

**REPORT TO THE LEGISLATURE:
CHILD WELFARE SERVICES AUTOMATION STUDY**



STATE OF CALIFORNIA
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in partnership with

OFFICE OF SYSTEMS INTEGRATION

California Department of Social Services
Report to the Legislature: Child Welfare Services Automation Study

Report to the Legislature
Child Welfare Services Automation Study

Legislative Mandate

AB 106, Committee on Budget. Human Services. (Chapter 32, Statutes of 2011)

SEC. 71. (a) By January 10, 2012, the State Department of Social Services, in partnership with the Office of Systems Integration and stakeholders, including legislative staff and counties, shall do all of the following:

(1) Determine and describe the degree to which the Child Welfare Services/Case Management System (CWS/CMS) satisfies all of the following requirements:

(A) Complies with applicable existing law, regulation, and policy.

(B) Supports existing child welfare services practice, including, but not limited to, key child welfare services functions, ease of access to case and service information, multidisciplinary case management, and ease of use.

(C) Links to information that enhances investigation, case management, or efficiency.

(D) Provides ready access to data for reporting, planning, management, and program outcome monitoring.

(2) Determine the best approach or approaches to address any missing functionalities that are critical to child welfare services operations. Options shall include building functionality into the existing CWS/CMS, restarting the CWS/Web procurement, or developing a new procurement.

(3) Assess and report on communication from the federal government regarding system requirements, both by the January 10, 2012, deadline, and thereafter, when the department receives additional direction regarding federal requirements.

(4) Recommend next steps, including a timeline, for implementing approaches identified pursuant to paragraph (2).

(b) (1) The requirement for submitting a report imposed under subdivision (a) is inoperative on January 10, 2016, pursuant to Section 10231.5 of the Government Code.

(2) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

Copies of this report can be obtained from:

California Department of Social Services
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Section I

Introduction / Executive Summary

I. INTRODUCTION/EXECUTIVE SUMMARY

A. Purpose of this Report

The California 2011/12 Enacted Budget indefinitely suspended the Child Welfare Services Web (CWS/Web) Project. This report has been developed by the California Department of Social Services (CDSS) in partnership with the Office of Systems Integration (OSI), legislative staff, the County Welfare Directors Association of California (CWDA), the California Technology Agency (Tech Agency), and county and other stakeholders to provide responses to the State Legislature as directed by Assembly Bill (AB) 106, Chapter 32.

The CDSS and OSI established the Child Welfare Services Automation Study Team (CAST) with selected state and county stakeholders who demonstrated the required technical expertise to conduct a thorough analysis of the Child Welfare Services/Case Management System (CWS/CMS). The aim of the study was to accurately assess and evaluate the information to be used in responding to the Legislature by January 10, 2012, as required by AB 106, Chapter 32, Section 71.

This report contains an assessment of the business needs of Child Welfare System of services (CWS), an assessment of the existing system, an analysis of viable automated system options to meet the critical business needs, communication from the federal government regarding Statewide Automated Child Welfare Information System (SACWIS) redesign requirements, and a recommendation on next steps, including a timeline and implementation approach.

This report addresses the questions raised in AB 106, which stated:

1. *Determine and describe the degree to which CWS/CMS system:*
 - a. *Is in compliance with current law, regulation, and policy.*
 - b. *Supports current Child Welfare System (CWS) practice, including but not limited to key CWS functions, ease of access to case and service information, multidisciplinary case management, and ease of use.*
 - c. *Links to information that enhances investigation, case management, or efficiency.*
 - d. *Provides ready access to data for reporting, planning, management, and program outcome monitoring.*
2. *Determine the best approach to address any missing functionalities that are critical to CWS operations. Options shall include building functionality into the current CWS/CMS, restarting the CWS/Web procurement, or developing a new procurement.*
3. *Assess and report on communication from the federal government regarding requirements of the system, both by the January 10, 2012 deadline and thereafter when there is additional direction on federal expectations.*
4. *Recommend next steps, including a timeline, for implementing the recommended approach or approaches.*

B. Executive Summary

1. Preface

With the indefinite suspension of the CWS/Web Project and legislative report request, staff from CDSS, OSI and counties researched the existing CWS/CMS and identified alternatives related to its continued use as well as its replacement. Based on findings from previous CDSS-sponsored reports such as the Go Forward Plan and the CWS/CMS Technical Architecture Alternatives Analysis Report, and research completed for this report, it is neither feasible nor cost-effective to maintain and enhance the old technology of the existing system; therefore, its replacement is the recommended alternative.

The recommendation is the Buy/Build alternative, involving the purchase of an application or applications that are already available, such as commercial off-the-shelf software (COTS) or a transfer system (currently in use or production in another state). The application or suite of applications would be purchased and used as-is, with any additional business functionality identified and built over time as extensions, basically customizing the system for California's program needs. This alternative has support from stakeholders, including county child welfare agencies which are the primary users of the system, based on the potential for greatly enhanced functionality at the lowest cost and a relatively swift implementation schedule. The one-time cost estimate used to evaluate this alternative against the other alternatives under study is approximately \$170 million over a five-year period. This estimate does not represent the total project cost, which will be provided in a forthcoming feasibility study report.¹

The team conducted a Request for Information (RFI) in September of 2011 to validate the capacities of existing COTS or transfer systems, and a second RFI in November 2011 which identified gaps between what's available and what's needed to provide for the program. The final submission date for the second RFI was February 17, 2012. Based on vendor responses from the two RFIs, there are several COTS or transfer systems in the marketplace that have the capacity to meet the functional needs of CWS. Two COTS and four transfer systems proposed by the vendors can deliver, on average, 74 percent of the required functionality straight out of the box.

The team also reviewed other viable alternatives; and the report provides the full evaluation of each alternative researched. The other alternatives reviewed include:

- Upgrading the existing CWS/CMS. The analysis showed this as a less viable alternative, due to the costs of enhancing and maintaining the aged technology of the existing system.

¹ Section III, Study Approach, provides a detailed discussion on how the costs were estimated.

- Restarting the CWS/Web Project. This alternative would provide sufficient functionality to meet program requirements; however, the time and cost for implementation, in comparison to the Buy/Build, eliminated it from contention.
- Custom design of a new system, using an incremental lifecycle (development and deployment of the application in phases, as opposed to an all-at-once approach). Like restarting the CWS/Web Project, this would support the program needs but the time and cost involved are not as practical as the recommended solution.

After full evaluation, the Buy/Build meets the program and business needs, costs, and time to delivery requirements, and therefore is the recommended solution.

2. Introduction

California's state-supervised, county-administered Child Welfare Services (CWS) program provides services to abused and neglected children, children in placement, and their families. The "business" of Child Welfare Services is protecting the most vulnerable of our state's residents, who are frequently raised in poverty and have experienced tremendous trauma in their short lives. In order to protect and preserve families, a multi-agency collaborative service approach is essential and requires a system with interoperability.

Child-protection work does not occur in an office at a desk but in the community homes, schools, hospitals, foster homes, and community centers. Child Welfare Services is a face-to-face business. We provide services to children at risk of abuse. This is the fundamental question CWS workers must determine: "Is this child safe?" CWS workers have to make a decision, often on the spot, whether a child needs to be removed from the home to ensure his or her safety.

State and county CWS workers require considerable resources to provide services to abused and neglected children in California. Each month CWS workers investigate approximately 31,500 reports of severe injury, death and life-threatening neglect at the hands of their parents and family members. More than 60,000 family members receive services designed to prevent abuse and neglect and to improve the capacity of families to safely care for over 100,000 children put in placement for their protection or living with their parents under close county protective supervision.

The current automated system, CWS/CMS, does not fully support child welfare practice and CWS workers do not have the tools or access to all the information needed and available to do their jobs. CWS/CMS is the most complex and largest child-welfare caseload in the United States.

CWS/CMS is in maintenance and operations mode with minimal development activity occurring. Numerous requests for changes and upgrades were deferred in anticipation of the improved system expected with the CWS/Web Project.

3. Summary of Response to AB 106/Committee on Budget (Chapter 32, Statutes of 2011)

This section of the report summarizes the responses to questions in AB 106.

Compliance with Current State and Federal Law, Regulation or Policy

CWS/CMS is not compliant with federal and state laws, regulations, and policies, including federal SACWIS requirements. Although the automated system is not compliant, the CWS program is compliant with laws, regulations and court orders. Program compliance is achieved through redundant manual processes and the creation of more than 100 external systems to fill the gaps in functionality. These inadequacies cause costly workarounds and divert CWS workers from supporting families.

System changes have been unable to keep pace with federal and state laws that change practice and requirements. Specific examples include:

- AB 636: Child Welfare System Improvement and Accountability Act – need to be able to provide accurate data that is required to manage the programs.
- AB 12/212: California Fostering Connections to Success Act and SB 654: Independent Living Program services – need to be able to allow CWS to determine and manage eligibility and the tracking of foster care and services costs.
- SB 1353 and AB 1933: Education stability/school of origin – need to be able to verify and manage foster parent reimbursement for transportation to and from school.
- SB 678: Indian Child Welfare Act (ICWA) compliance/placement of Indian child in Indian home –need to verify tribal membership status, identify availability of CWS jurisdiction, track placement and adoption in Indian Tribal homes.
- AB 743: Sibling placement/visitation: visitation – need to be able to document and manage our efforts to keep siblings together and facilitate visitation where that is not possible.
- SB 703: Interstate Compact on the Placement of Children (ICPC) – need to be able to track and report incoming ICPC home-study requests for children.
- SACWIS:
 - Interfaces
 - Adoption services
 - Data archiving
 - Eligibility determination
 - Financial management
 - Federal reporting

CWS/CMS Missing Functionality Critical to CWS Operations

Since CWS/CMS was designed and implemented, professional practice, regulations, and program needs have changed significantly. Productivity demands of a more mobile, technology-proficient work force require new tools to take full advantage of the growing skills and capabilities of CWS workers.

Missing critical functionality includes interfaces, service requests/referrals, and the SACWIS requirements outlined above. Additionally, current functionality that is not sufficient includes search functionality and the ability to manage placements, contacts, case plans and safety/risk assessments. The current reporting solution is also inadequate and does not meet the child welfare reporting needs.

County and state users believe incorporation of the critical functionality in an automated system will provide significant benefits and result in improved delivery of services to children and families, more efficient and effective use of the CWS workers' time, and better-quality case information. All of these enhancements are critical towards achieving program objectives, improving outcomes and improving child welfare practice.

Further detail on the missing and incomplete functionality of CWS/CMS that is critical for CWS practice is provided in Section IV: Status of CWS/CMS.

Federal Communication on SACWIS

The Administration for Children and Families (ACF) continues to develop proposed changes to SACWIS requirements. At this time, ACF has not released any information on potential SACWIS requirement changes or specified a timeframe for completing the process. ACF has been cooperative and supportive of the legislative report process and have informally advised CDSS that a suspension of the current higher SACWIS level federal financial participation (FFP) in CWS/CMS operation and on-going planning activities is unlikely as long as California makes reasonable timely progress towards complying with SACWIS requirements. However, failure to meet this federal regulatory expectation will result in reduction of FFP from the 50 percent SACWIS level to the lower Title IV-E FFP level for CWS/CMS and require California to reimburse the federal government for all or part of SACWIS FFP claimed since the beginning of the CWS/CMS project in the mid 1990s. Given the millions of dollars of SACWIS funding received by the State and counties over the life cycle of CWS/CMS, payback of federal SACWIS funds could be significant. ACF has not provided California with an estimate of how large the reimbursement amount will be (see Section II for background on SACWIS funding and Section VI for explanation of that payback process).

Comprehensive Evaluation of Alternative Solutions

The CAST conducted an analysis of alternatives using the process shown in Appendix B: Evaluation Framework. The alternatives assessed represent fundamental configurations at a high level. Several different detailed configurations are possible under each alternative, but this study did not examine the alternatives to that degree.

Four alternative solutions met sufficient evaluation criteria to be analyzed in detail as summarized in the table below.

Table 1 – Summary of Alternatives

Summary of Alternatives
CWS/CMS Upgrade - Upgrade the current system technology and functionality.
CWS/Web Restart – Use the existing CWS/Web Request for Proposal (RFP) to procure a new system.
New System Custom – Redevelop requirements and procure a new custom-built system.
New System Buy/Build – Redevelop requirements and buy a vendor pre-built solution with custom-built services as required to meet business needs and legislative mandates.

Additional alternatives were considered, including upgrading CWS/CMS to a “thick-client” platform. This alternative was determined to not meet critical CWS requirements. Another alternative considered involved fulfilling missing functional requirements by subscribing to a vendor-hosted software service (SaaS) maintained in a “cloud-computing” environment. Although an initial assessment of SaaS as a possible alternative has been initiated, suitable vendor offerings to fill CWS needs using this approach do not appear to exist based on current market research. The CAST will continue to research various SaaS solutions, communicate directly with potential providers through the RFI process, and formulate a foundation to determine the feasibility or non-feasibility for this alternative.

Business Drivers Form Basis of Evaluation:

Prior to the evaluation of alternatives, the CAST developed a formal evaluation framework to assist with scoring and ranking the alternatives. The criteria that formed this framework were based on business drivers that were agreed upon by the CWS/CMS Program Impact Advisory Committee (PIAC), CWS/CMS Technical Advisory Committee (TAC), CWS/CMS Oversight Committee (OSC), Study Control Board, and the CDSS Director.

Employing the evaluation framework, the CAST analyzed, ranked, and scored each alternative based on six evaluation factors:

- CWS business needs
- Technical viability
- SACWIS
- Time
- Risk
- Cost

Buy/Build Alternative Best Meets the Evaluation Criteria Overall:

The evaluation process showed the Buy/Build Alternative as the most suitable alternative overall. It is the alternative that (1) provides functionality the fastest, with its “out-of-a-box” approach for initial implementation, (2) ranked best in time for being able

to reach full-benefit realization, and (3) ranked as the best-cost option with the lowest ten-year Total Cost of Ownership (TCO) among all the alternatives.

Summary results of the alternatives evaluation are provided in the following table, which documents the scoring totals for each of the alternatives. To review the evaluation methodology, see Appendix B: Evaluation Framework.

Table 2 – Scoring Summary of Alternatives

Alternative	Non-Cost	Cost	Total Score
CWS/CMS Upgrade	386.1	90.0	476.1
CWS/Web Restart	651.3	111.0	762.3
New System Custom	753.8	122.8	876.6
New System Buy/Build	754.8	150.0	904.8

The CDSS with OSI and stakeholders has determined that the future technology direction for CWS/CMS must be tied to the business challenge of enabling the delivery of effective services and improving outcomes for the State’s at-risk children. In other words, the needs of the children drive the practices of the service-delivery organization and provide the target for strategic employment of technologies.

The CDSS, in partnership with OSI and stakeholders, performed extensive analysis during this study to address and link the current and future business needs of Child Welfare Services to the technology direction of CWS/CMS. The CAST reached a similar conclusion based on the Technical Architectural Alternative Analysis (TAAA) performed in 2005: to replace the existing system.

The recommendation is as follows:

- **Recommendation:** Replace CWS/CMS with a new computing infrastructure and a new software system – A Buy/Build product-delivery alternative is recommended to deliver (1) a new computing infrastructure, based on a Service-Oriented Architecture (SOA) and (2) a new software-based system. This recommendation will optimize deployment of the counties’ current and emerging business needs and will facilitate effective delivery of CWS services. The State will need to continue maintenance and operations (M&O) of the current CWS/CMS while simultaneously developing this new infrastructure and system.

Business Needs Criteria Supports Selection of the Buy/Build Alternative:

Analysis shows that each of the alternatives is able to accommodate state and county business requirements. The Buy/Build alternative will provide the ability to support CWS practice and has the fastest time-to-benefit. With this alternative, most business needs are expected to be met through an existing, tested and in-use product. Identified gaps and California-specific future enhancements will be addressed through custom-built services that are not expected to alter the core product. This alternative also avoids the risks of impacts associated with full-scale custom system-development efforts.

SACWIS requirements and business needs overlap; if the business needs for critical functionality are met, SACWIS compliance will also be achieved.

SACWIS Criteria Supports Selection of Buy/Build Alternative:

Although each alternative has the potential to meet the requirements of SACWIS, the selected alternative meets the SACWIS requirements up to four years earlier by

delivering the functionality critical to supporting CWS practice. The use of an existing, tested and in-use core product – that has likely already been found by ACF to be federal-SACWIS-compliant – provides maximum assurance that California will achieve full compliance. Reaching SACWIS compliance assures the State of continued FFP in its CWS automation effort.

Technical Viability Criteria Supports Selection of Buy/Build Alternative:

To validate the technical viability of the Buy/Build alternative, the CAST:

- Examined the architecture of CWS/CMS.
- Conducted interviews with key state and county stakeholders, county user technical staff, and M&O technical staff.
- Developed and released a survey to validate findings and refine proposed approaches to vendors who provide systems development and/or maintenance services.

As a result of these activities, it was determined that the existing CWS/CMS architecture cannot adequately support current and anticipated future business needs. Furthermore, the existing architecture introduced challenges for product offerings that were identified as possible buy/build solutions. A new computing infrastructure based on a Service-Oriented Architecture (SOA) was analyzed and determined to provide the most desirable combination of functionality support, management simplicity, architectural openness, scalability/flexibility/extensibility, and ease of integration/interface standardization. For any alternative that is not an upgrade to the existing CWS/CMS system, a new computing environment will be required.

Utilization of the buy/build software service(s) delivery approach, where the majority of the required functionality is provided through a completely developed, tested, and in-use product, was determined to deliver the best combination of shortest time-to-realization of business value, high potential for SACWIS compliance, and most favorable mitigation of financial, technical, operational, schedule, and implementation risks.

This alternative ranked highest in the technical category.

Cost Criteria Supports Selection of the Buy/Build Alternative:

The CAST estimated the cost for each alternative and compared costs among the alternatives. For each alternative, the estimates include: (1) one-time costs for evaluation purposes includes elements for the planning, development, and implementation phases; (2) continuing costs for the new estimated M&O; and (3) existing costs to maintain CWS/CMS until the initial release is implemented. The cost-estimating period for each of the alternatives consists of costs through the end of procurement plus ten years of costs after contract award.

The approximate costs of \$170 million for the Buy/Build alternative, is the lowest of all alternatives, although this cost estimate can range from \$156 million to \$184 million. The one-time cost estimate period for this alternative is five years with approved FFP of 50 percent, the total one-time cost to the State General Fund (SGF) would be

approximately \$85 million, incurred between SFY 1 and SFY 5. This estimate does not represent the total project cost, which will be provided in a forthcoming feasibility study report.

Continuing Information Technology (IT) costs for the new M&O are estimated to begin after the implementation of the initial release. Continuing existing IT costs are estimated to be incurred for three years and six months, during the same period required to procure the alternative and implement the initial release.

Current State Fiscal Year (SFY) 2011-12 CWS/CMS M&O costs are \$81 million, funded through 50 percent of FFP funds and 50 percent SGF dollars. This amount is projected to grow to approximately \$94 million by SFY 12. Request for FFP is submitted for approval on an annual basis and approvals are contingent on the State providing an annual plan to the ACF, showing the State's strategy for becoming SACWIS-compliant.

The Buy/Build alternative will allow the State to qualify for continued FFP annually for implementing a new solution, as well as for M&O costs associated with the existing system.

After development is complete, ongoing M&O costs are anticipated to be significantly lower than for the current system. Estimated average M&O costs for the Buy/Build alternative range from \$43 to \$51 million a year. With approved FFP of 50 percent, SGF estimated costs would range from \$22 to \$26 million a year, generating an approximate total SGF savings of \$167 million through SFY 12. The CAST projects the State can reduce ongoing operation costs of approximately 47 percent per year over the existing CWS/CMS.

The costs relate to the current CWS/CMS and the Buy/Build Alternative. The CWS Program also incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

These summary cost estimates do not include CWS/CMS or CWS program costs managed within CDSS.

Cost estimates were based on existing CWS/CMS costs, previously-approved CWS/Web project costs, Department of General Services (DGS) pricing resources, and a 3.5 percent increase to account for vendor labor cost escalation for each alternative.

Time Criteria Supports Selection of the Buy/Build Alternative:

In this category, the difference between all of the alternatives was significant. In the category of "time to realize total benefits," the Buy/Build alternative ranked higher than other alternatives because it had the shortest time-to-benefits delivery period.

Risk Criteria Supports Selection of the Buy/Build Alternative:

The risk category covers seven risk areas: financial, technical, operational, program, competitive procurement, schedule, and implementation. The Buy/Build alternative is lowest in overall risks among alternatives.

Other Factors to Consider

There are a number of initiatives to implement California Health and Human Services Agency (CHHS) IT hardware systems and software services over the next few years. The most notable initiatives (based on size and impact) to the Agency include:

- IT efforts associated with the California eHealth Initiative
- The Centers for Medicaid and Medicare Services (CMS) regulation changes for enhanced federal funding and cost allocation waivers (i.e., OMB A-87: Cost Principles for State, Local, and Indian Tribal Governments)
- The Leader Replacement System (LRS).

The CWS/CMS replacement system assessed in this report would also fall into the above size/impact grouping.

The federal government is providing enhanced funding to acquire hardware systems and software services to support HHS program deliveries, provided they meet federal funding guidelines and requirements.

A common theme in the federal funding guidelines and requirements is the development of IT hardware systems and software services based on open standards that ensure modularity, interoperability, scalability, and flexibility. The federal objective is to better manage costs by (1) reducing the number of stand-alone, duplicative systems currently in production and (2) promoting each state's ability to leverage, reuse, and share system components and technologies. This ability to share existing hardware components and software services will reduce the time required to develop and implement new systems (deliver business value), reduce the one-time implementation costs, and reduce the continuing costs for maintenance and operations.

CDSS has an excellent opportunity to maximize access to and utilization of the benefits of this enhanced federal funding through collaboration with these other HHS initiatives. The recommended alternative, New System Buy/Build, contains a hardware architecture modernization [based on Service-Oriented Architecture (SOA) concepts] and a software implementation that aligns with the requirements of the aforementioned initiatives. Through collaboration with and leveraging of the IT hardware systems and software services related to the initiatives, CDSS can facilitate reduction of the overall time and costs required to deliver and maintain the CWS/CMS replacement system. Implementing this strategy of separating the hardware architecture and the software services when developing systems will establish an operational baseline that other state departments can use to plan for and achieve similar one-time and ongoing system costs reductions.

Since these potential collaborative initiatives are in their early stages, it was not possible to measure, estimate or include the potential one-time and ongoing cost reductions in the preparation of this report. As part of its planning phase, the CAST plans to conduct further analysis on the progress of these initiatives and the guidelines for acquiring (or participating in) the enhanced federal funding. That analysis will establish whether

CDSS can leverage the IT hardware systems and/or software services related to these initiatives as part of the execution of the recommended buy/build alternative.

Cost and Timeline Comparison Summary

The following summary displays a comparison of costs and timelines for the current system, CWS/CMS, and the alternatives. The cost and timeline period for alternatives are based on a ten-year period from the estimated contract award date, plus the procurement phase costs. For some alternatives the ten-year period starts and ends within a fiscal year and the costs are adjusted accordingly. Figures are rounded to the nearest million.

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Table 3 – Comparison of Alternatives and Current System Costs (50%-50% Federally-Funded / SGF-Funded)

EXISTING CWS/CMS
 (Costs Rounded to the Millions)

	MAINTENANCE & OPERATION													**TOTAL
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	
Procurement Costs	\$ -	\$ -	\$ 5	\$ 6	\$ 6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 86	\$ 87	\$ 89	\$ 90	\$ 91	\$ 93	\$ 94	\$ 96	\$1,139
*Estimated Annual Totals	\$ 81	\$ 82	\$ 88	\$ 89	\$ 90	\$ 86	\$ 87	\$ 89	\$ 90	\$ 91	\$ 93	\$ 94	\$ 96	\$1,156

CWS/CMS UPGRADE
 (Costs Rounded to the Millions)

	PROCUREMENT			INITIAL RELEASE			FUTURE RELEASE			MAINTENANCE & OPERATION				TOTALS
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	
One-time IT Costs	\$ 12	\$ 12	\$ 29	\$ 34	\$ 62	\$ 29	\$ 29	\$ 28	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 235
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 76	\$ 77	\$ 78	\$ 78	\$ 79	\$ 80	\$ 81	\$ 41	\$ 590
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 430
Estimated Annual Totals	\$ 93	\$ 94	\$ 112	\$ 117	\$ 146	\$ 122	\$ 106	\$ 106	\$ 78	\$ 79	\$ 80	\$ 81	\$ 41	\$ 1,255

RESTART CWS/WEB
 (Costs Rounded to the Millions)

	PROCUREMENT			INITIAL RELEASE				FUTURE RELEASE			MAINTENANCE & OPERATION			TOTALS
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12		
One-time IT Costs	\$ 13	\$ 14	\$ 43	\$ 45	\$ 54	\$ 59	\$ 36	\$ 36	\$ 15	\$ -	\$ -	\$ -	\$ 315	
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 33	\$ 61	\$ 61	\$ 61	\$ 62	\$ 62	\$ 340	
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 85	\$ 57	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 555	
Estimated Annual Totals	\$ 94	\$ 96	\$ 126	\$ 128	\$ 138	\$ 144	\$ 126	\$ 97	\$ 76	\$ 61	\$ 62	\$ 62	\$ 1,210	

NEW SYSTEM → CUSTOM
 (Costs Rounded to the Millions)

	PROCUREMENT		INITIAL RELEASE		FUTURE RELEASE			MAINTENANCE & OPERATION					TOTALS	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12		Year 13
One-time IT Costs	\$ 13	\$ 13	\$ 31	\$ 74	\$ 62	\$ 54	\$ 4							\$ 251
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ 47	\$ 50	\$ 51	\$ 52	\$ 61	\$ 54	\$ 56	\$ 57	\$ 29	\$ 457
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 59	\$ -	\$ -							\$ 388
Estimated Annual Totals	\$ 94	\$ 95	\$ 114	\$ 157	\$ 168	\$ 104	\$ -	\$ 52	\$ 61	\$ 54	\$ 56	\$ 57	\$ 29	\$ 1,096

NEW SYSTEM → BUY/BUILD
 (Costs Rounded to the Millions)

	PROCUREMENT		INITIAL RELEASE		FUTURE RELEASE			MAINTENANCE & OPERATION					TOTALS
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
One-time IT Costs	\$ 14	\$ 14	\$ 93	\$ 30	\$ 19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170
Continuing IT Costs	\$ -	\$ -	\$ -	\$ 42	\$ 43	\$ 44	\$ 52	\$ 45	\$ 46	\$ 47	\$ 47	\$ 57	\$ 423
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 59	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 305
Estimated Annual Totals	\$ 95	\$ 96	\$ 176	\$ 131	\$ 62	\$ 44	\$ 52	\$ 45	\$ 46	\$ 47	\$ 47	\$ 57	\$ 898

Note: Year represents a State Fiscal Year

Next Steps

The Buy/Build alternative is recommended. It provides a solution which best meets current and future needs. It will provide significant benefits to children, their families, and communities as CWS workers become equipped to more effectively perform their jobs now and in the future. This alternative represents the shortest duration to deliver business value and has the most favorable impact to users. The technology supports effective, efficient, and economical upgrades as necessary throughout its lifetime.

Next steps include state approval of the Feasibility Study Report (FSR) and Budget Change Proposal (BCP)/Premise, as well as federal approval of the Planning Advance Planning Document (PAPD) and Implementation Advance Planning Document (IAPD).

The CAST released an RFI in September 2011 to determine the viability of using a transfer system or COTS product as a basis for California's Buy/Build solution. The RFI asked the vendor community if they had an existing system (e.g., COTS or transfer system) capable of supporting key CWS business areas. Eight responses were received and several of them were potentially viable solutions that addressed the needs of the State.

The CAST released a second RFI in November 2011 to have vendors conduct a gap analysis between the existing functionality in their COTS or transfer systems and the functional needs of CWS. Results from the gap analyses would allow the State to more accurately determine the viability of the Buy/Build Alternative. Seven responses were received, but only six had sufficient information to determine the functional gaps. Of the six responses, two were COTS systems and four were transfer systems. Each of the six systems could provide anywhere from 67 to 83 percent of the required functionality straight out of the box or an average of 74 percent across the six systems. The high percentage of functionality available in the six systems validated the viability of the Buy/Build Alternative.

Through a competitive procurement process managed by the DGS, the State will use a Request for Proposal (RFP) that will result in a best-value award to a single systems integrator (SI) responsible for all phases of the solution: design, development, implementation, and operation. The SI contract award date will occur in the SFY 3.

Section II

Background

II. BACKGROUND

A. CWS Business Program Background

The CWS program is the primary intervention resource for child abuse and neglect in California. Existing law provides for child welfare services which are directed toward the accomplishment of the following purposes:

- Protecting and promoting the safety and welfare of all children, including disabled, homeless, and dependent children.
- Preventing, remedying, or assisting in the resolution of problems that contribute to the exploitation or delinquency of children.
- Preventing the unnecessary separation of children from their families where their removal can be prevented by identifying family needs.
- Assisting families in resolving those issues that lead to child abuse and neglect and reunifying families whose children have been removed, whenever possible, by providing necessary services to the children and their families.
- Maintaining family connections, when removal cannot be prevented, by identifying children for whom tribal placement and relative placement are preferred and most appropriate.
- Assuring permanence for dependent children who cannot be returned home, by promoting timely adoption, guardianship, or alternative permanent placement for these children.

Oversight of California CWS is provided by the CDSS Children and Family Services Division. California's state-supervised child welfare program is administered at the local level by 58 counties, each governed by a county board of supervisors. The State's counties differ widely by population and economic base, and include a mix of urban, rural, and suburban settings and topographies that span desert, forest, mountain, coastal, and inland valley formations. Within a single statutory and regulatory framework, CWS is charged with providing the full array of services necessary to meet the individual and diverse needs of at-risk children and families.

B. SACWIS Requirements and CWS/CMS History

California statute (SB 370, Chapter 1294, Statutes of 1989 and reflected in the California Welfare and Institution Code 16501.5) mandated a single statewide-automated child welfare services information system several years prior to the creation of the federal SACWIS program. The federal SACWIS was established in 1993 legislation (Omnibus Reconciliation Act of 1993). SACWIS provided an optional opportunity for California to obtain increased FFP (i.e., enhanced funding) to develop a statewide-automated CWS system that provided services documentation, case management, business process management, and data reporting during the years

1993 – 1997, but SACWIS continues to provide a 50 percent federal share of costs for both development and ongoing system M&O.

While participation in the federal SACWIS program is optional for California, when California elected to participate, it became subject to compliance with federal functionality and statewide utilization requirements. Failure to meet compliance requirements subjects California to the loss or reduction of FFP and may also require California to reimburse the federal government for all or a portion of federal SACWIS FFP provided for the planning, development, and operation of CWS/CMS and CWS/Web (or any new SACWIS). This enhanced funding means that California is subject to more rigorous federal functional and fiscal approval criteria for the life of its SACWIS.

SACWIS requirements are designed to create a single, comprehensive CWS automated system to be used in all geographic areas of the State. In California, as in other state-supervised/county-administered child welfare states, this includes both state- and county-administered child welfare services. SACWIS functionality requirements are defined at a relatively high level. Each of them includes automation of multiple sub-tasks and business processes necessary to implement a functional category. Federal SACWIS requirements mandate all federal child welfare data reporting requirements be met by a participating state's SACWIS.

SACWIS compliance is also dependent on full utilization of the system throughout California. Use of other automated systems or local systems which fully or partially duplicate the functionality of the SACWIS is prohibited by ACF regulations. The SACWIS must be California's "single system of record" for the Child Welfare Services program. These requirements are intended to avoid duplicative information technology costs and systems at the state and local levels; multiple inconsistent, incomplete, or contradictory case records due to use of multiple systems, and the need for staff to use multiple automated case-management systems to conduct the full range of child welfare services and business processes. In addition, federal SACWIS approval and compliance policy includes a federal determination that a system be "efficient, effective, and economical," as well as able to meet the overall operational requirements of a state and its counties.

Since the mid-1990s, California has received millions of dollars annually from the federal government to plan for a fully SACWIS-compliant system. There are significant negative fiscal and program impacts in the event California withdraws from participation in SACWIS or fails to meet SACWIS compliance requirements:

- Possibility of an immediate reduction in federal financial support for CWS/CMS.
- Risk that the federal government may exercise its option to require full or partial payback of SACWIS funds provided to the State.
- Need for the counties to implement and/or continue multiple, independent automation projects to meet the needs of evolving practice and mandates.

- Increase in the cost to California to compensate for the loss of federal SACWIS funds to maintain and update CWS/CMS in order to keep pace with legislated program changes and operational changes.

History shows that the federal response has varied in regard to states that have either failed to achieve compliance or voluntarily dropped out of SACWIS. Federal responses range from immediate reduction in FFP and a payback of federal development funds, to loss of SACWIS FFP until such time as a state reached SACWIS compliance or resumed intent to reach it, and continuation of SACWIS FFP as long as the federal government determined that a state was making timely progress toward SACWIS compliance. At this point in time, California is in the last category.

Prior to CWS/CMS implementation in 1997, counties were asked to select a county-specific technical-support model that will support their day-to-day computing needs for CWS/CMS. Of the support models provided, one was called “coexistent,” under which the county provides the infrastructure support, and another “dedicated,” under which the county infrastructure support is provided by the State and the State’s system vendor. Initially, many counties selected the dedicated model because the county’s technical support staff was small or non-existent. Since the initial implementation, some counties have migrated to coexistent status. However, the majority of counties that initially opted for a dedicated model remain in that status. Currently, 30 of the 58 counties are dedicated and therefore reliant on the State and the state system vendor for CWS/CMS infrastructure support. In addition to the selected technical-support model selected by the counties, all counties are dependent on the State and its vendor for system support.

By 1998, CWS/CMS was being used by CDSS and all 58 counties, with nearly 15,000 users and 150,000 active online cases. By then, technology had already advanced beyond that used to build the system. The same technology remains in place today.

In 2004, federal SACWIS status and funding was withdrawn from California as a result of a determination that:

- California’s CWS/CMS functionality was not in compliance with federal SACWIS standards.
- California was not making timely progress in completing SACWIS functionality.
- M&O re-procurement, approval of county child welfare automation projects, and contracting processes were not in compliance with federal funding requirements.

In October 2004, SACWIS funding was conditionally restored retroactively as a result of negotiations between the State and the federal government (the Go-Forward Plan), which included a recommitment by California to implementing a SACWIS-compliant system.

In response to the temporary suspension of SACWIS funding and subsequent state/federal agreement in the Go-Forward Plan, the Legislature mandated the development of a TAAA. The TAAA included a number of approaches to re-architecting

CWS/CMS to better meet the business needs and SACWIS compliance. Based on the TAAA recommendation, a decision was made to continue to operate and maintain CWS/CMS while simultaneously building a new California SACWIS using a Web-services-based technical architecture. The plan for a new system became the CWS/Web project.

Once the TAAA was completed in 2005, the State participated in additional planning and negotiation with ACF on how to address outstanding SACWIS requirements within the proposed solution. That process resulted in ACF approval, including federal funding of the Planning Advance Planning Document (PAPD) for the development of California's new SACWIS, CWS/Web. Subsequent to the PAPD approval, state and county staff began development of system requirements that culminated in the release of the CWS/Web RFP in November 2010. In June 2011, however, the SFY 2011/12 California Budget indefinitely suspended CWS/Web. The Legislature directed the preparation of this report in AB 106.

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Section III

Study Approach

III. STUDY APPROACH

The task of the CWS Automation Study was to assess CWS business needs, assess the existing system (CWS/CMS), research viable automated system alternatives to address the needs, and provide recommendations for next steps.

To conduct the study, CDSS and OSI involved CWS/CMS stakeholders (including PIAC, TAC, and OSC) to determine the critical goals, objectives, activities and business needs of CWS. The CAST then determined which system functionality was missing or incomplete in support of critical CWS operations, and developed solution alternatives. The CAST developed a formal evaluation framework to assist in scoring and ranking alternatives, using criteria based on business drivers that were validated by PIAC, TAC and OSC during workgroup sessions. Using this evaluation framework, the CAST analyzed, scored and ranked each alternative within five major areas of importance, as described in Appendix A: Critical Functionality Assessment and Methodology. The team then vetted these alternatives with stakeholders.

All cost estimates provided in this report were used for evaluation purposes only. They were not intended to represent the total project costs similar to those shown in a feasibility study report. Total project costs were not provided because the CAST did not have sufficient time to compile and analyze every cost element, such as county goods and services costs. The cost estimates provided in this report, however, were calculated in an equitable manner among the alternatives; thus mitigating any unintended bias or spurious results.

The approach to developing costs varied slightly depending on the alternative studied. However, the CAST used some global approaches. The CAST assumed that the systems integrator would provide project and operations facilities regardless of the alternative chosen. The CAST leveraged the TAAA cost methodology to develop facilities costs. The CAST also assumed the use of the same contractor staffing levels for support services as outlined for the CWS/Web project, for each of the four alternatives presented in this report. Each alternative also required specialized approaches.

The CWS/CMS Upgrade alternative used the development and ongoing maintenance costs from the TAAA with a 3.5 percent increase to account for vendor labor cost escalation. The CAST further adjusted the cost based on timelines developed for this alternative.

For the CWS/Web Restart alternative, the CAST derived application maintenance costs from the TAAA, adjusted due to project timelines. The CAST derived development costs for the New System Custom alternative from the TAAA, increased 3.5 percent to account for vendor labor cost escalation, with adjustments to reflect the timeline for this alternative. The CAST used application maintenance costs from the TAAA, reduced by ten percent, assuming that some requirements outlined in the TAAA will be eliminated, and that the development approach specific to this alternative will lead to a faster time-to-benefit milestone.

The CAST approach to costing the New System-Buy/Build alternative was slightly different than that used for the other three alternatives. In developing cost estimates for this alternative, publicly-available price lists were obtained from various sources and the CAST assumed a volume-license discount will be available, similar to the Software Licensing Program managed by DGS. The CAST assumed that ongoing system maintenance costs will be limited to annual software assurance programs of approximately ten percent of the net software purchase price, with a third-party vendor managing the network infrastructure for a negotiated cost. The software assurance program will offer annual and/or as-needed fixes and upgrades at no additional cost above and beyond the annual fee. However, state-initiated custom-built services to support the solution will be a separate charge.

The timelines and cost tables provided in the report were based on SFYs rather than calendar years to clearly reflect each alternative's funding needs across these years. The SFYs evaluated for each alternative were either 12 or 13 years of data. The variation in years was due to the length of the procurement. A ten-year period was applied to each alternative to implement the Initial and Future Releases with the remaining years going toward Maintenance and Operations. The CAST would initiate an alternative starting with SFY 1 upon meeting the following conditions:

- A FSR approved by the California Technology Agency, Department of Finance and Department of General Services
- An As-Needed PAPD approved by the federal Administration of Children and Families to obtain federal funding for the months of July through September in SFY 1
- A PAPD Update approved by the federal Administration of Children and Families to obtain federal funding for the months of October through June in SFY 1
- A CDSS BCP and Premise approved by the Administration and the Legislature to obtain State funding
- An OSI BCP approved by the Administration and the Legislature to obtain State spending authority

The CAST would seek annual State and federal funding, as required, for SFY 2 and beyond.

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Section IV

Status of CWS/CMS

IV. STATUS OF CWS/CMS

A. This section addresses sections 1a – 1d of AB 106. To What Degree is CWS/CMS in Compliance with Current Law, Regulation, and Policy?

At this time, CWS/CMS does not fully support CWS practice nor is it capable of meeting a number of legislative, regulatory and policy objectives. Legislation applicable to CWS is provided in Appendix E: Legislative References

In order to assess the degree of CWS/CMS compliance with current law, regulation, and policy, the following were considered:

- The degree to which CWS/CMS meets federal and state laws, policies, and regulations.
- The degree to which CWS/CMS meets federal and state SACWIS compliance.
- The degree to which workarounds, including manual processes as well as state and county external systems, are used to achieve program compliance.

Throughout this section, “degree” is measured in terms of provided or missing functionality. Reviewing program compliance is outside the scope of this report.)

1. Federal SACWIS Compliance

Currently CWS/CMS is missing several functional areas required to meet SACWIS compliance. In addition to meeting county-identified needs for critical functionality, full SACWIS functionality will provide significant benefits and continued FFP.

CWS/CMS does not provide the following functionality:

- **Adoptions Case Management** - CWS/CMS does not provide adoptions case management functionality and is a barrier to meeting requirements of many recent state and federal laws, data reporting, and adoptions case management expansion under realignment. It currently only collects Adoption Foster Care Analysis and Reporting System (AFCARS) data elements and provides minimal support for the Adoption Assistance Program (AAP). As a result, statewide data reporting is missing client information and some counties have had to develop and maintain interim external systems to support their adoptions workload, which further results in data inaccuracy.
- **Archiving and Purging of Data** - CWS/CMS currently does not provide for the processes of archiving and purging its data. To be compliant, the system must support a range of system functions which includes the ability to archive data for recall purposes and to purge it where appropriate. This functionality will enhance storage capability, efficiency in relevant and expeditious searching of data, and the ability to economically retain historical information.

- **Eligibility Determination** - CWS/CMS does not meet SACWIS requirements related to eligibility determination for child welfare assistance programs. SACWIS requires that all eligibility documentation and determination processes be housed within one system of record either within the SACWIS system or through an interface with a single social service eligibility determination system.
- **Federal Reporting** - The system must generate required state and federal reports, ad-hoc management reports and statistical reports. CWS/CMS does not fully comply with all the requirements for federal reporting. For example, for National Youth in Transition Database (NYTD), it does not contain the functionality to survey the youth as directed by regulation, nor have the complete functionality needed to collect all required information about services, outcomes, and demographics for emancipated foster youth.
- **Required Interfaces to Title IV-A, Title IV-D, and Title XIX** - CWS/CMS does not support automated interfaces to the required systems. The interfaces will provide an automated exchange of common and/or relevant data to support child welfare services. These interfaces enable the CWS worker to determine who lives in the home, and what is the financial situation in the home, information which is critical for child safety assessments, case planning and management.
- **Financial Management** – CWS/CMS currently does not include financial-management functionality to support emergency assistance, foster care, KinGAP, AAP, and CWS service-connected expenses. This functionality will enable the worker to determine available services, prevent overpayments and resolve underpayments to Foster Parents and Service Providers.

2. State Legislative Compliance

In addition to SACWIS compliance, there remain other missing areas of compliance required by California legislation. CDSS and OSI have been unable to implement changes in CWS/CMS to keep pace with state laws that change practice and requirements. Specific examples include:

- AB 636 (Chapter 678, Statutes of 2001): Child Welfare System Improvement and Accountability Act – need to be able to provide accurate data that is required to manage the programs.
- AB 12 (Chapter 559, Statutes of 2010): California Fostering Connections to Success Act / and AB 212 (Chapter 459, Statutes of 2011) and SB 654 (Chapter 555, Statutes of 2010): Independent Living Program services – need to be able to allow CWS to determine and manage eligibility and the tracking of foster care and services costs.

- AB 2070 (Chapter 482, Statutes of 2008): Reunification Timeframes for Incarcerated Parents – need to be able to track, notify the incarcerated parent or guardian and extend the time allowed for reunification of incarcerated parents with their children.
- SB 1353 (Chapter 725, Statutes of 2010) and AB 1933 (Chapter 563, Statutes of 2010): Education Stability/School of origin and AB 1612: Educational Transportation Payments – need to be able to track the school of origin for foster youth; verify and manage foster parent reimbursement for transportation to and from school.
- AB 1325 (Chapter 287, Statutes of 2009): Tribal Customary Adoption – (see the federal SACWIS adoption case management functionality above.)
- SB 500 (Chapter 630, Statutes of 2005) and SB 720 (Chapter 475, Statutes of 2007): Whole Family Foster Homes – need to be able to identify and manage services and payments for the underage parent and their child who are both foster children that are placed in the same home.
- SB 380 (Chapter 486, Statutes of 2008): Intensive Treatment Foster Care – need to be able to document the need for the intensive treatment services and manage the higher payment rates.
- AB 1331 (Chapter 465, Statutes of 2007): Tracking of SSI Applications for Disabled Exiting Foster Youth – need to be able to track and manage the pending applications for SSI for disabled Foster Youth.
- AB 129 (Chapter 468, Statutes of 2004): Dual Jurisdiction of Wards and Dependents WIC 241.1 Protocols – need to be able to have probation and child welfare to be able to have dual assignment to a child welfare case.
- SB 678 (Chapter 838, Statutes of 2006): ICWA compliance/placement of Indian child in Indian home – need to verify tribal membership status, identify availability of CWS jurisdiction, track placement and Adoption in Indian Tribal homes.
- AB 743 (Chapter 560, Statutes of 2010): Sibling Placement/Visitation – need to be able to document and manage our efforts to keep siblings together and facilitate visitation where that is not possible.
- AB 938 (Chapter 261, Statutes of 2009): Early Search and Notification of Relatives – to enable documentation and notification to relatives of a child's removal from a home in a timely manner.
- AB 2651 (Chapter 701, Statutes of 2008): Adam Walsh Out-of-State CACI checks – need to extend background check clearance to other states.
- AB 2322 (Chapter 551, Statutes of 2010): Data Sharing of Families and Children at risk – need to have access to a database that includes information about convictions of family members or persons living in the child's home for crimes that involved a child as a victim.

- AB 2985 (Chapter 387, Statutes of 2006): Foster Care Identity Theft – need to be able to request a consumer credit disclosure, pursuant to federal law, on behalf of a youth in a foster care placement in the county.
- SB 703 (Chapter 583, Statutes of 2007): Interstate Compact on the Placement of Children (ICPC) – need to be able to track and report incoming ICPC home study request for children.

External systems and time-consuming manual processes have been developed as child welfare agencies strive to achieve Child Welfare Services Program compliance even though CWS/CMS continues to be non-compliant. These efforts are inefficient and costly.

B. To What Degree Does CWS/CMS Support Current CWS Practice?

CWS/CMS does not support current CWS practice. This section outlines both the missing functionality and needed modifications in CWS/CMS required to support critical CWS operations. In addition, this section addresses the ease of access to case and service information, multidisciplinary case management, and ease of use, as requested by AB 106.

Missing Functionality Critical to CWS Operations

The following outlines the missing functionality that is necessary to support critical daily activities of CWS.

1. Service Requests/Referrals

CWS/CMS is missing the functionality to request services or to complete referrals to the service providers. This basic functionality is necessary to record the services provided to the families, the outcome of the services, and the cost of services. Adding this missing functionality into a CWS automated system will improve services, data analysis, and the State's ability to report outcomes.

2. Adoptions

CWS/CMS does not have the ability to record information about adoption case services, including the home study process and post-adoption services. The lack of full adoption case-management functionality is a major limitation for state and county adoption agencies, and causes manual processing of forms and delays in completing adoptions. Adding this functionality will improve collaboration between county and state adoption workers and facilitate adoptive placements and permanency for children.

3. Eligibility

CWS/CMS is missing functionality to process applications to determine eligibility for CWS-related benefit programs: Emergency Assistance, Aid to Families and Dependent Children – Foster Care, Kin-GAP, and AAP. The ability to automate the eligibility determination process will improve its accuracy, timeliness and the delivery of

appropriate services. The missing functionality creates intensive manual processes that impose heavy workloads on CWS and eligibility workers, and promotes excessive data entry, storage of redundant information, and inconsistent data. Currently, more than one system must be used to document and determine foster-care eligibility.

4. Financial Management

CWS/CMS is missing financial management functionality to capture and record authorizations, invoicing, and payment-transaction information. This additional functionality in a statewide CWS automated system will facilitate better tracking and management of federal, state, and county funding.

5. Multidisciplinary Case Management

CWS/CMS does not support the emerging need of CWS to partner with community and governmental resources to serve families in a comprehensive multidisciplinary manner. Many CWS professional and community partners are directly involved in the service provisions for children and families, and need access to certain portions of CWS/CMS to effectively participate in integrated case management. It is noted that while a solution needs to enable system information sharing with such partners, overall information security and confidentiality must be ensured.

6. Role-Based Access/External User Data Entry

CWS/CMS does not support role-based system access and data views. Its technical architecture does not provide the granular security-control levels required to manage and control system access and data views for end users, which directly impacts integrated service provision. Consequently, CWS/CMS cannot allow service delivery partners to enter data or retrieve information without compromising security or confidentiality. This functionality is needed to support CWS program collaboration.

7. Interfaces

CWS/CMS does not provide the ability for bi-directional exchange of data with other state, county and federal systems. For clarification, see Sections IV. C2 and C3: Other Missing Functionality

8. Other Missing Functionality

The following missing functionality is also critically needed to support CWS practice:

- Ability to record service providers (contractors and non-contractors) in order to create a resource directory to enable users to search, view, and request services. This functionality is essential to the Case Plan and Financial Management processes.
- Ability to request criminal background checks and record the results.

- Ability to schedule meetings and to integrate system alerts and tasks with user calendars.
- Ability to record the services requested and provided to emancipated youth.
- Ability to record the joint assessment process when a child is being evaluated by CWS.
- Ability to record and track CWS activities and documents regarding detention warrants.
- Ability to capture and store electronic signatures.

These gaps in functionality force users to rely upon state and county external systems or hard-copy files to record CWS activities and service provision. The need to record information in numerous systems or in hard-copy files negatively impacts service workloads and increases the risk of overlooking information that is necessary to assess children's safety.

Improvements Needed to CWS/CMS to Support Critical CWS Operations

9. System Search Functions

CWS/CMS search functionality provides unreliable results due to its existing design and technology. When an emergency-response referral is received, the first task a user will perform is a search in CWS/CMS to verify if the person has prior CWS history. A search for a person with a common name will often identify so many records that the system cannot return any results. This limits the ability to use prior history as a factor in the decision-making process, which is essential to CWS practice, and also leads to the creation of duplicate client records in the system. If a CWS worker is unable to view a person's existing record, the historical data cannot be considered in the safety decision-making process which is essential to CWS practice. System search functionality must be improved in order to provide the level of client case management necessary to achieve desired outcomes and comply with legislative mandates.

10. Contact Management

The most common tasks performed daily by CWS involve interaction with children, families and service providers during emergency-response referral investigations and the performance of case management services. CWS/CMS does not allow entry or tracking of information at the level of granularity required for managing contacts, reporting information based on these contacts, or measuring outcomes. This is a barrier to accurate reporting, performance measures, and ongoing case management.

11. Placement Management

Another common task is placing a child in a caregiver's home. When a child is detained, the CWS worker must locate a caregiver's home for placement. The existing CWS/CMS placement-match functionality is not sufficient. The underlying CWS/CMS

data structure supports a facility-centric approach to placement rather than focusing on the qualities of the caregiver. As a result, the data elements in this area support the data structure rather than practice. For example, CWS/CMS does not allow a caregiver to have more than one role, such as providing both a licensed foster family home and relative home. Also, CWS/CMS does not maintain a historical legal authority for the placement. Consequently, most counties rely on external systems or manual tracking to maintain vacancy lists separate from CWS/CMS to support the search for available caregiver homes. In addition, the vacancy lists do not include the details to perform the necessary placement match. Cross-county placements are especially hampered by this process.

CWS workers record children's placements in CWS/CMS, but the data entry required for a placement is extensive and designed poorly. Needed improvements include streamlining data entry during the placement process, especially when a sibling group is involved, and allowing the ability to record a child's transfer from the legal responsibility of one jurisdiction to another (e.g., from WIC, Sections 300 to 600), without a break in the placement or the need to create a new case.

12. Case Plan Development

CWS policy requires a case plan to be developed for each child receiving case services. CWS/CMS case-plan functionality requires enhancements and modification in order to support basic CWS practice. Currently, users have to manually compile reports for independent living services using a combination of systems including CWS/CMS, county external systems, and manual tracking methods. As a result, many external systems have been created to assist in the compilation of these reports.

13. Safety/Risk Assessments

CWS/CMS has minimal functionality regarding safety/risk assessments. Currently, CWS agencies are using external systems (Structured Decision Making®, and Comprehensive Assessment Tool) to complete safety/risk assessments. In this area, CWS/CMS does not support CWS practice or facilitate consistent statewide decision making and reporting. If a referral or case is transferred to another county, the receiving county is unable to view the safety/risk assessment that was performed by the transferring CWS agency. Adding this functionality into the CWS statewide automated system will enable consistent statewide decision making, and assist with case planning and reporting to the court.

14. Ease-of-Use Problems

The following aspects of CWS/CMS denote areas of difficulty in using the system to support the daily activities of CWS:

- **CWS/CMS Navigation**

A user of CWS/CMS is required to open numerous screens in a case to view a specific record. This is ineffective, inefficient, and cumbersome, causing delays in providing service.

- **Mobility**

While the provision of services to children and families occur generally outside the office setting, CWS/CMS users currently have limited access to CWS/CMS while in the field, and use a Virtual Private Network (VPN) or dial-up-based technology. The dialup connection to CWS/CMS is extremely slow. The existing system also allows a limited number of concurrent users access by means of server-based computing (SBC), such as Citrix. While SBC technology is promising, CWS/CMS infrastructure does not allow wider use.

- **Reporting**

CWS/CMS does not have a single system-wide reporting solution to support users. Reporting needs are addressed through different sets of tools, data-access paths and repositories. The existing reporting solutions are outlined in detail in Section IV.D.1: CWS/CMS Reporting Solutions. CWS needs referral and case information in report format to deliver trend analysis, assist CWS workers and supervisors in performing case management activities, assist key stakeholders in overall project visioning, and provide the ability to analyze and report on outcome measures. This information is essential to policy decision making.

- **Workflow**

CWS/CMS does not have the ability to support CWS workflow or multiple assignments of tasks. A workflow-management system would be able to better manage and define a series of tasks to produce a desired final outcome or outcomes.

- **Role-Based Access/External User Data Entry**

CWS/CMS is difficult to navigate due to the lack of support for access roles and data views necessary to address CWS practice.

15. Other Improvements Needed

CWS/CMS stakeholders identified the following functionality that requires improvement to support CWS operations:

- Ability to record and accommodate case management data for Title IV-E children under the jurisdiction of Probation.
- Ability to update the Judicial Council forms used by CWS in a timely fashion, as the Judicial Council modifies them.
- Ability to record and capture more health and education information.
- Ability to accurately record and capture court hearing findings and orders.

- Ability to record and capture the family relationships, including maintaining historical relationships and legal designations.
- Ability to record and capture the mandated data for incoming Interstate Compact on the Placement of Children (ICPC) cases.
- Ability to limit access to data elements in a record at a granular level due to confidentiality requirements.
- Inclusion of quality-assurance functionality, including data edits, alerts, and audit capability.
- Ability to manage and save county-specific forms in an efficient manner.
- Ability to record and track new initiatives for reporting and performance measures.
- Ability to maintain case-record continuity while transitioning to and from different jurisdictional authorities.
- Ability to record during the screening process the Differential Response path, the community partner contacted, and the outcome.
- Ability to save, store, and access different types of files such as Microsoft Word documents, pictures, and Adobe Acrobat documents. The increasing demand for electronic storage of documents, including images, has exceeded the capacity contemplated by the original CWS/CMS architecture design.

C. To What Degree does CWS/CMS Link to Information that Enhances Investigation, Case Management, and Efficiency?

1. Existing Information Links

CWS/CMS currently has two information links:

- California Department of Education (CDE) provides the OSI CWS/CMS Office with a compact or digital versatile disk of school address information. The CWS/CMS Office then loads the information into CWS/CMS after manual manipulation of the data. Since the information is received and updated in the system periodically (approximately every six months), the school location information available in CWS/CMS is not up-to-date. The disk does not contain the education information for the child/youth. This includes caregiver information as well as some facility types. Furthermore, homes licensed by the counties are not included. Changes to the information are downloaded on a daily basis.
- CDSS Licensing Information System (LIS) provides information on state-licensed foster homes, foster-family agencies, and group homes, which includes license status and addresses; however, any additional information

critical to assessing a home for placement must be manually entered. Changes to the information are downloaded on a daily basis.

2. Missing Links to Information

There are links or interfaces to information that currently do not exist in CWS/CMS that will aid users and significantly enhance investigation, case management, and service delivery efficiency. Improved processes involve automated communication access to medical eligibility information and the ability to perform location searches for missing individuals. These interfaces will meet mandatory federal SACWIS requirements: Title IV-A – Statewide Automated Welfare Systems (SAWS), Title XIX – California Department of Health Care Services (DHCS) – MEDS, and Title IV-D – California Child Support Automation System (CCSAS).

- **SAWS Title IV-A**

An interface with SAWS will provide information about multiple programs and client identification when CWS has a mutual client with the California Work Opportunity and Responsibility to Kids (CalWORKS) program. The SAWS interface will enhance investigation, improve case-management services, and facilitate better service delivery by preventing duplication.

- **California DHCS MEDS - Title XIX**

An interface with MEDS will provide access to Medi-Cal eligibility verification, along with family and individual demographic information (e.g., address, telephone). This interface will provide client information to determine eligibility for children in foster care, allowing for the automated exchange of common case information, and capturing required data for federal reporting.

- **CCSAS - Title IV-D**

An interface with CCSAS will automate the collection of child-support information. This includes the mandatory reporting of child-support data for AFCARS, as well as verification across data systems on shared client information. This information will facilitate the collection of child support on the behalf of dependent children and the automated exchange of child-support referrals. This interface will allow the CWS to access information to locate missing persons.

- **Social Security Administration**

An interface with the Social Security Administration will automate the ability to submit requests for Social Security benefits on behalf of a child. AFCARS data could be exchanged, as a result. Demographic information could also be obtained on clients who will assist in service delivery.

- **State Controller's Office and the County Payment Systems**

An interface with the California State Controller's Office and county payment systems will automate CWS financial transactions. The State and counties are required to track and manage financial information including payment of CWS service-connected expenses, administration and issuance of assistance

payments, and children's income, when required. Accurate payments help ensure children's financial needs are met.

3. Other Missing Information Links Critical to CWS Operations

There are many links (i.e., interfaces) listed below which will greatly enhance investigation, case management, and due diligence (location) search functionality. In addition, many of these interfaces will help fulfill the needs of child welfare practice. Among the most important of the missing links are links with the following agencies:

- Administrative Office of the Courts – California Court Case Management System
- Department of Alcohol And Drug Programs
- Department of Corrections And Rehabilitation
- Department of Public Health
- Department of Health Care Services
- Department of Justice
- Department of Motor Vehicles
- Employment Development Department

For a listing of all desired potential links, refer to Appendix A: Critical Functionality Assessment and Methodology, Table 29 – Missing Critical Functionality per Legislative Mandate.

D. To What Degree does CWS/CMS Provide Ready Access to Data for Reporting, Planning, Management, and Program Outcome Monitoring?

While the degree cannot be quantified, CWS/CMS clearly does not fully support the program and user needs related to reporting, analysis, planning, or management. Nor does it meet the needs for program outcome monitoring, including compliance and performance. This is primarily due to the current need to use multiple data sources and reporting tools, all requiring different levels of expertise as well as additional licensing. The development of effective reports and analysis to support program business functions requires a single, robust data warehouse as well as tools for report development and analytics. The existing system is cumbersome and relies upon various technology platforms from which to draw data. This makes data reporting, analysis, and accuracy time-consuming and unreliable.

1. CWS/CMS Reporting Solutions

Data management and reporting/analysis capabilities are provided by numerous methods. CWS/CMS reporting solutions are described below and provide different types of reports for different constituent needs.

- CWS/CMS Database - The existing system allows for specialized reporting through statistical analysis software (SAS). However, this reporting mechanism only provides access to a few users.
- CWS/CMS Database Program Management Reports – Predefined program management reports are available within CWS/CMS. These reports can be generated by users, but are static and do not provide all of the necessary information or data access required. Any changes or enhancements must be performed by the contractor, and are costly to make.
- County Access to Data (CAD) Data Warehouse – The CAD data warehouse was developed to help counties fulfill the reporting requirements of their many constituents. It contains one statewide view and 58 county views of the data contained within CWS/CMS. These views allow each county to view only its own data. Users of the CAD data warehouse access the data using the Business Objects report tool suite, located on designated CWS/CMS workstations or via a Web tool. There are a limited number of standardized reports, which are supplemented by ad-hoc reporting capabilities. Refresh of the database happens once daily.
- Child Welfare Data Analysis Bureau (CWDAB), within the CDSS, Research Services Branch, supports the provision and improvement of child welfare services in California by providing data for policy development, budget planning, and measurement of program success against state- and federally-mandated standards. CWDAB uses data from CWS/CMS, related surveys, and administrative sources. CWDAB is also responsible for development and submission of federally-mandated data reports, e.g., National Child Abuse and Neglect Data System (NCANDS), AFCARS, NYTD, and the Federal Monthly Caseworker Visits.
- Center for Social Services Research (CSSR) at University of California, Berkeley (UCB) - The State contracts with UCB to provide quarterly reports that are posted and accessible by CWS agencies and the public. These reports include outcome measures, longitudinal reports, and other data sets at aggregate levels. These reports are generated using SAS software and are based on data directly extracted from the CWS/CMS mainframe on a quarterly basis.
- Children’s Research Center (CRC) – SafeMeasures® - This is a Web-based data-reporting system from a third party that provides current information on key performance standards. The system organizes case data according to performance on state regulations and federal outcome measures, allowing managers and supervisors to track key metrics and case requirements. Refresh of the database happens once daily.
- County-specific data marts - Several large counties such as Los Angeles, Orange, San Diego, Santa Clara, Alameda, and San Mateo have developed their own reporting systems to support their specific needs with data extracts from CWS/CMS database. Los Angeles and Alameda counties have daily

extracts, while the remaining counties have weekly extracts that are contracted separately with International Business Machines Corporation (IBM).

2. Data Access Needs

The following provides a description of the unmet needs for data access:

- CWS workers and managers throughout California need reliable access to standardized reports, scorecards, and/or dashboards to make more informed decisions, improve quality of services, meet outcomes, and manage work more effectively.
- System users must have ready access to aggregated and regional/county data based on roles and groups to better manage workload, program performance, and outcome improvements.
- All counties must have access to the same standard reports to monitor program performance, outcome measures, and workloads.
- To increase productivity, users need Web-based access to reports and information that identifies case activity and improves worker efficiency.
- The State and CWS agencies need data-mining capabilities to query and analyze data based on indicators of abuse for at-risk children, enabling earlier/better intervention.
- An ability to easily integrate with multiple external statewide or community systems will help CWS improve the sharing of information to improve program performance. Potential sources of data for valuable cross-program analysis include interfaces to CalWORKS Information Network, C-IV, Los Angeles Eligibility, Automated Determination, Evaluation and Reporting System, and MEDS. This cross-program analysis will allow CWS agencies to better identify causal relationships and lead to earlier or better service delivery to children and families in need.

The existing problem of having multiple reporting methods results in:

- Inconsistent data across multiple systems (Berkeley, CDSS, CAD, SafeMeasures[®], etc.) due to differing methodologies. These inconsistencies result in:
 - Increased effort for data reconciliation and staff support.
 - Lack of confidence in the accuracy of CWS/CMS data, due to different methods for reporting and data extraction.
 - Online audit issues.
 - Possible increased fines and penalties imposed by the federal government for the failure to meet or improve compliance or outcome measures in a timely manner at the county and state level.

- Manual tracking or county external systems created to track data related to programs for verification.

In summary, CWS/CMS has not kept up with the increasing demands of child welfare legislation, reform, and reporting requirements. From a practice perspective, a CWS solution for case management is needed to provide up-to-the-minute data on all clients and also provide for monitoring, tracking, and performance outcomes.

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Section V

Alternatives

V. ALTERNATIVES

This section addresses the AB 106 request to, “Determine the best approach to address any missing functionalities that are critical to Child Welfare Services operations. Options shall include building functionality into the existing CWS/CMS system, restarting the CWS/Web procurement, or developing a new procurement.” This section describes (A) the architecture of CWS/CMS and (B and C) each evaluated technical alternative in terms of benefits, challenges, approach, how well it meets business requirements, the time to achieve benefits, and the costs and risks involved.

A. Current Architecture of the Existing System, CWS/CMS

This subsection describes the architecture of CWS/CMS as it exists today. More background on its history and development is provided in Section II: SACWIS Requirements and CWS/CMS History

CWS/CMS achieved statewide operational status in 1998. Since then continuous development activities have occurred in the form of periodic releases. These releases focus on correcting operational defects and addressing new state legislation, federal regulation and agency policy.

The existing system is a multi-tiered client/server application comprised of several components. The three major components are a workstation user interface, application servers, and a mainframe back-end and database.

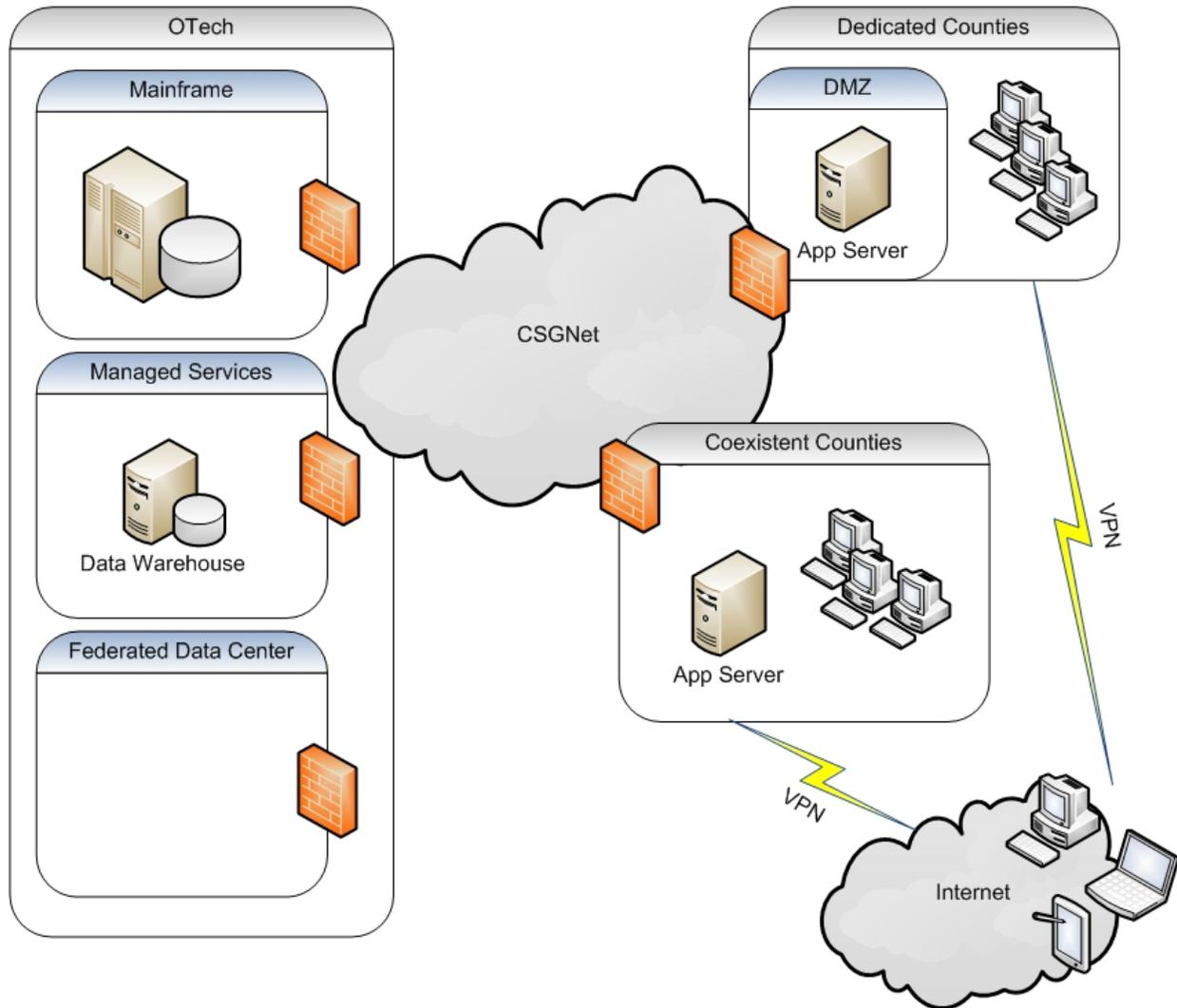
CWS/CMS operates on Windows XP workstations and utilizes the transaction architecture under the Customer Information Control System (CICS) environment to support business processes. As well as SAS analytical tools, CWS/CMS includes a separate CAD data warehouse environment for reporting. Transactions are processed by the CICS transaction monitor and are programmed using the Common Business Oriented Language (COBOL). The workstation client interacts with the database running on two mainframes at the Office of Technology Services (OTech).

The application servers provide intermediary functionality between distributed workstations and the mainframes. The application servers minimize network traffic and the number of connections between the host and workstations. They also provide a staging area for software distribution to reduce bandwidth congestion. The application servers are hosted locally in county server rooms and are designed to perform several functions including file sharing; print services, domain control, and antivirus updates; and acting as an application gateway.

The core of CWS/CMS resides on two mainframes. The primary role of the mainframes is to provide database and transaction services. All CWS/CMS data is stored in a series of database tables and accessed through CICS transactions generated from the CWS/CMS workstation application.

The following diagram illustrates the current architecture. Access to the application servers, mainframes, and database are only supported across the California State Government Network (CSGNet) and county wide-area network (WAN).

Figure 1 – CWS/CMS Current Architecture



Restrictions of the existing architecture of CWS/CMS include:

- There is no formal “control” layer to act as an intermediary between the graphical user interface (GUI) layer and the data layer and to notify it about changes to the data/views. Rather, the GUI layer incorporates this logic, which results in a tight coupling between business rules, user interface logic, and data. This tight coupling reduces flexibility and impairs the ability to alter business rules and data structures due to the needs of changing law, regulation and policy.
- Each business process is mapped to a long series of transactions which are executed either in parallel or sequentially as individual transactions. No true system management of business processes is possible in such an environment. In the CWS/CMS architecture, a transaction may encompass many business processes, which has resulted in application-code

interdependencies that limit the ability to easily support business and program changes.

- No clear separation exists between business- and user-interface logic on the workstation. This constraint limits the ability to customize the software to county-specific requirements.
- The existing design brings all the case data down to the workstation, and does not make this information accessible outside the workstation (such as via portable or alternative devices). With this design, information cannot be made available anywhere, anytime.
- CWS/CMS was not designed to allow concurrent update access to the same case data by multiple users at the same time. Typically, there are manual workarounds necessary to ensure that multiple users are not simultaneously accessing the same data.

Further detail on the architecture of CWS/CMS is shown in Appendix D: Current CWS/CMS Application Architecture Overview.

Costs for CWS/CMS

The cost estimates below do not include CWS/CMS county or CWS program costs.

Table 4 – CWS/CMS – Costs

*Costs are rounded to the nearest million.

EXISTING CWS/CMS (Costs Rounded to the Millions)														**TOTAL
MAINTENANCE & OPERATION														
	Year* 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	
Procurement Costs	\$ -	\$ -	\$ 5	\$ 6	\$ 6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 86	\$ 87	\$ 89	\$ 90	\$ 91	\$ 93	\$ 94	\$ 96	\$ 1,139
*Estimated Annual Totals	\$ 81	\$ 82	\$ 88	\$ 89	\$ 90	\$ 86	\$ 87	\$ 89	\$ 90	\$ 91	\$ 93	\$ 94	\$ 96	\$ 1,156

*Year represents a State Fiscal Year

**Current System Costs do not reflect the following anticipated resource needs under current agreements:

- Costs associated with building any required system functionality or enhancements.
- Hardware/Software replacement costs for equipment as system ages.
- Cost increases due to inflation.

The estimated costs for this alternative, Existing System CWS/CMS, reflect the costs associated with the procurement activities that will need to occur for the procurement of a new M&O agreement, before the existing base contract period expires in November 2016. The annual cost increases reflect the anticipated contract cost increases, as scheduled in the existing M&O agreement. With approved FFP of 50 percent, the total costs to the SFG would be approximately \$578 million, incurred between SFY 1 and SFY 13

The CWS Program incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

Cost estimates were based on existing M&O agreement costs and a 3.5 percent increase to account for vendor labor cost escalation.

B. Technical Alternatives Considered and Rejected

This subsection describes several technical alternatives to CWS/CMS that were considered potential solutions to address critical functionality needs but which were judge inadequate early in the process.

1. Maintain the existing CWS/CMS architecture

This alternative proposes that the State continue to maintain and upgrade CWS/CMS within the limits of the current technical architecture employed by CWS/CMS. This alternative would upgrade the existing “thick client” within the limits of the existing technical architecture employed by CWS/CMS. “Thick-client” architecture describes application software which is not available over the Web but only available on workstations, the “clients” of the system. Upgrades must be locally installed on individual workstations. (Conversely, “thin-client” architecture involves making a centralized application available to users via Web browsers.) With this thick-client scenario, it is assumed that no major technical application architecture changes will be made to CWS/CMS beyond those required to meet programmatic, legislative, and regulatory needs.

The architecture for this alternative will continue to be client /server with mainframes providing database and reporting services to client workstations. In the current architecture, the client utilizes a centralized DB2 database that resides on IBM mainframes hosted at OTech. The majority of business logic, business rules, and presentation logic resides on the workstation, which runs the Microsoft Office Suite. Users rely extensively on Microsoft Word for capturing case notes and deploying forms used to capture information. New business functionality will be written to be compatible with the existing Microsoft Windows operating system and deployed on these workstations.

At the county level, application servers function as intermediaries between a group of workstations (associated with a county or site) and the host. These servers minimize the traffic and number of connections between the host and workstations. They also provide a staging area for software distribution to reduce bandwidth congestion, such as the distribution of software to workstations over local-area-network (LAN) resources.

The CAST reviewed the alternative of keeping the existing architecture in its thick-client form, as a “thick-client upgrade.” However, the existing architecture clearly cannot support the future needs of CWS practice. Indeed, it is inadequate for current needs. The technical risks, time to deliver, and cost to implement did not meet business needs. Therefore, it is not discussed further as an alternative.

2. Build a New Custom System using a Serial Development Approach

This option will result in a completely new, custom system-development effort, utilizing the serial (waterfall) development lifecycle model. None of the existing CWS/CMS application elements will be reused with this alternative. Web technologies and layered architecture will separate the user interface, the application logic and the data. Existing operational business data will be (1) extracted, transformed (as applicable) and loaded

into a new database; (2) hosted in a new database engine; and (3) reside on a new database server. The system will be delivered as a complete system during the deployment phase, after all testing and defect correction has been completed.

The CAST evaluated the serial development approach and determined the incremental lifecycle methodology more closely aligns with the needs of CWS. Therefore, the serial development approach is not discussed further as an alternative.

3. Software as a Service (SaaS)

SaaS is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet. There are two slightly different delivery methods for SaaS: hosted application management and “software-on-demand.” Hosted application management is similar to application service provision, in that a provider hosts commercially-available software for customers and delivers it over the Web. With the software-on-demand method, the provider gives customers network-based access to a single copy of an application created specifically for SaaS distribution.

With SaaS the underlying code is the same for all customers and cannot be customized. Any features or functionality that the SaaS vendor adds to the software based on customer feedback becomes available to all customers.

SaaS, by the very nature of its name, is service-focused instead of application/solution-focused. Initial research has identified numerous potential segment solutions for CWS; that is, solutions that address a segment of the business practice, but not the entire practice. While individual segment solutions can deliver robust, quick-delivery answers to needs, their use will require some form of access integration (i.e., a portal), security management (single sign-on), and integration with other segment solutions to deliver a single look-and-feel to users.

SaaS customers have no direct control over the SaaS vendor’s infrastructure (hardware and software). While the availability and performance of the hardware and the scalability of the software are usually not an issue, the security of the mission-critical data can be a critical issue. There are state policies on the location and management of strategic, mission-critical data that need to be researched with state control entities to determine the feasibility of a solution where data is to be hosted outside a state-managed data center. This policy issue must be addressed to make this a viable alternative.

SaaS is a variation of the buy/build model that focuses specifically on the “buy” approach to supporting the needs of CWS practice. Conducting a gap analysis and then deploying the delivered service(s) are processes also used in the Buy/Build alternative, but in SaaS the duration is greatly compressed, reduced from months or years to weeks or months. To be a viable alternative, there either needs to be a single-vendor solution or else sufficient (multi-vendor) segment solutions available that can be integrated to support the full business needs of CWS practice. A single vendor SaaS provider will need to have software services that:

- Support all the needs of CWS practice.
- Address state data-management policies.
- Mitigate disaster-recovery risks involving data and replacement software.
- Address issues involving access integration and security management.
- Provide a uniform system “look and feel” to users.

An assessment of SaaS as a possible alternative has been initiated. The CAST will continue to research various SaaS solutions, communicate directly with potential providers through the RFI process, and formulate a foundation to determine the feasibility or non-feasibility for this alternative.

C. Alternative 1: Upgrade the Existing CWS/CMS

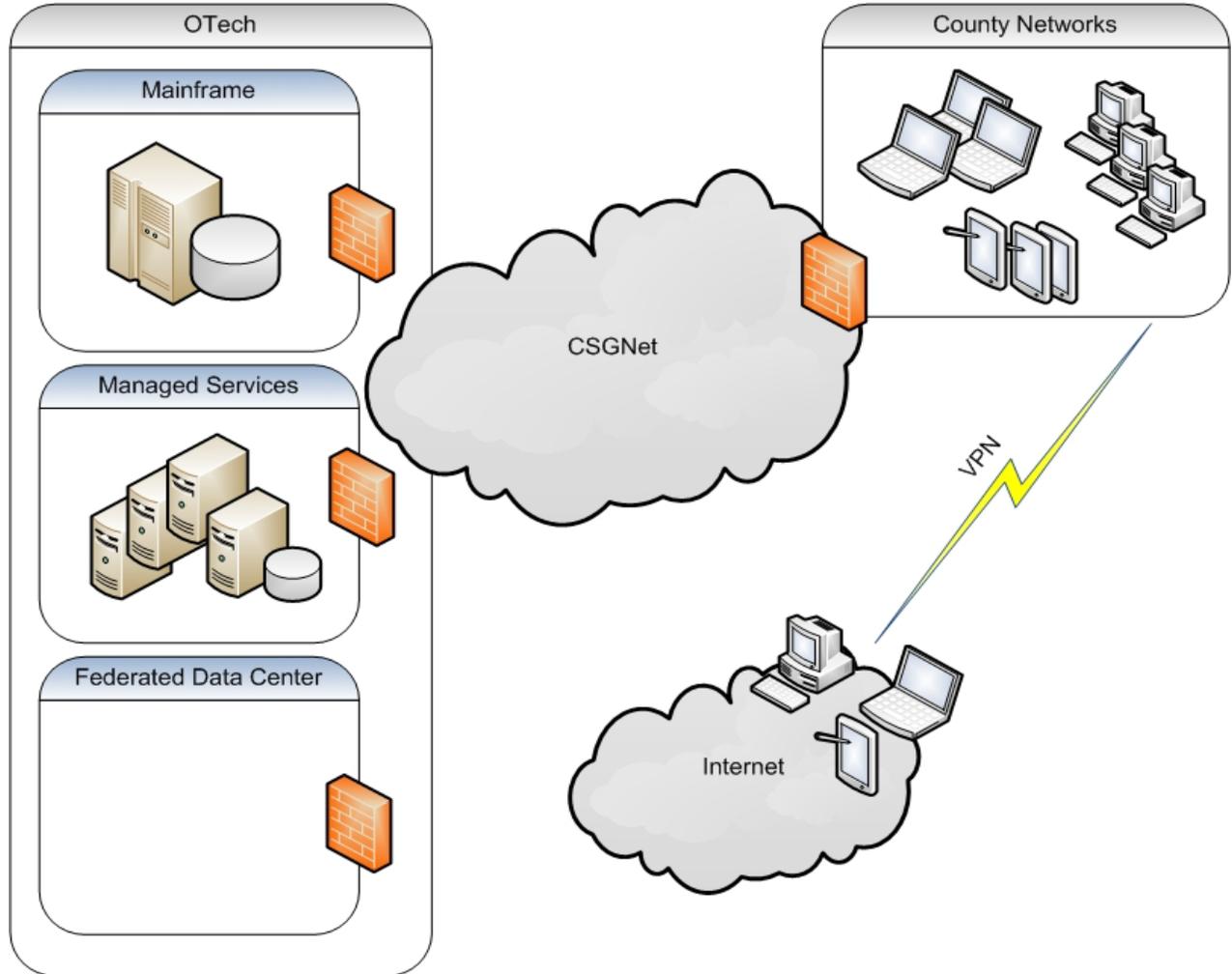
This alternative is focused on upgrading the current CWS/CMS to Web-based technologies. The existing thick client will be upgraded to a browser-based thin client and converted to n-tiered architecture. Enhancements and updates will have to be planned and delivered after the upgrade is completed and stabilized. The distributed application servers will be centralized to a Web-based application server(s) co-located with the IBM mainframes supporting the DB2 database.

This alternative will:

- Upgrade CWS/CMS client code to Web-based technologies.
- Migrate from 200+ application servers to a central Web-based application server hardware/software environment at OTech.
- Utilize the existing CICS/COBOL/DB2 code base.
- Add and enhance critical functionality after the initial upgrade is completed and the application is stabilized.

Figure 2 – CWS/CMS Upgrade – Technical Environment illustrates the architecture of this alternative, showing that the thick client has been replaced with a Web browser. The distributed application servers have been removed from the counties, and the IBM mainframe and DB2 database have been retained, but only to support the database. Access to the Web-based application server(s), IBM mainframe, and DB2 database are only supported across CSGNet and county WANs.

Figure 2 – CWS/CMS Upgrade – Technical Environment



1. Technical Description

Table 5 – CWS/CMS Upgrade – Scorecard

The scorecard shown on the right depicts how well this alternative scored for each evaluation factor and its overall score as a percentage. The icon shows the percent to which the alternative met the needs of the evaluation category (zero, quarter-, half-, three quarters- or fully-met).

Using this alternative, the process of upgrading the CWS/CMS technical infrastructure will evolve over time. Changes to the existing application and systems architecture will only be made to meet critical operational requirements, such as changing the security model to accommodate new user types or modifying an existing interface. The reporting architecture will leverage the existing data reporting capability. All counties with adequate technical infrastructure and support resources (typically coexistent counties) can deploy a data mart fed by the data warehouse. Counties without adequate technical infrastructure and support resources will access the data warehouse directly for their day-to-day operational reporting needs. The enhanced data warehouse will serve all county and state users for analytical reporting, data mining, and/or ad-hoc reporting. The potential retention of the CWS/CMS application architecture, IBM mainframe, and DB2 database as back-office infrastructure introduces a risk that users will be impacted by upgrades occurring in a production environment

Scorecard	
Business	●
Technical	◐
SACWIS	●
Time	●
Cost	●
Risk	●
50% overall score	

To re-host and upgrade the existing client-based user interface, business logic, and database interface will require extensive requirements specification/validation, analysis, and design prior to initiation of the build phase of the lifecycle.

The upgrade of CWS/CMS will result in:

- Replacement of the existing client with a Web browser.
- Re-host of the existing client-based user interface, business logic and database interface into n-tiered architecture.
- Development and delivery of critical functionality.
- Consolidation of the distributed application server architecture.
- Retention of the IBM mainframe.
- Retention of the existing CICS/COBOL/DB2 code base.
- Retention of application access through:
 - CSGNet (via VPN).
 - County LAN and the CSGNet.

- Direct connection to the CSGNet.
- Wireless connection to a county LAN and/or the CSGNet.

Critical functionality that must be available for the initial release can be developed separately from the major re-host effort (therefore not impacting its schedule) and deployed at the same time. Less-critical functionality will be prioritized, sequenced, and scheduled for inclusion in post-deployment enhancement releases.

2. Benefits

- Offers minimal impact to end users.
- Requires no data conversion.
- Replaces the thick client with a Web-browser-based thin client, allowing for access anywhere, anytime.
- Allows incremental functionality enhancements (based on budget and priorities) after initial release.
- Removes the operational cost of periodic refreshes of 200+ distributed application servers.
- Removes the operational cost of special workstation images to run the client software.
- Centralized application server(s) can be managed at OTech.
- Results in an improved maintenance lifecycle due to single-point enhancement/ upgrade deployment on the centralized application server(s).

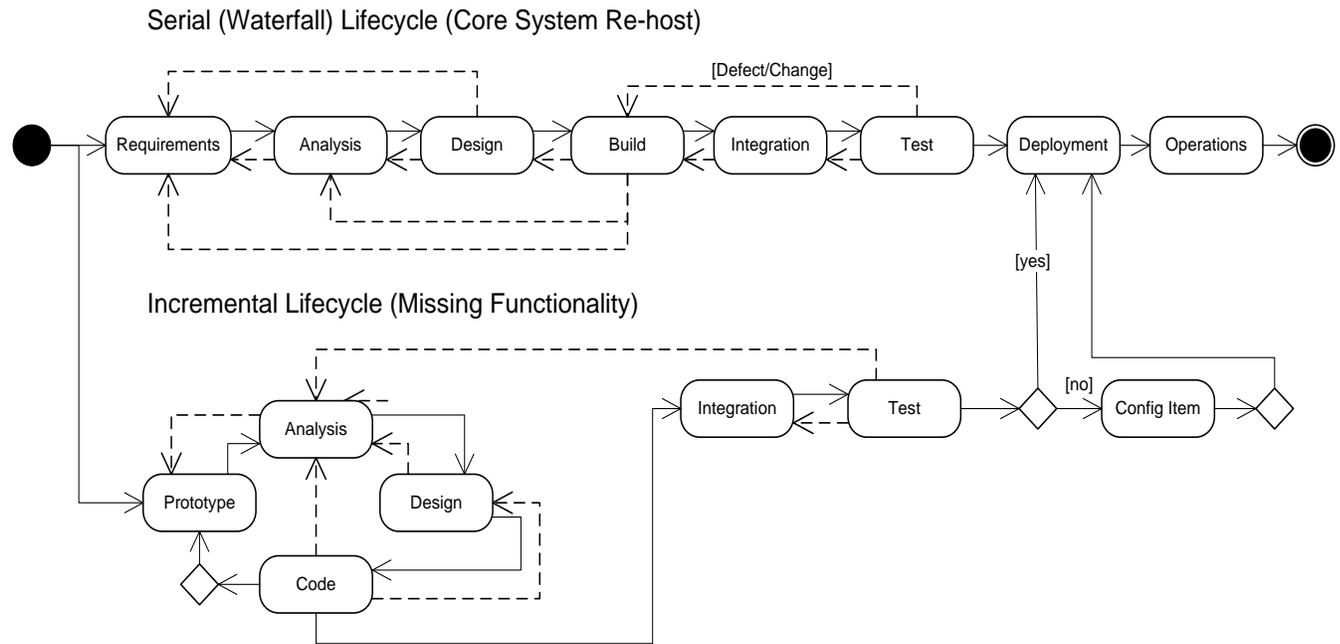
3. Challenges

- Offers only restricted use of the Web browser, as a thin client, to the State's intranet. (This does not provide internet capabilities.)
- Retains the operation and maintenance costs associated with the IBM mainframe and DB2 database.
- May require greater day-to-day performance management because of increased infrastructure complexity.
- Interface to partner systems is batch, which does not provide real-time information.

4. Methodology

The CWS/CMS Upgrade alternative will require two separate development lifecycles. Because of the complexity (which includes a new architecture) and the number of partner dependencies associated with the initial upgrade of the CWS/CMS client to Web technologies, this release will be executed using a separate serial-development lifecycle. Once this initial release has been completed, a new incremental-development lifecycle approach will apply to developing the new and enhanced functionality that was not present in CWS/CMS.

Figure 3 – CWS/CMS Upgrade – Lifecycle Methodology



A detailed discussion on the approach to be taken for the CWS/CMS Upgrade can be found in Appendix C: Lifecycle Methodologies.

5. Business Assessment

This alternative is focused on upgrading the existing CWS/CMS to Web-based technologies. Users will be provided access to the existing CWS/CMS via the county intranet. Remote access will continue to require the use of tokens and virtual private networks to access the county intranet to log on. Identified critical functionality and modifications to existing functionality will be prioritized, sequenced, and scheduled for inclusion in future enhancement releases after the upgrade is completed and stabilized.

This alternative leverages existing business infrastructure with the least disruption to business operations. As it involves minimal changes to the appearance and navigation of the application, users will require minimal training regarding changes. New functionality will require user training as it is implemented. The existing training infrastructure will be used for statewide training.

The stakeholder community identified that the functionality needed to support critical CWS operations and the length of time to delivery are their highest priorities when considering technical alternatives. This alternative is one of the slower to deliver benefits. This alternative also retains a number of existing constraints that will continue to impede usability and effective case management practice, such as the ease-of-use problems with navigation, the multiple inefficient reporting solutions, the limited mobile access, and the lack of role-based access. These constraints limit the ability to implement the self-service functionality as envisioned to allow CWS community partners to view and enter data.

Although the intent is to implement critical functionality and to modify existing problem functionality, it will be difficult to implement some of the functionality as preferred or optimal to support CWS practice.

This alternative does not have the ability to support real-time interfaces with other systems. It may also be difficult, due to the continuation of the existing environment and its limitations, to support all the identified interfaces.

The continuance of this constrained CWS/CMS alternative will result in California CWS dependence upon external vendors such as Sphere, CRC, University of California at Davis and Social Solutions for application and reporting services.

This alternative does not support the needs of CWS practice.

6. SACWIS

This alternative may accommodate the State's commitment to fulfilling SACWIS functional requirements. The delay increases the risk of suspension of SACWIS funding.

This alternative's limitations will result in the maintenance of existing external systems and creation of new systems to support CWS practice, which will jeopardize SACWIS compliance.

7. Timeline

The timeline to upgrade the existing CWS/CMS has been provided with a focus on the procurement, development, and deployment phases of the alternative.

Procurement

The following table identifies the tasks and durations to execute the procurement process for this alternative.

Table 6 – CWS/CMS Upgrade – Procurement Duration

Key Dates/Tasks	Develop RFP	County Review of RFP	Revise RFP	Review RFP	Release RFP	Bidders' Conference	Intent to Bid	Q&A	Confidentials	Prepare Addendum	Draft Proposal Evaluation	Draft Confidentials	Q&A	Addendum	Final Proposal Evaluation	Cost Opening	Intent to Award	Protest	Review and Approval	Award Contract	Total Months
Duration in Months	9.00	1.00	1.00	2.00	0.25	0.25	0.00	1.00	0.50	3.00	3.00	0.50	1.00	2.00	3.00	1.00	3.00				31.50

Development – Initial Release

The following table identifies the system and business function capabilities that will be delivered in the initial release.

Table 7– CWS/CMS Upgrade – Initial System and Business Functionality

System	Business Function
• Application Architecture	• Intake Management
• Infrastructure	• Case Management - Service / Case Plan
• Data Conversion (external systems only)	• Case Management - Review, Evaluation, Monitoring
• Workflow	• Court Processing
• System Security	• Administration
• General Functionality	• Resource Management
• Other Functionality	• Quality Assurance
• Interfaces	

Future Release

The following table identifies the business function capabilities that will be delivered in the future release.

Table 8 – CWS/CMS Upgrade – Future System and Business Functionality

System	Business Function
	• Adoptions
	• Financial Management
	• Eligibility
	• Critical Functionality Matrix
	• New Law, Regulation or Policy capabilities

Deployment – Initial Release

Because this alternative will utilize a centralized architecture and retain the existing workstation software characteristics (look-and-feel), the existing IBM mainframe and DB2 database, and workstation access only requires a Web browser, deployment will be instantaneous to all users the moment that the system comes online. A period of one month has been provided in the timeline to allow for ongoing user support (predominately additional training and question resolution) and for decommissioning previously-distributed architecture components.

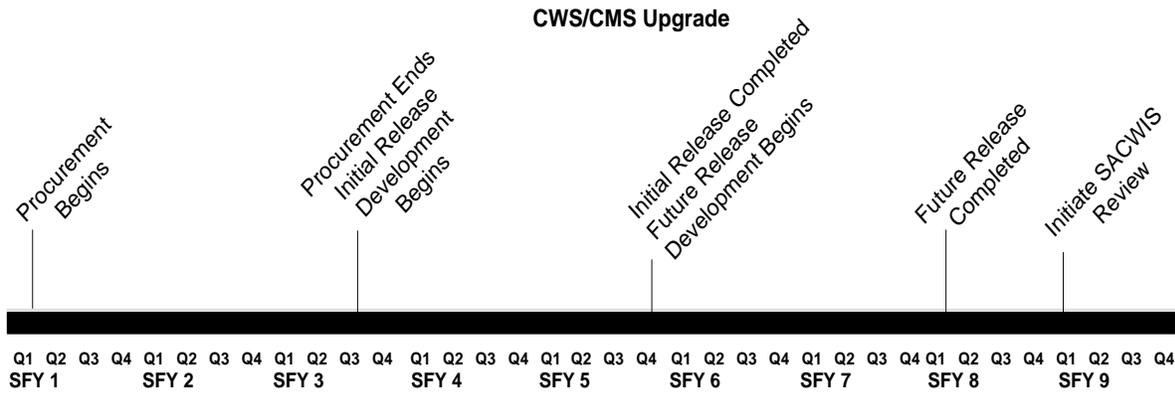
Deployment – Future Release

Like the initial release, deployment will be instantaneous to all users the moment that the future release business function is deployed. A period of one month has been provided in the timeline to allow for ongoing user support (predominately additional training and question resolution).

State Fiscal Year (SFY) Allocation

The following figure shows how the procurement, development and deployment phases will be allocated to state fiscal years during the duration of this alternative.

Figure 4 – CWS/CMS Upgrade – Timeline



8. Cost

The total cost for the CWS/CMS Upgrade alternative is estimated to range between \$1.2 billion and \$1.4 billion and consists of three components: one-time costs, ongoing costs, and continuing existing system costs.

The estimated one-time costs associated with this alternative range between \$216 and \$254 million. These costs consist of project staffing, procurement of project support vendors, new procurement activities of the existing M&O contract, and development of additional enhancements and functionality over time. With approved FFP of 50percent, the total one-time cost to the SGF would be approximately \$118 million, incurred between SFY 1 and SFY 8.

Total continuing IT costs are estimated to average \$79 million per year. These IT costs are associated with the new vendor’s ongoing maintenance and operational activities, annual system updates and patches, county support, and other system upgrades and refreshes as applicable under the new M&O contract. With approved FFP of 50 percent, the approximate annual SGF cost would be \$40 million beginning in SFY 6, resulting in an annual SGF savings of approximately \$7 million, in comparison to the existing CWS/CMS.

Estimated continuing existing-system costs are estimated to range between \$396 million and \$464 million. These costs are attributed to maintaining the existing system as-is while a new procurement for M&O services is conducted. These costs will occur concurrently with the one-time costs described above. With approved FFP of 50 percent, the total continuing existing-system costs to the SGF would be approximately \$215 million, incurred between SFY 1 and SFY 6.

The following table shows estimated costs broken out by one-time IT costs, continuing IT costs, and continuing existing IT costs by state fiscal year. The cost-estimating

period for this alternative consists of costs through the end of procurement plus ten years of costs after contract award.

The cost estimates do not include CWS/CMS county or CWS program costs. One-time county goods and services costs have been estimated and are included in each of the alternatives' one-time cost estimates.

Table 9 – CWS/CMS Upgrade – Costs

*Costs are rounded to the nearest million.

CWS/CMS UPGRADE
(Costs Rounded to the Millions)

	PROCUREMENT			INITIAL RELEASE		FUTURE RELEASE			MAINTENANCE & OPERATION				TOTALS	
	Year* 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12		Year 13
One-time IT Costs	\$ 12	\$ 12	\$ 29	\$ 34	\$ 62	\$ 29	\$ 29	\$ 28	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 235
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 76	\$ 77	\$ 78	\$ 78	\$ 79	\$ 80	\$ 81	\$ 41	\$ 590
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 430
Estimated Annual Totals	\$ 93	\$ 94	\$ 112	\$ 117	\$ 146	\$ 122	\$ 106	\$ 106	\$ 78	\$ 79	\$ 80	\$ 81	\$ 41	\$ 1,255

*Year represents a State Fiscal Year

The one-time IT costs for the CWS/CMS Upgrade is approximately \$235 million. The one-time IT cost estimate period for this alternative is eight years. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$118 million, incurred between SFY 1 and SFY 8.

Continuing IT costs for the new M&O are estimated to begin after the implementation of the initial release. Continuing existing IT costs are estimated to be incurred for five years and six months, during the same period required to procure the alternative and implement the initial release.

The CWS Program incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

Cost estimates were based on existing CWS/CMS costs, previously-approved CWS/Web project costs, DGS pricing resources, and a 3.5 percent increase to account for vendor labor cost escalation.

9. Risks

- Inability to agree on terms and conditions with the selected vendor during contract negotiations may delay the schedule and solution delivery date.
- Existing staffing levels may be insufficient to develop and complete the RFP and contracting process.
- Unanticipated tasks associated with the complexities of upgrading the existing system may require additional funding.

- Maintenance costs for the existing system may continue to increase over time and may become cost-prohibitive due to the continual use of the IBM mainframe and CICS/COBOL/DB2 code base.
- Inability to incorporate legislative or policy changes in a timely manner or at all, due to technical limitations of the system, may jeopardize continued federal funding and/or incur fines or other penalties.
- Operating with a hybrid of old and new technologies may not lower ongoing costs.
- Policy, regulation, and legislative changes during Design, Development and Implementation (DD&I) may delay the delivery date of the solution and increase costs.

D. Alternative 2 – Restart the CWS/Web Project

This alternative will utilize the existing CWS/Web RFP documents and requirements without modification to procure and develop a services-oriented Web-services-based architecture and replacement system for CWS/CMS. A new procurement will begin with the re-release of the CWS/Web RFP. All functionality, including the unfulfilled SACWIS technical requirements and integration of the external systems, will be available to users through a Web browser.

The approach to restarting CWS/Web will:

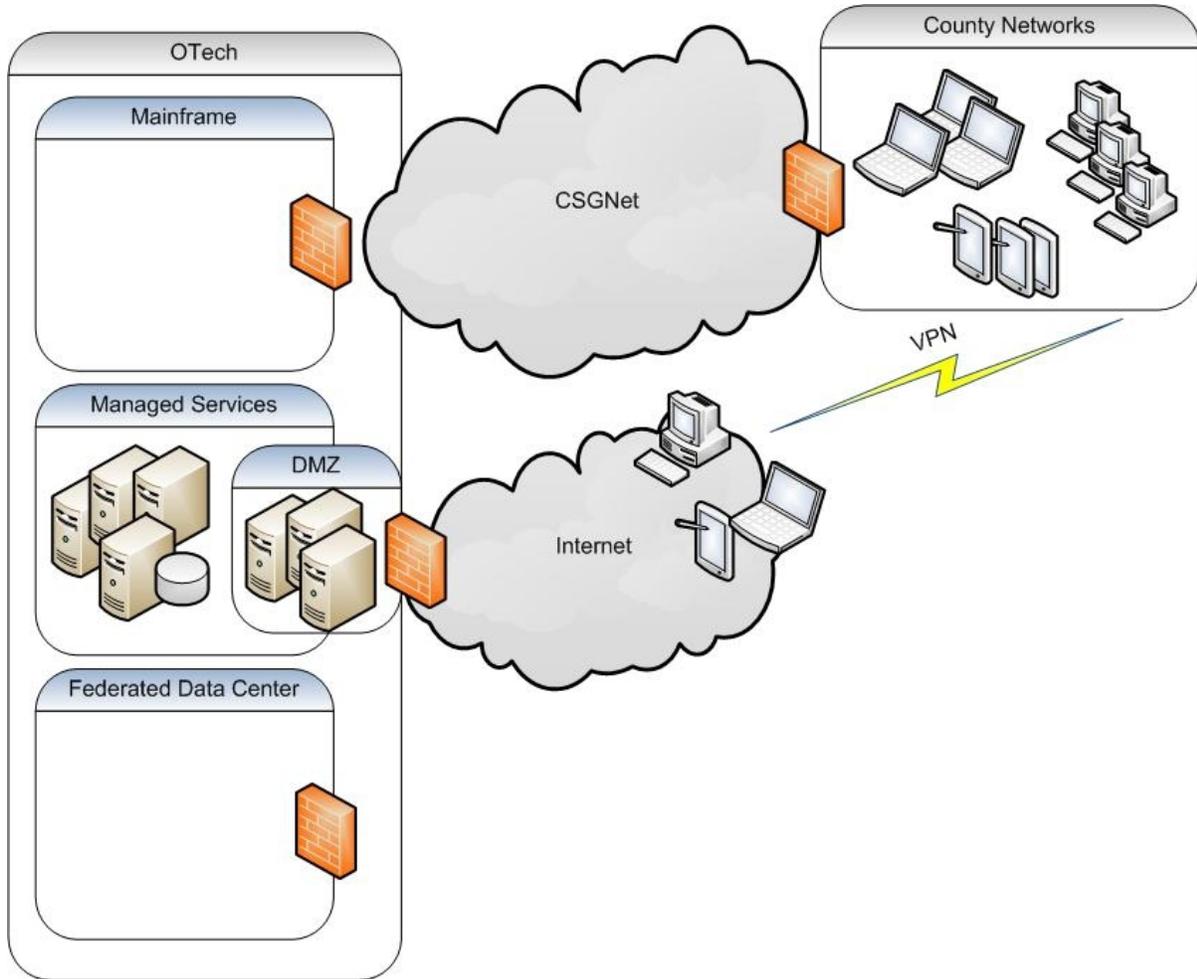
- Replace distributed computing architecture (servers and software) with centralized components that integrate the Web, the system logic and the database.
- Deliver an architecture based on Web technologies;
- Establish a SOA and support future collaboration with (interfaces to) other systems or services.
- Ensure a browser-based client (delivery of mobility).
- Develop and deliver data exchange interfaces to support interagency information sharing.
- Consolidate existing and external data sources into a single repository.
- Add missing business functionality.
- Enhance business functionality that is operationally insufficient.

The development and deployment of all functionality with this approach will occur over a period of three years. Deployment will occur in the fourth year, using an incremental geographical deployment.

The following diagram illustrates the basic architecture that restarting CWS/Web will utilize. For the user, whether residing at a county, in a state office building or operating outside of the traditional office environment, the sole requirement for system access is a Web browser. Access to centralized application components will depend on the user

location and method of connectivity (wireless, wired, Virtual Private Network). The computing infrastructure will be server-based and managed by OTech.

Figure 5 – Restart CWS/Web – Technical Environment



1. Technical Description

Table 10 – Restart CWS/Web – Scorecard

CWS/Web will enable the State and counties to connect to the system and interact via Web-standards-based mechanisms. Restarting CWS/Web will facilitate secure access to the application for any authorized user. The architecture will accommodate custom views and impose county-specific workflow preferences.

CWS/Web will provide interoperability between applications and processes, utilizing Web services and messaging components. This leverages other related technologies, providing an architectural framework similar to traditional distributed communications paradigms such as Common Object Request Broker Architecture. Service-publication mechanisms allow client applications to discover, locate and invoke Web-service components dynamically.

CWS/Web will be based on an architecture lending itself to the integration of external systems and the rapid development of new services. The system will be adaptable and extensible. Components will be designed in a loosely-coupled fashion to be interchangeable with other external components of similar functionality with limited change to the overall solution.

As an adaptable service-oriented architecture, CWS/Web will provide application development and deployment facilities to allow applications to be integrated and deployed using existing services. The system will allow new services to be created and made available without modification of existing application structures.

Scorecard	
Business	●
Technical	●
SACWIS	●
Time	●
Cost	●
Risk	●
75% <small>overall score</small>	

2. Benefits

- The system is planned, specified, designed and documented before any development begins.
- System specifications are very detailed and focus on maximum delivery of business value (aligned with need, law, policy and practice).
- System architecture is aligned with immediate business needs and long-range business objectives.
- SOA and Web technology frameworks facilitate system extensibility and interagency information sharing.
- The use of “services” (loosely coupled units of functionality that individually implement one action) results in:
 - Minimal development time.

- Simplified maintenance.
- Isolation of upgrade/enhancement impacts to the service itself.
- Simplified testing.
- Maximum potential reuse.

3. Challenges

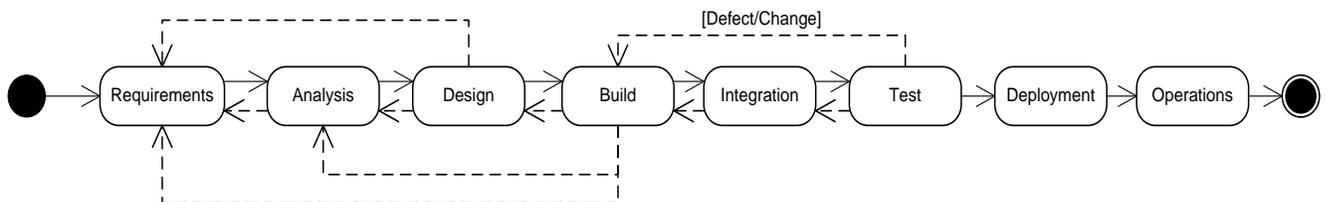
- Relies heavily on written communications between lifecycle phases.
- Integration, system, and acceptance testing cycles are executed after services are fully developed.
- It is difficult to determine the status of product development beyond the status of individual phases.
- The timing of testing makes defect correction more costly and time-consuming, and may delay the delivery of the system because of re-work complexity.
- Issues (what was missed) are often not identified until the test phase.
- The single, complete-system delivery model greatly delays delivery of business value.
- The heavily front-end loaded development lifecycle, involving (complete) system analysis, specification, design, and documentation, results in increased staffing costs and delayed return on investment, as measured by delivery of business value.
- Actual service (functionality) costs are very hard to determine because there is little or no cost segmentation within an individual phase.

4. Methodology

Requirements for the CWS/Web Restart alternative will be determined at the beginning of the development effort and can be changed only thereafter through application of a very structured change-management process.

Figure 6 – Restart CWS/Web – Lifecycle Methodology

Serial (Waterfall) Lifecycle



Details of the approach to be taken for restarting CWS/Web can be found in Appendix C: Lifecycle Methodologies, Restart the CWS/Web Project - Lifecycle Methodology.

5. Business Assessment

This alternative will utilize existing CWS/Web RFP documents without modification to procure and develop a replacement system for CWS/CMS. It provides for utilization of CWS/Web RFP requirements that have already been defined, approved, and documented. The CWS/Web RFP requirements include, at a minimum, the critical functionality required for SACWIS and CWS practice. A new procurement will start, re-releasing the CWS/Web RFP to result in development of a new custom application utilizing a Web-services-based architecture. This alternative will continue to utilize CWS/CMS while simultaneously developing the new system, CWS/Web.

This alternative resolves existing navigation, performance, and database-concurrency issues. It reduces duplicate data-entry efforts, and improves data quality and program management reports. It provides for timely implementation of functional changes and increased mobility. As noted in the TAAA report, counties have consistently voiced that the missing SACWIS functionality is a critical part of the capability needed to enhance the ability of CWS workers to provide essential services to children at risk. This alternative serves to meet those business needs.

A CWS worker's responsibilities are working with at-risk children and families, often outside of an office setting. With restarting CWS/Web, mobile access to the system will allow users to retrieve, enter and upload client information from most locations.

This alternative will provide users with better system navigation and ease of data entry. Role-based access will provide the ability to limit and control system access to appropriate parties. Not only will role-based access help workers by allowing them access only to the information they need to do their job, but it will allow them to work collaboratively with community partners. An example is Differential Response, where an external user (e.g., service provider) can have access to the system. The service provider will have a more limited access to the system and be limited as to what information they can enter. This alternative also supports multidisciplinary case management, where workers collaborate with community-based partners.

Workflow functionality will help workers in their daily activities by generating forms automatically and generating tasks or reminders when needed.

Restarting CWS/Web will allow counties the freedom to maintain their own computers and equipment. This alternative will not require counties to sustain existing levels of equipment and may help reduce their costs for maintaining the system.

This is a new solution that will require statewide implementation training. Due to the fact that the system can be accessed through the Internet, training labs can be easily set up in multiple locations.

This alternative will allow for the implementation of all interfaces as identified in the CWS/Web RFP. This supports the data exchange of client information and the ability for the information to be associated to the client. (One example is a potential interface with the California Department of Child Support Services system.) CWS workers will be

able to obtain information critical to investigation and case planning, such as location information and other client-specific information. This alternative will also support the ability to accept real time information from interface partners.

This alternative will support the ability to display views of data for case review. Types of case reviews may include:

- State technical assistance and monitoring
- Court
- Federal reporting
- Eligibility
- Financial management
- Title IV-E audits
- Federal reporting tools

Data integrity will be supported as client data is entered into the system. This alternative will create a framework upon which an improved reporting solution can be built by providing more comprehensive and accurate data, which translates into more timely and improved reporting. It will streamline data collection and improve the ability to report performance measures over time. Improved reports, such as outcome and data accountability reports, will assist CDSS in turn in the production of the following types of reports and documents:

- State legislative reviews and data requests
- Child and Family Services Review (CFSR)
- Annual Progress and Services Review (APSR)
- AFCARS
- NYTD
- NCANDS
- Relative/ Non-Relative Extended Family Members (NFREM) Review
- IV-E Adoptions Assistance Review

This alternative offers one of the better solutions to support CWS practice.

6. SACWIS

This alternative will obtain SACWIS compliance.

CWS/Web has been approved and funded at SACWIS FFP levels, subject to ongoing review, by ACF. ACF has agreed to continue SACWIS FFP for both development of CWS/Web and ongoing operation of CWS/CMS, pending implementation of CWS/Web. The current state suspension of CWS/Web may reduce ACF support for continuing SACWIS FFP due to the additional delay over the original approved timeframes.

However, to date, ACF remains supportive of California's reassessment process and is unlikely to suspend SACWIS FFP for either CWS/CMS operation or new system planning. Consequently, the state and county share of cost is not likely to increase due to a reduction of FFP.

7. Timeline

The timeline for the CWS/Web Restart has been provided with a focus on the procurement, development and deployment phases of the alternative.

8. Procurement

The following table identifies the tasks and durations to execute the procurement process for this alternative.

Table 11 – Restart CWS/Web – Procurement Duration

Key Dates/Tasks	Duration in Months
Develop RFP	1.00
County Review of RFP	0.00
Revise RFP	0.50
Review RFP	1.00
Release RFP	0.00
Bidders' Conference	0.25
Intent to Bid	0.00
Q&A	0.50
Confidentials	0.50
Addendum	3.00
Draft Proposal Evaluation	4.00
Draft Confidentials	0.50
Q&A	1.00
Addendum	3.00
Final Proposal Evaluation	4.00
Cost Opening	1.00
Intent to Award	3.00
Protest	
Review and Approval	
Award Contract	
Total Months	23.25

Development – Initial Release

The following table identifies the system and business function capabilities that will be delivered in the initial release.

Table 12 – Restart CWS/Web – Initial System and Business Functionality

System	Business Function
• Application Architecture	• Intake Management
• Infrastructure	• Case Management - Service / Case Plan
• Data Conversion (external systems only)	• Case Management - Review, Evaluation, Monitoring
• Workflow	• Court Processing
• System Security	• Administration
• General Functionality	• Resource Management
• Other Functionality	• Quality Assurance
• Interfaces	• Adoptions
• Reporting	• Financial Management
	• Eligibility

CWS/CMS Decommissioning

The existing CWS/CMS will be decommissioned after delivery of this initial release.

Development – Future Release

The following table identifies the business function capabilities that will be delivered in the future release.

Table 13 – Restart CWS/Web – Future System and Business Functionality

System	Business Function
	<ul style="list-style-type: none"> Critical Functionality Matrix
	<ul style="list-style-type: none"> New Law, Regulation or Policy capabilities

Deployment – Initial Release

This approach will utilize an entirely new SOA architecture and workstation access will require only a Web browser. Due to the new architecture (decommissioning the existing CWS/CMS), user interface characteristics will change to accessibility being possible with a Web browser only. With these changes and the addition of new capabilities (mobility and workflow), deployment will be executed in three sequential increments. The first deployment will occur over four months, the next over another period of four months, and the last deployment over a period of six months. County assignment to an increment will be determined during deployment increment planning.

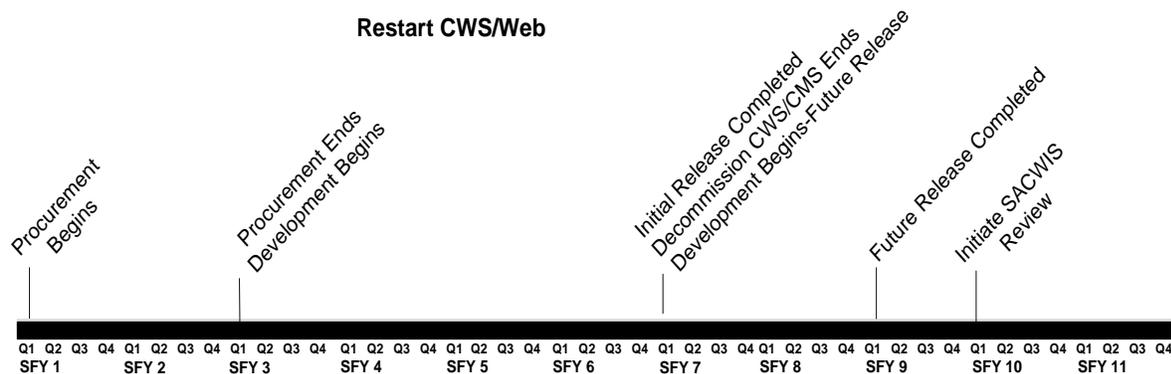
Deployment – Future Release

Like the initial release, deployment will be executed in three sequential increments. The first deployment will occur over four months, the next over another period of four months, and the last deployment over a period of six months.

State Fiscal Year (SFY) Allocation

The following figure shows how the procurement, development, and deployment phases will be allocated to state fiscal years during the duration of this alternative.

Figure 7 – Restart CWS/Web –Timeline



9. Cost

The total cost for the CWS/Web Restart alternative is estimated to range between \$1.1 billion and \$1.3 billion, and consists of three components: one-time costs, ongoing costs, and continuing existing-system costs.

The estimated one-time costs associated with this alternative range between \$290 million to \$340 million. These costs consist of project staffing, procurement of project support vendors, procurement activities for the systems integrator, and DD&I costs for the new CWS/Web solution. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$158 million, incurred between SFY 1 and SFY 9.

Total continuing IT costs are estimated to average \$61 million per year. These costs are associated with ongoing maintenance and operational activities of the new system, annual system updates and patches, county support, and other system upgrades and refreshes as applicable under the new M&O contract. With approved FFP of 50 percent, the approximate annual SGF cost would be \$31 million beginning in SFY 7, resulting in an annual SGF savings of approximately \$15 million, in comparison to the existing CWS/CMS.

The estimated continuing existing-system costs are estimated to range between \$511 million and \$599 million. These costs are attributable to maintaining the existing system as-is while the CWS/Web solution is being developed and implemented. These costs will occur concurrently with the one-time costs described above. With approved FFP of 50 percent, the total continuing existing-system costs to the SGF would be approximately \$278 million, incurred between SFY 1 and SFY 7.

The following table shows estimated costs broken out by one-time IT costs, continuing IT costs, and continuing existing IT costs by state fiscal year. The cost-estimating period for this alternative consists of costs through the end of procurement plus ten years of costs after contract award.

The cost estimates do not include CWS/CMS county or CWS program costs. One-time county goods and services costs have been estimated and are included in each of the alternatives' one-time cost estimates.

Table 14 – Restart CWS/Web – Costs

*Costs are rounded to the nearest million.

RESTART CWS/WEB													
<i>(Costs Rounded to the Millions)</i>													
	PROCUREMENT		INITIAL RELEASE				FUTURE RELEASE			MAINTENANCE & OPERATIONS			TOTALS
	<i>Year* 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>	<i>Year 6</i>	<i>Year 7</i>	<i>Year 8</i>	<i>Year 9</i>	<i>Year 10</i>	<i>Year 11</i>	<i>Year 12</i>	
One-time IT Costs	\$ 13	\$ 14	\$ 43	\$ 45	\$ 54	\$ 59	\$ 36	\$ 36	\$ 15	\$ -	\$ -	\$ -	\$ 315
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 33	\$ 61	\$ 61	\$ 61	\$ 62	\$ 62	\$ 340
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 84	\$ 85	\$ 57	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 555
Estimated Annual Totals	\$ 94	\$ 96	\$ 126	\$ 128	\$ 138	\$ 144	\$ 126	\$ 97	\$ 76	\$ 61	\$ 62	\$ 62	\$ 1,210

*Year represents a State Fiscal Year

The one-time costs for the Restart CWS/Web alternative, is approximately \$315 million.

The one-time cost estimate period for this alternative is nine years. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$158 million, incurred between SFY 1 and SFY 9.

Continuing IT costs for the new M&O are estimated to begin after the implementation of the initial release. Continuing existing IT costs are estimated to be incurred for seven

years, during the same period required to procure the alternative and implement the initial release.

The CWS Program incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

Cost estimates were based on existing CWS/CMS costs, previously-approved CWS/Web project costs, DGS pricing resources, and a 3.5 percent increase to account for vendor labor cost escalation.

10. Risks

- Existing CWS/CMS system costs may continue to increase while the CWS/Web solution is being developed.
- Existing staffing levels may be insufficient to develop and complete the RFP and contracting process.
- Policy, regulation, and legislative changes during DD&I may delay the delivery date of the solution and increase costs.
- Inability to agree on terms and conditions with the selected vendor during contract negotiations may delay the schedule and solution delivery date.
- Unanticipated tasks associated with the complexities of upgrading the current system may require additional funding.
- Inability to incorporate legislative or policy changes in a timely manner or at all, due to technical limitations of the system, may jeopardize continued federal funding and/or incur fines or other penalties.

E. Alternative 3 – Build a CWS New System

Within the following subsections, two possible options to implementing a completely new system are provided:

1. Custom
2. Buy/Build

This alternative will not use any existing CWS/CMS application elements. Web technologies and layered architecture will separate the user interface, the application logic, and the data. Existing operational business data will be (1) extracted, transformed (as applicable), and loaded into a new database; (2) hosted in a new database engine; and (3) reside on a new database server.

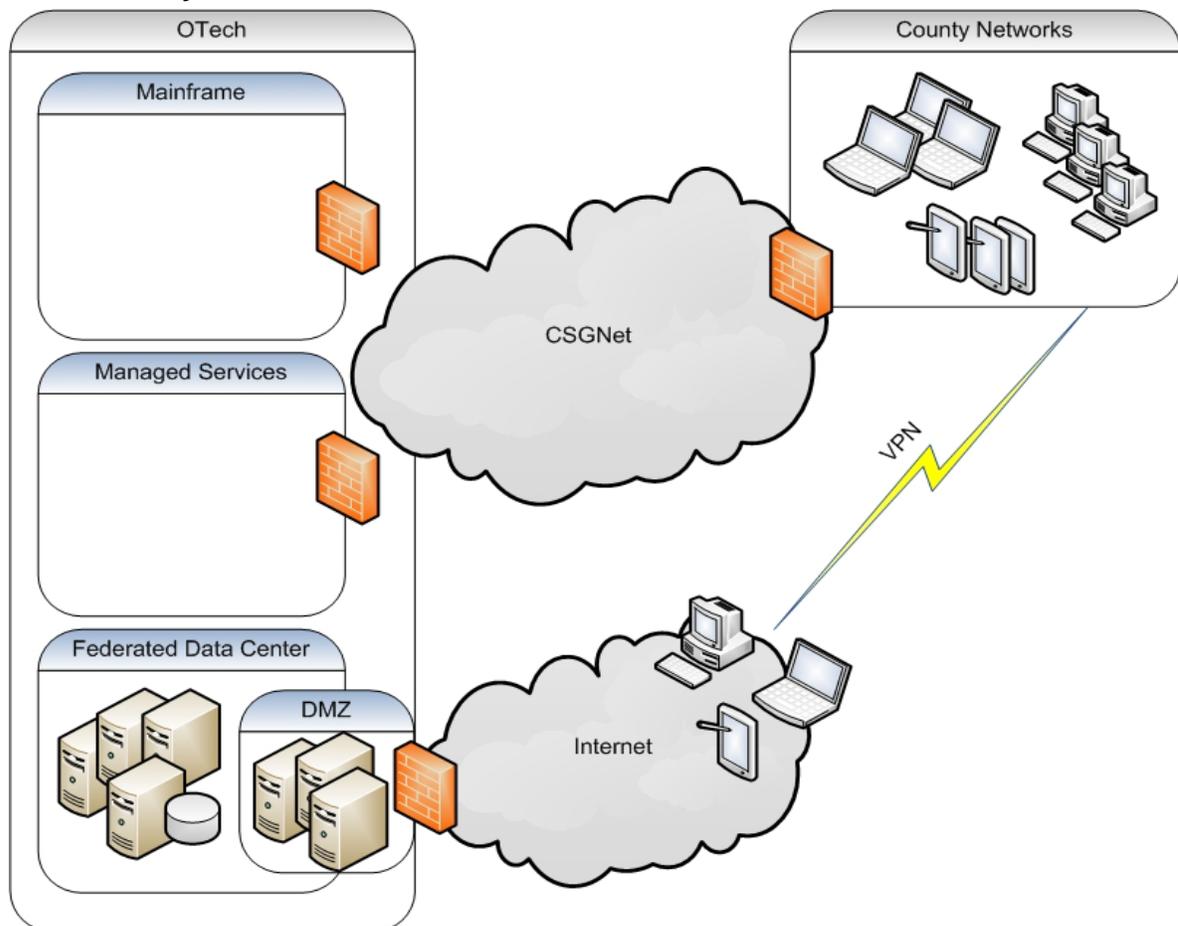
The approach to building a CWS new system will:

- Replace distributed computing architecture (servers and software) with centralized components that integrate the Web, the system logic, and the database.
- Deliver an architecture based on Web technologies.

- Establish a service-oriented architecture and support future collaboration with (interfaces to) other systems or services.
- Ensure a browser-based client (delivering user mobility).
- Develop and deliver data exchange interfaces to support interagency information sharing.
- Consolidate existing and external data sources into a single repository.
- Add missing business functionality.
- Enhance business functionality that is operationally insufficient.

The following diagram illustrates the basic architecture of this alternative. For the user, whether residing in a county, working in a state office building, or operating outside of the traditional office environment, the sole requirement for system access is a Web browser. Access to centralized application components will depend on the user location and method of connectivity (wireless, wired, VPN). The computing infrastructure will be server-based and managed by OTech.

Figure 8 – New System – Technical Environment



An enterprise-wide architecture that supports all the diverse lines of business is required for any new system alternative. This architecture should be standards-based to accommodate different levels of government as well as private industry partners. There are two foundational components that make up this new enterprise architecture:

- Business services implemented as shared Web services.
- Consistent user administration through Enterprise Identity Management (IDM). This will allow for various security policies to be applied.

The service-oriented architecture allows the new system to realize the advantages of maintaining a SOA-based application and infrastructure, and positions the solution to use the Enterprise IDM system or service.

The evolution of the Internet and its considerable use for online ecommerce have been key drivers for the development and implementation of highly distributed, portable, automated, and high-transaction systems. The knowledge, experience, and maturity gained from these technical implementations have advanced the state of products and software development processes. The sponsors of SOA-based implementations achieve the following advantages over typical non-SOA-based systems:

- A high level of interoperability that increases flexibility and reduces maintenance costs in the long run.
- Separation of concerns that serves to increase alignment with organizational division of responsibilities.
- An increase in system agility to match the business process agility, and allows for the ability to follow a roadmap over a period of time.
- Alignment with current and future technical strategies.

This approach allows the services offered by the new system to be constructed in discrete layers, loosely coupled to allow for rapid extensibility and adaptability to meet business change or expansion. This approach uses Domain-Driven Design (DDD) where the service layer will be built within a SOA using Web services.

The SOA approach used in this alternative also lends itself to reusability, as well as to ease of integration with external systems. By separating common system services into components requiring configuration settings for all business rules, it allows for externalization of these components into a global service registry for use by all applications requiring similar services. External systems can also reuse functionality published to the global service registry.

Option 1 – Build a New Custom System

1. Technical Description

Table 15 – New System – Custom Approach – Scorecard

This option will result in a complete new custom system development effort using none of the existing CWS/CMS application elements. Web technologies and layered architecture will separate the user interface, the application logic and the data. Existing operational business data will be (1) extracted, transformed (as applicable), and loaded into a new database, (2) hosted in a new database engine, and (3) reside on a new database server.

The system can be deployed either:

- As a single complete system by establishing an interim “configuration item” for each service after the test phase, and then releasing all configuration items at once.
- In increments after each service completes its test phase, either to the production environment as a new component/service, or to a sandbox environment for user training, evaluation, and/or practice use.

Scorecard	
Business	●
Technical	●
SACWIS	●
Time	◐
Cost	◐
Risk	◐
87% overall score	

2. Benefits

- Easier to reprioritize increment content/sequence as objectives change.
- Easier to provide frequent demonstration of progress to stakeholders because product segments/functional services will evolve within the increment.
- Smaller scope increments provide flexibility and management of cost when changes to scope and/or requirements are needed.
- Testing occurs informally throughout the increment’s product development activities (prototype, analysis, design, and code) and formally as final acceptance activity before deployment, resulting in fewer late-cycle defects.

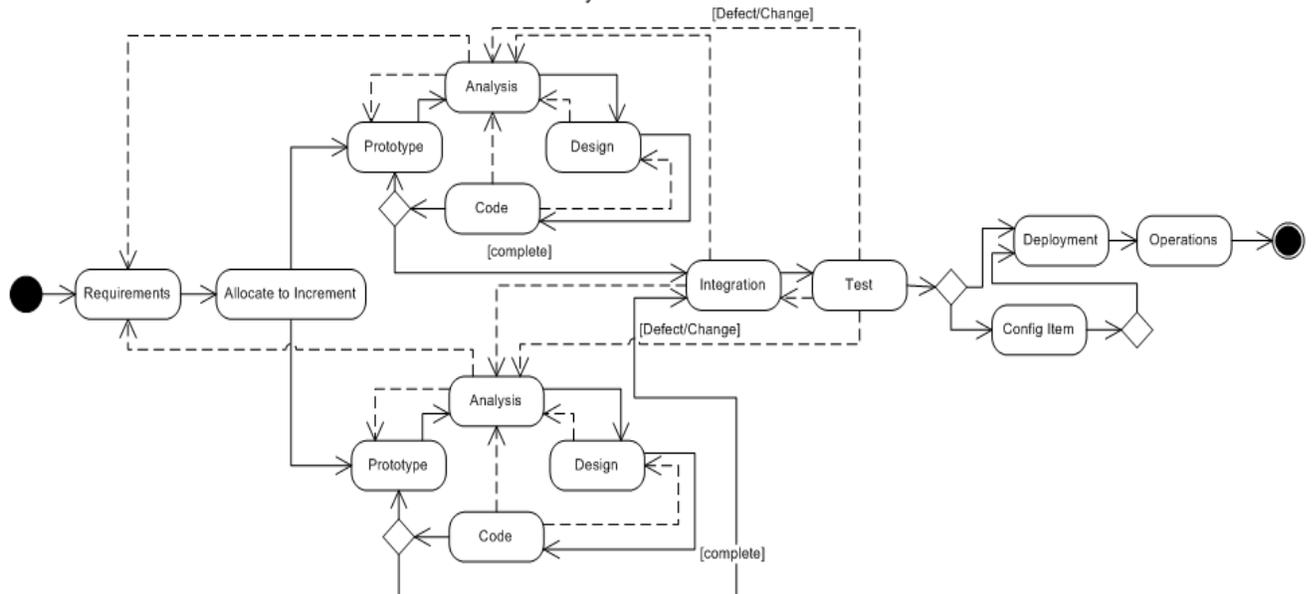
3. Challenges

- Requirements changes may be higher than anticipated because of incomplete, misunderstood, or incorrectly communicated needs or expectations.
- Functional scope and/or complexity may be more than can be completed within the time-box.
- Estimation of the number and duration of increments may result in reprioritization and sequencing, causing schedule delays.

4. Methodology

The following diagram shows a custom development lifecycle with two increments, for illustrative purposes. In actual use, the number of increments will be as many as required to complete the objectives where the lifecycle is used.

Figure 9 – New System – Custom Approach – Lifecycle Methodology



Details of the approach to be taken for a custom system development can be found in Appendix C: Lifecycle Methodologies, Build a New Custom System – Lifecycle Methodology.

5. Business Assessment

This alternative can leverage the existing CWS/Web RFP documents and requirements as a starting point for creating a new system. It provides the opportunity to reassess today's current business practice and legislative needs and incorporate these into the new system.

This alternative provides for a new custom-built application utilizing Web-services-based architecture that meets SACWIS functional requirements. This alternative continues to utilize CWS/CMS while simultaneously developing the new solution. It resolves existing navigation, performance, and database concurrency issues. It reduces duplicate data entry efforts and improves data quality and program management reports. This alternative uses a flexible approach that easily accommodates the addition of new functionality (e.g., requirements discovered during design or mandated by legislation) at a potentially lower cost than the Restart CWS/Web alternative. It provides for the timely implementation of functional changes and increased mobility.

A CWS worker's responsibilities are working with at-risk children and families, often outside of an office setting. With this alternative, mobile access to the system will enable client data entry, upload and retrieval from most locations.

This alternative will provide users with better system navigation and ease of data entry. Role-based access will provide the ability to limit and control system access to appropriate parties. Not only will role-based access help the workers by allowing them access only to the information they need to do their job, but it will allow workers to work collaboratively with community partners. An example is Differential Response, where an external user (e.g., service provider) can have access to the system. The service provider will have a more limited access to the system and be limited as to what information they can enter. This alternative also supports multidisciplinary case management, where workers collaborate with community-based partners.

Workflow functionality will help workers in their daily activities by generating forms automatically and generating tasks or reminders when needed.

This alternative will allow counties the freedom to maintain their own computers and equipment. This alternative will not require counties to sustain existing levels of equipment and may help reduce their costs for maintaining the system.

This is a new solution that will require statewide implementation training. Due to the fact that the system will be accessible through the Internet, training labs can be easily set up in multiple locations.

This alternative will allow for the implementation of all interfaces listed in the Critical Functionality spreadsheet, and support the data exchange of client information and the ability for the information to be associated to the client. (One example is a potential interface with the California Department of Child Support Services system.) CWS will be able to obtain information critical to investigation and case planning, such as location information and other client specific information, and be able to receive real-time information from interface partners.

This alternative supports the ability to display views of data for case review. Types of case reviews may include:

- State technical assistance and monitoring
- Court
- Federal reporting
- Eligibility
- Financial management
- Title IV-E audits
- Federal reporting tools

Data integrity will be supported as client data is entered into the system.

This alternative will create a framework upon which an improved reporting solution can be built by providing provide more comprehensive and accurate data, which translates into more timely and improved reporting. It will streamline data collection and improve the ability to report performance measures over time. Improved reports, such as

outcome and data accountability reports, will assist CDSS in the production of the following types of reports and documents:

- California CSFR II
- APSR
- AFCARS
- NYTD
- NCANDS
- Relative NFREM Review
- IV-E Adoptions Assistance Review

This alternative offers one of the better solutions to support CWS practice.

6. SACWIS

This alternative can achieve SACWIS compliance. The development technique of designing and using system functionality components during the development process will facilitate SACWIS compliance by the final product. Quicker implementation and a higher level of user acceptability at the end of the design phase will increase the likelihood of full utilization and complete functionality at the point of the formal federal compliance review. Consequently, ACF is less likely to suspend or require payback of SACWIS FFP for CWS/CMS and the new system development under this alternative. This alternative may also be more flexible, in that if ACF reduces SACWIS requirements, it will be easier to halt work on increments that are no longer needed. However, any delay in developing functionality increments will cause greater overall delay, risking an increase in state/county share of cost for both CWS/CMS and the new system if SACWIS FFP is suspended as a result.

7. Timeline

The timeline to build a new custom CWS system has been provided with a focus on the procurement, development and deployment phases of the alternative.

8. Procurement

The following table identifies the tasks and durations to execute the procurement process for this alternative.

Table 16 – New System – Custom Approach – Procurement Duration

Key Dates/Tasks	Develop RFP	County Review of RFP	Revise RFP	Review RFP	Release RFP	Bidders' Conference	Intent to Bid	Q&A	Confidentials	Prepare Addendum	Draft Proposal Evaluation	Draft Confidentials	Q&A	Addendum	Final Proposal Evaluation	Cost Opening	Intent to Award	Protest	Review and Approval	Award Contract	Total Months	
Duration in Months	9.00	1.00	1.00	2.00	0.25	0.25	0.00	1.00	0.50	3.00	3.00	0.50	1.00	2.00	3.00	1.00	3.00					31.50

Development – Initial Release

The following table identifies the system and business function capabilities that will be delivered in the initial release.

Table 17 – New System – Custom Approach – Initial System and Business Functionality

System	Business Function
<ul style="list-style-type: none"> Application Architecture Infrastructure 	<ul style="list-style-type: none"> Intake Management Case Management - Service / Case Plan
<ul style="list-style-type: none"> Data Conversion (external systems only) Workflow 	<ul style="list-style-type: none"> Case Management - Review, Evaluation, Monitoring Court Processing
<ul style="list-style-type: none"> System Security General Functionality 	<ul style="list-style-type: none"> Administration Resource Management
<ul style="list-style-type: none"> Other Functionality Reporting 	<ul style="list-style-type: none"> Quality Assurance

CWS/CMS Decommissioning

The existing CWS/CMS will be decommissioned after delivery of this initial release.

Development – Future Release

The following table identifies the business function capabilities that will be delivered in the future release.

Table 18 – New System – Custom Approach – Future System and Business Functionality

System	Business Function
	<ul style="list-style-type: none"> Adoptions
	<ul style="list-style-type: none"> Financial Management
	<ul style="list-style-type: none"> Eligibility
	<ul style="list-style-type: none"> Interfaces
	<ul style="list-style-type: none"> Critical Functionality Matrix
	<ul style="list-style-type: none"> New Law, Regulation or Policy capabilities

Deployment – Initial Release

Because this approach utilizes a centralized architecture and workstation access requires only a Web browser, deployment will be instantaneous to all users the moment that the system comes online. A period of one month has been provided in the timeline to allow for ongoing user support (predominately additional training and question resolution) and decommissioning of the previously distributed architecture components.

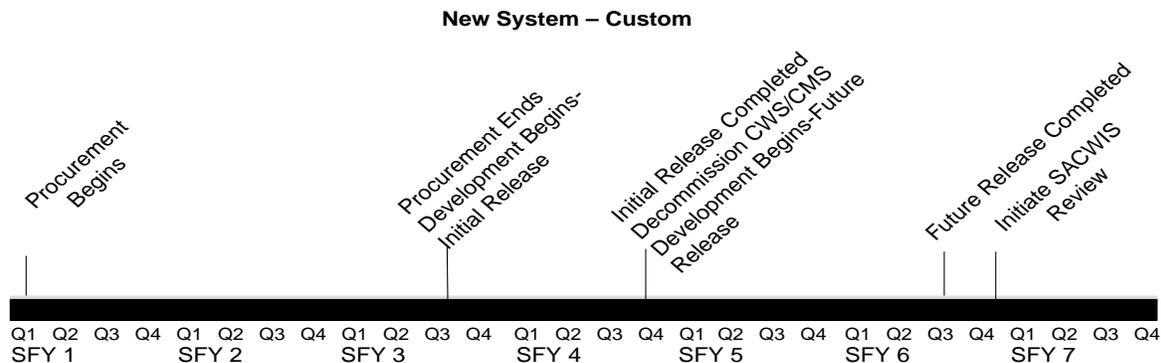
Deployment – Future Release

Like the initial release, deployment will be instantaneous to all users the moment that the future release business function is deployed. A period of one month has been provided in the timeline to allow for ongoing user support (predominately additional training and question resolution).

State Fiscal Year (SFY) Allocation

The following figure shows how the procurement, development and deployment phases will be allocated to state fiscal years during the duration of this alternative.

Figure 10 – New System – Custom Approach – Timeline



9. Cost

The CAST estimates the total cost for the New System Custom alternative to range between \$1.0 billion and \$1.1 billion. This consists of three components: one-time costs, ongoing costs, and continuing existing system costs.

Estimated one-time costs associated with this alternative range between \$231 million to \$271 million. These costs consist of project staffing, procurement of project support vendors, procurement activities for the systems integrator, and the DD&I costs of the new system. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$126 million, incurred between SFY 1 and SFY 7.

Total continuing IT costs are estimated to average \$54 million per year. These costs are associated with ongoing maintenance and operational activities of the new system, annual system updates and patches, county support, and other upgrades and refreshes as applicable under the new M&O contract. With approved FFP of 50 percent, the approximate annual SGF cost would be \$27 million beginning in SFY 5, resulting in an

annual SGF savings of approximately \$20 million, in comparison to the existing CWS/CMS.

Estimated continuing existing-system costs range between \$357 million and \$419 million. These costs are attributable to maintaining the existing system as-is while the new system is being developed and implemented. These costs will occur concurrently with the one-time costs described above. With approved FFP of 50percent, the total continuing existing-system costs to the SGF would be approximately \$194 million, incurred between SFY 1 and SFY 5.

The following table shows estimated costs broken out by one-time IT costs, continuing IT costs, and continuing existing IT costs by state fiscal year. The cost-estimating period for this alternative consists of costs through the end of procurement plus ten years of costs after contract award.

The cost estimates do not include CWS/CMS county or CWS program costs. One-time county goods and services costs have been estimated and are included in each of the alternatives' one-time cost estimates.

Table 19 – New System – Custom Approach – Costs

*Costs are rounded to the nearest million.

NEW SYSTEM → CUSTOM
(Costs Rounded to the Millions)

	PROCUREMENT			INITIAL		FUTURE RELEASE			MAINTENANCE & OPERATION					TOTALS
	Year* 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	
One-time IT Costs	\$ 13	\$ 13	\$ 31	\$ 74	\$ 62	\$ 54	\$ 4							\$ 251
Continuing IT Costs	\$ -	\$ -	\$ -	\$ -	\$ 47	\$ 50	\$ 51	\$ 52	\$ 61	\$ 54	\$ 56	\$ 57	\$ 29	\$ 457
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 83	\$ 59	\$ -	\$ -							\$ 388
Estimated Annual Totals	\$ 94	\$ 95	\$ 114	\$ 157	\$ 168	\$ 104	\$ -	\$ 52	\$ 61	\$ 54	\$ 56	\$ 57	\$ 29	\$ 1,096

*Year represents a State Fiscal Year

The one-time costs for the New System Custom alternative, is approximately \$251 million. The one-time cost estimate period for this alternative is six years and six months. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$126 million, incurred between SFY 1 and SFY 7.

Continuing IT costs for the new M&O are estimated to begin after the implementation of the initial release. Continuing existing IT costs are estimated to be incurred for five years, during the same period required to procure the alternative and implement the initial release.

The costs above only reflect state costs as they relate to this alternative. The CWS Program also incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

Cost estimates were based on existing CWS/CMS costs, previously-approved CWS/Web project costs, DGS pricing resources, and a 3.5 percent increase to account for vendor labor cost escalation.

10. Risks

- Inability to agree on terms and conditions with the selected vendor during contract negotiations may delay the schedule and delivery date of the solution.
- Existing staffing levels may be insufficient to develop and complete the RFP and contracting process.
- Policy, regulation, and legislative changes during DD&I may delay the delivery date of the solution and increase costs.
- Existing CWS/CMS system costs may continue to increase while the new system is being developed.
- Unanticipated tasks associated with the complexities of upgrading the current system may require additional funding.
- Inability to incorporate legislative or policy changes in a timely manner or at all, due to technical limitations of the system, may jeopardize continued federal funding and/or incur fines or other penalties.

Option 2 – Build a CWS New System Using a Buy/Build Approach (e.g., Transfer System/COTS)

1. Technical Description

This is the recommended alternative based on its scores and overall ranking.

Table 20 – New System – Buy/Build Approach – Scorecard

This alternative will deliver a fully-operational product purchased from a vendor. Custom-developed services will be built to extend the purchased product to fill gaps required to support business practice, law, and/or policy. This alternative will reuse none of the existing CWS/CMS application elements. Web technologies and layered architecture will separate the user interface, the application logic, and the data. Existing operational business data will be:

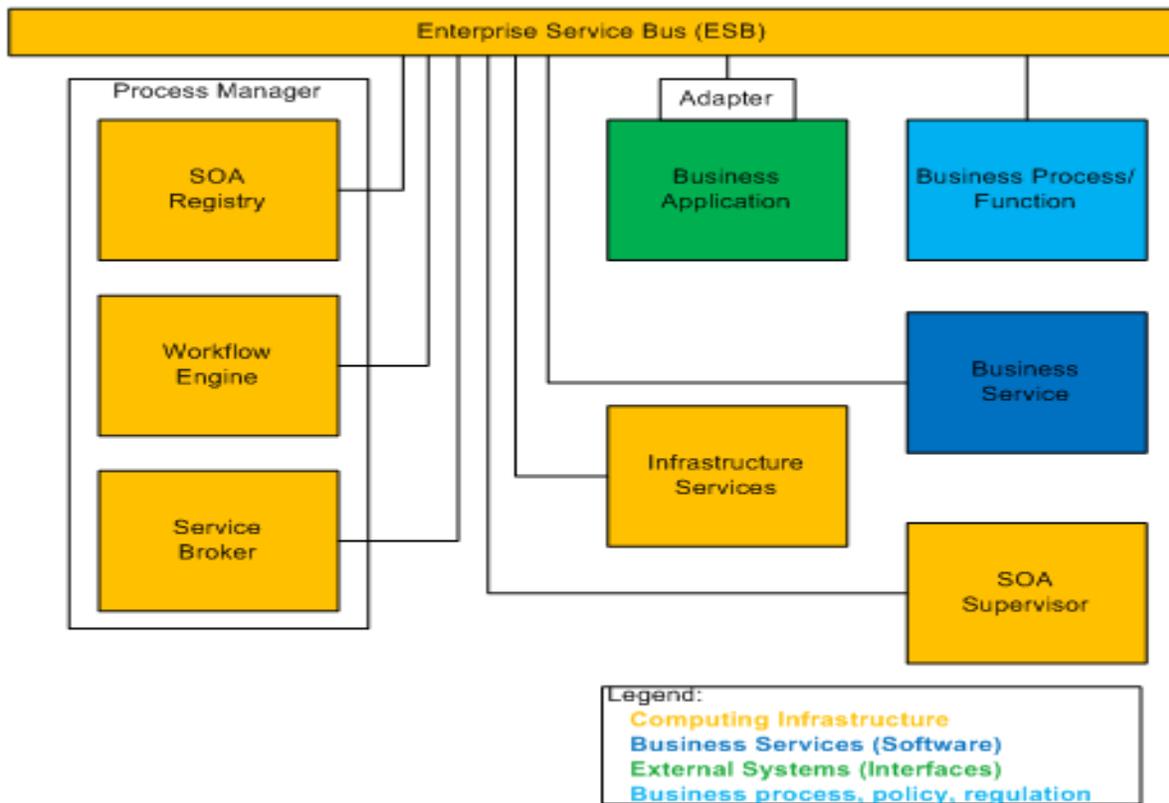
- Extracted, transformed (as applicable) and loaded into a new database.
- Hosted in a new database engine.
- Reside on a new database server.

A critical element in the successful implementation of this approach is the establishment of the service-oriented architecture. The following diagram illustrates how the SOA will connect the purchased product (shown as a business application) with custom-developed services (shown as a business service). This will allow the purchased product to remain unaltered, which is critical for later upgrades and enhancements from the vendor, without being impacted by or causing impact to custom-developed services. Connection to other agency systems (commonly referenced as data-exchange interfaces) will be accomplished using adapters with the business application.

The following diagram illustrates how the elements of this alternative’s internal system environment will interact.

Scorecard	
Business	●
Technical	●
SACWIS	●
Time	●
Cost	●
Risk	●
90% overall score	

Figure 11 – New System – Buy/Build Approach – Internal System Environment



The steps involved with using service-oriented architecture and a Buy/Build approach include:

- Evaluate and purchase a product.
- Conduct a gap analysis against the purchased product.
- Identify gaps that are required to fill mandated law/policy.
- Identify gaps that result because the purchased product cannot support the current practice.
- Determine the approach: develop custom-built services, configuration, or execute business process reengineering (BPR) to close the gap.
- Implement the purchased product.
- Test the implemented purchased product.
- Perform organizational change management to maximize user understanding, use and acceptance of the purchased product and the services.
- Deploy the purchased product.

- Build services.
- Integrate services.
- Test services.
- Deploy services.
- Move the purchased product and services into operation.

2. Benefits

- This alternative is best when a majority of business needs can be delivered with a fully-developed existing product, greatly shortening delivery of needed business value.
- The use of the buy/build approach provides maximum flexibility.
- Delivery of a service(s) can be prioritized and sequenced to best align with business goals, needs and objectives.
- Because the functionality of the pre-existing product will not contain any customization, vendor-initiated upgrades to provide new functionality and/or address defect correction can be implemented with minimal impact to the system operations.

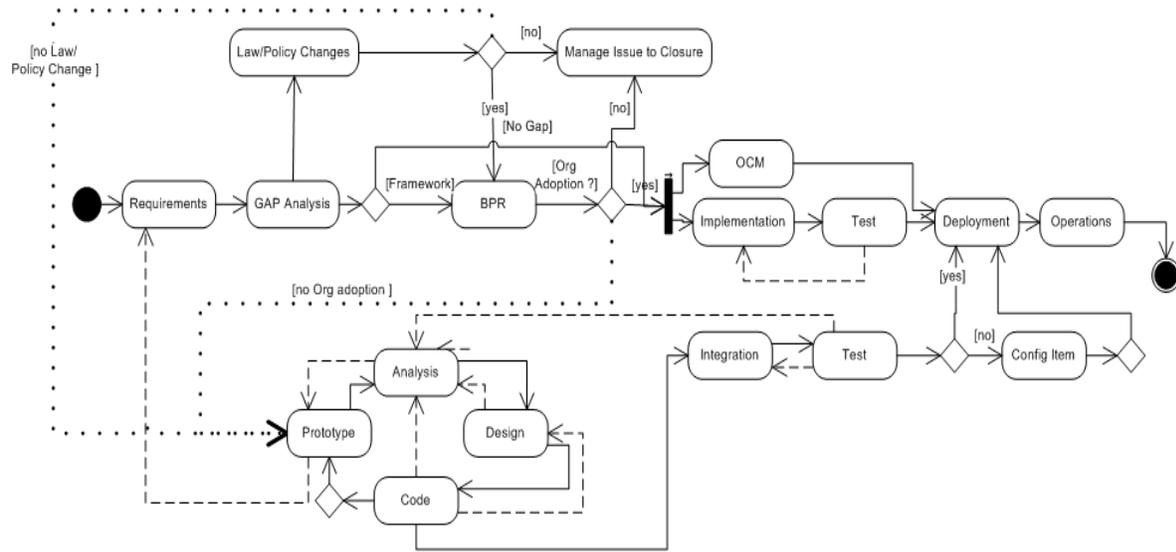
3. Challenges

- A very high number of requests for the development of services can result in excessive delays in delivery of this alternative.

4. Methodology

The Buy/Build development lifecycle has two distinct focuses for delivery of the final solution. The first focus is associated with the implementation of the purchased product (buy). The second is the incremental-development (build) of services that will be associated with the purchased product to extend its functionality.

Figure 12 – New System – Buy/Build Approach – Lifecycle Methodology



Details of the approach to be taken for the Buy/Build approach can be found in Appendix C: Lifecycle Methodologies, Buy/Build a New System – Lifecycle Methodology

5. Business Assessment

This alternative starts with the purchase of a product that has been proven to be effective, enabling the State to move to a new solution in a shorter timeframe. This alternative is the fastest to deliver functionality, which is one of the highest priorities of stakeholders. Once the purchased application is installed, additional critical functionality will be met by custom-built services to the system. This approach will allow California to add functionality and respond quickly to changes in practice, policy, or legislation in the future.

This alternative contains a “sandbox” environment that can be implemented to allow users an opportunity to participate from the beginning of the development life cycle. Giving this sandbox environment to users has several immediate benefits. Users can become familiar with the system over a period of time and provide feedback to the development team. Early access supports effective organizational change management by having the users see the system and imagine their future. It also supports user learning processes by allowing users to work in the sandbox before and after any formal training. Delivered product training documentation can be the starting point for the development of formal training materials. As new functionality is added through the use of services, county users will be able to participate in the development process without having to leave their county office. This may increase the amount of overall participation by removing the barrier of cost and time to travel.

The process for development and implementation differs from a custom-development solution built to prescribed specifications. The purchased product functionality will be compared to the CWS-identified scope in a gap analysis. During the analysis, gaps and

differences will be documented. Once gaps are identified, decisions on the appropriate action will be reviewed and either a modification will be made by building a service, or by changing how the system or business rules are configured or how the data is entered into the system. The latter two actions can be tested in the sandbox environment prior to the more costly step of building a custom-built service.

As with any customization, a service is not a one-time cost. The challenge for this solution will be obtaining an existing product that meets the majority of California's unique business requirements.

The Buy/Build New Solution has the ability to support CWS practice and has the shortest time-to-benefits of all the alternatives.

6. SACWIS

This alternative can achieve SACWIS compliance. This alternative has the shortest completion time and cost as it starts with an existing product that addresses SACWIS compliance. Consequently, it is unlikely ACF will suspend SACWIS level funding with this alternative. If the purchased product is not consistent with each unique California requirement, additional services will be designed and implemented to meet them.

7. Timeline

The timeline to execute the Buy/Build approach has been provided with a focus on the procurement, development and deployment phases of the alternative.

8. Procurement

The following table identifies the tasks and durations to execute the procurement process for this alternative.

Table 21 – New System – Buy/Build Approach – Procurement Duration

Key Dates/Tasks	Develop RFP	County Review of RFP	Revise RFP	Release RFP	Bidders' Conference	Intent to Bid	Q&A	Confidentials	Prepare Addendum	Draft Proposal Evaluation	Draft Confidentials	Q&A	Addendum	Final Proposal Evaluation & Demo	Cost Opening	Intent to Award	Protest	Review and Approval	Award Contract	Total Months
Duration in Months	6.00	1.00	1.00	2.00	0.25	0.25	0.00	1.00	0.50	2.00	3.00	0.50	1.00	2.00	4.00	1.00		3.00		25.75

Development – Initial Release

The following table identifies the system and business function capabilities that will be delivered in the initial release.

Table 22 – New System – Buy/Build Approach – Initial Business and System Functionality

System	Business Function
<ul style="list-style-type: none"> Application Architecture 	<ul style="list-style-type: none"> Intake Management
<ul style="list-style-type: none"> Infrastructure 	<ul style="list-style-type: none"> Case Management - Service / Case Plan
<ul style="list-style-type: none"> Data Conversion (ancillary systems only) 	<ul style="list-style-type: none"> Case Management - Review, Evaluation, Monitoring
<ul style="list-style-type: none"> Workflow 	<ul style="list-style-type: none"> Court Processing
<ul style="list-style-type: none"> System Security 	<ul style="list-style-type: none"> Administration
<ul style="list-style-type: none"> General Functionality 	<ul style="list-style-type: none"> Resource Management
<ul style="list-style-type: none"> Other Functionality 	<ul style="list-style-type: none"> Quality Assurance
<ul style="list-style-type: none"> Interfaces 	<ul style="list-style-type: none"> Adoptions
<ul style="list-style-type: none"> Reporting 	<ul style="list-style-type: none"> Financial Management
	<ul style="list-style-type: none"> Eligibility
	<ul style="list-style-type: none"> Custom Increments (required to deliver minimum required capabilities)

Note: The custom increments in the first release includes two concurrent 12-month development cycles to fill gaps in the purchased system capabilities that are required to maintain the baseline of the CWS/CMS system.

CWS/CMS Decommissioning

The existing CWS/CMS will be decommissioned after delivery of this initial release.

Development – Future Release

The following table identifies the business function capabilities that will be delivered in the future release. In this alternative, allocation of functionality to the future release cycle will be based solely on prioritization established by the program.

Table 23– New System – Buy/Build Approach – Future Business and System Functionality

System	Business Function
	<ul style="list-style-type: none"> Gaps not closed in the initial release
	<ul style="list-style-type: none"> Critical Functionality Matrix capabilities not delivered in the initial release
	<ul style="list-style-type: none"> New law, regulation or policy capabilities

Deployment – Initial Release

Because this approach utilizes a centralized architecture and workstation access requires only a Web browser, deployment will be instantaneous to all users the moment that the system comes online. One month has been provided in the timeline to allow for ongoing user support (mainly additional training and question resolution) and decommissioning of previously-distributed architecture components.

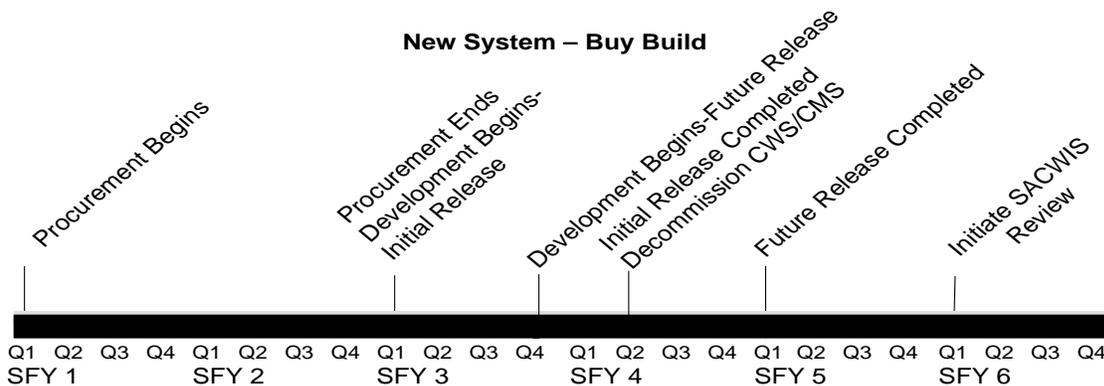
Deployment – Future Release

Like the initial release, deployment will be instantaneous to all users the moment that the future release business function is deployed. A period of one month has been provided in the timeline to allow for ongoing user support (predominately additional training and question resolution).

State Fiscal Year (SFY) Allocation

The following figure shows how the procurement, development and deployment phases will be allocated to state fiscal years during the duration of this alternative.

Figure 13 – New System – Buy/Build Approach – Timeline



9. Cost

The CAST estimates the total cost for the New System Buy/Build alternative to range between \$826 million and \$970 million. It consists of three components: one-time costs, ongoing costs, and continuing existing system costs.

The estimated one-time costs associated with this alternative range between \$156 million to \$184 million. These costs consist of project staffing, procurement of project support vendors, procurement of the system integrator, and the design, DD&I costs associated with building services. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$85 million, incurred between SFY 1 and SFY 5.

Total continuing IT costs are estimated to average \$47 million per year. These costs are associated with ongoing M&O activities of the new system, annual system updates and patches, county support, and other system upgrades and refreshes as applicable

under the new M&O contract. With approved FFP of 50 percent, the approximate annual SGF cost would be \$24 million beginning in SFY 5, resulting in an annual SGF savings of approximately \$23 million, in comparison to the existing CWS/CMS.

The estimated continuing existing-system costs range between \$281 million and \$329 million. These costs are attributable to maintaining the existing system as-is while the new system is being developed and implemented. These costs will occur concurrently with the one-time costs described above. With approved FFP of 50 percent, the total continuing existing-system costs to the SGF would be approximately \$153 million, incurred between SFY 1 and SFY 4.

The following table shows estimated costs broken out by one-time IT costs, continuing IT costs, and continuing existing IT costs by state fiscal year. The cost-estimating period for this alternative consists of costs through the end of procurement plus ten years of costs after contract award.

The cost estimates do not include CWS/CMS county or CWS program costs. One-time county goods and services costs have been estimated and are included in each of the alternatives' one-time cost estimates.

Table 24 – New System – Buy/Build Approach – Costs

*Costs are rounded to the nearest million.

*NEW SYSTEM → BUY/BUILD
 (Costs Rounded to the Millions)*

	PROCUREMENT		INITIAL RELEASE			FUTURE RELEASE		MAINTENANCE & OPERATION						TOTALS
	Year* 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12		
One-time IT Costs	\$ 14	\$ 14	\$ 93	\$ 30	\$ 19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170	
Continuing IT Costs	\$ -	\$ -	\$ -	\$ 42	\$ 43	\$ 44	\$ 52	\$ 45	\$ 46	\$ 47	\$ 47	\$ 57	\$ 423	
Continuing Existing IT Costs	\$ 81	\$ 82	\$ 83	\$ 59	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 305	
Estimated Annual Totals	\$ 95	\$ 96	\$ 176	\$ 131	\$ 62	\$ 44	\$ 52	\$ 45	\$ 46	\$ 47	\$ 47	\$ 57	\$ 898	

*Year represents a State Fiscal Year

The approximate one-time costs of \$170 million for the Buy/Build alternative, is the lowest of all the alternatives. The one-time cost estimate period for this alternative is five years. With approved FFP of 50 percent, the total one-time cost to the SGF would be approximately \$85 million, incurred between SFY 1 and SFY 5.

Continuing IT costs for the new M&O are estimated to begin after the implementation of the initial release. Continuing existing IT costs are estimated to be incurred for four years, during the same period required to procure the alternative and implement the initial release.

For further cost breakdown of One-time IT Costs and Continuing IT Costs, see Appendix H.

The CWS Program incurs county costs that vary from year to year based on county needs. Due to the variance, these costs are not included in any of the estimates of this report.

Cost estimates were based on existing CWS/CMS costs, previously-approved CWS/Web project costs, DGS pricing resources, and a 3.5 percent increase to account for vendor labor cost escalation.

10. Risks

- Inability to agree on terms and conditions with the selected vendor during contract negotiations may delay the schedule and delivery date of the solution.
- Existing staffing levels may be insufficient to develop and complete the RFP and contracting process.
- Policy, regulation, and legislative changes during DD&I may delay the delivery date of the solution and increase costs.
- A high number of requests for the development of services may increase costs and delay delivery of the new system.
- Unanticipated tasks associated with the complexities of upgrading the current system may require additional funding.

- Maintenance costs for the existing system may continue to increase over time and may become cost-prohibitive.
- Inability to incorporate legislative or policy changes in a timely manner or at all, due to technical limitations of the system, may jeopardize continued federal funding and/or incur fines or other penalties

Section VI

Federal Communication on SACWIS Requirements

VI. FEDERAL COMMUNICATION ON SACWIS REDESIGN REQUIREMENTS

This section addresses the AB 106 request to “assess and report on communication from the federal government regarding requirements of the system, both by the January 1, 2012 deadline and thereafter when there is additional direction on federal expectations.”

At this time, ACF has made no announcement of changes in SACWIS requirements and there is no indication that a specific plan or timeframe for completing this process is in place. Informal and unofficial federal communications suggest that the summer of 2012 is the earliest potential date for completion of any proposed SACWIS revisions. Pending ACF completion of internal processes, the normal federal regulatory processes of publishing proposed changes, obtaining public comment, and issuing final regulations will follow.

Other than input requested and provided to the Federal Register in the spring of 2011, there is no formal process to provide input to ACF in advance of the formal federal regulatory proposal and public comment period at this time. CDSS has had informal communications with ACF on this matter since the spring of 2011. CDSS suggested that ACF should consider obtaining additional input from states prior to developing and issuing proposed regulatory changes. There are precedents for doing so, such as provision of input on program outcome measures and some data reporting requirements that eventually went through the standard federal regulatory process. At this time, there is no indication of what, if any, SACWIS changes may be under consideration by the federal government.

CDSS and OSI staff added CWDA to the listing of call participants on conference calls with ACF weekly and monthly and continue to meet ACF reporting requirements that address current federal and state CWS/CMS operational, funding, and procurement approval processes, as well as the indefinite suspension of the CWS/Web project.

ACF has informally indicated a willingness to continue to work with California to achieve the goal of SACWIS compliance. ACF staff has advised that a suspension of SACWIS-level FFP for CWS/CMS operation is unlikely if California continues to make reasonably timely progress toward the goal of SACWIS compliance subsequent to the CWS/Web project suspension. ACF has also advised us that it is unlikely that the current federal Administration will repeat the sudden suspension of SACWIS FFP that occurred in 2003-04 due to multiple SACWIS-related issues.

ACF staff visited California to discuss current SACWIS status and issues on September 12 and 13, 2011. The visit provided an excellent opportunity to share concerns, challenges, and opportunities relative to CWS/CMS operations, SACWIS compliance, and the current suspension-related efforts to reassess California’s future strategy. ACF included CDSS, OSI, CWDA, county, and other stakeholders in these meetings.

The fiscal consequences of non-compliance with federal SACWIS standards could be in the hundreds of millions of dollars. In the event California does not become SACWIS compliant, in addition to a reduction in FFP for ongoing CWS/CMS costs the State could be required to pay back the difference between the higher level SACWIS FFP and the

regular Title IV-E FFP for both development and operational expenditures since the initiation of CWS/CMS in 1993. ACF was unable to provide an estimate of what a worst case payback liability would be at this time. Calculating this amount requires a review of all approved budgets and actual federal paid claims for all State development and operational costs as well as all county goods and services that received SACWIS level FFP. Once ACF determines what that amount is, the State will be provided an opportunity to reduce the payback amount by providing documentation that the expenditures were cost-beneficial to the program, even though SACWIS compliance was not achieved. However, even with this negotiation process, potential payback of SACWIS FFP over the life of CWS/CMS could amount to hundreds of millions of dollars.

In the event that there must be a partial or full payback of SACWIS FFP, the payback method is likely to be a negotiated agreement adjusted out of the State and county Title IV-E claims over a number of fiscal quarters. That process will result in de facto reductions in FFP for all IV-E funded services over a lengthy time period.

ACF has been cooperative and supportive of the request by the California Legislature for a legislative report and the reconsideration of child welfare automated system needs. ACF input reflects some of its ongoing concerns about the State's ability to comply with SACWIS. Such concerns include inadequate resource commitments to develop missing functionality, and the eventual full utilization of the system in a county-administered operational environment. ACF has also continued to remind the State that SACWIS participation, with its ability to claim higher federal funding, is voluntary, and that the State should consider its program needs as the primary criteria for determining system functionality.

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Section VII

Recommendation and Next Steps

VII. RECOMMENDATION AND NEXT STEPS

This section addresses the AB 106, request to “recommend next steps, including a timeline, for implementing the recommended approach or approaches.”

A. Recommendation

Based on the analysis and evaluation of alternatives in this report, CDSS, in partnership with OSI and stakeholders, recommends a new procurement to replace CWS/CMS with the New System Buy/Build alternative described in Section V.F: Option 2 – Build a CWS New System Using a Buy/Build Approach (e.g., Transfer System/COTS). This alternative received the highest score when evaluated using the criteria weighted by stakeholders in the evaluation framework as shown in Appendix B: Evaluation Framework. This alternative delivers the missing critical functionality in the shortest timeframe at the lowest cost. In addition, this alternative is the best fit for achieving the current and future needs of child welfare services, as it has the ability to:

- Provide the functionality needed to support current and future child welfare practice.
- Be a single statewide system of record.
- Efficiently automate future changes to practice and programs.
- Exchange data with business partners.
- Be a Web-based solution.
- Reach SACWIS compliance.

The recommended alternative, New System Buy/Build, is the most suitable alternative overall. It is the alternative that (1) provides functionality the fastest, with its “out-of-a-box” approach for initial implementation, (2) ranked best in time for being able to reach full-benefit realization, and (3) ranked as the best-cost option with the lowest ten-year TCO among all the alternatives.

It will deliver all the needed critical functionality in two releases. The initial release of the New System Buy/Build will allow the decommissioning of CWS/CMS and over 100 external systems throughout the State in Fiscal Year (SFY) 3. Future release will occur late in SFY 5, which will allow the State to prepare for a SACWIS review which could begin in SFY 5.

B. Other Factors to Consider

There are a number of initiatives to implement U.S. Department of Health and Human Services (HHS) IT hardware systems and software services over the next few years. The most notable initiatives (based on size and impact) to the agency include:

- IT efforts associated with the California eHealth Initiative
- The Centers for Medicaid and Medicare Services (CMS) regulation changes for enhanced federal funding and cost allocation waivers (i.e.,

OMB A-87: Cost Principles for State, Local, and Indian Tribal Governments)

- The Leader Replacement System (LRS).

The CWS/CMS replacement system assessed in this report would also fall into the above size/impact grouping.

The federal government is providing enhanced funding to acquire hardware systems and software services to support HHS program deliveries, provided they meet federal funding guidelines and requirements.

A common theme in the federal funding guidelines and requirements is the development of IT hardware systems and software services based on open standards that ensure modularity, interoperability, scalability, and flexibility. The federal objective is to better manage costs by (1) reducing the number of stand-alone, duplicative systems currently in production and (2) promoting each state's ability to leverage, reuse, and share system components and technologies. This ability to share existing hardware components and software services will reduce the time required to develop and implement new systems (deliver business value), reduce the one-time implementation costs, and reduce the continuing costs for maintenance and operations.

CDSS has an excellent opportunity to maximize access to and utilization of the benefits of this enhanced federal funding through collaboration with these other HHS initiatives. The recommended alternative, New System Buy/Build, contains a hardware architecture modernization [based on Service-Oriented Architecture (SOA) concepts] and a software implementation that aligns with the requirements of the aforementioned initiatives. Through collaboration with and leveraging of the IT hardware systems and software services related to the initiatives, CDSS can facilitate reduction of the overall time and costs required to deliver and maintain the CWS/CMS replacement system. Implementing this strategy of separating the hardware architecture and the software services when developing systems will establish an operational baseline that other state departments can use to plan for and achieve similar one-time and ongoing system costs reductions.

Since these potential collaborative initiatives are in their early stages, it was not possible to measure, estimate or include the potential one-time and ongoing cost reductions in the preparation of this report. As part of its planning phase, the CAST plans to conduct further analysis on the progress of these initiatives and the guidelines for acquiring (or participating in) the enhanced federal funding. That analysis will establish whether CDSS can leverage the IT hardware systems and/or software services related to these initiatives as part of the execution of the recommended buy/build alternative.

C. Next Steps and Timeline

The CAST released an RFI in September 2011 to determine the viability of using a COTS or transfer system as the base for California's Buy/Build solution. The RFI asked the vendor community if they had an existing system (e.g. COTS or transfer system) that can support key CWS business areas, including information about the architecture

model, and completed installations. Eight responses were received and several of them met the needs of the State.

The CAST released a second RFI in November 2011 to have vendors conduct a gap analysis between the existing functionality in their COTS or transfer system and the functional needs of CWS. Results from the gap analyses would allow the State to more accurately determine the viability of the Buy/Build Alternative. Seven responses were received, but only six had sufficient information to determine the functional gaps. Of the six responses, two were COTS systems and four were transfer systems. Each of the six systems could provide anywhere from 67 to 83 percent of the required functionality straight out of the box or an average of 74 percent across the six systems. The high percentage of functionality available in the six systems validated the viability of the Buy/Build Alternative.

In the fourth quarter of SFY1, the PAPD Update is anticipated for approval by ACF and annually thereafter.

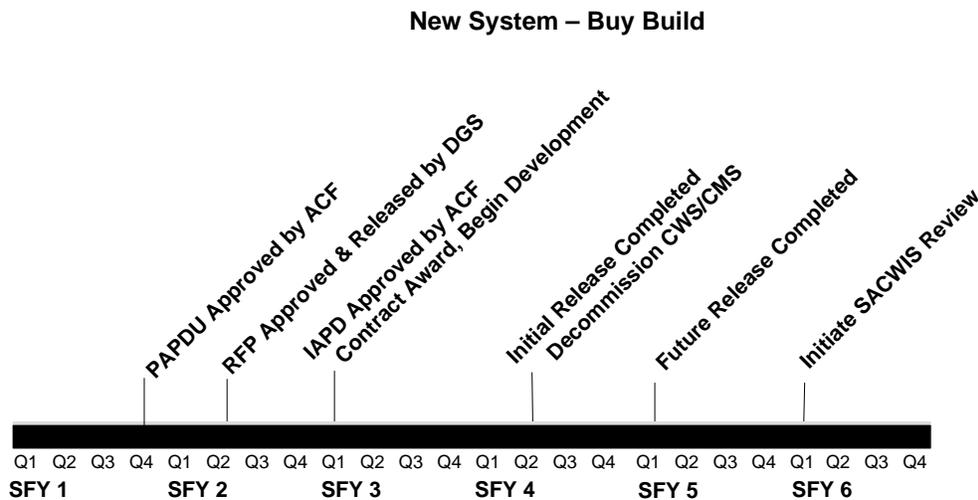
In the second quarter of SFY2, the RFP is anticipated for approval and release by DGS.

In the first quarter of SFY3, the IAPD is anticipated for approval by ACF.

Contract award and the beginning of development are anticipated during the first quarter of SFY3.

The following timeline is estimated for the recommended alternative.

Figure 14 – New System – Buy/Build Approach – Timeline



D. Procurement Approach

Various procurement vehicles are available for the purchase of Information Technology (IT) goods and services that are in compliance with federal and state contract regulations [e.g., Request for Offer (RFO), RFP, Invitation for Bid (IFB), and Alternative Procurement Process (APP)]. An RFO is a procurement vehicle which uses pre-existing or leveraged procurement agreements to buy IT goods and services for contracts under

\$1.5 million. An RFP is a competitive procurement vehicle used to acquire goods and services that are typically more complex in nature and of a higher value than a leveraged procurement vehicle. Conversely, an IFB is also a competitive procurement vehicle; however, its use is restricted to procurements where the acquirer knows exactly what solution it wants and can write to specific requirements detailing the solution. Of the competitive procurement approaches possible, an RFP is used when the intended solution is unclear and bidders must describe and propose a best value solution for the State.

While these vehicles are appropriate for most acquisitions, some business problems offer unique challenges where the use of different procurement strategies, within a competitive framework, may better meet the State's needs. In such cases, under Public Contract Code (PCC) Section 6611, the acquiring agency can request an exemption to conduct procurement under an APP. PCC Section 6611(a) authorizes the DGS to use a negotiation process under certain circumstances when procuring or contracting for goods, services, IT, and telecommunications.

A multi-step APP uses a two-staged procurement process, allowing bidders to submit proposals, demonstrate prototypes, and submit final bids. During this process, the State and bidders can communicate through multiple confidential discussions, which promote a better understanding of business needs. The final selection is based on the best value which best meets and potentially exceeds the requirements with the most reasonable overall cost and acceptable level of risk.

For each alternative discussed above, using an RFP will be the most effective way to achieve the best-value solution in the shortest timeframe, while allowing the broadest level of competition, fairness, and compliance with state and federal procurement regulations. The timeline for the procurement phase varies for each alternative. The length of the timeline is dependent on the time necessary for the development of the RFP and the subsequent procurement cycle. Where an alternative can leverage the already-developed CWS/Web RFP, the development of the RFP will be shorter and the subsequent vetting process during the procurement phase will similarly be shorter. A shorter procurement phase results in a lower procurement staffing level resulting in decreased staffing costs.

The chosen solution alternative, New System/Buy-Build, proposes purchasing a prebuilt application system and building additional functionality. A system integrator will be needed to implement the solution and build, integrate, and deploy any custom-built services. An RFP will be used to procure the SI. The actual development period of the RFP will be shorter than the other alternatives as it is presumed that the purchased component of the application will meet current operational functionality, resulting in less time needed to develop technical requirements. Although RFP development time is shorter, the State will have the ability to communicate with vendors during confidential discussions and to evaluate vendor demonstrations to better allow for selection of the best value to the State. The entire procurement phase for this alternative is 26 months, with six months for development of the RFP. Subsequent to release of the base functionality and completion of any custom-built services, the SI will provide maintenance and operation services for the term of the contract.

Section VIII

Appendices

VIII. APPENDICES

APPENDIX A: CRITICAL FUNCTIONALITY ASSESSMENT AND METHODOLOGY

This section shows the structured approach used to assess critical functionality for each alternative. The approach included data gathering, analysis, and validation to identify and rank missing critical functionality and existing functionality that needs improvement. The following describes these steps in more detail:

1. Data Gathering

The team gathered data from several sources including:

- CWS/Web RFP requirements
- TAAA Report
- Unimplemented CWS/CMS system change requests
- State and federal statutes and policies
- PIAC
- TAC
- OSC

2. Data Analysis

The CAST analyzed historical shelf data as well as input from the PIAC, TAC and OSC meetings to identify the missing functionality and existing functionality that needs improvement. A functionality spreadsheet was prepared to capture and categorize the critical functionalities identified into discrete functional areas (e.g., case management and eligibility determination). These critical functionalities were then analyzed against SACWIS requirements, state and federal statutes/policies, and CWS practice needs to determine which ones were impacted each of these.

3. Data Validation

The CAST requested the CWS/CMS governance committees (i.e., PIAC, TAC, and OSC) validate the functionalities shown on the functionality spreadsheet and add any functionality not listed. The committees were then asked to rate the functionalities as high, medium or low based on the critical functionality rating scale table below.

Table 25 – Critical Functionality Rating Scale

Rating	Criteria
High	<ul style="list-style-type: none"> • SACWIS requirement • Has system-wide impact affecting a significant number of users • Adversely affects federal and or state reporting • Adversely affects the accomplishment of an essential function • Has significant positive or negative impact to program performance and productivity • Alternative process available but not cost effective (requires significant manual effort) • Creates a public relations risk
Medium	<ul style="list-style-type: none"> • Meets definition of a “High” priority change but has a cost effective interim alternative process • Has minor positive or negative impact to program performance and productivity
Low	<ul style="list-style-type: none"> • A cost-effective permanent alternative process is available • Results in user/operator inconvenience or annoyance but does not affect a required operation or mission essential function • Impacts a small group of users

The CAST used results from the data analysis and validation to determine the missing and existing functionality deemed critical. Each element of functionality that received a rating of “high” was categorized as “critical functionality” in this report. The CAST used the list of critical functionality coupled with the functionality available in CWS/CMS as the basis for scoping and evaluating the technical alternatives under study. The exception was for the alternative of restarting the CWS/Web project, which used the existing RFP requirements as the basis for scoping and evaluation.

4. Critical Functionality Assessment Tables

The following tables show the analysis conducted to determine the missing critical functionality and the critical existing functionality that requires modification in CWS/CMS.

Table 26 – Column Definitions for Critical Functionality List provides the definitions and clarification for each column in Table 27 – List of Critical CWS/CMS Existing Functionality Needing Improvement.

Table 26 – Column Definitions for Critical Functionality List

Column Header	Definition/Clarification for Column Header
Function Category	This column lists the functional areas that have been identified as needs improvement at a high level, such as Intake Management and Case Management.
Sub Category	This column lists the subcategory that has been identified as needs improvement if applicable to the high level functional category.
Description	This column has a brief description of the functionality which requires modification.
Modification Required	If there is a check mark in this column, there is existing functionality in CWS/CMS that needs improvement or enhancement.
Workaround in Place	If there is a check mark in this column, there is existing functionality in CWS/CMS that is considered a workaround or combination of an external work around with CWS/CMS functionality to meet the business need.

The following table shows CWS/CMS functionality that requires modification, identified by the joint county/state CWS/CMS governance structure as critical.

Table 27 – List of Critical CWS/CMS Existing Functionality Needing Improvement

Critical CWS/CMS Existing Functionality Needing Improvement			
Category	Subcategory (if applicable)	Needs Improvement	Workaround in place
Case Management	Placement	√	
Case Management	Probation	√	√
Case Management	Court-JV Documents	√	√
Case Management	Independent Living Program	√	√
Case Management	Case Plan	√	
Case Management	Interstate Compact on the Placement of Children	√	√
Case Management	Health & Education Information	√	√
Case Management	Wraparound	√	√
Court Processing	Findings & Orders	√	
Data Access	Simplify Data Entry	√	√

Critical CWS/CMS Existing Functionality Needing Improvement			
Category	Subcategory (if applicable)	Needs Improvement	Workaround in place
Document Management	Storage & Access	√	√
General Capability	Search	√	
General Capability	Contact	√	√
General Capability	Safety/Risk Assessment	√	√
General Capability	Sensitive/Sealed	√	
General Capability	Local Document Management	√	
General Capability	Recording and tracking new Initiatives	√	
General Capability	Agency responsible/case continuity (300/600/450)	√	√
Intake Management	Differential Response	√	√
Interface	CDE (School/ education data)	√	√
Interface	LIS	√	
Optimistic concurrency	Loss of data due to multiple users in a case	√	√
Other Functionality	Family Relationships	√	√
Quality Assurance		√	
Reporting Solution	Standardized reports/data extracts	√	√
Technical	Application (Multiple) Upgrades	√	√

The following table describes each column used in Table 29 – Missing Critical Functionality per Legislative Mandate.

Table 28 – Column Definitions for Missing Critical Functionality per Legislative Mandate

Column Header	Definition/Clarification for Column Header
Function Category	This column lists the functional areas that have been identified as missing at a high level, such as Intake Management and Case Management.
Subcategory	This column lists the subcategory that has been identified as missing if applicable to the high level functional category.
Description	This column has a brief description of the missing critical functionality.
SACWIS	If there is a check in this column, the functionality is missing (not in CWS/CMS) and it is required by SACWIS.
Fed/State Regulation/Policy	If there is a check in this column, the functionality is missing (not in CWS/CMS) and it is required by federal or state regulations/policy other than SACWIS.

The following table shows the missing functionality identified by the joint county/state CWS/CMS governance structure as critical to meeting legislative mandates.

Table 29 – Missing Critical Functionality per Legislative Mandate

Missing Critical Functionality			
Category	Subcategory (if applicable)	SACWIS	Fed/State Reg/Policy
Administration	Workflow		
Administration	Self Service (i.e. NYTD Survey, Caregivers)		
Administration	Role Based Access		
Administration	Archiving	√	
Case Management	Adoptions	√	√
Case Management	Services (Requests & referrals)		
Case Management	Emancipated Youth		√
Court Processing	Joint assessment process (241.1)		√
Eligibility Determination		√	√
Financial Management		√	√
General Capability	Background Checks		
General Capability	Calendaring		

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Report to the Legislature: Child Welfare Services Automation Study

Missing Critical Functionality			
Category	Subcategory (if applicable)	SACWIS	Fed/State Reg/Policy
Intake Management	Recording and tracking search/ interview/detention warrants		√
Interface	Title IV-A (SAWS)	√	
Interface	Title IV-D (CCSAS)	√	√
Interface	Title XIX (MEDS)	√	
Interface	Statewide Client Index		
Interface	Child Abuse Central Index		√
Interface	California Court Case Management System		√
Interface	Social Security (AFCARS/benefit data)	√	√
Interface	Medicaid Management Information Decision Support System		
Interface	DMV (Client Data)		
Interface	County Payment Systems (financial data)	√	
Interface	California Outcomes Measurement System		
Interface	Automated Vital Statistics System		
Interface	Electronic Death Registration System		
Interface	Employment Development Dept. (Client Data)		
Interface	California Department of Mental Health (Client Data/Delivered Services)		√
Interface	CDSS - Master Adoption Index		√
Interface	California Department of Developmental Services (Child Welfare Data Analysis Bureau/Dual Agency data)		√
Interface	California Department of Corrections and Rehabilitation (Child Welfare Data Analysis Bureau/Client data)		√
Other Functionality	Electronic Signatures		
Resource Management	Resource Directory		

APPENDIX B: EVALUATION FRAMEWORK

1. Introduction

This section outlines the evaluation framework the CAST utilized to assess and select the best technical alternative to support CWS practice in a single statewide automated system.

2. Summary of Evaluation Process

The study evaluation process and methodology are based upon the CWS/CMS TAAA evaluation framework. The evaluation process and framework emphasized the degree to which each alternative compares to the specific evaluation factors and criteria. This approach provided greater sensitivity to how well or how poorly each alternative compared using each criterion. Evaluation was based on independent judgment, the understanding by the team of CWS critical needs and priorities, and expert opinion. The following table provides an overview of the evaluation process.

Table 30 – Evaluation Process

Process/Event	Description
Gather data	Data were gathered from prior research, historical shelf data, best practices, and subject matter experts from OTech, Tech Agency, CWDA, PIAC, TAC, OSC, and others.
Identify and analyze a range of technical alternative solutions	The CAST conducted extensive analysis of the alternatives, including development of alternative scenarios, schedules and a 10-year Total Cost of Ownership
Validated technical alternative solutions	Governance Structure committees reviewed and vetted the technical alternative solutions being considered by the CAST.
Identify criteria against which to measure the potential alternatives	The CAST identified factors and criteria similar to the TAAA. The criteria were validated by the Governance Structure committees.
Weight evaluation criteria to represent assessment priorities	The Governance Structure committees reached consensus on the weighting of the evaluation criteria.
Assess each alternative's ability to meet the defined criteria based on a rating scale	The CAST used expert opinion to assess the capability of each alternative to meet the individual criteria.
Conduct a separate cost evaluation using the ten (10) year	The CAST conducted a separate cost evaluation, similar in respects to the methods used by the State

Process/Event	Description
total cost of ownership of each alternative to assign points based on a cost-variance formula	to evaluate costs in a competitive bid.
Derive a score for each alternative	Following the allocation of cost and non-cost points (total of 1000 points available), the CAST selected the alternative with the highest score as the recommended solution for CWS.

3. Evaluation Factors and Criteria

The CASE developed and categorized the non-cost evaluation factors for the proposed technical alternatives in five major areas: CWS Business Needs, Technical Viability, SACWIS, Time, and Risks. The criteria defined the critical functional and technical considerations which differentiate the viability of the alternatives in meeting currently established business needs. The following table provides an overview of the non-cost evaluation factors and criteria.

Table 31 – Non-Cost Evaluation Factors and Criteria

CWS Business Needs	
Ability to meet missing critical functionality	The alternative’s ability to support missing functionality critical to CWS operations.
Ability to improve existing functionality	The alternative’s ability to support the enhancement and or modifications of the functionality currently available.
Ability to improve usability	<p>The alternative’s ability to improve the user interface. Usability is the measure of the effectiveness and efficiency of a user’s experience using a system.</p> <p>Usability characteristics include:</p> <p>Ease of learning – how quickly can new users learn to accomplish basic tasks.</p> <p>Ease of system navigation – if a user has used the system before, can he or she remember “how” to do something, or do they have to relearn the task.</p> <p>Error frequency and severity – how often do users make mistakes and are they able to recover from those mistakes.</p>

Technical Viability	
Ability to support new functionality	The alternative's ability to support the addition of the new functionality as needed due to CWS practice changes.
Manageability/simplicity	The alternative's ability to provide sets of information related to system health, performance, and usage, and the ability to be controlled and configured easily.
Architectural openness	The alternative's ability to support multiple vendors or products to prevent "lock-in" and encourage procurement competitiveness.
Scalability	The ease with which the alternative can be altered to effectively and efficiently service user and system demands.
Flexibility and extensibility	The alternative's ability to easily support augmentation without compromising the original architecture.
Ease of integration/interface standardization	The ability of the alternative to integrate or provide interfaces to other systems via common industry standard protocols and services.
SACWIS	
Ability to become SACWIS compliant	The alternative's ability to incorporate the SACWIS required functions including the required interfaces.
Ability to receive full FFP	The alternative's ability to implement the SACWIS requirements in a manner that ensures the continuance of FFP funding.
Time	
Ability to provide missing critical functionality and improve existing functionality in a timely manner	The alternative's ability to deliver new functionality in a timely fashion (irrespective of the time to obtain approvals for the changes).
Ability to deliver benefits incrementally over time	The ability of the alternative to deliver benefits incrementally over time.

Risks	
Financial Risk	The alternative's risk of deviation from the proposed budget.
Technical Risk	The alternative's risk related to the complexity of development and implementation.
Operational Risk	The alternative's risk associated with disruption to current operational processes and routines.
Program Risk	The alternative's risk associated with disruption to program processes and routines.
Competitive Procurement Risk	The alternative's ability to provide for market competitiveness.
Schedule Risk	The alternative's risk of deviation from the proposed schedule.
Implementation Risk	The alternative's ability to limit risk / complexity associated with implementation.

4. Rating Process

The CAST evaluated each alternative according to the evaluation factors and criteria. Then each alternative was assigned a rating for the evaluation criteria. Each rating was assigned a percentage of points to complete the scoring process. The following table illustrates the ratings utilized as part of the evaluation process.

Table 32 – Rating Scale

Rating	General Rating Framework	Percentage of points achieved
Excellent	The alternative's ability to meet the evaluation criteria exceeds the standards.	100%
Above Average	The alternative's ability to meet the evaluation criteria is above standards.	75%
Acceptable	The alternative's ability to meet the evaluation criteria meets standards.	50%
Marginally Acceptable	The alternative's ability to meet the evaluation criteria is below the standards.	25%
Unacceptable	The alternative does not meet the standards.	0%

5. Scoring Process

For the non-cost evaluation, the CAST assessed each of the alternatives according to the evaluation factors and criteria. The alternatives were assigned a rating for each non-cost criteria. The CAST assigned each rating a percentage of points to complete the scoring process. Total points available for the non-cost evaluation were 850 (out of 1000 total points). The following table illustrates the criteria and criteria weightings used for this analysis.

Table 33 – Non-Cost Criteria and Criteria Weightings (Available Points)

Evaluation Factors	Criteria	Available Points
CWS Business Needs	Ability to meet missing critical functionality	100
	Ability to improve existing functionality	100
	Ability to improve usability	100
	Sub-Total	300
Technical Viability	Ability to support new functionality	45
	Manageability/Simplicity	25
	Architectural openness	25
	Scalability	35
	Flexibility and extensibility	35
	Ease of integration/interface standardization	40
	Sub-Total	205
SACWIS	Ability to become SACWIS compliant	5
	Ability to receive full Federal Financial Participation	20
	Sub-Total	25
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner	125
	Ability to deliver benefits incrementally over time	125
	Sub-Total	250
Risks	Financial Risk	13
	Technical Risk	9
	Operational Risk	9
	Program Risk	12
	Competitive Procurement Risk	9
	Schedule Risk	9
	Implementation Risk	9
	Sub-Total	70
	Total	850

6. Cost Scoring Methodology

The CAST calculated the estimated cost score for each alternative using the following methodology. The score is based on the estimated cost (i.e., the lowest cost alternative divided by each alternative) and the maximum points. Each alternative cost score was calculated by multiplying the cost factor by the maximum number of points available to obtain the cost score. The cost factors were carried out three decimal places for the calculations, and the points were rounded up or down to the closest whole number.

The following table illustrates the computation process², assuming the example “Alternative 3” is the alternative with the lowest cost estimate.

Table 34 – Example of Cost-Scoring Methodology

Alternative	Proposed Cost	Cost Factor	Maximum Points	Calculation	Cost Score
1	\$71,250	$\frac{\$59,750}{\$71,250} = .832$	150	.832 X 150	125
2	\$67,500	$\frac{\$59,750}{\$67,500} = .885$	150	.885 X 150	133
3	\$59,750	$\frac{\$59,750}{\$59,750} = 1.000$	150	1000 X 150	150

Scores for each of the five major areas: CWS Business Needs, Technical Viability, SACWIS, Time, and Risks were combined with the cost score to calculate final scores with the maximum of 1,000 points.

7. Scoring Results

The New System— Buy/Build alternative was determined to be the best alternative to support California CWS practice in a single statewide automated system. The following table illustrates the total scores for each alternative.

Table 35 – Total Scores for all Alternatives

Alternatives	CWS/CMS Upgrade	Restart CWS/Web	New System Incremental	New System Buy/Build
Total Score	304.8	762.3	876.6	904.8

The sections that follow document the results of the scoring process that was applied.

² Figures in the example explain the computations and have no other significance.

8. Non-Cost Scoring Results

For the non-cost evaluation, the alternatives were compared using each criterion and rated in terms of how well each alternative met the specific criteria. The following table provides a visual representation of this process. The New System – Buy/Build alternative performed the best against the criteria. Visual representation is used to indicate what percentage of points each alternative achieved for each category in Table 37 – Non-Cost Scoring Results of All Alternatives.

Table 36 – Visual Representation of Non-Cost Scoring Evaluation Ratings

Rating	Percent of Points Achieved	Visual
Excellent	100%	●
Above Average	75%	◐
Acceptable	50%	◑
Marginally Acceptable	25%	◒
Unacceptable	0%	○

Table 37 – Non-Cost Scoring Results of All Alternatives

Factors		Criteria	CWS/CMS Upgrade Incremental	CWS/Web Restart	New System Incremental	New System Buy/Build
CWS Business Needs	Ability to meet missing critical functionality		◑	●	●	◐
	Ability to improve existing functionality		◑	●	●	◐
	Ability to improve usability		◑	●	●	◐
Technical Viability	Ability to support new functionality		◑	●	●	●
	Manageability/Simplicity		◑	◐	◐	●

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Factors		Criteria	CWS/CMS Upgrade Incremental	CWS/Web Restart	New System Incremental	New System Buy/Build
	Architectural openness		☐	●	●	☐
	Scalability		☐	●	●	●
	Flexibility and extensibility		☐	●	●	☐
	Ease of integration /interface standardization		☐	☐	☐	●
SACWIS	Ability to become SACWIS compliant		☐	●	●	●
	Ability to receive full Federal Financial Participation		☐	☐	●	●
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner		☐	☐	☐	●
	Ability to deliver benefits incrementally over time		☐	☐	☐	●
Risks	Financial Risk		☐	☐	☐	●
	Technical Risk		☐	☐	☐	●
	Operational Risk		☐	☐	☐	●
	Program Risk		☐	☐	☐	☐
	Competitive Procurement Risk		☐	☐	☐	☐
	Schedule Risk		☐	☐	☐	●
	Implementation Risk		☐	☐	☐	●

The tables below provide the detailed assessment of each alternative against the specified criteria using the rating scale.

Table 38 – Alternative 1 – CWS/CMS Upgrade – Non-Cost Scoring Evaluation

Evaluation Factors	Criteria	Available Points	Rating	Percentage	Awarded Points
CWS Business Needs	Ability to meet missing critical functionality	100	Acceptable	50%	50.0
	Ability to improve existing functionality	100	Acceptable	50%	50.0
	Ability to improve usability	100	Acceptable	50%	50.0
	Sub-Total	300			150.0
Technical Viability	Ability to support new functionality	45	Acceptable	50%	22.5
	Manageability/Simplicity	25	Acceptable	50%	12.5
	Architectural openness	25	Marginally Acceptable	25%	6.3
	Scalability	35	Marginally Acceptable	25%	8.8
	Flexibility and extensibility	35	Marginally Acceptable	25%	8.8
	Ease of integration/interface standardization	40	Marginally Acceptable	25%	10.0
	Sub-Total	205			68.8
SACWIS	Ability to become SACWIS compliant	5	Acceptable	50%	2.5
	Ability to receive full Federal Financial Participation	20	Acceptable	50%	10.0
	Sub-Total	25			12.5
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner	125	Acceptable	50%	62.5
	Ability to deliver benefits incrementally over time	125	Acceptable	50%	62.5
	Sub-Total	250			125.0
Risks	Financial Risk	13	Acceptable	50%	6.5
	Technical Risk	9	Acceptable	50%	4.5
	Operational Risk	9	Marginally Acceptable	25%	2.3
	Program Risk	12	Marginally Acceptable	25%	3.0
	Competitive Procurement Risk	9	Acceptable	50%	4.5
	Schedule Risk	9	Acceptable	50%	4.5
	Implementation Risk	9	Acceptable	50%	4.5
	Sub-Total	70			29.8
Total		850			386.1

Table 39 – Alternative 2 – Restart CWS/Web – Non-Cost Scoring Evaluation

Evaluation Factors	Criteria	Available Points	Rating	Percentage	Awarded Points
CWS Business Needs	Ability to meet missing critical functionality	100	Excellent	100%	100.0
	Ability to improve existing functionality	100	Excellent	100%	100.0
	Ability to improve usability	100	Excellent	100%	100.0
	Sub-Total	300			300.0
Technical Viability	Ability to support new functionality	45	Excellent	100%	45.0
	Manageability/simplicity	25	Above Average	75%	18.8
	Architectural openness	25	Excellent	100%	25.0
	Scalability	35	Excellent	100%	35.0
	Flexibility and extensibility	35	Excellent	100%	35.0
	Ease of integration/interface standardization	40	Acceptable	50%	20.0
	Sub-Total	205			178.8
SACWIS	Ability to become SACWIS compliant	5	Excellent	100%	5.0
	Ability to receive full Federal Financial Participation	20	Above Average	75%	15.0
	Sub-Total	25			20.0
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner	125	Acceptable	50%	62.5
	Ability to deliver benefits incrementally over time	125	Acceptable	50%	62.5
	Sub-Total	250			125.0
Risks	Financial Risk	13	Acceptable	50%	6.5
	Technical Risk	9	Acceptable	50%	4.5
	Operational Risk	9	Marginally Acceptable	25%	2.3
	Program Risk	12	Marginally Acceptable	25%	3.0
	Competitive Procurement Risk	9	Acceptable	50%	4.5
	Schedule Risk	9	Acceptable	50%	4.5
	Implementation Risk	9	Marginally Acceptable	25%	2.3
Sub-Total	70			27.5	
Total		850			651.3

Table 40 – Alternative 3, Option 1 – CWS New System – Custom – Non-Cost Scoring Evaluation

Evaluation Factors	Criteria	Available Points	Rating	Percentage	Awarded Points
CWS Business Needs	Ability to meet missing critical functionality	100	Excellent	100%	100.0
	Ability to improve existing functionality	100	Excellent	100%	100.0
	Ability to improve usability	100	Excellent	100%	100.0
	Sub-Total	300			300.0
Technical Viability	Ability to support new functionality	45	Excellent	100%	45.0
	Manageability/simplicity	25	Above Average	75%	18.8
	Architectural openness	25	Excellent	100%	25.0
	Scalability	35	Excellent	100%	35.0
	Flexibility and extensibility	35	Excellent	100%	35.0
	Ease of integration/interface standardization	40	Above Average	75%	30.0
	Sub-Total	205			188.8
SACWIS	Ability to become SACWIS compliant	5	Excellent	100%	5.0
	Ability to receive full Federal Financial Participation	20	Excellent	100%	20.0
	Sub-Total	25			25.0
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner	125	Above Average	75%	93.8
	Ability to deliver benefits incrementally over time	125	Above Average	75%	93.8
	Sub-Total	250			187.5
Risks	Financial Risk	13	Above Average	75%	9.8
	Technical Risk	9	Above Average	75%	6.8
	Operational Risk	9	Above Average	75%	6.8
	Program Risk	12	Above Average	75%	9.0
	Competitive Procurement Risk	9	Above Average	75%	6.8
	Schedule Risk	9	Above Average	75%	6.8
	Implementation Risk	9	Above Average	75%	6.8
	Sub-Total	70			52.5
Total		850			753.8

Table 41 – Alternative 3, Option 2 – CWS New System – Buy/Build – Non-Cost Scoring Evaluation

Evaluation Factors	Criteria	Available Points	Rating	Percentage	Awarded Points
CWS Business Needs	Ability to meet missing critical functionality	100	Above Average	75%	75.0
	Ability to improve existing functionality	100	Above Average	75%	75.0
	Ability to improve usability	100	Above Average	75%	75.0
	Sub-Total	300			225.0
Technical Viability	Ability to support new functionality	45	Excellent	100%	45.0
	Manageability/simplicity	25	Excellent	100%	25.0
	Architectural openness	25	Above Average	75%	18.8
	Scalability	35	Excellent	100%	35.0
	Flexibility and extensibility	35	Above Average	75%	26.3
	Ease of integration/interface standardization	40	Excellent	100%	40.0
	Sub-Total	205			190.0
SACWIS	Ability to become SACWIS compliant	5	Excellent	100%	5.0
	Ability to receive full Federal Financial Participation	20	Excellent	100%	20.0
	Sub-Total	25			25.0
Time	Ability to provide missing critical functionality and improve existing functionality in a timely manner	125	Excellent	100%	125.0
	Ability to deliver benefits incrementally over time	125	Excellent	100%	125.0
	Sub-Total	250			250.0
Risks	Financial Risk	13	Excellent	100%	13.0
	Technical Risk	9	Excellent	100%	9.0
	Operational Risk	9	Excellent	100%	9.0
	Program Risk	12	Above Average	75%	9.0
	Competitive Procurement Risk	9	Above Average	75%	6.8
	Schedule Risk	9	Excellent	100%	9.0
	Implementation Risk	9	Excellent	100%	9.0
	Sub-Total	70			64.8
Total		850			754.8

The following table illustrates the cost-scoring methodology for each alternative.

Table 42 – Cost Criteria and Calculation

Alternative	Estimated Cost	Calculation	Maximum Points	Cost Score
CWS/CMS Upgrade	\$1,493,027,671	0.600	150	90.0
Restart CWS/Web Serial	\$1,211,066,935	0.740	150	111.0
New System Custom	\$1,094,260,780	0.819	150	122.8
New System Buy/Build	\$ 896,039,267	1.000	150	150.0

As a result of both the non-cost and cost evaluation of the technical alternatives being considered in the CWS Automation Study, the New System Buy/Build alternative was confirmed as the best overall solution. The following table summarizes the result of this evaluation:

Table 43 – Evaluation Summary

Alternative	Non-Cost Points	Cost Points	Total Score
CWS/CMS Upgrade	386.1	90.0	476.1
CWS/Web Serial	651.3	111.0	762.3
New System Custom	753.8	122.8	876.6
New System Buy/Build	754.8	150.0	904.8

Scorecards provide visual representation of how well each alternative met the six major areas: CWS Business Needs, Technical Viability, SACWIS, Time, Cost and Risks, plus an overall score.

The following table shows the different rating levels of the evaluation framework in visual form, based on their scoring percentage. The scorecard below is an example of how a particular alternative might be scored, using the visual to display each rating.

Table 44 – Scorecard Ratings Visual Representation and Scorecard Example

Rating	Percent of Points Achieved	Visual
Excellent	81 - 100%	●
Above Average	61 - 80%	◐
Acceptable	41 - 60%	◑
Marginally Acceptable	21 - 40%	◒
Unacceptable	0 – 20 %	○

Visual Representation Scorecard Example Scorecard	
Business	◑
Technical	◑
SACWIS	◑
Time	◑
Cost	◒
Risk	◑
34% overall score	

APPENDIX C: LIFECYCLE METHODOLOGIES

This section describes the benefits and challenges of different approaches for managing the solution lifecycle for each alternative.

1. Upgrade the Existing CWS/CMS - Lifecycle Methodology

The following table provides the benefits and challenges associated with the upgrade of the existing CWS/CMS on a serial-development lifecycle basis. This methodology will apply to the initial phase of re-hosting the CWS/CMS architecture. Subsequently, upgrade of functionality will be performed using the incremental-development lifecycle methodology.

Table 45 – Benefits and Challenges of Upgrading CWS/CMS – Serial Approach

Benefits	Challenges
1. Greatest control	1. Very rigid process
	2. Plan driven
	3. Plan is often developed before individuals doing work have joined the team.
	4. Plan is difficult to change because of milestone/deliverable date expectations established early in the lifecycle.
	5. Management/governance structure often restricts collaboration.
2. Product is delivered as a single complete solution.	6. Business value is delivered all at once, at the very end of the lifecycle.
	7. The late, single-solution delivery results in high risk and corrective cost if the business value does not align with the business expectations.
3. It is strictly defined and bounded lifecycle phases.	8. Long time span between lifecycle initiation and delivery of functional product.
	9. User participation (input/feedback) is often limited after initial requirements and analysis phases.
	10. Testing and defect correction occurs late in the lifecycle during the testing phase, which leads to delivery delays/rework.
4. Cost, schedule, resource, and completion date targets are defined early in the lifecycle before work initiates.	11. Hard to estimate cost, schedule and resource requirements prior to work initiation; project overruns are common.
	12. Rework resulting from change management process impacts multiple lifecycle phases and results in cost

Benefits	Challenges
	<p>increases and schedule delays.</p> <p>13. Cost, schedule and resource estimation executed before team members doing the work join the team results in schedule/deliverable delays.</p>
<p>5. Product is completely documented (requirements, analysis, and design) before development begins.</p>	<p>14. Relies heavily on written communications (via documentation).</p> <p>15. Increased cost and time to implement discoveries/changes across functional elements being developed concurrently</p> <p>16. Because phases are often executed by a functional specialty, cross-phase impacts may not be comprehended or mitigated, causing increased change requests.</p>
<p>6. It is tolerant of changes in staffing (each phase is isolated to a functional specialty, so replacement is simplified).</p>	<p>17. Specialized staff members may have long periods with no work for their specialty.</p>

Functionally, the serial lifecycle approach is best suited for projects where:

- Requirements are well known and stable.
- Low risk exists in the areas of user interface and system performance.
- High risk exists in budget/schedule predictability and control.

The risk in budget/schedule predictability and control is thought to be mitigated because serial development completes project-wide work products for each phase (requirements, analysis, design, test, and implementation) before moving on to the next phase. Because the project-wide work products are tightly bound to a definable phase, it is assumed this will mitigate risk in relation to budget /schedule predictability and control. However, business value (feature, function and alignment with need) is delivered all at once, and only at the very end of the project. This late delivery results in high risk and high corrective-action cost when the business value does not align with the business expectations.

Requirements for the system are determined at the beginning of the development effort and can only be changed thereafter through application of a very structured change management process. This means that the cost impact, especially to schedule and resources, of changing the requirements will incrementally increase with each subsequent phase in the serial chain. This is a common reality in product development projects. Because the project-wide work products are tightly coupled to each serial phase, each work product is based on only what is known during that phase. Discoveries arising in later phases generate changes in the base lined work products in

upstream phases. A change to a requirement must occur in the requirements phase. Each requirement-phase change will ripple through all subsequent work products in every subsequent serial phase, until the phase where the requirement change request was discovered and initiated is reached. This rework is expensive in both schedule and resource utilization.

In this lifecycle methodology, communication is accomplished through documentation and it is assumed that the documentation is complete and correct at the end of the phase where it is created. Since the work in the next phase is based on documentation that has been reviewed and accepted in previous phase(s), the need for ongoing user interaction grows less critical with each subsequent phase. This means that face-to-face user feedback occurs primarily during requirements, analysis, and testing cycles. Design, code, and integration phases are based on the requirements and analysis documentation. Because the requirements and analysis documentation must identify the needs for today, tomorrow, next week, next month, and onward into the operational life of the system, the level of specification during the initial phases is very precise. This is problematic because the timeline from initiation to deployment to operations is typically multiple years, and many business conditions will change during this extended duration. From a project management perspective, phases (including the tasks for each phase) need to be identified and estimated months or even years before they will be executed.

The following table provides the benefits and challenges associated with the CWS/CMS Upgrade alternative in its upgrade to new functionality, involving an incremental lifecycle development methodology as its second phase of the upgrade:

Table 46 – Benefits and Challenges of Upgrading CWS/CMS – Incremental Approach

Benefits	Challenges
1. Results in a working service(s) (functionality) after each increment.	
2. Schedule is easier to maintain because increments are time-boxed with set start and complete dates (the time-box does not have to be the same for every increment).	1. Functional scope and/or complexity may be greater than can be completed within the time-box.
	2. Unfinished scope from the exceeded time-box(s) may not be developed because of prioritization and/or schedule adherence.
3. Increments are aligned to prioritized business value/need to maximize development and delivery schedule.	3. Business value priority may not align with dependencies on infrastructure, data and/or other services that require lower priority increments to be completed first.
	4. In-cycle business-value priority changes may not align with dependencies on infrastructure, data, and/or other services that require lower-priority increments to be completed first.

Benefits	Challenges
4. Smaller scope within each increment results in more flexible, less costly changes to scope and/or requirements.	5. Only enough requirements are defined to plan and initiate an increment because requirements refinement is expected to be continuous throughout the increment.
	6. Requirements changes may be higher than anticipated as prototypes identify incomplete, misunderstood, or incorrectly communicated need/expectations.
	7. Problems may arise in the system architecture because not all infrastructure requirements are known initially for all increments in the lifecycle.
5. Because each increment encapsulates a single element of functionality, it is easier to determine the true status of product development as increments complete.	
6. It is easier to test and execute defect correction because of the smaller functional scope in each increment.	8. Defects identified during an increment's integration testing may impact team resources and schedule because the service(s) to which integration is being executed may have completed all its increment activities.
	9. The complexity/need for regression testing increases with each increment. This can impact schedules and resources if test automation is not utilized.
7. It is easier to manage product risk because highest-risk functionality can be developed in isolation to increments that have the lowest impact on the total product.	
8. Progress is measured through completed functionality (delivery of business value).	
9. It is easier to stop development of an individual service (or the entire product) because investment is made in small increments and the business value for the increment and/or all increments to date is	10. The termination of development for an individual service may impact scope, schedule, and resources for later planned increments.

Benefits	Challenges
measurable.	
10. The duration to complete all increments requires less time than in serial lifecycle phases because of the smaller functional scope and associated efficiencies realized with each increment.	
11. Staff resources required to complete all increments are less than that required to complete all serial lifecycle phases because of: 12. the smaller functional scope 13. the ability to reuse resources (analysts, designers, developers) across numerous increments instead of concentration into a single phase 14. the increased efficiency of task performance gained through repetitive execution	11. Because the prototype, analysis, and design iterations require constant involvement and communication across business and technical staff, staff members assigned to an increment must be available and fully allocated for the entire increment.
15. Flexible deployment options allow better alignment with business needs and operational feasibility.	

With this lifecycle approach used for implementing new functionality, the system is defined, designed, and coded through a series of small, manageable increments. Within each increment, the prototype, analysis, design, and code activities can:

- Be performed serially.
- Be performed collaboratively.
- Be performed iteratively.
- Result when the “complete?” decision is “no.”
- Loop into another pass through the prototype, analysis, design, and code activities.
- Require sufficient time within the determined time-box to complete a further iteration.

Deployment can be initiated at the end of an increment, delayed to any later increment, or deployed as a total system at the end of all increments.

The incremental product development model is applicable to projects where:

- Software requirements are well defined, but actual realization can be delayed to align with business value based priority, where:
 - Core product functionality, including core infrastructure, is delivered first.
 - Lower priority functionality is delivered later.
 - System architecture evolves through the increments and attains its final state during the final iteration.

Mechanically, this approach constructs a framework (partial) implementation of a total system during the initial increment. Each subsequent increment adds functionality or performance to the system baseline, based on business -value priority or architectural need. This model assumes that requirements are not fully understood or specified before an increment is initiated, but requirements are at a level that the required number of increments can be estimated and the requirements can be allocated (based on priority for implementation) across the planned increments.

Each increment initiates development of a prototype that aligns with its allocated requirements. The prototype starts with the functional elements of the requirements that are well understood and involves potential users to evaluate the prototype and provide feedback during analysis of requirements. This prototype/analysis activity is executed iteratively, often with collaborative capture of the evolving design, until the time allocated for these activities is exhausted or agreement is reached on the refined product. Discovered requirements defects are managed through the change management process and incorporated into the current increment, if the schedule allows, or allocated to later increments based on their priority. After the design is stable, the lifecycle moves into coding, integration testing, and acceptance testing.

Integration testing is normally not a source of major issues because the estimation of the number of increments and the allocation of requirements across the increments should provide an understanding of intra-increment dependencies. Best practices suggest that an early prototype should address the product architecture and provide basic functional connectivity (integration) that will be refined as later increments are completed.

Because the prototype, analysis, and design iterations identify and repair most defects before final coding occurs, the test phase should yield a very small number of defects. As discussed above, deployment can be:

- As a single, complete system.
- After each increment completes.
- To a sandbox environment for user training, evaluation and/or practice use.

2. Restart the CWS/Web Project - Lifecycle Methodology

The following table provides the benefits and challenges associated with restarting CWS/Web:

Table 47 – Benefits and Challenges of Restarting CWS/Web

Benefits	Challenges
1. Greatest control	1. Very rigid process
	2. Plan driven
	3. Plan is often developed before individuals doing work have joined the team.
	4. Plan is difficult to change because of milestone/deliverable date expectations established early in the lifecycle.
	5. Management/governance structure often restricts collaboration.
2. Product is delivered as a single complete solution.	6. Business value is delivered all at once, at the very end of the lifecycle.
	7. The late, single-solution delivery results in high risk and corrective cost if the business value does not align with business expectations.
3. It is strictly defined and bounded lifecycle phases.	8. Long time span between lifecycle initiation and delivery of functional product
	9. User participation (input/feedback) is often limited after initial requirements and analysis phases.
	10. Testing and defect correction occurs late in the lifecycle during the testing phase, which leads to delivery delays / rework.
4. Cost, schedule, resource, and completion date targets are defined early in the lifecycle before work initiates.	11. Hard to estimate cost, schedule and resource requirements prior to work initiation; project overruns are common.
	12. Rework resulting from Change Management Process impacts multiple lifecycle phases results in cost increases and schedule delays.
	13. Cost, schedule and resource estimation executed before team members doing the work join the team results in schedule/deliverable delays.
5. System is completely	14. Relies heavily on written

Benefits	Challenges
documented (requirements, analysis, and design) before development begins.	communications (via documentation).
	15. Increased cost and time to implement discoveries/changes across functional elements being developed concurrently
	16. Because phases are often executed by a functional specialty, cross-phase impacts may not be comprehended or mitigated, causing increased change requests.
6. It is tolerant of changes in staffing (each phase is isolated to a functional specialty, so replacement is simplified).	17. Specialized staff members may have long periods with no work for their specialty.

Functionally, the CWS/Web Restart alternative is best suited where:

- Requirements are well-known and stable.
- Low risk exists in the areas of user interface and system performance.
- High risk exists in relation to the budget and schedule predictability and control.

The risk in budget and schedule predictability and control is thought to be mitigated because serial-development completes the project-wide work products for each phase (requirements, analysis, design, test, and implementation) before moving on to the next phase. Because the project-wide work products are tightly bound to a definable phase, it is assumed this will mitigate risk in budget and schedule predictability and control. However, business value (feature, function and alignment with need) is delivered all at once, and only at the very end of the project. This late delivery results in high risk and high corrective action cost when the business value does not align with the business expectations.

Requirements for the system are determined at the beginning of the development effort and can only be changed thereafter through application of a very structured change management process. This means that the cost impact, especially to schedule and resources, of changing the requirements will incrementally increase with each subsequent phase in the serial chain. This is a common reality in product development projects. Because the project-wide work products are tightly coupled to each serial phase, each work product is based on only what is known during that phase. Discoveries arising in later phases generate changes in the baseline work products in upstream phases. A change to a requirement must occur in the requirements-phase work products. Each requirement phase change will ripple through all subsequent work products in every subsequent serial phase, until the phase where the requirement change request was discovered and initiated is reached. This rework is expensive in both schedule and resource utilization.

In this CWS/Web lifecycle methodology, communication is accomplished through documentation and it is assumed that the documentation is complete and correct at the end of the phase where it is created. Since the work in the next phase is based on documentation that has been reviewed and accepted in previous phase(s), the need for ongoing user interaction grows less critical with each subsequent phase. This means that face-to-face user feedback occurs primarily during requirements, analysis, and testing cycles. Design, code, and integration phases are based on requirements and analysis documentation. Because the requirements and analysis documentation must identify the needs for today, tomorrow, next week, next month, and onward into the operational life of the product, the level of specification during the initial phases is very precise. This is problematic because the timeline from initiation to deployment to operations is typically multiple years, and many business conditions will change during this extended duration.

From a project management perspective, phases (including the tasks for each phase) need to be identified and estimated months or even years before they will be executed. Because the CWS/Web project will have a tendency to cover long durations and deliver all-encompassing solutions, there is also a tendency for critical milestone dates to be considered firm and non-negotiable, a practice that ultimately results in either missed targets and schedule slippage or excessive compression of task work to meet the set-in-stone milestone dates.

3. Build a New Custom System – Lifecycle Methodology

The following table provides a summary of benefits and challenges of the custom lifecycle model. The above model shows two increments for illustrative purposes only. In actual practice, the number of increments will be as many as is required to complete the objectives where the lifecycle is used.

Table 48 – Benefits and Challenges of Building a New Custom System

Benefits	Challenges
1. Results in working service(s) (functionality) after each increment.	
2. Schedule is easier to maintain because increments are time-boxed with set start and complete dates (time-box does not have to be the same for every increment).	1. Functional scope and/or complexity may be greater than can be completed within the time-box.
	2. Unfinished scope from the exceeded time-box(s) may not be developed because of prioritization and/or schedule adherence.
3. Increments are aligned to prioritized business value/need to maximize development and delivery schedule.	3. Business value priority may not align with dependencies on infrastructure, data, and/or other services that require lower priority increments to be completed first.

Benefits	Challenges
	4. In-cycle business-value priority changes may not align with dependencies on infrastructure, data and/or other services that require lower-priority increments to be completed first.
4. Smaller scope within each increment results in more flexible, less costly changes to scope and/or requirements.	5. Only enough requirements are defined to plan and initiate an increment because requirements refinement is expected to be continuous throughout the increment.
	6. Requirements changes may be higher than anticipated as prototypes identify incomplete, misunderstood, or incorrectly communicated need/expectations.
	7. Problems may arise in the system architecture because not all infrastructure requirements are known initially for all increments in the lifecycle.
5. Because each increment encapsulates a single functionality, it is easier to determine the true status of the product development as increments complete.	8. Improper estimation of the number and duration of increments may result in reprioritization and sequencing that causes schedule delays.
6. It is easier to test and execute defect correction because of the smaller functional scope in each increment.	9. Defects identified during an increment's integration testing may impact team resources and schedule because the service(s) to which integration is being executed may have completed all its increment activities.
	10. The complexity/need for regression testing increases with each increment. This can impact schedule and resources if test automation is not utilized.
7. It is easier to manage product risk because highest risk functionality can be developed in (isolated to) an increment(s) that has the lowest impact on the total product.	
8. Progress is measured through completed functionality (delivery of business value).	
9. It is easier to stop development of an individual service or entire system because investment is	11. The termination of development for an individual service may impact scope, schedule, and resources for later planned

Benefits	Challenges
made in small increments and the business value for the increment and/or all increments to date is measurable.	increments.
16. The duration to complete all increments requires less time than all serial lifecycle phases because of the smaller functional scope and associated efficiencies realized with each increment.	
17. Staff resources required to complete all increments will be less than that required to complete all serial lifecycle phases because of: 18. smaller functional scope 19. ability to reuse resources (analysts, designers, developers) across numerous increments instead of concentration into a single phase 20. increased efficiency of task performance gained through repetitive execution	12. Because the prototype, analysis, and design iterations require constant involvement and communication across business and technical staff, staff members assigned to an increment must be available and fully allocated for the entire increment.
21. Flexible deployment options allow better alignment with business needs and operational feasibility.	

With the custom development lifecycle, the product is defined, designed, and coded through a series of small, manageable increments. Within each increment, the prototype, analysis, design, and code activities can:

- Be performed serially.
- Be performed collaboratively.
- Be performed iteratively.
- Result when the “complete?” decision is “no.”
- Loop into another pass through the prototype, analysis, design, and code activities.
- Require sufficient time within the determined “time-box” to complete another iteration.

Deployment can be initiated at the end of an increment, delayed to any later increment, or deployed as a total system at the end of all increments.

Mechanically, this approach constructs a framework (partial) implementation of a total system during the initial increment. Each subsequent increment adds functionality or performance to the system baseline, based on business-value priority or architectural need. This methodology assumes that requirements are not fully understood or specified before an increment is initiated, but requirements are at a level that the required number of increments can be estimated and the requirements can be allocated (based on priority for implementation) across the planned increments.

Each increment initiates development of a prototype that aligns with its allocated requirements. The prototype starts with the functional elements of the requirements that are well understood and involves potential users to evaluate the prototype and provide feedback (the analysis activity). This prototype/analysis activity is executed iteratively, often with collaborative capture of the evolving design, until the time allocated for these activities is exhausted or agreement is reached on the refined product. Discovered requirements defects are managed through the change management process and are incorporated into the current increment (if the schedule allows), or are allocated to later increments based on their priority. After the design is stable, the lifecycle moves into coding, integration testing, and acceptance testing.

Integration testing is normally not a source of major issues because the estimation of the number of increments and the allocation of requirements across the increments should provide an understanding of the intra-increment dependencies. Best practice suggests that an early prototype should address the product architecture and should provide basic functional connectivity (integration) that will need to be refined as later increments are completed.

Because the prototype, analysis, and design iterations will identify and repair most defects before the final coding occurs, the test phase will yield a very small number of defects.

As discussed above, deployment can be:

- As a single, complete system.
- After each increment completes.
- To a sandbox environment for user training, evaluation and/or practice use.

In summary, with the custom development methodology it is easier to reprioritize increment content and sequence as objectives change, and easier to provide frequent demonstration of progress to stakeholders as functional service(s) evolve within the increment. Smaller-scope increments provide flexibility and manage cost when changes to scope and/or requirements are needed. Also, as testing occurs informally throughout the increment's product development activities (prototype, analysis, design, and code), and formally as a final acceptance activity before deployment, fewer late-cycle defects arise.

4. Buy/Build a New System – Lifecycle Methodology

The benefits and challenges of using this development method are summarized in the following table.

Table 49 – Benefits and Challenges of Using a Buy/Build Approach

Benefits	Challenges
1. Establishes a fully functional system after initial deployment.	1. The purchased product may not deliver all required business functionality.
	2. Requires development of a service(s) to fill a functional gap(s) in the business need(s)/ objective(s), law, and/or policy.
	3. Requires extreme discipline on the part of customers and vendor to not make any modifications to the purchased product.
2. Upgrades to new versions of the purchased product are not an issue because service capabilities are isolated and unchanged.	4. Some modifications to a service(s) may be required to align with changes in the service capabilities.
3. A capability that is not included in the service can be developed as an ancillary service(s) and provided as a custom-built service to the service capabilities.	
4. Development and delivery of a service(s) does not impact the purchased product because the service(s) is/are isolated from the purchased product.	5. The process for request, specification, approval, and delivery of a service(s) can result in prolonged delivery lifecycles.
	6. A service may be for a specific user population (or county) instead of all system users, which could result in a cost-sharing model for its development.
5. Development and delivery of functionality as a service(s) results in maximum flexibility when a changing law, policy, or process requires a modification to the system.	
6. Data exchange interfaces to systems at other agencies and/or partners can be developed using “adapter” technology, which normally facilitates minimum modifications to the agency/partner systems.	

Benefits	Challenges
7. A service can be developed at any point in the lifecycle (i.e., in parallel with the implementation of the purchased product), so the timing of delivery of business value can be planned and executed to meet business needs/objectives.	
8. Because each service encapsulates a single functionality, it is easier to determine the status of business functionality gap closure.	
9. Schedule is easier to maintain because delivery of purchased product and development of services are separated.	
10. Delivery of the purchased product and service(s) is aligned to prioritized business value/need.	
11. It is easier to test and execute defect correction within a service because the functional scope is isolated to the service	

Like all lifecycles, this development lifecycle begins with the business goals, needs, and objectives (identified in the model as requirements). Through gap analysis, these business requirements are analyzed against the capabilities of the purchased product.

All identified gaps are also mapped against existing laws and policies to determine if there is a need or possibility to pursue changes in these laws/policies to remove the gap(s). At the conclusion of this analysis, there are three logical next steps:

- No changes are possible and the gap must be filled; therefore, develop a service to fill the gap.
- Changes are made to mitigate some or all of the gaps; therefore, execute BPR to determine impacts and changes to existing practice.
- Identify the inability to change law and/or policy, resulting in the lack of building an associated custom service and/or no need to execute BPR as an issue and manage the issue to closure.

When a gap is identified that is not directly tied to a law or policy, the next step in the lifecycle will be to move to BPR. BPR analysis can determine if the current business process can be executed without support from the purchased product, or if a change can be made in the current business process to remove the gap. When doing BPR, it is important to remember that any tool may be an enabler of business processes. The business processes are what you must control.

All BPR outputs must be verified for organizational adoption. There are three logical outcomes from the combination of BPR and the verification for organizational adoption:

- BPR and organizational adoption is not possible and the gap must be filled; therefore, develop a service to fill the gap.
- BPR and organizational adoption are possible; therefore, move to implementation because there are no impacts to the purchased product.
- Identify the inability to achieve BPR and organizational adoption; therefore, the gap must be identified as an issue and managed to closure.

The essential condition of this alternative is that no modifications be made to the purchased product, in order to enable vendor upgrades to these elements. All issues and gaps must be resolved through either development of a custom-built service (extension to the product) or via BPR.

In parallel with the implementation of the purchased product, organizational change management needs to be executed to:

- Communicate the capabilities that will be delivered in the purchased product.
- Communicate capabilities that do not currently exist that will be available through the development of custom services.
- Communicate how the capabilities of the purchased product will be used to support the business practice.
- Communicate when services will be available to fill gaps between functionality desired in the system and available in the purchased product.
- Communicate changes (temporary or permanent) that will need to be made in how the system is used to execute the practice.
- Communicate any approved changes to the practice.

In summary, this methodology is the most flexible and allows a majority of business needs to be delivered with a purchased product, greatly shortening delivery of business value. Delivery of a developed service can be prioritized and sequenced to best align with business goals, needs and objectives. Because the functionality of the purchased product will not contain any customization, vendor-initiated upgrades to provide new functionality and/or address defect correction can be implemented with minimal impact to the operation of the system.

APPENDIX D: CURRENT CWS/CMS APPLICATION ARCHITECTURE OVERVIEW

The CWS/CMS application is a multi-tiered client/server application comprised of several components. The major tiers and components include:

- Workstation user interface and business logic
- Application (county) server tiers – mainly communication logic
- Backend host and database – system of records

As well as SAS analytical tools, CWS/CMS also includes a separate environment for reporting, CAD.

1. Workstation Overview

The CWS/CMS application currently runs on workstations using the Windows 2000 and XP operating systems. CWS/CMS workstation client software architecture consists of several application layers. These layers include:

- **Presentation Services** – The presentation services component is the GUI provided to the user. The presentation service is provided via a Windows workstation.
- **Business Rule Services** – These services provide the application business logic unique to each functional area. At the workstation, both early verification (using the GUI business rules) and late verification use application rules to provide accurate information.
- **Security Services** – All traffic between CWS/CMS workstations and host applications are altered from clear text prior to transmission over the network and to the host.
- **Transaction Services** – Data traveling between the workstation and the host is organized into packets or transactions. The transaction services component creates these data transactions and transports the information to and from the host. The infrastructure supporting this is based on IBM's n-tier Customer Information Control System architecture. CICS components in the user workstation communicate to the CICS gateway components residing on the county server that in turn communicates to the backend CICS component on the mainframe.

The workstation client interacts with the IBM mainframe server host at the state data center. The host is the main repository for data, code tables, and document templates and stores all data related to a case.

2. Application/County Server Overview

The application server (or county server) functions as an intermediary between a group of workstations (associated with a county or site) and the host. The design and use of

an application server was very typical in early client/server days for very large enterprise applications. Given the cost of the network, the application server was used to minimize traffic and the number of connections between the host and workstations. The application server is also used as a staging area for software distribution to reduce bandwidth congestion. Rather than distributing new code releases to 17,000 workstations over the WAN, software is first distributed to the application servers over the WAN that in turn are responsible for distributing software to local workstations over LANs.

Based upon user population, each county uses one or more CWS/CMS application servers. The application servers are hosted locally in county server rooms. These servers are designed to perform several functions including:

- **Transaction Support** – Offload various communication functions from the workstation to the server.
- **Reduce Network Transactions** – Provide a staging point for software and code table distribution to reduce bandwidth over the network.
- **Security and Compression** – Provide additional security functionality including compression and encryption of the traffic over the WAN network.
- **CWS Administrator** – Provide the local administrator with capabilities to locally manage resources and staff.

3. Backend Host Overview

The core component of CWS/CMS is the IBM mainframe computer or host. The primary role of the host is to provide database and transaction services. CWS/CMS is built on an IBM DB2 database. All CWS/CMS data is stored in a series of database tables and accessed through CICS transactions generated from the workstation's CWS/CMS application. The transactions are processed by the CICS transaction monitor and programmed using the COBOL language.

IBM designed the transaction architecture under the CICS environment to support the workstation client and the business processes of case workers at the time of design. The transaction design is comprised of three major layers:

- Compression/decompression of input from the workstation
- A framework for dynamically linking a sequence of procedural routines depending on the transaction identified
- Data access packets based on Structured Query Language (SQL) statements that are invoked by those transactions

4. Reporting Overview

Reporting requirements within CWS/CMS are satisfied by several methods. Specific user community needs are addressed through different sets of tools and data access paths and repositories.

There are four basic categories of reporting in CWS/CMS:

- Standard program management reports
- Ad-hoc reporting run against the CAD
- Quality assurance and regulatory compliance reporting services from Safe Measures®
- Ad-hoc reporting run against the production database via SAS software

It must also be noted that several counties employ their own data warehouse, data marts, reporting, and/or business intelligence software for satisfying reporting needs within their county.

A key component of the CWS/CMS architecture is the CAD. CAD was developed to help counties and California child welfare service agencies fulfill their many constituents' reporting requirements. The CAD solution contains one statewide view and 58 county views of the data contained within CWS/CMS. These views allow a county to only view its own data. In contrast to the production database, the CAD "de-normalizes" some data tables to better accommodate these additional views and to increase query performance, as CAD is optimized for query vs. update.

The majority of CAD users (200+) makes use of the CWS/CMS data warehouse and associated data marts for ad-hoc reporting and analysis. These CAD users access the data warehouse using the Business Objects report tool suite, located on selected CWS/CMS workstations. An encrypted network tunnel is established between their workstation and the CAD server to provide a secure transmission of data to and from the data warehouse. Access and usage is limited to the number of purchased licenses.

5. County Infrastructure Overview

Each CWS/CMS client county has its own unique characteristics based on local network conditions and topologies. County infrastructures are classified as either dedicated or coexistent depending on the level of support to county LANs.

Dedicated counties entered into an agreement under which IBM Global Services is designated to be the agency responsible for the installation and maintenance of CWS/CMS applications and related operating hardware and software.

Coexistent counties agreed to use the CWS/CMS suite of applications, but retain responsibility for the maintenance of related operating hardware used by the CWS/CMS application Network Infrastructure.

6. Information Security Architecture Overview

CWS/CMS contains information that is highly confidential and sensitive in nature. CWS/CMS security architecture is based on a layered model incorporating security controls in each layer. The security in each layer includes:

- Workstation/LAN Security Components
 - Authentication by unique user id and passwords – standard Active Directory logon scripts and network access security
 - Physical security of workstations
- Server Security Components
 - Case data is encrypted/compressed when stored on a local application server and during transmission to the backend host.
- Application/Host Security Components
 - Application security is based on IBM's Resource Access Control Facility (RACF) security systems. Each user is uniquely identified to the systems by dedicated representatives from the State, county, or office security administrator using unique user id and passwords.
 - Access to cases, reports, and data is based on a pre-assigned user authority profile that restricts access to individual programs, reports, and data on the host.
 - Access logic is part of the application logic.
- CAD Security
 - Network Data Stream – Cisco
 - RDBMS Security – Runtime client encryption and user authentication
 - Application Security – Assigned security levels
 - Data Access Security – Assigned by authorization level, views, and profiles
 - Users have read-only access and cannot change data in data warehouse.
- Network Security Components/Encryption
- Remote Access Security – Currently, remote access is supported via dial-up circuits or VPN. Security is enforced through user IDs and passwords.
- Logging and Tracking
 - Invalid user IDs and passwords, as well as login attempts, are tracked in a security log.
 - Logs are reviewed periodically by security administrators based on local policies.
 - Automatic revocation of user IDs and passwords after a pre-defined number of failed attempts.
- Data Backup and Recovery

- Data is backed-up daily on the host and the local application servers (local user files).
- Tapes at the data center are moved off-site on a daily basis.
- Physical Security
 - Access to data center controlled by badges.
 - Servers are placed in locked rooms (policy).
 - Servers (in dedicated environments) have case key locks.
- Security Management - Each county has a dedicated security manager responsible for:
 - Managing user id and password (add, change, delete, reset, etc.).
 - Managing access control and authority levels.
 - Managing email security.
 - Managing physical security for servers, workstations, and security communications for the county.

7. Software Distribution Infrastructure Overview

CWS/CMS uses Tivoli Software Distribution software to deliver software to the CWS/CMS Windows application servers in the counties.

APPENDIX E: LEGISLATIVE REFERENCES

This appendix details the state and federal legislation, regulations, or policies identified in this report.

Table 50 – Legislative References

State Legislative References		
Reference	Detail	Information link
Assembly Bill 12 Chapter 559, Statutes of 2010	California Fostering Connections to Success Act, implements federal foster care reform legislation to provide federally subsidized relative guardianships, and extend foster care jurisdiction to age 21.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0001-0050/ab_12_bill_20100930_chaptered.html
Assembly Bill 106 Chapter 32, sec 71 Statues of 2011	Requiring CDSS, by January 10, 2012, to report specific information regarding status of CWS/CMS.	http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0101-0150/ab_106_bill_20110629_chaptered.html
Assembly Bill 129 Chapter 468, Statues 2004	Dual Jurisdiction of Wards and dependents.	http://www.leginfo.ca.gov/pub/03-04/bill/asm/ab_0101-0150/ab_129_bill_20040910_chaptered.html
Assembly Bill 212 Chapter 449, Statues of 2011	California Fostering Connections to Success Act, extends specified foster care benefits to youth up to 19, 20, and 21 years of age.	http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0201-0250/ab_212_bill_20111004_chaptered.html
Assembly Bill 636, Chapter 678, Statutes of 2001 Welfare and Institutions Code, 10601.2	CWS Improvement and Accountability Act.	http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0601-0650/ab_636_bill_20011010_chaptered.html http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0601-0650/ab_636_bill_20011010_chaptered.pdf

State Legislative References		
Reference	Detail	Information link
Assembly Bill, 743 Chapter 560, Statutes of 2010	Sibling Placement and visitation.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0701-0750/ab_743_bill_20100930_chaptered.html
Assembly Bill 938 Chapter 261, Statute of 2010	Early search and notification of relatives.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0901-0950/ab_938_bill_20091011_chaptered.html
Assembly Bill 1325, Chapter 287, Statutes of 2009	Requires the juvenile court and social workers to consider and recommend tribal customary adoption, as defined, as an additional permanent placement option, Without termination of parental rights, for a dependent child. The bill would provide that a tribal customary adoption order would have the same force and effect as an order of adoption.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_1301-1350/ab_1325_bill_20091011_chaptered.html
Assembly Bill 1331, Chapter 434, Statutes of 2007	Tracking of SSI application for disabled exiting foster youth.	http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1301-1350/ab_1331_bill_20071011_chaptered.html
AB 1933 Chapter 563, Statutes of 2010	Ensures and facilitates the proper educational placement, enrollment in school, and checkout from school of foster children. Provides for assisting foster children when transferring from one school to another or from one school district to another in ensuring proper transfer of credits, records, and grades.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_1901-1950/ab_1933_bill_20100930_chaptered.pdf

State Legislative References		
Reference	Detail	Information link
AB 2070 Chapter 442, Statutes of 2008	Reunification timeframes for Incarcerated Parents.	http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_2051-2100/ab_2070_cfa_20080506_155149_asm_comm.html
Assembly Bill 2322 Chapter 551, Statutes of 2010	Data Sharing of Families and Children at risk for child abuse.	http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_2301-2350/ab_2322_bill_20100929_chaptered.html
Assembly Bill 2985, Chapter 387, Statutes of 2006	Requires a county welfare department to request a consumer disclosure for youth in a foster care, when the youth reaches his or her 16th birthday, in order to ascertain whether the youth has been the victim of identity theft. Provides that, if the consumer disclosure reveals any negative items or evidence of identity theft, the department is to refer the youth to an approved Organization that provides services to identity theft victims. Requires the Department to maintain a list of approved organizations.	http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_2951-3000/ab_2985_bill_20060922_chaptered.html
California Health Information Exchange	Related strategic plan whose goal is to achieve statewide electronic health data exchange, uniform interoperability standards and adoption of health information technologies.	http://ehealth.ca.gov/Portals/0/uploads/CA_HIE_Strategic%20Plan.pdf
CWS Realignment Governor's 2011/12 May Revision	Transfers primary program responsibility and associated funding for CWS to counties. Counties would be given flexibility to operate the program and best serve vulnerable children. CDSS would continue as authorized by statute to promulgate regulations, policies, and procedures necessary to implement the	http://www.chhs.ca.gov/Documents/Realignment.pdf http://www.dof.ca.gov/budget/historical/2011-12/governors/documents/May_Revision_2011-

State Legislative References		
Reference	Detail	Information link
	State's child welfare system and to ensure safety, permanence, and well-being for children and families. The CDSS continues its responsibility for the supervision and coordination of programs in California funded under federal Title IV-B subparts 1 and 2 of the Social Security Act, Title IV-E, Child Abuse Prevention and Treatment Act (CAPTA), and the Chafee Foster Care Independence Program and Education Training Vouchers programs for older and/or former foster care youth.	12_Summary.pdf
Senate Bill 370 , Chapter 1294, Statutes of 1989 California Welfare and Institutions Code 16501.5	Mandates a single statewide child welfare automation system.	http://www.childsworld.ca.gov/pg1329.htm
Senate Bill 500 Chapter 630, Statutes of 2005	Require a shared responsibility plan to be developed between the teen parent, caregiver, and other county or state representatives, as appropriate, for the care of the child of a teen parent when the child of a teen parent is not under the jurisdiction of the dependency court but is in the full or partial physical custody of the teen parent who is living in an out-of-home placement in a whole family foster home.	http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb_0451-0500/sb_500_bill_20051007_chaptered.html
Senate Bill 678 Chapter 838, Statutes of 2008	Expand various provisions of state law to, among other things, apply to certain children who do not come within the definition of an Indian child for purposes of the Indian Child Welfare Act, and would provide that a parent, Indian custodian, or tribe may intervene in child custody proceedings involving children with Indian ancestry, as specified.	http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb_0651-0700/sb_678_bill_20060930_chaptered.html
Senate Bill 703 , Chapter 583	ICPC. An interstate compact, or agreement, that has been enacted into	http://cld.ca.gov/res/pdf/FC7900.pdf

State Legislative References		
Reference	Detail	Information link
Statutes of 2007	law by all 50 states in the United States, and the District of Columbia, which expedite the movement of children from one state to another for the purposes of foster care and adoptions.	http://www.childsworld.ca.gov/PG1316.htm http://www.childwelfare.gov/systemwide/laws_policies/federal/index.cfm?event=federalLegislation.viewLegis&id=82 http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0701-0750/sb_703_bill_20071013_chaptered.pdf
Senate Bill 933 Chapter 311 Statutes of 1998	Reexamination of the Role of Group Home Care: Legislation is part of efforts for congregate care reform efforts.	http://www.childsworld.ca.gov/res/PDF/StatusReport.pdf http://www.leginfo.ca.gov/pub/97-98/bill/sen/sb_0901-0950/sb_933_bill_19980819_chaptered.pdf
Senate Bill 1353 Chapter 557, Statutes of 2010	When determining placement, educational and school placement setting need to address availability and close proximity to the parent's home and promotes educational Stability.	http://www.leginfo.ca.gov/pub/09-10/bill/sen/sb_1351-1400/sb_1353_bill_20100930_chaptered.html
System Improvement Plan (SIP). Welfare and Institutions Code, 10601	Required under AB 636 implementation. Counties are to collaborate with other local partners to develop a county SIP. The purpose of the SIP is to establish program priorities, define specific action steps to achieve improvement and establish goals for improvement.	http://www.dss.cahwnet.gov/pdf/ab636.pdf

Federal Legislative References		
Reference	Detail	Information Link
Adoption and Foster Care Analysis Reporting System (AFCARS) (CFR) Title 45 § 1355.57-	The AFCARS collects case level information on all children in foster care for whom state child welfare agencies have responsibility.	http://www.acf.hhs.gov/cwpm/programs/cb/laws_policies/laws/cwpm/policy.jsp?idFlag=1 http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#cw
Annual Progress and Services Report (APSR) 45 CFR §1357.16 -	Annual state updates on the progress made toward accomplishing the goals and objectives in the Child and Family Service Plan (CFSP).	http://www.acf.hhs.gov/programs/cb/programs_fund/index.htm#CFSP http://www.gpo.gov/fdsys/search/pagedetails.action;jsessionid=S7ZRTk1HCry5N33L78KSbTG HJz38mVRkLQJt0bVZ6D0RNQqgvMT0!1692713536!1829334544?st=citation%3A45+CFR+1357&granuleId=CFR-2010-title45-vol4-sec1357-16&packageId=CFR-2010-title45-vol4
Child Abuse Prevention and Treatment Act (CAPTA) (Public Law 93-247)	The Child Abuse Prevention and Treatment Act (CAPTA) is one of the key pieces of legislation that guides child protection. This is one of Congress' significant pieces of legislation that support the States' duty and power to act on behalf of children when parents are unable or unwilling to do so.	http://www.acf.hhs.gov/programs/cb/laws_policies/cblaws/capta03/capta_manual.pdf
Child and Family Services Plan (CFSP) 45 CFR § 1357.16	Five-year state strategic plan that sets forth the vision and the goals to be accomplished to strengthen the States' overall child welfare system.	http://www.acf.hhs.gov/programs/cb/programs_fund/index.htm#CFSP http://www.gpo.gov/fdsys/search/pagedetails.action;jsessionid=S7ZRTk1HCry5N33L78KSbTG

Federal Legislative References		
Reference	Detail	Information Link
		HJz38mVRkLQJt0bVZ6D0RNQggvMT0!1692713536!1829334544?st=citation%3A45+CFR+1357&granuleId=CFR-2010-title45-vol4-sec1357-16&packageId=CFR-2010-title45-vol4
Child and Family Services State Plan Reviews (CFSR), 45 CFR §1357.16	<p>Reviews of state child and family service to insure federal funding conformity under the below identified areas;</p> <p>Title IV-E Foster Care</p> <p>Title IV-B Subpart 1 Child Welfare Services</p> <p>Title IV-B Subpart 2 Promoting Safe and Stable Families</p> <p>Chafee Foster Care Independence Act of 1999</p> <p>The Child Abuse Prevention and Treatment Act, as amended by the Keeping Children and Families Safe Act of 2003</p>	<p>http://www.acf.hhs.gov/programs/cb/programs_fund/</p> <p>http://www.gpo.gov/fdsys/search/pagedetails.action?jsessionid=S7ZRTk1HCry5N33L78KSbTG_HJz38mVRkLQJt0bVZ6D0RNQggvMT0!1692713536!1829334544?st=citation%3A45+CFR+1357&granuleId=CFR-2010-title45-vol4-sec1357-16&packageId=CFR-2010-title45-vol4</p>
National Child Abuse and Neglect Data System (NCANDS)	The NCANDS national data collection and analysis system created in response to the requirements of the CAPTA for Child Welfare Outcomes Reports, which include Child Maltreatment Reports.	<p>http://www.acf.hhs.gov/programs/cb/systems</p> <p>http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#cw</p>
National Youth in Transition Database (NYTD) 45 CFR Part	Data collection system to track the independent living services states provide to youth and develop outcome measures that may be used to assess states' performance in operating their independent living programs.	<p>http://www.acf.hhs.gov/programs/cb/systems</p> <p>http://edocket.access.gpo.gov/2008/pdf/E8-3050.pdf</p>

Federal Legislative References		
Reference	Detail	Information Link
1356		
Program Improvement Plan (PIP), 45 CFR §1357.16	Foster Care Eligibility Program Improvement Plan. California's opportunity to develop and implement corrective action plan associated to the CFSP/CFSR.	http://www.acf.hhs.gov/programs/cb/laws_policies/cblaws/fed_reg/fr012500.htm
Safe and Timely Interstate Placement of Foster Children Act of 2006 – (P.L). 109-239 ICPC	An interstate compact, or agreement, that has been enacted into law by all 50 states in the United States, and the District of Columbia, which expedite the placement of foster care children across state lines and removes barriers traditionally recognized as detrimental to timely interstate placements.	http://cclid.ca.gov/res/pdf/FC7900.pdf http://www.childsworld.ca.gov/PG1316.htm http://www.childwelfare.gov/systemwide/laws_policies/federal/index.cfm?event=federalLegislation.viewLegis&id=82
SACWIS Title XIII, Section 13713. Enhanced match for automated data systems, of the Omnibus Budget Reconciliation Act of 1993 Public Law 103-66	Provides states with the opportunity to obtain enhanced funding through the Title IV-E to plan, design, develop, and implement a SACWIS.	http://www.acf.hhs.gov/programs/cb/systems/sacwis/about.htm http://www.acf.hhs.gov/programs/cb/laws_policies/policy/at/at9501.htm

APPENDIX F: ACRONYMS LIST

Table 51 – Acronyms List

Acronym	Definition
AAP	Adoption Assistance Program
ACF	Administration for Children and Families
AFCARS	Adoption Foster Care Analysis and Reporting System
APP	Alternative Procurement Process
APSR	Annual Progress and Services Review
BCP	Budget Change Proposal
BPR	Business Process Reengineering
CAD	County Access to Data
CalWORKS	California Work Opportunity and Responsibility to Kids
CAPTA	Child Abuse Prevention and Treatment Act
CAST	Child Welfare System Automation Study Team
CCSAS	California Child Support Automation System
CDE	California Department of Education
CDPH	California Department of Public Health
CDSS	California Department of Social Services
CFSP	Child and Family Services Plan
CFSR	Child and Family Services Review
CICS	Customer Information Control System
COBOL	Common Business Oriented Language
COTS	Commercial-off-the-Shelf
CRC	Children’s Research Center
CSGNet	California State Government Network
CSSR	Center for Social Services Research, University of California at Berkeley
CWDA	County Welfare Directors Association
CWDAB	Child Welfare Data Analysis Bureau
CWS	Child Welfare Services

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Acronym	Definition
CWS/CMS	Child Welfare Services/Case Management System
CWS/Web	Child Welfare Services Web Project
DD&I	Design, Development & Implementation
DDD	Domain Driven Design
DGS	Department of General Services
DHCS	Department of Health Care Services
DMV	Department of Motor Vehicles
FFP	Federal Financial Participation
FSR	Feasibility Study Report
GUI	Graphical User Interface
IAPD	Implementation Advance Planning Document
IBM	International Business Machines Corporation
ICPC	Interstate Compact on the Placement of Children
IDM	Identity Management
IFB	Invitation for Bid
ICWA	Indian Child Welfare Act
IT	Information Technology
LAN	Local Area Network
LIS	Licensing Information System
M&O	Maintenance and Operations
MEDS	Medi-Cal Eligibility Determination System
NCANDS	National Child Abuse and Neglect Data System
NYTD	National Youth in Transition Database
OSC	CWS/CMS Oversight Committee
OSI	Office of Systems Integration
OTech	Office of Technology Services
PAPD	Planning Advanced Planning Document
PCC	Public Contract Code

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Acronym	Definition
PIAC	CWS/CMS Program Impact Advisory Committee
PIP	Program Improvement Plan
RACF	Resource Access Control Facility
RDBMS	Relational Database Management System
RFI	Request for Information
RFO	Request for Offer
RFP	Request For Proposal
SaaS	Software as a Service
SACWIS	Statewide Automated Child Welfare Information System(s)
SAS	Statistical Analysis Software
SAWS	Statewide Automated Welfare System
SBC	Service Based Computing
SI	Systems Integrator
SIP	Session Initiation Protocol
SQL	Structured Query Language
SOA	Service-Oriented Architecture
TAAA	Technical Architecture Alternatives Analysis
TAC	CWS/CMS Technical Advisory Committee
TASP	Technical Architecture Strategic Plan
TCO	Total Cost of Ownership
UCB	University of California at Berkeley
VPN	Virtual Private Network
WAN	Wide Area Network
WIC	Welfare and Institutions Code

APPENDIX G: BIBLIOGRAPHY

This section shows the bibliography of material used in or referenced in the study:

1. ACF. "California AFCARS Assessment Review Report prepared by Children's Bureau, Administration on Children, Youth and Families and Office of Information Services Administration for Children and Families U.S. Department of Health and Human Services." November 2004.
2. CDSS. "CWS/Web Advance Planning Document # 1." August 2009.
3. CDSS. "External System Analysis – CDSS CMS Support." February 2011.
4. CDSS. "External System Analysis – CDSS CPFSB." March 2011.
5. CDSS. "Implementation Advance Planning Document # 2." May 2011.
6. CDSS. D. Oliveira. "External System Analysis CDSS CYPB." March 2011.
7. CWS/CMS "Technical Support Hardware/Software Purchase Plan."
8. CWS/CMS. "California's Go-Forward Plan." August 2004.
9. CWS/CMS. "CWS/CMS Strategic Plan." September 2006.
10. CWS/CMS. "Request for Proposal OSI-0530-208." December 2010.
11. CWS/CMS. "SCR's Referencing Legislative Needs." June 2011.
12. CWS/CMS. "Update Bidders' Library Artifacts 23 and 24 by J. Allen." January 2011.
13. CWS/CMS. COMSYS. "Automated Title IV-E Eligibility Determination Alternatives Analysis Study Deliverable 3.4." March 2009.
14. CWS/CMS. Eclipse Solutions, Inc. "CWS/CMS Technical Alternatives Analysis." March 2005.
15. OSI, "Legislative Hearing Script." April 2008.
16. OSI. "CWS-LAO Schedule Comparison." March 2008.
17. TASP – Technical Architecture Strategic Plan, dated April 8, 2003, created jointly by CDSS, OSC, and OSI.

APPENDIX H: COTS COST BREAKDOWN

Table 52 – COTS Cost Breakdown

California Department of Social Services
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New System - Buy/Build Approach												
	PROCUREMENT PERIOD (24-26 mos.)				Design, Development, and Test		Custom Extensions				TOTAL	
	SFY 1		SFY 2		SFY 3		SFY 4		SFY 5			
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
One-Time IT Project Costs												
State Goods & Services												
Staff (Salaries & Benefits)	36.0	3,961,818	36.0	3,961,818	36.0	3,961,818	36.0	3,961,818	36.0	3,961,818	180.0	19,809,090
CDSS Staff	14.0	1,332,585	14.0	1,332,585	14.0	1,332,585	14.0	1,332,585	14.0	1,332,585	70.0	6,662,925
Hardware Purchase (Project Office)		188,200		6,900		0		0		0		195,100
Software Purchase/License (Project Office)		120,750		126,788		133,127		139,783		146,772		667,220
Telecommunications		0		0		0		0		0		0
Contract Goods & Services												
Base Framework Software Purchase		0		0		36,399,880		0		0		36,399,880
Systems Integrator		0		0		8,250,000		8,250,000		8,250,000		24,750,000
Procurement		0		0		0		0		0		0
Project Management Support Services		887,040		887,040		887,040		887,040		506,880		4,055,040
Planning Document Assistance		0		0		0		0		0		0
Project Oversight Consultant		348,480		348,480		348,480		348,480		199,131		1,593,051
Technical V&V Services		559,680		559,680		559,680		559,680		319,817		2,558,537
Quality Management Support Services		0		538,560		538,560		538,560		307,749		1,923,429
System Architect		0		0		0		0		0		0
Technical Consulting Services		792,000		792,000		792,000		792,000		452,571		3,620,571
Stakeholder Management Consulting		168,960		168,960		168,960		168,960		96,549		772,389
Legal Services Contract		100,000		100,000		100,000		100,000		57,143		457,143
Cost Estimation & Evaluation Services		290,400		580,800		290,400		0		0		1,161,600
Infrastructure Support Services		0		0		2,935,368		759,526		434,015		4,128,909
OSI County Consulting Contracts		1,085,000		1,085,000		1,085,000		1,085,000		620,000		4,960,000
CDSS County Consulting Contracts		517,000		517,000		517,000		517,000		295,429		2,363,429
DGS Fees		210,000		35,000		210,000		70,000		70,000		595,000
TOTAL Contract Services		4,958,560		5,612,520		53,082,368		14,076,246		11,609,284		89,338,978
Data Center Services (FDC)		34,000		34,000		14,400,000		7,234,000		34,000		21,736,000
FDC Hardware/Software		0		0		7,425,000		371,250		0		7,796,250
OSI Overhead		846,000		930,600		977,130		512,993		269,321		3,536,045
Agency Facilities		882,875		451,500		451,500		451,500		0		2,237,375
Other		1,374,645		1,330,645		2,788,859		1,456,359		1,363,377		8,313,885
County Goods & Services		0		0		8,151,898		0		0		8,151,898
Total One-time IT Costs	50.0	13,699,433	50.0	13,787,356	50.0	92,704,285	50.0	29,536,535	50.0	18,717,157	250.0	168,444,765
Continuing IT Project Costs												
State Goods & Services												
Staff (Salaries & Benefits)							58.0	6,100,000	58.0	6,100,000	522.0	54,900,000
Hardware/Software Maintenance-Purchase								303,600		303,600		2,732,400
Telecommunications								0		0		0
Contract Services												
Application Maintenance								3,639,988		3,767,388		37,741,200
M&O Vendor - Training								0		0		0
Infrastructure Support Services								14,400,000		14,904,000		149,306,340
Project Management Support Services								242,120		484,239		4,116,034
Technical V&V Services								559,680		559,680		5,037,120
Quality Management Support Services								538,560		538,560		4,847,040
OSI County Consulting Contracts								775,000		775,000		6,975,000
CDSS County Consulting Contracts								517,000		517,000		4,653,000
DGS Fees								175,000		175,000		1,575,000
TOTAL Contract Services								20,847,348		21,720,867		214,250,733
Data Center Services (FDC)								9,000,000		9,000,000		81,000,000
FDC Hardware/Software								1,113,750		1,536,975		30,544,530
OSI Overhead								1,590,514		1,590,514		14,314,626
Agency Facilities								451,500		451,500		4,063,500
Other								2,309,352		2,309,352		20,784,168
County Goods & Services												
Total Continuing IT Costs	0.0	0	0.0	0	0.0	0	58.0	41,716,064	58.0	43,012,808	522.0	422,589,957
Total Project Costs	50.0	13,699,433	50.0	13,787,356	50.0	92,704,285	108.0	71,252,598	108.0	61,729,965	772.0	591,034,722

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COTS Cost Breakdown continued

	New System - Buy/Build Approach												TOTAL			
	SFY 6		SFY 7		SFY 8		M&O SFY 9		SFY 10		SFY 11		SFY 12		PYs	Amts
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts		
One-time IT Project Costs																
State Goods & Services																
Staff (Salaries & Benefits)														180.0		19,809,090
CDSS Staff														70.0		6,662,925
Hardware Purchase (Project Office)																195,100
Software Purchase/License (Project Office)																667,220
Telecommunications																0
Contract Goods & Services																
Base Framework Software Purchase																36,399,880
Systems Integrator																24,750,000
Procurement																0
Project Management Support Services																4,055,040
Planning Document Assistance																0
Project Oversight Consultant																1,593,051
Technical V&V Services																2,558,537
Quality Management Support Services																1,923,429
System Architect																0
Technical Consulting Services																3,620,571
Stakeholder Management Consulting																772,389
Legal Services Contract																457,143
Cost Estimation & Evaluation Services																1,161,600
Infrastructure Support Services																4,128,909
OSI County Consulting Contracts																4,960,000
CDSS County Consulting Contracts																2,363,429
DGS Fees																595,000
TOTAL Contract Services																89,338,978
Data Center Services (FDC)																21,736,000
FDC Hardware/Software																7,796,250
OSI Overhead																3,536,045
Agency Facilities																2,237,375
Other																8,313,885
County Goods & Services																8,151,898
Total One-time IT Costs														250.0		168,444,765
Continuing IT Project Costs																
State Goods & Services																
Staff (Salaries & Benefits)	58.0	6,100,000	58.0	6,100,000	58.0	6,100,000	58.0	6,100,000	58.0	6,100,000	58.0	6,100,000	58.0	6,100,000	522.0	54,900,000
Hardware/Software Maintenance-Purchase		303,600		303,600		303,600		303,600		303,600		303,600		303,600		2,732,400
Telecommunications		0		0		0		0		0		0		0		0
Contract Services																
Application Maintenance		3,899,246		4,035,720		4,176,970		4,323,164		4,474,475		4,631,081		4,793,169		37,741,200
M&O Vendor - Training		0		0		0		0		0		0		0		0
Infrastructure Support Services	15,425,640		15,965,537		16,524,331		17,102,683		17,701,277		18,320,821		18,962,050		149,306,340	
Project Management Support Services	484,239		484,239		484,239		484,239		484,239		484,239		484,239		4,116,034	
Technical V&V Services	559,680		559,680		559,680		559,680		559,680		559,680		559,680		5,037,120	
Quality Management Support Services	538,560		538,560		538,560		538,560		538,560		538,560		538,560		4,847,040	
OSI County Consulting Contracts	775,000		775,000		775,000		775,000		775,000		775,000		775,000		6,975,000	
CDSS County Consulting Contracts	517,000		517,000		517,000		517,000		517,000		517,000		517,000		4,653,000	
DGS Fees	175,000		175,000		175,000		175,000		175,000		175,000		175,000		1,575,000	
TOTAL Contract Services	22,374,365		23,050,736		23,750,780		24,475,326		25,225,231		26,001,382		26,804,698		214,250,733	
Data Center Services (FDC)	9,000,000		9,000,000		9,000,000		9,000,000		9,000,000		9,000,000		9,000,000		81,000,000	
FDC Hardware/Software	1,590,769		8,910,000		1,702,123		1,761,697		1,590,769		1,646,446		10,692,000		30,544,530	
OSI Overhead	1,590,514		1,590,514		1,590,514		1,590,514		1,590,514		1,590,514		1,590,514		14,314,626	
Agency Facilities	451,500		451,500		451,500		451,500		451,500		451,500		451,500		4,063,500	
Other	2,309,352		2,309,352		2,309,352		2,309,352		2,309,352		2,309,352		2,309,352		20,784,168	
County Goods & Services																
Total Continuing IT Costs	58.0	43,720,101	58.0	51,715,702	58.0	45,207,869	58.0	45,991,989	58.0	46,570,966	58.0	47,402,794	58.0	57,251,664	522.0	422,589,957
Total Project Costs	58.0	43,720,101	58.0	51,715,702	58.0	45,207,869	58.0	45,991,989	58.0	46,570,966	58.0	47,402,794	58.0	57,251,664	772.0	591,034,722