards. Both standards are compatible with the Statewide Information Management Manual (SIMM) Section 200. PMI and IEEE clearly define the major activities of a project to ensure the product or service delivered satisfies the organization's business needs. This ensures a standardized and systematic approach for performing the major project activities.

OES uses Microsoft Project to track and report on their progress and performance. The selected vendor may use other tools. These tools may be proprietary but need to be compatible with the project's overall standards. During vendor selection a compatibility assessment will be made.

A key component of the Project Management Methodology is the fundamental principle of sharing risk with the vendor. The project scope, schedule, and requirements will be clearly defined in the vendor contract, and the vendor will be required to provide the necessary skills and staff resources to accomplish the project goals and objectives. The vendor will provide acceptable solutions to system requirements as stated in the contract and detailed Scope of Work. Payments will be subject to satisfactory completion of each project phase/deliverable, with OES Project Manager Approval, and acceptance of required deliverables by the State.

6.3. Project Organization

This section describes the proposed project organization. It explains who should be on the team; how the team relates to affected organizations; and how the roles relate to each other.

The following organization chart reflects project team roles. Blue boxes indicate vendor responsibilities.

The team size will vary throughout the project as will the team composition. The EAWs show the expected staffing in greater detail.

The current organization charts for OES are found in Appendix B – Current OES Organization Charts.

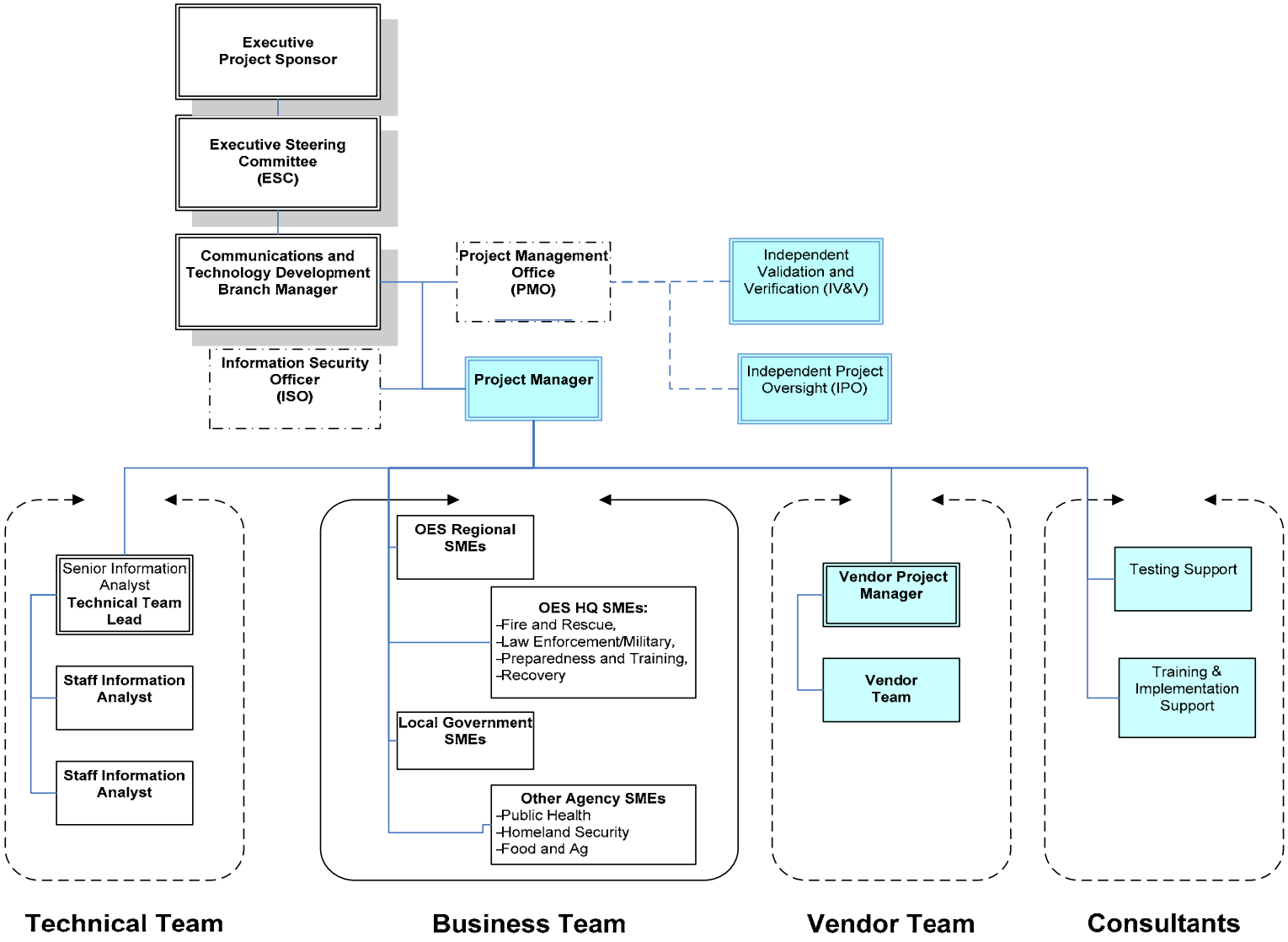


Figure 8: Project Organization Chart

6.4. Project Priorities

The top priority of this project is resources. Resources are "Constrained". OES will not add resources to this project and must therefore maximize the use of existing resources.

The second priority is schedule. It is marked as "Accepted". This means that a change in schedule could be acceptable if necessary to meet project objectives and maximize the use of existing resources.

Project scope is most flexible. It is marked as "Improved". OES can modify scope in order to manage resources and schedule. Additions to scope can be made, as long as the scope change improves the project, yet does not adversely affect project resources and schedule.

These priorities must remain consistent throughout the project. Changes in priority increase project risk significantly. Contract and procurement details must reflect these priorities. These priorities are depicted in the table below.

Table 9: Priorities Trade-off Matrix

	Resources	Schedule	Scope
Constrained (Can not change)	✓		
Accepted (Could be changed)		✓	
Improved (Can be changed)			✓

6.5. Project Plan

This section covers the high-level aspects of project planning.

6.5.1. Project Scope

The project must provide the capabilities needed for OES to meet its mandated mission and business needs. The system must provide a web-based, enterprise-wide response information management solution. It should support the previously discussed business processes efficiently and should be easy-to-use. It will centralize the response information and provide ready access to it. The system must provide a flexible foundation for future changes.

The scope of the RIMS Solution Project is to replace the existing RIMS software with a solution that meets OES and stakeholder needs by providing accurate and readily accessible information so that the State can mitigate against, prepare for, respond to, and recover from the effects of an emergency/event.

6.5.2. Project Assumptions

This project will impact the OES' processes and stakeholder relationships. The solution will enhance the State's emergency response capabilities. The following are important organizational assumptions that will have a bearing on project success:

- OES will give full support and commitment to the project
- OES will commit to provide needed resources to the Project
- OES processes and operations may be modified as a result of the OHS merge
- Stakeholders will be actively involved in the project. User participation provides "buy-in" to ensure the success of the solution
- Information and functional needs vary at different SEMS levels of operation
- Various SEMS Operation Levels will participate in requirement gathering and definitions

This report recommends a commercial software product modified to deliver a complete solution to OES. The selected software vendor/systems integrator will, working with OES, determine the best implementation approach. This report makes the following implementation assumptions:

- OES can engage a qualified vendor/systems integrator to implement the selected solution
- The selected solution supports all of the required processes
- The solution can meet all State security requirements
- OES will implement the software solution at one time while phasing several interfaces
- OES will make the software solution available shortly after the training sessions have been completed
- OES will conduct the training roughly over a 3 month period, incorporating a 'Train-the-Trainer' approach by first including their Regions, and then other area points
- The rough order-of-magnitude cost estimates provided by potential vendors are accurate

A variety of external factors will influence project success. The project external facing assumptions include:

- Organizational changes will not diminish support and resources for the project
- City and County Operational Area's and other system users will not be charged for system access
- County Operational Area adoption of the solution is critical to success
- There is no mandate for County usage beyond current resource requesting and reporting
- Different County Operational Area's have varied levels of IT support
- Solution will not replace technology investments already made by the County Operational Area's and other stakeholders
- OES will initially focus on Situational Reporting and Resource Request interfacing with County Operation Areas
- OES will be interfacing with Counties that already have an implemented Emergency Software Solution that they do not plan on replacing in the next several years. This may also exclude emergency tracking that has been managed through Ad Hoc systems such as MS Excel, etc.
- The initial interface implementation will include approximately 16 Counties who are currently operating with an implemented Emergency Software Solution. The balance of interfacing will occur if/when Counties implement a separate Emergency Software solution with the guidance of OES.
- OES interface design will be standard to support interfacing with other State Agencies

The above are the important general assumptions. They provide general issues for project planning and risk management.

6.5.3. Project Phasing

Since the solution will be deployed via the web and will replace only one legacy system, OES will implement the basic RIMS Solution in a one-time deployment approach. The project team may choose to sequentially implement data exchanges between the RIMS Solution and existing County Operational Area systems.

6.5.4. Roles and Responsibilities

This section describes key project leadership roles. OES resources will fill some roles while contracted resources will fill other roles. The table below describes the general responsibilities of the key roles.

Table 10: Roles and Responsibilities

Key Role	Responsibilities
Executive Project Sponsor	Participates as member of Executive Steering Committee Ensures organization supports the change Ensures project meets business needs Maintains an active role in the project Makes ongoing decisions on critical project issues Ensures project needs are met (support, resources) Mediates issue resolution
Executive Steering Committee (ESC)	Provides strategic leadership to project Approves project strategies and directives Ensures project needs are met (support, resources) Makes decisions on critical project issues Defines expectations and success indicators Approves scope changes Resolves strategic and organizational issues and conflicts Highest level of escalation for issues/decisions
Communications and Technology Development Branch Manager	Participates as member of the Executive Steering Committee. Oversees technical project support Supports the Project Manager by helping to resolve technical issues and risks Participates in technical architecture and technical product reviews Provides necessary technical support Staffs project with proper IT team members (in quantity and skills)
PMO Oversight	Provides tools, standards and methodology for project development Supports the project through use of tools, standards and methodology Provides high-level oversight of adherence to OES' standards and methodologies Acquires IV&V Consultant Services. Manages Independent Validation and Verification (IV&V) contract. Reviews and approves IV&V vendor deliverables Manages Vendor Project Manager
Project Manager	Manages project per PMI, IEEE, SIMM and OES standards Manages all project costs in alignment with project budget Develops and manages the Project Plan and Schedule Tracks project schedule, scope and budget Communicates expectations and critical decisions to project team and stakeholders Prepares project status reports Presents project status to the ESC Manages the Change Control, Issues Management, Risk Management and Change Management Processes Point of contact to facilitate timely issue resolution and escalation.

Key Role	Responsibilities
	Provides process direction to the team. Manages and coordinates RIMS Solution project with other OES projects Establishes standards for documentation, data, training, software development and technical system support Negotiates for resources with the various resource managers. Staffs project with proper program team members (in quantity and skills). Coordinates project work efforts Coordinates User Acceptance Testing (UAT) activities Reviews and approves project deliverables and vendor invoices Manages vendor contracts and tracks contract compliance Participates in Weekly Status meetings with Vendor and Project Team
OES Project Team	Manages and track all deliverables Provides guidance and structure in the review and approval process for deliverables Guides resources in their day-to-day activities Ensures processes and plans are being followed Provides regular Status Reports on team progress Performs user acceptance testing Develops team deliverables Reports up to manager on progress
Selected Vendor / Systems Integrator	Successfully implements quality solution within defined scope, schedule, cost and resources Documents system business requirements Develops all required deliverables including training documents Performs data loads and conversions, as needed Delivers system that meets all contract requirements Transfers knowledge to OES staff Adheres to project plan and schedule Adheres to project management methodologies Oversees all vendor and vendor-contracted project personnel
Independent Verification & Validation (IV&V)	Ensures compliance with requirements for project activities related to technical processes Ensures adherence to standards, practices and conventions related to technical processes Makes recommendations for changes as needed Assesses technical deliverables, processes, and products Monitors project activities for requirements, design, build, documentation, configuration management, testing, data conversion, training and implementation Assesses adherence to technical best practices Reports and make recommendations on technical risks and issues Attends and report at ESC meetings

6.5.5. Project Schedule

This project will take approximately two years to procure and complete. The table below shows the approximate schedule. The schedule assumes OES can begin implementation of the project in December 2010. If this happens, the project would successfully complete in May 2011.

The project begins with the approval of this FSR and concludes with closeout processes. The project team should schedule key milestones and decision points throughout the project. OES and vendor Project Managers will create a detailed project plan to deliver the solution.

Table 11: Project Schedule

Project Phase	Start	Finish
Requirements Definition	Apr-09	Sept-09
Procurement Development	Apr-09	Sept-09
Conduct Procurement	Oct-09	Mar-10
Contract Finalization	Apr-10	May-10
IV&V	Jul-09	Jun-11
IPO	Jul-10	May-11
Design, Development and Configuration	Jul-10	Nov-10
Testing	Oct-10	Nov-10
Integration Development	Jul-10	Oct-10
Integration Testing	Oct-10	Jan-11
Training	Aug-10	Nov-10
System Implementation	Dec-10	Feb-11
Integration Roll-out	Jan-11	Mar-11
Post Implementation Support and Project Close-out	Mar-11	May-11
Final Acceptance	---	May-11
Maintenance and Operations	May-11	On-going
Post Implementation Evaluation Report	---	Jun-11

6.6. Project Monitoring

The project managers (OES and Vendor) will monitor project progress. The project managers will work closely with the project team to gather progress information. They will develop a detailed work plan using IEEE and PMI guidelines. They will use OES project management tools to record and report progress throughout the project.

OES will comply with Department of Finance (DOF) oversight requirements. At a minimum, project managers will provide various status reports on a monthly basis. They will prepare the following:

- Monthly project status
- Monthly oversight agency reports
- Any special reports about project status, issues, action items, major milestones, and System Development Life Cycle (SDLC) reviews

These reports will verify that the project's scope, schedule, and spending are under control.

OES will also engage IV&V consultant(s) with expertise and experience in comparable projects. They will give additional suggestions on best practices. These consultants will perform independent verification and validation functions. They will also track project requirements and independently verify that deliverables meet these requirements. The IV&V consultant(s) will report to the OES Project Management Office (PMO), whose staff will review and approve the consultants' deliverables and manage the contracts.

6.7. Project Quality

The Vendor Project Manager will help develop quality standards for this project. The IV&V consultant will validate the project's adherence to the plan and evaluate products to ensure they meet quality standards.

The Proposed Solution has identified three primary activities in quality management:

- Quality Planning – identifying relevant quality standards and determining how to satisfy them
- Quality Assurance – regular evaluation of overall project performance to provide confidence in project quality
- Quality Control – monitoring specific project results for quality standard compliance and identifying ways to eliminate unsatisfactory performance

The following expands the concepts introduced above:

Quality Planning

Quality planning begins very early in the project, because the most significant impacts on the quality of a project occur during the early stages. For the RIMS Solution project, quality planning will begin with an approved project charter, and the development of a Quality Management Plan (QMP). The QMP will describe the project team's responsibilities, and the procedures, processes, and resources needed to implement quality management on the project.

Quality Assurance

Quality assurance consists of the implementation of the QMP. It requires adherence to the standards and processes determined to be applicable to the project, which should result in continuous improvement, with few errors or defects.

Quality assurance is the mechanism to ensure that the commitments stated in the project plan are actually being followed.

Quality Control

Quality control will focus on reviewing project results against quality standards and expected results. The goal is to introduce continuous improvement through feedback, instigate process improvements where needed, and ultimately eliminate unsatisfactory results.

Project Managers and the IV&V consultant will monitor plan compliance with the QMP.

6.8. Change Management

Change management on this project has two aspects. They are organizational change and procedural change management. This section will discuss organizational change management first.

Change management must address organizational issues and should begin during project planning. Managing organizational change goes beyond getting users involved in design activities and training. The project team should monitor sponsor commitment throughout the project. They should develop a communication strategy that will help reinforce stakeholder commitment. This especially includes end-user stakeholders. Effective change management can make a project successful; failure to manage change can break it.

The project should address organizational change management in the following key areas:

- Project communications planning and management
- Project human resource management
- Project risk management

OES' existing processes support the second aspect of change management. This is procedural change management. This covers changes to things like configuration, baselines, scope, etc. The Executive Project Sponsor must approve significant changes to project baselines (Cost, Schedule, Scope or Quality). The Executive Project Sponsor should do this only under exceptional circumstances.

Procedural change management should be handled by a series of change control boards. The following figure describes the process flow.

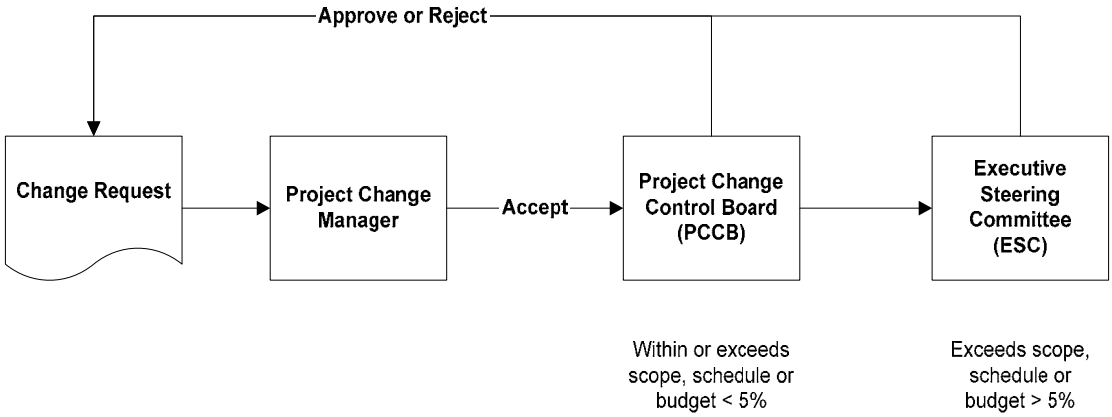


Figure 9: Change Management Process Flow

The first level of change management is the project change manager, who will decide whether to accept the change. The project change manager is usually either the Project Manager or a designee. If accepted, the change request will move on to the Project Change Control Board (PCCB) review. It consists of the OES Project Manager and Vendor Project Manager. This board can approve change requests that are within the scope, cost and schedule of the overall project, as well as any scope, or schedule changes that cause the project to exceed the baseline, but overall results in less than a 5% change.

The OES ESC should review changes not resolved by the PCCB. The ESC should review change requests elevated to them or that require more authority than chartered within the PCCB. This includes changes to overall project scope or schedule greater than 5% or any cost increase beyond the approved budget.

The Project Change Manager will track all proposed changes. Proposed changes should fully document the source, reason, and specifics of the proposed change. The Project Change Manager will review each change request, and determine whether to proceed, reject, or elevate the request. The Project Change Manager will assign an analyst to assess the change. The analyst will estimate cost, schedule, and resources needed to make the change. If a change is accepted, the Project Change Manager will submit it for PCCB review.

6.9. Authorization Required

This project requires approval from the following:

- OES Director
- OES Executive Management
- OES Communications and Technology Development Branch Manager
- OES Budget Officer
- OES PMO

This FSR also requires approval from the Department of Finance as part of the standard FSR review process.

7. Risk Management Plan

This Risk Management Plan describes the methods that the RIMS Solution project team will use to manage risks throughout the life of the project. This section also contains the RIMS Solution Risk Management Worksheet, which identifies the initial potential sources of risk associated with this project. This plan will encompass the entire structure of the project and its deliverables, providing a comprehensive framework for assessing each aspect of the project for potential risk.

Risk (Defined)

A risk is any potential problem that may interfere with the successful completion of the project. Risks may potentially affect project schedule, cost, and/or quality.

Risk Management (Defined)

Risk management considers potential technical, financial and business problems that can affect the success of a project. It involves a variety of tasks, such as identifying risks, estimating their impact and when they might occur, and deciding how to avoid or mitigate each risk well in advance.

Risk management includes the following major components:

- Risk Assessment – identifying, analyzing, quantifying and prioritizing risks
- Risk Response Planning – developing a plan of action for each identified risk, and for tracking progress against the plan
- Risk Tracking and Control – monitoring and evaluating project risks
- Risk Reserves - Resources allocated to manage risks

The continuous cycle of risk management activity is depicted graphically below.

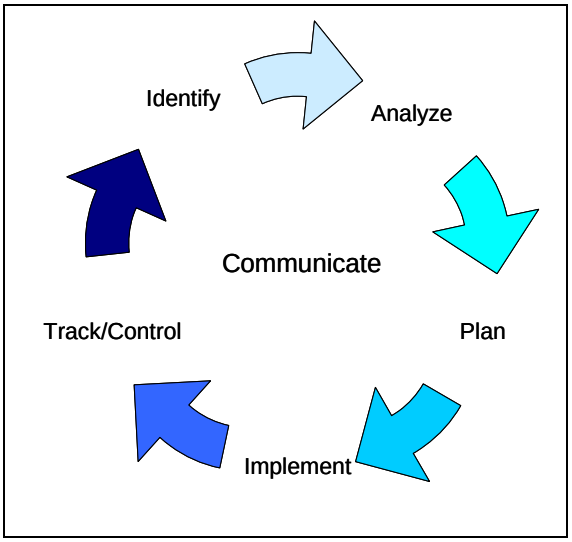


Figure 10: Risk Management Lifecycle

7.1. Risk Management Approach

The RIMS Solution project will follow OES's Project Management Office (PMO) risk management processes, which are based on PMBOK guidelines and the State Information Management Manual (SIMM) Section 200.

7.1.1. Risk Assessment

During the risk assessment process, OES worked to identify, analyze, quantify and prioritize risks. The risk assessment process included a review and determination of whether the identified risks are acceptable. Risk assessment is not a one-time event however; OES will continue to assess the risks identified monthly or more frequently, if required, throughout the project. In addition, OES will include all identified risks in the detailed project plan using OES's standard project management planning tools, such as Microsoft Project.

Risk Identification

Risk identification is the process of discovering those risks which could negatively impact project quality, cost, and/or schedule. It would be impossible to identify all possible risks to the project, therefore emphasis is on identifying risks that are at least somewhat likely to occur and that could have a significant impact on the project. All project team members are responsible for identifying potential risks to the project. Weekly project team meetings include a standing agenda item for raising new, potential risks to the attention of the Project Manager. Project team members may also communicate new, potential risks to the Project Manager by email, telephone, or ad hoc meetings. Potentially serious risks should be communicated as soon as practical rather than waiting for the next meeting.

Project risks can come from many and varied sources. Project team members must be vigilant in recognizing and documenting potential risks so that they can be properly evaluated for project impact. The following information sources were used to aid in the initial identification of risks for the RIMS Solution project:

- SIMM Categories and Examples of Risk
- Project structure and deliverables
- Historical Information
- Project Team Brainstorming
- Interviews with Stakeholders and other states
- Informal market surveys of vendors

Risk Analysis and Quantification

For each risk identified, the OES RIMS Replacement project team will determine and analyze actual risks to the project. For each risk, this analysis identifies quantifies potential impacts to the project, thus providing decision support information to the Project Manager. The Project Manager can use this information to set priorities, allocate resources and define tasks to mitigate or avoid identified risks. The following considerations support the determination of a risk.

- **Timeframe:** A risk is a potential future event. Risk events that have already occurred are not risks, but rather represent problems or issues to be managed outside of the Risk Management process. Events that may occur after the project is completed, but not during the project, are not risks to the project.
- **Likelihood:** What is the estimated probability of the risk event occurring? If there is little or no likelihood of the risk event occurring, the risk may not warrant inclusion in the Risk Management process. An event that is certain to occur is not a risk but rather a problem or issue.
- **Impact:** What is the estimated impact to the project schedule, cost, or quality if the risk event should occur? Risks with little or no impact may not warrant inclusion in the Risk Management process.

Risks that are judged to meet the three criteria described above will be included in the project Risk Management process. Risk analysis and quantification will be continuously performed during the life of the RIMS Replacement project.

During a facilitated session, the OES brainstormed and assessed risks anticipated to impact the RIMS Replacement project. Risks that have been assessed as part of this planning effort are reflected in Section 7.2.

Risk Prioritization

During the initial risk session, the project team identified risks, considered the potential impact or consequences to the project and assigned a priority to each identified risk. Risk priority will be reviewed and evaluated on an ongoing basis throughout the life of the RIMS Replacement project.

Risks are prioritized by severity, with high severity risks given the highest priority for response action and escalation. Risk severity is determined by the probability, impact, and timeframe of the risk.

Probability

Risks are assigned a probability rating based on the estimated likelihood of a risk event occurring.

For the purpose of the risk management worksheet, the risk probability is described as a percentage of the likelihood of the risk occurring.

Table 12: Risk Probability Table

Probability	Probability Rating
Greater than 70% of occurring	High
40% to 70% chance of occurring	Medium
Less than 40% chance of occurring	Low

Impact

Risks are assigned an impact rating based on the estimated negative impact on project cost, schedule and/or quality.

Table 13: Risk Potential Impact

Criteria	Impact Rating
One or more of the following: • Project cost increase of 10% or more • Project schedule increase of 10% or more • Failure to meet required performance • Failure to provide required functionality	High
None of the above High criteria, one or more of the following: • Project cost increase of 5% to 10% • Project schedule increase of 5% to 10% • Significant discrepancies in desired performance • Significant discrepancies in desired functionality	Medium
None of the above High or Medium criteria, one or more of the following: • Project cost increase of less than 5% • Project schedule increase of less than 5% • Minor discrepancies in desired performance • Minor discrepancies in desired functionality	Low

Timeframe

Risks are assigned a timeframe rating based on the time period within which action must be taken to successfully respond to the risk.

Table 14: Risk Timeframe Rating

Time Period to Respond to Risk	Timeframe Rating
Less than 3 months	Short
3 to 6 months	Medium
More than 6 months	Long

Exposure

Risk exposure is determined from the probability and impact ratings, and is used along with the timeframe rating to determine severity. The exposure rating for each risk is the intersection of that risk's impact and probability in the matrix below:

Table 15: Risk Exposure

		Probability		
		High	**Medium**	**Low**
Impact	**High**	**High**	**High**	**Medium**
	Medium	**High**	**Medium**	**Low**
	Low	**Medium**	**Low**	**Low**

Severity

Risk severity is determined from the exposure and timeframe ratings, and is used to prioritize the risk. "High" severity risks have the highest priority for risk response activity and escalation, followed by "Medium", and then "Low" severity risks. The severity rating for each risk is the intersection of that risk's exposure and timeframe in the matrix below:

Table 16: Risk Severity

		Exposure		
		High	**Medium**	**Low**
Time Frame	**Short**	**High**	**High**	**Medium**
	Medium	**High**	**Medium**	**Low**
	Long	**Medium**	**Low**	**Low**

Risk Escalation

The Project Manager will escalate risks to the Executive Steering Committee and Project Sponsor depending on risk severity, as indicated in the risk escalation matrix below:

Table 17: Risk Escalation Overview

		Risk Severity		
		High	**Medium**	**Low**
Escalation	**Executive Steering Committee**	**X**	**X**	**X**
	Project Sponsor	**X**	**X**	

The method of risk escalation is as follows:

- High, medium and low severity risks are reported to the Executive Steering Committee during monthly Executive Steering Committee Meetings
- High and medium severity risks are reported to the Project Sponsor in regular project status reports
- High severity risks are reported to the Executive Steering Committee, Project Sponsor, and OES PMO

7.1.2. Risk Response

For each risk, the OES RIMS Replacement project team will identify the factors of schedule, resources and stakeholder risk tolerances. The risk response category defines the project team's response to risk threats and determines how to appropriately respond to each recognized risk. This response can consist of one of the following approaches:

- **Avoidance:** Risk avoidance involves eliminating the risk by eliminating the cause or by using an alternate approach that does not involve the risk
- **Mitigation:** Risk mitigation involves primarily steps taken beforehand that let you have a contingency available
- **Acceptance:** Risk acceptance involves simply accepting the risk event and the consequences
- **Sharing:** Risk sharing involves shifting some of the risk or risky activities to others, such as contractors, and accepting the remainder

The outputs of the risk management activities are the Risk Management Plan and the Risk Contingency Plan:

- **Risk Management Plan** - The Project Manager and project team members document the procedures to manage risk throughout the project. The Project Manager will present this plan to the Executive Project Sponsor and the Executive Steering Committee for review and acceptance.
- **Risk Contingency Plan** - This plan is part of the Risk Management Plan and is maintained by the Project Manager and project team members. It defines action steps to be taken if an identified risk event should occur.

7.1.3. Risk Tracking and Control

The Project Manager will be responsible for establishing and maintaining risk status information, defining action plans, and taking corrective action when appropriate. In addition, OES PMO staff will assist in monitoring the project for risks.

OES will formally review risks on a monthly basis, or more frequently if required. SIMM-defined risk escalation requirements will be followed. OES will use the Risk Management Plan to respond to risk events throughout the life of the project.

The tools used to monitor risk include project management software to identify potentially impacted project activities situated on the critical path, a Risk Management Plan, and risk management worksheets. Additionally, metrics for measuring performance and progress toward resolving risks will be established and maintained.

Risk control uses the Risk Management Plan to respond to the risk events throughout the duration of the project. As changes occur, identification, quantification and response are repeated. Control and iteration are important. The Project Manager and Project Sponsor control the risks. Some risk control techniques to be used are as follows:

- **Perform preventive action:** This action uses the Risk Management Plan as a guide to proactively reduce or eliminate the probability or impact of a risk event occurring.
- **Perform corrective action:** This action uses the Risk Management Plan as a guide to performing the planned contingency risk response should a risk event occur.
- **Update the Risk Management Plan**: As the project changes, anticipated risks occur or fail to occur. As risk event effects are evaluated or new risks emerge, the Risk Management Plan will be updated.

7.1.4. Risk Reserves

OES expects to modify project scope before extending project resources or schedule to meet project objectives. Any significant changes of 10% (+/-) to the cost, schedule or benefits of the original FSR estimate will be handled and approved in accordance with SIMM guidelines.

7.2. Risk Management Worksheet

The Risk Management Worksheet below describes the risks associated with the project, the probability of the risk occurring, the impact if the risk occurs, and preventive or contingency measures that OES can use to address the risk.

Table 18: Risk Event Probability and Impact Descriptions

Statement of Probability or Impact	Description
Low	Unlikely or highly unlikely
Medium	Better than even chance
High	Highly likely or almost certain

Table 19: Risk Management Worksheet

#	Risk Description	Risk Event Probability	Impact	Preventive Measures
1.	**Organizational Commitment** Unable to establish and sustain organizational priority and support for project Ineffective project governance (e.g. untimely decisions, inactive sponsorship)	30%	High	Establish active sponsorship and ESC Establish organization's priority, merger transition plan and stakeholder communication strategy
2	**State Emergency** State emergency(ies) diverts resources and organizational priorities away from project	Program: 90% Key IT: 20%	Program: Low Key IT: High	Work with sponsor and ESC to ensure continuity of key project resources independent of emergencies Build resource alternatives into vendor contract
3	**Significant Scope Change** Inability to manage and control project scope and contracts increases project cost (e.g. merger, legal mandates, etc.)	50%	Medium	Ensure vendor contract has ability to handle scope expansion Define change control and approval process
4	**User Acceptance and Mastery of System** Lack of end-user buy-in / acceptance of the new system Lack of sufficient and available training to learn the new system	30%	Low	Involve end-users in requirements definition Provide web-based education to the end-user community (related to the project and on the solution) throughout all phases of the project
5.	**Appropriate Project Resources** OES does not have project team resources with the appropriate skill set when needed OES is unable to establish or maintain continuity of project team	30%	Medium	Establish staff resource requirements (and associated duties) prior to project initiation Work with sponsor to secure resources and confirm availability
6.	**Quality of Vendor Services and Solution** Failure of the vendor to perform / deliver Failure of vendor solution to meet requirements and quality standards	20%	High	Build Statement Of Work into RFP which the vendor must agree to structure the project payments based on acceptance of business functionality not project management deliverables

#	Risk Description	Risk Event Probability	Impact	Preventive Measures
7.	**Sufficient Solution Testing** Inadequate acceptance criteria and testing	60%	Medium	Establish a testing team early in the project Trace requirements and all changes through testing Coordinate with State, Regional and Local to ensure User Acceptance Test staff are available when needed
8.	**Failure to Exchange Information with Key Stakeholder Systems** Inability to clearly define and develop data exchanges Complexity of data exchanged increases project effort and complexity	50%	Low	Build date exchange standards into Statement of Work Establish communications between interfacing entities (key staff) and project team
10	**Inadequate Funding** 100% Grant Funding may not get authorized until after FSR is submitted/approved Loss of project funding	50%	High	Establish communication between project sponsor and DOF to manage funding authorization issues

8. Economic Analysis Worksheets

8.1. Methodology

The worksheets included in this section provide a comparative analysis of the costs associated with the proposed solution and the viable alternative for developing and implementing a response information management system solution for OES.

An explanation of the contents of each worksheet can be found in the instructions for Economic Analysis Worksheets. The assumptions made while creating the tables are as follows:

8.2. Existing System Cost Assumptions

8.2.1. Information Technology:

The estimates for existing costs are based on the following information:

State IT Staff

OES currently has IT positions from the Communications and Technology Branch providing 2.5 Personnel Years (PYs) support for the existing RIMS. The annual salaries are $232,518 annually. Below are the existing staff and their support activities:

Table 20: Existing State IT Staff

Annual Hours	Total PY	Staff	Support Activities
89.3	.05	Data Processing Manager (DPM) II	Provides network support and direction
1250.2	.7	Senior Information Analyst (Specialist)	Provides programming oversight and direction
1786	1	Associate Programmer Analyst (Specialist)	Provides help desk, training, and configuration support
1339.5	.75	Staff Programmer Analyst	Provides Programming Support

Hardware/Software

The existing system hardware maintenance is $154, 564 annually.

- RIMS & WEB Server Cluster are $5,896 annually
- Firewall costs are $7,543 annually
- Switches & Routers costs are $54,614 annually
- Intrusion Detection costs are $12,999 annually

- Remote Control Management System costs are $72,248 annually
- Circuit & Router Monitor Control costs are $421 annually
- Backup System costs are $843 annually

The existing system software maintenance and licensing is $129,657 annually.

- NC4 Public Sector LLC software licensing and maintenance are $90,000 annually
- Network Monitoring software are $39,657 annually.

Contract Services

There are no contract services used to support the existing system.

Data Center

The existing Data Center Services costs are currently $12,000 annually.

Facilities

Existing OES Facilities costs are excluded from the analysis because they would be identical for all of the alternatives.

Other

- IT Staff Training is $25,349 per year
- Travel is primarily between Headquarters and the EOCs, at an annual costs of $80,000 per year

8.2.2. Program

The existing program PYs are based on currently filled program positions within OES. The annual cost for these positions is $37,239,078. Current salary and benefit levels were used to calculate existing PY costs for a total of 483 positions within OES which included:

The Other Program annual costs total $2,818,021 and include the following:

- Lodging costs for emergency responses
- Car Rental costs for emergency responses
- Per-diem costs for emergency responses
- Airfare costs for travel emergency responses
- Staff Overtime for on site emergency response support
- Overtime for SOC program staff overtime during emergency responses

8.3. Proposed Solution Assumptions

8.3.1. One-Time IT Project Costs

OES will work with the solution vendor to develop a complete response information management system solution. The solution will utilize commercial software and customize it to meet interface and management reporting needs. The solution will replace the existing software used by OES during an Emergency Response. The following assumptions apply to the solution's one-time IT project costs:

General Assumptions:

Assumptions behind the one-time project costs include the following:

- The project is authorized, project funds are available, and work can begin on July 2010
- By March 2010, OES will complete the procurement process and will select a solution vendor
- OES already has the hardware necessary to support a solution that would be implemented within the next three fiscal years
- A standard interface file platform will be developed by OES and the solution Vendor and be provided to each interfacing State/Local Government and other support agencies
- Two-way connectivity between OES and Local Governments will be built to support secure transmission of Situational Reports and Mission Request transactions
- The vendor will provide application training to OES using Train-the-Trainer method
- OES will facilitate Train-the-Trainer sessions with the Regions and Local Governments and other Agencies

Staffing Assumptions:

OES will redirect a total of 2.2 PYs for the staffing needs of the project. The following staff will be redirected for the project:

Table 21: Proposed Solution Redirected State Staff

Fiscal Year	2008/09 (April - June)		
Class	**Hours**	**PYs**	**Costs**
SR. ISA	53.58	0.03	$3,081
SISA	142.88	0.08	$7,472
Total	**196.46**	**0.1**	**$10,553**

Fiscal Year	2009/10 (July – June)		
Class	**Hours**	**PYs**	**Costs**
SR. ISA	178.6	0.1	$10,271
SISA	535.8	0.3	$28,020
Assoc Isa	0	0	$0
Staff Counsel	303.62	0.17	$15,824
Dep Dir R&R	17.86	0.01	$1,584
Chief Counsel	17.86	0.01	$1,580
Dep Dir Ors	53.58	0.03	$4,752
Sr Emer Serv Coord	53.58	0.03	$2,660
Emer Serv Coord	53.58	0.03	$2,009
Total	**1214.48**	**0.7**	**$66,701**

Fiscal Year	2010/11 (July – June)		
Class	**Hours**	**PYs**	**Costs**
SR. ISA	178.6	0.1	$10,271
SISA	500.08	0.28	$26,152
Assoc Isa	232.18	0.13	$11,073
Staff Counsel	0	0	$0
Dep Dir R&R	160.74	0.09	$14,255
Chief Counsel	160.74	0.09	$14,223
Dep Dir Ors	500.08	0.28	$44,348
Sr Emer Serv Coord	321.48	0.18	$15,962
Emer Serv Coord	500.08	0.28	$18,750
Total	**2553.98**	**1.4**	**$155,034**

Procurement

Fiscal Year 2008/09 and FY 2009/10

- OES will redirect a Senior Information Systems Analyst (ISA) and a Staff ISA to work on Requirement Definition and Procurement Activities. The cost for each FY will be $10,553 for a total of $21,106.
- In Fiscal Year 2009/10, a Legal Staff Council will be utilized to finalize the Vendor Contract. Total cost for Staff Council in that fiscal year is $15,824.

Project

The project activity will include participation from redirected staff with a total cost of $211,181 for Fiscal years 2009/10 and 2010/11. The following is the staff break out:

- OES will redirect Senior ISA to focus on Project Management activities and Project Closeout

- OES will redirect Staff ISA, to focus on Project management, interface testing, training, and system implementation and interface roll out, and project close out
- OES will redirect Associate ISA to focus on system and interface testing and training
- OES will redirect Deputy Director Regional Offices to assist with training
- OES will involve Deputy Directors, Chief Counsel, Sr. Emergency Services Coordinator, and Emergency Services Coordinator to assist with System and Interface Subject Matter Input and testing assistance

Hardware Purchase Assumptions:

- OES will not need to purchase any Hardware for this effort. The existing servers should support the solution

Software Purchase/License Assumptions:

- OES will purchase SQL software, Commercial software, and MAPPER software for a total of $141,000. This expenditure will occur in FY 2010/11.

Telecommunications Assumptions:

- OES will not need to purchase any new telecommunications for this effort

Contract Services Assumptions:

Vendor Contract Services

- The estimated one-time contract services costs for Vendor project management is $134,100, (estimated at 50% of full time for 12 months, at $150/hour for 149 hours/month). All of the costs will incur during FY 2010/11.
- The estimated one-time contract service costs for Software Customization costs will be $186,250. This will include customization for Interface Development, Interfacing with Other Agencies, and Additional Management Reports and Views. These costs will incur during FY 2010/11.
- The estimated one-time contract service costs Other Contract Services is $125,500. These costs include Business Process Reengineering work related to the project, System Implementation, and Interface roll out. These costs will incur during FY 2010/11.

Contract Services Provided to State

- The estimated one-time contract services costs for State Project Management is $268,200 (estimated at full time for 12 months, at $150 per hour for an average 149 hours per month) All of the costs would incur during FY 2010/11
- OES will Contract for a full-time resource to develop the RFP and procurement documentation and assist with the procurement process. The one-time cost for the contract resource (averaged over a 12 month period at a $150 per hour at 149 hours a month) will be $67,050 for three months in FY 2008/09 and $201,150 in FY 2009/10 for three months of RFP development and six months of procurement support.
- OES will contract for a full-time resource to provide Testing Support and management. The one-time cost for the contract resource will be $74,500 (estimated for 4 months, at $125 an hour at 149 hour a month). All of the costs would fall within FY 2010/11.
- OES will contract for a full-time resource to provide training and implementation support. The one-time cost for the contract resource will be $111,750 (estimated for 6 months at $125 per hour at 149 hours a month). All of the costs would fall within FY 2010/11.
- The estimated one-time contract services costs for IPO services is $26,820 (estimated at 10% of full time for 12 months, at $150/hour for 149 hours a month). All of the costs will incur during FY 2010/11.
- IV&V is estimated to start during RFP development. The estimated one-time contract services costs for IV&V services is $80,460 (estimated at 15% of full time for 24 months, at $150/hour for 149 hours/month). Costs will be $40,230 during FY 2009/10 and $40,230 during FY 2010/11.

Data Center Services Assumptions:

- The application and database will be housed at OES. The anticipated one-time cost of this is $2,000. This cost will occur during FY 2010/11.

Agency Facilities Assumptions:

- There are no Agency Facilities costs; the assumption is that the project team will reside at the OES Headquarters located at 3650 Schriever Ave, Mather CA 95655 and that there will be space available for them.

Other Solution Assumptions:

Training

- Formal technical training will be included with contract services for the State IT staff

Travel

- Project-related travel is expected to be primarily between Headquarters and the field offices, and is estimated at $28,200 for the total effort. This is based on an average of $400 average for 58 training sessions.

8.3.2. Continuing IT Project Costs

The following continuing costs have been estimated:

Staffing Assumptions:

The continued staffing is based on Communications and Technology Branch 2.5 PY IT staff moving from the existing system to support the new application, provide help desk support, provide application support, and PMO Support. Below are the staff that will be redirected for continued IT Project costs:

Table 22: Proposed Continuing State IT Staff

Annual Hours	Total PY	Staff	Support Activities
89.3	.05	Data Processing Manager (DPM) II	Provides network support and direction
1250.2	.7	Senior Information Analyst (Specialist)	Provides programming oversight and direction
1786	1	Associate Programmer Analyst (Specialist)	Provides help desk, training, and configuration support
1339.5	.75	Staff Programmer Analyst	Provides Programming Support

- The Data Processing Manager total costs for FY 2011/12 and ongoing years will be $5,392 for each year
- The Senior ISA (Specialist) costs beginning FY 2011/12 and ongoing years will be $71,896 per year
- The Associate Programmer Analyst (Specialist) costs for FY 2011/12 and ongoing will be $85,180 per year
- The Staff Programmer Analyst (Specialist) costs for FY 2011/12 and ongoing will be $70,051 per year

Hardware Lease/Maintenance Assumptions:

OES will have the following

- On-going Hardware costs (totaling $154,564) will continue beginning in FY Four and ongoing
- RIMS & WEB Server Cluster costs continuing in FY 2011/12 and ongoing are $5,896 per year
- Firewall costs continuing FY 2011/12 and ongoing are $7,543
- Switches & Routers costs continuing FY 2011/12 and ongoing are $54,614
- Intrusion Detection costs continuing FY 2011/12 and ongoing are $12,999
- Remote Control Management System costs continuing FY 2011/12 and ongoing are $72,248
- Circuit & Router Monitor Control costs continuing FY 2011/12 and ongoing are $421
- Backup System costs continuing FY 2011/12 and ongoing are $843

Software Lease/Maintenance Assumptions:

Software licensing and maintenance costs were provided by the vendors who responded to the Market Survey. The FSR estimated costs are based on an aggregate of the reviewed costs for various products reviewed during the market research. The following are the estimated Software Lease/Maintenance costs:

- Network monitoring software costs will continue beginning in FY 2011/12 and ongoing. The cost per FY is $39,657
- NC4 Public Sector LLC software licensing and maintenance will no longer be required for an annual savings of $90,000 beginning in FY 2011/12.
- Commercial Software and maintenance annual costs for the proposed solution are estimated at $11,000 beginning in FY 2011/12 and ongoing

Telecommunications Assumptions:

- There are no telecommunications costs associated with the proposed solution

Contract Services Assumptions:

- There will be no ongoing contract services beyond the on-time proposed cost.

Data Center Services Assumptions:

- The anticipated ongoing cost of Data Center Services will be $12,000 a year will continue beginning FY 2011/12 and ongoing

Agency Facilities Assumptions:

- There are no Agency Facilities costs; the assumption is that the project team will reside at the OES Headquarters located at 3650 Schriever Ave, Mather CA 95655 and that there will be space available for them

Other Assumptions:

Training

- IT Staff Training is $25,349 per year and will continue beginning in FY 2011/12 and ongoing

Travel

- Travel is primarily between Headquarters and the Emergency Operation Centers (EOCs), at an annual cost of $80,000 per year and will continue beginning in FY 2011/12

8.3.3. Continuing Existing IT and Program Costs

Continuing Existing IT Staff Costs:

The Existing IT Staff Costs will not change.

Continuing Existing Program Costs:

The Existing Program Costs will not change.

Continuing Hardware Lease/Maintenance Costs:

The Existing Hardware Lease/Maintenance Costs will not change.

Continuing Software Lease/Maintenance Costs:

The Existing Software Lease/Maintenance Costs will not change.

Continuing Other Contract Services Costs:

The Existing Other Contract Costs will not change.

Continuing Data Center Staff Costs:

The Existing Data Center Costs will not change.

Continuing Agency Facilities Staff Costs:

The Existing Agency Facilities Costs will not change.

Continuing Existing Program Staff Costs:

The Existing Program Staff Costs will not change.

Continuing Existing Program Other Costs:

The Existing Program Other Costs will not change.

8.4. Alternative #1 Assumptions – Custom Development

8.4.1. One-Time IT Project Costs

OES will work with the solution vendor to develop a complete Response Information Management System solution. The solution will take commercial software and customize it to meet interface, mobile solution, and management reporting needs. The solution would enhance the existing commercial software used by OES during an Emergency Response. The following assumptions apply to the solution's one-time IT project costs:

General Assumptions:

Assumptions behind the one-time project costs include the following:

- The project would be authorized, project funds are available, and work can begin on January 2010
- OES already has the hardware necessary to support a solution that would be implemented within the next three fiscal years
- A standard interface file platform will be created by OES and the solution Vendor and provided to each interfacing Local Government and other Agency
- Two-way connectivity between OES and Local Governments will be built to support secure transmission of Situational Reports and Mission Request transactions
- OES will work with the Vendor to create a 'Dashboard' window/reports mechanism for Management Views
- Vendor will develop a mobile solution that interfaces with the software solution
- The vendor will provide application training to OES in a Train-the-Trainer fashion
- OES will facilitate Train-the-Trainer sessions with the Regions and Local Governments and other Agencies

Staffing Assumptions:

OES will redirect a total of 6.7 PYs for the staffing needs of the project. The following 9 staff (making up the total 6.7 PY) will be redirected for the project:

Table 23: Alternative Solution State Staff

Fiscal Year	2008/09 (April - June)		
	Hours	**PYs**	**Costs**
	893	0.5	$49,027
Total	**893**	**0.5**	**$49,027**
Fiscal Year	**2009/10 (July – June)**		
	Hours	**PYs**	**Costs**
	3750.6	2.1	$208,766
Total	**3750.6**	**2.1**	**$208,766**
Fiscal Year	**2010/11 (July – June)**		
	Hours	**PYs**	**Costs**
	7322.6	4.1	$409,666
Total	**7322.6**	**4.1**	**$409,666**

Hardware Purchase Assumptions:

- OES will not need to purchase any Hardware for this effort. The existing servers should support the solution

Software Purchase/License Assumptions:

- OES will not need to purchase new software as their existing version will be utilized for customization

Telecommunications Assumptions:

- OES will not need to purchase any new telecommunications for this effort

Contract Services Assumptions:

Vendor Contract Services

- The estimated one-time contract services costs for Vendor Project Management is $201,150 (estimated at 50% of full time for 18 months, at $150/hour for 149 hours/month). A total of $67,050 costs will fall within FY 2009/10 and a total of $134,100 costs will fall within FY 2010/11.
- The estimated one-time contract service cost for Software Customization is $279,375 of which $93,125 will fall within FY 2009/10 and $186,250 will fall within FY2010/11.
- The estimated one-time contract service costs Other Contract Services is $159,750. These costs include Business Process Reengineering work related to the project, System Implementation, and Interface roll out. These costs will fall within FY 2010/11

Contract Services Provided to State

- The estimated one-time contract services costs for State Project Management is $402,300 (estimated at full time for 18 months, at $150 per hour at 149 hours a month). FY 2009/10 is estimated to be $134,100 and FY 2010/11 is estimated to be $268,200.
- OES will Contract for a full-time resource to perform Requirements gathering and documentation. The one-time cost for the contract resource is estimated to be a total of $134,100 (estimated at full time for 6 months, at $150 hour at 149 hours a month). FY 2009/10 is estimated to be $67,050 and FY 2010/11 is estimated to be $67,050.
- OES will contract for a full-time resource to provide Testing Support and management. The one-time total cost for the contract resource will be $167,635 (estimated for 9 months, at $125 an hour at 149 hour a month). FY 2009/10 is estimated to be $18,625 and FY 2010/11 is estimated to be $149,000.
- OES will contract for a full-time resource to provide training and implementation support. The one-time total cost for the contract resource will be $204,875 (estimated for 11 months, at $125 an hour at 149 hour a month) with all costs falling within FY 2010/11.
- The estimated one-time contract services costs for IPO services is $40,230 (estimated at 10% of full time for 18 months, at $150/hour for 149 hours/month). FY 2009/10 will have costs of $13,250 and FY 2010/11 will have costs of $26,820.
- The estimated one-time contract services costs for IV&V services is $80,460 (estimated at 15% of full time for 24 months, at $150/hour for 149 hours/month). FY 2009/10 will have costs of $40,230 and FY 2010/11 will have costs of $40,230.

Data Center Services Assumptions:

- One-time cost of this is $2,000. This cost will occur during FY 2010/11.

Agency Facilities Assumptions:

- There are no Agency Facilities costs; the assumption is that the project team will reside at the OES Headquarters located at 3650 Schriever Ave, Mather CA 95655 and that there will be space available for them.

Other Solution Assumptions:

Training

- Formal technical Oracle training for the State IT staff is estimated at $5,500 in FY 2009/10. Software Administration training is estimated at $10,000 in FY 2009/10.

Travel

- Project-related travel is expected to be primarily between Headquarters and the field offices, and is estimated at $28,200 for the total effort in FY 2010/11. This is based on an average of $400.00 average for 58 training sessions.

8.4.2. Continuing IT Project Costs

The following continuing costs have been estimated:

Staffing Assumptions:

The continued staffing is based on Communications and Technology Branch 2.5 PY IT staff moving from the existing system to support the new application, provide help desk support, provide application support, and PMO Support. Below are the staff that will be redirected for continued IT Project costs:

Table 24: Continuing State IT Staff

Annual Hours	Total PY	Staff	Support Activities
89.3	.05	Data Processing Manager (DPM) II	Provides network support and direction
1250.2	.7	Senior Information Analyst (Specialist)	Provides programming oversight and direction
1786	1	Associate Programmer Analyst (Specialist)	Provides help desk, training, and configuration support
1339.5	.75	Staff Programmer Analyst	Provides Programming Support

- The Data Processing Manager total costs for FY 2011/12 and ongoing years will be $5,392 for each year

- The Senior ISA (Specialist) costs beginning FY 2011/12 and ongoing years will be $71,896 per year
- The Associate Programmer Analyst (Specialist) costs for FY 2011/12 and ongoing will be $85,180 per year
- The Staff Programmer Analyst (Specialist) costs for FY 2011/12 and ongoing will be $70,051 per year

Hardware Lease/Maintenance Assumptions:

OES will have the following:

- On-going Hardware costs (totaling $154,564) continuing beginning in FY 2011/12 and ongoing.
- RIMS & WEB Server Cluster costs continuing in FY 2011/12 and ongoing are $5,896 per year
- Firewall costs continuing FY 2011/12 and ongoing are $7,543
- Switches & Routers costs continuing FY 2011/12 and ongoing are $54,614
- Intrusion Detection costs continuing FY 2011/12 and ongoing are $12,999
- Remote Control Management System costs continuing FY 2011/12 and ongoing are $72,248
- Circuit & Router Monitor Control costs continuing FY 2011/12 and ongoing are $421
- Backup System costs continuing FY 2011/12 and ongoing are $843

Software Lease/Maintenance Assumptions:

Costs for software and maintenance costs were provided by the vendors who responded to the Market Survey. The FSR estimated costs are based on an aggregate of the reviewed costs for various products reviewed during the market research. The following are the estimated Software Lease/Maintenance costs:

- Network monitoring software costs will be incurred beginning FY 2011/12 and ongoing. The cost per FY is $39,657.
- Commercial Software and maintenance costs estimated to continue beginning in FY 2011/12 and ongoing are $90,000

Telecommunications Assumptions:

- There are no telecommunications costs associated with the proposed solution

Contract Services Assumptions:

- There will be no ongoing contract services beyond the on-time proposed cost

Data Center Services Assumptions:

- The anticipated ongoing cost of Data Center Services will be $12,000 a year will continue beginning FY 2011/12 and ongoing

Agency Facilities Assumptions:

- There are no Agency Facilities costs; the assumption is that the project team will reside at the OES Headquarters located at 3650 Schriever Ave, Mather CA 95655 and that there will be space available for them.

Other Solution Assumptions:

Training

- IT Staff Training of $25,349 per year and will continue beginning in FY 2011/12 and ongoing

Travel

- Travel primarily between Headquarters and the Emergency Operation Centers (EOCs), at a cost of $80,000 per year will continue beginning in FY 2011/12

8.4.3. Continuing Existing IT and Program Costs

As the alternative is a customization of commercial software which OES currently has, benefit is realized in not having One-Time software costs affiliated with Alternative one. The following continuing existing IT and program costs have been estimated:

Continuing Existing IT Staff Costs:

The Existing IT Staff Costs will not change.

Continuing Existing Program Costs:

The Existing Program Costs will not change.

Continuing Hardware Lease/Maintenance Costs:

The Existing Hardware Lease/Maintenance Costs will not change.

Continuing Software Lease/Maintenance Costs:

The Existing Software Lease/Maintenance Costs will not change.

Continuing Other Contract Services Costs:

The Existing Other Contract Costs will not change.

Continuing Data Center Staff Costs:

The Existing Data Center Costs will not change.

Continuing Agency Facilities Staff Costs:

The Existing Agency Facilities Costs will not change.

Continuing Existing Program Staff Costs:

The Existing Program Staff Costs will not change.

Continuing Existing Program Other Costs:

The Existing Program Other Costs will not change.

8.5. Cost Worksheets

The worksheets that follow Appendices A and B itemize the costs of the proposed solution and alternative over the next three fiscal years. See **Attachment A – Economic Analysis Worksheet Details.**

EXISTING SYSTEM COST WORKSHEET

Office of Emergency Services

Project: Agency Wide Infrastructure Enhancement

BASELINE

	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		TOTALS	
	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts
Information Technology (IT) Costs:										
Continuing:										
Staff (Salaries & Benefits)	2.5	$ 232,518	2.5	$ 232,518	2.5	$ 232,518	2.5	$ 232,518	10.0	$ 930,071
Hardware Lease/Maintenance		$ 154,564		$ 154,564		$ 154,564		$ 154,564		$ 618,256
Software Maintenance/Licenses		$ 129,657		$ 129,657		$ 129,657		$ 129,657		$ 518,628
Contract Services		$ -		$ -		$ -		$ -		$ -
Data Center Services		$ 12,000		$ 12,000		$ 12,000		$ 12,000		$ 48,000
Agency Facilities		$ -		$ -		$ -		$ -		$ -
Other		$ 105,349		$ 105,349		$ 105,349		$ 105,349		$ 421,396
Total IT Costs	2.5	$ 634,088	2.5	$ 634,088	2.5	$ 634,088	2.5	$ 634,088	10.0	$ 2,536,351
Program Costs:										
Continuing:										
Staff	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	1932.0	$ 148,956,311
Other		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 11,272,085
Total Program Costs	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	1932.0	$ 160,228,396
Total Existing System Costs	485.5	$ 40,691,187	485.5	$ 40,691,187	485.5	$ 40,691,187	485.5	$ 40,691,187	1942.0	$ 162,764,747

*See detail sheets for breakdown

PROPOSED SYSTEM COST WORKSHEET

Office of Emergency Services

Project: Agency Wide Infrastructure Enhancement

	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		TOTALS	
	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts
Information Technology (IT) Costs:										
One-time:										
Staff (Salaries & Benefits)	0.1	$ 10,553	0.7	$ 66,701	1.4	$ 155,034	0.0	$ -	2.2	$ 232,288
Hardware Purchase		$ -		$ -		$ -		$ -		$ -
Software Purchase/License		$ -		$ -		$ 141,000		$ -		$ 141,000
Telecommunications		$ -		$ -		$ -		$ -		$ -
Contract Services										
Software Customization		$ -		$ -		$ 186,250		$ -		$ 186,250
Project Management		$ -		$ -		$ 402,300				$ 402,300
Project Oversight		$ -		$ -		$ 26,820		$ -		$ 26,820
IV&V Services		$ -		$ 40,230		$ 40,230		$ -		$ 80,460
Other Contract Services		$ 67,050		$ 201,150		$ 311,750		$ -		$ 579,950
TOTAL Contract Services		$ 67,050		$ 241,380		$ 967,350		$ -		$ 1,275,780
Data Center Services		$ -		$ -		$ 2,000		$ -		$ 2,000
Agency Facilities		$ -		$ -		$ -		$ -		$ -
Other		$ -				$ 28,200		$ -		$ 28,200
Total One-time IT Costs	0.1	$ 77,603	0.7	$ 308,081	1.4	$ 1,293,584	0.0	$ -	2.2	$ 1,679,268
Continuing:										
Staff	0.0	$ -	0.0	$ -	0.0	$ -	2.5	$ 232,518	2.5	$ 232,518
Hardware Lease/Maintenance		$ -		$ -		$ -		$ 154,564		$ 154,564
Software Maintenance/Licenses		$ -		$ -		$ -		$ 50,657		$ 50,657
Telecommunications		$ -		$ -		$ -		$ -		$ -
Contract Services		$ -		$ -		$ -		$ -		$ -
Data Center Services		$ -		$ -		$ -		$ 12,000		$ 12,000
Agency Facilities		$ -		$ -		$ -		$ -		$ -
Other		$ -		$ -		$ -		$ 105,349		$ 105,349
Total Continuing IT Costs	0.0	$ -	0.0	$ -	0.0	$ -	2.5	$ 555,088	2.5	$ 555,088
TOTAL PROJECT COSTS	0.1	$ 77,603	0.7	$ 308,081	1.4	$ 1,293,584	2.5	$ 555,088	4.7	$ 2,234,355
Continuing Existing Costs:										
Information Technology Costs:										
Staff	2.5	$ 232,518	2.5	$ 232,518	2.5	$ 232,518	0.0	$ -	7.5	$ 697,553
Other		$ 401,570		$ 401,570		$ 401,570		$ -		$ 1,204,710
Total Existing IT Costs	2.5	$ 634,088	2.5	$ 634,088	2.5	$ 634,088	0.0	$ -	7.5	$ 1,902,263
Program Costs:										
Staff	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	1932.0	$ 148,956,311
Other		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 11,272,085
Total Program Costs	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	1932.0	$ 160,228,396
TOTAL CONTINUING EXISTING COSTS	485.5	$ 40,691,187	485.5	$ 40,691,187	485.5	$ 40,691,187	483.0	$ 40,057,099	1939.5	$ 162,130,659
TOTAL ALTERNATIVE PROJECT COSTS	485.6	$ 40,768,790	486.2	$ 40,999,267	486.9	$ 41,984,770	485.5	$ 40,612,187	1944.2	$ 164,365,015
Increased Revenues		$ -		$ -		$ -		$ -		$ -

*See detail sheets for breakdown

ALTERNATIVE 1 COST WORKSHEET

Office of Emergency Services
Project: Agency Wide Infrastructure Enhancement

	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		TOTALS	
	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts
Information Technology (IT) Costs:										
One-time:										
Staff (Salaries & Benefits)	0.5	$ 49,027	2.1	$ 208,766	4.1	$ 409,666	0.0	$ -	6.7	$ 667,459
Hardware Purchase		$ -		$ -		$ -		$ -		$ -
Software Purchase/License		$ -		$ -		$ -		$ -		$ -
Telecommunications		$ -		$ -		$ -		$ -		$ -
Contract Services										
Software Customization		$ -		$ 93,125		$ 186,250		$ -		$ 279,375
Project Management		$ -		$ 201,150		$ 402,300				$ 603,450
Project Oversight		$ -		$ 13,410		$ 26,820		$ -		$ 40,230
IV&V Services		$ -		$ 40,230		$ 40,230		$ -		$ 80,460
Other Contract Services		$ 67,050		$ 85,650		$ 513,625		$ -		$ 666,325
TOTAL Contract Services		$ 67,050		$ 433,565		$ 1,169,225		$ -		$ 1,669,840
Data Center Services		$ -		$ -		$ 2,000		$ -		$ 2,000
Agency Facilities		$ -		$ -		$ -		$ -		$ -
Other		$ -		$ 15,500		$ 28,200		$ -		$ 43,700
Total One-time IT Costs	0.5	$ 116,077	2.1	$ 657,831	4.1	$ 1,609,091	0.0	$ -	6.7	$ 2,382,999
Continuing:										
Staff	0.0	$ -	0.0	$ -	0.0	$ -	2.5	$ 232,518	2.5	$ 232,518
Hardware Lease/Maintenance		$ -		$ -		$ -		$ 154,564		$ 154,564
Software Maintenance/Licenses		$ -		$ -		$ -		$ 129,657		$ 129,657
Telecommunications		$ -		$ -		$ -		$ -		$ -
Contract Services		$ -		$ -		$ -		$ -		$ -
Data Center Services		$ -		$ -		$ -		$ 12,000		$ 12,000
Agency Facilities		$ -		$ -		$ -		$ -		$ -
Other		$ -		$ -		$ -		$ 105,349		$ 105,349
Total Continuing IT Costs	0.0	$ -	0.0	$ -	0.0	$ -	2.5	$ 634,088	2.5	$ 634,088
TOTAL PROJECT COSTS	0.5	$ 116,077	2.1	$ 657,831	4.1	$ 1,609,091	2.5	$ 634,088	9.2	$ 3,017,087
Continuing Existing Costs:										
Information Technology Costs:										
Staff	2.5	$ 232,518	2.5	$ 232,518	2.5	$ 232,518	0.0	$ -	7.5	$ 697,554
Other		$ 401,570		$ 401,570		$ 401,570		$ -		$ 1,204,710
Total Existing IT Costs	2.5	$ 634,088	2.5	$ 634,088	2.5	$ 634,088	0.0	$ -	7.5	$ 1,902,264
Program Costs:										
Staff	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	483.0	$ 37,239,078	1932.0	$ 148,956,312
Other		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 2,818,021		$ 11,272,084
Total Program Costs	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	483.0	$ 40,057,099	1932.0	$ 160,228,396
TOTAL CONTINUING EXISTING COSTS	485.5	$ 40,691,187	485.5	$ 40,691,187	485.5	$ 40,691,187	483.0	$ 40,057,099	1939.5	$ 162,130,660
TOTAL ALTERNATIVE PROJECT COSTS	486.0	$ 40,807,264	487.6	$ 41,349,018	489.6	$ 42,300,278	485.5	$ 40,691,187	1948.7	$ 165,147,747
Increased Revenues		$ -		$ -		$ -		$ -		$ -

PROJECT FUNDING PLAN

Office of Emergency Services
Project: Agency Wide Infrastructure Enhancement

	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		TOTALS	
	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts
TOTAL PROJECT COSTS	0.1	$ 77,603	0.7	$ 308,081	1.4	$ 1,293,584	2.5	$ 555,088	4.7	$ 2,234,355
REDIRECTED RESOURCES										
Staff	0.1	$ 10,553	0.7	$ 66,701	1.4	$ 155,034	2.5	$ 232,518	4.7	$ 464,805
Redirected Funds										
Existing System		$ -		$ -		$ -		$ 322,570		$ 322,570
Other fund sources		$ -		$ -		$ -		$ -		$ -
Total Redirections	0.1	$ 10,553	0.7	$ 66,701	1.4	$ 155,034	2.5	$ 555,088	4.7	$ 787,375
ADDITIONAL FUNDING										
One-Time Project Costs	0.0	$ -	0.0	$ -	0.0		0.0	$ -	0.0	$ -
Federal Grant Funding		$ 67,050		$ 201,150		$ 1,138,550		$ -		$ 1,406,750
Continuing Project Costs	0.0	$ -	0.0	$ -	0.0		0.0		0.0	$ -
TOTAL NEW FUNDING	0.0	$ 67,050	0.0	$ 201,150	0.0	$ 1,138,550	0.0	$ -	0.0	$ 1,406,750
Total Project Funding	0.1	$ 77,603	0.7	$ 267,851	1.4	$ 1,293,584	2.5	$ 555,088	4.7	$ 2,194,125
Difference: Funding - Costs	0.0	$ -	0.0	$ (40,230)	0.0	$ -	0.0	$ -	0.0	$ (40,230)
TOTAL ESTIMATED SAVINGS	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -
NEW **PROGRAM** FUNDING NEEDED	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -

ADJUSTMENTS, SAVINGS AND REVENUES WORKSHEET
(DOF Use Only)

Office of Emergency Services
Project: Agency Wide Infrastructure Enhancement

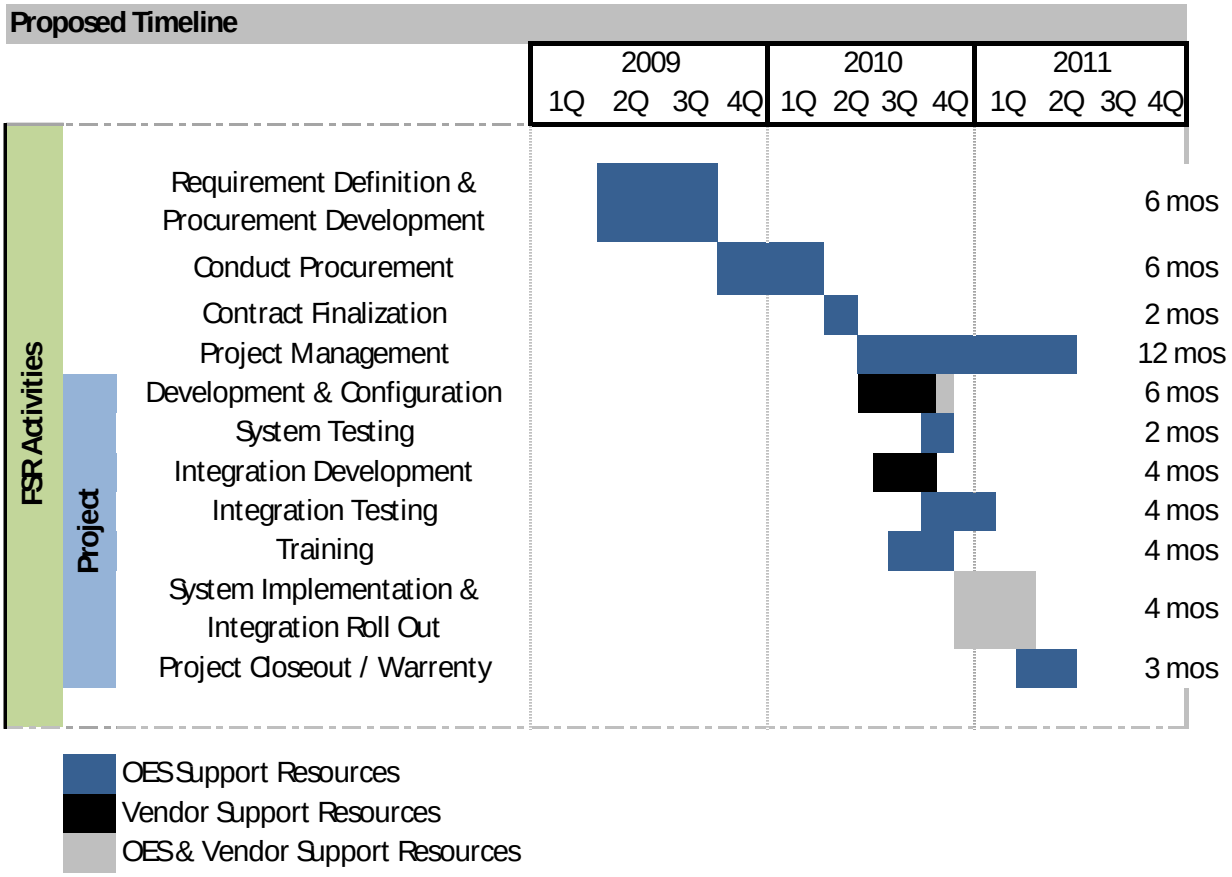
	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		TOTALS	
Annual Project Adjustments	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts	PYs	Amounts
One-time Costs										
Previous Year's Baseline	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Annual Augmentation	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Total One-Time Budget Actions	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Continuing Costs										
Previous Year's Baseline	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Annual Augmentation	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Total Continuing Budget Actions	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		
Total Annual Project Budget Augmentation	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -		

Total Additional Project Funds Needed

Annual Savings/Revenue Adjustments

Cost Savings	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -
Increased Program Revenues	0.0	$ -	0.0	$ -	0.0	$ -	0.0	$ -

Appendix A – Project Schedule



Appendix B – Acronyms

Acronym	Definition
AFRCC	Air Force Reserve Coordination Center
Agency	State or Federal Entity
ARC	American Red Cross
ARF	Action Request Form - for FEMA assistance
Attachment	Anything linked or 'added on' to the document
BORSTAR	US Border Patrol Search Trauma and Rescue
CAL OSHA	California Occupational Safety Health Association
CALEPA	California Environmental Protection Agency
Cal-ESAR	California Explorer Search and Rescue
CSC	California Service Corps
CALTRANS	California Department of Transportation
CAP	Civil Air Patrol
CARB	California Air Resources Board
CARDA	California Rural Development Agency
CASSDA	California Swiss Search Dog Association
CCC	California Conservation Corps
CDC	California Department of Corrections
CDF	California Department of Forestry
CDFA	California Department of Food & Agriculture
CDMG	California Division of Mines & Geology
CEC	California Energy Commission
CHP	California Highway Patrol
CNG	California National Guard
CUEA	California Utilities Emergency Association
CYA	California Youth Authority
CYA/MPS	California Youth Authority/Mountain Public Service Rescue Team
DART	Drowning Accident Rescue Team
Data Sharing	An E-Team software feature to share data across networks
DFG	Department of Fish and Game
DGS	Department of General Services

Acronym	Definition
DHS	Department of Health Services
Distribution	A field that limits who can view the report
DMH	Department of Mental Health
DOJ	Department of Justice
DPR	Department of Parks and Recreation
DSS	Department of Social Services
DTSC	Department of Toxics and Substance Control
DWR	Department of Water Recourses
EDD	Employee Development Department
Egress	an exit from a place; the act of going out from or of leaving a place
EMSA	Emergency Medical Services Authority
EOC	Emergency Operations Center
Event	A significant occurrence; multiple related incidents
FRMAC	Federal Radiological Monitoring and Assessment Center
FEMA	Federal Emergency Management Agency
FIRESCOPE	Firefighting Resources of California Organized for Potential Emergencies
ICS	Incident Command System
IDE	Initial Damage Estimate
Incident	An occurrence at the city or OA level affecting lives, property or the environment
Ingress	entry into a place; a way of entering a place
ISP	Internet Service Provider
JOC	Joint Operations Center
Lead Agency	Entity who will be responsible for an Event or Incident
LEMA	Law Enforcement Mutual Aid
MBDA	US Minority Business Development Agency
Mission number	Computer generated number issued by State OES to track State Recourses
MRT	Mission Request Tasking
NIMS	National Incident Management System
OA	Operational Area
oasis	Operational Area Satellite Information System
OEHHA	Office of Environmental Health Hazard Assessment

Acronym	Definition
OES	Office of Emergency Services
OSHPD	Office of Statewide Health, Planning and Development
PUC	Public Utilities Commission
REOC	Region Emergency Operations Center
RFA	Request for Federal Assistance - Old name for FEMA form
RIMS	Response Information Management System
SAR	Search and Rescue
SEMS	Standardized Emergency Management System
SME	Subject Matter Expert
SOC	State Operations Center
SDAC	State Dose Assessment Center
Status	The current condition of an occurrence; is subject to change
SWRCB	State Water Resources Control Board
USCG	US Coast Guard
DOD	US Department of Defense
DOE	US Department of Energy
US EPA	US Environmental Protection Agency
US NASA	US National Aeronautical and Space Administration
US NRC	US Nuclear Regulatory Commission
USACE	US Army Corps of Engineers
WC	Warning Center - (State OES Warning Center)
WOOF	Wilderness Finders Search Dog Teams

Attachment A – OES RIMS Replacement FSR EAW Attachment

OES_RIMS_Replacement_FSR_EAW_Attachment_v2.xls

Attachment B – OES Organization Charts