



Gartner

Technical Architecture Alternatives Analysis Report

CWS/CMS Technical Architecture Alternatives Analysis (TAAA)

23 March 2005

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Executive Summary

1.0 Executive Summary

A major challenge in the development and enhancement of a statewide automated child welfare information system is dealing with the complexity and challenges inherent in fulfilling child welfare services responsibilities. One unique challenge is that there is no “one” clearly accepted practice or approach to the provision of child welfare services. While there are variations in child welfare service practices from a national and local perspective; there is agreement, and corresponding federal requirements, regarding the core outcomes to be achieved – Child Safety, Child and Family Well-being, and Permanency for the Child.



The State of California has embraced this challenge and determined that the future technology direction for the Child Welfare Services/Case Management System (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. In response to requests by the California Legislature and the Federal Health and Human Services Agency Administration for Children and Families (ACF), the California Department of Social Services (CDSS) undertook an extensive analysis (Technology Architecture Alternatives Analysis, or TAAA) to address and link the current and future business needs of child welfare services to a technology direction of CWS/CMS. The results of this analysis yield two critical recommendations:

- **Replace the Existing CWS/CMS with a New California SACWIS System** – To optimize the deployment of the counties’ current business needs (including unfulfilled federal Statewide Automated Child Welfare Information System (SACWIS) requirements) and meet emerging needs to facilitate effective delivery of services, the State should continue maintenance and operations (M&O) of the current CWS/CMS while simultaneously building a new SACWIS application using a web services based Technical Architecture as part of Alternative 3.
- **Develop and Deploy the Four Major Unfulfilled SACWIS Requirements** – Although Alternative 3 is the recommended solution, the Eclipse/Gartner TAAA Team recommends that regardless of the alternative selected, the State adhere to the real service delivery needs and implement the four major unfulfilled SACWIS requirements (Adoptions Case Management, Automated Title IV-E Eligibility Determination, Interfaces to Title IV-A (CalWORKS), Title IV-D (Child Support), IV-E (Foster Care) and Title XIX (Medi-Cal) Systems, and Financial Management for Out-of-Home Care and Adoptions Assistance Payments). While the method for deploying these functions in the CWS/CMS environment requires consultation with federal stakeholders, the business functions are critical to fulfilling the requirements of the counties in providing services for the safety, well-being, and permanence of the child.

The TAAA Report and recommended alternative fully comply with the State's directives¹ by:

Directive	Result	Compliant?
<input type="checkbox"/> The plan shall include, but is not limited to, analyses of both SACWIS and non-SACWIS alternatives, including a cost benefit analysis for each.	<input type="checkbox"/> The TAAA Report provides analyses of each alternative as SACWIS and non-SACWIS implementations and details the cost and benefits of each.	✓
<input type="checkbox"/> Alternatives item amount for technology changes must examine both the technology of the existing system and other technologies that can be readily enhanced and modernized for the expected life of the system, and that employ open architectures.	<input type="checkbox"/> The TAAA Report provides analyses of three primary alternatives, one of which consisted of extending the existing system to meet business needs and two alternatives that focused on web-based architectures utilizing modern technologies and open architectures.	✓
<input type="checkbox"/> Each alternative examined shall consider a strategy that ensures open and fair competition, including a multi-procurement strategy.	<input type="checkbox"/> The TAAA Report details how each alternative was prepared with a strategy that maximized opportunity to promote open and fair competition and a multi-procurement strategy.	✓
<input type="checkbox"/> CDSS shall consult with the County Welfare Directors Association (CWDA) during the development of the plan.	<input type="checkbox"/> The TAAA Report describes the how CWDA, CWS/CMS County Oversight Committee and county users were actively involved during the development of the report.	✓

The TAAA Report provides the basis for a future SACWIS technology direction and approach that focuses on the current needs of child welfare services. While this report is not intended as a request for funding, the total cost of ownership (TCO) analysis provides the basis for making sound decisions concerning the future direction of the SACWIS automation.

1.1 Current Solution Does Not Meet Service Delivery Needs

Two themes have emerged from national experience in the development, implementation, and enhancement of a statewide automated child welfare information system. The first is that most systems are **not seen as easy to use**, that is reflecting and supporting an intuitive approach to supporting child welfare work. Difficulties that have been noted include that systems are not consistent in their approach and look, and they do not provide for efficient completion of routine work processes. Most SACWIS applications are composed of numerous windows that are often difficult for a worker to navigate. Many SACWIS applications in use today do not easily support the basic business and service flow of and between child welfare services work units during the life of the case. Ease of use of a system affects the extent to which it is used by workers in carrying out their basic work processes, and therefore impacts the reliability of the data contained in and derived from the system.

¹ Language pursuant to Budget Act of 2004 (SB 1113, Chapter 208, Statutes of 2004).

The second theme identifies the **fragmentation of information** within many SACWIS systems, which at times, hinders rather than assists social workers in applying a state's practice requirements to their work. Child welfare services are provided to extremely vulnerable populations of families and children, and focused and reliable information is vital to support and validate crucial decisions regarding the safety and well-being of children. SACWIS systems need to integrate easily into a state's model of practice in assessing risk and safety, identifying environmental conditions, parental capacity and patterns of behavior needing to be addressed to ensure the ongoing safety and well-being of children and to expedite permanency. The delivery of child welfare services is complex and, at best, the SACWIS system should consistently support the state's expectation for practice and compliance with law, rules and regulations. At the very least, the SACWIS system should not be a barrier to the realization of the state's practice and compliance requirements.

The Current Solution Does Not Meet Child Welfare Service Business Needs

The State of California's SACWIS experience is consistent with that of other states. The current system was designed in the early 1990s to meet business needs and practices of child welfare services, as they existed in California. At the time CWS/CMS was enacted, there was no centralized statewide system that allowed State or county Child Welfare workers to share information. Each county had its own locally designed method of managing cases, which ranged from manual, paper-file systems to computer-based systems. The different systems made information-sharing inefficient and time-consuming. The implementation of CWS/CMS provided significant automation of manual tasks, reduced the use of local systems and resulted in the largest statewide child welfare case-management system in the United States. The system monitors 730,000² cases with one or more referrals annually. The system has provided a stable environment for eight years in support of child welfare services.

Since CWS/CMS was designed and then implemented in 1997, professional practice, regulation, and program needs have changed significantly. In addition, the productivity demands of a more mobile, technology proficient work force require new tools to take full advantage of the growing skills and capabilities of social workers. Consequently, CWS/CMS is perceived as cumbersome by social workers and does not support service delivery practices in an efficient and effective manner. In fact, many social workers report that current system limitations inhibit the amount of time they can spend in the field serving children, their families, and communities.

"We can make the system work, but it should work for us".

County Case Worker, December 2004

County and State users also indicate that the incorporation of the most critical, unfulfilled SACWIS functionality, regardless of technology platform, would provide significant benefit and would result in improved delivery of services, more effective use of social workers' time, and better quality case data. All of these are critical components to ensure achievement of program outcomes. The business impacts of not providing this functionality are provided in the table below:

² SFY 2005/06 Governor's Budget cited the caseload at approximately 730,000.

Table 1 - SACWIS Business Impacts

Business Impacts of SACWIS Non-Compliance	
Adoptions Case Management	<ul style="list-style-type: none"> ❑ The lack of case management functionality is a barrier to meeting the requirements of recent State and federal laws. ❑ The lack of case management functionality compromises the State's adoption program data. ❑ The existing adoption functionality is insufficient to meet the needs of a rapidly expanding statewide adoption program.
Automated Title IV-E Eligibility Determination	<ul style="list-style-type: none"> ❑ The lack of automation results in an increasingly heavy manual workload for Title IV-E eligibility determination. ❑ The lack of automation results in inaccurate and inconsistent determination of Title IV-E eligibility.
Interfaces to Title IV-A, Title IV-D, IV-E and Title XIX Systems	<ul style="list-style-type: none"> ❑ Multiple barriers reduce service delivery efficiency to troubled families. ❑ Lack of automated information exchange limits the efficiency and productivity of social workers.
Financial Management	<ul style="list-style-type: none"> ❑ Non-compliance impedes accurate and timely authorization, processing, and reconciliation of financial records and transactions for Out-of-Home Care and Adoptions Assistance Payments. ❑ Foster care overpayments/underpayments may be inaccurately applied.

The Current Solution Does Not Align with the Future SACWIS Vision

California's Child Welfare Services (CWS) program serves children who have been abused or neglected reuniting them with their families whenever possible. When a child cannot be safely returned to their family, CWS finds an alternative placement for that child or children. California is dedicated to providing a continuum of programs and services aimed at safeguarding the well-being of children and families in ways that strengthen and preserve families, encourage personal responsibility, and foster independence.

The future SACWIS vision is compelling in its simplicity. That vision is essentially to improve the safety, well-being and permanence of children by enhancing the ability of social workers to do their job in an effective and efficient manner. Clearly, the technical architecture and choices for the future CWS/CMS will not result in opportunity realization, rather the technology will merely

Every child in California lives in a safe, stable, permanent home, nurtured by healthy families and strong communities

CWS Vision

provide a platform by which opportunities may be enabled. This concept is evident in the recurring user complaints that the current system is neither intuitive nor easy to use. The future SACWIS vision provides for a solution that more effectively:

- Automates routine activities (documenting actions and activities) and supports complex

tasks (decision support in child protective services, foster care placements, and case planning).

- Moves beyond “people and data processing” requirements and focuses instead on child service transactions. The system needs to support and validate decisions at all levels of the organization.
- Reflects and supports an intuitive approach to supporting child welfare work.

The State has Committed to Charting a Future SACWIS Technology Direction

As part of the development of the CWS/CMS Strategic Plan, all major stakeholders were involved to determine the needs and directions of the future CWS/CMS. The resulting CWS/CMS Strategic Plan³ outlined the business need for modernizing the current CWS/CMS to a web-based technical architecture to meet the demands for increased linkages to other programs and the need for user mobility.

Subsequently, the CWS/CMS Project Office, with technical assistance from external industry experts, developed the Technical Architecture Strategic Plan (TASP). This document, published in April 2003, outlined a conceptual framework for fulfilling many of the technical projects and policy initiatives identified in the CWS/CMS Strategic Plan. These included improving system performance; making the application more user-friendly; and providing a more open application architecture that would allow enhanced competition for future system development. The TASP is conceptual in nature and does not contain a detailed roadmap for obtaining these objectives. However, it does define the next step to be taken to achieve the desired outcome – a re-architected CWS/CMS.

ACF and State stakeholders agreed in 2004 that the most expeditious means of determining the future technology direction was to conduct a Technical Architecture Alternatives Analysis (TAAA). The TAAA was tasked with comparing three different technology alternatives for CWS/CMS. The three alternatives were described as:

- Alternative 1: Continue with the current CWS/CMS technical architecture.
- Alternative 2: Evolve the current CWS/CMS technical architecture to a web services based technical architecture over time.
- Alternative 3: Continue maintenance and operations (M&O) of the current CWS/CMS while simultaneously building a new SACWIS application using a web services based technical architecture.

In addition, since the current CWS/CMS system also lacks essential functionality required for a compliant SACWIS system, the State required an assessment of the feasibility and impact of completing the following four major unfulfilled SACWIS requirements:

- Adoption case management
- Automated Title IV-E eligibility determination

³ CWS/CMS Strategic Plan, published in June 2002 and updated in December 2003.

- Interfaces for Title IV-A (CalWORKS), Title IV-D (Child Support), IV-E (Foster Care) and Title XIX (Medi-Cal) systems
- Financial management (Out-of-Home Care and Adoption Assistance Payments)

The TAAA was conducted in response to ACF requirements and the Budget Act of 2004 (Chapter 208, Statutes of 2004). The TAAA is expected to provide quantitative data to support a technical architecture decision that improves service delivery capabilities, meets the goals of the CWS/CMS Strategic Plan, and is cost effective. The TAAA must also provide decision-makers with the information necessary to make a determination as to which, if any, of the remaining unfulfilled SACWIS functions must be developed.

1.2 Comprehensive Evaluation of Alternative Solutions

Independent and Objective Analysis of the Feasible Alternatives

The TAAA Team conducted an independent and objective analysis of the three alternatives within the scope of this study. The consultants and firms conducting the analysis (Eclipse Solutions, Gartner Consulting, The Center for the Support of Families, and Software Productivity Research) have no personal or corporate interest in the decision as to the future SACWIS technology direction pursued by the State. Moreover, the process by which the alternatives were analyzed and presented to CWS/CMS and CDSS management was unbiased and none of the alternatives were discarded as potential solutions.

All Three Alternatives are Technically Possible

Based on the high level business requirements (i.e., unfulfilled SACWIS functions, mobility, remote access, etc.), each alternative scenario was developed to conduct like-to-like comparisons among the alternatives. Based on this scenario modeling, each of the three alternatives was deemed “feasible” in terms of meeting the mandatory business requirements of the State. The following three alternatives were analyzed in detail:

Alternative 1: Current System	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS within the limits of the current technical architecture employed by CWS/CMS.
	⇒ In Alternative 1, it is assumed that no major technical application architecture changes will be made to the CWS/CMS application beyond those required to meet programmatic, legislative, and regulatory needs.
	⇒ Under this alternative, the CWS/CMS application will be modified to achieve full SACWIS compliance using the current architecture.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.

Alternative 2: Evolve Current System to Web Services Infrastructure over 8 Years	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS but evolve the CWS/CMS technical architecture to a web-services based infrastructure over time.
	⇒ Functionality addressing California's remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure as part of the evolutionary process.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.
Alternative 3: Develop New Web-Services Based System	⇒ This alternative proposes that the State procure vendor services to build a new fully compliant "California SACWIS" using a web services based technical architecture.
	⇒ Under this alternative, the State would continue to maintain and operate the existing CWS/CMS until the new system is deployed.
	⇒ Functionality addressing California's remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.

Business Drivers Form Basis of Evaluation

Prior to the evaluation of alternatives, the TAAA Team developed a formal evaluation framework to assist with scoring and ranking the three alternatives. The criteria that formed this framework were based on business drivers that were agreed upon by the CWS/CMS County Oversight Committee and CWS/CMS Management Committee during several working group sessions. By employing the evaluation framework, the TAAA Team was able to analyze and rank each alternative within five major areas:

- **Business** – This category carried 20% of the total weighting and was comprised of the criteria surrounding the ability of each alternative's architecture solution to accommodate SACWIS and business functionality, support out-come based operations, and support child welfare services program strategy; usability of the system on each architecture; ability to enable remote system access; and ability to support business operations.
- **Technical** – This category carried 20% of the total weighting and was comprised of the criteria surrounding the ability of each alternative's architecture to serve as a single system of record; function as a single integrated system; be easily scaled to accommodate user, functionality or system growth; be easily managed and maintained (simplicity); provide support for core and non-core functionality; provide flexibility and extensibility to accommodate changing needs; provide architectural openness, such as non-proprietary frameworks and code; easily integrate and interface via standardized means; and deliver new functionality (changes and enhancements) in a timely manner.

- **Total Cost of Ownership** – This category carried 25% of the total weighting and was comprised of the criteria evaluating the total ten-year cost, breakeven point, and timing of cash flows.
- **Time** – This category carried 15% of the total weighting and was comprised of the criteria associated with the time to benefit realization and the time for incremental delivery of benefits/functionality.
- **Risk** – This category carried 20% of the total weighting and was comprised of the criteria associated with the financial, technical, operational, competitive procurement, schedule, and implementation risks.

1.3 Alternative 3 Best Meets the Evaluation Criteria

As a result of the evaluation process, Alternative 3 (continue maintenance and operations of the current CWS/CMS while simultaneously redeveloping a new SACWIS application using a web services based technical architecture) best meets the criteria in all categories except for risk. Alternative 3 clearly provides the best implementation of the business and technical criteria with primary differentiating factors being the ease of overall maintenance and support; ease of supporting functional changes through an integrated, flexible, and extendable architecture; and openness of the architecture. Alternative 3 was ranked best in time for being able to reach full benefit realization with a completely redeveloped system (including the unfulfilled SACWIS and additional business functionality) within 36 months. Alternative 3 was also ranked as the best cost option with the lowest ten-year TCO among all of the alternatives (Alternative 1 - \$1.49B; Alternative 2 - \$1.31B; Alternative 3 - \$1.17B). Detracting factors include one-time development costs that are higher than Alternative 1 (Alternative 1 - \$120M and Alternative 3 - \$136M) and operational risks associated with the development and cutover to a new system and schedule and financial risks common to all large Information Technology (IT) projects. To mitigate these risks and to provide early delivery of existing business functionality, the TAAA Team has recommends that Alternative 3 be implemented as a redeveloped system, which will greatly reduce the initial requirements definition effort. This approach would produce a system that employs a look and feel consistent with the current interface to minimize user impact and includes the enhanced performance and flexibility provided by the new architecture. The development would include updates to address priority deficiencies defined by the user and would establish the environment in which the additional county business needs (including unfulfilled SACWIS functionality) will be developed.

Alternative 2 (continue to maintain and upgrade the existing CWS/CMS but evolve the CWS/CMS technical architecture to a web services based infrastructure over 8 years) ranked second based on its ability to meet the business and technical criteria with the introduction of an open and more flexible architecture. Detracting factors include the highest one-time development costs of all three alternatives (Alternative 1 - \$120M; Alternative 2 - \$183M; Alternative 3 - \$136M) and significant risks related to maintaining two systems across an extended period. Maintaining two systems includes impacting county worker work flow, the complexity of utilizing multiple user interfaces, synchronizing data between the two systems, and supporting redundant requirements. Alternative 2 also scored worst in time to benefit realization by being the last alternative to deliver the full benefits associated with its implementation. Another detracting point is that Alternative 2 is the only alternative that requires the support of two production systems and federal funding would only apply to the costs for one of them.

Alternative 1 (continue to maintain and upgrade the existing CWS/CMS within the limits of the current technical architecture employed by CWS/CMS) ranked last in all evaluation categories except risk. Alternative 1 was assessed as low risk as it represents an operational environment with mature processes and the degree of risk to implement additional functionality, including unfulfilled SACWIS functions, is lower than that of the other two alternatives. Detracting factors include highest overall cost (Alternative 1 - \$1.49B), less flexibility to deliver updates, limited ability to accommodate interfaces, inability to provide security at the level needed, and the complexity involved with new development efforts.

The results of the alternatives evaluation are provided in the following table. The table documents the ranking of each alternative by evaluation category, assigns points relative to the ranking and then applies the relative weighting factors to determine the category score and subsequent final ranking of the alternative.

Table 2 - Aggregate Scoring Model

	Alternative 1				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	3	1	20%	0.20	3
Technical	3	1	20%	0.20	
TCO	3	1	25%	0.25	
Time	3	1	15%	0.15	
Risk	1	5	20%	1.00	
				TOTAL	1.80

	Alternative 2				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	2	3	20%	0.60	2
Technical	2	3	20%	0.60	
TCO	2	3	25%	0.75	
Time	2	3	15%	0.45	
Risk	3	1	20%	0.20	
				TOTAL	2.60

	Alternative 3				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	1	5	20%	1.00	1
Technical	1	5	20%	1.00	
TCO	1	5	25%	1.25	
Time	1	5	15%	0.75	
Risk	2	3	20%	0.60	
				TOTAL	4.60

Business Criteria Supports Selection of Alternative 3

The TAAA Team believes that each of the TAAA alternatives is able to accommodate State and county business requirements. However, in every category, Alternatives 2 and 3 outranked Alternative 1 in the ability to satisfy the business criteria. The primary differentiating factors were the open flexible architecture design found in Alternatives 2 and 3, their ability to accommodate workflow, and their ability to code and deliver functionality more rapidly. While Alternatives 2 and 3 will ultimately provide the same architecture and system, the complexity of utilizing multiple user interfaces, synchronizing data between the two systems, supporting two production systems and the eight-year migration period for Alternative 2 contributed to a lower score in several categories. The final scoring resulted in Alternative 3 receiving the best ranking overall.

Technical Criteria Supports Selection of Alternative 3

As part of the evaluation process, the TAAA Team examined the current architecture, other web-based architectures currently supporting similar case management systems, business processes, and conducted workshops and interviews with key State stakeholders, county user technical staff, and M&O technical staff. Additionally, the technical team developed a vendor survey and conducted interviews with vendors providing development and/or maintenance services on web-based systems to validate findings and refine proposed models. Finally, the analysis of the size of the current CWS/CMS application through function point analysis provided critical information that addressed overall feasibility of the alternatives. The TAAA Team found that Alternative 3 best meets the majority of the technical evaluation criteria. The primary differentiating factors were the maintenance and supportability, ease of integration, flexibility, and extensibility to support functional changes and openness of the architecture.

Total Cost of Ownership Supports Selection of Alternative 3

The TAAA Team estimated the ten-year cost for each alternative and compared costs among the alternatives, using the 2004 Advance Planning Document Update (APDU) costs allocated for the period of State Fiscal Year (SFY) 2006/07 CWS/CMS costs as the baseline. Quantifiable benefits were included in the evaluation to obtain a timeframe in which the investment in the new architecture and/or functionality would payoff. The three criteria analyzed were total ten-year cost, breakeven point, and timing of cash flows. As the following chart indicates, Alternative 1 has the lowest one-time (development) cost, and Alternative 3 has the lowest ongoing (maintenance and operations) cost over time.

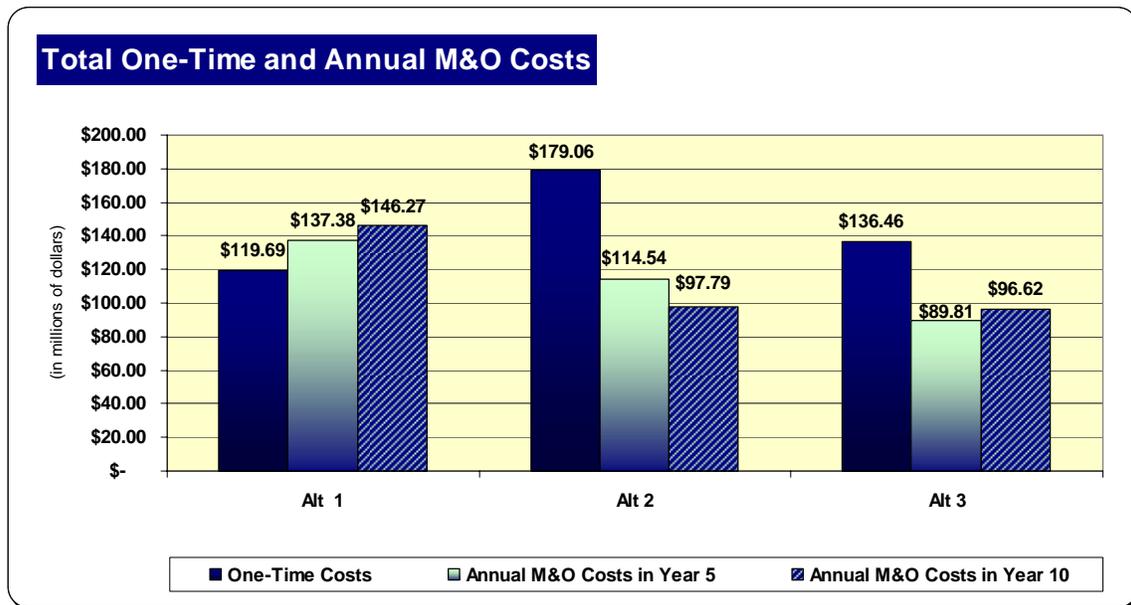


Figure 1 - Total One-Time and Annual M&O Costs

When the total ten-year costs and savings are combined, the net cost/savings provides the amount of return on investment that can be achieved with each alternative. As shown in the table below, Alternative 3 has the lowest total ten-year cost and is able to realize the most benefits during the ten-year period.

Table 3 - Cumulative Net Cost/Benefits

	Alt 1	Alt 2	Alt 3
One-Time Costs	\$ 119.69	\$ 179.06	\$ 136.46
Ongoing Costs (Total for Ten-Year Period)	\$ 1,367.31	\$ 1,119.98	\$ 1,032.76
Total Costs	\$ 1,487.01	\$ 1,299.05	\$ 1,169.22
Total Benefits Realized Over Ten-Year Period	\$ 854.41	\$ 754.56	\$ 947.90
Cumulative Net Cost/Benefits for Ten-Year Period	\$ (632.59)	\$ (544.48)	\$ (221.32)

**Costs and benefits shown in millions of dollars*

Benefits identified in the table above are associated with increased productivity, program efficiencies, and system savings. It is assumed that all benefits will be reinvested back into the CWS/CMS program to reduce the workload of the current social workers who are currently working overtime, as documented in the Senate Bill (SB) 2030 report.⁴

Total Cost of Ownership Supports Development of Unfulfilled SACWIS Functions

The TAAA Team also assessed the funding impacts for each alternative with and without the implementation of the unfulfilled SACWIS functions. As the previous figures illustrate, the overall ten-year cost to implement the SACWIS functionality in Alternative 3 is lower than Alternatives 1 and 2 and decidedly less than continuing with the current system (which currently does not contain the four missing SACWIS functions). The following figure illustrates the breakout of total

⁴ The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a two-week period.

federal and General Funds that will be required for the ten-year period to fund each alternative with the unfulfilled SACWIS functionality and the current system. Overall, more federal and General Funds will be required for Alternative 1 than for the current system. Both Alternatives 2 and 3 will have fewer federal funds available to pay for the new architecture and re-development of existing functionality. However, while Alternative 2 will require more General Funds than Alternative 3 or the current system, Alternative 3 requires the least amount of total General Funds of all the alternatives or the current system.

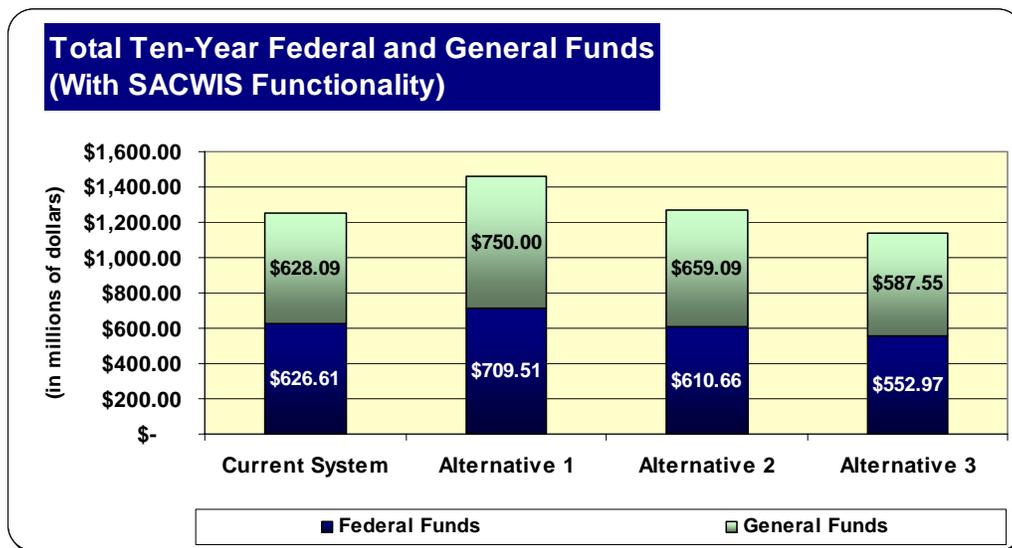


Figure 2 - Total Ten-Year Federal and General Funds (With SACWIS Functionality)

The following figure illustrates the total ten-year impact to federal and General Funds if the State does not implement the four unfulfilled SACWIS functions. While not implementing the four SACWIS functions cost less than implementing them, if the State chooses not to implement the needed functionality, a significantly higher amount of General Funds will be required to support the current system or any alternative selected.

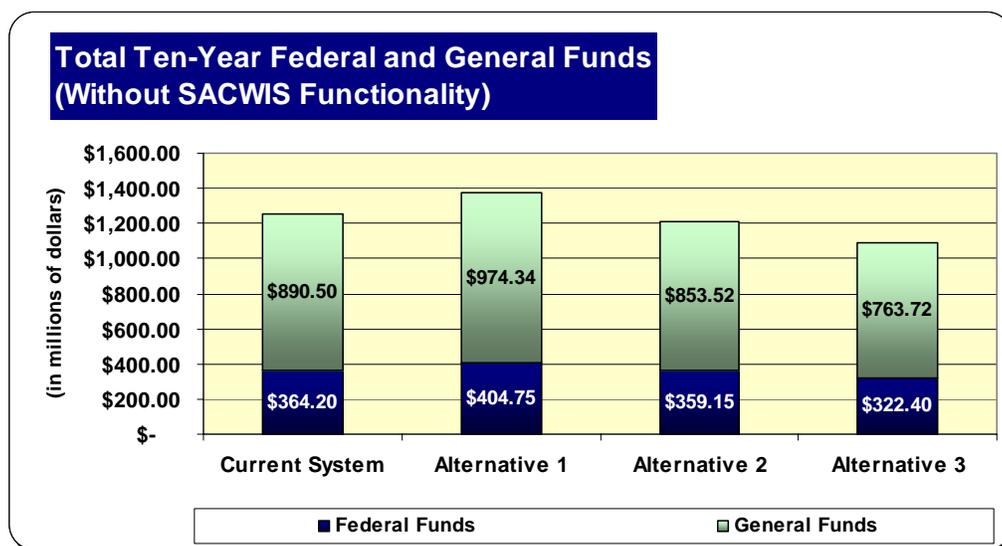


Figure 3 - Total Ten-Year Federal and General Funds (Without SACWIS Functionality)

The TAAA Team determined that Alternative 3 is the best funding option and the State should consider implementing the unfulfilled SACWIS functionality. The following chart, clearly illustrates the significant difference in the funding impact that Alternative 3 has over the current system.

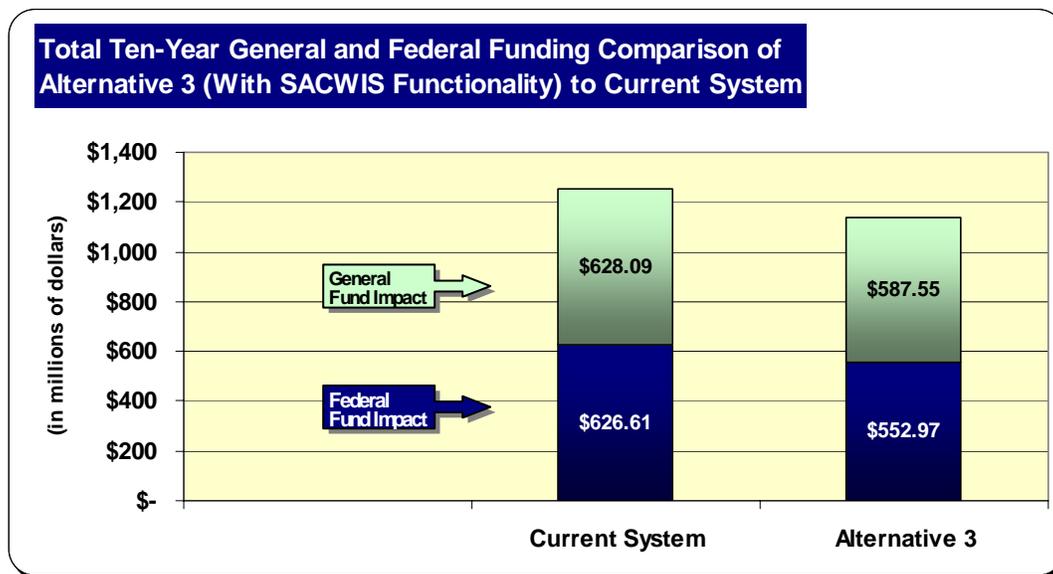


Figure 4 - Total Ten-Year General and Federal Funding Comparison of Alternative 3 (With SACWIS Functionality) to Current System

It is important to note that regardless of the funding impacts of implementing (or not implementing) the unfulfilled SACWIS functionality, the counties have consistently voiced that the missing SACWIS functionality is a critical part of the capability needed to enhance the ability of the social worker to provide essential services to children at risk. While discussions will continue with the Legislature and ACF regarding outstanding SACWIS requirements, the State and counties have clearly communicated the business need for the four missing SACWIS functions.

Timing Criteria Supports Selection of Alternative 3

In this category, the difference between all of the alternatives was minimal. In the time required to realize total benefits, Alternative 3 ranked higher than the other alternatives because it had the shortest time to full benefit delivery, just 36 months for existing CWS/CMS functionality and 36 months when including missing SACWIS functionality after the start of development. Alternative 1 ranked second to Alternative 3 in full benefit realization and was ranked lowest for incremental benefit delivery, as critical functionality (i.e., adoptions case management) would not be fully deployed until Year 5. Alternative 2 was ranked the lowest in time to benefit realization by being the last alternative to deliver the full benefits associated with this alternative. Alternative 2 fared better in the incremental delivery of benefits category in its ability to deliver adoptions functionality by the third year. However, Alternative 3 received the best overall ranking in this category.

Risk Criteria Supports Selection of Alternative 1

The risk category covers six risk areas – financial, technical, operational, competitive procurement, schedule, and implementation. The alternative with the lowest overall risk in all but one category was Alternative 1. Since Alternative 1 represents an operational environment with mature processes, the degree of risk to implement additional functionality, including unfulfilled SACWIS functions, is lower than that of the other two alternatives. Alternative 1 had the highest risk among the alternatives when considering the risk of conducting competitive procurements for related goods and services. Alternative 2 was ranked the highest overall risk because of the impact to county operations, the complexity of synchronizing data, and support of dual production systems. The principal risks associated with Alternative 3 include operational risks associated with the development and cutover to a new system as well as schedule and financial risks common to all large IT projects. To mitigate the risks with Alternative 3, the TAAA Team recommends that the State essentially redevelop existing CWS/CMS functionality on new technology platforms without making significant changes to functionality or look and feel prior to initial deployment. This approach minimizes user impact and includes the enhanced performance and flexibility provided by the new architecture. The development would include updates to address priority deficiencies defined by the user and would establish the environment in which the additional county business needs (including unfulfilled SACWIS functionality) will be developed.

1.4 Alternative 3 Provides the Best Long-Term Solution

As a result of the analysis and evaluation, Alternative 3 received the best overall ranking and highest score among the alternatives. The TAAA Team recommends that the State pursue this alternative based on the analysis presented in the TAAA Report. Overall, Alternative 3:

- Provides the best solution to meet the current and future needs for the delivery of child welfare services.
- Establishes a new strategic technology direction that meets the needs of county, State and federal stakeholders.
- Provides for the lowest TCO for SACWIS automation.
- Promotes open competition for the procurement of goods and services.

The TAAA Team further recommends that the State act to implement the unfulfilled SACWIS functionality based on the priority of the business needs defined by the CWS/CMS users. In particular, the adoptions case management functionality and automated interfacing of information between systems will provide social workers and management with a significant improvement in the capture, processing, and reporting of case data; resulting in greater efficiency in service delivery and improved quality of data reporting. The State's implementation of the unfulfilled SACWIS functions will:

- Provide the best solution to meet known business requirements for the delivery of child welfare services and provides social workers with the necessary tools to ensure Child Safety, Child and Family Well-being, and Permanency for the Child.
- Demonstrate willingness to meet federal requirements for SACWIS compliance and lays the foundation for future SACWIS completion.

- Result in a lower TCO for SACWIS automation due to federal financial participation.
- Promote open competition for the procurement of goods and services and provides greater choices to the State and federal stakeholders.

Though the State has the option of deciding not to fulfill one or all of the remaining SACWIS functions, this decision would be made despite both business need and financial justification.

1.5 Roadmap for the Future

Alternative 3 provides a new strategic technology direction for California's CWS/CMS. The detailed planning and execution of this new direction will be challenging, but will provide significant benefits to children, their families and communities as social workers become equipped to more effectively perform their jobs.

The TAAA Team recommends that the State prioritize the following additional functionality in the future California CWS/CMS:

- **Adoptions Case Management Functionality** – Adoptions case management functionality is necessary to expedite the adoption process to reduce the number and length of foster care placements. The way to achieve the best child and adoptive parent match is for case workers to quickly identify and document a child's medical, behavioral, and cultural needs. Adoptions case management would achieve that goal by improving adoptions data quality and the achievement of permanence.
- **Data Warehouse Functionality** – A data warehouse will provide the necessary reporting capabilities for non-technical county social work staff to monitor their workload, and measure outcome performance as mandated by the federal government and the Legislature (Assembly Bill (AB) 636, Chapter 678, Statutes of 2001). The CWS/CMS currently does not provide standard or ad hoc graphical reports for social work supervisors and management to easily track their progress toward achieving improved outcomes. The TAAA Team recommends the State provide uniform statewide capabilities to enable counties to monitor their performance, improve data quality and achieve program outcomes.
- **Mobility Support** – Mobility is a critical component for improved social work practice resulting in better outcomes for children. Identifying foster home availability and initiating placement while in the field will result in less disruption to the child. Additionally, workers need the ability to enter critical case information in a timely manner from the field in order to achieve improved data quality and the achievement of program outcomes.

Should the State adopt the proposed strategy, the TAAA Team further recommends the roadmap for Alternative 3 be adjusted to provide an early implementation of the data warehouse and mobility infrastructure. These high-priority needs can be implemented as the first stages of Alternative 3 and will provide county and State users with benefits within the first year of implementation. These recommended roadmap adjustments include the proper sequencing to ensure specific technical components are in place to support the timing of these implementations. However, as part of the planning process, it is advised that the roadmap be reviewed with key stakeholders to ensure the top priorities are properly defined.

Background, Purpose, and Scope

2.0 Background, Purpose, and Scope

2.1 Background

The CWS program is a federally mandated program operated by each of the 50 states. California is one of 11 states that operate on a state supervised/county-administered model of governance for the CWS program. Under this system, each of California's 58 individual counties administers its own child welfare program; while the CDSS, responsible for overall guidance, monitors and provides support to counties through regulatory oversight, administration, and input on the development of program policies and laws.

The CDSS' Children and Family Services Division (CFSD) is the single state agency responsible for CWS policy development, program management, and oversight. CFSD fulfills this role through a broad spectrum of activities and tasks. CFSD secures federal and State funding to support CWS programs; conducts research and develops new programs and services; provides oversight and evaluation of local and statewide demonstration projects; provides statewide "best practices" training for social workers; coordinates scholarships for social work students; helps formulate post-secondary social services curriculums; supervises ongoing county program operations; and is the project sponsor that maintains overall responsibility for CWS/CMS. CDSS also provides direct services such as adoption placements.

This approach to child welfare services allows for overall program management and objectives to be set by the State; and allows counties local control in CWS program operations to reflect their communities' standards regarding child welfare services.

The CWS/CMS was originally implemented in 1997, with continued development through rollout in 1998. Currently the State is in the M&O phase of the project, with only minimal new development activity occurring. The system supports all 58 California counties, the California Department of Social Services, and has over 19,000 users identified. The current implementation has incorporated a majority of the required federal SACWIS requirements, yet four (4) of the most significant and critical components of SACWIS functionality remain unfulfilled, specifically:

- Adoption case management;
- Interfaces for Title IV-A (CalWORKS), Title IV-D (Child Support), IV-E (Foster Care) and Title XIX (Medi-Cal) systems;
- Automated Title IV-E eligibility determination; and
- Financial management (Out-of-Home Care and Adoption Assistance Payments).

2.2 Purpose

The State of California contracted technical consulting expertise to conduct an independent analysis of the best approach to resolve the problems and challenges faced by the existing CWS/CMS technical architecture. This project is known as the Technical Architecture Alternatives Analysis (TAAA)⁵. Eclipse Solutions (Eclipse), Gartner Consulting (Gartner), The Center for the Support of Families (The Center), and Software Productivity Research (SPR), collectively known as the TAAA Team, performed this analysis.

The primary objective of the TAAA Team was to analyze the technical alternatives and provide a TCO comparison between each of the three alternatives, which included:

- Alternative 1 - Continue with the current CWS/CMS Technical Architecture (Status Quo);
- Alternative 2 - Evolve the current CWS/CMS Technical Architecture to a web services based Technical Architecture over time (Evolve and Build); and
- Alternative 3 - Continue maintenance and operations (M&O) of the current CWS/CMS while simultaneously building a new SACWIS application using a web services based Technical Architecture (Replace).

The TAAA analysis was also to include a determination of the appropriateness of implementing the unfulfilled SACWIS requirements from a business and financial perspective.

To accomplish the purpose and objective of this analysis, the TAAA Team was structured to assist the State with an experienced consulting team that understands the need for the TAAA, thoroughly understands and has utilized the Health and Human Services Data Center (HHSDC) Systems Integration Division's (SID) Best Practices, and is experienced at assessing technology alternatives with a focus on reducing risk and TCO. Eclipse teamed with Gartner to leverage the strength of their robust methodologies, technical architecture models, and expertise.

In addition to Gartner, Eclipse enlisted the services of The Center for this project. The Center is a human services consulting group, nationally recognized as experts in programs related to children and families, bringing many years of expertise working with federal SACWIS requirements. Finally, Eclipse utilized the expertise of SPR to conduct a function point analysis of the existing CWS/CMS to gain a better understanding of the application size; the impact of changes or enhancements to the current application; and to size the new application.

2.3 Scope

The scope of the alternatives analysis was to develop a TCO comparison of the alternatives. The TCO includes the costs to acquire the system – the hardware and software development costs – and the long-term maintenance and operational costs. For the purposes of the TCO analyses, long-term was defined as 10 years. The alternatives considered are as follows:

⁵ The TAAA Report is an informational report that discusses the CWS/CMS technical assessment and cost analysis aspects of the TCO comparison. The TAAA Report is not a funding document, i.e. Feasibility Study Report (FSR).

Alternative 1: Current System	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS within the limits of the current fat client ⁶ technical architecture employed by CWS/CMS.
	⇒ In Alternative 1, it is assumed that no major technical application architecture changes will be made to the CWS/CMS application beyond those required to meet programmatic, legislative, and regulatory needs.
	⇒ Under this alternative, the CWS/CMS application will be modified to achieve full SACWIS compliance using the current architecture.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.
Alternative 2: Evolve Current System to Web Services Infrastructure over 8 Years	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS but evolve the CWS/CMS technical architecture to a web services based infrastructure over time.
	⇒ Functionality addressing California's remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure as part of the evolutionary process.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.
Alternative 3: Develop New Web-Services Based System	⇒ This alternative proposes that the State procure vendor services to build a new fully compliant "California SACWIS" using a web services based technical architecture.
	⇒ Under this alternative, the State would continue to maintain and operate the existing CWS/CMS until the new system is deployed.
	⇒ Functionality addressing California's remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.

For each of these alternatives, the existing CWS/CMS will continue to be maintained as required to meet programmatic, legislative, and regulatory needs during this parallel development effort. However, no major technical application architecture changes will be made to the legacy system. Also included in the analysis of the three alternatives is the evaluation of the following four critical unfulfilled SACWIS requirements and the assessment of implementation and operational costs for each:

⁶ *Fat client: A client-centric computing model where software must be installed on each client (computer) in a network. This often requires that each client be upgraded to the same level.*

- Adoption case management;
- Interfaces for Title IV-A (CalWORKS), Title IV-D (Child Support), Title IV-E (Foster Care), and Title XIX (Medi-Cal) systems;
- Automated Title IV-E eligibility determination; and
- Financial management (Out-of-Home Care and Adoption Assistance Program Payments).

The TAAA Team analysis describes the technical and business benefits, limitations, and risks of each alternative and provides cost comparisons documenting the long-term TCO for each associated alternative. Each alternative clearly identifies technical architecture components (hardware and software) used to arrive at the costs for that alternative. The TAAA Team is providing the State with this report, which includes a fully documented description of the TCO information and the team's recommended alternative, to help the State make a well-informed decision regarding the best alternative.

Providing TCO information related to federal SACWIS compliance required the TAAA Team to develop two distinct types of information. The first was the cost to build, implement, and operate the remaining unfulfilled federal SACWIS compliant technical functionality for each of the three alternatives. The second was federal funding ramifications, based on whether the CWS/CMS is considered a federally compliant or non-compliant SACWIS.

Following the completion of the alternatives analysis, the TAAA Team will perform the following tasks:

- Assist with preparation of State and federal approval documents required to procure development vendor services. This will entail incorporation of the TAAA results into State and federal document formats acceptable for submission to the State and federal Control Agencies. Examples of the documents to be prepared include Advance Planning Document Updates (APDUs), Statements of Work (SOWs), Budget Change Proposals (BCPs), and Feasibility Study Reports (FSRs);
- Assist with acquisition planning and support tasks required to procure development vendor services, following the required State and federal project approval processes; and
- Perform knowledge transfer to State staff regarding results of the TAAA final report and the basis of the results.

2.4 Key Tasks

The TAAA project includes several key tasks and activities in support of the development of the TAAA Report, approval documents, and technical requirements. These key tasks and activities include:

Table 4 - Key Tasks Summary

Technical Architecture Alternatives Analysis – Phase 1			
Task	Activity	Schedule Date	Status
Technical Methodology and Approach Document	Provide a detailed description of the methodology that will be used to perform the TAAA project.	November 23, 2004	✓
Baseline Document	Analyze and document the business, technical and fiscal baseline of the current environment. The established baseline is then used to develop the alternatives analysis.	December 16, 2004	✓
TAAA Report – 1st Draft	Document the results of the Technical Architecture Alternatives Analysis including: Target Architectures, TCOs, Comparison of Alternatives, SACWIS Completion Analysis, and Recommended Alternative.	February 9, 2005	✓
TAAA Report – 2nd Draft	Update to incorporate State and county comments	February 25, 2005	✓
TAAA Report – Final	Update to incorporate State, county and federal comments.	March 25, 2005	✓

2.5 Next Steps

Upon completion of the TAAA analysis, CWS will move forward with the following activities:

Table 5 - Next Steps Summary

State and Federal Approval Documents – Phase 2			
Task	Activity	Due Date	Status
Analysis of Vendor Recommended Alternative	Review of State and county business priorities to verify (financial and technical) impact of recommendation and determine specific tactical and strategic direction for implementation.	April/May 2005	
State Recommendation	Document and communicate to stakeholder community specifics of State recommended solution and timeline for next steps	June 2005	
Preparation of State Feasibility Study Report (FSR)	Refine the recommended alternative into a State of California FSR including: development of business case, proposed solution, project budget and schedule, project management and risk management plans.	3 rd Quarter 2005/06	
Preparation of Federal As-Needed APDU Document	Prepare an As-Needed Advance Planning Document Update (APDU) for federal approval that documents the chosen technology alternative.	3 rd Quarter 2005/06	
Acquisition Support – Phase 3			
Task	Activity	Due Date	Status
Preparation and Delivery of Technical Requirements for Development Vendor Request For Proposal (RFP)	Prepare technical requirements for a development vendor RFP based on the selected technology alternative and the business needs established in the FSR and APDU.	Completion of Phase 2 + 6 Months	

Approach and Methodology

3.0 Approach and Methodology

This section discusses the primary methodologies utilized to perform the alternatives analysis. This includes the methodologies for performing the Total Cost of Ownership analysis, Function Point Analysis, and Risk Assessment.

3.1 Approach

The TAAA Team followed a structured approach to defining the TAAA for CWS/CMS and worked closely with the State to understand clearly the current and future business and IT direction of the CWS/CMS program. The TAAA Team conducted a detailed analysis of the application architecture alternatives, including a TCO based on these alternatives. Each of the three (3) alternatives were analyzed to determine the technical and business benefits, limitations, and risks associated with implementing the remaining SACWIS compliant technical functionality, including cost comparisons that documented the TCO over the 10 year period for each associated alternative. The TAAA Team established a decision making process and the criteria that key stakeholders leveraged to select from the alternatives. The general approach to this study is straightforward and based on six major analytical tasks:

- **Future State and Strategic Business Direction** - Determine future business state as defined by business requirements, including an evaluation of the State's business and programmatic needs for implementing major unfulfilled SACWIS functionality, and requirements for mobility, remote access, etc. The TAAA Team conducted a number of site visits, interviews and workshops with county and State representatives, including case workers, county management and State management and executives. The TAAA Team also reviewed previous APDUs and FSRs to better understand the historical and future needs of the program as expressed in these documents. Finally, the TAAA Team relied on the experience and expertise of "The Center" to provide additional context for the SACWIS program.
- **Baseline of the Current State** - Establish a baseline to document the current state with regard to business, technical and financial elements of the CWS program and automation (see Appendix F – Baseline Document). In order to accomplish this objective, the TAAA Team reviewed a large number of State, federal and IBM authored documents, conducted interviews and site visits with State and county stakeholders and reviewed the programmatic and business requirements defined within federal SACWIS regulations and State Child Welfare policy.
- **Evaluation Framework** - Establish an evaluation framework for comparing the three alternatives. The TAAA Team developed a comprehensive evaluation and decision making model and process based on best practices and numerous workshops and discussions with county and State stakeholders. The model included criteria that were weighted based on priorities of the various stakeholders. It is important to note that the TAAA Team incorporated the perceived and stated needs of all stakeholders, including federal, county, and State interests.
- **Target Architecture** - Develop architecture scenarios for the target state of the three alternatives and confirm the gaps between the baseline and target state. The TAAA Team started with the three general alternatives required by the TAAA SOW and refined those

alternatives in order to provide a robust architectural framework for analysis and cost estimation. The TAAA Team incorporated mandatory requirements (i.e., mobility, remote access, etc.) and normalized the alternatives to ensure that a direct cost comparison could be made. Each alternative was constructed in a way that maximized the viability or feasibility of that alternative.

- **TCO Analysis** - Determine one-time and ongoing costs and timelines for achieving the target state for each alternative scenario. The TAAA Team used models constructed for each alternative in order to establish baseline and future costs associated with each alternative. For example, key cost components such as application development, application support, business and IT operations, etc., were modeled and estimated based on a variety of techniques that included both bottom up and top down costing techniques. Future growth assumptions and models were developed to provide a realistic projection of costs. The TAAA Team placed particular emphasis on the application development estimation effort, utilizing multiple approaches to determine cost and size of the system for redevelopment/extension purposes. This “Function Point” analysis included the following steps:
 - Use of external estimation experts (SPR), who calculated the size of the existing CWS/CMS application based on industry standard methods
 - Gartner benchmarking data that provided “uplifts” to the basic SPR estimate to accommodate for the complexity of the environment
 - Comparison to other state SACWIS systems, using cost to size comparisons
- **Evaluation and Comparison of Alternatives** - Evaluate and score each alternative against the evaluation criteria. Following development of the target architectures and TCO analysis, the TAAA Team confirmed the evaluation criteria with State and county stakeholders and conducted an independent scoring of the alternatives against the stated criteria. The TAAA Team then conducted a decision workshop with State and county stakeholders to confirm the analysis, accept the recommendation and make a consensus decision as to the future technical direction of CWS/CMS

The Figure below provides a graphical representation of the basic approach that the TAAA Team utilized:

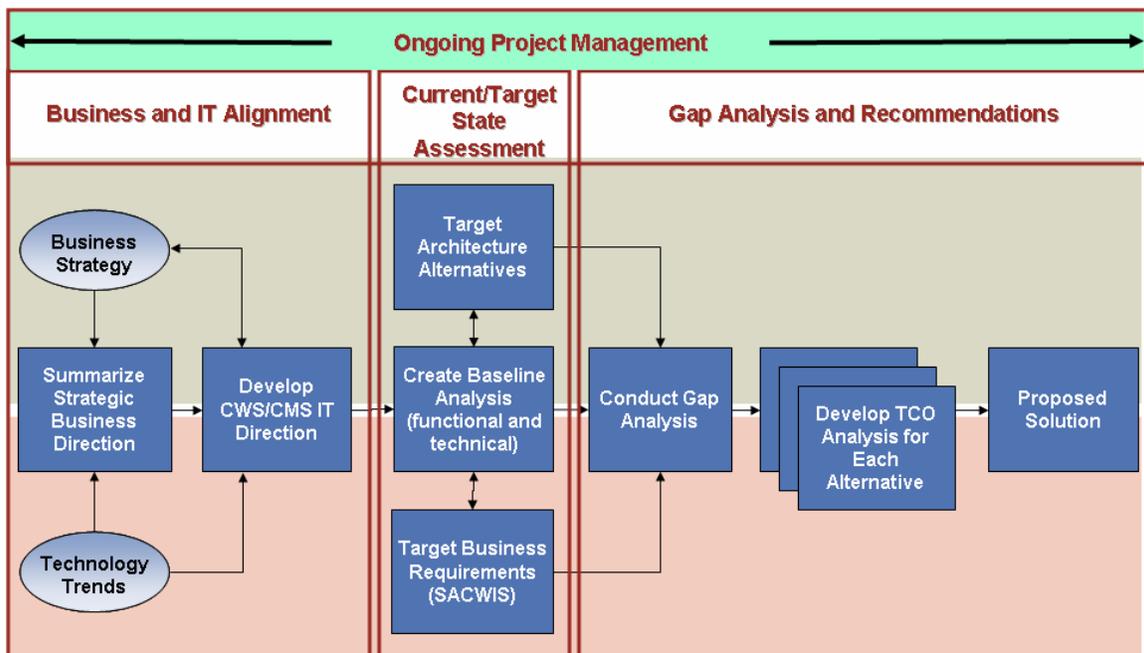


Figure 5 - Project Management and Systems Engineering Analysis / Alternatives Analysis Approach

3.2 Methodology

The primary methodologies utilized during the alternatives analysis include the TCO, Function Point Analysis, and Risk Analysis. Each of these methodologies served to provide critical insight necessary to accurately assess and evaluate the three alternatives.

3.2.1 Total Cost of Ownership

A TCO analysis includes all costs associated with the acquisition, development, deployment, implementation and ongoing maintenance and operations of a system across a given time period. The costs include one time development, hardware and software purchases, training, staffing, and facilities. In a TCO, the costs are categorized in the way money is spent by the organization, e.g., staffing costs, vendor costs, data center costs. This in turn provides an organization valuable information in which to assess their overall spending and look for cost reduction improvements.

The TCO methodology centers around four basic steps: 1) Identify existing cost data; 2) Develop a TCO model for each alternative; 3) Conduct the TCO Analysis; and 4) Develop Final TCO. The first step identified the sources of data, whether it existed or needed to be developed. The second step defined the one-time and ongoing cost model for each architectural alternative, by looking first at the current set of functionality and second, the county business needs. The third step involved filling the models with cost data for discrete cost elements that drive different cost profiles for each alternative. Lastly, the models were finalized for each alternative, showing the TCO figures for CWS/CMS as implemented in each architectural alternative, with separate cost for both the “current” system and the system including the unmet SACWIS functionality.

The figure below provides a high level conceptual framework for the TCO analysis. As depicted, the TAAA Team analyzed and documented existing CWS/CMS costs in terms of broad cost categories such as business operations, application, infrastructure and IT operations costs. For each alternative, one time and ongoing cost elements (i.e., staff, hardware, software) and funding implications were considered for both SACWIS and non-SACWIS options.

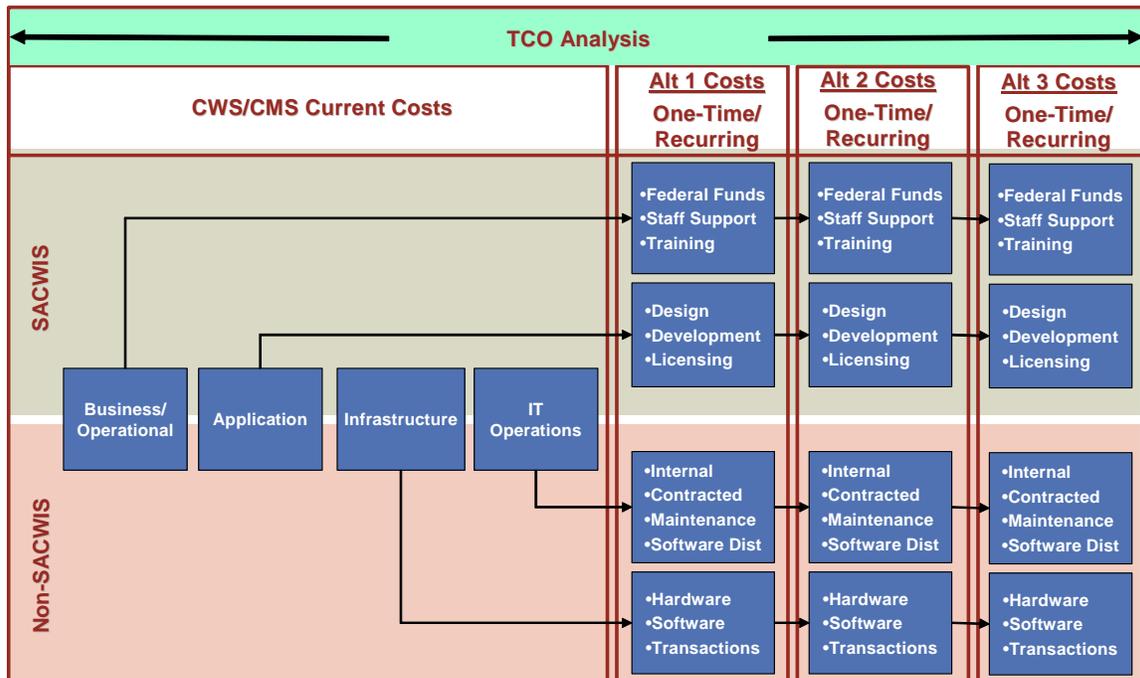


Figure 6 - High Level TCO Framework

3.2.2 Function Point Analysis

Software application size is a key input to estimating the cost, effort, and schedule associated with the development of any complex application, including CWS/CMS. One of the main objectives of our analysis was to independently estimate the size of the existing CWS/CMS application functionality along with required enhancements, in order to build the comparative TCO models under each alternative. There are a number of techniques and numerous tools available for size estimation; many of which are included in available software cost models. It is generally recommended that small projects (usually, less than \$50K) use either a bottom up or top down estimate to generate a size estimate. For medium sized projects (\$50K to \$1M), a metric based approach should be employed (e.g. line of code, function point, object point).

For larger projects such as CWS/CMS, it is appropriate to use two or more metric based approaches and models and correlate the results. The most popular metric based approaches for estimating software size are source lines of code (SLOC), function points (FP) and object points (OP). Lines of code are particularly valuable for real time and embedded systems with little user interface. This was the original metric based approach and was popularized by the Constructive Cost Model (COCOMO). The Function Points approach employs user interface features to estimate program size. It is the most common technique for estimating management information system (MIS) application size. Object metrics have become feasible only with the

popularization of object-oriented development and use objects as a predictor of program size. For this project we utilized both Function Point Analysis as well as the Analogy Model to determine the size of the CWS/CMS. Analogy Models estimate program size by comparison with one or more software applications with a similar user base and scope of business process support.

The Function Point Analysis (FPA) methodology used for the TAAA project is an industry recognized methodology for determining the overall size of a software application. Function point analysis centers around seven basic steps: 1) Determining the type of function point count; 2) Identifying the counting scope or boundary; 3) Identifying data functions; 4) Identifying the transactional functions; 5) Determining the unadjusted count; 6) Determining the adjustment for complexity; and 7) Calculating the adjusted function point count. We used these results to provide estimated project effort, scheduling, and costs.

In its simplest terms, function points count the externally visible aspects of software products: inputs to an application, outputs from an application, user inquiries, the data files updated by the application, and the number of interfaces to other applications. These items are then weighted by their complexity factors, the total of all these represent the function point count of the application. Software Productivity Research (SPR, a Capers Jones Company), one of the pioneers and thought leaders of the software sizing professional services industry, performed the CWS/CMS function point count by reviewing all available requirements and user training documentation on both CWS/CMS and the additional SACWIS functional requirements.

The Function Point counts were then fed into three separate cost estimating models in order to produce three independent cost estimates for cross validation and eventual convergence. The first model is a software estimating tool (Knowledge Plan) developed and used by SPR in their professional practice. This software produces costs and schedule estimates based on a number of input factors including size in Function Points. The second model is a proprietary model developed by the Application Development benchmarking group within Gartner Measurement. This model is based on a continuously refreshed database of client information and their unique experiences with software development projects. The model takes into consideration a variety of factors including productivity rates from projects with similar profile and characteristics, management overhead, unique testing requirements, regulatory and political factors, rework and risks in order to produce a cost estimate for the project. The third model is an experiential based model maintained by Eclipse Solutions based on their experience of working as a Quality Assurance and Independent Verification and Validation (IV&V) consultant on a number of California government and Welfare related systems. Each model produced an independent high and low cost estimate for the development of the application and the required SACWIS enhancements. After close examination of the range of estimates based on the different models and approaches, the team reached consensus on using an average of the low and high estimates from all three models. This approach is very similar to the Wideband Delphi technique (team based, collaborative estimating) with the exception that the independent estimates were based on metrics based models.

Finally, the results of the analysis were compared to the experience of other States (Analogy Model) that have built similar SACWIS systems based on cost data collected and maintained by The Center. The detailed analysis can be found in Appendix H – Function Point Analysis Data to this document.

3.2.3 Risk Management

Risk management is a continual process that occurs in all phases of the project. It is critical to identify project risks early in the project as part of project planning. Project risks should be identified in terms of specific concerns, problems, or possible future occurrences that could result in negative impacts on project budget, schedule, or quality. For the purpose of the TAAA project, we have defined six risk categories that include:

1. **Financial** – the risk of deviation from the proposed budget.
2. **Technical** – the risk related to the complexity of development and implementation.
3. **Operational** – the risk associated with disruption to current operational processes and routines.
4. **Competitive Procurement** – the ability to provide for market competitiveness.
5. **Schedule** – the risk of deviation from the proposed schedule.
6. **Implementation** – the risk or complexity associated with implementation.

While risk management and analysis are important components of most projects, the abbreviated nature of the TAAA required a more condensed and less formal risk process. The TAAA Team categorized and prioritized potential risk items. As this is just the Alternatives Analysis, risk mitigation strategies will be presented within the FSR for identified risks. For this phase of the TAAA Project, only high criticality risks have been defined.

Additional details on the approach and methodologies utilized for the TAAA are available in Appendix G – Technical Methodology and Approach Document.

Current Environment

4.0 Current Environment

This section documents the current state with regard to business, technical, and financial elements of the CWS program and automation. To accomplish this objective, the TAAA Team reviewed a large number of State, federal, and IBM authored documents; conducted interviews and site visits with State and county stakeholders; and reviewed the programmatic and business requirements defined within federal SACWIS regulations and State child welfare policy. These baseline findings were used as the starting point for analyzing the three alternatives and performing all comparisons.

This section is a high-level summary of key points and discussion of the CWS/CMS business, technical and financial baselines. Further details on the current environment are available in Appendix F – Baseline Document.

4.1 Business Baseline

4.1.1 CWS/CMS Program

The CWS program is organized into programs that together, form a continuum of efforts aimed at safeguarding the well-being of children and adults in ways that strengthen and preserve families, encourage personal responsibility, and foster independence. Generally, the continuum can be broken down into four broad categories:

- Programs and services intended to prevent abuse or strengthen families;
- Programs and services intended to remedy the effects of abuse or neglect (e.g., emergency response, family maintenance and family reunification);
- Programs and services that provide for the out-of-home care of children (e.g. Foster Care and Relative Home Placements); and
- Programs and services that provide for the permanent removal of children from abusive homes (e.g. adoptions, legal guardianship, kinship care).

In 1989, SB 370 (Chapter 1294, Statutes of 1989) authorized the development and implementation of a statewide computer system to automate the case management, services planning, and information gathering functions of child welfare services. CWS/CMS is California's version of the statewide computer system. After the project had started, SACWIS requirements were added through federal regulations.

Each county welfare department administers the Child Welfare Services (CWS) program. The functional business process is generally started when a call comes through the abuse hotline and ends when a child is returned home, provided emancipation, appointed guardianship, or adopted.

As of September 2003, the California CWS workload included:

- 730,000⁷ children with one or more referrals; and
- 74,000⁸ children in foster care.

4.1.2 Business and Organization Architecture

4.1.2.1 Organization Mission

California's CWS program serves children who have been abused or neglected, reuniting them with their families whenever possible. When a child cannot be safely returned to their family, CWS finds alternative placement for that child or children. California is dedicated to providing a continuum of programs and services aimed at safeguarding the well-being of children and families in ways that strengthen and preserve families, encourage personal responsibility, and foster independence. California's Child Welfare Services program is a broad program that focuses on:

- Preventing child abuse;
- Protecting and promoting the well-being of children who have been abused, exploited, or neglected by their parents or other caretakers;
- Assisting abusive or neglectful parents or other caretakers;
- Ensuring safe, permanent homes for children who have been abused or neglected (by reuniting them with their parents or finding adoptive homes, legal guardians, or other permanency options); and
- Assisting older children to develop independent living skills so that they can transition to healthy adulthood.

The vision is essentially to ensure every child in California lives in a safe, stable, permanent home, nurtured by healthy families and strong communities.

4.1.2.2 Structure

The project's organization chart, depicted in the following figure represents the CWS/CMS oversight, governance, and management structure to accomplish the program's mission and vision. Also depicted on the chart is the external oversight function of multiple State-level agencies. The following summarizes the key aspects of the organization and governance composition:

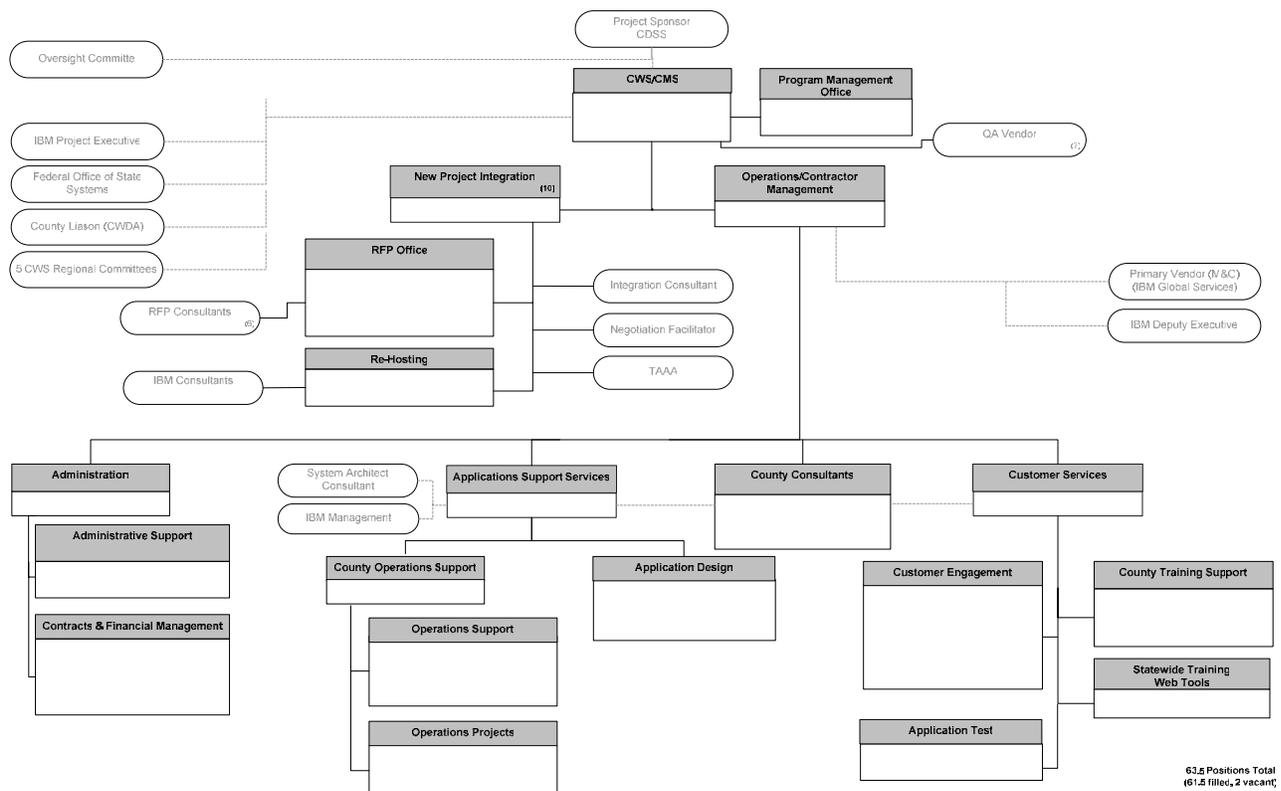
- The oversight activities focus on both State approval of application maintenance requests and on the activities necessary to ensure the quality and timeliness of maintenance and operations services.
- Governance is represented by the CWS/CMS Oversight Committee (OSC) and CDSS. CDSS contracts with the Health and Human Services Data Center (HHSDC), via an interdepartmental agreement, for the management of the CWS/CMS.
- Project management of CWS/CMS is the responsibility of a designated HHSDC Deputy

⁷ SFY 2005/06 Governor's Budget cited the caseload at approximately 730,000.

⁸ SFY 2005/06 Governor's Budget cited the average monthly number of children aided by Foster Care as 74,283.

Director, who staffs the project through a combination of State, vendor, and consultant resources. The Deputy Director is responsible for all project activities performed by vendor, consultant, and State staff. The Deputy Director manages the scope, cost, and schedule of all project activities utilizing industry and best practices⁹.

- The independent Quality Assurance (QA) vendor works with the project manager to ensure the project is managed according to best practices, also providing independent review of project deliverables and reporting to the external State control agencies.
- The Independent Verification and Validation (IV&V) vendor works with the project manager to provide an independent review of the project deliverables.¹⁰



63.5 Positions Total
61.5 filled, 2 vacant

Figure 7 - CWS/CMS Organizational Structure

4.1.2.3 Goals and Objectives

The provisions of SB 370 laid out specific goals in the development of a statewide child welfare system. CWS/CMS has been designed to:

- Provide CWS workers with immediate access to child, family, and case-specific information in order to make appropriate and timely case decisions;

⁹ Refer to HHSDC Best Practices Web site at <http://www.bestpractices.cahwnet.gov/>

¹⁰ Procurement of IV&V vendor is in progress.

- Provide CWS workers with current and accurate information to effectively and efficiently manage their caseloads and take appropriate and timely case management actions;
- Provide State and county administrators with the information needed to administer programs and monitor and evaluate the achievement of program goals and objectives;
- Provide State and county CWS agencies with a common database and definition of information from which to evaluate CWS; and
- Consolidate the collection and reporting of information for CWS programs pursuant to State and federal requirements.

At the time SB 370 was enacted, no centralized statewide system existed to allow State or county child welfare workers to share information. Each county had its own locally designed method of managing cases that ranged from manual, paper-file systems to computer-based systems. The different systems made information sharing inefficient and time-consuming.

4.1.3 **Current Functional Baseline**

The county welfare department administers CWS. From a high-level perspective, the CWS program consists of four traditional service components that are as follows:

- **Emergency Response (ER)** – the initial intake point for the program in which social workers respond to and investigate reports of abuse or neglect;
- **Family Maintenance (FM)** – provides services to prevent abuse or neglect while the child remains in his or her home;
- **Family Reunification (FR)** – provides services to enable safe return of the child to the family while the child is in temporary care (e.g., foster care); and
- **Permanent Placement (PP)** – provides management and placement services to provide a permanent long-term alternative (i.e., guardianship or adoption) to children in temporary care who cannot be returned to their families.¹¹

A high-level picture of the CWS process is depicted below.

¹¹ SACWIS Functionality Analysis Report, Title IV-A Interface, July 27, 2001, Logicon - A Northrop Grumman Company

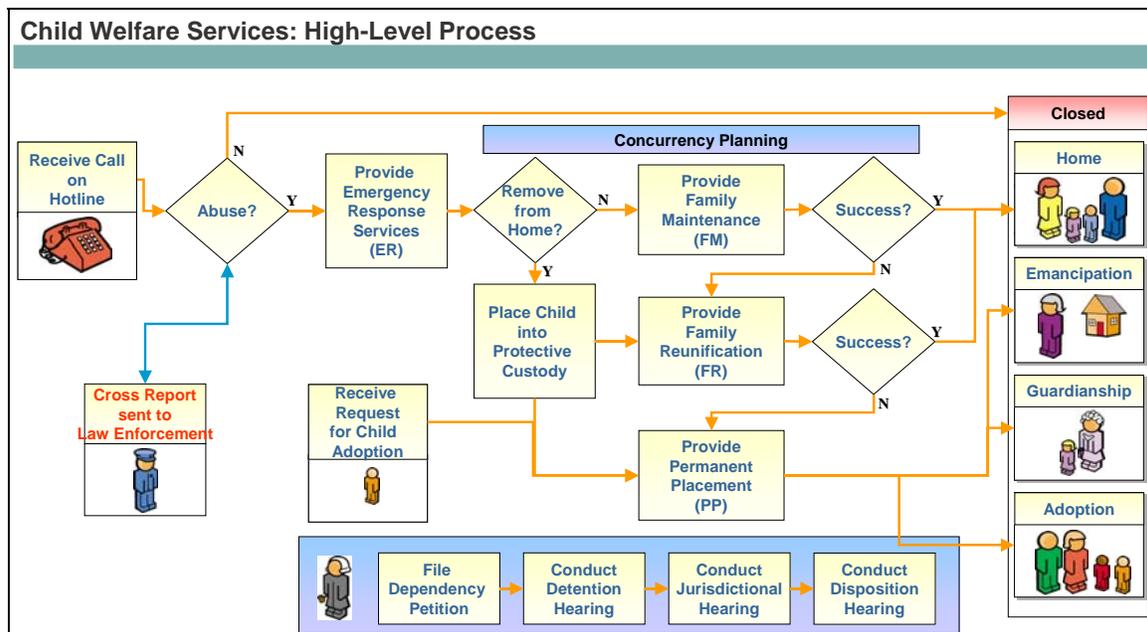


Figure 8 - Child Welfare Services: High-Level Process

The county welfare department administers the Child Welfare Services (CWS) program either directly or through providers. The functional business process is generally started when a call comes through the abuse hotline and ends when a child is returned home, provided emancipation, appointed guardianship, or adopted.

As of September 2003, the California CWS workload included:

- 730,000¹² children with one or more referrals; and
- 74,000¹³ children in foster care.

Additional details on the activities associated with each of the four traditional service components (i.e., Emergency Response, Family Maintenance, Family Reunification, and Permanent Placement.) can be found in the Appendix F – Baseline Document.

4.1.3.1 CWS/CMS Functionality

The CWS/CMS has eleven functional components designed to reflect the processes employed by child welfare workers in investigating, servicing, and managing a child welfare case. Combined, these eleven components automate the many phases and programmatic functions of CWS. The eleven components and their functions are as follows:

- **Intake** – referral screening, investigation and cross reporting;
- **Client Information** – recording and accessing information on clients;

¹² SFY 2005/06 Governor's Budget cited the caseload at approximately 730,000.

¹³ SFY 2005/06 Governor's Budget cited the average monthly number of children aided by Foster Care as 74,283.

- **Service Delivery** – recording of services delivered to clients;
- **Case Management** – developing case plans, monitoring service delivery, progress assessment;
- **Placement** – placement management and matching of children to placement alternatives;
- **Court Processing** – hearing preparation, filing of petitions, generating subpoenas, citations, notices, recording court actions;
- **Caseload** – assignment and transfer of cases;
- **Resource Management** – information on resources available for CWS (services providers, county staff resources, etc.);
- **Program Management** – caseload, county, program-level information for program management purposes;
- **Adoptions** – recording of information for reporting purposes; and
- **Licensing** – information on licensees used in placement decisions.

Each functional component captures information and provides automated tools for case management, service provision, and program management or documenting case history.

4.1.4 **Key Findings**

The key findings described within this section are related to the business baseline. Findings were obtained through a variety of sources including interviews and workshops with key stakeholders. Information regarding the types of interviews can be found in Appendix F – Baseline Document. Interviewees included:

- CWS/CMS executives, business staff, and technical staff;
- CDSS executives and staff;
- San Mateo County staff;
- Los Angeles County staff;
- Santa Clara County Staff,
- Colusa County Staff,
- Yolo County Staff,
- Sacramento County Staff,
- County representatives, including case workers and supervisors; and the
- CWS/CMS Oversight Committee.

In addition to the interviews and workshops, the following documentation was reviewed and business needs were validated.

- The California Statewide Automated Child Welfare Information System (SACWIS) Go-Forward Plan, dated August 2004
- The SOW for the TAAA
- The Technical Architecture Strategic Plan (TASP) published in April 2003

- The Go-Forward Plan, As-Needed Advance Planning Document Update (APDU), published in August 2004

The findings are as follows:

- **Untimely System Updates** – CWS/CMS receives a variety of system change requests from federal, State, and county sources to perform modifications to the CWS/CMS to meet legislative, regulatory, and programmatic needs. The following factors affect the deployment cycle:

- The CWS/CMS release cycle currently takes a minimum of six months. Once State and federal approval are received for a release, the structured development life cycle is followed by CWS/CMS (i.e., design, program, test, train, and release).
- The size, complexity, and tightly interwoven nature of the application result in an increase in application development time.
- The effort to integrate existing web-based services or commercial-off-the-shelf solutions into the system is more difficult.
- The counties must go through a time-consuming effort to update their data marts and query mechanisms whenever a change is made to the CWS/CMS database schema.

All of these factors result in time-consuming development and, at times, legislation is in effect before the appropriate programmatic changes are updated in the application. For example, the Department of Justice (DOJ) releases updates to reports/forms approximately once a year. If CWS/CMS has not released the programmatic change to create the revised DOJ reports, end-users must manually produce the forms until the change is implemented within the application.

- **Limited Remote System Access** – The end-users currently have limited access to CWS/CMS while in the field and, if they have access, the processing time is very slow. If timely remote access were available, the social worker would use CWS/CMS while away from the normal office environment. For example, the social worker could use the system while waiting for court appointments, waiting for doctors appointments, or while at home on-call. Remote access would allow the social worker to spend more time in the field with the children and families.
- **External System Access and Information Exchange** – With the overall child welfare program moving to a more collaborative nature and inclusive casework model, a more diverse group of end-users needs the ability to exchange information with an increased variety of external systems. For example:

- Bureau of Indian Affairs (BIA)
- Case aides and clerks
- Independent Living Program (ILP) service providers
- Family law
- Foster parents
- Health And education providers
- Courts and court officers
- Juvenile probation
- Mental health and other therapeutic service providers
- Law enforcement agencies
- Probation officers
- Public health nurses

Providing the ability to exchange information (i.e., a two-way interface that sends and receives information) would result in improved accuracy of case data. By automating the interface between systems, a benefit could be realized from:

- ❑ A decrease in time to perform data entry;
 - ❑ A reduction in storage of redundant data;
 - ❑ A reduction in data entry errors; and
 - ❑ A decrease in inconsistent data.
- **Document Storage** – The need exists to store multiple documents per case while also providing the ability to store multiple electronic document types. Currently the CWS/CMS only supports storing of Microsoft Word documents. With improved technology, the ability to store and retrieve a variety of electronic document types (i.e., pictures, scanned images, signatures, etc.) could be achieved. For example, this would allow the social worker to store pictures of abused children, pictures of living conditions, and the ability to store legal documents from court (e.g., third party reports).
- **Case Collaboration** – The current process of sharing information and collaborating on cases between departments is inefficient and subject to multiple errors. The process is as follows:
- ❑ The social worker prints the case/client information.
 - ❑ The case information is then faxed or mailed to the recipient.
 - ❑ The recipient of the information re-keys the information into another system.

Because of time and job pressures, the information is sometimes not entered into another system. The current process of sharing information and collaborating on cases is cumbersome, inefficient, and subject to errors.

- **Data Access and User Groups** – As the child welfare program moves toward a more inclusive casework model, the need exists to provide multiple agencies (i.e., private, public, and county) with the ability to access information. In addition, the need exists to provide layers of access to specific levels (i.e., groups) of users. The CWS/CMS, as currently designed, does not provide a robust access model allowing differing levels of data viewing and security for specific user groups.
- **Data Entry and Workflow** – End users must perform data entry tasks that are redundant and lack support for workflow functions. In particular, the technical architecture is designed such that concurrent or simultaneous data updates to the same case record are difficult to achieve. In addition, data entered in one area of the application does not consistently populate the same data fields in other areas.

The technical architecture also lacks support for automating workflow. This results in a decrease in user efficiency and successful case management.

- **Promising Practices** – Through research, program evaluation, and consensus building, child welfare leaders continue to identify and test innovative and effective practices that best serve their clients. However, the following practices are primarily manual processes that can vary in implementation from one county to another. The following models must be automated throughout the State to improve accuracy and remove inconsistent application of policy among social workers and among counties. The models of focus are as follows:
- ❑ **Differential Response** – This is a safety, fact-finding, and family assessment approach

that seeks to engage families in a less adversarial process. This eliminates current practice that requires a substantiation of an allegation in order to qualify for services that could help to stabilize the family and promote safety, permanence, and well-being for children.

- ❑ **Safety Assessment** – This model provides social workers with a research-based, standardized safety assessment tool to increase reliability and accountability during the intake and investigation process. Safety assessment uses clearly defined standards and instruments for immediate, reliable, and long-term safety decisions.
- ❑ **Family Group Decision-Making** – This approach to case planning is intended to strengthen the potential of the family to function effectively and responsibly. Families participate in the role of experts and partners in designing their own individualized, culturally responsive, and relevant services. These families are provided with diverse, comprehensive, and community-based networks of resources.
- ❑ **Family-to-Family** – This Annie E. Casey Foundation initiative is being tested in many communities across the U.S., including a number of counties in California. This approach works to better screen children being considered for removal from home, bring children in congregate or institutional care back to their neighborhoods, involve foster families as team members in efforts to reunify families, and invest in the capacity of communities from which children in foster care come.
- ❑ **Community Based Practice** – This evolving approach to the CWS practice involves partnering with community organizations to serve families in a comprehensive multi-disciplinary manner.
- **Training and User Support** – Adequate CWS/CMS help tools are currently not available; and the opportunity exists for improvement to assist the end-user in learning.
- **Standardized Reporting** – End users of the CWS/CMS require a variety of reports to assist in trend analysis, supervise and assist case workers, assist key stakeholders in overall project vision, and provide the ability to analyze and report on outcome measures. End users require both standard and ad hoc reports.
- **Resources vs. Workload** – The current social worker’s workload is greater than a standard eight-hour day. If a more efficient child welfare system is implemented, this will reduce the workload of the social workers and allow them to provide better quality service to the child. Better quality of service to the child will result in a higher chance of obtaining a successful outcome.
- **Other Languages** – With the population of California growing, the need to communicate, generate notices, and produce reports in multiple languages is consequently increasing.
- **Optimistic Concurrency** – The system was not designed to allow concurrent update access to the same case data; the optimistic concurrency design causes occasional loss of data. Typically, there are manual activities to ensure that multiple users are not simultaneously accessing the same data.

4.2 Technical Baseline

4.2.1 Technical Architecture Overview

The CWS/CMS enterprise network services all fifty-eight (58) California counties, the Central Data Processing Facility, the Central Sacramento Server Facility, the CWS/CMS Project Office, and CDSS (CDSS is sometimes referred to as the 59th county). The system is comprised of 392 sites within the counties, more than 16,683 workstations, 449 servers, and over 1,300 printers.

4.2.2 Overview of Current Architecture

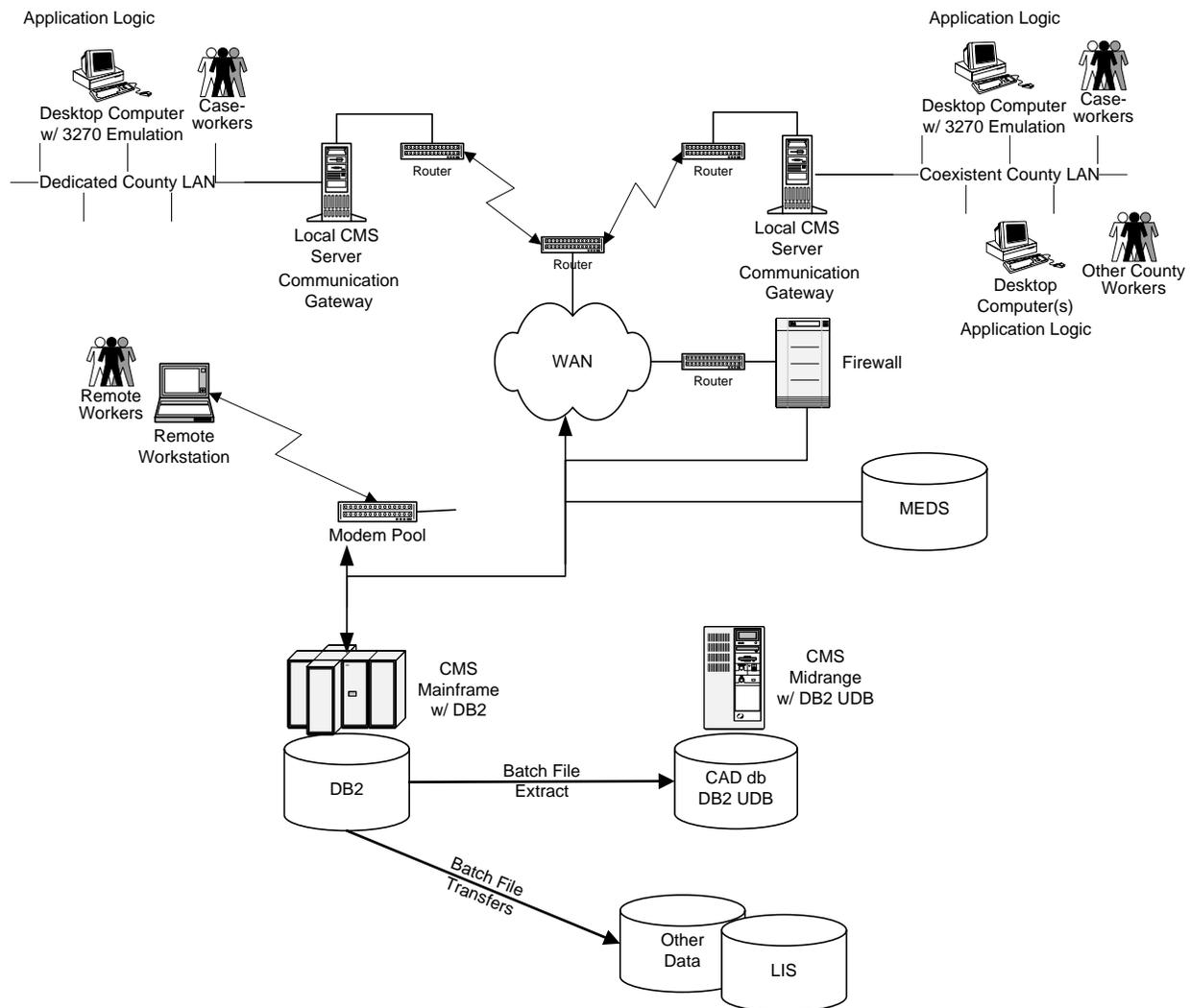


Figure 9 - Current Architecture

4.2.2.1 Application Architecture Overview

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

- Desktop 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 referred to as County Access to Data (CAD).

For a complete description of the Application Architecture, see the Application Architecture Overview in Appendix F – Baseline Document.

4.2.2.1.1 Desktop Overview

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

- **Presentation Services** – The Presentation Services component is the graphical user interface (GUI) provided to the user. The presentation service is provided via a Windows desktop PC or laptop.
- **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 the CWS/CMS desktop and the host applications are altered from clear text prior to transmission over the network and to the host.
- **Transaction Services** – The 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 three-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 Desktop client interacts with the IBM mainframe server host at IBM's data center facility in Boulder, Colorado. The host is the main repository for data, code tables, and document templates and stores all data related to a case.

4.2.2.1.2 Application/County Server Overview

The application server (or county servers) functions as an intermediary between a group of PCs (associated with a county or site) and the host. The design and use of an application server was very typical in the 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 desktops.

The application server is also used as a staging area for software distribution to reduce bandwidth congestion. Rather than distributing new code releases to 16,683 desktops over the wide area network (WAN), software is first distributed to the application servers over the WAN, which in turn are responsible for distributing software to the local Personal Computer (PC) over local area network resources (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. The county server connects to the host using IBM SNA APPC Lu6.2 protocol;
- **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; and
- **Redundancy and Recovery** – Provide redundancy and recovery capabilities by rerouting traffic over different networks in case of network outage.

4.2.2.1.3 Backend Host Overview

The core component of the CWS/CMS is the IBM OS/390 mainframe computer or *host*. The primary role of the host is to provide database and transaction services. CWS/CMS is built upon the IBM DB2 database. All CWS/CMS data is stored in a series of database tables and is accessed through CICS transactions generated from the workstation CWS/CMS application. The transactions are processed by the CICS transaction monitor and are programmed using the COBOL language.

IBM designed the transaction architecture under the CICS environment to support the desktop 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 (XPD) depending on the transaction identified; and
- Data access packets based on Structured Query Language (SQL) statements that are invoked by the XPD transactions.

4.2.2.1.4 Reporting

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:

1. Standard Program Management reports (PM);
2. Ad hoc reporting run against the CAD;
3. Quality assurance and regulatory compliance reporting services from Safe Measures®; and
4. Ad hoc reporting run against the production database via Statistical Analysis System (SAS) software.

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

- **Standard Program Management Reporting** – The primary means of reporting in CWS/CMS are the standard PM reports. These are available online within the application. The PM reports are predefined and automatically generated by the system. These reports are static.
- **County Access to Data** – 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 the CWS/CMS. These views allow a county to only view its own data. In contrast to the production database, the CAD “denormalizes” some data tables to better accommodate these additional “views” and to increase query performance – CAD is optimized for query vs. update.

The majority of CAD users (200+) use 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 desktop workstations. An encrypted network tunnel is established between their desktop and the CAD server to provide a secure transmission of data to and from the data warehouse. The CAD server is currently co-located in the CWS/CMS Project Office in Sacramento and is connected to the HHSDC via a high-speed T1 network link.

Since CAD is not part of the State owned infrastructure, access and usage is limited to the number of purchased licenses.

4.2.3 Overview of Current Technical Infrastructure

The CWS/CMS technical infrastructure is comprised of multiple hardware and software components that make up the system-wide architecture. In its simplest form, CWS/CMS consists of the following major components:

- County LAN infrastructure.
- Statewide Wide Area Network.
- Service Delivery Center (Boulder Data Center).
- Remote Access Infrastructure.
- Internet Access Infrastructure.
- Email/Exchange Infrastructure.
- CAD Infrastructure.

4.2.3.1 County Infrastructure

4.2.3.1.1 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. Dedicated county LANs are 10-MB Ethernet

networks connected to the HHSDC WAN. There are 37 dedicated counties with 113 sites, ranging from a single server to multiple server sites.

Coexistent counties agreed to use the CWS/CMS suite of applications, but retain responsibilities for the maintenance of related operating hardware used by the CWS/CMS application Network Infrastructure. There are 22 coexistent counties (includes CDSS) with 279 sites.

4.2.3.1.2 Site Topology

Sites with four or less users may be connected to a remote server at the discretion of the county and/or State. Sites with between 1 and 125 users are allocated a single application server that performs application services, domain authentication, and file and print services (if applicable). HHSDC and/or the county maintain the physical local area network. HHSDC maintains the logical configuration of the hubs and switches located in dedicated counties. All sites that are allocated servers have at least a T-1 circuit connecting to HHSDC.

Counties may consist of multiple sites within a single domain. Standalone sites have servers that service a local site and possibly remote sites. Remote sites are not serviced by a local server, but they use a connected server that resides at another county site. HHSDC manages the logical topology and management of the circuits.

4.2.3.1.3 Local LANs

Either a Token Ring or Ethernet Local Area Network connects the CWS/CMS workstations and servers in each of the 58 counties. Each LAN may contain one or more network hubs and/or network switches that route all network traffic to the HHSDC WAN. HHSDC provides, monitors, and supports all network devices within dedicated CWS/CMS counties. Dedicated county LANs are mainly 100-Mbps switched Ethernet networks connected to the HHSDC WAN.

4.2.3.2 State Wide Network (WAN) – HHSDC INFRASTRUCTURE

4.2.3.2.1 WAN Backbone

The State of California Health and Human Services Data Center (HHSDC) provides the WAN for CWS/CMS. Each of the 58 counties is provisioned with a dedicated network router that enables CWS/CMS application traffic to flow from the county network to the IBM Service Delivery Center (SDC) in Boulder, CO. The network link from each of the counties will vary in bandwidth depending on the user population for that county. IBM coordinates network monitoring with HHSDC staff to provide 24x7x365 service.

The IBM SDC is connected to the HHSDC WAN via dedicated network links, each providing 1.44 Mbs of network bandwidth. The dedicated circuits and associated network routers are configured for high availability in such a way that, if there is any loss of one or more of the links or routers, the network traffic will automatically be routed to the available links.

Additionally, in support of external interfaces, terminal emulation is provided between the CWS/CMS host and the State Medi-Cal Eligibility Data System (MEDS) and the Licensing Information System (LIS) hosts. The gateway service on the local county application server provides terminal emulation connectivity from the user's desktop. In selected counties, the gateway service also provides connectivity to county-specific host systems.

4.2.3.3 Service Delivery Centers (CWS/CMS HOST) – Data Center

The core component of CWS/CMS is the IBM S/390 mainframe computer or *host*. The primary role of the host is to provide database and transaction services. The mainframe operates in a parallel sysplex¹⁴ environment with *two* Central Processing Units (CPUs) to support the availability and reliability requirements for CWS/CMS. This configuration provides the 24x7 support for the application and allows one of the CPUs or related components to be taken down for maintenance without affecting the availability of the database and/or transaction services.

CWS/CMS is built upon the IBM DB2 database. All CWS/CMS data is stored in a series of database tables and is accessed through the transactions generated from the workstation CWS/CMS application. The transactions are processed by the CICS transaction monitor and are programmed using the COBOL language.

4.2.3.4 Remote Access

The AT&T Network dial-up network provides dial-up users with remote access to the CWS/CMS application via standard telephone company circuits. AT&T Network Services, contacted through IBM, provides a single POP to the central data processing facility (CDPF) located in Boulder, CO. Data traffic generated by the dial-up user is delivered to the CDPF and then routed across the WAN/MAN to the user's logon domain.

4.2.3.5 Web Infrastructure

The Health and Human Services Data Center (HHSDC) houses and manages the CWS/CMS Internet Access infrastructure. The CWS/CMS county web site hosts both static and dynamic content. The content includes an on-line resource center for on-line registration of CWS/CMS training classes, delivery of web-based training modules and the xTools database utility for download.

The Internet Access infrastructure consists of network load-balancing servers, multiple Web servers, and a scaleable Internet connection. The Internet Access infrastructure is isolated from the Internet and CWS/CMS networks through the use of multiple protocol firewalls that form a "demilitarized zone" (DMZ), preventing unauthorized access. The Internet firewalls are routinely monitored for unauthorized access and possible vulnerabilities. In addition, the IBM Network team performs routine penetration testing against the Web servers to detect well-known Web server vulnerabilities.

4.2.3.6 Email (Exchange)

As part of the contract, users at dedicated counties, and some coexistent counties are provided email services via the Outlook 98 workstation application and Microsoft (MS) Exchange.

To consolidate the management and maintenance of MS Exchange, a central server facility was established in Sacramento to service the smaller dedicated counties (under 150 users). The largest dedicated counties and coexistent counties using the CWS/CMS MS Exchange services are provided with an MS Exchange server located within the county. MS Exchange Clients can access email from their workstation on the LAN or through a dial-up connection provided

¹⁴ A "sysplex" is a collection of MVS systems that cooperate, using certain hardware and software products, to process work.

through the AT&T Network Services dial-up network. The local MS Exchange servers are included in the county LAN environment. Counties that require their own email system can be fully integrated into the MS Exchange network by the creation of a separate local MS Exchange site.

4.2.3.7 CWS/CMS Information Security Architecture Overview

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

- Desktop/LAN Security Components
 - Authentication by unique userid and passwords – standard Active Directory logon scripts and network access security.
 - Physical security of desktops.
- 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 userid 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 – Safenet.
 - 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. Security is enforced through userids and passwords.
- Logging and Tracking
 - Invalid userids 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 userid 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
 - Mainframe protected data center.
 - Access to data center controlled by badges.
 - Servers are placed in locked rooms (policy).
 - Servers and workstations (in dedicated environments) have case key locks.
- Security Management - Each county has a dedicated security manager responsible for:
 - Managing userid and password (add, change, delete, reset, etc.);
 - Managing access control and authority levels;
 - Managing email security; and
 - Managing physical security for servers, workstations, and security communications for the county.

4.2.3.8 Software Distribution Infrastructure

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

4.2.4 Technical Operations Overview

4.2.4.1 Overview of CWS/CMS IT Support Organization

At the highest level, CWS/CMS operational support services can be decomposed into the following key service organizations:

- Project Office
- CWS/CMS Application Maintenance
- Network Services
- Managed Operations
- End User Support

4.2.4.1.1 Project Office

The Project Office includes IBM and State CWS/CMS project management, project administration, project financial, project quality assurance and project team lead staff required to support operations and maintenance efforts. The project at the Project Office consists of approximately 90 IBM staff and 75 State employees or consultants.

4.2.4.1.2 CWS/CMS Application Maintenance

CWS/CMS Application Maintenance includes the following activities:

- Response to problem tickets created by Customer Support Services (Helpdesk) staff in response to user calls that could not be handled by the helpdesk.
- In response to identified application defects, CWS/CMS Application Maintenance is responsible for developing and packaging groups of corrective maintenance items into interim releases, and supporting the deployment of these releases.

Activities in Application Maintenance do not include changes to the infrastructure, incorporating statutory or regulatory changes, or adding user-desired or other functionality outside the original system requirements, except in minor cases involving minimal effort to satisfy end-user business needs. Adapting the application to new technical environments or business processes, and adding additional functionality, is considered for funding under the System Change portion of the CWS/CMS contract. These activities are conducted through the work order process included in the CWS/CMS contract.

4.2.4.1.3 Network Services

Connectivity between the county and project central sites is provided by HHSDC WAN, which includes HHSDC support of county and State-housed routers. Responsibility for the CWS/CMS network is therefore shared between HHSDC and IBM. IBM Network Services staff is responsible for ensuring the suite of servers at the counties and the communications infrastructure at IBM's Boulder data center meet the performance level guarantees within the contract.

Responsibilities of the staff include maintenance and support for the project office servers as well as the county application and network support servers. They operate and maintain a set of 47 network servers in Boulder that perform critical functions, including configuration management, software distribution, application version control, server image, remote server management, internet naming resolution, capacity monitoring and performance monitoring.

4.2.4.1.4 Managed Operations

These services include the centralized mainframe servers that host the application's primary databases and the hosted web-based services:

- Host Services.
- System Security.
- Database Management.

4.2.4.1.5 End-User Support

These services include what is sometimes referred to as "helpdesk" activities, as well as direct support for dedicated county workstations, and State-authorized support for selected desktop and software issues for dedicated counties. IBM Customer Support Services (Helpdesk) provides a single point of contact for assisting the CWS/CMS application users in both dedicated and co-existent counties.

4.2.4.2 Overview of CWS/CMS Operational Support Processes

4.2.4.2.1 Problem Management

CWS/CMS has established a formal end-user support model comprised of three components:

- **Health and Human Services Data Center (HHSDC) Helpdesk** – Responsible for wide area network communication support.
- **County Helpdesks** – First point of contact for end-users in coexistent counties.
- **IBM Global Services Helpdesk (IBM Boulder)** – First point of contact for end-users in dedicated counties.

Both HHSDC and IBM Helpdesk use a three-tiered helpdesk support model:

- **Level 1** – initial problem determination, logging, tracking, and problem resolution.
 - Level 1 staff receives extensive training in the application and its support software, in order to assist users with application utilization questions.
 - Over 70% of calls are dealt with at Level 1 and do not generate a problem ticket; most application-focused user problems can be resolved by the initial responder.
- **Level 2** – In-depth problem determination, root cause analyses, and problem resolution.
- **Level 3** – Provides final resolution on defects.

4.2.4.2.2 Network and Systems Management

All production network devices (hosts, servers, switches, routers) are monitored for 24x7 availability, which is checked from the CDPF and the HHSDC. Tivoli Netview checks availability by sending a directed query against the machine's network interface card (NIC). If the NIC replies, the server or device is considered available. If a server or network device is unavailable or unreachable, the Operations staff at the CDPF or HHSDC recovers the resource or escalates support until the resource is available again. Problem and change processes interact with this monitoring service.

4.2.4.2.3 Software Distribution

The software distribution management services provide periodic updates to the existing applications used by CWS/CMS clients and distribute new applications to the users. These services are used in the Windows 2000 operating environments.

4.2.4.2.4 Change Management Process Overview

Change management encompasses any alteration to hardware, software, network, application, operational procedure, or environment that adds to, deletes from, or in any way modifies the CWS/CMS environment.

- **Change Request Submission** – After going through an internal county change request evaluation process, all change requests are reviewed at a regional level to gauge statewide impact. If the change is approved at the regional level, the System Change Requests (SCRs) go to the State Application Support unit. In addition, CDSS, CWS/CMS State staff, and CWS/CMS vendor staff may submit SCRs. In 2004, 187 SCRs were submitted. These requests are reviewed at a bi-weekly Project Office Change Review (POCR) committee

meeting, which acts as the Change Control Board for the CWS/CMS project. Requests are entered into the Request Tracking System (RTS) by application support staff. Reasons for making changes include:

- ❑ Add new functions to support new CWS/CMS requirements or mandated policies.
 - ❑ Fix CWS/CMS known problems.
 - ❑ Growth.
 - ❑ Performance tuning.
 - ❑ Preventive maintenance.
 - ❑ Technology refresh.
- **Change Request Evaluation** – SCRs are reviewed at the POCR meeting and are classified as: Open-Assigned, Open-Pending, Closed as Completed, Closed as Duplicate, Closed – Not Approved/Contrary to CWS/CMS Policy, or Closed – Not Approved/Issue Resolved. When determining the Release content for potential future Releases, the POCR follows the Strategic Initiative Plan set by the Oversight Committee (OSC). When SCRs are approved, the proposed Release content is then designated for a future release.
- The SCR number and status assigned by POCR are communicated back to the requestor. If the Request was rejected by the POCR, the reason is also communicated back to the requestor. If necessary, the submitter contacts the CWS/CMS change coordinator regarding the status of the submitted request.
- **Release Planning** – When an SCR is slated for a release, the application support manager assigns an analyst to capture requirements and document the details of the SCR. All SCRs to be released are packaged and sent to IBM for their IT Analysis and Cost Estimates.
- **Release Review** – The Release Package is sent to CWS/CMS executives for review and, if approved, sent to CDSS. If CDSS also approves the release, the Release Package is reviewed by the Administration for Families and Children (ACF). If the ACF approves the release, they notify the State via an approval letter, which signals that work on the release may begin.

4.2.4.2.5 Capacity Management

Capacity management is the process of planning and controlling Information Technology (IT) resources to ensure the efficient use of existing IT resources and identify the need for additional IT resources necessary to meet service commitments. The process results in:

- A capacity recommendation to resolve resource imbalance within the project.
- Definition of required system resources for a new requirement.
- System resource projections that have mutual agreement between State of California CWS/CMS, the Project Office, and IBM Global Services.

4.2.4.2.6 Performance Management

Performance management is the process of planning, defining, measuring, monitoring, analyzing, reporting, and tuning the performance of component resources to enable meeting response time, throughput, and delivery requirements in support of the CWS/CMS project as defined in the IBM Global Services CWS/CMS Service Level Agreement. All of the processes

and tools to perform Performance Management are in place and designed to optimize resources. The Performance Management process includes:

- Performance monitoring and analysis;
- Performance tuning, and balancing; and
- Performance communication and reporting.

4.2.5 **Function Point Analysis**

A function point analysis of the existing CWS/CMS software code was conducted to gain a better understanding of the impact of changes on the existing system. Function point analysis provides a language-independent approach to estimating software development efforts. The function point metric and its associated counting practices constitute an internationally recognized method of quantifying software functionality *from the end-user's perspective*. In this way, the size of software applications and enhancements can be expressed in the language of the end-user, and not in the technical terminology of the software engineer.

Furthermore, by focusing on the business functions to be delivered by the application, users and developers alike are able to understand *what* the software will do rather than *how* it will be accomplished. This, in turn, allows the functional size of an application to be estimated before the software itself is actually built.

Function point analysis centers around seven basic steps: 1) Determining the type of function point count; 2) Identifying the counting scope or boundary; 3) Identifying data functions; 4) Identifying the transactional functions; 5) Determining the unadjusted count; 6) Determining the adjustment for complexity; and 7) Calculating the adjusted function point count. This measure can then be used to estimate the level of effort for the development and maintenance processes, approximate number of lines of source code, differences in application sizing if created in different programming languages, and project productivity metrics with different programming languages. Additional information regarding function point analysis and the methodology used can be found in Appendix G – Technical Methodology and Approach Document.

As noted above, a function point count comes in two forms, the unadjusted count, and the adjusted count. The unadjusted function point count tallies the number of transaction and data functions found in the application. These items are rated for functional complexity. This rating takes into account the number of data elements and record element types that are associated with the function. A rating of “low”, “average”, or “high” is then given to each function, based on the number of data elements and record element types found in each. The function count for each function is then multiplied by the rating modifier. This yields the unadjusted function point count.

The adjusted function point count modifies the unadjusted count by applying additional complexity factors to compensate for certain environmental or general system characteristics. The 14 general system characteristics are rated on a scale from 0 to 5. These are totaled and put into a formula that then adjusts the total function point count by $\pm 35\%$ to get the final adjusted function point count. Further information on function point adjustments and the general system characteristics attributes can be found in Appendix G – Technical Methodology and Approach Document.

The TAAA Team carried out its work with the help of a Certified Function Point Specialist. This same specialist did the original analysis of the four California SAWS consortia welfare applications. Based on his analysis of the current CWS/CMS application, we estimated the total adjusted function point count for its replacement. In addition, the team developed an estimate for the missing SACWIS technical functionality.

The current CWS/CMS application was found to have an adjusted function point count of 3,681. The function point analysis of the CWS/CMS application, including the missing federal SACWIS compliant technical functionality, arrived at the adjusted function point count of 5,055. These are the values used for development cost estimation along with the estimated duration and required resources.

In addition to the analysis done on the California CWS/CMS, the TAAA Team undertook several other comparative studies of other State's SACWIS costs. Based on input from another member of our team (The Center), we backfired function point counts based on the development costs of the systems as reported to ACF and available through public information.

Because function point analysis can be used for numerous software development project metrics – sizing, costing, duration, and resources – the methods used to estimate these values can also be used in the opposite direction.

Backfiring is a computed function point value based on total number of lines of code. The lines of code are compared based on the complexity level of the programming language. The backfired function point count value is the number of lines of code factored by a language complexity multiplier. For example, 'C' language count has been determined to average 66 lines of code per function point. If the lines of code in a particular language are known, the function point count can be inferred. However, it is important to note that under COCOMO.II source code line counting rules, lines of code generated by a source code generator should not be counted.

Another method for backfiring function point counts involves calculations of project cost in comparison to function point development costs. As noted previously, the function point count can be used to estimate the project sizing and costing. Working in the opposite direction, project cost divided by relative cost per function point can yield an approximate function point count. While a “rough” measure, cost per function point can be used to analyze similar projects in similar industries. Thus using costs, function points can be “backfired” for comparative analysis.

The TAAA Team used several of these backfiring techniques to validate the SPR function point counts against other state's SACWIS applications as well as the Statewide Automated Welfare Systems (SAWS) applications. We used these development costs to determine system sizing (function points) using an average government system development cost per function point. It must be noted that these figures were only used to provide values for comparison not for development scope or costing. The values were used to double-check our original count against similar systems, making sure that our estimates were in line with other similar applications.

Table 6 - Backfired Function Points for Comparison

State	Stage	Year of Operation	Number of Users	Contractor Costs	Vendor	Backfired FP
Arizona	Complete	1997	1,500	14,453,384	Unisys	3,613
Arkansas	Operational	1997	1,835	8,336,331	SCB	2,084
Connecticut	Operational	1996	2,500	14,600,000	AMS	3,650
District of Columbia	Operational	1998	850	15,857,443	Deloitte	3,964
Delaware	Operational	1998	900	2,279,871	PSI (now MAXIMUS)	570
Idaho	Operational	1999	552	5,626,967	In House	1,407
Indiana	Operational	1997	1,400	13,188,158	IDMS/R	3,297
Iowa	Operational	1995	5,000	3,273,882	BDM (Now TRW)	818
Kentucky	Operational	1996	2,000	4,066,795	Unisys	1,017
Maine	Operational	1998	700	6,960,000	Network Six	1,740
Massachusetts	Complete	1999	3,300	17,542,829	Deloitte	4,386
Minnesota	Operational	1996	3,000	5,420,050	In House	1,355
Montana	Operational		720	3,835,038	BDM (Now TRW)	959
Nebraska	Operational		2,026	10,900,000	Anderson	2,725
Nevada	Partially Operational	1999	1,000	14,000,000	TRW	3,500
New Hampshire	Operational	1998	400	9,827,282	DRC	2,457
New Mexico	Operational	1998	1,500	7,288,524	AMS	1,822
Oklahoma	Complete	1995	1,500	19,500,000	Deloitte	4,875
Rhode Island	Complete	1997	731	6,008,039	AMS	1,502
Tennessee	Partially Operational		3,000	14,246,345	In House	3,562
Texas	Operational	1996	5,900	52,530,582	Anderson	13,133
Utah	Operational	1997	1,000	12,982,892		3,246
Washington	Operational	1996	2,000	549,000	In House	137
West Virginia	Complete		939	8,760,478	Deloitte	2,190
Wyoming	Operational		300	5,300,000	Anderson	1,325

* NOTE: highlighted states have achieved federal SACWIS compliance.

As another data point for analysis, we compared the function point count of the CWS/CMS application against the four SAWS consortia applications. This exercise was instructive in several areas. First, it again allows us to double-check our CWS/CMS count against four other similar systems developed in the State of California. Second, it put the CWS/CMS application's total functionality into perspective. While many of the elements of a SAWS system are similar to CWS/CMS (cases, families, clients, relations, etc.), it is understood that CWS/CMS is not quite as "big" as a SAWS application.

Table 7 - SAWS Consortia Function Point Counts

Function Points	Unadjusted	Adjusted
Leader	8,972	10,677
ISAWS	7,923	8,968
CalWIN	11,200	13,216
C-IV	8,905	10,775

The last piece of information used for comparative purposes came from SPR's extensive database of software development project metrics. This chart, as indicated, reflects the general "bell curve" of development project sizes. As can be seen, the majority of application development projects fall within the general range of 100 to 10,000 function points.

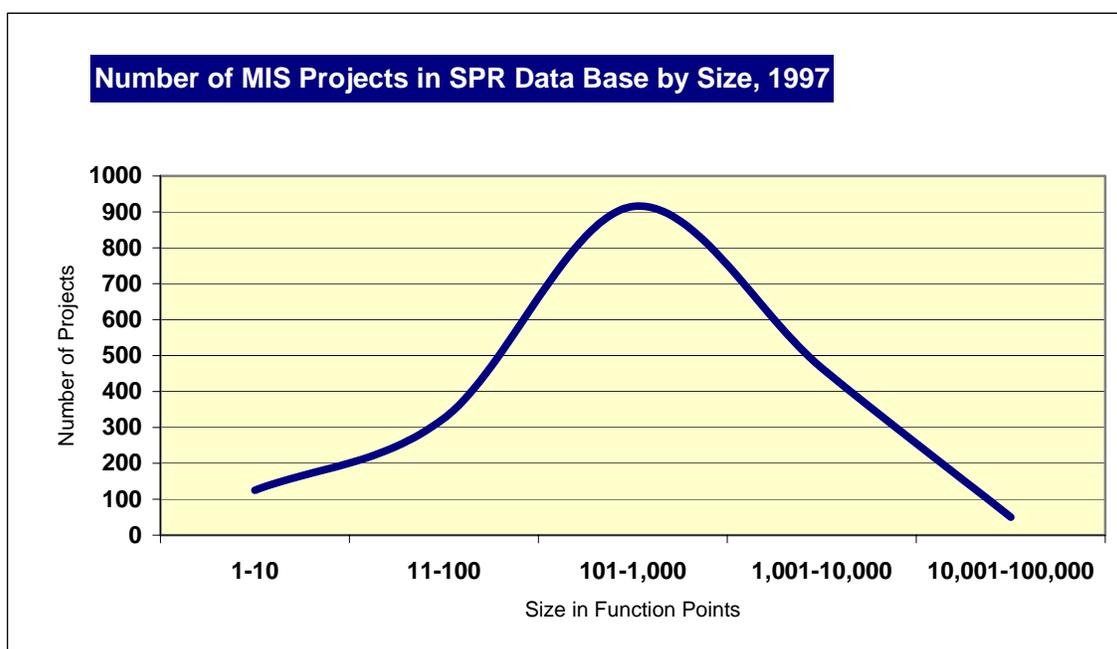


Figure 10 - Development Projects by Function Point Size

Based on the comparative analysis of the both other states' SACWIS backfired function point counts and the actual function point analysis of the SAWS consortia systems, the TAAA Team feels our estimate is in line with and provides a true and fair representation of the functionality necessary for a compliant SACWIS application.

4.2.6 Key Findings

The following key findings are related to the technical baseline. Findings were made based on review of existing documents and interviews and workshops with key stakeholders. The key findings are listed below.

4.2.6.1 Strengths

The following items were observed as strengths of the CWS/CMS application:

- **Modularity** – The system was originally designed using modularity principles of the time. Focus was on separation of graphical user interface (GUI), business rules, and data. IBM did a good job in achieving these objectives.
- **Reliability** – The system is highly reliable and uses the following methods to maintain uptime:
 - High degree of redundancy at all layers.
 - Application servers have multiple ways for connecting to backend host.
 - Applications/Desktops have logic for dealing with failed application server.
 - Backend – Sysplex.
 - Strong backup – third party tape management off-site.
 - Multiple communication access methods.
- **Documentation** – There is a significant amount of current documentation on the system architecture.
- **Helpdesk, Incident, and Problem Management** – Services provided by IBM are consistent with Information Technology Infrastructure Library (ITIL) and industry best practices. The process maturity levels of helpdesk, incident, and problem management are consistent with mature and advanced organizations.

4.2.6.2 Weaknesses

The following items were found as weaknesses in the current CWS/CMS application:

- **Untimely System Updates** – CWS/CMS receives a variety of system change requests from federal, State, and county sources to perform modifications to CWS/CMS to meet legislative, regulatory, and programmatic needs. The following factors affect the deployment cycle:
 - The CWS/CMS release cycle – Once State and federal approval are received, the structured development life cycle is followed by CWS/CMS (i.e., design, program, test, train and release). This development life cycle currently takes a minimum of six months for a release.
 - The size, complexity, and tightly interwoven nature of the application results in an increase in application development time.
 - The effort to integrate existing web-based services or commercial-off-the-shelf solutions into the system is more difficult.
 - The time-consuming effort the counties must go through to update their data marts and query mechanisms whenever a change is made to the CWS/CMS database schema.

All of these factors result in time-consuming development and, at times, legislation is in effect before the appropriate programmatic changes are updated in the application. For example, the Department of Justice (DOJ) releases updates to reports/forms approximately once a year. If CWS/CMS has not released the programmatic change to create the revised

DOJ reports, end-users must manually produce the forms until the change is implemented within the application.

- **“Optimistic Concurrency Problem”** – The system was not designed to allow concurrent update access to the same case data; the optimistic concurrency design causes occasional loss of data. Typically, there are manual activities to ensure that multiple users are not simultaneously accessing the same data.
- **System Usability** – The system is not designed to support the current way case workers do their business, that is:
 - The system is not designed to support and facilitate current child welfare work – it was designed to meet the needs of the time but business practices have since changed (i.e., legislation, policy, and approach).
 - There is minimal use of workflows and business process automation.
 - Minimal protection against data quality issues – minimal automatic checking for existing data.
 - According to county workers: “we can *make* the system work, but it should work for us”.
- **Portability** – Laptops are not usable from field or remote locations.
- **System Architecture** –
 - The current design was optimized to support the fat client desktop. Rather than following a modern model/view/control architecture where the presentation logic is separate from data (model) via a control layer, this architecture is much more tightly coupled. There is no formal “control” layer to act as an intermediary between the GUI layer and the data layer and notify it about changes to the data/views. Rather, the GUI layer incorporates this logic, which in essence results in a tight coupling between business rules, user interface logic, and data.
 - A second difference of the CWS/CMS architecture and current architectures is the view of business transactions. In a current architecture, each business processes is mapped to a series of transactions which are executed in parallel or sequentially as individual transactions. In the CWS/CMS architecture view, a transaction may encompass many business processes.
 - Support for alternative devices is limited under the current architecture.
 - No clear separation exists between business and user interface logic on the desktop.
 - The current “Open Case” design (bringing all case data down to the desktop) does not work in a portable or alternative device environment.
 - The current software distribution mechanism cannot effectively be used to support laptops over lower speed communication lines.
- **Systems Integration** – CWS/CMS does not have a formally defined and operational integration architecture. Previous efforts by the project to provide a general-purpose integration architecture or application programming interface (API) were rejected by county technical personnel as too difficult to work with.
- **System Security** – Counties require more granular access control roles and some counties have more stringent security needs particularly related to system login and password policies.

- **Reporting** – 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 (PM), ad hoc reporting run against the CAD data warehouse, quality assurance and regulatory compliance reporting services from Safe Measures®, and ad hoc reporting run against the production database via Statistical Analysis System (SAS) software.
 - Not all reporting tools are within CWS/CMS and critical ones are external (i.e., CAD and Safe Measures®).
 - The limited number of purchased licenses restricts current access to data.
- **Documentation** – There is a lack of complete documentation of the system.

4.3 Financial Baseline

This section provides a summary overview of the financial baseline information for costs and benefits associated with the current CWS/CMS, highlighting cost trends for the past three complete fiscal years (Federal Fiscal Year (FFY) 2001 through FFY 2003). Where applicable, Child Welfare Services (CWS) program costs that may be affected by any implemented alternative are discussed. Specifically, this section addresses:

- State of California Program Costs
- CWS/CMS Costs
- Key Findings

4.3.1 *State of California Program Costs*

Since 1998, the CWS/CMS has been viewed by the State and ACF as an “operational” system. However, the SACWIS Assessment Review is still open, pending completion of SACWIS functions required to close out the assessment. Until the SACWIS Assessment Review is complete, the State will continue to incur both one-time development and ongoing maintenance and operations (M&O) costs to complete the SACWIS. To accurately allocate and report costs to ACF on all new development and ongoing maintenance, the State must use multiple federally approved Cost Allocation Plans (CAP) to allocate expenditures to benefiting programs funded at the State and county level. The following two sections describe the cost allocation methodology for allocating and reporting program funds at the State and county levels.

4.3.1.1 *State Program Costs*

At the State level, multiple agencies incur CWS/CMS operational costs. The State's budget for CWS/CMS includes costs for State, county, vendor, and contracted staff specifically assigned to CWS/CMS activities and all hardware, software, and interfaces that comprise the CWS/CMS solution.

- **SACWIS** – This project funding area includes costs related to:
 - A single statewide automated child welfare information system consisting of hardware and software; and
 - Personnel directly associated with the functioning of the statewide system.

For costs to be considered eligible in this category, the statewide system must meet the requirements imposed by federal regulations and be capable of interfacing with another system to perform other required functions (i.e., collecting information relating to child abuse and neglect). To the extent practicable, the system must be capable of interfacing with, and retrieving information from the State data collection system that collects information relating to the eligibility of individuals under Title IV-A. In addition, the system should provide efficient, economical, and effective administration of the programs carried out under a state's plan approved under Title IV-B or IV-E of the Social Security Act. Costs in this program funding area are shared based on the following ratios (ratios indicate sharing of federal/State funds):

- ❑ **State Only (0/100)** – Represents budget/expenditures for which Federal Financial Participation (FFP) was not available, but the item is categorized as SACWIS.
- ❑ **Title IV-E (50/50)** – Represents allowable Title IV-E SACWIS categorization.
- ❑ **TANF Emergency Assistance (EA) (100/0)** – CWS/CMS budget/expenditures allocated to TANF.
- **Non-SACWIS** – This project funding area includes hardware, software, interface, and personnel costs related to Electronic Data Processing (EDP) systems developed to enhance program performance and interface with other system(s), but not required for the functioning of a SACWIS system. Non-SACWIS systems are not defined, implemented, and/or available statewide. Costs in this program funding area are shared based on the following ratios (ratios indicate sharing of federal/State funds):
 - ❑ **State Only (0/100)** – Represents budget/expenditures allocated to State-only programs.
 - ❑ **Foster Care Title IV-E (caseload-based ratio)** – Represents budget/expenditures allocated to the State-only and Title IV-E Foster Care Programs, based on statewide caseload statistics per the approved cost allocation methodology.
 - ❑ **Training Title IV-E (75/25)** – Represents budget/expenditures enhanced non-SACWIS Title IV-E associated with CWS/CMS training, as documented in California's federally approved Title IV-B State Plan. These costs are allocated to the State-only and enhanced Title IV-E training components based on statewide foster care caseload statistics.

4.3.1.2 County Program Costs

CDSS maintains the federally approved public assistance cost allocation plan for county-level costs, which describes the methodology the counties are required to follow for claiming all costs incurred by the county. The county cost allocation plan is in conformance with the federal requirements contained at Office of Management and Budget (OMB) Circular A-87 for public assistance cost allocation plans.

This section will only describe costs that will be used in comparing alternatives and therefore will not include program costs (i.e., Emergency Assistance) that will not be affected by any alternative implemented. The costs that will be included are: 1) the SACWIS and non-SACWIS Program Costs related to CWS/CMS and 2) program costs for business processes (i.e., adoptions) that have been identified as potentially being changed via implementation of any of the selected alternatives. These are described as follows:

- **SACWIS and Non-SACWIS Program Costs** – For counties to request approval and subsequently claim and allocate costs against CWS/CMS budget, counties must (in accordance with the federal guidelines) categorize all CWS/CMS costs as either SACWIS or non-SACWIS and determine whether the costs benefit programs outside of Title IV-E or IV-B State Plans for cost allocation purposes. The funding allocations for reimbursement are consistent with the cost allocation described above (Section 4.3.2.1) and as explained in County Fiscal Letter (CFL) No. 04/05-13 (dated August 30, 2004), CFL No. 04/05-30 (dated October 18, 2004), and CFL No. 04/05-32 (dated December 6, 2004).¹⁵
 - **CWS/CMS System Support Staff (SSS)** – This SACWIS project category shares costs based on a ratio of 50% federal funding, 35% State funding, and 15% county funding.
 - **CWS/CMS Staff Development** – This non-SACWIS project category shares costs based on first applying the IV-E discount of 25% and then applying the 75% federal and 25% State share to the remaining 75%.
- **Affected CWS Business Program Costs** – While these business program costs will not be included in the development or maintenance costs for the CWS/CMS, implementation of specific alternatives may result in benefits in these areas. Therefore, the base program costs for each of the potentially affected program areas have been included here. Current cost sharing occurs at 50% federal, 35% State, and 15% county.

4.3.2 CWS/CMS Costs

4.3.2.1 Original One-Time Development Costs

CWS/CMS entered into maintenance and operations in 1998 and is viewed by the State and ACF as an “operational” system. However, the SACWIS Assessment review is still open, pending completion of SACWIS functions required to close out the assessment. The Department of Finance Office of Information Technology (DOF/OIT) approved the initial Feasibility Study Report (FSR) for the development of the CWS/CMS on December 15, 1989. The planning and procurement effort began immediately after the FSR approval and resulted in a contract award to IBM Global Services in January 1992. As the primary vendor, IBM was charged with developing a CWS/CMS capable of:

- Providing CWS workers with immediate access to child and family specific information to make appropriate and expeditious case decisions;
- Providing CWS workers with the case management information needed to effectively and efficiently manage their caseloads and take appropriate and timely case management actions;
- Providing State and county CWS management with the information needed to monitor and evaluate the accomplishment of CWS tasks and goals; and
- Providing all CWS agencies with a common database and definition of information to evaluate the CWS programs.

¹⁵ <http://www.dss.cahwnet.gov/lettersnotices/default.htm>

The following table illustrates the actual one-time development costs associated with the planning, procurement, development, and implementation of the CWS/CMS that ended in 1998 and one-time development costs incurred since the original implementation. It is important to note that although system development ended in 1998, the depreciation expenditures for equipment costing over \$5,000 per unit extend through FFY 2001. Because the costs are for equipment purchased during the development period, they are considered part of and have been included in the one-time costs.

Table 8 - One-Time Costs to Develop Original CWS/CMS

Actual Expenditures Summary												
One-Time Costs to Develop Original CWS/CMS												
	FFY 1990-93*	FFY 1994	FFY 1995	FFY 1996	FFY 1997	FFY 1998	FFY 1999	FFY 2000	FFY 2001	FFY 2002	FFY 2003	Total
State Goods and Services												
HHSDC Project Staff	\$ 3,847,187	\$ 2,121,587	\$ 1,685,436	\$ 2,024,604	\$ 2,423,765	\$ 561,162	\$ -	\$ -	\$ -	\$ 64,021	\$ 221,074	\$ 12,948,836
County Staff Consultant Contracts	\$ -	\$ 305,054	\$ 395,288	\$ 848,886	\$ 1,595,292	\$ 261,134	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,405,654
CDSS Staffing Costs	\$ -	\$ -	\$ 20,604	\$ 204,485	\$ 205,935	\$ 41,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 472,274
HHSDC WAN Services	\$ -	\$ -	\$ 4,513	\$ 136,676	\$ 33,192	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 174,381
HHSDC Admin Overhead	\$ -	\$ -	\$ 55,856	\$ 437,582	\$ 630,100	\$ 136,321	\$ -	\$ -	\$ -	\$ 9,264	\$ 31,989	\$ 1,301,112
Subtotal	\$ 3,847,187	\$ 2,426,641	\$ 2,161,697	\$ 3,652,233	\$ 4,888,284	\$ 999,867	\$ -	\$ -	\$ -	\$ 73,285	\$ 253,062	\$ 18,302,256
County Goods and Services												
County Conversion	\$ -	\$ -	\$ -	\$ 13,550	\$ 2,354,454	\$ 1,238,221	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,606,225
County SACWIS Implementation	\$ -	\$ -	\$ -	\$ 21,277,072	\$ 14,650,710	\$ 2,076,118	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 38,003,900
Subtotal	\$ -	\$ -	\$ -	\$ 21,290,622	\$ 17,005,164	\$ 3,314,339	\$ -	\$ 41,610,125				
Vendor Goods and Services												
Development Contract	\$ 4,839,416	\$ 977,914	\$ 6,000,000	\$ 64,314,942	\$ 5,180,215	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 81,312,487
Enhancements	\$ -	\$ -	\$ -	\$ -	\$ 2,108,992	\$ 3,590,591	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,699,583
Unanticipated	\$ -	\$ -	\$ -	\$ 223,310	\$ 641,782	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 865,092
Depreciation	\$ -	\$ -	\$ -	\$ 191,493	\$ 255,324	\$ 255,324	\$ 63,831	\$ 63,831	\$ 63,832	\$ -	\$ -	\$ 893,635
Subtotal	\$ 4,839,416	\$ 977,914	\$ 6,000,000	\$ 64,729,745	\$ 8,186,313	\$ 3,845,915	\$ 63,831	\$ 63,831	\$ 63,832	\$ -	\$ -	\$ 88,770,797
Contracted Goods and Services												
Project Management Support	\$ -	\$ -	\$ -	\$ 133,812	\$ 1,306,697	\$ 234,812	\$ -	\$ -	\$ -	\$ -	\$ 108,993	\$ 1,784,314
Acquisition Support	\$ -	\$ -	\$ -	\$ -	\$ 2,035	\$ 679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,714
Technical Support	\$ -	\$ -	\$ -	\$ 287,680	\$ 436,620	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 724,300
New Development	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal	\$ -	\$ -	\$ -	\$ 421,492	\$ 1,745,352	\$ 235,491	\$ -	\$ -	\$ -	\$ -	\$ 108,993	\$ 2,511,328
Total One-Time	\$ 8,686,603	\$ 3,404,555	\$ 8,161,697	\$ 90,094,092	\$ 31,825,113	\$ 8,395,612	\$ 63,831	\$ 63,831	\$ 63,832	\$ 73,285	\$ 362,056	\$ 151,194,507

*Costs for planning and procurement of development/implementation vendor

4.3.2.2 Ongoing and Operations Costs

Maintenance and Operations (M&O) changes began in 1996, prior to the completion of system development, with wide area network charges and local M&O charges to assist with the office automation rollout. The ongoing M&O costs shown below are the actual costs incurred to-date to:

- Maintain and update the current custom CWS/CMS application to ensure it continues to support the CWS program;
- Maintain the CWS/CMS application to remain current with legislative and regulatory mandates;
- Operate the CWS/CMS in all counties and CDSS at the service levels defined in the contract; and
- Maintain the required level of service to users by assuring the hardware and software infrastructure is technically sufficient to support the required case management documentation required of the CWS program.

It is important to note that FFY 2004 is a partial year and reflects only nine months of the total 12-month period.

Table 9 - Ongoing Costs to Maintain CWS/CMS

Actual Expenditures Summary										
FFY 2001 - 2004 On-Going Costs to Maintain CWS/CMS										
	FFY 1996	FFY 1997	FFY 1998	FFY 1999	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004*	Total
State Goods and Services										
HHSDC Project Staff	\$ -	\$ -	\$ 1,754,968	\$ 2,089,208	\$ 2,686,136	\$ 3,416,310	\$ 3,795,606	\$ 4,790,024	\$ 4,027,976	\$ 22,560,227
County Staff Consultant Contracts	\$ -	\$ -	\$ 937,175	\$ 1,167,767	\$ 1,516,266	\$ 272,613	\$ 361,058	\$ 342,065	\$ 216,972	\$ 4,813,915
CDSS Project Staff	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,868,987	\$ 1,797,926	\$ 3,390,880	\$ 7,013,929	\$ 15,071,722
HHSDC WAN Services	\$ 1,076,380	\$ 2,414,245	\$ 3,775,955	\$ 3,645,977	\$ 5,108,398	\$ 4,227,861	\$ 4,175,290	\$ 3,703,551	\$ 2,262,802	\$ 30,390,458
DGS Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 219,005	\$ 32,235	\$ 105,321	\$ 241,452	\$ 598,014
HHSDC Admin Overhead	\$ -	\$ -	\$ 440,861	\$ 593,696	\$ 980,726	\$ 494,581	\$ 597,601	\$ 671,234	\$ 630,997	\$ 4,409,696
Subtotal	\$ 1,076,380	\$ 2,414,245	\$ 6,908,959	\$ 7,496,648	\$ 10,291,526	\$ 11,499,356	\$ 10,759,716	\$ 13,003,075	\$ 7,380,199	\$ 77,844,033
County Goods and Services										
Local User M&O	\$ 88,510	\$ 993,597	\$ 7,195,940	\$ 14,984,787	\$ 10,688,244	\$ 10,558,614	\$ 12,759,715	\$ 9,846,029	\$ 8,912,997	\$ 76,028,433
Depreciation	\$ -	\$ -	\$ -	\$ 25,932	\$ 115,874	\$ 491,141	\$ 679,399	\$ 750,058	\$ 537,997	\$ 2,600,400
Subtotal	\$ 88,510	\$ 993,597	\$ 7,195,940	\$ 15,010,719	\$ 10,804,118	\$ 11,049,755	\$ 13,439,114	\$ 10,596,087	\$ 9,450,994	\$ 78,628,833
Vendor Goods and Services										
Basic M&O Services	\$ -	\$ 1,440,000	\$ 7,610,000	\$ 28,562,864	\$ 40,797,148	\$ 54,840,000	\$ 55,160,000	\$ 56,493,334	\$ 41,970,003	\$ 286,873,349
Additional User M&O (ARCs)	\$ -	\$ 2,095,145	\$ 11,192,241	\$ 9,247,361	\$ 8,286,546	\$ 6,727,105	\$ 10,752,440	\$ 9,439,758	\$ 79,725	\$ 57,820,321
System Changes	\$ -	\$ 2,756,458	\$ 6,714,111	\$ 5,597,418	\$ 6,250,000	\$ 9,757,443	\$ 2,458,293	\$ 8,513,494	\$ -	\$ 42,047,216
Technical Infrastructure	\$ -	\$ 2,000,000	\$ 14,472,143	\$ 8,999,999	\$ -	\$ 114,659	\$ 5,853,378	\$ 323,721	\$ 234,320	\$ 31,998,220
Subtotal	\$ -	\$ 8,291,603	\$ 39,988,495	\$ 52,407,642	\$ 55,333,694	\$ 71,439,207	\$ 74,224,111	\$ 74,770,306	\$ 42,284,048	\$ 418,739,106
Contracted Goods and Services										
Project Management Support	\$ -	\$ -	\$ 638,885	\$ 683,162	\$ 746,484	\$ 1,464,465	\$ 1,284,819	\$ 1,601,965	\$ 1,199,919	\$ 7,619,699
Acquisition Support	\$ -	\$ 316,338	\$ 651,680	\$ 963,205	\$ 969,599	\$ 773,618	\$ 727,987	\$ 389,155	\$ 717,726	\$ 5,509,309
Technical Support	\$ -	\$ -	\$ 218,578	\$ 505,958	\$ 380,903	\$ 2,334,640	\$ 3,228,468	\$ 8,078,376	\$ 7,900,355	\$ 22,647,278
Subtotal	\$ -	\$ 316,338	\$ 1,509,142	\$ 2,152,325	\$ 2,096,986	\$ 4,572,723	\$ 5,241,274	\$ 10,069,496	\$ 9,818,001	\$ 35,776,286
Total On-Going Costs	\$ 1,164,890	\$ 12,015,783	\$ 55,602,536	\$ 77,067,334	\$ 78,526,324	\$ 98,561,041	\$ 103,664,215	\$ 108,438,965	\$ 68,933,241	\$ 610,988,258

* Partial Year - FFY 2004 Maintenance Costs reflect actual costs captured from October 1, 2003 - June 30, 2004.

4.3.2.3 Benefits and Savings Realization

In the 1995 Advance Planning Document (APD) for the CWS/CMS, the State anticipated achieving two primary benefits from system implementation:

- Administrative efficiencies through the increased productivity of workers and the displacement of existing county IT systems used to support the delivery of Child Welfare Services; and
- Programmatic benefits through improved business processes and uniform statewide tools introduced to social workers for the first time.

While the State recognized the implemented CWS/CMS would deliver these benefits, the impact on many of the program components managed by CWS/CMS were not estimated at the inception of the project.

Using the 1998 ACF-approved APDU data as the baseline, the following table is based on the federal cost benefit analysis (CBA) depicts the total cost reductions/avoidances for each CWS/CMS benefit. The table includes the updated benefit targets from the approved 2004 APDU.

Table 10 - CWS/CMS Benefit Projections and Updates

	1998 Projection	2004 APDU
1. Converting County CWS Systems	\$135,814,609	\$141,437,054
2. Eliminating Other County Systems	8,288,738	9,905,485
3. Foster Care Information System (FCIS) Discontinuance	10,921,050	10,921,050
4. Family Maintenance Case Reporting	89,478,308	178,567,428
5. Adoption Foster Care Analysis and Reporting System (AFCARS) Penalty Avoidance	28,912,481	n/a
6. Productivity Gains	298,723,168	0
7. Length of Stay (LOS) in Foster Care	527,085,468	150,952,955
8. ER Caseload Closures	N/A	0
9. Family Maintenance Cases with Children Removed from Home	N/A	62,722,869
10. Kinship Guardianship Assistance Program	N/A	0
11. Forms Printing/Reproduction Costs	N/A	0
12. Base Funding Adjustment	N/A	0 ¹⁶
Total	\$1,099,223,822	\$554,506,841

¹⁶ The Base Funding Adjustment has been retained as a placeholder, although no benefit is claimed in this update. In the future, the State may quantify the cost of additional Social Workers that would have been required to meet Caseload standards had CWS/CMS not been implemented in California.

The State reports to the ACF via the Annual APDU on the level to which savings have been realized due to implementation of the CWS/CMS. The State has reported that CWS/CMS is consistent with the intent of the SACWIS regulation goal of efficient, effective, and economical administration of Title IV-E and IV-B programs in California. The chart below compares the costs to the benefits (realized to date) because of implementing the CWS/CMS and shows the projection of costs and benefits through FFY 2008.

Table 11 - CWS/CMS Cost Benefit Measurement Actuals through FFY 2004 and Projections to FFY 2008

COST BENEFIT MEASUREMENT^{a,b}																
System Life Cost Profile																
<i>Description</i>	<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>	<i>Year 13</i>	<i>Year 14</i>	<i>Year 15</i>	<i>Total</i>
	<i><1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	
One Time Costs	\$12.1	\$8.2	\$90.1	\$31.8	\$8.4	\$0.1	\$0.1	\$0.1	\$0.2	\$0.4	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$152.3
Additional Estimated Costs ^c	\$0.0	\$0.0	\$0.1	\$1.0	\$7.2	\$15.0	\$10.8	\$11.3	\$13.4	\$10.6	\$42.6	\$21.0	\$20.8	\$20.8	\$20.8	\$195.5
Ongoing Costs ^{d,e}	\$0.0	\$0.0	\$1.1	\$11.0	\$48.4	\$62.1	\$67.7	\$87.5	\$90.1	\$98.3	\$87.4	\$102.2	\$113.9	\$113.9	\$113.9	\$997.4
Total Costs	\$12.1	\$8.2	\$91.3	\$43.8	\$64.0	\$77.1	\$78.6	\$98.9	\$103.8	\$109.2						\$687.0
Total Projected Costs											\$129.9	\$124.1	\$134.7	\$134.7	\$134.7	\$658.1
System Life Benefits Profile																
<i>Description</i>	<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>	<i>Year 13</i>	<i>Year 14</i>	<i>Year 15</i>	<i>Total</i>
	<i><1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	
Total Benefits				\$3.4	\$8.6	\$16.2	\$26.0	\$48.1	\$53.8	\$60.8						\$217.0
Total Projected Benefits											\$59.6	\$66.1	\$68.8	\$70.6	\$72.4	\$337.5
Cumulative Benefit / Cost Profile (Actual and Projected)																
<i>Description</i>	<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>	<i>Year 13</i>	<i>Year 14</i>	<i>Year 15</i>	<i>Total</i>
	<i><1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	
Cumulative Total Benefits	\$0.0	\$0.0	\$0.0	\$3.4	\$12.0	\$28.2	\$54.3	\$102.3	\$156.2	\$217.0	\$276.6	\$342.7	\$411.5	\$482.1	\$554.5	\$554.5
Cumulative Total Costs	\$12.1	\$20.3	\$111.5	\$155.4	\$219.4	\$296.5	\$375.1	\$474.0	\$577.8	\$687.0	\$817.0	\$941.1	\$1,075.7	\$1,210.4	\$1,345.1	\$1,345.1
Comparison																
<i>Description</i>	<i>Current Actual</i>					<i>Projected</i>										
Total Benefits	\$217.0					\$554.5										
Less Total Costs	\$687.0					\$1,345.1										
Net Benefit (Cost)	(\$470.1)					(\$790.6)										
Benefit/Cost Ratio	3.16648					2.42579										
Breakeven																

^a Dollars in millions.

^b Actuals, Years 1 through 10; 1994 through 2003.

^c Additional Estimated Costs include County Goods & Services

^d Projected Costs are proposed budget for 2004 to 2006, extended through 2008.

^e Consistent with OISM-ACF-IM-93-4, Costs include training activities described in our Title IV-B State Plan.

4.3.3 Key Findings

This section identifies the key financial trends and findings for costs and benefits related to the CWS/CMS. In general, findings concentrate on the last full three years of cost data (i.e., FFY 2001 through FFY 2003). Future projections, where appropriate, have been included to illustrate anticipated trends and funding allocations. Findings within the section highlight areas that may be affected by the implementation of any of the selected alternatives. The following sections describe each of the key financial findings:

- **Continuing SACWIS Development Costs** – The SACWIS Assessment Review is still open, pending completion of SACWIS functions required to close out the assessment. The CWS/CMS has been in SACWIS Assessment Review since August 1999. Until the SACWIS Assessment Review is complete, the State will continue to incur one-time development costs to complete the SACWIS.
- **Maintenance and Operations Cost Trends** – maintenance and operations costs have increased an average of 23% per year, with growth slowing to less than 1% per year since FFY 2002. Between 1996 and 1998, maintenance costs increased consistently with the increased activities associated with CWS/CMS development (WAN usage), office automation rollout to the counties, and implementation of the CWS/CMS statewide. Between system implementation in FFY 1998 and FFY 2002, CWS/CMS experienced a significant statewide increase in overall usage. The increased usage was attributed to: 1) increased number of users and 2) increased transaction volume (i.e., full utilization of the CWS/CMS and increased size and ratio of transaction per day to number of active cases).
- **Use of State Goods and Services Budgeted M&O Funds** – The State Goods and Services budgeted costs have been consistently utilized at or above 100% each year. The State has successfully stayed within 10% of its planned budget for the past three fiscal years.
- **Unused Portion of County Goods and Services Budgeted M&O Funds** – The County Goods and Services cost category is comprised of expenditures for merit staff, local contract services, local networks, hardware/equipment (servers, PCs laptops, printers), and software required to support CWS/CMS. Costs in this category are only attributable to SACWIS M&O (not Title IV-E program administrative expenses) and reported as a county expense via the CDSS claiming system. Any costs that are not declared through the claiming system are not reimbursed from the State budget. The budgeted depreciation costs captured within the County Goods and Services budget have been fully utilized each fiscal year; therefore, they will not be included in this discussion. The Local M&O subcategory, however, shows significant deviations between budgeted costs and actual expenditures.
- **Unused Portion of Vendor Goods and Services Budgeted M&O Funds** – Four categories comprise the Vendor Goods and Services cost category: 1) Basic M&O Service, 2) Additional User M&O, 3) System Changes, and 4) Technical Infrastructure. The Basic M&O costs are fixed costs per contract language and do not deviate as a rule; therefore, they will not be included in the discussion of unused funds. It is important to note that a budget placeholder entered in FFY 2003 was not removed when the new contract amounts were updated mid-year, which resulted in the dual reporting of budgeted amounts for Basic M&O. The budget reported that 46% of the Basic M&O budget was not used, which did not reflect the true accounting of actual expenditures to the true budget amount. The discussion in this finding will focus on the percentage of the Vendor Goods and Services budget not used during FFY 2001 through FFY 2003 for system changes and technical infrastructure.

- ❑ **Planned System Changes** – Currently, the State can utilize up to \$10.5 million annually for system changes. However, the allocation for specific changes cannot be placed in the actual budget until federal approval is obtained for each change.
- ❑ **Technical Infrastructure** – Because of the architecture of CWS/CMS, it is critical that technology maintenance activities occur within prescribed timeframes. These technology maintenance activities are necessary for complete and accurate information to help make critical child safety decisions and meet mandated State and federal reporting requirements.
- **As Needed Use of Contracted Goods and Services M&O Funds** – The State utilizes contracted services in response to increased workloads (on an as-needed basis), a greater level of effort necessary to complete services, the need for specialized skills, or unanticipated activities.
- **Benefit Realization Trends** – The State of California reports within its approved 2004 APDU, that CWS/CMS is consistent with the intent of the SACWIS regulation goal of efficient, effective, and economical administration of Title IV-E and IV-B programs in California. CWS/CMS currently supports 58 counties (each with county-specific business administration, different organization structures, and diverse operational processes) in the automated processing of Child Welfare cases. California's current statewide workload averages 730,000¹⁷ annually. Prior to the implementation of CWS/CMS, a significant portion of the counties utilized entirely manual processes for managing cases and reporting information to county, State, and federal agencies. Without CWS/CMS, the ability for case workers to effectively provide children with the necessary services and report required information to funding and oversight agencies while managing an ever-increasing workload may have been notably diminished. With the implementation of CWS/CMS, the State and counties projected realizing benefits in the following areas:
 - ❑ Converting county CWS systems.
 - ❑ Eliminating other county systems.
 - ❑ FCIS discontinuance.
 - ❑ Family maintenance case reporting.
 - ❑ Length of stay in foster care.
 - ❑ Family maintenance cases with children removed from home.
- **Anticipated Costs of Future Plans** – The State has outlined in its 2004 APDU its FFP requests for future M&O activities through September 2006 (FFY 2006). Activity descriptions, schedules, budgets, and applicable procurement details can be found in the 2004 APDU. The following summarizes each request:
 - ❑ Funds have been requested in the State Goods and Services category for FFY 2005 (\$17.85 million) and FFY 2006 (\$32.73 million) for HHSDC, CDSS, county consultant staff, DGS fees, WAN services, data center hosting services, and administrative overhead costs.
 - ❑ Funds have been requested in the County Goods and Services category for FFY 2005 (\$28.37 million) and FFY 2006 (\$28.25 million) for system support staff and local goods and services costs.

¹⁷ SFY 2005/06 Governor's Budget cited the caseload at approximately 730,000.

- For each anticipated system change (i.e., Child Welfare Improvement Activities Release, M&O Release), and a FFP requests will be submitted in As-Needed APDUs as each work order is finalized.
- Funds have been requested for Statewide Technical Refresh Activities, (\$4.49 million for FFY 2005 and \$3.49 million for FFY 2006) for office suite software upgrades, operating system upgrades, asset management software, printer replacement, and MS Exchange email services move to the State Data Center.

Drivers, Requirements, and Opportunities

5.0 Drivers, Requirements, and Opportunities

This section documents the CWS/CMS' current business, technology and financial drivers, requirements and opportunities, which were used as the basis for establishing a set of evaluation categories and criteria for assessing the relative viability of the three alternatives to meet the current and long term needs of the CWS/CMS user community.

The TAAA Team conducted a detailed assessment of the current needs by reviewing existing documentation and performing site visits, interviews and workshops with all stakeholder groups. These included:

■ Key Documentation

- ❑ CWS/CMS Strategic Plan (updated June 2003)
- ❑ CWS/CMS Technical Architecture Strategic Plan
- ❑ TAAA Visioning Session Notes
- ❑ CWS/CMS Go Forward Plan
- ❑ CWS/CMS Go Forward As-Needed APDU
- ❑ CWS/CMS 2002/2003 Annual APDU
- ❑ Final Report – California Child and Family Services Review
- ❑ CWS/CMS SACWIS Review Guide
- ❑ CWS/CMS – Expanded Adoptions System Feasibility Study and Special Project Reports
- ❑ CWS/CMS – Alternatives Analysis for IV-E Eligibility Determination
- ❑ Processes Supporting Foster Care and Adoption Assistance Financial Management in California Counties

■ Workshops

- ❑ County Line Workers
- ❑ County Managers and Supervisors
- ❑ Operations, Maintenance and Program Staff
- ❑ CWS/CMS Oversight Committee

■ Interviews

- ❑ CWDA Director
- ❑ CDSS Staff (Program, Policy, IT and Financial)
- ❑ Sacramento County Adoptions Staff
- ❑ Yolo County Eligibility Determination Staff

■ Site Visits

- San Mateo County
- Los Angeles County
- Colusa County
- Santa Clara County

The drivers, requirements and opportunities were validated with stakeholders on December 21, 2004. The critical needs identified in this section of the report were incorporated as evaluation criteria by which each alternative was subsequently compared.

5.1 Business Drivers

Since deployment of CWS/CMS in 1997, Child Welfare workers have become increasingly dependent upon this system for providing the most current and accurate data required to perform the vital role of protecting children at risk. At the same time, workers faced an increase in programmatic expectations to achieve specific outcomes with difficult case situations. Therefore, they demanded a system that efficiently accommodates entry of State data requirements, is responsive to programmatic changes, and enhances service delivery.

Additionally, as CWS/CMS end-users have become more knowledgeable about web-based applications and services, the user's overall level of sophistication and technical proficiency has increased. This has resulted in an overall increase in end user expectations of what CWS/CMS should provide them. Because of the size and complexity of the system, complex change management processes and problems with funding; system changes have not kept pace with user needs and programmatic requirements.

This section provides an overview of the business drivers that must be addressed to meet end user and stakeholder expectations of the system.

- CWS/CMS receives frequent, ongoing requests from State and county users and stakeholders to perform functional modifications to CWS/CMS to meet programmatic, legislative, and regulatory needs. Because of complex funding and decision-making processes, timely system changes do not generally occur and the State and counties must find temporary workarounds until the application is updated. For example, court and State Judicial Council reports/forms that could be produced by the system must often be manually produced if CWS/CMS is not updated in a timely fashion.

Because the application is custom developed and relies heavily on older technologies, development costs are high and the State's ability to seek alternate solutions or vendors is limited. Reduced competition is considered a major factor in the high costs of system maintenance.

- Since deployment of CWS/CMS in 1997, the system has become the primary tool and database to document casework activities regarding abused and at-risk children in California. This has resulted in a diverse group of potential system users desiring access to this system. However, as currently designed, CWS/CMS may not provide the flexibility to allow different users to access limited portions of CWS/CMS data or functionality. This is

becoming increasingly important given the direction of the child welfare program towards a more inclusive casework model incorporating multiple agencies in the management of the case.

Additionally, CWS/CMS' current design limits the State's ability to interface with other automated systems such as the Child Support Enforcement System and the CalWORKS systems.

To avoid costly and redundant corollary systems, CWS/CMS must provide a means of defining new user groups, user roles, and user access to data and/or functionality for such groups as the following:

- Bureau of Indian Affairs (BIA)
- Courts and Court Officers
- Independent Living Program (ILP) Service Providers
- Health and Education Providers
- Foster Parents
- Adult and Juvenile Probation
- Law Enforcement Agencies
- Mental Health and Other Therapeutic Service Providers
- Public Health Nurses
- Community-Based Organizations

- Currently, case workers must manually enter case data into CWS/CMS. CWS case aids, ancillary CWS Service Providers, and data entry clerks are increasingly employed to enter routine data because data entry is often a time consuming activity. This is a result of complex menu navigation to reach data entry screens, the requirement to enter similar data repeatedly, and the number of fields that must be manually populated on data entry screens.

During development of the CWS/CMS Strategic Plan¹⁸, a needs assessment involving more than 350 stakeholders was conducted. During this assessment effort, stakeholders identified numerous technology changes to increase user efficiency by providing more modifications and enhancement to the CWS/CMS data entry mechanisms. Among the needs defined were:

- Simplify the data entry process, requiring fewer screens with less downloaded data;
- Automatically notify others when a change occurs, when the change affects the area the users are in and need to be aware of (e.g., when a placement change occurs send an update notification to an eligibility worker);
- Automatically populate forms and/or reports with case data that already exists within the system,
- Enable users to access information in multiple cases simultaneously; and
- Increase system flexibility regarding business rules and navigational order of required input.

As CWS/CMS is modernized, it must provide better mechanisms for entering and capturing data as well as producing data to assist in program administration and measuring program

¹⁸ CWS/CMS Strategic Plan , June 2002, updated on December 2003.

performance. Additionally, when users modify information (data) in one area of the system that users in another area of the system need to be aware of, there is no mechanism within CWS/CMS for automatically notifying others of the change (e.g. a placement change doesn't automatically trigger an updated notice to an eligibility worker). Further, some forms and/or reports within CWS/CMS do not automatically populate with case data that exist within the system. These characteristics increase costs, decrease user efficiency, and increase the likelihood of data inconsistency. CWS/CMS must provide better mechanisms for entering and capturing data. As CWS/CMS is modernized, the system must pre-populate across all areas of the application and to all system generated forms and reports. Increasing end user efficiency and data consistency and data integrity must be a prime consideration of the CWS/CMS redesign effort.

- Currently, remote access to the CWS/CMS is cumbersome or the ability to connect is not available. Case workers have identified the need to retrieve and record information while in the field. A few examples of how this remote technology could be applied are as follows:
 - While in court, case disposition information can be entered.
 - While waiting for court appointments, case information can be entered.
 - While in the home performing assessments or follow-up appointments, data can be entered during or shortly after the visit.
 - As information is obtained while out in the field during personal interviews, phone conversations, visits with other organizations, information can be directly entered into CWS/CMS.

With a greater ability of remote access, information could be entered into the system in a more timely fashion. In addition, this ability provides a more collaborative environment as information can also be directly accessed while in the field.

5.1.1 Programmatic Changes

The following programmatic changes were identified as additional business drivers during the TAAA Team workshops held on December 1, 2004 and December 8, 2004 with county and State CWS/CMS users:

- **Outcome-Based / Performance Driven** – Evaluate the success of a child as he or she moves through the program.
- **Safety Assessments** – Evaluate case for possible child safety issues and exposures through the application of a risk assessment approach to safety and risk in child protective cases.
- **Team Decision Making** – Ability to collaborate with other community stakeholders (family, youth, community partners, others) to determine the best approach to handling a case (i.e., information access, tracking meeting commitments, researching questions, etc.)
- **Differential Response** – Support for tracking and monitoring results at an aggregate level for cases referred to other community stakeholders to be handled as an alternative to the traditional child protective services system.
- **Concurrent Planning** – Allow the ability to track concurrent planning activity on the system.

5.2 Requirements

5.2.1 Business Requirements

The workshops were used to produce a list of business requirements (i.e., functional enhancements) that were viewed, as higher priority business needs:

- Adoption Case Management.
- Interface to Title IV-E Eligibility Determination.
- Foster Care Placement.
- Independent Living Program.
- Streamlined, more intuitive user interface and navigation (e.g. ability to close out several clients, update help information, merge two case plans, and have one screen for specific information such as health info).
- Enhanced data entry functionality to reduce data entry redundancy and includes features to streamline data capture (i.e., court reporting, medical information).
- Support for safety assessment tools.
- Improved ability for timely updates (i.e., updated forms, response to legislative changes, software fixes, program changes/enhancements).
- Live interface from ancillary systems developed by the counties until such functionality can be incorporated into the single, statewide system.
- Support for Differential Response.
- Improved training content and multimedia delivery mechanisms.
- Improved system reporting and trend analysis for management and case workers.
- Two-way interfaces with critical systems (e.g. CalWORKS, Medi-Cal, Child Health and Disability Prevention (CHDP), Child Support).
- Ability for concurrent update of case data without loss of information.
- Access to cases in other counties in read only mode for emergency response.
- Remote access and wireless capabilities.
- Support for multiple languages.
- Ability to identify foster care under and overpayments through automated system interfaces.
- Add pictures and scanned documents easily and without storage issues.
- More granular security control levels to provide the right staff with appropriate access.
- Need the ability to produce a basic “Face Sheet” (case profile data) similar to San Diego.
- Enhance handling of Special Projects and Pilot Projects tracking.
- Ability to geographically identify information (e.g. auto population of ZIP codes, links to directions).
- Ability to identify and locate a neighborhood and service provider information (e.g. school districts).
- Improve CWS/CMS Search functionality and effectiveness.

5.2.2 Technology Requirements

The program needs have been captured in the CWS/CMS Strategic Plan as separate technology projects. The projects/requirements were identified and classified into four categories: Critical, High, Medium, and Low.

5.2.2.1 CWS/CMS Technology Projects (Critical)

The CWS/CMS Strategic Plan (with December 2003 updates) identifies the following technology projects as critical to their strategy to achieve their business goals:

- Improve functionality in Adoptions Case Management (per SACWIS requirements).
- Improve functionality in Probation IV-E Foster Care payments (per SACWIS requirements).
- Interface with IV-E Eligibility Determination and Benefits Calculation system (per SACWIS requirements).
- Interface with SAWS IV-A system including Financial Management (per SACWIS requirements).
- Interface with Medi-Cal (Title XIX) system (per SACWIS requirements).
- Interface with Child Support system (per SACWIS requirements).
- Simplify data entry through applets that require fewer screens, bring down less data and thus expedite entry.
- Develop infrastructure to support out-of-office access, including technology and staff support (e.g., Personal Digital Assistants (PDA), laptops, wireless, faster access via systems like dial-up, broadband, satellite).
- Provide standardized reports showing county and State outcomes as defined by the Adoptions, Safe Families Act (ASFA), AB 636, and the Program Improvement Plan (PIP).
- Provide easy access to information that is helpful to each type of user: standardized queries, reports, real-time data, on-line support, and so forth.
- Expand and improve web-based and self-directed interactive training.
- Assess the feasibility of, and where feasible proceed with, moving major portions of the current CWS/CMS application from the desktop to the server (i.e., from a fat client to a thin client technical architecture).
- Ensure data in state databases is accessible via CWS/CMS (e.g., schools, MEDS).

5.2.2.2 CWS/CMS Technology Projects (High)

The CWS/CMS Strategic Plan (with December 2003 updates) identifies the following high-priority technology projects:

- Develop additional ways to enter data and documents via scanners, digital cameras, voice recognition, etc.
- Assess and implement ways to reduce or eliminate occurrences of optimistic concurrency conflicts in all future system improvements and releases.
- Research options to enable users to access new information without closing out the current case (e.g., multiple cases open and the ability to quickly save them when a new case is being opened).

- Increase system flexibility to allow counties to enter data more efficiently (e.g., identify business rules that might be suspended to allow partial entry of data, flexible order of data entry, and so forth).
- Allow selected other user groups to have limited access into CWS/CMS to enter data (e.g., Mental Health staff or County Counsel).
- Improve functionality in the Independent Living Program (ILP) including post emancipation tracking.
- Provide multi-lingual case plans and court reports.
- Improve functionality in Health and Education Passport (HEP).
- Improve the Moves, Adds, and Changes (MAC) process to respond more quickly to county needs.
- Advocate with California Social Work Education Center (CalSWEC) and colleges / universities to integrate CWS/CMS training into Bachelor of Social Work (BSW) and IV-E Masters of Social Work (MSW) curriculum.
- Provide county web access to status of CWS/CMS Help Desk tickets.
- Work with CDSS Community Care Licensing Division to modify the Licensing Information System (LIS) to provide data more effectively to CWS/CMS.

5.2.2.3 CWS/CMS Technology Projects (Medium)

The CWS/CMS Strategic Plan (with December 2003 updates) identifies the following medium-priority technology projects:

- Improve capabilities for creating and formatting court reports, case plans, etc.
- Improve functionality in transmitting documents directly from CWS/CMS (e.g., without creating additional documents in other applications).
- Assess and improve the usefulness and timeliness of automatic reminders for case management activities, due dates, etc.
- Effective linkage to Criminal Law Enforcement Tracking System (CLETS).
- Effective linkage to Department of Justice (DOJ) Child Abuse Registry system.
- Effective linkage to Local Dependency Court systems.

5.2.2.4 CWS/CMS Technology Projects (Low)

The CWS/CMS Strategic Plan (with December 2003 updates) identifies the following low-priority technology projects:

- Effective linkage to Public Health systems.
- Effective linkage to Local Education systems.
- Effective linkage to Local Probation systems.
- Effective linkage to Mental Health programs.
- Effective linkage to Local Law Enforcement systems.
- Effective linkage to Workforce Investment Act (WIA).

- Effective linkage to Drug and Alcohol programs.
- Effective linkage to Probation Case Management.
- Effective linkage to In-Home Support Services (IHSS) system.
- Effective linkage to Adult Protective Services (APS) systems.
- Effective linkage to General Assistance Programs.

5.3 Opportunities

Based on user input and the drivers, objectives, and requirements described above, the TAAA Team compiled a list of opportunities that could be enabled through incorporation of the current county business needs and by addressing current system limitations or functionality gaps. It is important to note that the technical architecture of the future CWS/CMS will not result in opportunity realization, rather the technology merely provides a platform by which these opportunities may be enabled.

The opportunities defined are described as qualitative benefits and link to factors other than cost. They link to legislative mandates, program goals, and outcome measures. The following describes how existing and new qualitative benefits apply.

- **Increased Delivery of Services to Children and Families.** A SACWIS-compliant system improves the lives of children and their families in the following ways:
 - **Immediate Response.** Online statewide historical, referral, and case data makes it easier for staff to assess and respond to children at risk with more complete information in the decision making process.
 - **Improved Client Services.** Immediate access to and knowledge of recent efforts and the history of client assessments/service planning leads to more appropriate case decision making and service delivery.
 - **Health/Education Passport.** Readily available medical and educational information allows case workers, substitute care providers, and Public Health professionals to better manage the safety and well-being of children.
 - **Children Placed More Quickly into Permanency.** Provides the case worker with the ability to manage the services delivery and move the child more rapidly into the most appropriate permanent setting.
 - **Increase in Successful Outcomes.** Automation of tasks allows case workers to spend more time providing service to children, resulting in the increased likelihood of better outcomes.
- **Enhancing Social Work Practice.** The future CWS/CMS can enable the improvement of social work practices. Improvements in work practices that would result from remote access and mobility include:
 - **Expanded Availability of Critical Information.** Improved remote access will provide an around the clock gateway to critical information such as referral history, prior placements, legal history of the dependent child, delivered services, and education/health records.

- ❑ **Immediate Entry of Data.** Ability to immediately update and enter data any time any where.
- ❑ **Mobile Workforce.** Provides the ability for the social workers to access the system via PDA's, web browsers, wireless telephones, and laptops. This allows social workers in large and rural counties to spend more time doing social work in the field rather than traveling to the office to record information.
- ❑ **Provides Quick Access.** Provides the users with consistent and quick access from any location.
- **Increased Delivery of Services in Adoption.** The automation of developing and implementing a CWS/CMS adoptions case management system will improve the lives of children and their families in the following ways:
 - ❑ **Provide Adoption Data.** The automation of adoptions will ensure counties, CDSS, Legislature, and federal government have necessary adoption information. The automation of adoptions will allow CDSS to administer the statewide program in a cost-effective way and perform quality assurance functions such as Interstate Compact on Adoption and Medical Assistance, and AFCARS / National Child Abuse and Neglect Data System (NCANDS).
 - ❑ **Improved Placement Matching.** Automation of adoptions will allow county and CDSS staff to quickly identify a child's placement options and match a child's specific needs and characteristics (culture, language, medical and behavioral needs, etc.) with available placement options. This results in faster identified placements, and fewer failed placements due to a better match at the outset thereby improving case outcomes. This also helps counties meet legislative requirements of maintaining children in the most home-like, least restrictive placement. This will ultimately have an indirect effect on reducing the overall costs associated with placements.
 - ❑ **Achieve Program Goals.** Automation of adoptions will support the statutory requirement for concurrent planning. Automation of adoptions will further the development of a consolidated home study process for foster and adoptive families. Automation of adoptions will allow further access to information necessary for post-adoption services, which will support families and potentially prevent adoption disruptions.
- **IV-E Eligibility.** Providing an interface between CWS/CMS and the SAWS consortia, where much of automated IV-E eligibility information resides, will assist the child welfare services program.
 - ❑ **Enhance Eligibility Determinations.** Will result in more accurate federal and State-only determinations for foster care and adoption assistance payments.
 - ❑ **Enhance Eligibility for Other Programs.** Exchange of data will help children be more readily eligible for Medi-Cal benefits and have their well-being better assured.
 - ❑ **Review and Audit Eligibility Information.** Complete eligibility information is available to necessary county and State staffs for independent review and audit, and is available to workers for the life of the case to allow more expeditious redeterminations.
 - ❑ **Increase in Consistency.** Automated IV-E information will ensure the same rules are applied to all cases resulting in consistent eligibility determinations.

- **Interfaces.** Interfaces between CWS/CMS and other systems (i.e., IV-D, IV-A, and XIX) to meet SACWIS and federally optional, State-elected interface requirements will help meet program goals, more effectively administer cases, and more efficiently allow workers to achieve better program outcomes.
 - **SACWIS Interfaces.** A CWS/CMS and IV-D interface will help make better placement decisions by locating parents to place the child with, allow for the automated exchange of common case information, allowing recoupment and reimbursement of previously paid foster care dollars, and capture required AFCARS data. A CWS/CMS and IV-A interface will allow for more informed decisions during intake and investigation, and better-integrated case management between families being served by both programs. A CWS/CMS interface with Title XIX data will help provide needed information to track eligibility for children in foster care, allow for the automated exchange of common case information, and capture AFCARS required data.
 - **Federally Optional, State-Elected Interfaces.** Interfaces are necessary between CWS/CMS and other State systems for better program administration, integrated case management, better service delivery, and more readily achievable program goals. For example, interfaces could include courts and juvenile justice to more quickly move families through the judicial process and achieve permanency outcomes. Interfaces with local education systems could obtain needed education information for well-being outcomes.
- **Financial Management.** The automation of financial management will support the efficient management of the processes necessary to ensure the accurate and timely authorization, processing, and reconciliation of financial records and transactions.
 - **Increasing Accuracy of Payments.** Accurate payments help ensure children's financial needs are met. In addition, this automation will allow the State and counties to account more easily for Out-of-Home Care costs. It would allow counties to correlate financial information to placements.
 - **Reduce Foster Care Eligibility Under and Overpayments.** Automation of Out-of-Home Care and Adoption Assistance Program Payments accounts receivable and payable functions will provide the ability to ensure that underpayments and overpayments are reduced.
- **Improved Management Information Support.** CWS/CMS provides the following improvements which will be enhanced with a data warehouse:
 - **Better Monitoring.** Provides the ability for tracking and monitoring results at an aggregate level for cases that are referred to other service providers.
 - **Custom Reports.** Provides the ability for creating customized reports with the implementation of a data warehouse.
 - **Quality Assurance.** Provides the ability to review case files and track workload for accuracy, completeness, and compliance with federal, State and county requirements.
 - **State and Federal Reporting.** Provides enhanced capability for county program managers and CDSS to monitor compliance with program outcomes measures and AFCARS reporting.
- **Improvement in Credibility.** Integration of information will allow social workers to respond promptly and accurately to external inquiries, thereby improving the credibility of the administering agencies within the community. The overall ability for CWS/CMS to provide

accurate and timely information to the legislature, County Board of Supervisors, other agencies, and to citizen interest groups will be dramatically enhanced.

- **Improved Usability.** Usability gains occur with the implementation of the following:
 - **Menu Navigation.** Simplified menu navigation allows workers to spend less time on the system and more time serving families.
 - **Electronic Documents.** The ability to store and retrieve a variety of document types (i.e., pictures, scanned images, signatures, etc.) results in complete case files in one countywide accessible location.
- **Productivity Gains.** Productivity gains occur with the implementation of the following:
 - **Improved Data Entry Methods.** Data entry improvements result in more complete and accurate data.
 - **Improved Pre-Population of Data.** The ability to pre-populate forms and documents within a case increases user efficiency and decreases repetitive data entry.
 - **Improved Automated Workflow.** An automated data workflow provides the ability to perform numerous functions simultaneously rather than sequentially.
 - **Improved Concurrency.** Multiple users concurrently work on portions of a case record simultaneously. This reduces optimistic concurrency; bandwidth peaks, and enhances the ability to provide integrated case management.
- **Improvement in Ongoing Maintenance.** A new technical architecture would provide the following benefits:
 - **Decrease in Timeline for Enhancements.** A new technical architecture decreases the time to implement changes to the application. This allows the application to reflect program changes more quickly, creating efficiencies for the program operations. (i.e., business progress, forms, data reporting, etc.)
 - **Decrease in Maintenance Time.** A reduction in maintenance time occurs by replacing the hard coded business rules with object-oriented techniques.
- **Improved Security/Confidentiality.** A new technical architecture will provide the following benefits in security and confidentiality.
 - **Interfaces.** Provides easier addition of new user groups to the system by external organizations and systems, while maintaining the proper access control mechanisms.
 - **Tighter Control.** Provides the ability to apply more granular security control levels to limit access to appropriate staff for better-integrated case management.
- **Benefits to Child Welfare Administration.** CWS/CMS will continue to produce benefits for county child welfare program managers and State administrators. The system assists with this effort in the following ways:
 - **Better Program Planning.** More complete and timely data will improve program planning.
 - **Compliance with State/federal Mandates.** Counties and the State can identify compliance issues and/or trends that may lead to compliance issues.

- ❑ **Enhanced Program Oversight.** Online program reviews reduce the need for site visits and increase the number of reviews and technical assistance that can be completed each year.
- ❑ **Issue Resolution.** An improved statewide system increases common understanding of issues, as all parties are able to view the exact same information.
- ❑ **Facilitates Research and Program Analysis.** The system provides a solid basis from which to extract aggregate caseload data and project trends.

SACWIS Completion Analysis

6.0 SACWIS Completion Analysis

In addition to being tasked with comparing the three alternatives for modernizing CWS/CMS, the TAAA Team was required to assess the business need for the four major unfulfilled SACWIS functions and the costs, benefits, and funding implications associated with implementing (or not implementing) them. The TAAA Team's assessment has determined that regardless of cost and funding impacts, implementation of the four major unfulfilled SACWIS functions is imperative to meeting the counties' current business needs. This conclusion was reached after numerous site visits, interviews and workshops conducted with county stakeholders (county line workers, supervisors, managers, and regional directors). In each meeting, a clear and consistent message was presented by the county stakeholders – the four major unfulfilled SACWIS functions are a critical part of the capability needed to enhance the ability of the social worker to provide essential services to children at risk.

Implementation of SACWIS functionality is imperative to meeting the counties' current business needs and is part of the overall business strategy.

A decision to implement the four major unfulfilled SACWIS functions would also result in benefits by automating manual processes and would reduce the number of ancillary systems being developed and maintained at the county level.

The SACWIS completion analysis conducted by the TAAA Team included:

- An evaluation of the three alternatives for their ability to accommodate the major unfulfilled SACWIS requirements;
- Definition of the costs to develop, implement and maintain the major unfulfilled SACWIS functions in each; and
- An analysis of the federal funding ramifications based on whether or not the CWS/CMS is a SACWIS or non-SACWIS system.

This section of the TAAA Report discusses the SACWIS analysis and has been organized as follows:

- Description of the federal SACWIS requirements
- Status of California's SACWIS compliance/non-compliance
- Impacts of unfulfilled SACWIS functionality on California's CWS program
- Impacts of implementing SACWIS
- SACWIS funding assumptions
- SACWIS funding impacts
- Recommended SACWIS direction for the State

6.1 Description of the Federal SACWIS Requirements

The federal SACWIS requirements are broken into eight major sections and within each section, requirements are grouped into several categories. There are 80 SACWIS¹⁹ mandatory and optional requirements in total. For purposes of this report, we have described the eight major sections and listed the categories of requirements that fall within each. Additional details on the SACWIS requirements and the CWS/CMS can be found in Appendix F – Baseline Document.

- **Intake Management** – Processing referrals for service, conducting an investigation, and assessing the need for service.
 - Intake
 - Screening
 - Investigation
 - Assessment
- **Eligibility** – Determining programs for which funding support is available for clients receiving services. Program eligibility may include determining funding for foster care/adoption payments and the type of programs that will allow a client to receive Medi-Cal. This function is usually initiated during the intake function.
 - Initial eligibility determination
 - Changes in eligibility
- **Case Management** – Preparation of service plans, determining whether the agency can provide the services, authorizing the provision of services, and managing the delivery of those services.
 - Service/case plan
 - Case review/evaluation
 - Monitoring service/case plan services
- **Resource Management** – Maintenance and monitoring of information on an array of service providers, including prevention programs, placement services, and foster care providers.
 - Facilities support
 - Foster/adoptive homes support
 - Resource directory
 - Contract support
- **Court Processing** – Legal activities and documentation procedures involving judicial events requiring action on the part of the State agency.
 - Court documents
 - Notifications
 - Tracking

¹⁹ Reference Federal Action Transmittal ACF-OISM-001, which identifies 80 requirements.

- Indian child welfare
- **Financial Management** – Tracks and manages financial transactions. It may be part of the SACWIS itself or may be an automated interface to a department or statewide financial system.
 - Accounts payable
 - Accounts receivable
 - Claims
- **Administration** – Procedures for ensuring support for efficient management, and reliable and accurate operation of the system.
 - Staff management
 - Reporting
 - Administrative support
- **Interfaces** – Electronic links between the child welfare and other systems, to receive, transmit, and verify case and client information.
 - Required interfaces
 - Optional interfaces

6.2 Status of California's SACWIS Compliance / Non-Compliance

Currently, California's SACWIS lacks federal SACWIS compliance in four main functional areas: Adoptions Case Management, Automated Title IV-E Eligibility Determination, Interfaces to Title IV-A, Title IV-D, IV-E, and Title XIX Systems, and Financial Management.

- **Adoptions Case Management** – The CWS/CMS Adoptions subsystem currently only collects Adoption Foster Care Analysis and Reporting System (AFCARS) data elements and provides minimal support for the Adoption Assistance Program (AAP).
- **Automated Title IV-E Eligibility Determination** – The CWS/CMS application does not fully meet federal requirements in eligibility that call for the system to:
 - Document the data used to establish an individual's complete Title IV-E eligibility for independent review and audit; and
 - Ensure accuracy and consistency when determining eligibility.
- **Required Interfaces to Title IV-A, Title IV-D, Title IV-E and Title XIX Systems** – The CWS/CMS application currently does not support automated interfaces to State systems used to support programs administered under titles IV-A (CaWORKS), IV-D (Child Support Enforcement), and XIX (Medi-Cal).
- **Financial Management** – The CWS/CMS application currently does not include financial management functionality or an automated interface to a statewide or department financial system for foster care Out-of-Home Care payments and Adoptions Assistance Payments.

6.3 Impacts of Unfulfilled SACWIS Functionality on California's Child Welfare Services

The first step in developing an understanding of the impact of the four major areas of unfulfilled SACWIS functionality was to assess the business need for this capability and how not having it affects the CWS program. The TAAA Team conducted this assessment as part of a series of workshops, interviews and site visits to identify and define the current needs of the CWS/CMS user community as described below:

■ Workshops

- County line workers
- County managers and supervisors
- Operations, maintenance and program staff
- CWS/CMS Oversight Committee

■ Interviews

- CWDA Director
- CDSS staff (program, policy, IT and financial)
- Sacramento County Adoptions staff
- Yolo County Eligibility Determination staff

■ Site Visits

- San Mateo County
- Los Angeles County
- Colusa County
- Santa Clara County

Overall, the users of the CWS/CMS indicated incorporation of the four major unfulfilled areas of SACWIS functionality would provide significant benefits and would result in improved service delivery, more effective use of the social workers' time, and better-quality case data collected. Additional details on how the unfulfilled SACWIS functionality affects the child welfare program in California are described in the paragraphs that follow.

6.3.1 Adoptions Case Management

The county users identified Adoptions Case Management as one of their top business needs (behind remote access and data reporting) to perform their jobs effectively. The CWS/CMS

The counties have identified Adoptions Case Management as one of their top business needs to perform their job effectively.

Oversight Committee members reiterated this need at the December 2004 meeting. The current CWS/CMS offers limited adoptions information and therefore, does not provide full case management functionality. As a result, one county has developed and maintained an interim system to support their adoptions workload. The current system fails to support program needs because it lacks functionality in several critical areas.

- ***The lack of case management functionality is a barrier to meeting the requirements of recent State and federal laws.***
 - The implementation of the federal ASFA and conforming State statute have created a significantly heightened priority on adoptions by requiring a hearing to discuss a permanent plan for the child, such as adoption, on every child residing in foster care more than one year. California law further requires that adoption determinations be based on an assessment by an adoption agency. Due to these laws, there is significant additional workload for adoptions, particularly in the area of child and applicant assessment, which is not supported by the existing application.
 - AB 1544 (Statutes of 1997, Chapter 793) mandates concurrent planning to move children to permanent homes more quickly. Concurrent planning is a child welfare case planning methodology used when children are removed from their parents' custody due to abuse or neglect and placed into foster care. During the time efforts are being made to return the child home, a contingency plan is developed in the event reunification efforts are unsuccessful. Since this contingency plan is often adoption, this further increases the emphasis on adoption when children in foster care are unable to return home. The existing application does not provide support for concurrent services planning. This functionality would allow workers to document the two service tracks required by law and regulation in CWS/CMS.
- ***The lack of case management functionality compromises the State's adoption program data.***
 - CWS/CMS captures minimal adoptions data. CDSS captures the remaining adoptions data through manual processes. Significant county and State efforts could be minimized if this were automated.
- ***The existing adoption functionality is insufficient to meet the needs of a rapidly expanding statewide adoption program.***
 - Over the last few years, changes in both State and federal laws have increased emphasis on adoption to provide permanence for foster children who are unable to return to their parents. This new focus is moving more foster children to adoption than ever before. Through the California Adoption Initiative, the number of children placed for adoption nearly doubled from 3,265 in SFY 1995/96 to 6,141 in SFY 1998/99. These numbers have increased to over 7,000 for SFY 2005/06²⁰. In addition, the number of children freed for adoption has significantly increased over previous years.
 - Historical data shows that less than 60% of children entering foster care in any given year will return to their parents within the first six years in foster care. With 74,000 children in care²¹, the task of providing children with permanent homes is substantial. Without permanent homes, children will remain in foster care until they emancipate at age 18.
 - Given the expansion of the statewide adoption program, traditional quality assurance efforts are increasingly impractical. However, automated or online case reviews cannot be performed. The current CWS/CMS application is limited and cannot be used by the

²⁰ SFY 2005/06 Governor's Budget cited the number of children placed for adoption as 7,004.

²¹ SFY 2005/06 Governor's Budget cited the average monthly number of children aided by Foster Care as 74,283.

State to perform quality assurance functions on adoption cases. For instance, the CWS/CMS application cannot be used to determine if fundamental regulatory requirements have been met. The only current alternative is to review the physical case file, resulting in a significant investment in staff and travel costs. In order to meet the adoption needs of increasing numbers of children, public adoption agencies will have to begin working with the children, their birth parents and potential adoptive parents shortly after the children enter foster care. These agencies will have to be able to use the CWS/CMS to manage their case activities and record required adoption information on behalf of the child. An example of this involves case contacts.

- Current adoption functionality allows the shielding of adoption data elements. However, case contact narratives with children and adoptive applicants cannot be recorded in a way that is protected by adoption privilege early in the management of the case. The process for recording required information for these families on the CWS/CMS application does not support the business needs and does not meet the federal SACWIS requirements.

6.3.2 Title IV-E Eligibility Determination, Interfaces and Financial Management

Another significant need identified by the CWS/CMS users is the ability to use the system as a single interface to perform eligibility determinations and to exchange information related to Titles IV-A, IV-D, IV-E, XIX and local financial management systems. The current system fails to support program needs because it lacks functionality in several critical areas:

■ No Automated IV-E Eligibility Determination

- **Heavy workload for IV-E eligibility determination** – The IV-E eligibility determination (ED) process imposes a heavy workload on social workers and eligibility workers due to the prevalence of manual, work-intensive processes. Social and eligibility workers have to access a variety of disparate systems (CWS/CMS, CalWORKS, Medi-Cal, Income Eligibility and Verification System (IEVS), county payment systems) to gather all of the required information for a IV-E case. Integration between these systems is limited, increasing the problems of excessive data entry, storage of redundant information, and inconsistent data. In addition, probation cases are handled by probation officers who belong to a separate agency and have no access to any child welfare systems. The lengthy IV-E ED information gathering process can take anywhere from two hours to two days. This results in the need for additional staff and reduces the time social workers can spend with their clients. It increases the administrative overhead associated with the transmission of paper documents between facilities and workers because paper files are maintained in multiple locations.
- **Inaccurate and inconsistent determination of IV-E eligibility** – IV-E ED is primarily a manual process that can vary in its implementation from one county to another. The IV-E ED process must be automated throughout the State to improve its accuracy and remove inconsistent application of policy among eligibility workers and counties. Furthermore, social workers and eligibility workers require much of the same information, but have very different responsibilities and often report to separate organizations. These inconsistencies can significantly degrade the quality of services provided by the program.

■ **Missing Title IV-A, Title IV-D, and Title XIX Interfaces**

- **Multiple barriers reduce service delivery efficiency to troubled families** – Income support, employment services and CWS are offered by the same agency in most California counties. However, families requiring services from multiple programs routinely find they are assigned one or more case workers for each program and asked many of the same questions by those different workers.

The current process of sharing information and collaborating on cases is inefficient and subject to multiple errors. The physical process requiring printing of case/client information to share with a co-worker treating the same client, or members of the same family, is very cumbersome. The information contained on the printout is re-keyed by the other worker into the other system. For example, a social worker places a child in foster care. Information on the child and a case is printed out and given to the eligibility worker. The eligibility worker then re-enters the information into his/her respective system.

As the paper is printed and distributed to and from the various workers to share information, it is sometimes lost and/or mishandled. Additionally, because of time and job pressures, it is sometimes not entered into the other system. The current process of sharing information and collaborating on cases is cumbersome, inefficient, and subject to multiple errors.

IV-A case information on common families is helpful to make more informed decisions during intake and investigation, which will increase worker and child safety and result in better outcomes for the child.

- **Lack of SACWIS compliance for automated information exchange** – SACWIS requirements mandate CWS/CMS must provide automated exchange of common and/or relevant data with the Title IV-A system that collects information relating to the eligibility of individuals under Title IV-A (CalWORKS). This information would further the integration of case management activities (i.e., work participation requirements).

SACWIS requirements mandate CWS/CMS must provide for the exchange of information with Title IV-D to establish and report a child support case. In addition, interfacing can help locate absent parents for placement decisions. Further, AFCARS requirements include obtaining information on any and all sources of child support collections.

SACWIS requirements mandate CWS/CMS must provide for the exchange of information needed by the State Medi-Cal eligibility system to calculate and track Medi-Cal eligibility.

AFCARS requirements include information on sources of financial information for the child in foster care. This information could be obtained through automated information exchanges with existing statewide databases such as IEVS, IV-A and IV-D, among others.

■ **Non-Compliant Financial Management**

- The existing CWS/CMS does not support the effective and efficient management of the processes necessary to ensure the accurate and timely authorization, processing, and reconciliation of financial records and transactions. This functionality would greatly enhance the efficiency and effectiveness of accounts payable and accounts receivable processes.

6.4 Impacts of Implementing SACWIS

The TAAA Team worked with CDSS and CWDA to define what benefits could be achieved by implementing the four major areas of unfulfilled SACWIS functionality. The benefits described below are not an all inclusive list. Benefits are identified as either qualitative or quantitative. The quantitative benefits are representative of how automation would produce benefits in these areas and have been conservatively estimated to reflect the impact of adding this SACWIS functionality. It is assumed that all benefits will be reinvested back into the CWS/CMS program to reduce the workload of the social workers that currently work overtime as documented in the SB 2030 report.²²

6.4.1 Qualitative Benefits

Qualitative benefits link to factors other than cost. They are discussed from the perspective of improving the programmatic aspects of CWS and management. The following describes how qualitative benefits apply.

- **Increased Delivery of Services in Adoption.** The development and implementation of a CWS/CMS adoptions case management system correlate to improving the lives of children and their families in the following ways:
 - **Provide Adoption Data.** The automation of adoptions will ensure counties, CDSS, the Legislature, and federal government have necessary adoption information. The automation of adoptions will allow CDSS to administer the statewide program in a cost-effective way and perform quality assurance functions such as Interstate Compact on Adoption and Medical Assistance, and AFCARS/NCANDS.
 - **Improved Placement Matching.** Automation of adoptions will allow county and CDSS staff to quickly identify a child's placement options and match a child's specific needs and characteristics (culture, language, medical and behavioral needs, etc.) with available placement options. This will result in faster identified placements, and fewer failed placements due to a better match at the outset thereby improving case outcomes. This also helps counties meet legislative requirements of maintaining children in the most home-like, least restrictive placement. This will ultimately have an indirect effect on reducing the overall cost associated with placements.
 - **Achieve Program Goals.** Automation of adoptions will support the statutory requirement for concurrent planning and program goals of permanency; will further the development of a consolidated home study process for foster and adoptive families; and will allow greater access to information necessary for post-adoption services, which will support families and potentially prevent adoption disruptions.
- **Title IV-E Eligibility.** Providing an interface between CWS/CMS and the SAWS consortia, where much of automated IV-E eligibility information resides, will assist the CWS program.
 - **Enhance Eligibility Determinations.** Will result in more accurate federal and State-only determinations for foster care Out-of-Home Care and Adoption Assistance Payments.
 - **Enhance Eligibility for Other Programs.** Exchange of data will help children be more readily eligible for Medi-Cal benefits and have their well-being better assured.

²² The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a two-week period.

- ❑ **Review and Audit Eligibility Information.** Complete eligibility information is available to county and State staff for independent review and audit, and is available to workers for the life of the case to allow more expeditious re-determinations.
- ❑ **Increase in Consistency.** Automated Title IV-E information will ensure the same rules are applied to all cases resulting in consistent eligibility determinations. Because of automation, social workers will be able to focus on assisting children in achieving desired outcomes.
- **Interfaces.** Interfaces between CWS/CMS to meet SACWIS (Titles IV-A, IV-D, IV-E and XIX) and federally-optional State-elected interfaces will help meet program goals, administer cases more effectively, and allow workers to achieve better program outcomes more efficiently.
 - ❑ **SACWIS Interfaces.** A CWS/CMS and Title IV-D interface will help workers make better placement decisions by locating parents to initiate services or place the child, allow for the automated exchange of common case information, allow recoupment and reimbursement of previously paid foster care dollars, and capture required AFCARS child support data. A CWS/CMS and Title IV-A interface will provide more readily accessible information to make more informed decisions during a child abuse investigation and allow for better-integrated case management between families being served by both programs. A CWS/CMS interface with Title XIX data will help provide needed information to track eligibility for children in foster care and allow for the automated exchange of common case information. All of these interfaces would also aid the State in more readily capturing AFCARS information on sources of federal support.
- **Financial Management.** The automation of financial management will support the efficient processes necessary to ensure accurate and timely authorization, processing, and reconciliation of financial records and transactions.
 - ❑ **Increasing Accuracy of Payments.** Accurate payments help ensure children's financial needs are met. In addition, this automation will allow the State and counties to account more easily for out-of-home care costs. It would allow counties to correlate financial information to the type of placement and any related supplemental payments.
 - ❑ **Reduce Foster Care Eligibility Under and Overpayments.** Automation of the accounts receivable and payable system will ensure that underpayments and overpayments are reduced.

6.4.2 Quantitative Benefits

SACWIS benefits have been calculated by estimating the amount of time it takes a worker to complete the task minus the estimated amount of time it will take with a specific alternative. The estimates are based on experience and observation. The program time-savings are then multiplied by the average hourly rate and the number of workers. This provides a monthly savings, which is then multiplied out to get a yearly figure.

For each alternative the following program benefits will not be completely realized for approximately one year after full implementation of the system. The learning curve associated with the use of new functionality will require the entire 12 months. After this period, the State should realize the full benefit of increased staff productivity. These savings would be reinvested

back into the program based upon the increased workload documented in SB 2030 and new program requirements enacted since its completion.

- **Automate Adoptions Case Management.** The manual processes of managing adoption cases can be decreased through automation. The average worker spends time each day performing a variety of manual tasks that can be eliminated or improved.
 - **Automate Case Management Tasks.** With implementation of a full case management system, data will be available to facilitate the overall adoption case management process. Adoption homes will be identified faster. Information will be readily available for the social worker to answer questions and facilitate adoptions. The average social worker saves time if the information is readily available and organized to assist in the overall facilitation of the adoption process. A conservative 5% overall time savings is estimated for each case, with an annual caseload of 7,004²³ resulting in a savings of \$742,191 annually.
- **Automated Interfaces.** The process of acquiring, compiling, and delivering (i.e., faxing, hand-carrying, telephoning, etc.) information can be a time-consuming process for the social worker especially where there are multiple organizations requiring similar information. The social worker spends time each day performing tasks that can be eliminated through various two-way interfaces.
 - **Title IV-A: CalWORKS Program.** The CalWORKS program is California's largest cash assistance program for children and families with an annual caseload of 730,000²⁴. The social worker searches SAWS when initial abuse allegations are received, and through the life of a case for integrated case management. This task is estimated at 5 minutes per case. Elimination of this task through automation will result in a total savings of \$2,569,600 annually.
 - **Title IV-D: Child Support.** The child support program establishes and enforces court orders for child, spousal, and medical support from absent parents. The social worker searches for parental information to help make case planning and placement decisions. This task is estimated at 5 minutes per case with an annual caseload of 74,283²⁵. If this information is automatically searched and provided to the social worker, a total annual savings of \$261,476 will result.
 - **Title XIX: Medi-Cal Program.** Medi-Cal, California's Medicaid program, is a key component of California's health care delivery system. The social worker searches for information on each child to determine whether the child is already receiving Medi-Cal. This task is estimated at 5 minutes per case with an annual caseload of 74,283. Elimination of this task through automation will result in a total annual savings of \$261,476.
- **Automated Title IV-E Eligibility Determination.** The automation of the eligibility information sharing process will eliminate or improve several tasks, which will result in savings.

²³ SFY 2005/06 Governor's Budget cited the number of children placed for adoption as 7,004.

²⁴ SFY 2005/06 Governor's Budget cited the caseload at approximately 730,000.

²⁵ SFY 2005/06 Governor's Budget cited the average monthly number of children aided by Foster Care as 74,283.

- ❑ **Eliminate the Manual Process of Delivering Information to Eligibility.** The manual process of delivering (i.e., faxing, hand carrying, telephoning, etc.) information to the eligibility department can be decreased through automation. The average social worker spends 10 minutes performing the task of delivery of eligibility information per week. The number of full time equivalents (FTEs) minus Los Angeles (Los Angeles already has an interface to their eligibility system.) is 5,853²⁶. The elimination of the manual data-sharing task through automation will result in a total savings of \$2,317,788 annually.
- ❑ **Automate the Data Entry Process of Eligibility Data.** Once the eligibility division performs the calculations, the information is returned to the social worker who then has to manually enter the results. Through a two-way interface with the eligibility department, this task can be eliminated. The average worker spends 5 minutes per case performing data entry and the annual caseload of foster care children minus Los Angeles (Los Angeles already has an eligibility system.) is 45,313. The eligibility process occurs once every 6 months²⁷. Automatically importing the eligibility results will realize a reduction of 50% in the time the social worker must work with the case. The timesavings recognized through the automation of this task will result in a total savings of \$159,502 annually.

6.5 SACWIS Funding Assumptions

The following assumptions were used to determine the funding implications of implementing or not implementing the unfulfilled SACWIS functionality.

6.5.1 If Implement SACWIS Functionality

If the State implements the unfulfilled SACWIS functionality:

- The current CWS/CMS will continue to be funded as a SACWIS.
- For the scope of and funding purposes within this study, SACWIS functionality means Adoption Case Management, Automated Title IV-E Eligibility Determination through an interface model, Interfaces to Title IV-A, Title IV-D, Title IV-E and Title XIX Systems, and Financial Management.
- ACF will approve additional SACWIS functionality, provided the State implements a single statewide system.
- Re-development of existing functionality on the new architectures (Alternatives 2 and 3) will be funded at the IV-E discounted level. Maintenance of the system (if considered a SACWIS system) will be funded at the current SACWIS level.
- All non-SACWIS modifications to the current application are necessary for business operations and required services provision and will be funded using administrative methodologies for cost allocation.
- Development and maintenance of Adoptions Case Management functionality is part of and will be funded under Title IV-E SACWIS funding. (During APDU, a separate Adoptions category will be added under the SACWIS IV-E cost allocation category).

²⁶ FTE's for FY '03-'04 received from CDSS.

²⁷ Eligibility cases are reassessed every 6 months. This calculation does not include the assessments that occur with placement changes.

- ACF will only fund one single standard interface to accommodate all the SAWS consortia. It is assumed that these costs will be funded at the SACWIS rate. It is anticipated that by the time the interfaces are being developed, the two child support (IV-D) systems will have completed the transition into one statewide system. Therefore, it is assumed that only one interface to the IV-D system will be required. It should be noted that the cost of (and subsequent funding for) building interfaces on external systems has not been included in this study.
- The additional business functionality development of 300 function points per year will be considered non-SACWIS. It is assumed that 100% of the functionality will be necessary for the administration of the Foster Care and Adoptions programs only and, funding will be shared at the non-SACWIS IV-E discounted level. Once functionality is clearly defined, an allocation methodology will be developed to conform to Office of Management and Budget (OMB) A-87 requirements for benefiting program allocations.
- The development and maintenance of the mobility/remote access capabilities will be considered non-SACWIS and necessary for the administration of Foster Care and Adoptions programs only. Funding will be shared at the non-SACWIS IV-E discounted level because 100% of the functionality will be utilized to improve the efficiency and effectiveness of administering the Foster Care and Adoptions programs and providing timely services to meet the immediate needs of the children.
- Incorporation of a data warehouse in a statewide system will enhance the administration of and meet SACWIS reporting requirements of Foster Care and Adoptions programs..

6.5.2 If Do Not Implement SACWIS Functionality

If the State does not implement the unfulfilled SACWIS functionality:

- The current CWS/CMS will be funded as a non-SACWIS system and funded at a reduced rate for federal participation for discounted Foster Care IV-E funding (i.e., 37.5/62.5 instead of 50/50).
- Re-development of existing functionality on the new architectures (Alternatives 2 and 3) will be funded at the IV-E discounted level. Maintenance of the system will be funded at the reduced non-SACWIS funding level.
- All modifications to the current application are necessary for business operations and required services provision and will be funded using administrative methodologies for cost allocation.
- The additional business functionality development of 300 function points per year will be considered non-SACWIS. It is assumed that 100% of the functionality will be necessary for the administration of the Foster Care and Adoptions programs only, and funding will be shared at the non-SACWIS discounted level. Once functionality is clearly defined, an allocation methodology will be developed to conform to OMB A-87 requirements for benefiting program allocations.
- The development and maintenance of the mobility/remote access capabilities will be considered non-SACWIS. Funding will be shared at the non-SACWIS Title IV-E discounted level because 100% of the functionality will be utilized to improve the efficiency and effectiveness of administering the Foster Care and Adoptions programs and providing timely services to meet the immediate needs of the children.

- Incorporation of a data warehouse in a statewide system will enhance the administration of the Foster Care and Adoptions programs. It is assumed that all costs associated with this effort will be approved and fundable using a non-SACWIS cost allocation methodology.
- Although it is possible, per SACWIS regulations (45 Code of Federal Regulation (CFR) 1355.56), for the federal government to request payback of all SACWIS funding if a decision is made to not pursue SACWIS, for this study, it is assumed that negotiations will result in no payback. Therefore, no payback has been included in this analysis.

6.6 SACWIS Funding Impacts

In its simplest form, SACWIS federal participation is based on whether an activity or cost can be attributed directly to meeting a SACWIS requirement. If an activity is deemed to meet the criteria for being considered SACWIS, costs are first appropriately allocated to all benefiting programs per cost allocation methodologies and then federal funds are applied to 50% of the costs for the portion of the activity allocated to the Foster Care and Adoptions programs. Activities related to the statewide system, but not directly attributable to meeting a SACWIS requirement, are considered to be non-SACWIS. Costs for non-SACWIS activities are first appropriately allocated to all benefiting programs per cost allocation methodologies. Costs allocable to the Foster Care program are discounted by the percentage of State-only Foster Care cases to total federal and State-only cases and a ratio of federal and State-only percentages is developed for cost allocation. The two Foster Care cost categories eligible for non-SACWIS federal funding are Title IV-E discounted and Title IV-E enhanced training funding. It is important to note that the non-SACWIS IV-E discounted funding ratio (75% federal Foster Care/25% State-only Foster Care) is based on caseload and therefore, the sharing ratio fluctuates from year to year. In the non-SACWIS scenario, federal funds are applied to 50% of 75% of the IV-E discounted funds. For IV-E enhanced funding (75/25), non-SACWIS federal funding is applied to 75% of the 75%. It is important to note that the IV-E enhanced funding is only eligible for direct training costs.

The following figure provides a high-level comparison of the total one-time and ongoing costs for the current system and each alternative. *It is important to note that for funding purposes, the costs associated with CDSS staff have been excluded from the following cost comparison tables.*

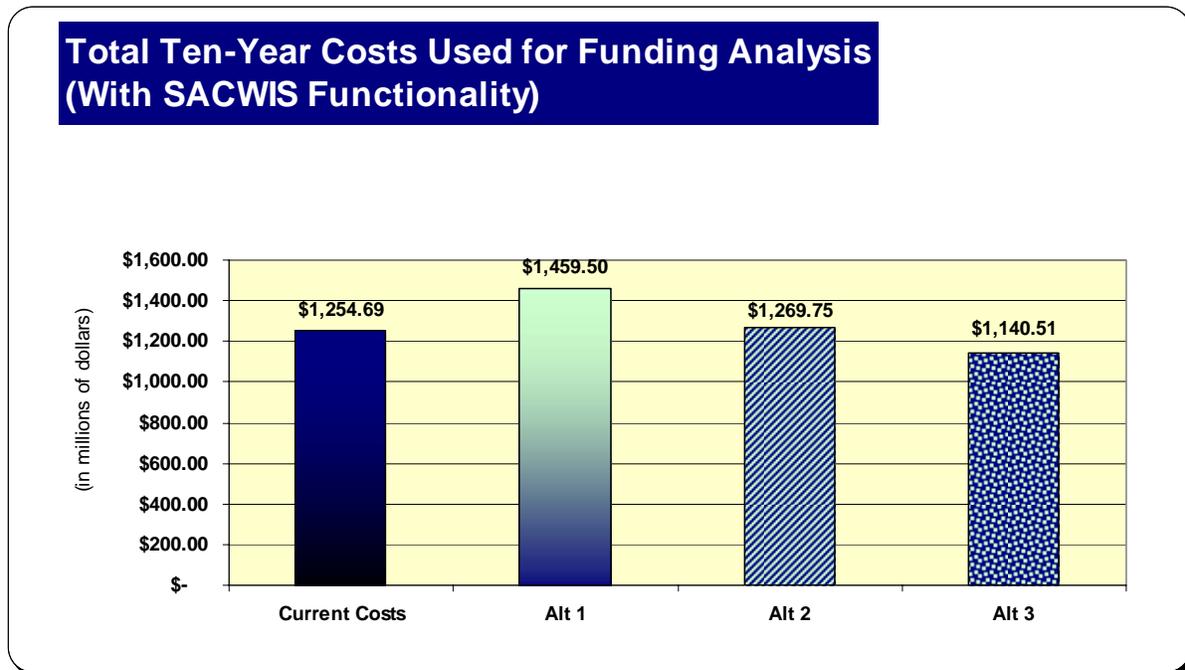


Figure 11 - Total Ten-Year Costs Used for Funding Analysis (With SACWIS Functionality)

The figure above illustrates that the overall ten-year costs to implement the four major unfulfilled SACWIS functions in Alternative 3 are lower than Alternatives 1 and 2 and decidedly less than continuing with the current system (which currently does not contain the four missing SACWIS functions). The following figure illustrates the breakout of total federal and General Funds that will be required for the ten-year period to fund the current system and each alternative. Overall, more federal and General Funds will be required for Alternative 1 than for the current system. Both Alternatives 2 and 3 will have fewer federal funds available to pay for the new architecture and re-development of existing functionality. However, while Alternative 2 will require more General Funds than Alternative 3 or the current system, Alternative 3 requires the least amount of total General Funds of all the alternatives or the current system.

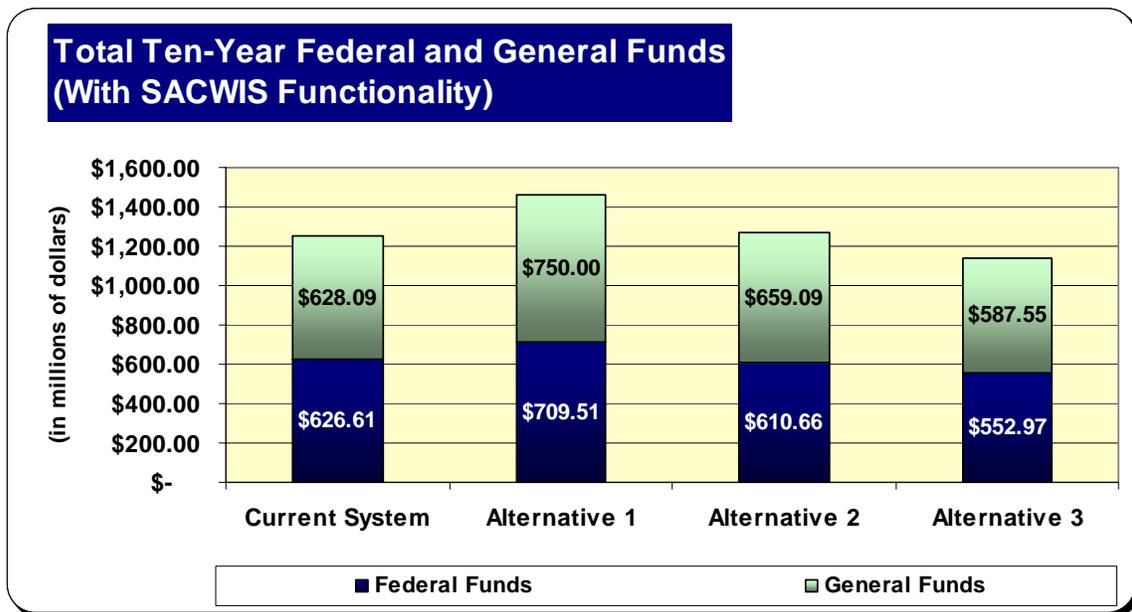


Figure 12 - Total Ten-Year Federal and General Funds (with SACWIS Functionality)

The following figure illustrates the total ten-year costs for each alternative, minus the development and maintenance of the four major unfulfilled SACWIS functions. *It is important to note that for funding purposes, the costs associated with CDSS staff have been excluded from the following cost comparison tables.*

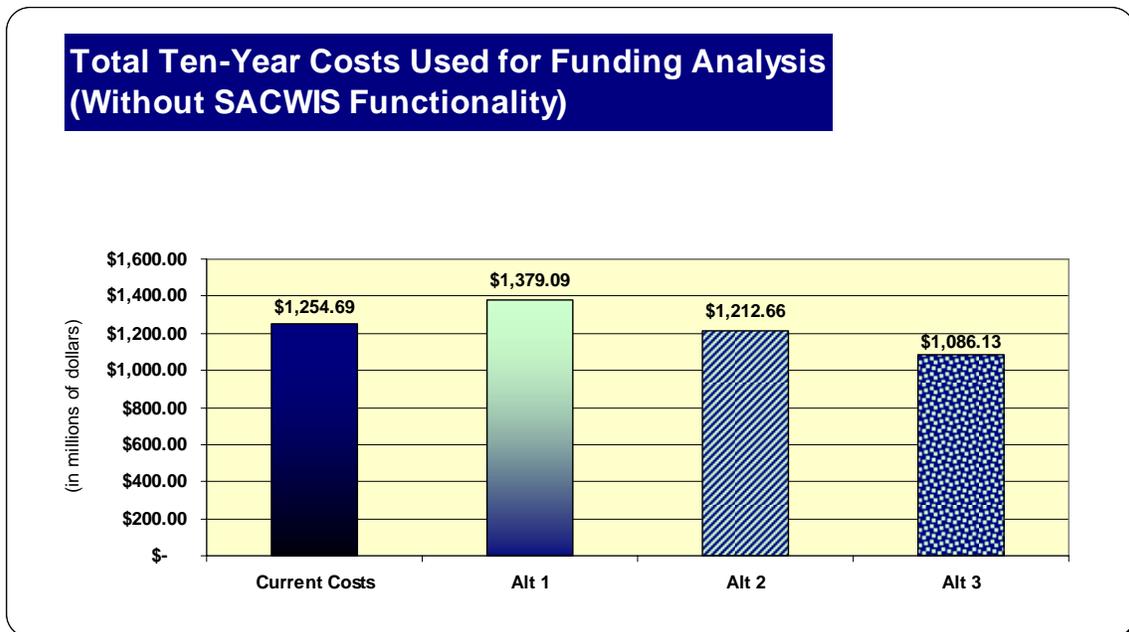


Figure 13 - Total Ten-Year Costs Used for Funding Analysis (Without SACWIS Functionality)

The following figure illustrates the total ten-year impact to federal and General Funds if the State does not implement the four major unfulfilled SACWIS functions. While the figure above illustrates that not implementing the four SACWIS functions could cost less than implementing them, if the State chooses not to implement the needed functionality, a significantly higher amount of General Funds will be required to support the current system or any alternative selected. Additionally, the counties have made a strong case for the implementation of the SACWIS functionality to conduct their daily business of providing services to needy children.

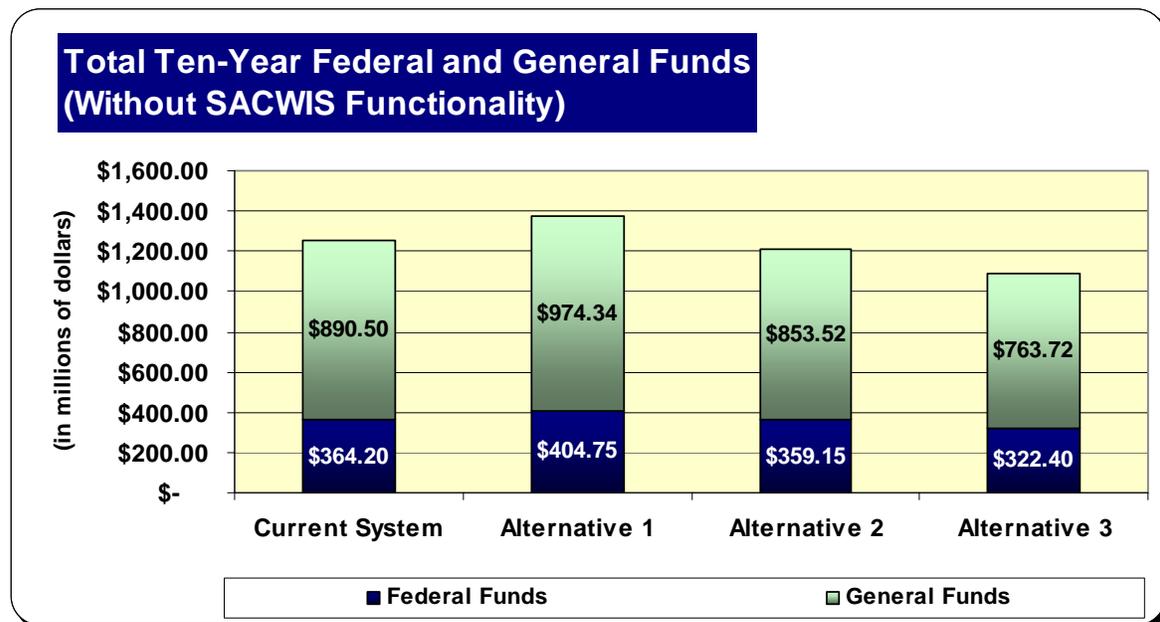


Figure 14 - Total Ten-Year Federal and General Funds (without SACWIS Functionality)

6.7 Recommended SACWIS Direction for the State

The TAAA Team recommends that the State act to implement the four major unfulfilled SACWIS functions based primarily on the fact that the SACWIS functionality is not only a federal requirement, but provides functionality that is vital to the daily business of providing child welfare services. The Adoptions Case Management functionality and automated interfacing of information between systems will provide social workers and management a significant improvement in the capture, processing and reporting of case data, resulting in greater efficiency in service delivery and improved quality of data reporting.

In addition, the TAAA Team notes that implementing the four major unfulfilled SACWIS functions will help in the continuation of federal funding at the current SACWIS level, which will lessen the overall impact to the General Fund. Based on the TAAA Team's assessment, Alternative 3 yields the best ten-year funding situation. Alternative 3 is lower than Alternatives 1 and 2 when compared similarly with and without the addition of SACWIS functionality. The overall costs for Alternative 3 are decisively lower (even with the addition of the new architecture, re-developed functionality, SACWIS functionality, and additional business functionality) than continuing with the current system without any enhancements. Because of the lower costs, the overall funding level is correspondingly lower – both federal and General Funding requirements are notably lower overall. The figure below compares the total federal

and General Funding for Alternative 3 if the four major unfulfilled SACWIS functions are implemented to the current system without any additional enhancements.

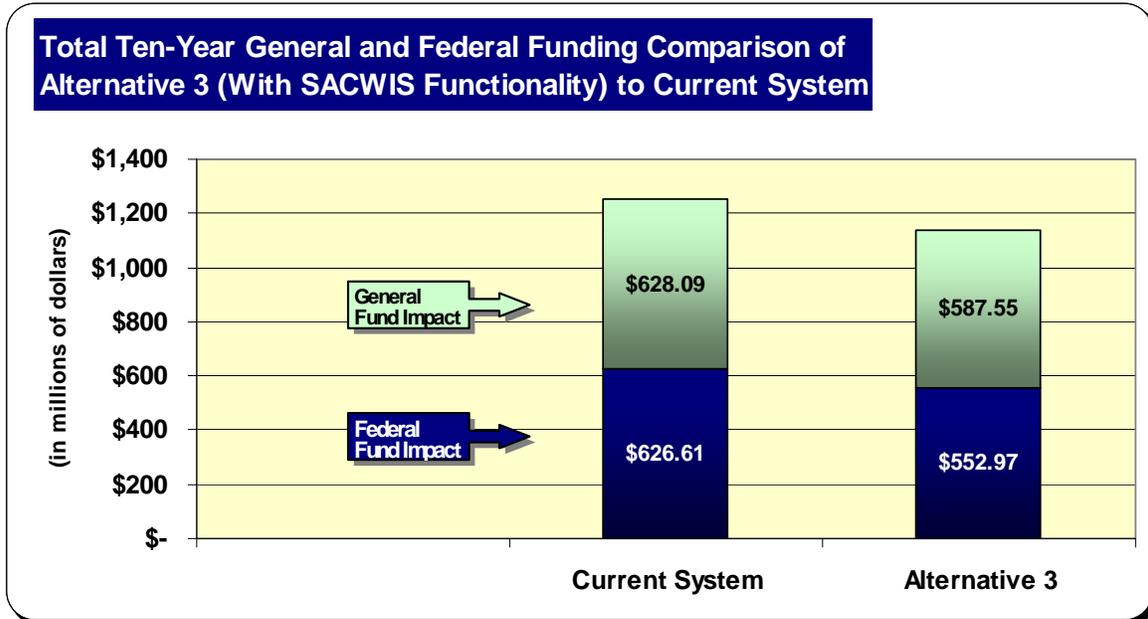


Figure 15 - Total Ten-Year General and Federal Funding Comparison of Alternative 3 (With SACWIS Functionality) to Current System

Alternatives Overview

7.0 Alternatives Overview

As part of the analysis, the TAAA Team examined the current architecture, web-based architectures currently supporting similar case management systems, business processes, and conducted workshops and interviews with key State stakeholders, county user technical staff, and IBM technical staff. Additionally, the technical team developed a vendor survey and conducted interviews with vendors providing development and/or maintenance services on web-based systems to validate findings and refine proposed models. Finally, the analysis of the size of the current CWS/CMS application (function points) provided critical information that addressed overall feasibility of the alternatives.

Based on the analysis of available information and subject matter expertise, the TAAA Team developed architecture scenarios for the target state of the three alternatives and confirmed the gaps between the baseline and target state. The TAAA Team started with the three general alternatives required by the TAAA Request for Proposals (RFP) and refined those alternatives in order to provide a robust architectural framework for analysis and cost estimation. The TAAA Team incorporated screening requirements (i.e., mobility, remote access, etc.) and normalized the alternatives to ensure that a direct cost comparison could be made. Each alternative was constructed in a way that maximized the viability or feasibility of that alternative. The alternatives were defined as follows:

Alternative 1: Current System	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS within the limits of the current fat client technical architecture employed by CWS/CMS.
	⇒ In Alternative 1, it is assumed that no major technical application architecture changes will be made to the CWS/CMS application beyond those required to meet programmatic, legislative, and regulatory needs.
	⇒ Under this alternative, the CWS/CMS application will be modified to achieve full SACWIS compliance using the current architecture.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.
Alternative 2: Evolve Current System to Web Services Infrastructure over 8 Years	⇒ This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS but evolve the CWS/CMS technical architecture to a web services based infrastructure over time.
	⇒ Functionality addressing California's remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure as part of the evolutionary process.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.

Alternative 3: Develop New Web-Services Based System	⇒ This alternative proposes that the State procure vendor services to build a new fully compliant “California SACWIS” using a web services based technical architecture.
	⇒ Under this alternative, the State would continue to maintain and operate the existing CWS/CMS until the new system is deployed.
	⇒ Functionality addressing California’s remaining unfulfilled SACWIS requirements would be designed, developed, and implemented under the proposed new web services based infrastructure.
	⇒ Optionally, pursuant to the Budget Act of 2004 (Chapter 208, Statutes of 2004), the alternative shall include analyses of both SACWIS and non-SACWIS implementations.

To establish feasible alternatives that can be equitably compared to the criteria, the TAAA Team established common assumptions for all three alternatives as follows:

- The current deficient remote access infrastructure will be enhanced by the addition of Server Based Computing (SBC) infrastructure to the current environment (see description of SBC in paragraphs below). This will provide for browser-based access to the existing functionality on the fat client. With this enhancement, remote and roaming users will be able to more easily use the system from remote locations or from the field.
- The analysis assumes that the Project will not provide remote access devices (e.g., PDAs, cell phones, etc.).
- Adoptions case management functionality will be required for each alternative as soon as possible.
- The State will enhance the current data warehouse to support common reporting needs of staff in all counties.
- The CWS/CMS will be hosted at the State Data Center.
- Internal users will grow at a rate of 3% per year.
- The number of external users is assumed to be 150 at Year 1, and will grow annually at a rate of 120% (4,800 external users in Year 10).
- Over time, remote access users will grow to approximately 50% of case workers, which will affect network bandwidth peak utilization periods.
- Data will grow at historical rates of approximately 10% per year; SACWIS will add an initial 10% of data and then grow at a rate of 10% per year.
- Approximately 300 function points will be added on an annual basis to enhance user functionality.
- New SACWIS functionality will go through a standard development life cycle.
- All email communications will continue on the Outlook/Exchange infrastructure.
- Ongoing maintenance and critical enhancements will be required in the old CWS/CMS environment until any new system is deployed.
- Maintenance of desktops and file servers in dedicated counties will continue to be a requirement supported by the State.

- For each alternative, ongoing maintenance and operations services will be structured to support competitive bidding.
- Assuming the State's successful implementation of the four missing SACWIS functions in CWS/CMS, the State will be able to successfully negotiate all other SACWIS compliance issues with federal stakeholders.
- Eligibility determination will be performed on the SAWS systems and a two-way interface between the SAWS systems and CWS/CMS will be created to satisfy SACWIS eligibility requirements.
- Identified savings for all alternatives will be reinvested back into the CWS/CMS program to reduce the workload of the current social workers who are currently working overtime, as documented in the SB 2030 report.²⁸

This section provides an overview of the three alternatives considered in this analysis. There are two areas of enhanced functionality that will be common to all alternatives, an upgraded data reporting capability and enhanced remote accessibility. Both are found within the current CWS/CMS but have significant shortcomings that limit their usefulness.

The current CAD was intended to be a service giving the user community ad hoc query, analysis, and reporting capabilities not found within CWS/CMS. CAD is a vendor service and is not State-owned. The CAD data store is a replicated version of the production data that is refreshed weekly. The CAD is designed to allow counties to query their data without affecting the CWS/CMS production environment. However, the current CAD service has been augmented in many counties by other solutions (i.e., Safe Measures®, CAD IQ, and county data warehouses) purchased by the counties.

The current remote access solution uses dialup capabilities to connect the worker's computer to the system network. Several problems exist with the current solution. For example, if an application update is available when the user dials in, the entire application update must be downloaded over the dialup connection, often presenting a lengthy delay, before the worker can work with the application. Another systemic problem is present with the dialup connection – the "Open Case" delay caused by downloading all case data to the remote computer before updates can be made. While this in itself can present quite a delay, the "optimistic concurrency" can also present problems if the same case is updated by another worker or supervisor prior to the remote worker transmitting their updates to the case. Lastly, one of the major hindrances to allowing full remote access to third-party service providers (probation officers, school officials, etc.) is the current user access and security model. The application does not provide a robust access model allowing differing levels of data viewing and security for specific user groups. The enhanced versions of the data reporting and remote access functionality are described below.

With all three alternatives, the current business-reporting infrastructure would be expanded to become a fully functional data warehouse that serves the basic operational reporting needs of all the counties. This includes the addition of required data elements from external data sources, and developing browser-based access to predefined daily operational reports. Counties can have a local data mart deployed within the county that can be updated with county-specific data from the data warehouse on a daily basis. Counties may also add additional data elements from

²⁸ The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a two-week period.

other internal and external sources as needed in order to meet the local requirements. Users needing ad hoc queries and analytical reporting can use third-party BI tools such as Business Objects, MicroStrategy, Cognos, or SAS, to perform the required analysis and reporting. The statewide data warehouse will be designed to meet the specific needs of the different type of users.

Additionally in all three alternatives, the current remote access infrastructure will be enhanced by the addition of SBC infrastructure to the current environment. This will provide for browser-based access to the existing functionality on the fat client. With this enhancement, remote and roaming users will be able to use the system effectively from remote locations. This physical architecture extension allows for basic keyboard and screen input/output information to be exchanged over the Internet between the SBC server and the browser client.

The client application executes on the SBC server and transmits its screen information to the browser client over the open or proprietary network while responding to keyboard and mouse movements at the browser client. CWS/CMS workstation components are currently designed for use in a single user environment – one machine, one user. When this application is installed, the SBC server will identify and store the application settings such as the registry variables and the initialization file (.ini). When a user launches the application, the SBC server copies the application setting information to the user's environment and thus isolates these settings for each user. The current cwscms.ini file stores the application configuration information such as the location of the code tables, document templates, trace log location, and the CWS/CMS county server names for the user. Several of these parameters point to fixed locations on the local 'C' drive. Additionally, the application uses several temporary files, the names of which are "hard-coded" into the application. The SBC server cannot automatically modify these settings and hence file contentions can occur that will prevent successful execution of CWS/CMS. These issues – as well as the user access shortcomings – will need to be addressed in order for the current CWS/CMS application to function properly in this environment.

7.1 Alternative 1

7.1.1 *Alternative Description*

In Alternative 1, the State will continue with the current technical architecture and optionally incorporate remaining unfulfilled county business requirements to achieve SACWIS compliance.

Under this alternative, the State will continue to maintain and upgrade the existing CWS/CMS application system within the limits of the current fat client technical architecture employed by CWS/CMS. There will be no major architectural overhaul of the CWS/CMS over the next ten years. All major technical components and development environments of the system will continue to be used for the near future. The CWS/CMS application can also be optionally enhanced to address the unfulfilled SACWIS functionality (i.e., Adoptions Case Management, Interfaces, Automated Title IV-E Eligibility Determination, and Financial Management) using the current architecture.

7.1.2 Assumptions

The following assumptions were made for Alternative 1:

- There will be no major architectural overhaul to the CWS/CMS over the next ten years. All major technical components and development environments of the system will continue to be used in the future.
- The current environment limits the ability to incorporate third-party components and services.
- The maintenance service provider will most likely provide new SACWIS functionality.
- New technologies will not be incorporated for development of new SACWIS functionality.
- Adoptions case management costs for this alternative will be based on previously estimated costs documented within the 2004 Expanded Adoptions Subsystem (EAS) Post-Implementation Evaluation Report (PIER).
- Estimates for additional functionality will be based on function point analysis and adjusted to IBM cost/function point algorithms.

7.1.3 Target Architecture

The target architecture in this alternative will continue to be a fat client / server architecture. In the current architecture, the majority of business logic, business rules, and presentation logic reside on the client workstation running Windows 2000. The workstation runs the Microsoft Office 97 Suite and extensively uses Microsoft Word for capturing case notes and deploying forms used to capture information. Any new business functionality will continue to be written in Visual Basic 6.x and deployed on the workstation. The client talks to a centralized database that resides on an IBM mainframe using CICS. The following diagram provides a high-level architectural view of this alternative:

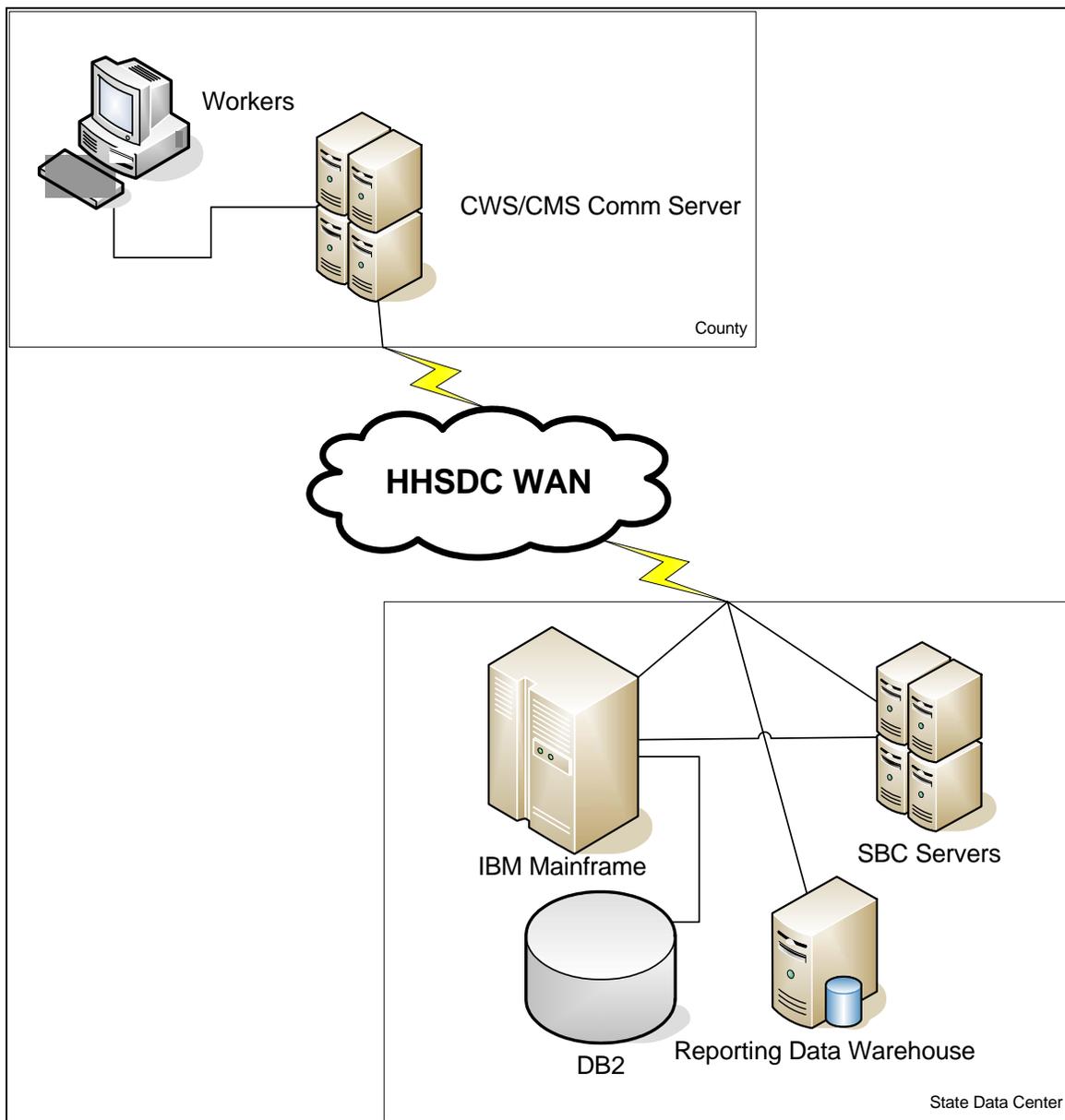


Figure 16 - Alternative 1 Architecture

The CWS/CMS client software architecture consists of several application layers. These layers include:

- **Presentation Services** – The presentation services component is the graphical user interface (GUI) provided to the user. The presentation service is provided via a Windows desktop PC or laptop.
- **Business Rule Services** – These services provide the application business logic unique to each functional area.
- **Security Services** – All traffic between the CWS/CMS desktop and the host application is encrypted prior to transmission over the network and to the host.

- **Transaction Services** – The 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 three-tier CICS architecture. CICS components in the user workstation communicate to the CICS gateway components residing on the county server that in turn communicate to the CICS component on the mainframe.

At the county level, a server functions as an intermediary between a group of PCs (associated with a county or site) and the host. The purpose of the server is to minimize the traffic and number of connections between the host and desktops. The server is also used as a staging area for software distribution to reduce bandwidth congestion and is responsible for distributing software to the local PC over local area network resources (LANs).

Based on the user population, each county uses one or more local county servers. The server is hosted locally in county server rooms. The server performs the following functions:

- **Transaction Support** – Offloads communication functions from the workstation to the host. The county server connects to the host using IBM SNA APPC LU 6.2 protocol.
- **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 obfuscation of traffic over the WAN.
- **CWS Admin** – Provide local administrator with capabilities to locally manage resources and staff.
- **Redundancy and Recovery** – Provide redundancy and recovery capabilities by rerouting traffic over different networks in case of network outage.
- Other functions as defined in the *CWS/CMS Server Architecture* document referenced below.

The host computer for the system is the IBM S/390 mainframe computer. The primary role of the host is to provide database and transaction services. The system will continue to be built upon the IBM DB2 database management system. All data is stored in a series of database tables and is accessed through CICS transactions generated at the workstation. The transactions are processed by the CICS transaction monitor and are programmed using the COBOL language.

This system uses highly customized, proprietary transaction architecture under the CICS environment. 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 on the transaction identifier.
- Data access packets based on SQL statements.

For a complete description of the current architectures, please see the current versions of the architectural documentation:

Document Title	Version / Date
CWS/CMS System Architecture Overview	Version 1.2, October 15, 1999
CWS/CMS Server Architecture	Version 3.0, August 11, 2004
CWS/CMS Architecture Documentation Roadmap	Version 2.0, August 11, 2004
CWS/CMS Infrastructure Architecture	Version 1.0, November 7, 2003
CWS/CMS Application Architecture	Version 2.0, June 18, 2004
Windows 2000 Workstation Architecture	Version 3.0, March 29, 2004
CWS/CMS CAD Architecture	Version 2.0, April 5, 2004

The target 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. The data warehouse platform will continue to be based on DB2 Universal Database (UDB) running on the IBM pSeries platform. Less technically proficient counties can access the data warehouse directly for their day-to-day operational reporting needs. Access to predefined daily operational reports will be through a browser with access to the data warehouse. The enhanced data warehouse can be utilized by county users for analytical reporting, data mining, and/or ad hoc reporting.

The data model and design of the data warehouse will ensure it properly meets the basic reporting needs of all counties and follows best practices in data warehouse design. Any additional external sources of data will be identified and brought into the data warehouse to be accessed by the counties. The data warehouse will also be responsible for populating the local data marts on a nightly basis. The following is a high-level diagram of the Data Warehousing Architecture that will be deployed:

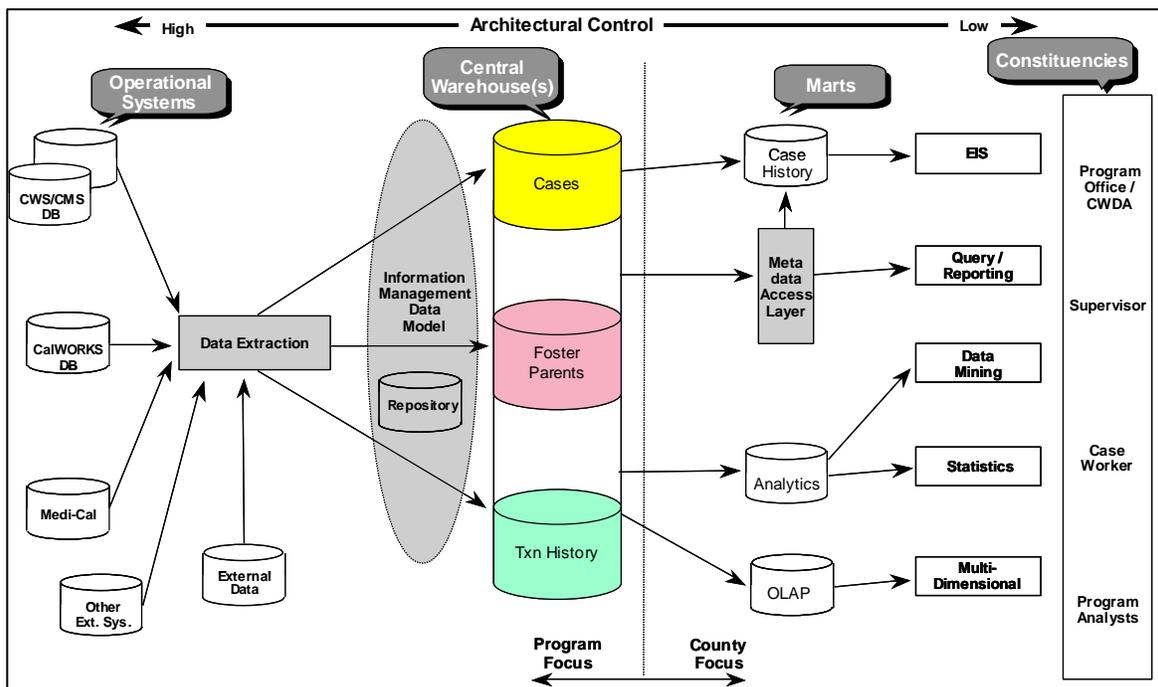


Figure 17 - Data Warehouse Architecture

To enable “anytime anywhere” access to the system, the State will deploy a new physical access tier using the SBC architecture. With the addition of this new access tier, the case workers will be able to access the application remotely from any workstation browser over the public Internet or the private network. The SBC architecture allows access to older generation fat client/server applications with acceptable performance over the Internet or dialup facilities. This is accomplished by having the client application execute on a centralized server, and by the keyboard input and the screen output being exchanged with the remote user over the Internet or the dialup network. The SBC servers will be housed at a State Data Center and a number of load balancers will ensure that the incoming traffic is routed to the most available server. The following is an example of the SBC deployment architecture:

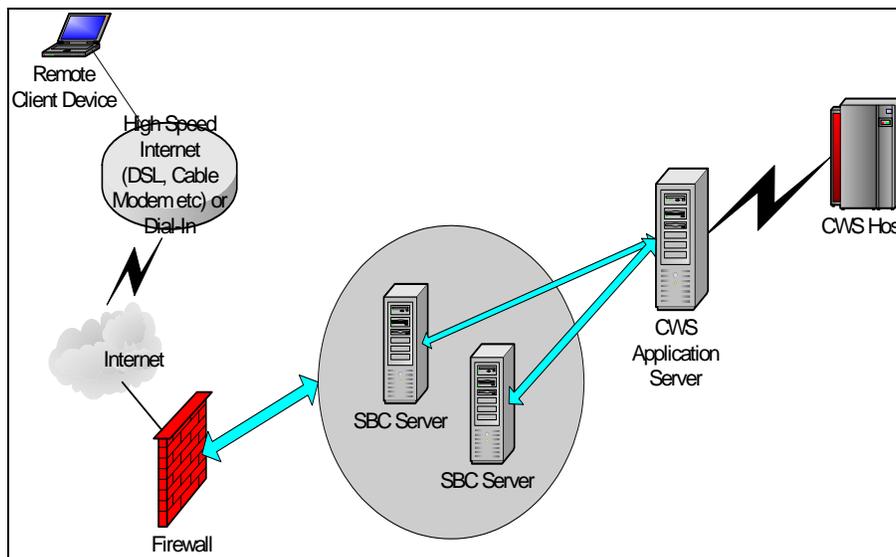


Figure 18 - SBC Architecture

7.1.4 Total Cost of Ownership

The TAAA Team has estimated the ten-year costs for Alternative 1 using the approved 2004 APDU costs allocated for period of SFY 2006/07 CWS/CMS costs as the baseline. In its approach to estimating costs for this alternative, the TAAA Team was very conservative. That is, known costs previously developed for feasibility studies and APDUs were used, where appropriate, in lieu of re-estimating costs. Adjustments to the baseline CWS/CMS costs were only made to reflect anticipated growth of 1% annually. Growth for each area was based on financial trends over the past three years.

7.1.4.1 Assumptions

All cost assumptions related to Alternative 1 can be found in Appendix C – Alternative 1 – Detailed Cost Summary. The following are the key assumptions that helped to define the costs for Alternative 1:

- For the purposes of this analysis, the TAAA Team assumed that there are no current one-time development costs and did not include costs for potential future development efforts outside of this alternative.
- Current ongoing M&O costs will continue and increase at a growth of 1% per year.

- All new costs will be added to existing costs.
- No new architecture or re-development of existing functionality is required.
- SACWIS functionality is related solely to automated system features that support county processes and does not imply funding.
- Per the timeframe identified in the EAS PIER, Adoptions functionality will be developed and deployed between July 2007 and December 2011.
- The effort to develop New SACWIS Functionality includes the cost and effort of developing Eligibility functionality/interfaces, Financial Management functionality/interfaces, and Interfaces to Title IV-A (CalWORKS), Title IV-D (Child Support Enforcement), and Title XIX (Medi-Cal).
- Eligibility functionality/interfaces will be developed and deployed between July 2008 and June 2011, Financial Management functionality/interfaces between July 2009 and June 2011, and Interfaces between July 2009 and June 2011.
- The 300 additional function points per year will be developed beginning July 2009.
- One (1) State manager will be assigned to manage the contracted staff providing development services on behalf of the HHSDC State staff.
- CDSS staff will provide policy direction and guidance during development.
- Three (3) staff will support the Adoptions, SACWIS, and Data Warehouse development efforts. Two (2) of these staff will transition to the M&O organization as part of continuing support for the Adoptions and SACWIS functionality.
- Additional facilities costs will only be applied to the development of the remote access infrastructure and data warehouse. All other facility costs have been included in the projected vendor rates.
- State Data Center hosting service costs will continue at the current level, as the addition of Adoptions and SACWIS functionality will not result in the need for addition hardware or equipment to be hosted.
- State Data Center WAN costs will increase as a result of increasing the number of sites by 5% each year.
- County participation will include project, conversion (data validation and manual conversion), and implementation staff during the development period for Adoptions and SACWIS functionality.
- Vendor costs for Adoptions were based on the costs outlined in the CWS/CMS Expanded Adoptions Subsystem (EAS) Post Implementation Evaluation Report (PIER).
- Timeframes and the level of effort for vendor costs for the development of SACWIS functionality were scoped based on the information contained within the CDSS Title IV-E Eligibility Determination System Feasibility Study Report. Actual costs were based on the number of function points identified for financial management, Title IV-E eligibility, and interfaces and the average current vendor rate per function point.
- Hardware and software will be purchased to support the development and maintenance efforts, including workstations/laptops, servers, and development and productivity software.
- No additional production hardware or software is required to support the development or operation of the new functionality.

- Remote access infrastructure and data warehouse hardware will be housed at the State Data Center.
- All host hardware and software will be hosted at the State Data Center.
- Current contracted goods and services will continue and additional QA, IV&V, integration services, and training contractors will be added to the development of each new function. Although the cost of existing contracts has been continued over the ten-year period to provide a level of contractor coverage, no additional QA or IV&V services will be required for the maintenance of any new function.

7.1.4.2 Ten-Year Cost

The following table illustrates the current costs projected over ten years and the total ten-year costs for this alternative.

Table 12 - Projected Current and Total Ten-Year Costs for Alternative 1

	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Current CWS/CMS Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.55	\$ 129.61	\$ 130.70	\$ 131.82	\$ 132.96	\$ 1,281.32
One-Time Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-Going Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.55	\$ 129.61	\$ 130.70	\$ 131.82	\$ 132.96	\$ 1,281.32
Costs	\$ 134.42	\$ 133.05	\$ 157.30	\$ 170.26	\$ 146.54	\$ 146.80	\$ 147.65	\$ 149.02	\$ 150.60	\$ 152.55	\$ 1,488.18
One-Time Costs	\$ 10.45	\$ 4.39	\$ 27.09	\$ 37.24	\$ 9.15	\$ 6.28	\$ 6.27	\$ 6.27	\$ 6.27	\$ 6.27	\$ 119.69
Development of Adoptions Functionality on Existing Architecture	\$ 0.99	\$ 0.99	\$ 16.35	\$ 18.07	\$ 2.87	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 39.27
Additional Costs to Develop SACWIS Functionality on Existing Architecture	\$ -	\$ 2.15	\$ 3.99	\$ 12.87	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19.00
Additional Costs to Develop New Business Functionality on Existing Architecture	\$ -	\$ -	\$ 5.49	\$ 5.36	\$ 5.36	\$ 5.35	\$ 5.35	\$ 5.35	\$ 5.35	\$ 5.35	\$ 42.97
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ 5.49	\$ 5.36	\$ 5.36	\$ 5.35	\$ 5.35	\$ 5.35	\$ 5.35	\$ 5.35	\$ 42.97
- Mobility/Remote Access	\$ 2.39	\$ 0.33	\$ 0.34	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.07
- Data Warehousing	\$ 7.07	\$ 0.93	\$ 0.92	\$ 0.92	\$ 0.92	\$ 0.92	\$ 0.92	\$ 0.92	\$ 0.92	\$ 0.92	\$ 15.38
On-Going Costs	\$ 123.96	\$ 128.65	\$ 130.20	\$ 133.02	\$ 137.38	\$ 140.52	\$ 141.38	\$ 142.75	\$ 144.33	\$ 146.27	\$ 1,368.48
Current On-Going Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.55	\$ 129.61	\$ 130.70	\$ 131.82	\$ 132.96	\$ 1,281.32
New Additional M&O	\$ -	\$ 0.09	\$ 0.12	\$ 0.12	\$ 0.13	\$ 0.13	\$ 0.14	\$ 0.14	\$ 0.14	\$ 0.15	\$ 1.17
Additional On-Going Costs for Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ 1.45	\$ 2.19	\$ 2.45	\$ 2.48	\$ 2.47	\$ 2.47	\$ 13.50
Additional On-Going Costs for New SACWIS Functionality	\$ -	\$ -	\$ -	\$ 0.09	\$ 1.63	\$ 1.59	\$ 1.58	\$ 1.58	\$ 1.61	\$ 1.58	\$ 9.66
Additional Costs to Maintain New Business Functionality on Existing Architecture	\$ -	\$ 0.03	\$ 0.03	\$ 0.80	\$ 0.90	\$ 0.97	\$ 1.06	\$ 1.15	\$ 1.24	\$ 1.33	\$ 7.51
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ 0.03	\$ 0.03	\$ 0.80	\$ 0.90	\$ 0.97	\$ 1.06	\$ 1.15	\$ 1.24	\$ 1.33	\$ 7.51
- Mobility/Remote Access	\$ -	\$ 1.05	\$ 1.38	\$ 2.08	\$ 2.06	\$ 1.91	\$ 2.25	\$ 2.11	\$ 2.12	\$ 2.51	\$ 17.46
- Data Warehousing	\$ 0.19	\$ 3.00	\$ 3.21	\$ 3.46	\$ 3.72	\$ 5.18	\$ 4.29	\$ 4.60	\$ 4.93	\$ 5.28	\$ 37.86

(Note: Costs shown in millions of dollars)

7.1.4.3 Benefits

7.1.4.3.1 Assumptions

The following are the key assumptions for all benefits in Alternative 1:

- All benefits will begin 12 months after the functionality has been implemented. Because Alternative 1 is a continuing system, all current savings will continue and be built upon with the additional benefits from added functionality.
- All benefits drivers and variables were obtained from documented sources to ensure validity of benefits.
- The savings identified will be reinvested back into the CWS/CMS program to reduce the workload of the current social workers that are currently working overtime as documented in the SB 2030 report²⁹.

7.1.4.4 Quantitative Benefits

The quantitative savings/benefits that Alternative 1 will be able to take advantage of are:

- **Current System Savings** – Because Alternative 1 is the continuation of the existing system, the current system savings have been included in the total benefits available to this alternative. The current system savings were based on anticipated savings identified in the approved 2004 APDU and projected for the ten-year period based on a three-year growth trend of benefits of 3%. Because Alternatives 2 and 3 are considered new development efforts, this category will not apply to those alternatives.
- **Increased Productivity** – Alternative 1 will be able to take advantage of benefits associated with:
 - **Mobility** – Technology to support PDAs for the social worker in the field increases productivity. If the social worker performs an additional 25 minutes per week of work as a result of having mobile technology and 50% of the work force utilizes this technology, \$3,723,720 will be recognized in savings annually. It is anticipated that in the first year of benefit realization only 30% of the work force will use this technology and receive benefits of \$2,234,280. In the second year, 40% of the work force is anticipated to take up the use of this technology, increasing savings to \$2,979,040. In the third year, 50% of the work force will use the technology and full benefit realization (\$3,723,720) will occur from that point forward.
- **Program Savings** – The following program savings are anticipated to occur as a result of implementing Alternative 1:
 - **Automate Adoptions Case Management Tasks** – The manual processes of managing adoption cases can be decreased through automation. The average worker spends time each day performing a variety of manual tasks that can be eliminated or improved. With implementation of a full case management system, data will be available to facilitate the overall adoption case management process. Adoption homes will be identified faster. Information will be readily available for the social worker to answer questions and facilitate adoptions. The average worker saves time if the information is readily available

²⁹ The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a two-week period.

and organized to assist the social worker in the overall facilitation of the adoption process. A conservative estimate of a 5% overall time savings is estimated for each case, with an annual caseload of 7004³⁰ resulting in a savings of \$742,191 annually.

- **Automated Interfaces** – The process of acquiring, compiling, and delivering (i.e., faxing, hand carrying, telephoning, etc.) information can be a time consuming process for the social worker especially where there are multiple organizations requiring similar information. The social worker spends time each day performing tasks that can be eliminated through a two-way interface.
 - *Title IV-A: CalWORKS Program* – The CalWORKS program is California’s largest cash assistance program for children and families with an annual caseload of 730,000³¹. The social worker searches SAWS when initial abuse allegations are received, and through the life of a case for integrated case management. This task is estimated at 5 minutes per case. Elimination of this task through automation will result in a total savings of \$2,569,600 annually.
 - *Title IV-D: Child Support* – The child support program establishes and enforces court orders for child, spousal, and medical support from absent parents. The social worker searches for parental information to help make placement decisions. This task is estimated at 5 minutes per case with an annual caseload of 74,283³². If this information is automatically searched and provided to the social worker, a total annual savings of \$261,476 will result.
 - *Title XIX: Medi-Cal Program* – Medi-Cal, California’s Medicaid program, is a key component of California’s health care delivery system. The social worker searches for information on each child to determine whether the child is already receiving Medi-Cal. This task is estimated at 5 minutes per case with an annual caseload of 74,283³³. Elimination of this task through automation will result in a total savings of \$261,476 annually.
- **Automated Title IV-E Eligibility Determination** – The automation of the eligibility information sharing process will eliminate or improve several tasks, which will result in savings.
 - *Eliminate the Manual Process of Delivering Information to Eligibility* – The manual process of delivering (i.e., faxing, hand carrying, telephoning, etc.) information to the eligibility department can be decreased through automation. The average social worker spends 10 minutes delivering eligibility information per week. The number of FTEs minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 5,853. The elimination of the manual data-sharing task through automation will result in a total savings of \$2,317,788 annually.
 - *Automate the Data Entry Process of Eligibility Data* – Once the eligibility division performs the calculations, the information is returned to the social worker who then

³⁰ CWS/CMS adoptions caseload SFY 2003/04.

³¹ SFY 2005/06 Governor’s Budget cited the caseload at approximately 730,000.

³² Caseload count obtained from the Governors Budget, 2005 for Foster Care children.

³³ Caseload count obtained from the Governors Budget, 2005 for Foster Care children.

manually enters the results. Through a two-way interface with the eligibility department, this task can be eliminated. The average worker spends 5 minutes per case performing data entry and the annual caseload of foster care children minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 45,313. The eligibility process occurs once every six (6) months³⁴. Automatically importing the eligibility results will realize a reduction of 50% in the time the social worker must work with the case. The time savings recognized through the automation of this task will result in a total savings of \$159,502 annually.

The total benefits for the ten-year period are shown in the following table.

³⁴ Eligibility cases are reassessed every 6 months. This calculation does not include the assessments that occur with placement changes.

Table 13 - Total Ten-Year Benefits for Alternative 1

	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Benefits	\$ 68.84	\$ 72.41	\$ 76.82	\$ 77.57	\$ 80.55	\$ 90.80	\$ 93.98	\$ 96.50	\$ 99.10	\$ 101.77	\$ 858.33
Current Savings	\$ 68.84	\$ 72.41	\$ 74.59	\$ 74.59	\$ 76.82	\$ 81.50	\$ 83.95	\$ 86.47	\$ 89.06	\$ 91.73	\$ 799.96
Current System Savings	\$ 68.84	\$ 72.41	\$ 74.59	\$ 74.59	\$ 76.82	\$ 81.50	\$ 83.95	\$ 86.47	\$ 89.06	\$ 91.73	\$ 799.96
Increased Productivity	\$ -	\$ -	\$ 2.23	\$ 2.98	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 27.56
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ 2.23	\$ 2.98	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 27.56
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5.57	\$ 6.31	\$ 6.31	\$ 6.31	\$ 6.31	\$ 30.82
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.74	\$ 0.74	\$ 0.74	\$ 0.74	\$ 2.97
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5.57	\$ 5.57	\$ 5.57	\$ 5.57	\$ 5.57	\$ 27.85
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
System Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(Note: Benefits shown in millions of dollars)

7.1.4.5 Breakeven

Alternative 1 is the augmentation of the current system. Therefore, previously incurred and realized costs and benefits for this system were added to the cumulative total to provide the truest picture of this alternative. In the current environment, recent adjustments downward in the cumulative total projected benefits indicate that the current system will not breakeven. Moreover, as shown in this graph, Alternative 1 will not reach a payback point, even with the addition of the new functionality and associated benefits.

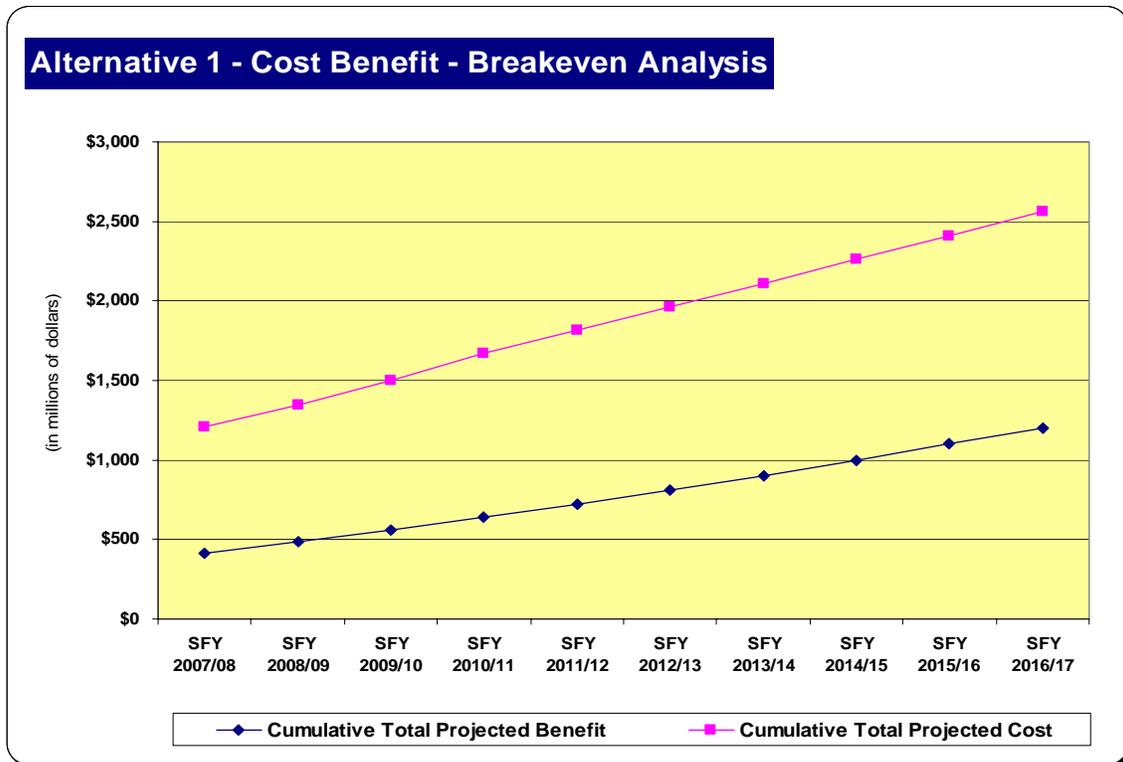


Figure 19 - Alternative 1 - Cost Benefit - Breakeven Analysis

7.1.4.6 SACWIS Funding Impacts

In its simplest form, SACWIS federal participation is based on whether an activity or cost can be attributed directly to the meeting of a SACWIS requirement. If an activity is deemed to meet the criteria for being considered SACWIS, costs are first appropriately allocated to all benefiting programs per cost allocation methodologies and then federal funds are applied to 50% of the costs for the portion of the activity allocated to the Foster Care and Adoptions programs. Activities related to the statewide system, but not directly attributable to meeting a SACWIS requirement, are considered to be non-SACWIS. Costs for Non-SACWIS activities are first appropriately allocated to all benefiting programs per cost allocation methodologies. Costs allocable to the Foster Care program are discounted by the percentage of State-only Foster Care cases to total federal and State-only cases and a ratio of federal and State-only percentages is developed for cost allocation. The two Foster Care cost categories eligible for non-SACWIS federal funding are Title IV-E Discounted and Title IV-E Enhanced training funding. It is important to note that the non-SACWIS IV-E Discounted funding ratio (75% federal Foster Care/25% State-only Foster Care) is based on caseload and therefore, the

sharing ratio fluctuates from year to year. In the non-SACWIS scenario, federal funds are applied to 50% of 75% of the IV-E Discounted funds. For IV-E Enhanced funding (75/25), non-SACWIS federal funding is applied to 75% of the 75%. It is important to note that the IV-E Enhanced funding is only eligible to be applied to direct training costs. The assumptions for the SACWIS/non-SACWIS cost allocation can be found in Section 6.

For purposes of discussing the SACWIS funding, all outcomes will be described relative to the impact to general and federal funds. The following charts³⁵ illustrate the total impact to these funds as a result of implementing Alternative 1 with and without SACWIS functionality.

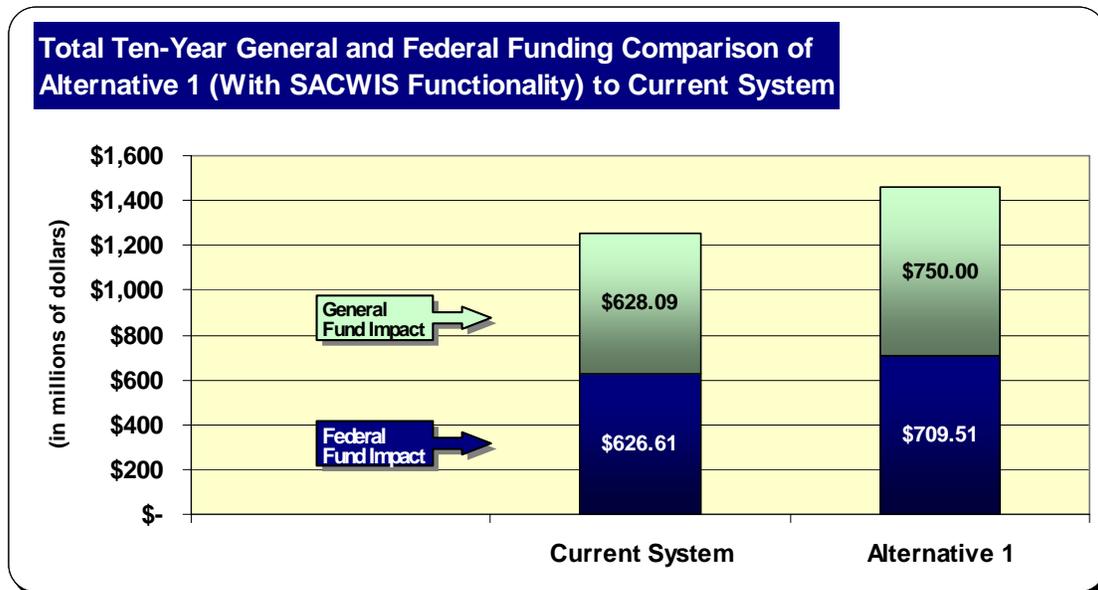


Figure 20 - Total Ten-Year General and Federal Funding Comparison of Alternative 1 (With SACWIS Functionality) to Current System

As shown in the chart above, Alternative 1 has an increased need for general and federal funds above the current system funding levels because of the development, implementation, and operation of the additional SACWIS and business functionality. As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State pursues SACWIS functionality, the current level of SACWIS funding will be available.

³⁵ The total costs presented here for funding do not include costs for CDSS Staff, as their participation in any CWS/CMS activity is funded separately.

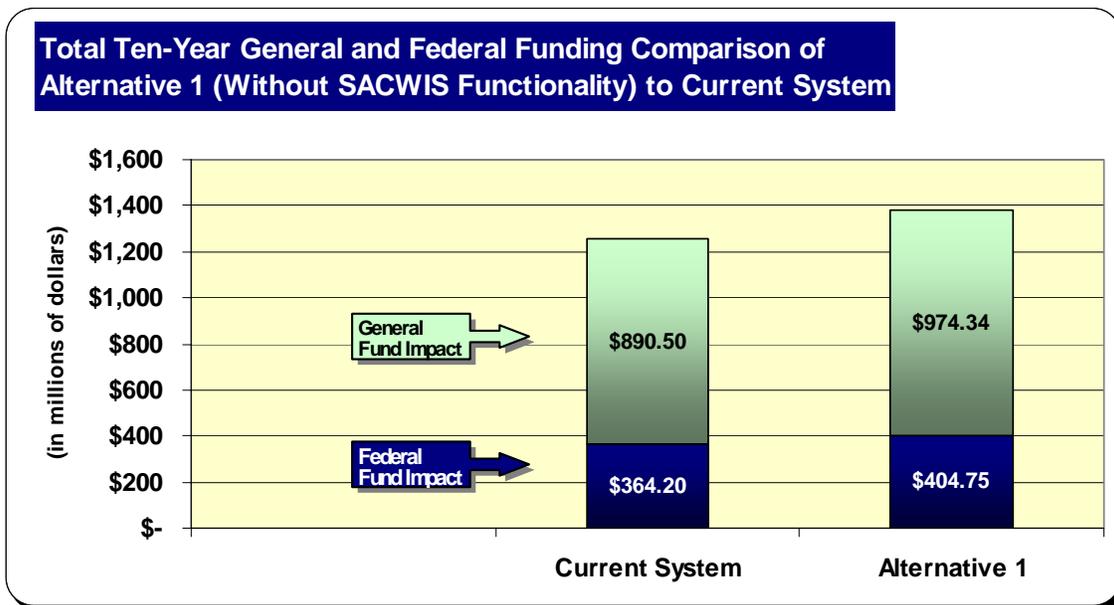


Figure 21 - Total Ten-Year General and Federal Funding Comparison of Alternative 1 (Without SACWIS Functionality) to Current System

As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State does not pursue SACWIS functionality, then a reduced amount of federal funding will be available. Although the overall cost is reduced because the SACWIS functionality is not being developed, the impact of not pursuing SACWIS results is significant because of the notable shift in the amount of general and federal funds eligibility. As shown in the chart above, there will be a considerable increase in the amount of General Funds required if the State chooses to not continue seeking SACWIS compliance.

7.1.5 High-Level Roadmap

The TAAA Team developed the Alternative 1 roadmap as a development/deployment scenario based on the needs of the State and reasonable deployment planning considerations. There are various timelines and approaches for developing and deploying the capabilities associated with the alternative that the State may pursue. The actual development/deployment timeline and approach may vary based on State priorities and vendor capabilities.

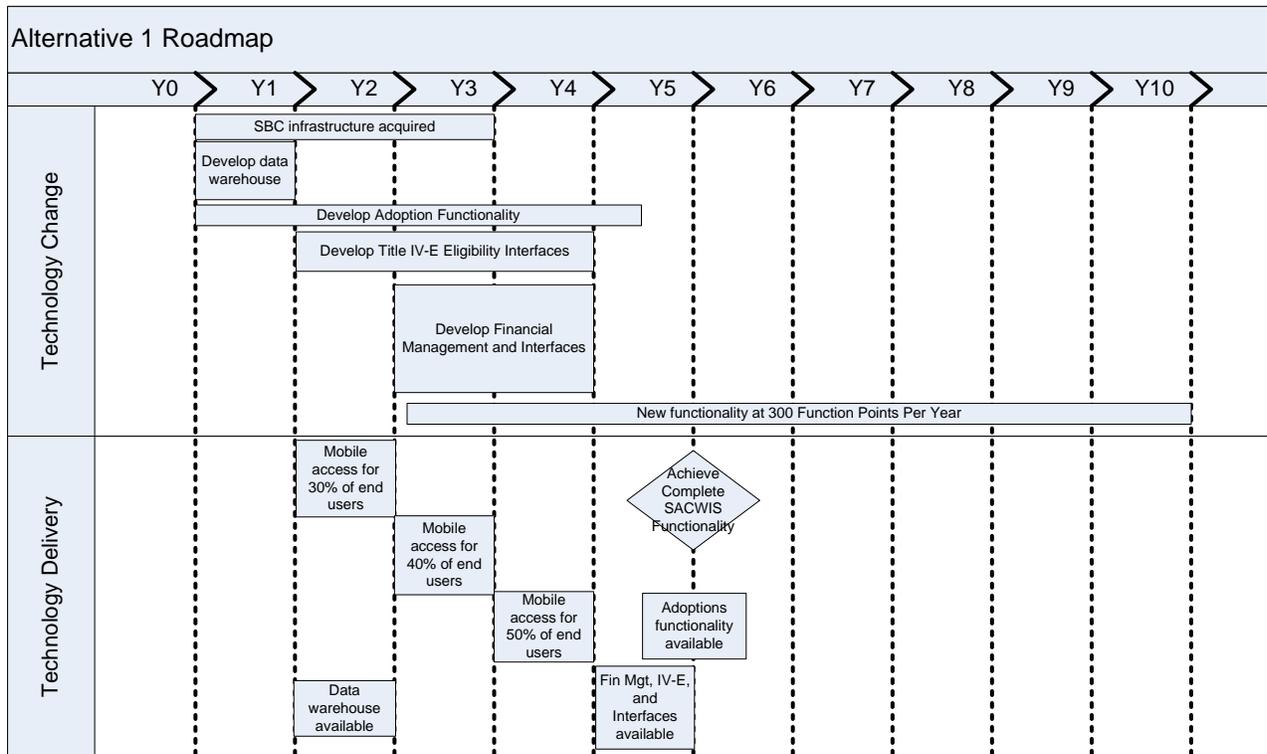


Figure 22 - Alternative 1 Roadmap

7.1.6 Risks

The section includes high-level risks associated with the financial, technical, operational, competitive procurement, schedule, and implementation characteristics of this alternative. These risks illustrate the comparative risks associated with the alternative and are not intended to be a comprehensive list of all risks for each alternative.

Risk	Area
<ul style="list-style-type: none"> Because of limited competitive alternatives, the continued dependence on the maintenance service provider presents a high likelihood of incurring higher maintenance and procurement costs. 	Financial, Competitive Procurement

Risk	Area
<ul style="list-style-type: none"> Additional time and resources spent on “workarounds” will continue because of the untimely deployment of new and updated business functionality reducing worker effectiveness and time spent on providing service to California’s children and families. 	Financial
<ul style="list-style-type: none"> Increased delays in obtaining future funding from federal stakeholders and a resultant increased monetary burden on California taxpayers are likely because of potentially decreased federal stakeholder support for the existing technology solution. 	Financial, Schedule
<ul style="list-style-type: none"> Deficiencies in application functionality force counties to continue paying for third-party solutions to meet business requirements. 	Financial
<ul style="list-style-type: none"> The current fat client application and security architecture that restricts collaborative functionality for third party or community-based service providers will continue to hinder the full realization of services to California’s at risk children and families. 	Technical
<ul style="list-style-type: none"> The current COBOL/CICS and data access routines lock the State into a solution that limits the available technical and procurement options. 	Technical, Competitive Procurement
<ul style="list-style-type: none"> Dwindling availability of COBOL/CICS resources increase the likelihood of increased costs and limited development resources. 	Technical
<ul style="list-style-type: none"> The legacy environment and infrastructure will continue to limit the State’s ability to secure competitive procurement options. 	Competitive Procurement
<ul style="list-style-type: none"> The complex nature, size, and interaction with desktop software present significant risks to time and schedule when preparing a statewide rollout of the fat client software. 	Implementation

7.1.7 Benefits and Limitations

The following tables detail general benefits that could be realized for Alternative 1. The benefits are shown using the ‘●’ symbol and the ‘◐’ ‘◑’ symbols. In general, the presence of the ‘●’ symbol indicates the benefit is realized for Alternative 1. The ‘◐’ ‘◑’ symbols indicate that the benefit is realized for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the benefit does not apply to or is marginal for Alternative 1.

Business Benefits	Alt 1
Least disruptive to current county operations	●
Leverages existing business and technical infrastructure	●
Increased cash flow for incremental investment	
Risk exposure opportunity is incremental (versus Alt 3)	
Quickest delivery of incremental benefits (Adoptions)	
Quickest delivery of all SACWIS benefits	
New strategic direction enhances county and federal stakeholder buy-in	
Provides for increased procurement competition	
Lowest yearly M&O costs after implementation	
Easier data entry/simplified navigation	
Allows concurrent case record access	
Easily updated and customized form templates	

Technical Benefits	Alt 1
Retains existing State and county maintenance and support process	●
No major technology barriers to SACWIS implementation	●
High degree of availability and redundancy	●
No barriers to increased caseload, users, sites, or transactions	●
Supports State CIO Strategic Plan	
Incremental development and deployment of SACWIS functionality	
Open technical environment	
Greater platform and technology flexibility	
Workflow management capabilities	
More granular security allows for external organization access	◐
Easier interface with external systems	
Supports mobile workforce	◐
Reduced workstation business logic and “footprint”	

Implementation Benefits	Alt 1
Least disruption to existing business and technical operations	●
Low risk development	●
Low one time costs	●
Evolutionary approach should minimize large scale business disruption	
Minimal initial requirements gathering	

The following table details general limitations for Alternative 1. The limitations are shown using the ‘●’ symbol and the ‘◐’ ‘◑’ symbols. In general, the presence of the ‘●’ symbol indicates a limitation for Alternative 1. The ‘◐’ ‘◑’ symbols indicate that the limitation is present for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the limitation does not apply to Alternative 1.

Limitations	Alt 1
Does not leverage existing data – allows duplicate entry	●
Redundant data entry	●
Limited/no opportunity for workflow processing	●
Limited use of mobile devices	●
Lacks user friendly features (spell check, user prompts, limited search capability)	●
Requires significant training	●
Counties will continue to rely on ancillary system until evolution is complete	●
Users must use multiple interfaces	
State must support parallel production systems	
State must fill “system integrator” role for two or more vendors (multiple platforms, multiple procurements)	
Higher initial one-time system development costs	
Requires concentrated support from State and county during up-front development period	

7.2 Alternative 2

7.2.1 Alternative Description

In Alternative 2, the State will evolve the existing CWS/CMS application to a web services based SOA over time while optionally delivering the remaining SACWIS functionality with a browser-based user interface accessing the SOA using web services.

This alternative proposes that the State continue to maintain and upgrade the existing CWS/CMS while evolving the technical architecture to a web services based infrastructure over time. Changes to the existing application and systems architecture will only be made to meet critical business requirements such as changing the security model to accommodate new user types or modifying an existing interface.

The incremental and discrete migration phases will be based upon the time, cost, and risks associated with the architectural change opportunities. The phases will be prioritized by evaluating the county pain points, mandated or desired functional enhancements, time to benefits delivery, and the strategic technical capabilities to meet specific business requirements.

The remaining unfulfilled SACWIS technical functionality will be designed, developed, and implemented using the SOA and accessed through the browser-based user interface as a part of the evolution and migration to the target architecture.

Service Oriented Architecture

Alternatives 2 and 3 introduce a web services based or Service Oriented Architecture (SOA) to the CWS/CMS technical environment. The SOA represents advancement in the development strategies for applications. As the Internet and local intranets provide greater connectivity, options for the distribution of applications and new methods for envisioning “how” applications work have evolved.

Traditionally, application architectures have been broken down into three basic categories: monolithic, client/server, and n-tier. The monolithic architecture is best exemplified by the traditional mainframe applications (one large program and a data store) located on the mainframe. All user interface processing, business logic, and data access occurred within the one program, running on one “box”.

Client/server architectures represented the next technological advancement, splitting off the database server from the client application. This presented a number of advantages over the monolithic architecture, primarily by allowing a shared database server to service multiple users’ requests. While splitting the database server from the user application reduced overall network traffic for user data queries, it did not reduce traffic for entire data files. In addition, cost reductions were often realized by running the client application on relatively inexpensive PCs and using a more powerful server for the database.

N-tier architectures evolved from the client/server model by further separating the user application functionality into finer-grained pieces. Traditionally, a third tier was inserted by segregating the functionality into user interface, business logic or process management, and a database management. The n-tier architecture has undergone a variety of refinements: n-tier with transaction processing monitor (TP), n-tier with a messaging server, n-tier with an application server (generally web-based applications), n-tier with an Object Request Broker (ORB), and an n-tier distributed or collaborative enterprise architecture.

(continued)

7.2.2 Assumptions

The following assumptions were made for Alternative 2:

- The State would continue to maintain and upgrade the existing CWS/CMS – changes to the existing application and systems architecture to meet critical business requirements – while evolving the technical architecture to a web services based infrastructure over time.
- Existing functionality will be converted and deployed to a web services based SOA/browser-based environment over an 8-year period; the mainframe will be decommissioned at the same time.
- While there would be no need for distributing CWS/CMS code to the field in a browser-based architecture, the State would still be required to maintain desktops and servers in dedicated counties.
- The State would manage and integrate current and target systems and/or vendors over an extended period.
- This alternative further assumes that hosting services and data center operations transfer from the IBM Global Service site in Boulder, Colorado to the State Data Center.

7.2.3 Target Architecture

The target architecture in this alternative will be a combination of the existing CWS/CMS architecture coexisting alongside the new web services based SOA architecture. In this alternative, the State will procure an application server suite. This suite

SOA *(continued)*

This last n-tier architecture is often viewed as a hybrid of several different n-tier models. It can utilize a messaging component to hide specific implementation details of networking, protocols, and location of data or hosts. It can support aspects of the TP monitor components by handling transaction management and security.

The distributed/collaborative architecture allows a business to analyze its internal processes in new ways that are defined by changing business opportunities instead of by preconceived systems design (such as monolithic data processing applications). In this architectural design, an object model represents all aspects of the business; what is known, what the business does, what are the constraints, and what are the interactions and the relationships. A business model is used to integrate and migrate parts of legacy systems to meet the new business profile.

This distributed/collaborative architecture results in the creation of composite applications, applications built from existing application logic and data. The existing application logic and data are repackaged and “exposed” to the enterprise as available services to be called upon and used by other applications. This constitutes a SOA. The driving forces behind this type of architecture are common data, functionality, and expanding code reuse.

An SOA, at its heart, is a collection of services. A service is a software component that is well-defined, both from the standpoint of software and business function, and does not depend on the context or state of any application that calls it. Often these services are implemented as web services, accessible by applications through the Simple Object Access Protocol (SOAP), an Extensible Markup Language (XML) form document transmitted over Hypertext Transfer Protocol (HTTP). The advantage of using web standards in an SOA is that services can more easily adapt to different applications. Nothing in particular has to be done programmatically to the service, except to enable it to receive requests and transfer results using SOAP. In many cases, web services are straightforward to build, and existing software can be adapted to create new services.

(continued)

will be the basic infrastructure for deploying the next generation application functionality in a SOA. Many of the application server suites can provide out-of-the-box functionality for integration with the existing CWS/CMS environment. All new functionality, including the four unfulfilled SACWIS technical requirements developed in the new environment, will be browser-based and delivered to the social worker through the web browser alongside the current CWS/CMS application.

The development and deployment of all functionality into the web services based SOA environment will occur over a period of eight years. The migration will be planned in phases such that each phase provides additional tangible benefits to the State. There will not be significant changes at the workstation level, as the social worker will continue to use the existing workstation configuration to run CWS/CMS alongside a browser accessing the new browser-based application functionality. The new application platform suite will be able to connect to the current DB2 database on the mainframe. In year three, the CICS universal client and CICS transaction gateway at the county server level will be replaced by a SOAP and XML at the workstation level for the current CWS/CMS application.

Migration of the CWS/CMS existing functionality will occur at a rate of approximately 500 function points per year, starting in year 3. The security model must be enhanced during the first year to accommodate a more granular level of security control for external users.

As in Alternative 1, SBC will be leveraged to enable productive remote access to the existing CWS/CMS functionality. The target 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 that will be fed by the data warehouse. The data warehouse platform will continue to be based on DB2 UDB running on an IBM pSeries platform. Access to predefined daily operational reports will be through a browser with access to the data warehouse or a data mart. The enhanced data warehouse can be utilized by county users for analytical reporting, data mining, and/or ad hoc reporting.

SOA *(continued)*

A SOA enables the business to define the essential services it requires to serve its core business needs efficiently, and to adapt rapidly to changing business conditions. Once these core services are implemented, any authorized application can call upon them to access and analyze data, build new business models, or provide data or features that make that application immediately pay back its investment.

This means that SOA is both a technical and a business strategy. It is a business strategy in that services deliver core value to the business. The services that comprise the SOA must be designed with an intimate understanding of the business, to determine what capabilities can be used across multiple applications. In addition, they must be general enough to support multiple applications with different purposes, yet specific enough to provide real value to individual applications (FTPOne (Peter Varhol - author), Special Report: Service-Oriented Architecture Page, 30 March 2004, www.ftponline.com/special/soa/overview/, 30 July 2004).

The data model and design of the data warehouse will be reviewed to ensure it properly meets the basic reporting needs of all counties and follows best practices in data warehouse design. Any additional external sources of data will be identified and brought into the data warehouse to be accessed by the counties. The following diagram provides a high-level architectural view of this alternative:

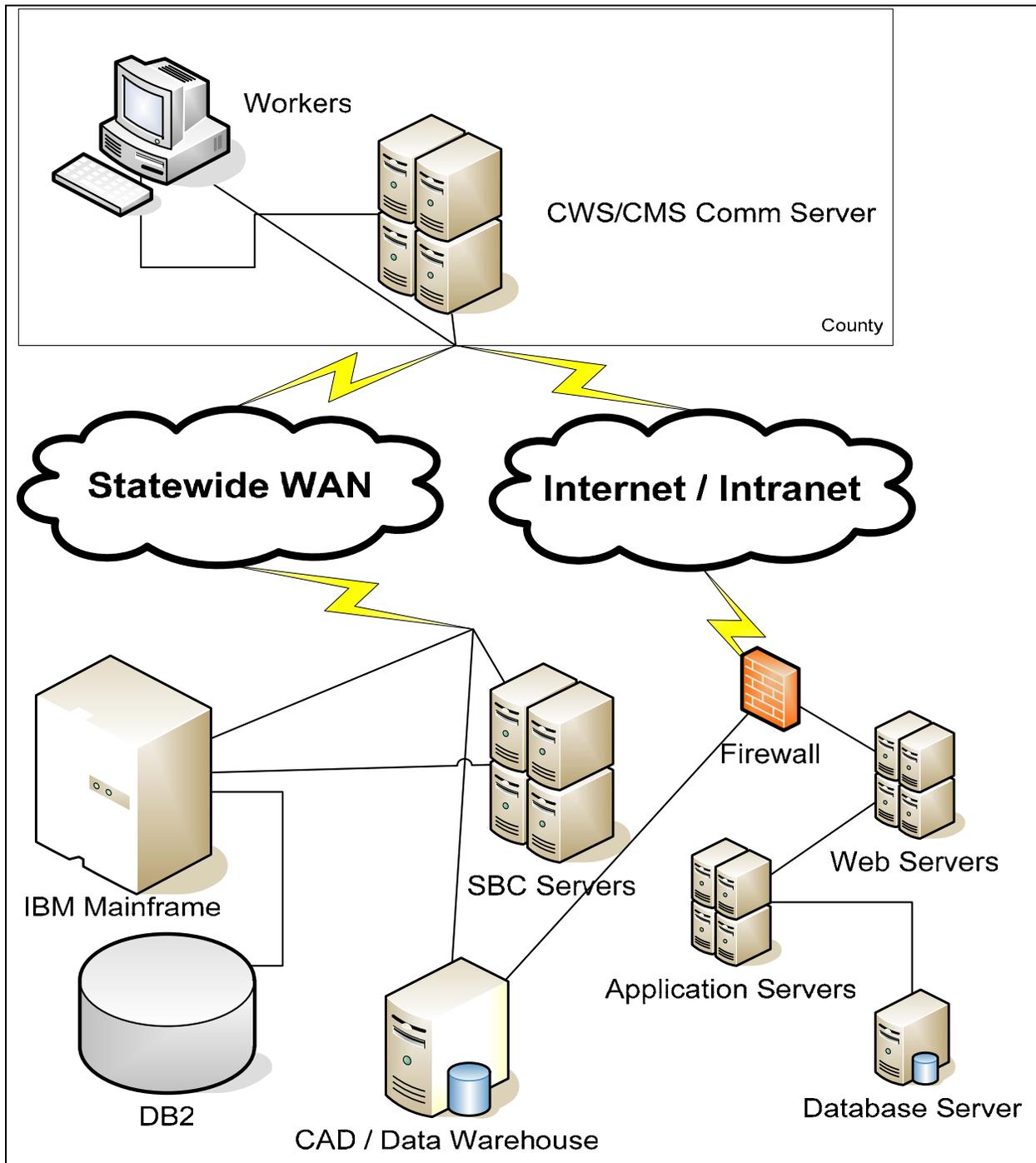


Figure 23 - Alternative 2 Architecture

7.2.4 Total Cost of Ownership

The TAAA Team has estimated the ten-year costs for Alternative 2 using the approved 2004 APDU costs allocated for period of SFY 2006/07 CWS/CMS costs as the baseline and projecting costs based on function point analysis for the new development efforts.

7.2.4.1 Assumptions

All cost assumptions related to Alternative 2 can be found in Appendix D – Alternative 2 – Detailed Cost Summary. The following are the key assumptions that helped to define the costs for Alternative 2:

- For the purposes of this analysis, the TAAA Team assumed that there are no current one-time development costs and did not include costs for potential future development efforts outside of this alternative.
- Current ongoing M&O costs will continue and increase at a growth of 1% per year until the implementation of the new solution is completed.
- The re-development of existing functionality on the new architecture will occur over an eight-year period.
- All new costs will be added to existing costs until the implementation of each portion of the new solution.
- SACWIS functionality is related solely to automated system features that support county processes and does not imply funding.
- Per the timeframe identified in the EAS PIER, Adoptions functionality will be developed and deployed between July 2007 and June 2009.
- The effort to develop new SACWIS functionality includes the cost and effort of developing Eligibility functionality/interfaces, Financial Management functionality/interfaces, and Interfaces to Title IV-A (CalWORKS), Title IV-D (Child Support Enforcement), and Title XIX (Medi-Cal).
- Eligibility functionality/interfaces will be implemented between July 2008 and June 2010, Financial Management functionality/interfaces between July 2009 and June 2010, and Interfaces between July 2009 and June 2010.
- The 300 additional function points per year will be developed beginning July 2010.
- One (1) State manager will be assigned to manage the contracted staff providing development services on behalf of the HHSDC State staff.
- CDSS staff will provide policy direction and guidance during development.
- Three (3) staff will support the Adoptions, SACWIS, and Data Warehouse development efforts. Two (2) of these staff will transition to the M&O organization as part of continuing support for the Adoptions and SACWIS functionality.
- Additional facilities costs will be added to each effort (re-development of existing functionality, adoptions functionality, SACWIS functionality, remote access infrastructure, and data warehouse). All other facilities costs have been included in the projected vendor rates.

- The new architecture will result in the reduction of State Data Center hosting service costs by approximately 20%. The transition to the new level of costs will occur gradually over the eight-year time period.
- State Data Center hosting service costs will not be affected by the addition of Adoptions and SACWIS functionality will not result in the need for addition hardware or equipment to be hosted.
- State Data Center WAN costs will increase as a result of increasing the number of sites by 5% each year.
- County participation will include project, conversion (data validation and manual conversion), and implementation staff during the development period for Adoptions and SACWIS functionality.
- Vendor costs for the re-development of existing functionality and all SACWIS functionality (Adoptions, IV-E Eligibility, Financial Management, and Interfaces) were based on the number of function points and average standard cost per function point.
- Hardware and software will be purchased to support the development and maintenance efforts, including workstations/laptops, servers, and development and productivity software.
- Production hardware or software will be required to support the SOA infrastructure.
- Remote access infrastructure and data warehouse hardware will be housed at the State Data Center.
- All host hardware and software will be hosted at the State Data Center.
- Current contracted goods and services will continue and additional QA, IV&V, integration services, and training contractors will be added to the development of each new function. Although the costs of existing contracts has been continued over the ten-year period to provide a level of contractor coverage, no additional QA or IV&V services will be required for the maintenance of any new function.

7.2.4.2 Ten-Year Costs

The following table illustrates the current costs projected over ten years and the total ten-year costs for this alternative.

Table 14 - Projected Current and Total Ten-Year Costs for Alternative 2

COST CATEGORY	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Current CWS/CMS Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.43	\$ 129.50	\$ 130.59	\$ 131.71	\$ 132.84	\$ 1,280.75
One-Time Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-Going Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.43	\$ 129.50	\$ 130.59	\$ 131.71	\$ 132.84	\$ 1,280.75
Costs	\$ 154.61	\$ 165.55	\$ 148.29	\$ 135.80	\$ 131.12	\$ 128.11	\$ 120.80	\$ 114.16	\$ 99.52	\$ 100.89	\$ 1,298.85
One-Time Costs	\$ 30.64	\$ 36.41	\$ 26.96	\$ 17.32	\$ 16.61	\$ 16.55	\$ 16.48	\$ 11.83	\$ 3.13	\$ 3.14	\$ 179.06
Costs to Evolve Existing to New Arch and Re-Dev Functionality on New Arch	\$ 16.83	\$ 15.10	\$ 13.61	\$ 13.55	\$ 13.47	\$ 13.40	\$ 13.34	\$ 8.69	\$ -	\$ -	\$ 107.99
Additional Costs to Develop Adoptions Functionality on New Architecture	\$ 4.33	\$ 15.50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19.82
Additional Costs to Develop SACWIS Functionality on New Architecture	\$ 0.13	\$ 4.81	\$ 12.35	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17.29
Additional Costs to Develop New Business Functionality on New Architecture	\$ -	\$ -	\$ -	\$ 3.10	\$ 2.49	\$ 2.49	\$ 2.49	\$ 2.48	\$ 2.48	\$ 2.48	\$ 18.01
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ 3.10	\$ 2.49	\$ 2.49	\$ 2.49	\$ 2.48	\$ 2.48	\$ 2.48	\$ 18.01
- Mobility/Remote Access	\$ 2.31	\$ 0.34	\$ 0.34	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.00
- Data Warehousing	\$ 7.05	\$ 0.66	\$ 0.66	\$ 0.66	\$ 0.65	\$ 0.65	\$ 0.65	\$ 0.65	\$ 0.65	\$ 0.65	\$ 12.95
On-Going Costs	\$ 123.96	\$ 129.14	\$ 121.34	\$ 118.48	\$ 114.51	\$ 111.56	\$ 104.32	\$ 102.33	\$ 96.38	\$ 97.76	\$ 1,119.79
Current On-Going Costs	\$ 123.78	\$ 124.48	\$ 96.08	\$ 74.39	\$ 60.37	\$ 46.17	\$ 31.20	\$ 18.94	\$ 2.51	\$ 2.85	\$ 580.78
New On-Going Costs to Maintain New Architecture and Re-Dev Functionality	\$ -	\$ 0.42	\$ 19.23	\$ 35.77	\$ 45.22	\$ 54.81	\$ 62.95	\$ 72.82	\$ 84.41	\$ 85.23	\$ 460.86
Additional On-Going Costs for Adoptions Functionality on New Architecture	\$ -	\$ 0.00	\$ 1.41	\$ 1.46	\$ 1.46	\$ 1.51	\$ 1.52	\$ 1.55	\$ 1.61	\$ 1.59	\$ 12.12
Additional On-Going Costs for New SACWIS Functionality on New Architecture	\$ -	\$ -	\$ -	\$ 1.23	\$ 1.17	\$ 1.17	\$ 1.16	\$ 1.20	\$ 1.21	\$ 1.19	\$ 8.31
Additional Costs to Maintain New Business Functionality on New Architecture	\$ -	\$ -	\$ -	\$ -	\$ 0.44	\$ 0.51	\$ 0.62	\$ 0.67	\$ 0.73	\$ 0.83	\$ 3.80
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ 0.44	\$ 0.51	\$ 0.62	\$ 0.67	\$ 0.73	\$ 0.83	\$ 3.80
- Mobility/Remote Access	\$ -	\$ 1.13	\$ 1.48	\$ 2.23	\$ 2.18	\$ 2.24	\$ 2.60	\$ 2.55	\$ 0.97	\$ 0.77	\$ 16.16
- Data Warehousing	\$ 0.19	\$ 3.11	\$ 3.13	\$ 3.40	\$ 3.68	\$ 5.15	\$ 4.28	\$ 4.60	\$ 4.94	\$ 5.30	\$ 37.77

(Note: Costs shown in millions of dollars)

7.2.4.3 Benefits

7.2.4.3.1 Assumptions

The following are the key assumptions for all benefits in Alternative 2:

- All benefits will begin 12 months after the functionality has been implemented. The only exception is System Savings, which includes the replacement of current systems. This benefit will be realized at the time the new system is implemented.
- All benefits drivers and variables were obtained from documented sources to ensure validity of benefits.
- The savings identified will be reinvested back into the CWS/CMS program to reduce the workload of the current social workers who are currently working overtime as documented in the SB 2030 report³⁶.

7.2.4.3.2 Quantitative Benefits

The quantitative savings/benefits that Alternative 2 will be able to take advantage of are:

- **Increased Productivity** – Alternative 2 will be able to take advantage of benefits associated with:
 - **Reduced Wait Time** – With the implementation of a new technical architecture, there will be an overall reduction in the amount of time the social worker must wait for the CWS/CMS to display or process information. As documented in the SB 2030 Report³⁷, the average case worker spends 15.5 hours a week on CWS/CMS. Of this time, 11.6% is spent waiting for the system to display information. These figures characterize a worst-case scenario and were based on a point-in-time assessment. While improvements have been made in this area, the fat client technology is still in use. Any performance improvements recognized with the new system will increase overall productivity and allow the social worker more time in performing work with the children instead of working with CWS/CMS. The new technical architecture and thin client should create a drop of 50% in the average time a social worker must wait for the system. If 8,463³⁸ workers no longer spend their time waiting for the system, this will result in an overall savings of \$6,108,837 annually.
 - **Mobility** – Technology to support PDA's for the social worker in the field increases productivity. If the social worker performs an additional 25 minutes per week of work as a result of having mobile technology and 50% of the work force utilizes this technology, \$3,723,720 will be recognized in savings annually. It is anticipated that in the first year of benefit realization only 30% of the work force will use this technology and receive benefits of \$2,234,280. In the second year, 40% is anticipated to take up the use of this technology, increasing savings to \$2,979,040. In the third year, 50% of the work force will use the technology and full benefit realization (\$3,723,720) will occur from that point forward.

³⁶ The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a 2-week period.

³⁷ SB 2030 Report Child Welfare Services Workload Study Final Report.

³⁸ FTE's for FY '03-'04 received from CDSS.

- **Improve Overall Productivity through a New Interface Design** – Elimination of redundant data entry produces additional time savings. The time savings of the new interface design is estimated at 2% for the entire caseload. This savings calculates to \$515,145 annually.
- **Program Savings** – The following program savings are anticipated to occur as a result of implementing Alternative 2:
 - **Automate Adoptions Case Management Tasks** – The manual processes of managing adoption cases can be decreased through automation. The average worker spends time each day performing a variety of manual tasks that can be eliminated or improved. With implementation of a full case management system, data will be available to facilitate the overall adoption case management process. Adoption homes will be identified faster. Information will be readily available for the social worker to answer questions and facilitate adoptions. The average worker saves time if the information is readily available and organized to assist the social worker in the overall facilitation of the adoption process. A conservative estimate of a 5% overall time savings is estimated for each case, with an annual caseload of 7004³⁹ resulting in a savings of \$742,191 annually.
 - **Automated Interfaces** – The process of acquiring, compiling, and delivering (i.e., faxing, hand carrying, telephoning, etc.) information can be a time consuming process for the social worker especially where there are multiple organizations requiring similar information. The social worker spends time each day performing tasks that can be eliminated through a two-way interface.
 - *Title IV-A: CalWORKS Program* – The CalWORKS program is California's largest cash assistance program for children and families with an annual caseload of 730,000⁴⁰. The social worker searches SAWS when initial abuse allegations are received, and through the life of a case for integrated case management. This task is estimated at 5 minutes per case. Elimination of this task through automation will result in a total savings of \$2,569,600 annually.
 - *Title IV-D: Child Support* – The child support program establishes and enforces court orders for child, spousal, and medical support from absent parents. The social worker searches for parental information to help make placement decisions. This task is estimated at 5 minutes per case with an annual caseload of 74,283⁴¹. If this information is automatically searched and provided to the social worker, a total annual savings of \$309,760 will result.
 - *Title XIX: Medi-Cal Program* – Medi-Cal, California's Medicaid program, is a key component of California's health care delivery system. The social worker searches for information on each child to determine whether the child is already receiving Medi-Cal. This task is estimated at 5 minutes per case with an annual caseload of 74,283⁴². Elimination of this task through automation will result in a total annual savings of \$309,760.

³⁹ CWS/CMS caseload SFY 2003/'04.

⁴⁰ Caseload count obtained from the Child Welfare Services Report for California, "Counts of Children with one or more Referrals for October 1, 2002 to September 30, 2003."

⁴¹ Caseload count obtained from the Governors Budget, 2005.

⁴² Caseload count obtained from the Governors Budget, 2005.

- **Automated Title IV-E Eligibility Determination** – The automation of the eligibility information-sharing process will eliminate or improve several tasks, which will result in savings.
 - *Eliminate the Manual Process of Delivering Information to Eligibility* – The manual process of delivering (i.e., faxing, hand carrying, telephoning, etc.) information to the eligibility department can be decreased through automation. The average social worker spends 10 minutes delivering eligibility information per week. The number of FTEs minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 5,853⁴³. The elimination of the manual data-sharing task through automation will result in a total savings of \$2,317,788 annually.
 - *Automate the Data Entry Process of Eligibility Data* – Once the eligibility division performs the calculations, the information is returned to the social worker who then has to manually enter the results. Through a two-way interface with the eligibility department, this task can be eliminated. The average worker spends 5 minutes per case performing data entry and the annual caseload of foster care children minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 45,313. The eligibility process occurs once every six (6) months⁴⁴. Automatically importing the eligibility results will realize a reduction of 50% in the time the social worker must work with the case. The time savings recognized through the automation of this task will result in a total savings of \$159,502 annually.
- **System Savings** – As the current system is decommissioned, the State will be able to realize the costs of that system as an annual savings. For Alternative 2, the current system will be decommissioned over a period of eight years.

The total benefits for the ten-year period are shown in the following table.

⁴³ FTE's for FY '03-'04 received from CDSS.

⁴⁴ Eligibility cases are reassessed every 6 months. This calculation does not include the assessments that occur with placement changes.

Table 15 - Total Ten-Year Benefits for Alternative 2

COST CATEGORY	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Benefits	\$ -	\$ -	\$ 33.42	\$ 50.42	\$ 71.31	\$ 94.14	\$ 104.55	\$ 121.61	\$ 138.98	\$ 140.14	\$ 754.56
Current Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Current System Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Increased Productivity	\$ -	\$ -	\$ 2.23	\$ 3.02	\$ 5.82	\$ 5.85	\$ 5.88	\$ 5.89	\$ 5.91	\$ 5.93	\$ 40.53
Benefits from Development of New Architecture and Re-Development of Existing F	\$ -	\$ -	\$ -	\$ 0.04	\$ 0.06	\$ 0.09	\$ 0.12	\$ 0.13	\$ 0.15	\$ 0.17	\$ 0.76
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 12.22
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ 2.23	\$ 2.98	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 27.56
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Savings	\$ -	\$ -	\$ -	\$ 0.25	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 12.87
Benefits from Development of New Architecture and Re-Development of Existing F	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 1.73
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 11.14
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
System Savings	\$ -	\$ -	\$ 31.18	\$ 47.15	\$ 63.38	\$ 86.19	\$ 96.57	\$ 113.62	\$ 130.97	\$ 132.11	\$ 701.16
Benefits from Development of New Architecture and Re-Development of Existing F	\$ -	\$ -	\$ 31.18	\$ 47.15	\$ 63.38	\$ 86.19	\$ 96.57	\$ 113.62	\$ 130.97	\$ 132.11	\$ 701.16
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(Note: Benefits shown in millions of dollars)

7.2.4.4 Breakeven

While Alternative 2 incurs costs and generates savings on a graduated basis, the cumulative benefits are not able to out pace the cumulative costs during the ten-year period.

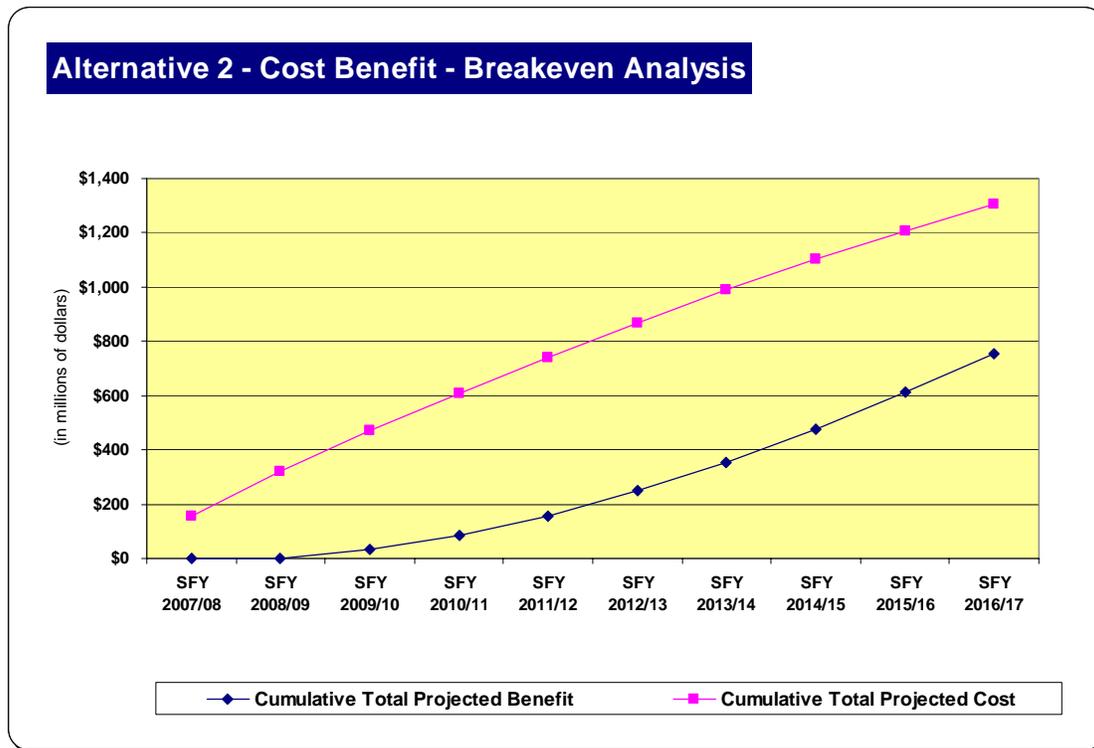


Figure 24 - Alternative 2 - Cost Benefit - Breakeven Analysis

7.2.4.5 SACWIS Funding Impacts

In its simplest form, SACWIS federal participation is based on whether an activity or cost can be attributed directly to the meeting of a SACWIS requirement. If an activity is deemed to meet the criteria for being considered SACWIS, costs are first appropriately allocated to all benefiting programs per cost allocation methodologies and then federal funds are applied to 50% of the costs for the portion of the activity allocated to the Foster Care and Adoptions programs. Activities related to the statewide system, but not directly attributable to meeting a SACWIS requirement, are considered to be non-SACWIS. Costs for non-SACWIS activities are first appropriately allocated to all benefiting programs per cost allocation methodologies. Costs allocable to the Foster Care program are discounted by the percentage of State-only Foster Care cases to total federal and State-only cases and a ratio of federal and State-only percentages is developed for cost allocation. The two Foster Care cost categories eligible for non-SACWIS federal funding are Title IV-E Discounted and Title IV-E Enhanced training funding. It is important to note that the non-SACWIS IV-E Discounted funding ratio (75% federal Foster Care/25% State-only Foster Care) is based on caseload and therefore, the sharing ratio fluctuates from year to year. In the non-SACWIS scenario, federal funds are applied to 50% of 75% of the IV-E Discounted funds. For IV-E Enhanced funding (75/25), non-SACWIS federal funding is applied to 75% of the 75%. It is important to note that the IV-

E Enhanced funding is only eligible to be applied to direct training costs. The assumptions for the SACWIS/non-SACWIS cost allocation can be found in Section 6.

For purposes of discussing the SACWIS funding, all outcomes will be described relative to the impact to general and federal funds. The following charts⁴⁵ illustrate the total impact to these funds as a result of implementing Alternative 2 with and without SACWIS functionality.

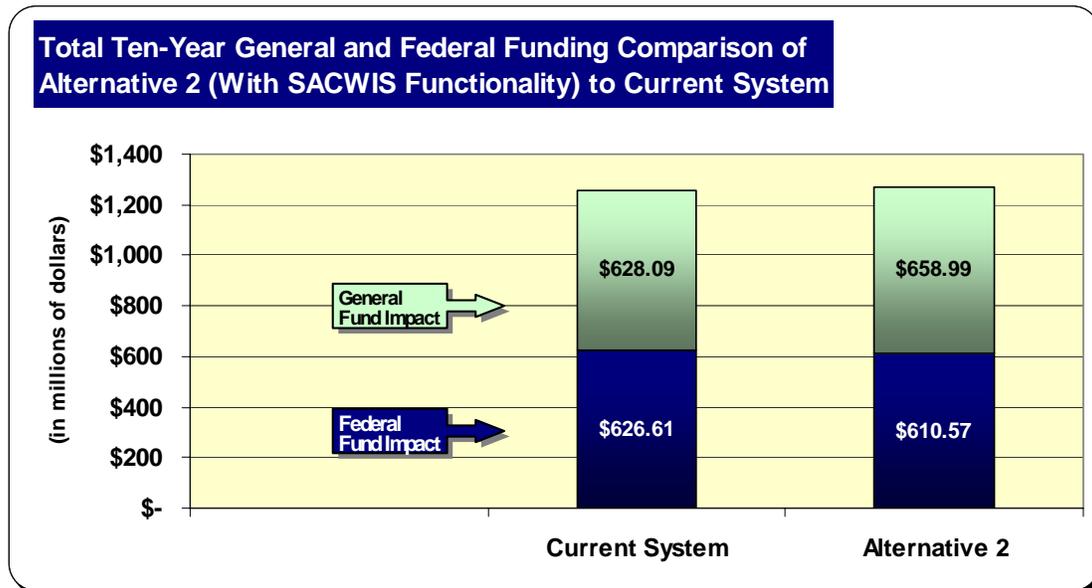


Figure 25 - Total Ten-Year General and Federal Funding Comparison of Alternative 2 (With SACWIS Functionality) to Current System

As shown in the chart above, Alternative 2, even with the additional costs for the complete solutions (i.e., development and operation of new architecture, re-developed functionality, SACWIS functionality, and business functionality), has only a slightly increased need for General Funds above the current system funding levels. As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State pursues SACWIS functionality, the current level of SACWIS funding will be available.

⁴⁵ The total costs presented here for funding do not include costs for CDSS Staff, as their participation in any CWS/CMS activity is funded separately.

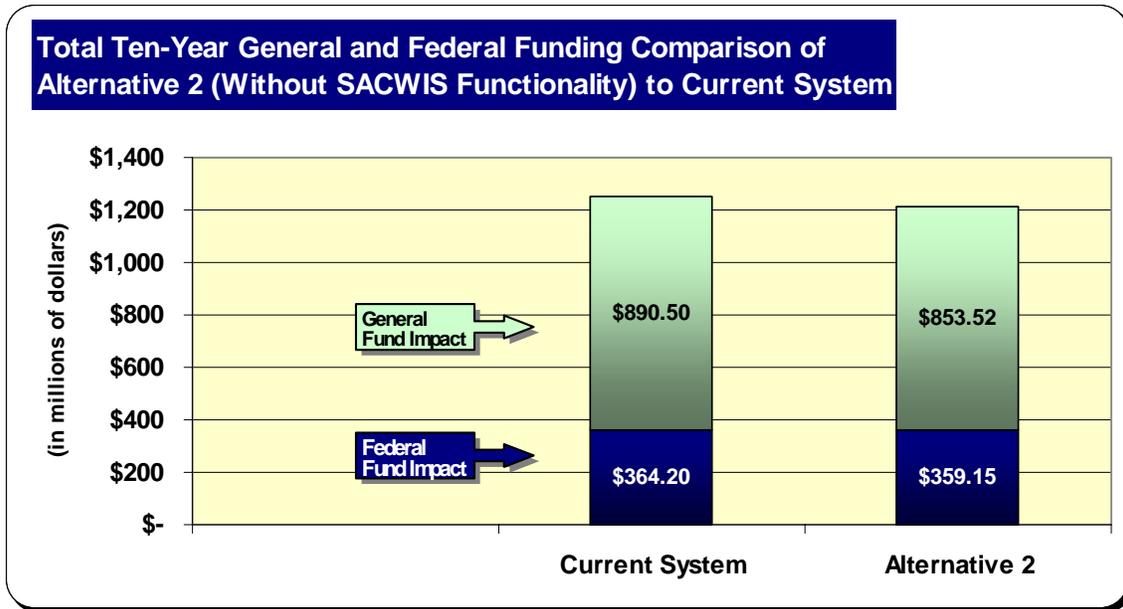


Figure 26 - Total Ten-Year General and Federal Funding Comparison of Alternative 2 (Without SACWIS functionality) to Current System

As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State does not pursue SACWIS functionality, then a reduced amount of federal funding will be available. Although the overall cost is reduced because the SACWIS functionality is not being developed, the impact of not pursuing SACWIS results is significant because of the notable shift in the amount of general and federal funds eligibility. As shown in the chart above, there will be a considerable increase in the amount of General Funds required if the State chooses to not continue seeking SACWIS compliance.

7.2.5 High-Level Roadmap

The TAAA Team developed the Alternative 2 roadmap as a development/deployment scenario based on the needs of the State and reasonable deployment planning considerations. There are various timelines and approaches for developing and deploying the capabilities associated with the alternative that the State may pursue. The actual development/deployment timeline and approach may vary based on State priorities and the vendor capabilities.

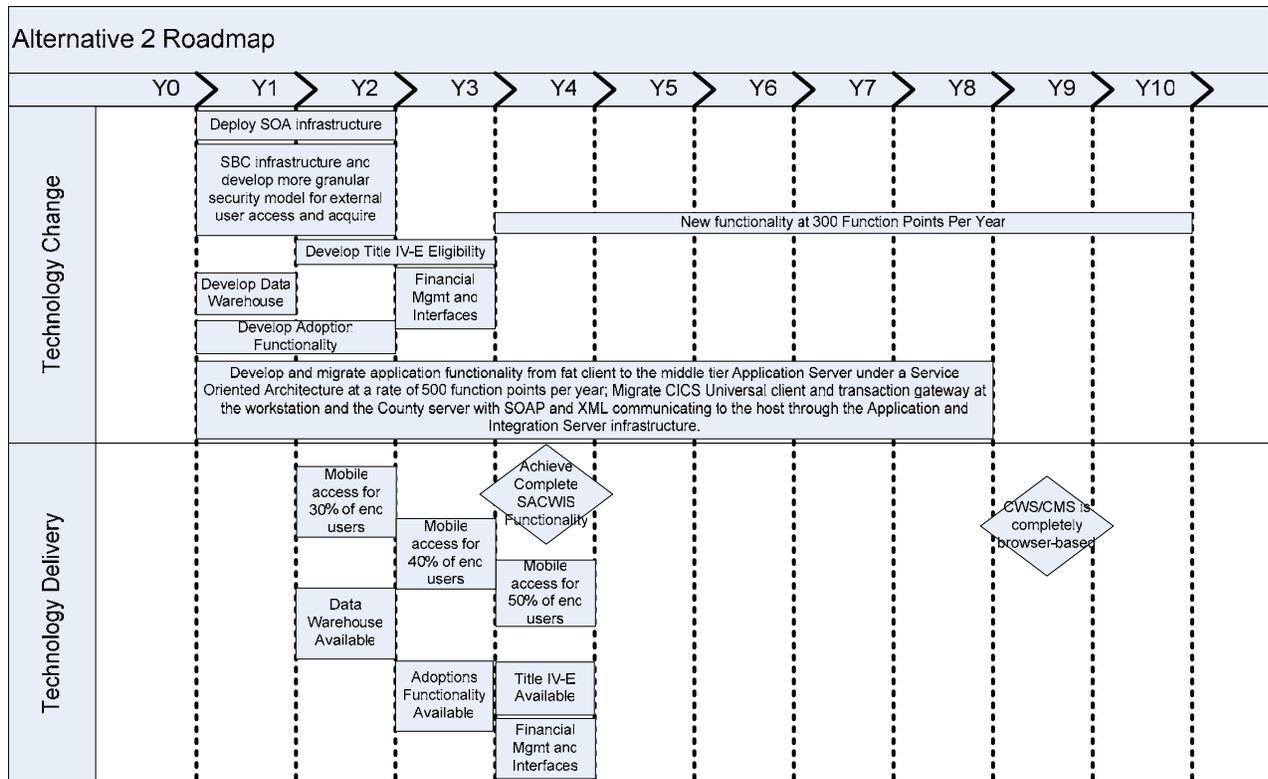


Figure 27 - Alternative 2 Roadmap

7.2.6 Risks

This section includes high-level risks associated with the financial, technical, operational, competitive procurement, schedule, and implementation characteristics of this alternative. These risks illustrate the comparative risks associated with the alternative and are not intended to be a comprehensive list of all risks for each alternative.

Risk	Area
<ul style="list-style-type: none"> The long implementation timeline and multiple "prime" vendors are likely to lead to procurement, funding, and contracting obstacles. 	Financial, Operational, Schedule, Competitive Procurement

Risk	Area
<ul style="list-style-type: none"> Additional challenges will be faced by project staff acting in a systems integrator role that will include maintaining both the legacy and new environments. Long-term systems integration will require additional staff and technical expertise. 	Technical, Operational, Competitive Procurement
<ul style="list-style-type: none"> Multiple applications and environments will present significant data integration and presentation problems leading to data integrity and/or synchronization issues. 	Technical, Operational
<ul style="list-style-type: none"> The implementation timeline for delivery of benefits reducing usability problems may result in decreased overall system satisfaction and acceptance. 	Operational
<ul style="list-style-type: none"> Multiple applications and user interfaces increase the likelihood of user dissatisfaction and will require the careful coordination of release management for the two environments as well as additional training. 	Operational, Schedule
<ul style="list-style-type: none"> Multiple applications will require additions and alterations to county and State operational processes requiring additional workload and possibly staff. 	Financial, Operational, Implementation
<ul style="list-style-type: none"> Increased scope of work is likely as a result of the overall duration of the project and the difficulty of maintaining focus during that period. 	Schedule
<ul style="list-style-type: none"> Coordinating separate vendor schedules will result in difficulty resolving schedule dependencies. 	Schedule
<ul style="list-style-type: none"> Participation and support of county personnel will be restricted as a result of insufficient resources to support multiple implementations. 	Implementation
<ul style="list-style-type: none"> Implementation complexity will be increased because of parallel development, testing, training, and deployment cycles of the multiple systems. 	Implementation

7.2.7 Benefits and Limitations

The following tables detail general benefits that could be realized for Alternative 2. The benefits are shown using the '●' symbol and the '◐' '◑' symbols. In general, the presence of the '●' symbol indicates the benefit is realized for Alternative 2. The '◐' '◑' symbols indicate that the benefit is realized for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the benefit does not apply to or is marginal for Alternative 2.

Business Benefits	Alt 2
Least disruptive to current county operations	◐
Leverages existing business and technical infrastructure	◐
Increased cash flow for incremental investment	●
Risk exposure opportunity is incremental (versus Alt 3)	●
Quickest delivery of incremental benefits (Adoptions)	●
Quickest delivery of all SACWIS benefits	
New strategic direction enhances county and federal stakeholder buy-in	◑
Provides for increased procurement competition	◑
Lowest yearly M&O costs after implementation	
Easier data entry/simplified navigation	◑
Allows concurrent case record access	◑
Easily updated and customized form templates	◑

Technical Benefits	Alt 2
Retains existing State and county maintenance and support process	◐
No major technology barriers to SACWIS implementation	●
High degree of availability and redundancy	●
No barriers to increased caseload, users, sites, or transactions	●
Supports State CIO Strategic Plan	◑
Incremental development and deployment of SACWIS functionality	●
Open technical environment	◑
Greater platform and technology flexibility	◑
Workflow management capabilities	◑
More granular security allows for external organization access	◑
Easier interface with external systems	◑
Supports mobile workforce	◑
Reduced workstation business logic and “footprint”	◑

Implementation Benefits	Alt 2
Least disruption to existing business and technical operations	
Low risk development	
Low one time costs	
Evolutionary approach should minimize large scale business disruption	●
Minimal initial requirements gathering	

The following table details general limitations for Alternative 2. The limitations are shown using the ‘●’ symbol and the ‘◐’ ‘◑’ symbols. In general, the presence of the ‘●’ symbol indicates a limitation for Alternative 2. The ‘◐’ ‘◑’ symbols indicate that the limitation is present for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the limitation does not apply to Alternative 2.

Limitations	Alt 2
Does not leverage existing data – allows duplicate entry	◐
Redundant data entry	◐
Limited/no opportunity for workflow processing	◐
Limited use of mobile devices	◐
Lacks user friendly features (spell check, user prompts, limited search capability)	◐
Requires significant training	◐
Counties will continue to rely on ancillary system until evolution is complete	◐
Users must use multiple interfaces	●
State must support parallel production systems	●
State must fill “system integrator” role for two or more vendors (multiple platforms, multiple procurements)	●
Higher initial one-time system development costs	●
Requires concentrated support from State and county during up-front development period	

7.3 Alternative 3

7.3.1 Alternative Description

In Alternative 3, a new application for CWS/CMS will be developed utilizing a web-services based SOA, optionally including the required SACWIS technical functionality. This alternative proposes that the State procure vendor services to build a new compliant “California SACWIS” using a web services based application architecture accessing the SOA services. The existing CWS/CMS will continue to be maintained as required to meet critical business, legislative, and regulatory needs during this parallel development effort. However, no major technical application architecture changes will be made to the legacy system.

7.3.2 Assumptions

The following assumptions were made for Alternative 3:

- The State will continue to maintain and upgrade the existing CWS/CMS as required to meet critical business, legislative, and regulatory needs while building in parallel a new “California SACWIS”.
- The development of new functionality will use a standard development lifecycle. For existing functionality:
 - Conversion of existing functionality will occur in a one-time development effort.
 - Requirements gathering will be minimal, except for security and access controls design.
 - Normal requirements gathering will occur for new SACWIS functionality.
 - Initial rollout of the application will leverage current user interface layout and design as much as possible.
 - Improvements to address defined priority deficiencies will be incorporated based on priority of need.
- While there would be no need for distributing CWS/CMS code to the field in a browser-based architecture, the State would still be required to maintain desktops and servers in dedicated counties.
- This alternative further assumes that hosting services and data center operations transfer from the IBM Global Service site in Boulder, Colorado to the State Data Center.

7.3.3 Target Architecture

The target architecture in this alternative will be a web services based SOA. The primary objective is to move all CWS/CMS functionality to the new architecture as quickly as possible. In this alternative, the State will procure an application server suite. This suite will be the basic infrastructure for deploying the next generation application functionality in an SOA. All redeveloped functionality, including the four unfulfilled SACWIS technical requirements, developed in the new environment, will be a thin client application architecture available to the social worker through a web browser.

The development and deployment of all functionality into the SOA environment will occur over a period of 3 years. The deployment will happen during Year 4 using an incremental geographical

deployment. With the deployment of the new architecture, the need for tight control of the workstation image is minimized, as the application only requires a browser to execute. However, the MS Office product will continue to be used at the workstation.

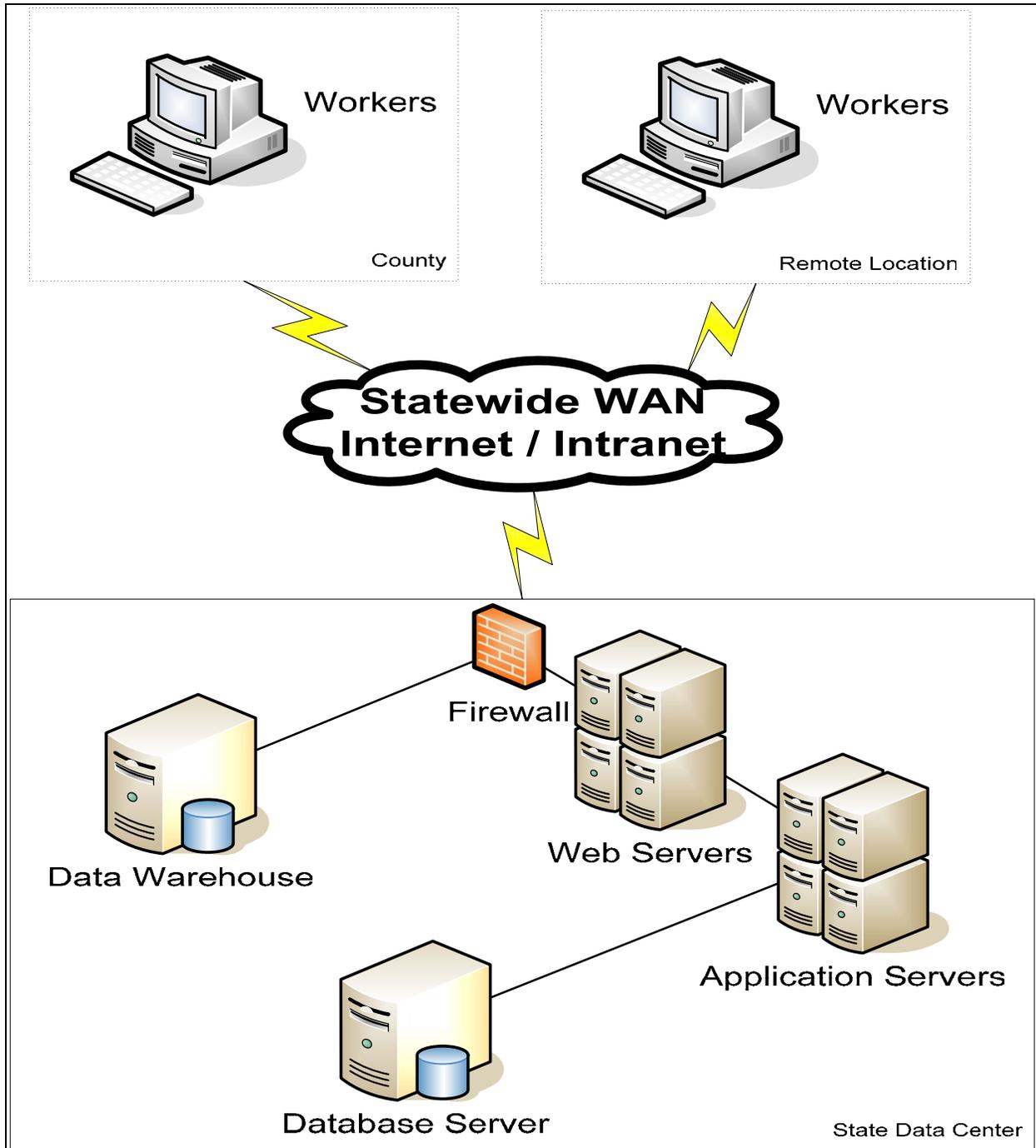


Figure 28 - Alternative 3 Architecture

Alternative 3 has the same target infrastructure as Alternative 2, but compresses the delivery timeline so the mainframe can be decommissioned after Year 5. In addition, Alternative 3 provides a distinct “cutover” from the existing CWS/CMS to the new system and does not require multiple user interfaces or data synchronization.

7.3.4 Total Cost of Ownership

The TAAA Team has estimated the ten-year costs for Alternative 3 using the approved 2004 APDU costs allocated for period of SFY 2006/07 CWS/CMS costs as the baseline and projecting costs based on function point analysis for the new development efforts.

7.3.4.1 Assumptions

All cost assumptions related to Alternative 3 can be found in Appendix E – Alternative 3 – Detailed Cost Summary. The following are the key assumptions that helped to define the costs for Alternative 3:

- For the purposes of this analysis, the TAAA Team assumed that there are no current one-time development costs and did not include costs for potential future development efforts outside of this alternative.
- Current ongoing M&O costs will continue and increase at a growth of 1% per year until the implementation of the new solution is completed.
- The re-development of existing functionality on the new architecture will occur over a three-year period.
- SACWIS functionality is related solely to automated system features that support county processes and does not imply funding.
- Per the timeframe identified in the EAS PIER, Adoptions functionality will be developed and deployed between July 2008 and June 2010.
- The effort to develop New SACWIS Functionality includes the cost and effort of developing Eligibility functionality/interfaces, Financial Management functionality/interfaces, and Interfaces to Title IV-A (CalWORKS), Title IV-D (Child Support Enforcement), and Title XIX (Medi-Cal).
- Eligibility functionality/interfaces will be implemented between July 2008 and June 2010, Financial Management functionality/interfaces between July 2009 and June 2010, and Interfaces to Title IV-A, Title IV-D and Title XIX between July 2009 and June 2010.
- The 300 additional function points per year will be developed beginning July 2010.
- One (1) State manager will be assigned to manage the contracted staff providing development services on behalf of the HHSDC State staff.
- CDSS staff will provide policy direction and guidance during development.
- Three (3) staff will support the Adoptions, SACWIS, and Data Warehouse development efforts. Two (2) of these staff will transition to the M&O organization as part of continuing support for the Adoptions and SACWIS functionality.
- Additional facilities costs will be added to each effort (re-development of existing functionality, adoptions functionality, SACWIS functionality, remote access infrastructure, and data warehouse). All other facilities costs have been included in the projected vendor rates.

- The new architecture will result in the reduction of State Data Center hosting service costs by approximately 20%. The transition to the new level of costs will occur immediately at the end of the three-year development period.
- State Data Center hosting service costs will not be affected by the addition of Adoptions and SACWIS functionality will not result in the need for additional hardware or equipment to be hosted.
- State Data Center WAN costs will increase as a result of increasing the number of sites by 5% each year.
- County participation will include project, conversion (data validation and manual conversion), and implementation staff during the development period for Adoptions and SACWIS functionality.
- Vendor costs for the re-development of existing functionality and all SACWIS functionality (Adoptions, IV-E Eligibility, Financial Management, and Interfaces) were based on the number of function points and average standard cost per function point.
- Hardware and software will be purchased to support the development and maintenance efforts, including workstations/laptops, servers, and development and productivity software.
- Production hardware or software will be required to support the SOA infrastructure.
- Remote access infrastructure and data warehouse hardware will be housed at the State Data Center.
- All host hardware and software will be hosted at the State Data Center.
- Current contracted goods and services will continue and additional QA, IV&V, integration services, and training contractors will be added to the development of each new function. Although the cost of existing contracts has been continued over the ten-year period to provide a level of contractor coverage, no additional QA or IV&V services will be required for the maintenance of any new function.

7.3.4.2 Ten-Year Costs

The following table illustrates the current costs projected over ten years and the total ten-year costs for this alternative.

Table 16 - Projected Current and Total Ten-Year Costs for Alternative 3

COST CATEGORY	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Current CWS/CMS Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.43	\$ 129.50	\$ 130.59	\$ 131.71	\$ 132.84	\$ 1,280.75
One-Time Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-Going Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 126.46	\$ 127.50	\$ 128.43	\$ 129.50	\$ 130.59	\$ 131.71	\$ 132.84	\$ 1,280.75
Costs	\$ 151.07	\$ 150.59	\$ 196.64	\$ 92.34	\$ 92.90	\$ 95.23	\$ 95.62	\$ 96.86	\$ 98.28	\$ 99.71	\$ 1,169.22
One-Time Costs	\$ 26.83	\$ 21.38	\$ 66.00	\$ 3.72	\$ 3.09	\$ 3.09	\$ 3.09	\$ 3.08	\$ 3.08	\$ 3.08	\$ 136.46
Development of New Architecture and Re-Development of Existing Functionality	\$ 17.33	\$ 12.38	\$ 37.47	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67.18
Additional Costs to Develop Adoptions Functionality on New Architecture	\$ -	\$ 4.64	\$ 15.70	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20.34
Additional Costs to Develop SACWIS Functionality on New Arch	\$ -	\$ 3.25	\$ 11.88	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15.13
Additional Costs to Develop New Business Functionality on New Architecture	\$ -	\$ -	\$ -	\$ 3.11	\$ 2.49	\$ 2.49	\$ 2.49	\$ 2.48	\$ 2.48	\$ 2.48	\$ 18.04
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ 3.11	\$ 2.49	\$ 2.49	\$ 2.49	\$ 2.48	\$ 2.48	\$ 2.48	\$ 18.04
- Mobility/Remote Access	\$ 2.30	\$ 0.34	\$ 0.34	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.00
- Data Warehousing	\$ 7.20	\$ 0.78	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 12.78
On-Going Costs	\$ 124.23	\$ 129.21	\$ 130.63	\$ 88.61	\$ 89.81	\$ 92.14	\$ 92.53	\$ 93.77	\$ 95.20	\$ 96.62	\$ 1,032.76
Current On-Going Costs	\$ 123.78	\$ 124.48	\$ 125.46	\$ 1.00	\$ 1.28	\$ 1.56	\$ 1.86	\$ 2.17	\$ 2.51	\$ 2.85	\$ 386.96
New On-Going Costs to Maintain New Architecture and Re-Dev Functionality	\$ 0.27	\$ 0.60	\$ 0.87	\$ 80.60	\$ 81.02	\$ 81.63	\$ 82.39	\$ 82.99	\$ 83.56	\$ 84.38	\$ 578.31
Additional On-Going Costs for Adoptions Functionality on New Architecture	\$ -	\$ -	\$ -	\$ 1.59	\$ 1.60	\$ 1.56	\$ 1.59	\$ 1.56	\$ 1.56	\$ 1.59	\$ 11.06
Additional On-Going Costs for New SACWIS Functionality on New Arch	\$ -	\$ -	\$ -	\$ 1.29	\$ 1.23	\$ 1.19	\$ 1.18	\$ 1.22	\$ 1.18	\$ 1.18	\$ 8.46
Additional Costs to Maintain New Business Functionality on New Architecture	\$ -	\$ -	\$ -	\$ -	\$ 0.46	\$ 0.53	\$ 0.63	\$ 0.66	\$ 0.72	\$ 0.81	\$ 3.80
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ 0.46	\$ 0.53	\$ 0.63	\$ 0.66	\$ 0.72	\$ 0.81	\$ 3.80
- Mobility/Remote Access	\$ -	\$ 1.19	\$ 1.41	\$ 0.86	\$ 0.69	\$ 0.68	\$ 0.78	\$ 0.76	\$ 0.94	\$ 0.72	\$ 8.04
- Data Warehousing	\$ 0.19	\$ 2.94	\$ 2.89	\$ 3.27	\$ 3.53	\$ 4.99	\$ 4.10	\$ 4.40	\$ 4.73	\$ 5.09	\$ 36.12

(Note: Costs in millions of dollars)

7.3.4.3 Benefits

7.3.4.3.1 Assumptions

The following are the key assumptions for all benefits in Alternative 3:

- All benefits will begin 12 months after the functionality has been implemented. The only exception is System Savings, which includes the replacement of current systems. This benefit will be realized at the time the new system is implemented.
- All benefits drivers and variables were obtained from documented sources to ensure validity of benefits.
- The savings identified will be reinvested back into the CWS/CMS program to reduce the workload of the current social workers who are currently working overtime as documented in the SB 2030 report⁴⁶.

7.3.4.3.2 Quantitative Benefits

The quantitative savings/benefits that Alternative 3 will be able to take advantage of are:

- **Increased Productivity** – Alternative 3 will be able to take advantage of benefits associated with:
 - **Reduced Wait Time** – With the implementation of a new technical architecture, there will be an overall reduction in the amount of time the social worker must wait for the CWS/CMS to display or process information. As documented in the SB 2030 Report⁴⁷, the average case worker spends 15.5 hours a week on CWS/CMS. Of this time, 11.6% is spent waiting for the system to display information. These figures characterize a worst-case scenario and were based on a point-in-time assessment. While improvements have been made in this area, the fat client technology is still in use. Any performance improvements recognized with the new system will increase overall productivity and allow the social worker more time in performing work with the children instead of working with CWS/CMS. The new technical architecture and thin client should create a drop of 50% in the average time a social worker must wait for the system. If 8,463⁴⁸ workers no longer spend their time waiting for the system, this will result in an overall savings of \$6,108,837 annually.
 - **Mobility** – Technology to support PDAs for the social worker in the field increases productivity. If the social worker performs an additional 25 minutes per week of work as a result of having mobile technology and 50% of the work force utilizes this technology, \$3,723,720 will be recognized in savings annually. It is anticipated that in the first year of benefit realization only 30% of the work force will use this technology and receive benefits of \$2,234,280. In the second year, 40% is anticipated to take up the use of this technology, increasing savings to \$2,979,040. In the third year, 50% of the work force will use the technology and full benefit realization (\$3,723,720) will occur from that point forward.

⁴⁶ The SB 2030 report clearly outlines that the average work time per employee was 84 hours for a 2-week period.

⁴⁷ SB 2030 Report Child Welfare Services Workload Study Final Report.

⁴⁸ FTE's for FY '03-'04 received from CDSS.

- **Improve Overall Productivity through a New Interface Design** – Elimination of redundant data entry produces additional time savings. The time savings of the new interface design is estimated at 2% for the entire caseload. This savings calculates to \$515,145 annually.
- **Program Savings** – The following program savings are anticipated to occur as a result of implementing Alternative 3:
 - **Automate Adoptions Case Management Tasks** – The manual processes of managing adoption cases can be decreased through automation. The average worker spends time each day performing a variety of manual tasks that can be eliminated or improved. With implementation of a full case management system, data will be available to facilitate the overall adoption case management process. Adoption homes will be identified faster. Information will be readily available for the social worker to answer questions and facilitate adoptions. The average worker saves time if the information is readily available and organized to assist the social worker in the overall facilitation of the adoption process. A conservative estimate of a 5% overall time savings is estimated for each case, with an annual caseload of 7004⁴⁹ resulting in a savings of \$742,191 annually.
 - **Automated Interfaces** – The process of acquiring, compiling, and delivering (i.e., faxing, hand carrying, telephoning, etc.) information can be a time consuming process for the social worker especially where there are multiple organizations requiring similar information. The social worker spends time each day performing tasks that can be eliminated through a two-way interface.
 - *Title IV-A: CalWORKS Program* – The CalWORKS program is California's largest cash assistance program for children and families with an annual caseload of 730,000⁵⁰. The social worker searches SAWS when initial abuse allegations are received, and through the life of a case for integrated case management. This task is estimated at 5 minutes per case. Elimination of this task through automation will result in a total savings of \$2,569,600 annually.
 - *Title IV-D: Child Support* – The child support program establishes and enforces court orders for child, spousal, and medical support from absent parents. The social worker searches for parental information to help make placement decisions. This task is estimated at 5 minutes per case with an annual caseload of 74,283⁵¹. If this information is automatically searched and provided to the social worker, a total annual savings of \$309,760 will result.
 - *Title XIX: Medi-Cal Program* – Medi-Cal, California's Medicaid program, is a key component of California's health care delivery system. The social worker searches for information on each child to determine whether the child is already receiving Medi-Cal. This task is estimated at 5 minutes per case with an annual caseload of 74,283⁵². Elimination of this task through automation will result in a total annual savings of \$309,760.

⁴⁹ CWS/CMS caseload SFY 2003/'04.

⁵⁰ Caseload count obtained from the Child Welfare Services Report for California, "Counts of Children with one or more Referrals for October 1, 2002 to September 30, 2003."

⁵¹ Caseload count obtained from the Governors Budget, 2005.

⁵² Caseload count obtained from the Governors Budget, 2005.

- **Automated Title IV-E Eligibility Determination** – The automation of the eligibility information-sharing process will eliminate or improve several tasks, which will result in savings.
 - *Eliminate the Manual Process of Delivering Information to Eligibility* – The manual process of delivering (i.e., faxing, hand carrying, telephoning, etc.) information to the eligibility department can be decreased through automation. The average social worker spends 10 minutes delivering eligibility information per week. The number of FTEs minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 5,853⁵³. The elimination of the manual data-sharing task through automation will result in a total savings of \$2,317,788 annually.
 - *Automate the Data Entry Process of Eligibility Data* – Once the eligibility division performs the calculations, the information is returned to the social worker who then has to manually enter the results. Through a two-way interface with the eligibility department, this task can be eliminated. The average worker spends 5 minutes per case performing data entry and the annual caseload of foster care children minus Los Angeles (removed Los Angeles from the equation because Los Angeles already has a one-way interface for eligibility) is 45,313. The eligibility process occurs once every six (6) months⁵⁴. Automatically importing the eligibility results will realize a reduction of 50% in the time the social worker must work with the case. The time savings recognized through the automation of this task will result in a total savings of \$159,502 annually.
- **System Savings** – At the time the current system is decommissioned, the State will be able to realize the costs of that system as an annual savings. For Alternative 3, the current system will be decommissioned at the end of Year 3.

The total benefits for the ten-year period are shown in the following table.

⁵³ FTE's for FY '03-'04 received from CDSS.

⁵⁴ Eligibility cases are reassessed every 6 months. This calculation does not include the assessments that occur with placement changes.

Table 17 - Total Ten-Year Benefits for Alternative 3

COST CATEGORY	SFY 2007/08	SFY 2008/09	SFY 2009/10	SFY 2010/11	SFY 2011/12	SFY 2012/13	SFY 2013/14	SFY 2014/15	SFY 2015/16	SFY 2016/17	Total
Benefits	\$ -	\$ -	\$ 2.23	\$ 127.70	\$ 133.76	\$ 134.79	\$ 135.73	\$ 136.80	\$ 137.88	\$ 139.00	\$ 947.90
Current Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Current System Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Increased Productivity	\$ -	\$ -	\$ 2.23	\$ 2.98	\$ 5.93	\$ 5.93	\$ 5.93	\$ 5.93	\$ 5.93	\$ 5.93	\$ 40.80
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ -	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 1.03
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 2.04	\$ 12.22
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ 2.23	\$ 2.98	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 3.72	\$ 27.56
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Savings	\$ -	\$ -	\$ -	\$ -	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 12.62
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 1.48
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 1.86	\$ 11.14
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
System Savings	\$ -	\$ -	\$ -	\$ 124.73	\$ 125.72	\$ 126.76	\$ 127.69	\$ 128.76	\$ 129.85	\$ 130.97	\$ 894.48
Benefits from Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ -	\$ -	\$ 124.73	\$ 125.72	\$ 126.76	\$ 127.69	\$ 128.76	\$ 129.85	\$ 130.97	\$ 894.48
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(Note: Benefits in millions of dollars)

7.3.4.4 Breakeven

Although Alternative 3 does not reach a point of return on investment during the ten-year period, it does breakeven in June 2022.

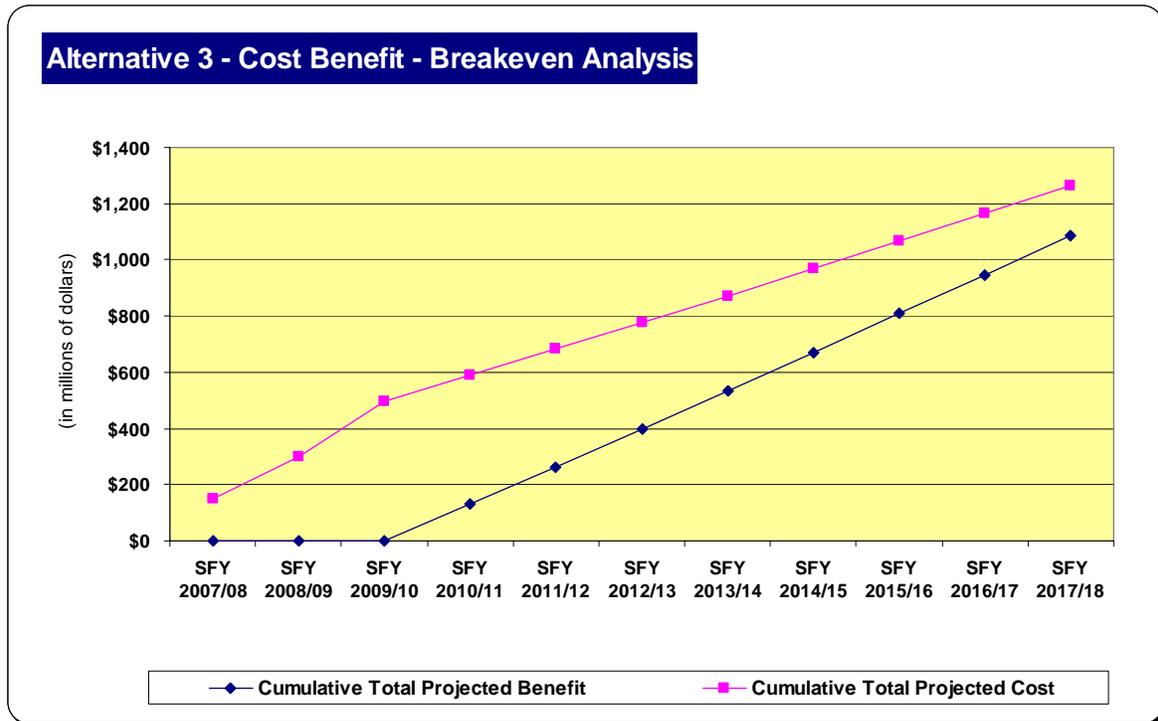


Figure 29 - Alternative 3 Cost Benefit - Breakeven Analysis

7.3.4.5 SACWIS Funding Impacts

In its simplest form, SACWIS federal participation is based on whether an activity or cost can be attributed directly to the meeting of a SACWIS requirement. If an activity is deemed to meet the criteria for being considered SACWIS, costs are first appropriately allocated to all benefiting programs per cost allocation methodologies and then federal funds are applied to 50% of the costs for the portion of the activity allocated to the Foster Care and Adoptions programs. Activities related to the statewide system, but not directly attributable to meeting a SACWIS requirement, are considered to be non-SACWIS. Costs for non-SACWIS activities are first appropriately allocated to all benefiting programs per cost allocation methodologies. Costs allocable to the Foster Care program are discounted by the percentage of State-only Foster Care cases to total federal and State-only cases and a ratio of federal and State-only percentages is developed for cost allocation. The two Foster Care cost categories eligible for non-SACWIS federal funding are Title IV-E Discounted and Title IV-E Enhanced training funding. It is important to note that the non-SACWIS IV-E Discounted funding ratio (75% federal Foster Care/25% State-only Foster Care) is based on caseload and therefore, the sharing ratio fluctuates from year to year. In the non-SACWIS scenario, federal funds are applied to 50% of 75% of the IV-E Discounted funds. For IV-E Enhanced funding (75/25), non-SACWIS federal funding is applied to 75% of the 75%. It is important to note that the IV-E Enhanced funding is only eligible to be applied to direct training costs. The assumptions for the SACWIS/non-SACWIS cost allocation can be found in Section 6.

For purposes of discussing the SACWIS funding, all outcomes will be described relative to the impact to general and federal funds. The following charts⁵⁵ illustrate the total impact to these funds as a result of implementing Alternative 3 with and without SACWIS functionality.

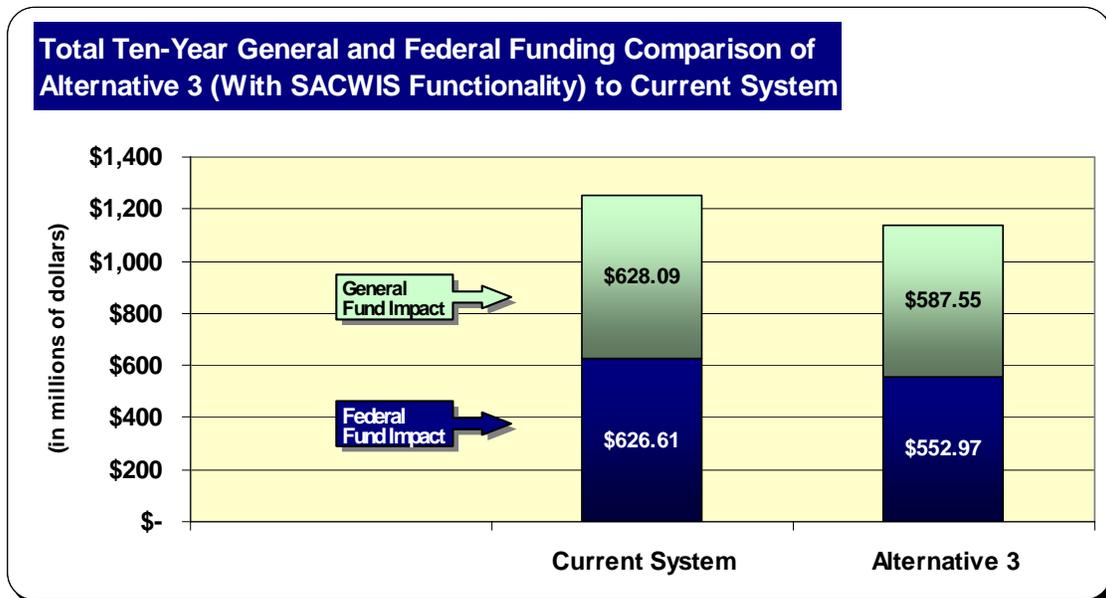


Figure 30 - Total Ten-Year General and Federal Funding Comparison of Alternative 3 (With SACWIS Functionality) to Current System

As shown in the chart above, the overall lower ten-year cost for Alternative 3 results in an overall lessening of the amount of federal and General Funds required to pay for the complete solution (i.e., development and operation of new architecture, re-developed functionality, SACWIS functionality, and business functionality). As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State pursues SACWIS functionality, the current level of SACWIS funding will be available.

⁵⁵ The total costs presented here for funding do not include costs for CDSS Staff, as their participation in any CWS/CMS activity is funded separately.

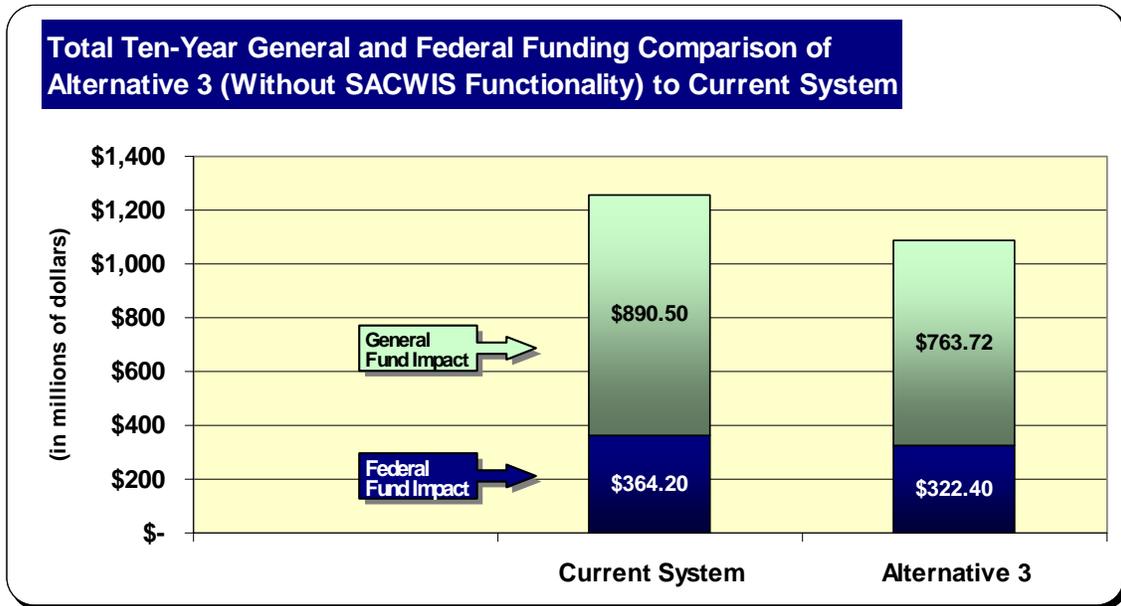


Figure 31 - Total Ten-Year General and Federal Funding Comparison of Alternative 3 (Without SACWIS functionality) to Current System

As stated in the SACWIS assumptions (Section 6), the TAAA Team assumed that if the State does not pursue SACWIS functionality, then a reduced amount of federal funding will be available. Although the overall cost is reduced because the SACWIS functionality is not being developed, the impact of not pursuing SACWIS results is significant because of the notable shift in the amount of general and federal funds eligibility. As shown in the chart above, there will be a considerable increase in the amount of General Funds required if the State chooses to not continue seeking SACWIS compliance.

7.3.5 High-Level Roadmap

The TAAA Team developed the Alternative 3 roadmap as a development/deployment scenario based on the needs of the State and reasonable deployment planning considerations. There are various timelines and approaches for developing and deploying the capabilities associated with this alternative that the State may pursue. The actual development/deployment timeline and approach may vary based on State priorities and the vendor capabilities.

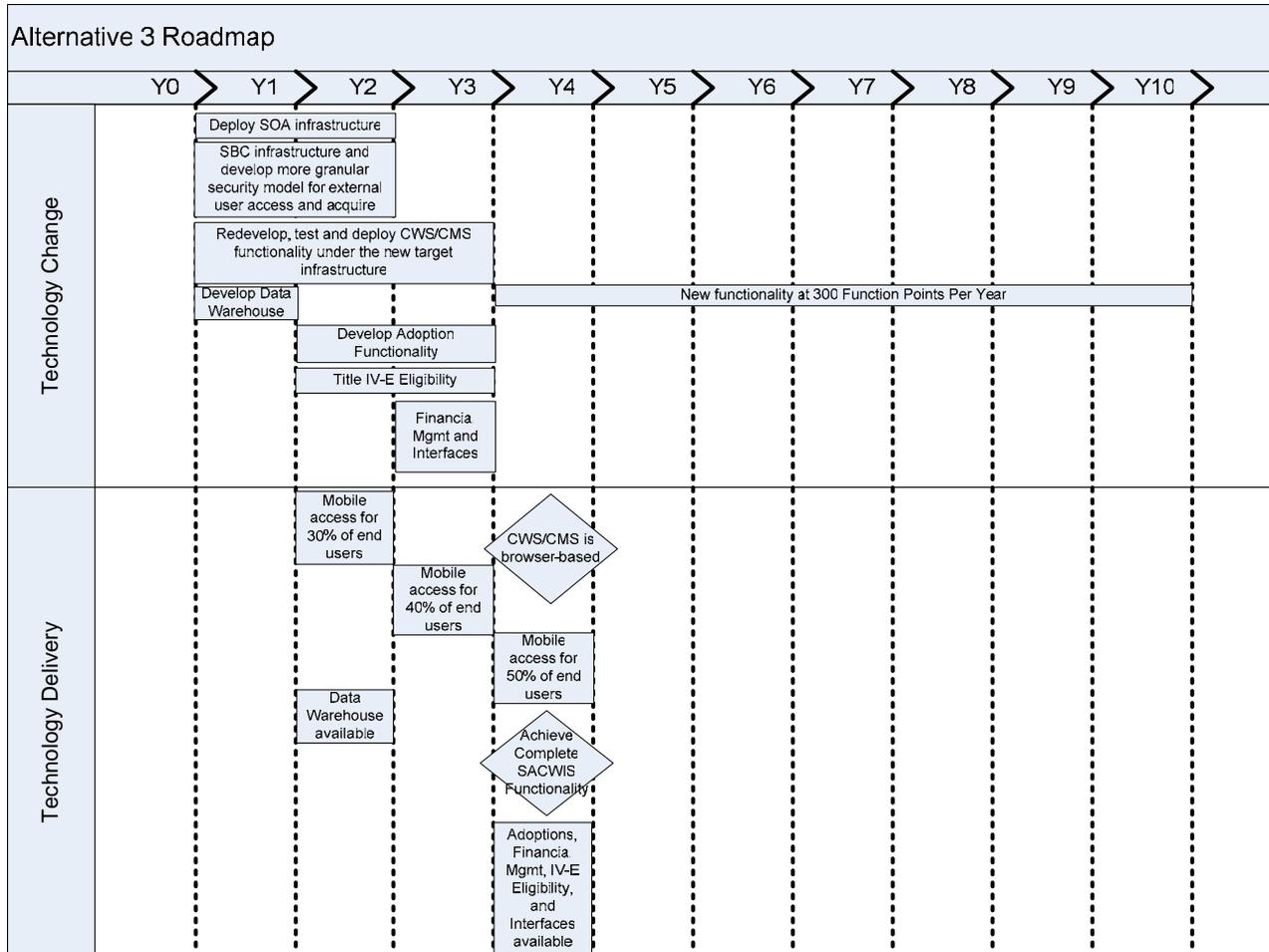


Figure 32 - Alternative 3 Roadmap

7.3.6 Risks

The section includes high-level risks associated with the financial, technical, operational, competitive procurement, schedule, and implementation characteristics of this alternative. These risks illustrate the comparative risks associated with the alternative and are not intended to be a comprehensive list of all risks for each alternative.

Risk	Area
<ul style="list-style-type: none"> The accelerated delivery schedule and new architecture may pose financial, technical, operational, and schedule risks if the project does not have the required personnel and resources to support the effort; thereby, resulting in increases to cost and schedule. 	Financial, Technical, Operational, Schedule
<ul style="list-style-type: none"> Additions and alterations to county and State operational processes may require additional workload and possibly staff. 	Financial, Operational, Implementation
<ul style="list-style-type: none"> Architectural changes will require changes to the procurement model and scope. 	Competitive Procurement
<ul style="list-style-type: none"> “Big bang” replacement of the current application represents a risk to the schedule resulting in project delays. 	Schedule
<ul style="list-style-type: none"> Deployment of new technologies and infrastructure will require changes to the current technical operations staff, processes, and operations. 	Implementation

7.3.7 Benefits and Limitations

The following tables detail general benefits that could be realized for Alternative 3. The benefits are shown using the ‘●’ symbol and the ‘◐’ ‘◑’ symbols. In general, the presence of the ‘●’ symbol indicates the benefit is realized for Alternative 3. The ‘◐’ ‘◑’ symbols indicate that the benefit is realized for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the benefit does not apply to or is marginal for Alternative 3.

Business Benefits	Alt 3
Least disruptive to current county operations	◐
Leverages existing business and technical infrastructure	◐
Increased cash flow for incremental investment	
Risk exposure opportunity is incremental (versus Alt 3)	
Quickest delivery of incremental benefits (Adoptions)	
Quickest delivery of all SACWIS benefits	●
New strategic direction enhances county and federal stakeholder buy-in	●
Provides for increased procurement competition	●
Lowest yearly M&O costs after implementation	●
Easier data entry/simplified navigation	●
Allows concurrent case record access	●
Easily updated and customized form templates	●

Technical Benefits	Alt 3
Retains existing State and county maintenance and support process	◐
No major technology barriers to SACWIS implementation	●
High degree of availability and redundancy	●
No barriers to increased caseload, users, sites, or transactions	●
Supports State CIO Strategic Plan	●

Technical Benefits	Alt 3
Incremental development and deployment of SACWIS functionality	
Open technical environment	●
Greater platform and technology flexibility	●
Workflow management capabilities	●
More granular security allows for external organization access	●
Easier interface with external systems	●
Supports mobile workforce	●
Reduced workstation business logic and “footprint”	●

Implementation Benefits	Alt 3
Least disruption to existing business and technical operations	
Low risk development	
Low one time costs	
Evolutionary approach should minimize large scale business disruption	
Minimal initial requirements gathering	●

The following table details general limitations for Alternative 3. The limitations are shown using the ‘●’ symbol and the ‘◐’ ‘◑’ symbols. In general, the presence of the ‘●’ symbol indicates a limitation for Alternative 3. The ‘◐’ ‘◑’ symbols indicate that the limitation is present for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑). The absence of any symbol indicates either that the limitation does not apply to Alternative 3.

Limitations	Alt 3
Does not leverage existing data – allows duplicate entry	◐
Redundant data entry	◐
Limited/no opportunity for workflow processing	◐
Limited use of mobile devices	◐
Lacks user friendly features (spell check, user prompts, limited search capability)	◐
Requires significant training	◐
Counties will continue to rely on ancillary system until evolution is complete	◐
Users must use multiple interfaces	
State must support parallel production systems	◐
State must fill “system integrator” role for two or more vendors (multiple platforms, multiple procurements)	
Higher initial one-time system development costs	●
Requires concentrated support from State and county during up-front development period	●

Evaluation Framework

8.0 Evaluation Framework

8.1 Evaluation Process

The TAAA Team developed the following evaluation framework process for evaluating and selecting an alternative. The process was developed, then presented and validated by the CWS/CMS Management Committee on December 17, 2004.

A summary of the evaluation framework process is summarized in the table below.

Table 18 - Evaluation Framework Process

Process	Description
Business Problem Identified and Decision Required	Federal, State and County stakeholders agree that a problem or decision is required concerning the future CWS/CMS automation.
Gather and Evaluate Data	State has engaged TAAA Team to conduct this effort.
Identify a Range of Alternative Solutions	The State has defined the broad alternatives.
Identify Criteria Against Which To Measure The Potential Solutions	Recommend that all stakeholders participate in defining criteria. Minimally, represent each stakeholder's interests.
Weight Criteria To Represent Assessment Priorities	Recommend that all stakeholders participate in weighting the criteria. Minimally, represent each stakeholder's interests.
Create a Score For Each Alternative and Select Best Alternative	Recommend that all stakeholders participate in selecting the alternative. Minimally, represent each stakeholder's interests.

8.2 Evaluation Categories and Criteria

The evaluation criteria in which to measure potential solutions were developed and categorized within five major areas: Business, Technical, Total Cost of Ownership, Time, and Risk. The criteria define the critical functional and cost considerations that are used to differentiate the viability of the three alternatives to meet the currently established business needs in a single statewide system.

8.2.1 Business Criteria

Ability to Accommodate Missing SACWIS Functionality

Ability to accommodate Eligibility The solution's ability to accommodate Title IV-E eligibility determination as a two-way interface to the appropriate SAWS application.

Ability to Accommodate Missing SACWIS Functionality

Ability to accommodate Financial Management	The solution's ability to accommodate financial management functionality either as an integrated solution within the CWS/CMS application or a two-way interface to the appropriate county financial management application.
Ability to accommodate Interfaces	The solution's ability to accommodate interfaces to currently defined or yet-to-be defined ancillary child welfare or other State systems (e.g., Title IV-A (CalWORKS) Title IV-D (Child Support) and Title XIX (Medi-Cal) systems).

Ability to Accommodate Additional Program Functions

Ability to accommodate Adoptions	<p>The solution's ability to allow the county/state adoption workers and the courts to obtain accurate up-to-date statewide information needed to support the adoption process by:</p> <ul style="list-style-type: none"> ■ Providing the functionality to capture and retrieve adoption case information including, but not limited to: <ul style="list-style-type: none"> □ Child's adoption readiness information □ Child's physical and emotional health needs □ Potential adoptive parent information □ Home studies □ Relative assessments □ Birth parents termination rights information □ Post adoption services □ Post adoption assistance payments □ Track completion of the adoption placement agreement □ Finalized adoption ■ Enhancing the Concurrent Planning process to include support of consolidated home studies (for both Family Foster Care and adoption) along with interface to the Foster Care Licensing Information Systems (FLIS). ■ Providing the functionality to assist county/state adoption workers to match foster children and potential adoptive parents include search of statewide and national databases. ■ Providing the functionality to assist county/state adoption workers in completing the 26 Recommendation Report in accordance with Welfare Code. (Section 366.26)
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Ability to accommodate
Independent Living Program (ILP)

The solution's ability to allow the county social worker to obtain accurate up-to-date statewide information needed to prepare emancipated minors to successfully transition to self-sufficiency. The system should include the tools and information necessary for social workers to:

- Identify children who are likely to remain in foster care until 18 years of age.
- Assess a youth's need for services, incorporate a case plan, and track service delivery.
- Help youth receive the education, life skills and vocational training and services necessary to obtain employment.
- Help youth prepare for and enter postsecondary training and educational institutions.
- Provide personal and emotional support to youth through mentors and interactions with appropriate significant adults.
- Provide financial, housing, counseling support and services for former foster care recipients between 18 and 21 years of age.
- Track provision of the items and services required in Welfare and Institutions (W&I) Code 391 prior to dismissal of dependency by the Juvenile Court (MEDS cards, birth certificate, etc.).
- Capture services provided by multiple counties when the child is placed outside the county with primary case responsibility.
- Support scheduling and provision of services including:
 - Class scheduling, attendance tracking, and evaluation results
 - Transportation scheduling
 - Youth eligibility for education and training vouchers
- Support managerial information reporting requirements for the Independent Living Program including:
 - Calculate and track applicable state AB 636 outcome measures.
 - Calculate and track federal outcome measures.
 - Fulfill state and federal reporting requirements.
 - Track contractors' performance.

Ability to accommodate Foster Care Placement

The solution's ability to allow the county social worker to obtain accurate, up-to-date statewide information about current and upcoming vacancies in Foster Care homes, Foster Family Agencies and Group Homes. The system should include the following facility information, but not limited to:

- Children currently residing in the facility including the name and contact information for their social worker.
- Services provided at the facility.
- Location of the facility.
- Limitations on the children they will accept.
- Special needs they are able to accept (e.g., medically fragile, fire starter, large sibling groups).
- On-site school offerings and school jurisdiction.
- Facility's key physical characteristics (such as swimming pool).
- Whether the family is pre-approved for adoptions.
- Any substantiated complaints.
- Other information currently carried in the Licensing Information System (LIS).

In addition, the system should interface with the Title IV-E Foster Care payment systems to improve accuracy and reduce overpayments.

Ability to Support Outcome-Based Operations

Ability to generate reports of outcome data

The solution's ability to enable collection of and reporting on outcome via standard and ad hoc reports that facilitate county's ability to determine the factors resulting in outcomes, track performance over time, and develop trend analyses. The solution must also include standard and management reporting, which facilitates tracking of case management and data entry.

Ability to track cases using a variety of data elements

The solution must facilitate tracking and comparison of client groups to support two county business needs:

1. The ability to track current activities and outcomes for a special group of clients (such as those serviced in a special project) and
 2. The ability to compare outcomes between groups (i.e. those served in a special project against the remainder of the clients).
-

Alignment with Child Welfare Program Strategy

Ability to accommodate safety assessment	The solution's ability to provide social workers with standardized risk assessment tools, which clearly defines standards and instruments for immediate, reliable, and long-term safety decisions.
Ability to accommodate differential response	The solution's ability to support multiple alternative service delivery systems based on a determination made in Emergency Response when responding to reports made to county child abuse hotlines. It is a safety, fact-finding and family assessment approach that seeks to engage families in a less adversarial process, eliminating current practice that requires a substantiation of an allegation in order to qualify for services that could help to stabilize the family and promote safety, permanence, and well-being for children. Based on this assessment, clients will be assigned to one of several (probably three) service approaches. The system will need to track each group separately.
Ability to accommodate team decision-making	The solution's ability to accommodate an approach to case planning that is intended to strengthen the potential of the family to function effectively and responsibly. Families participate as the role of experts and partners in designing their own individualized, culturally responsive, and relevant services. These families are provided with diverse, comprehensive, and community-based networks of resources.

Usability

User Interface (help screens, user prompts, system navigation)	<p>User interface usability is the measure of the quality of a user's experience when interacting with or using a system. Usability characteristics include:</p> <ul style="list-style-type: none"> ■ Ease of learning – how quickly can new users accomplish basic tasks. ■ 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. ■ Error frequency and severity – how often do users make mistakes and can they recover from those mistakes.
Workflow	The solution's ability to support a workflow component. Workflow means the automation of a business process or processes where information or tasks are passed from one participant to another for action, according to a set of procedural rules.

Usability

Ability to store pictures	The solution's ability to store digital pictures (or other digital artifacts) pertaining to the case that can be retrieved later and are made a permanent part of that case.
Ability to provide access to data while ensuring adequate security and confidentiality of data	The solution's ability to control access to case data at a fine-grained level through appropriate authorization / authentication means. This should allow different levels of users and service providers to collaborate on specific case data without compromising security and confidentiality.

Mobility

Ability to provide remote access	The solution's ability to access the application wherever the worker has an Internet connection.
Ability to support PDAs and other mobile devices	The solution's ability to interact or accept input from portable devices for recording in the case file, either in an online or offline mode.
Ability to provide wireless access	The solution's ability to interact seamlessly with portable devices when those devices have access through wireless means.

Business Operations

Enables county workflow flexibility	The solution's ability to allow counties to vary workflows independent of other counties. This would allow for greater or lesser specialization based on a county's need.
Supports common program practice	The solution's ability to ensure common practices across all counties, regardless of how each county may have "personalized" the solution.

8.2.2 Technical Criteria

Single system of record	The solution's ability to provide a single repository for case data, eliminating the need for other outboard system data repositories. The solution should have the ability to provide interfaces or service access points that outboard systems can query for data.
Single integrated system	The solution's ability to provide all required functionality through a single user interface or portal. The user should be able to access all system functions without having to toggle between applications.
Scalability	The ease with which the solution can be altered to effectively and efficiently service user and system demands.

Manageability / simplicity	The solution's ability to provide sets of information related to system health, performance, usage, and the ability to be controlled and configured easily.
Support for core and non-core functionality	The solution's ability to support the addition of core functionality – that functionality available to all users – as well as non-core functionality – that functionality that is available to specific subsets of users.
Flexibility and extensibility	The solution's ability to easily support augmentation without compromising the original architecture.
Architectural openness (non-proprietary)	The solution's ability to support multiple vendors or products to prevent "lock-in" and encourage procurement competitiveness.
Ease of integration / interface standardization	The ability of the solution to integrate or provide interfaces to other systems via common industry standard protocols and services.
Time to deliver new functionality (changes and enhancements)	The solution's ability to deliver new functionality in a timely fashion (irrespective of the time to obtain approvals for the changes).

8.2.3 Total Cost of Ownership Criteria

Overall ten-year cost	The solution's overall one-time and ongoing costs during the ten-year period.
Breakeven point	The point at which the system is considered to be paid off through realization of savings / benefits.
Timing of cash flows	The amount of cash being expended and received each fiscal year toward the one-time and ongoing costs of the solution.

8.2.4 Time Criteria

Time to benefit realization	The amount of time before any benefits are realized and the time to full benefit realization.
Incremental benefit delivery	The ability of the solution to deliver benefits incrementally over time.

8.2.5 Risk Criteria

Financial risk	The solution's risk of deviation from the proposed budget.
Technical risk	The solution's risk related to the complexity of development and implementation
Operational risk	The solution's risk associated with disruption to current operational processes and routines.

Competitive Procurement risk	The solution's ability to provide for market competitiveness.
Schedule risk	The solution's risk of deviation from the proposed schedule.
Implementation risk	The solution's ability to limit risk / complexity associated with implementation.

8.3 Scoring Process

To ensure the best alternative was selected, using a measurable and consistent approach, the scoring process was performed in three phases.

- **Screening Process:** Each alternative was measured against the screening criteria. If all the screening criteria were met, the alternative passed and moved into the next scoring phase. If any of the screening criteria was not met, the alternative failed but was still scored. ***Each of the three alternatives met the screening criteria.***
- **Ranking Process:** Each of the alternatives was compared one to another and assigned a ranking of 1, 2, or 3. A ranking of 1 means the alternative best meets the evaluation criteria, 2 is second best, and 3 is third best. The alternative with the **lowest** numeric score will be considered the best alternative.
- **Weighting Process:** After each alternative was ranked, a total was determined for each of the five areas, Business, Technical, Total Cost of Ownership, Time, and Risk. This total score was then weighted to determine the outcome.

8.3.1 Screening Process

Of the evaluation criteria defined, several of these criteria were designated as screening criteria, that is the criteria "must be met or the alternative would not be selected". These screening criteria were defined as pass / fail criteria that the alternative must meet in order to be considered viable. The screening criteria are listed below:

- Ability to accommodate Adoptions
- Ability to accommodate Independent Living Program (ILP)
- Ability to generate reports of outcome data
- Ability to track cases using a variety of data elements
- User Interface (help screens, user prompts, system navigation)
- Work flow
- Ability to store pictures
- Ability to provide access to data and simultaneously ensure the adequate security and confidentiality of the data
- Ability to provide remote access
- Ability to support PDAs and other mobile devices
- Ability to provide wireless access
- Enables county workflow flexibility

- Supports common program practice
- Scalability

8.3.2 Ranking Process

The following table describes the ranking of all three alternatives, compared one to another. A ranking of 1 means the alternative best meets the evaluation criteria, 2 is second best, and 3 is third best. The alternative with the lowest numeric score will be considered the best alternative.

Ranking	General Scoring Framework
1	Solution ranks first among the three alternatives in its ability to meet the evaluation criteria.
2	Solution ranks second among the three alternatives in its ability to meet the evaluation criteria.
3	Solution ranks third among the three alternatives in its ability to meet the evaluation criteria.

When alternatives equally meet the evaluation criteria, they shall be given the same rating. As an example, if two alternatives are equal in their ability to meet a specific criteria and the third alternative is less able to meet the criteria, the first two shall each receive a rating of '1' and the third alternative a rating of '3'. In the situation where one alternative clearly exceeds the other two, but there is no differentiation in the latter two's abilities, the superior alternative shall receive a rating of '1' and the other two shall receive a rating of '3'. If all three alternatives equally support or are equally able to meet the criteria, all alternatives shall receive the rating of '2'.

8.3.3 Weighting Process

The scores for each of five major areas: Business, Technical, Total Cost of Ownership, Time, and Risk are totaled once all the evaluation criteria have been ranked. The alternative that ends up with the best ranking (lowest total) gets the most points. Specifically, the best score would get a ranking of 1 and would receive 5 points, the second best score would receive 3 points, and the third best score would receive 1 point. These point totals are then weighted with the established weighting value. The total weighted score would then be used to rank the alternatives. In this example, a rank of 1 is best and 3 worst. The following is an example of the weighting:

Table 19 - Example of Evaluation Weighting and Scoring

	Alternative 1				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	2	3	20%	0.60	1
Technical	3	1	20%	0.20	
TCO	2	3	25%	0.75	
Time	1	5	15%	0.75	
Risk	1	5	20%	1.00	
			TOTAL	3.30	
	Alternative 2				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	3	1	20%	0.20	2
Technical	2	3	20%	0.60	
TCO	1	5	25%	1.25	
Time	3	1	15%	0.15	
Risk	2	4	20%	0.80	
			TOTAL	3.00	
	Alternative 3				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	1	5	20%	1.00	3
Technical	1	5	20%	1.00	
TCO	3	1	25%	0.25	
Time	2	3	15%	0.45	
Risk	3	1	20%	0.20	
			TOTAL	2.90	



Alternatives Evaluation

9.0 Alternatives Evaluation

The Alternatives Analysis section will analyze the three (3) alternatives in terms of qualitative and quantitative criteria. Each technology alternative will be analyzed for the ability to support both current functionality and unfulfilled county business functionality, which includes the unfulfilled SACWIS requirements. A total cost of ownership analysis will be included as part of the analysis of the alternatives.

9.1 Overview

The following paragraphs document the results of the comparative evaluation of the three (3) alternatives. The evaluation is documented by evaluation category and criteria and documents the factors that contributed to the assigned ranking.

9.1.1 Business

This section describes how the business criteria scored within the Evaluation Framework. The TAAA Team believes that each of the TAAA alternatives is able to accommodate State and county business requirements. However, in every category, Alternatives 2 and 3 outranked Alternative 1 in the ability to satisfy the business criteria. The primary differentiating factors were the open flexible architecture design found in Alternatives 2 and 3, their ability to accommodate workflow, and their ability to code and deliver functionality more rapidly. While Alternatives 2 and 3 will ultimately provide the same architecture and system, the complexity of utilizing multiple user interfaces, synchronizing data between the two systems, and the eight-year migration period for Alternative 2 contributed to a lower score in several categories. The final scoring resulted in Alternative 3 receiving the best ranking overall. The Business Criteria and scoring associated with each is displayed in the table below.

Table 20 - Business Criteria Rankings

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Business	20%				
Ability to Accommodate Missing SACWIS Functionality					
Ability to accommodate IV-E Eligibility Determination			3	2	1
Ability to accommodate Financial Management			3	2	1
Ability to accommodate Interfaces			3	2	1
Ability to Accommodate Additional Program Functions					
Ability to accommodate Adoptions		✓	3	1	2
Ability to accommodate Independent Living Program (ILP)		✓	3	1	1
Ability to accommodate Foster Care Placement			3	1	1
Ability to Support Outcome – Based Operations					
Ability to generate reports of outcome data		✓	2	2	2

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Business	20%				
Ability to track cases using a variety of data elements		✓	3	1	1
Ability to Support Child Welfare Program Strategy					
Ability to accommodate safety assessments			3	1	1
Ability to accommodate differential response			3	1	1
Ability to accommodate team decision-making			3	1	1
Usability					
User Interface (help screens, user prompts, system navigation)		✓	3	2	1
Workflow		✓	3	2	1
Ability to store pictures		✓	3	1	1
Ability to provide access to data while ensuring adequate security and confidentiality of data		✓	3	2	1
Mobility					
Ability to provide remote access		✓	2	2	2
Ability to support PDA's and other mobile devices		✓	3	2	1
Ability to provide wireless access		✓	2	2	2
Business Operations					
Enables County Workflow Flexibility		✓	3	2	1
Supports Common Program Practice		✓	3	2	1
Business Criteria Subtotal			57	32	24
Ranking			3	2	1

■ Ability to Accommodate Missing SACWIS Functionality

□ Ability to accommodate Eligibility

The open architecture design for Alternatives 2 and 3 provides a more flexible architecture for interfacing with external eligibility systems. This architecture will also provide a simpler environment for creating the interfaces to the external eligibility systems. Therefore, Alternatives 2 and 3 were scored higher than Alternative 1.

The phased approach for Alternative 2 will add complexity to the building of interfaces. Therefore, Alternative 3 scored higher than Alternative 2.

□ Ability to accommodate Financial Management

The open architecture design for Alternatives 2 and 3 provides a more flexible architecture for interfacing with external county financial systems. This architecture will also provide a simpler environment for creating the interfaces to the external county financial systems. Therefore, Alternatives 2 and 3 were scored higher than Alternative 1.

The phased approach for Alternative 2 will add complexity to the building of a financial management system. For this reason, Alternative 3 scored higher than Alternative 2.

□ Ability to accommodate Interfaces

The open architecture design for Alternatives 2 and 3 provides a more flexible architecture for interfacing with other external systems. The phased approach for Alternative 2 will add complexity to the building of interfaces.

■ Ability to Accommodate Additional Program Functions

□ Ability to accommodate Adoptions

A high priority from a business perspective has been placed on providing a solution to allow the county/State adoption workers and the courts to obtain accurate up-to-date statewide information needed to support the adoption process. For this reason, Alternative 2 has been scored the highest as it is slated for the earliest delivery of this functionality to the adoption workers.

The timeliness in delivery of this functionality is in part due to the improved software development environment offered in the technical architectures of Alternatives 2 and 3.

□ Ability to accommodate Independent Living Program (ILP)

Delivery timing of this option is not critical, since authorizing legislation has not been passed. Alternatives 2 and 3 scored higher than Alternative 1 due to the ease of interfacing with external systems (i.e., education and training vouchers).

□ Ability to accommodate Foster Care Placement

As timing of this option is not critical, Alternatives 2 and 3 scored higher than Alternative 1 due to the ease of interfacing with external systems.

■ Ability to Support Outcome-Based Operations

□ Ability to generate reports of outcome data

As a more capable data warehouse will be implemented for each alternative, all alternatives were scored equal.

□ Ability to track cases using a variety of data elements

Alternative 1 was scored lower as the architecture and current environment facilitates a higher level of coding complexity than Alternatives 2 or 3. However, no differentiators exist between Alternative 2 and 3 so they were scored equal.

■ Ability to Support Child Welfare Program Strategy

□ Ability to accommodate safety assessments

Alternative 1 was scored lower as the architecture and current environment facilitates a higher level of coding complexity than Alternatives 2 or 3. However, no differentiators exist between Alternative 2 and 3 so they were scored equal.

□ Ability to accommodate differential response

Alternative 1 was scored lower as the architecture and current environment facilitates a higher level of coding complexity than Alternatives 2 or 3. However, no differentiators exist between Alternative 2 and 3 so they were scored equal.

- Ability to accommodate team decision-making

Alternative 1 was scored lower as the architecture and current environment facilitates a higher level of coding complexity than Alternatives 2 or 3. However, no differentiators exist between Alternative 2 and 3 so they were scored equal.

- Usability

- User Interface (help screens, user prompts, system navigation)

Alternative 1 was scored lower than Alternative 2 or 3 due to the complexity of the current user interface and workflow. Alternative 2 was scored lower than Alternative 3, as the user will have two separate user interfaces for some period until the full system is deployed.

Alternative 3 was scored the highest, as a complete new user interface would be delivered at one time.

- Workflow

Alternative 1 was scored the lowest as workflow changes would be limited and difficult to apply in the current architecture.

Alternative 2 and 3 were scored higher as workflow changes could be implemented. However, Alternative 2 was scored lower than Alternative 3, as workflow will encompass multiple architectures – old and new.

Alternative 3 scored the highest as workflow could be implemented at one time.

- Ability to store pictures

Alternative 1 was scored lower as the current application is not structured to support digital pictures or other types of digital media. Alternative 2 and 3 were scored higher as the application would easily accommodate the storage of pictures and there are no differentiators between the two alternatives.

- Ability to provide access to data while ensuring adequate security and confidentiality of data

Alternative 1 was scored lower, as the application does not currently support multiple user security profiles. Alternative 2 was scored lower than Alternative 3, as the old level of security will need to be maintained over the entire system deployment.

- Mobility

- Ability to provide remote access

Each alternative scored equally, as there were no differentiators as enhanced remote access was scoped within each.

- Ability to support PDAs and other mobile devices

Alternative 1 was scored lowest, as the fat client cannot be easily transferred to a PDA or mobile device. Alternative 2 was scored higher than Alternative 1, as the current fat client will continue to exist.

Alternative 3 was scored the highest, as it will have full capability to support PDA or mobile devices at the time of deployment.

- ❑ Ability to provide wireless access

Each alternative was scored equal, as there were no differentiators for the solution's ability to interact seamlessly with portable devices when those devices have access through wireless means.

- Business Operations

- ❑ Enables county workflow flexibility

Alternative 1 was scored lowest, as workflow is difficult to implement and individual county workflow would be even more difficult to implement due to the current application architecture. Alternative 3 was scored highest as it offers the most flexibility in implementing workflow and county variations of workflow.

- ❑ Supports common program practice

Alternative 1 was scored the lowest at it allows variability in standard practices. Alternative 2 was scored lower than Alternative 3, as it will be more difficult to maintain standard practices over a longer deployment period. In addition, it will be harder to implement standards during a phased approach.

9.1.2 Technical

As part of the technical evaluation process, the TAAA Team examined the current architecture, other web-based architectures currently supporting similar case management systems, business processes, and conducted workshops and interviews with key State stakeholders, county user technical staff, and M&O technical staff. Additionally, the technical team developed a vendor survey and conducted interviews with vendors providing development and/or maintenance services on web-based systems to validate findings and refine proposed models. Finally, the analysis of size of the current CWS/CMS application (i.e., function point analysis) provided critical information that addressed overall feasibility of the alternatives. The TAAA Team found that Alternative 3 best meets the majority of the evaluation criteria. The primary differentiating factors were the maintenance and supportability, ease of integration, flexibility, and extensibility to support functional changes and openness of the architecture.

Table 21 - Technical Criteria Rankings

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Technical	20%				
Single System of Record			3	2	1
Single Integrated System			1	3	1
Scalability		✓	2	2	2
Manageability / Simplicity			2	3	1
Support for Core and non-Core Functionality			3	1	1
Flexibility and Extensibility			3	2	1
Architectural Openness (non-proprietary)			3	1	1
Ease of Integration / Interface Standardization			3	2	1

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Time to Deliver New Functionality (changes and enhancements)			2	3	1
<i>Technical Criteria Subtotal</i>			22	19	10
Ranking			3	2	1

- Single system of record

Alternative 2 and 3 were rated higher as they will be designed as a single repository for all required case data.

Alternative 1 was rated lowest, as counties have created their own data stores for functionality missing within the current application.

Alternative 2 and 3 have architectures better suited for interfacing with outboard systems that query for data. Alternative 2 was rated lower than Alternative 3 due to its extended deployment schedule.

- Single integrated system

Alternative 1 and 3 were scored highest, as both are a single integrated system. Alternative 2 scored lower as two separate systems would be maintained until final deployment.

- Scalability

Each alternative was scored equal, as there were no differentiators. Each system can scale appropriately.

- Manageability / simplicity

Alternative 2 was scored lowest, as it is the most complex of the 3 alternatives to manage.

Alternative 1 was scored lower than Alternative 3, as the management and communications protocols are application specific as opposed to other standard protocols. However, it was scored higher than Alternative 2 as the current solution is robust and already in place.

- Support for core and non-core functionality

Both Alternative 2 and 3 were rated higher than one as their more open system architecture allows for collaborative development and the extended application benefits available through composite applications.

- Flexibility and extensibility

The architecture platform proposed for Alternatives 2 and 3 is more flexible and extensible than Alternative 1. Alternative 2 was rated lower than 3 due to the ongoing operations of the original application.

- Architectural openness (non-proprietary)

Alternatives 2 and 3 provide more competitive procurement opportunities.

- Ease of integration / interface standardization

The architecture platform proposed for Alternative 2 and 3 provides a greater variety of choices than Alternative 1 for disparate system integration and interfacing. Alternative 2 was rated lower than Alternative 3 due to the ongoing operations of the original application.

■ Time to deliver new functionality (changes and enhancements)

The time to deliver new functionality will be shortest (irrespective of the time to obtain approvals for the changes) in Alternative 3 due to its enhanced and robust software development environment. Alternative 2 was scored lowest, as there are multiple application architectures to consider when making changes and enhancements.

9.1.3 Total Cost of Ownership

The TAAA Team estimated the ten-year cost for each alternative and compared cost among the alternatives. Quantifiable benefits were included in the evaluation to obtain a timeframe in which the investment in the new architecture and/or functionality would payoff. The three criteria analyzed by the TAAA Team were total ten-year cost, breakeven point, and timing of cash flows. As the following chart indicates, Alternative 1 has the lowest one-time cost, and Alternative 3 has the lowest ongoing cost.

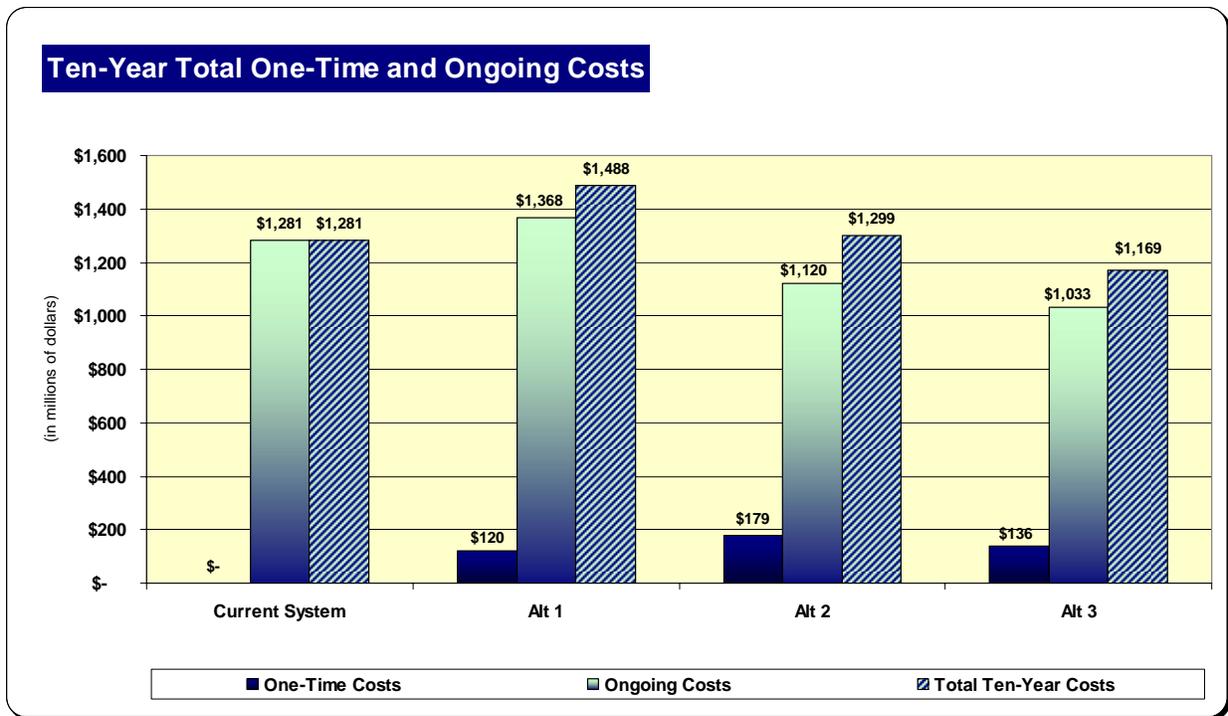


Figure 33 - Ten-Year Total One-Time and Ongoing Costs

Table 22 - TCO Criteria Rankings

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Total Cost of Ownership (TCO)	25%				
Overall 10-year Cost			3	2	1
Breakeven Point			3	3	1
Timing of Cash Flows			3	1	1
Total Cost of Ownership Criteria Subtotal			9	6	3
Ranking			3	2	1

■ Overall ten-year cost

The TAAA Team has estimated the ten-year costs for the alternatives considered in this analysis, and compared costs among alternatives, using the approved 2004 APDU costs allocated for the period of SFY 2006/07 CWS/CMS costs as the baseline. This has been done to provide a common basis for cost projections. In its approach to estimating costs, the TAAA Team has been very conservative. That is, known costs that had been developed previously for feasibility studies and APDUs were used, where appropriate, in lieu of re-estimating costs. Adjustments to the baseline CWS/CMS costs were only made to reflect anticipated growth. Growth for each area was based on financial trends over the past three years.

In accordance with the State's business direction to implement the unfulfilled SACWIS functionality, all costs presented here include the costs to implement the SACWIS functionality and are analyzed from that perspective. The following table illustrates the total ten-year costs and benefits for each alternative.

Table 23 - Ten-Year Costs and Benefits

(all costs shown in millions of dollars)	Alt 1	Alt 2	Alt 3
One-Time Costs	\$ 119.69	\$ 179.06	\$ 136.46
Development of New Architecture and Re-Development of Existing Functionality	\$ -	\$ 107.99	\$ 67.18
Additional Costs to Develop Adoptions Functionality	\$ 39.27	\$ 19.82	\$ 20.34
Additional Costs to Develop SACWIS Functionality (FM, IV-E Eligibility, Interfaces)	\$ 19.00	\$ 17.29	\$ 15.13
Additional Costs to Develop New Business Functionality			
- Additional Functionality (300 Function Points Per Year)	\$ 42.97	\$ 18.01	\$ 18.04
- Mobility/Remote Access	\$ 3.07	\$ 3.00	\$ 3.00
- Data Warehousing	\$ 15.38	\$ 12.95	\$ 12.78
On-Going Costs (Total for Ten-Year Period)	\$ 1,367.31	\$ 1,119.79	\$ 1,032.76
Current On-Going Costs	\$ 1,281.32	\$ 580.78	\$ 386.96
New On-Going Costs to Maintain New Architecture and Re-Developed Functionality	\$ -	\$ 460.86	\$ 578.31
Additional On-Going Costs for Adoptions Functionality on New Architecture	\$ 13.50	\$ 12.12	\$ 11.06
Additional On-Going Costs for New SACWIS Func (FM, IV-E Eligibility, Interfaces)	\$ 9.66	\$ 8.31	\$ 8.46
Additional Costs to Maintain New Business Functionality			
- Additional Functionality (300 Function Points Per Year)	\$ 7.51	\$ 3.80	\$ 3.80
- Mobility/Remote Access	\$ 17.46	\$ 16.16	\$ 8.04
- Data Warehousing	\$ 37.86	\$ 37.77	\$ 36.12
Total Benefits Realized Over Ten-Year Period	\$ 854.41	\$ 754.62	\$ 947.96
Current Savings	\$ 795.99	\$ -	\$ -
Current System Savings	\$ 795.99	\$ -	\$ -
Increased Productivity	\$ 27.61	\$ 40.59	\$ 40.86
Benefits from Development of New Architecture and Re-Development of Existing Fun	\$ -	\$ 0.76	\$ 1.03
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Func (FM, IV-E Eligibility, Interfaces)	\$ -	\$ 12.22	\$ 12.22
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ 27.61	\$ 27.61	\$ 27.61
- Data Warehousing	\$ -	\$ -	\$ -
Program Savings	\$ 30.82	\$ 12.87	\$ 12.62
Benefits from Development of New Architecture and Re-Development of Existing Fun	\$ -	\$ -	\$ -
Additional Benefits from Implementing Adoptions Functionality	\$ 2.97	\$ 1.73	\$ 1.48
Additional Benefits from Implementing SACWIS Func (FM, IV-E Eligibility, Interfaces)	\$ 27.85	\$ 11.14	\$ 11.14
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -
System Savings	\$ -	\$ 701.16	\$ 894.48
Benefits from Development of New Architecture and Re-Development of Existing Fun	\$ -	\$ 701.16	\$ 894.48
Additional Benefits from Implementing Adoptions Functionality	\$ -	\$ -	\$ -
Additional Benefits from Implementing SACWIS Func (FM, IV-E Eligibility, Interfaces)	\$ -	\$ -	\$ -
Additional Benefits from Implementing New Business Functionality	\$ -	\$ -	\$ -
- Additional Functionality (300 Function Points Per Year)	\$ -	\$ -	\$ -
- Mobility/Remote Access	\$ -	\$ -	\$ -
- Data Warehousing	\$ -	\$ -	\$ -
Cummulative Net Cost/Benefits for Ten-Year Period	\$ (632.59)	\$ (544.23)	\$ (221.26)

*Costs and benefits shown in millions of dollars

Both short- and long-term views of the financial impacts associated with each alternative are shown above. Short-term impacts are represented by the one-time costs, which for this analysis include system development costs. The combination of maintenance and operations costs and savings/benefits combine to represent the long-term impacts. The overall effect of both short- and long-term impacts factor into the cumulative net, which provides a measure of the overall financial attractiveness of each alternative over time.

- **Short-Term Financial Impacts** – When viewed in the short-term, Alternative 1 is the lowest cost alternative. Because Alternative 1 is based on expanding and enhancing the current operating system, only costs associated with the new components affect the overall total; hence, the least amount of additional investment required. However, it is important to note that while the total costs for Alternative 1 is less than the other alternatives, the cost to develop the additional SACWIS functionality (i.e., Adoptions, Financial Management, IV-E Eligibility, and Interfaces) is 50% more expensive in Alternative 1 than in either Alternative 2 or 3. Similar differentiating cost factors are also associated with the cost for the ongoing addition of business functionality at the rate of 300 function points per year. The cost to implement the additional business functionality is 42% higher than in Alternative 2 or 3. The cost to add mobility/remote access and data warehousing to any of the architectures analyzed is neutral in that no factors influence a higher or lower cost for any alternative.
- **Long-Term Financial Impacts** – When the long-term perspective is taken, Alternative 3 results in the greatest overall financial return. In fact, Alternative 3 outpaces the return (cumulative net) of the next most attractive option (Alternative 1) by approximately \$323 million over the ten-year period. This substantially greater return is primarily a result of the quicker realization of benefits. The additional difference in the overall financial return associated with Alternative 3 (in comparison to Alternative 1) is because of lower maintenance and operations costs that would result from efficiencies of moving to an architecture that is more efficient to maintain and operate. It is one perspective to look at the total ongoing costs for the entire ten-year period. Another perspective is to look at the annual ongoing costs in Year 5 and again at Year 10 after all three alternatives have fully stabilized. The chart below illustrates the ongoing costs at Years 5 and 10 for each alternative.

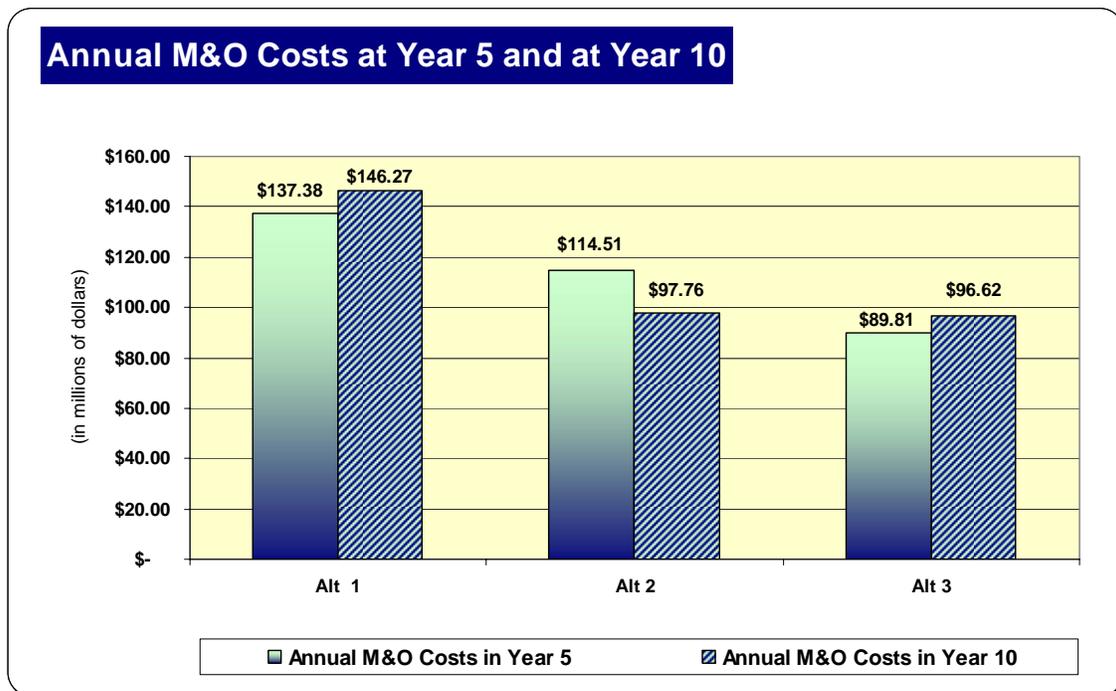


Figure 34 - Annual M&O Costs at Year 5 and Year 10

Another critical factor in analyzing the total ten-year costs is the amount of federal participation the State can anticipate toward the acquisition and support of the selected alternative. In its simplest form, SACWIS federal participation is based on whether an activity or cost can be attributed directly to the meeting of a SACWIS requirement. If an activity is deemed to meet the criteria for being considered SACWIS, costs are first appropriately allocated to all benefiting programs per cost allocation methodologies and then federal funds are applied to 50% of the costs for the portion of the activity allocated to the Foster Care and Adoptions programs. Activities related to the statewide system, but not directly attributable to meeting a SACWIS requirement, are considered to be non-SACWIS. Costs for non-SACWIS activities are first appropriately allocated to all benefiting programs per cost allocation methodologies. Costs allocable to the Foster Care program are discounted by the percentage of State-only Foster Care cases to total federal and State-only cases and a ratio of federal and State-only percentages is developed for cost allocation. The two Foster Care cost categories eligible for non-SACWIS federal funding are Title IV-E Discounted and Title IV-E Enhanced training funding. It is important to note that the non-SACWIS IV-E Discounted funding ratio (75% federal Foster Care/25% State-only Foster Care) is based on caseload and therefore, the sharing ratio fluctuates from year to year. In the non-SACWIS scenario, federal funds are applied to 50% of 75% of the IV-E Discounted funds. For IV-E Enhanced funding (75/25), non-SACWIS federal funding is applied to 75% of the 75%. It is important to note that the IV-E Enhanced funding is only eligible to be applied to direct training costs only. The assumptions for the SACWIS/non-SACWIS cost allocation can be found in Section 6.

For purposes of discussing the SACWIS funding, all outcomes will be described relative to the impact to general and federal funds. The following figure provides a high-level comparison of the total one-time and ongoing costs for the current system and each alternative. *It is important to note that for funding purposes, the costs associated with CDSS staff have been excluded from the following cost comparison tables.*

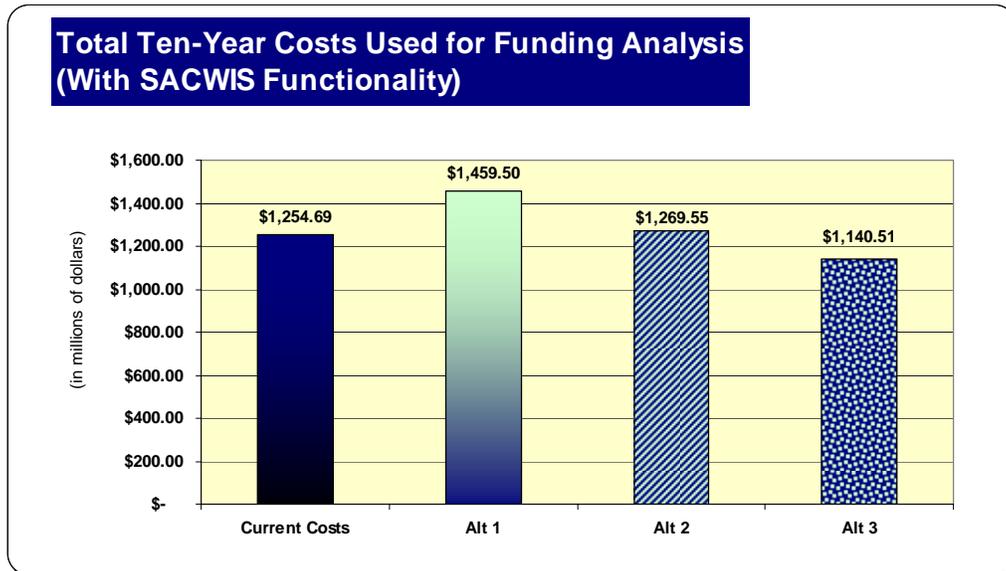


Figure 35 - Total Ten-Year Cost Used for Funding Analysis (With SACWIS Functionality)

The figure above illustrates that the overall ten-year costs to implement the SACWIS functionality in Alternative 3 are lower than Alternatives 1 and 2 and decidedly less than continuing with the current system (which currently does not contain the four missing SACWIS functions). The following figure illustrates the breakout of total federal and General Funds that will be required for the ten-year period to fund the current system and each alternative. Overall, more general and federal funds will be required for Alternative 1 than for the current system. Both Alternatives 2 and 3 will have fewer federal funds available to pay for the new architecture and re-development of existing functionality. However, while Alternative 2 will require more General Funds than Alternative 3 or the current system, Alternative 3 requires the least amount of total General Funds of all the alternatives or current system.

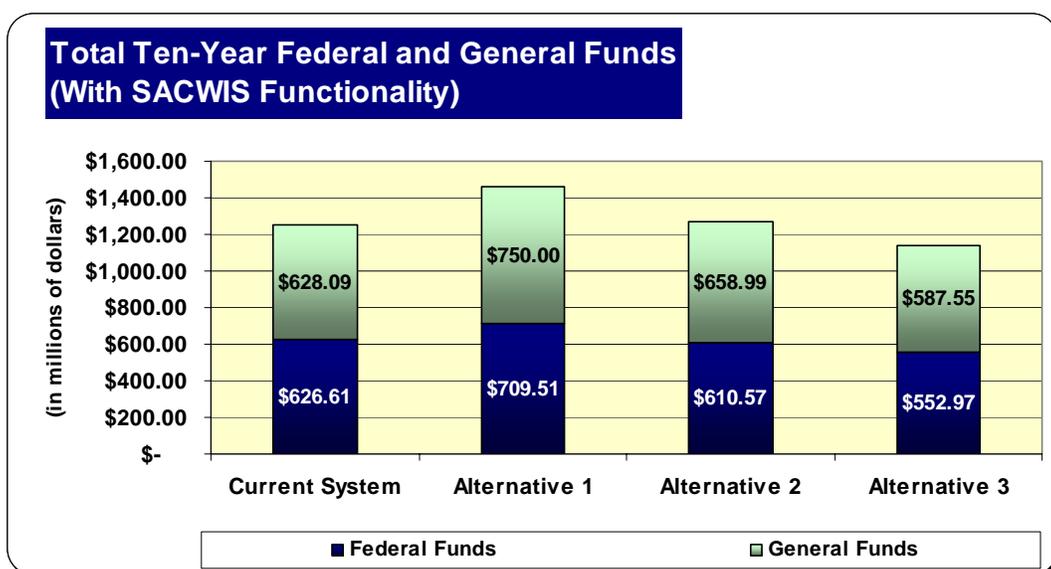


Figure 36 - Total Ten-Year Federal and General Funds (with SACWIS Functionality)

The following figure illustrates the total ten-year costs for each alternative, removing the development and maintenance of the four SACWIS functions. *It is important to note that for funding purposes, the costs associated with CDSS staff have been excluded from the following cost comparison tables.*

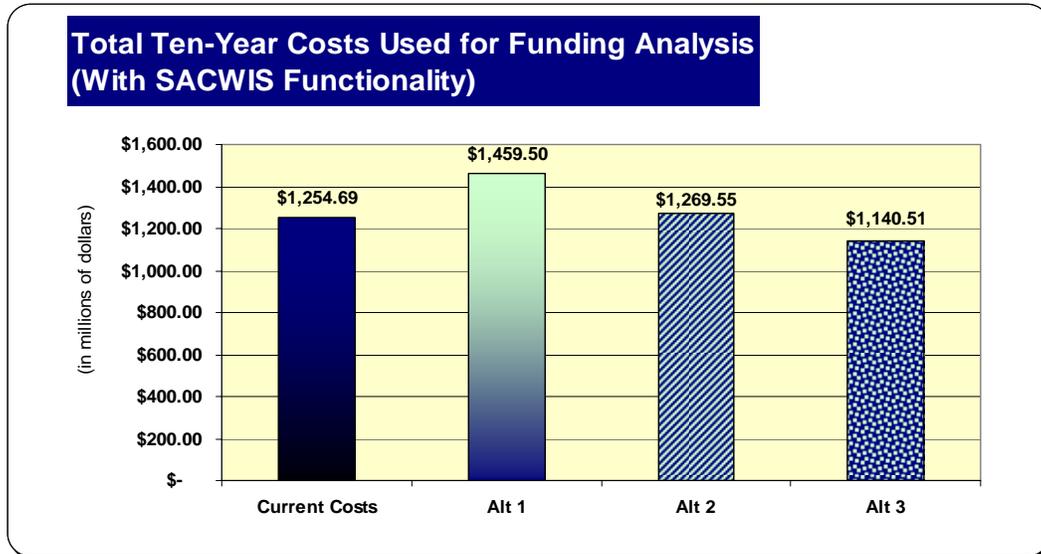


Figure 37 - Total Ten-Year Costs Used for Funding Analysis (Without SACWIS Functionality)

The following figure illustrates the total ten-year impact to federal and General Funds if the State does not implement the four SACWIS functions. While the figure above illustrates that not implementing the four SACWIS functions could cost less than implementing them, if the State chooses not to implement the needed functionality, a significantly higher amount of General Funds will be required to support the current system or any alternative selected. Additionally, the counties have made a strong case for the implementation of the SACWIS functionality to conduct their daily business of providing services to needy children.

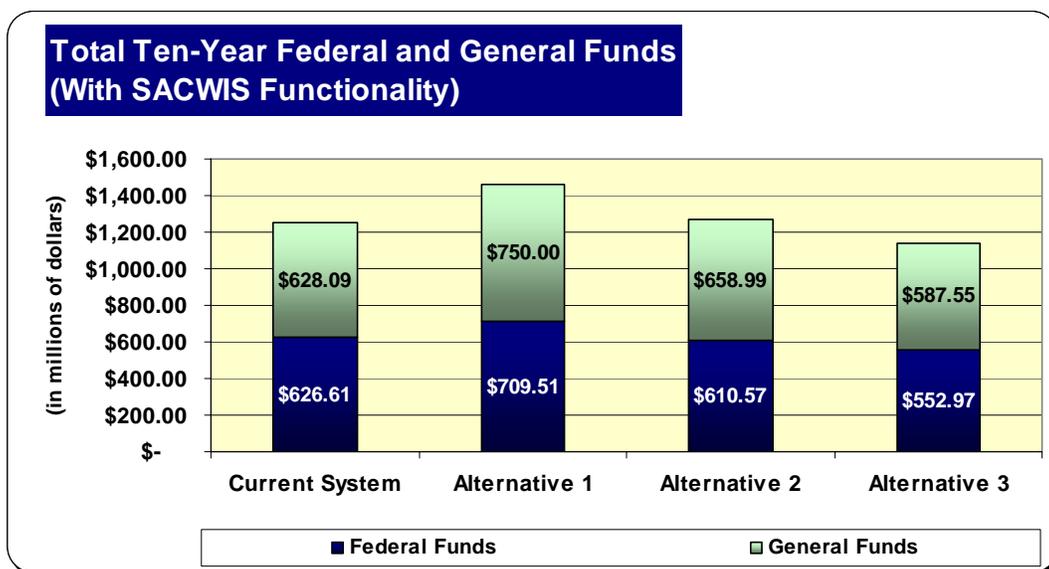


Figure 38 - Total Ten-Year Federal and General Funds (without SACWIS Functionality)

Alternative 3 ranks the best in this category because it has the greatest overall return on investment and lowest ongoing costs, even after the re-development of functionality and implementation of SACWIS and additional business functionality. Additionally, because of the lower overall costs, Alternative 3 requires the least amount of general or federal funding in either scenario (with or without SACWIS functionality). Overall, the long-term advantages of lower maintenance costs and overall return on investment with Alternative 3 far outweigh the initial investment costs. For these reasons, the TAAA Team believes that Alternative 3 is the most financially attractive option in the overall ten-year cost category.

■ Breakeven point

The cumulative benefits obtained over the ten-year period were charted against the cumulative total ten-year costs (one-time and ongoing) for each alternative. The net result of comparing cumulative costs with cumulative benefits should be at some point in time, the benefits will out pace the costs, and thus reach a breakeven point for the overall investment. In this analysis, none of the alternatives reach a breakeven point before the end of the ten-year period. However, because the cost/benefit curve for Alternative 3 appeared to be closing, the TAAA Team extrapolated costs beyond the ten-year period to determine when breakeven would occur for this alternative. As shown in the figure below, the TAAA Team determined that Alternative 3 will reach a return on investment in April 2022. Alternative 1 and 2 never reach a breakeven point. Therefore, Alternative 3 receives the best ranking in this category.

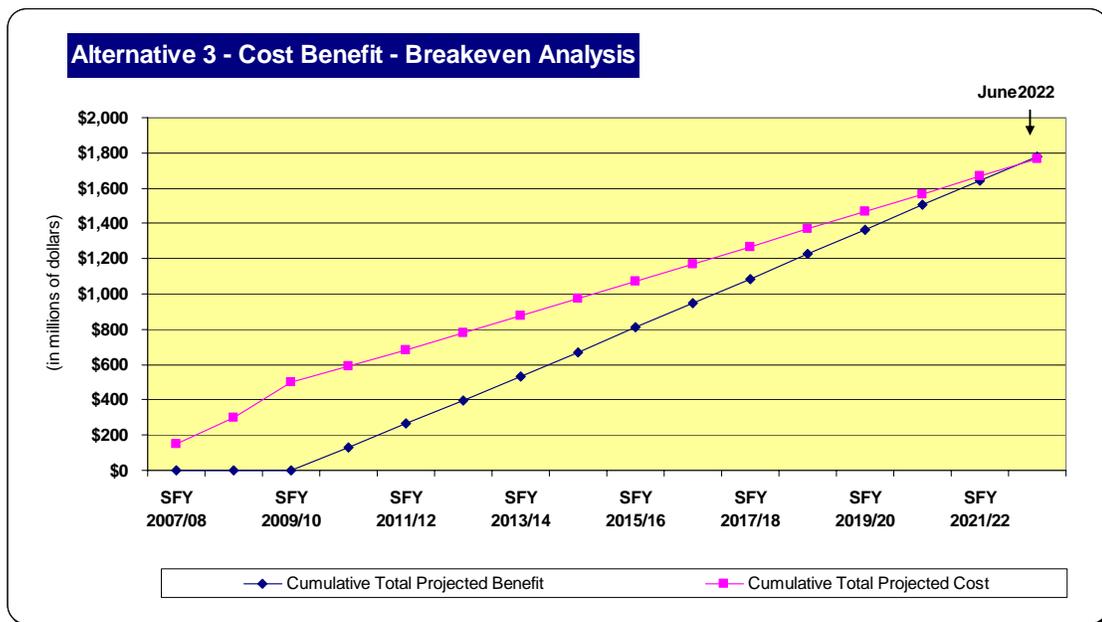


Figure 39 - Alternative 3 - Cost Benefit - Breakeven Analysis

■ Timing of cash flows

As shown in the chart below, the most consistent cash flow over the entire ten-year period is Alternative 1. However, during the first three years, all Alternatives are at a relatively even cost level. In the third year, Alternative 2 begins a steady downward trend toward lower cash

flows as migration from the current to new architecture occurs. In the fourth year, Alternative 3 begins incurring its cash flow at the lowest level of all three alternatives until the ninth year when Alternative 2 also hits the lower ongoing cost level. While Alternative 1 certainly meets the criteria for the most consistent flow of cash over the timeframe, it is difficult to award it the best ranking because it also maintains the highest total cost over the entire period.

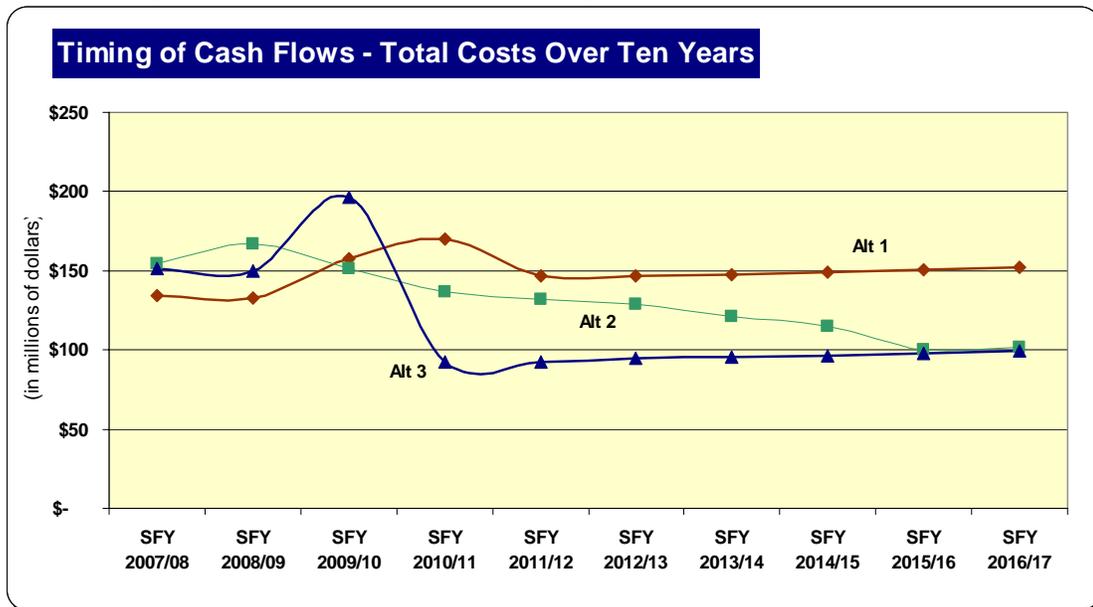


Figure 40 - Timing of Cash Flows

However, when looking at the overall net of cash flows out and savings being realized, the trend lines change dramatically. In the following graph, Alternatives 2 and 3 have a similar cash flow, but the cash flows associated with Alternative 3 have a greater positive gain over the ten-year period. In the overall category, Alternatives 2 and 3 rank equally.

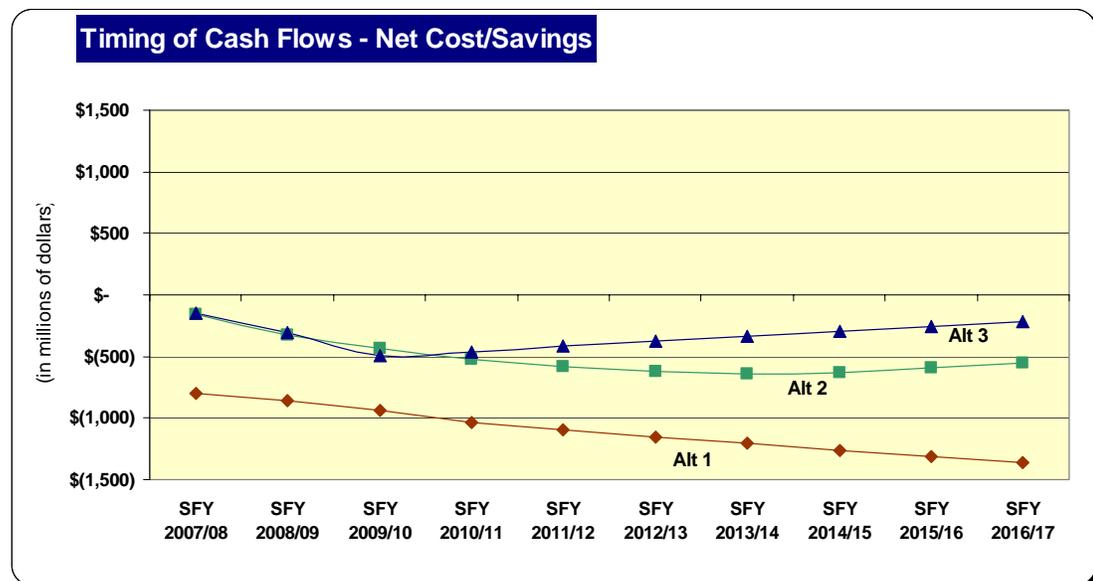


Figure 41 - Timing of Cash Flows - Net Cost/Savings

9.1.4 Time

In this category, the difference between all of the alternatives was minimal. In the time required to realize total benefits, Alternative 3 ranked higher than the other alternatives because it had the shortest time to full benefit delivery, just 36 months for existing CWS/CMS functionality and 36 months when including missing SACWIS functionality after the start of development. Alternative 2 was ranked the lowest in time to benefit realization by being the last alternative to deliver the full benefits associated with this alternative. Alternative 2 fared better in the incremental delivery of benefits category in its ability to deliver adoptions functionality by the third year. Overall, Alternative 3 received the best overall ranking in this category.

The following graphic summarizes the rankings in relation to time.

Table 24 - Time Criteria Rankings

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Time	15%				
Time to Full Benefit Realization			2	3	1
Incremental Benefit Delivery			3	1	2
<i>Time Criteria Subtotal</i>			5	4	3
Ranking			3	2	1

■ Time to full benefit realization

The following table itemizes the number of months required to complete system development/implementation, and the date at which implementation is projected to be complete and would then be available to users. For example, Alternative 1 starts development in Year 1 and concludes the implementation in Year 5. The full benefits of the new development would be available to the users in Year 6.

Table 25 - System Development and Implementation Timelines

System Development and Implementation Timelines			
	System Development Begins	System Implementation Complete	Full Benefit Available to Users
Alternative 1	Year 1	Year 5	Year 6
Alternative 2	Year 1	Year 8	Year 9
Alternative 3	Year 1	Year 3	Year 4

The total system development estimates were derived from function point analysis as well as FSRs and APDUs.

For Alternative 1, estimates for Adoptions were derived from the Expanded Adoptions System (EAS) FSR. All other Alternative 1 estimates were based on previous work product

and function point analysis. The Adoption's system development schedule accounts for the entire 52-month duration. All other functionality development schedules fall within the 52 months.

For Alternative 2, the incremental migration of the current system functionality to the service oriented architecture will be developed within 96 months. All other functionality development schedules fall within the 96 months.

Finally, for Alternative 3, the redevelopment and deployment of the CWS/CMS functionality under a service oriented architecture will occur within 36 months. All other functionality development schedules fall within the 36 months. Examination of these projections reveals that Alternative 3 scored the highest as it has the shortest time to full benefit realization.

■ Incremental benefit delivery

The following graphic defines the year in which each component of the new development effort would become available to the users for each of the alternatives. For example, the new data warehouse capability would become available to the users under all three alternatives in the later portion of Year 1.

Table 26 - Incremental Benefit Delivery Summary

Incremental Benefit Delivery Summary			
	Alt 1	Alt 2	Alt 3
Data Warehouse	Year 1	Year 1	Year 1
SBC	Year 1 – Year 3	Year 1 – Year 3	Year 1 – Year 3
Adoptions	Year 5	Year 3	Year 4
Title IV-E Eligibility	Year 4	Year 4	Year 4
Financial Management	Year 4	Year 4	Year 4
Interfaces	Year 4	Year 4	Year 4
Redeveloped Functionality	N/A	Year 4 – Year 9	Year 4

Incremental benefit delivery looks at when a user first obtains access to enhanced functionality. As depicted in the table above, Alternative 2 scored highest. Alternative 2 is the first to offer incremental benefits with the delivery of adoptions in year 3. This incremental benefit is significant based on the priority placed on delivery of adoption functionality. Alternative 3 scored higher than Alternative 1 as adoptions functionality is delivered in year 4.

9.1.5 Risk

The risk category covers six risk areas – financial, technical, operational, competitive procurement, schedule, and implementation. The alternative with the lowest overall risk in all but one category was Alternative 1. Since Alternative 1 represents an operational environment with mature processes, the degree of risk to implement additional functionality, including the four major unfulfilled SACWIS functions, is lower than that of the other two alternatives. Alternative 1 had the highest risk among the alternatives when considering the risk of conducting competitive procurements for related goods and services. The principal risks associated with Alternative 3 include operational risks associated with the development and cutover to a new system as well as schedule and financial risks common to all large IT projects. To mitigate the risks, the TAAA

Team recommends that the State essentially redevelop existing CWS/CMS functionality on new technology platforms without making significant changes to functionality or look and feel prior to initial deployment. This approach minimizes user impact and includes the enhanced performance and flexibility provided by the new architecture. The development would include updates to address priority pain points defined by the user and would establish the environment in which the additional county business needs (including unfulfilled SACWIS functionality) will be developed.

Table 27 - Risk Criteria Rankings

Criteria	Weight	Screen Criteria	Alt 1	Alt 2	Alt 3
Risk	20%				
Financial Risk			1	3	2
Technical Risk			1	3	2
Operational Risk			1	3	2
Competitive Procurement Risk			3	2	1
Schedule Risk			1	2	3
Implementation Risk			1	3	2
<i>Risk Criteria Subtotal</i>			8	16	12
Ranking			1	3	2

■ Financial risk

For each of the alternatives, financial risk was measured as the risk of deviation from the proposed budget. Since Alternative 1 is based on the current system, the financial risks are pertinent to the one-time development costs for the additional unfulfilled county business needs. These costs are lower and more easily managed than the costs involved with Alternatives 2 and 3. Ongoing maintenance costs for Alternative 1 have increased, but the trend of the mainframe costs are known and documented. Therefore, Alternative 1 scored the highest.

Both Alternatives 1 and 2 would face a funding risk at the federal level as they represent the two highest cost alternatives.

Alternative 2 provides the greatest financial risk as managing multiple system procurements and development efforts increase the likelihood of deviation from costs and schedule, and susceptibility to State budget cuts.

Alternative 3 reflects financial risks common to all large IT projects. The alternative would have a higher amount of development work and cost involved in a shorter period of time. In typical IT projects this can be risky as the business processes must be prepared, requirements defined thoroughly, functionality developed and users must be trained under a new model of conducting their business. To mitigate these risks and to provide early delivery of existing business functionality, the TAAA Team has recommended that Alternative 3 be implemented as a redeveloped system, which will greatly reduce the initial requirements definition effort. This approach would produce a system that employs a look and feel consistent with the current interface to minimize user impact and includes the enhanced

performance and flexibility provided by the new architecture. The development would include updates to address priority pain points defined by the user and would establish the environment in which the additional county business needs (including unfulfilled SACWIS functionality) will be developed. This approach was only deemed possible after conducting numerous meetings, interviews and workshops with the user and being able to develop a solid understanding of what they feel is good about the current system and what is not.

■ Technical risk

Out of the three alternatives, Alternative 2 is the most technically complex and the highest risk. Maintaining two separate architectures over an extended period of time increases the complexity (i.e. data synchronization between the two systems). In addition, the phased approach development cycle also increases the complexity with multiple data conversions, testing cycles, and overall implementation.

Alternative 1 was scored the highest as the vendor and technology are known and have proven stability.

■ Operational risk

Each of the three alternatives was evaluated for operational risk, which includes those risks associated with disruption to current operation processes and routines at the county, state and federal levels. Alternative 1 was scored the highest as there would be the least amount of disruption at the county, state and federal levels leveraging the expansion of the currently existing system. With a one time cutover as proposed in Alternative 3, this alternative scored higher than Alternative 2 where there would be multiple implementation phases, which could result in multiple disruptions at all levels.

■ Competitive procurement risk

Competitive procurement risk measures market competitiveness for each alternative. Alternative 1 offers a solution with the least market competitiveness due to the nearly sole-source nature of the current environment.

Alternative 3 scored higher than Alternative 2 due to the extended period (i.e., 8 years) that Alternative 2 is reliant on the existing architecture.

■ Schedule risk

The risk of the schedule deviating from the proposed scheduled was evaluated for each alternative. Alternative 1 was scored the highest as the process is in place and proven for scheduled deployments.

Alternative 3 represents the highest schedule risk based on the size of its initial software delivery within the first three years of the project. It scores lowest.

■ Implementation risk

Implementation risk is the risk associated with the complexity of implementation. Alternative 2 was scored the lowest as the process to implement and maintain two systems in a phased approach is the most complicated. Alternative 2 and 3 also add the complexity of implementing a new technical architecture. Alternative 1 was scored highest as a new architecture is not being implemented and the implementation process is in place and proven for scheduled deployments.

9.2 Scoring

9.2.1 Screening Process Results

Of the screening criteria defined, it was determined that each of the alternatives met the list of screening criteria below:

Table 28 – Screening Process Results

Criteria	Alt 1	Alt 2	Alt 3
Ability to accommodate Adoptions	✓	✓	✓
Ability to accommodate Independent Living Program (ILP)	✓	✓	✓
Ability to generate reports of outcome data	✓	✓	✓
Ability to track cases using a variety of data elements	✓	✓	✓
User Interface (help screens, user prompts, system navigation)	✓	✓	✓
Work flow	✓	✓	✓
Ability to provide access to data and simultaneous ensure the adequate security and confidentiality of the data	✓	✓	✓
Ability to store pictures	✓	✓	✓
Ability to provide remote access	✓	✓	✓
Ability to support PDA's and other mobile devices	✓	✓	✓
Enables County Workflow Flexibility	✓	✓	✓
Supports Common Program Practice	✓	✓	✓
Scalability	✓	✓	✓

9.2.2 Ranking Process Results

The following table summarizes the totals for each of the five areas.

Table 29 - Ranking Process Results

Criteria	Alt 1	Alt 2	Alt 3
Subtotals			
Business Criteria	57	32	24
Technical Criteria	22	19	10
TCO Criteria	9	6	3
Time Criteria	5	4	3
Risk Criteria	8	16	12

9.2.3 Weighting Process Results

After totaling the criteria for each of the five areas, each of the alternatives was ranked within their category. The figure below shows the alternative that received the lowest score (highest ranking) within each category would get the most points for that category. For example, Alternative 3 for the business criteria had the lowest total of 25 (alternative 1 = 57, alternative 2 = 32) and therefore would be ranked 1. The alternative that received the lowest score (highest ranking) within each category, would get the most points for that category. The business ranking of 1 would receive 5 points.

After the point system was applied, the point totals were scored against the weighting to determine a final score. The figure below displays the model used for scoring and the final results.

Table 30 – Weighting Process Results

	Alternative 1				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	3	1	20%	0.20	3
Technical	3	1	20%	0.20	
TCO	3	1	25%	0.25	
Time	3	1	15%	0.15	
Risk	1	5	20%	1.00	
			TOTAL	1.80	
	Alternative 2				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	2	3	20%	0.60	2
Technical	2	3	20%	0.60	
TCO	2	3	25%	0.75	
Time	2	3	15%	0.45	
Risk	3	1	20%	0.20	
			TOTAL	2.60	
	Alternative 3				RANK
	RANK	POINTS	WEIGHT	SCORE	
Business	1	5	20%	1.00	1
Technical	1	5	20%	1.00	
TCO	1	5	25%	1.25	
Time	1	5	15%	0.75	
Risk	2	3	20%	0.60	
			TOTAL	4.60	

9.3 Summary of Benefits and Limitations

The following tables detail general benefits that could be realized for each of the alternatives. The benefits are shown using the '●' symbol and the '◐' '◑' symbols. In general, the presence of the '●' symbol indicates the benefit is realized for that particular alternative. The '◐' '◑' symbols indicate that the benefit is realized for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑).

The absence of any symbol in an alternative's column indicates either that:

- The benefit does not apply to that alternative; or
- The benefit only applies to a specific alternative or alternatives; or
- The benefit is marginal for that specific alternative.

Business Benefits	Alt 1	Alt 2	Alt 3
Least disruptive to current county operations	●	◐	◐
Leverages existing business and technical infrastructure	●	◐	◐
Increased cash flow for incremental investment		●	
Risk exposure opportunity is incremental (versus Alt 3)		●	
Quickest delivery of incremental benefits (Adoptions)		●	
Quickest delivery of all SACWIS benefits			●
New strategic direction enhances county and federal stakeholder buy-in		◑	●
Provides for increased procurement competition		◑	●
Lowest yearly M&O costs after implementation			●
Easier data entry / simplified navigation		◑	●
Allows concurrent case record access		◑	●
Easily updated and customized form templates		◑	●

Technical Benefits	Alt 1	Alt 2	Alt 3
Retains existing state and county maintenance and support process	●	◐	◐
No major technology barriers to SACWIS implementation	●	●	●
High degree of availability and redundancy	●	●	●
No barriers to increased caseload, users, sites, or transactions	●	●	●
Supports State CIO Strategic Plan		◑	●
Incremental development and deployment of SACWIS functionality		●	
Open technical environment		◑	●
Greater platform and technology flexibility		◑	●
Workflow management capabilities		◑	●
More granular security allows for external organization access	◑	◑	●
Easier interface with external systems		◑	●
Supports mobile workforce	◑	◑	●
Reduced workstation business logic and "footprint"		◑	●

Implementation Benefits	Alt 1	Alt 2	Alt 3
Least disruption to existing business and technical operations	●		
Low risk development	●		
Low one time costs	●		
Evolutionary approach should minimize large scale business disruption		●	
Minimal initial requirements gathering			●

The following table details general limitations for each of the alternatives. The limitations are shown using the '●' symbol and the '◐' '◑' symbols. In general, the presence of the '●' symbol indicates a limitation for that particular alternative. The '◐' '◑' symbols indicate that the limitation is present for a period of time, either up to the cutover from old to new system (◐) or following the cutover to the new system (◑).

The absence of any symbol in an alternative's column indicates either that:

- The limitation does not apply to that alternative; or
- The limitation only applies to a specific alternative or alternatives.

Limitations	Alt 1	Alt 2	Alt 3
Does not leverage existing data – allows duplicate entry	●	◐	◐
Redundant data entry	●	◐	◐
Limited / no opportunity for workflow processing	●	◐	◐
Limited use of mobile devices	●	◐	◐
Lacks user friendly features (spell check, user prompts, limited search capability)	●	◐	◐
Requires significant training	●	◐	◐
Counties will continue to rely on ancillary system until evolution is complete	●	◐	◐
Users must use multiple interfaces		●	
State must support parallel production systems		●	◐
State must fill "system integrator" role for two or more vendors (multiple platforms, multiple procurements)		●	
Higher initial one-time system development costs		●	●
Requires concentrated support from state and county during up front development period			●

9.4 Changes and Benefit Delivery

The following table details side-by-side the technology changes found in each alternative and the year(s) of occurrence:

Year of Technology Changes	Alt 1	Alt 2	Alt 3
Server Based Computing infrastructure acquired	1-3	1-3	1-3
Data warehouse developed	1	1	1
Adoption functionality developed	1-5	1-2	2-3
Title IV-E Eligibility interfaces developed	2-4	2-3	2-3
Financial Management and Interfaces developed	3-4	3	3

Additional development of 300 function points annually	3-10	4-10	4-10
Service Oriented Architecture infrastructure deployed	-	1-2	1-2
More granular security model for external user access developed	-	1-2	1-2
Existing functionality replicated	-	1-8	1-3

The following table details side-by-side the business benefit delivery found in each alternative and the year of occurrence:

Year of Business Benefit Delivery	Alt 1	Alt 2	Alt 3
Mobile access available to user community	2	2	2
50 % mobile case worker utilization	4	4	4
Data warehouse functionality available	2	2	2
Adoptions functionality available	6	3	4
Title IV-E Eligibility interface ability availability	5	4	4
Financial Management and Interfaces availability	5	4	4
Full SACWIS technical functionality achieved	6	4	4
Browser-based CWS/CMS application available	-	9	4

9.5 Alternative Evaluation Framework

At the request of the State, the TAAA Team conducted a secondary scoring evaluation of the alternatives that considers the degree to which each alternative compares to the specific evaluation criteria. For example, for the criteria of cost, this scoring model takes into account the variances in the Total Cost of Ownership for each alternative and assigns specific corresponding points. Using this approach, Alternative 3 was confirmed as the best alternative for the future SACWIS solution. Please refer to Appendix I – Alternative Evaluation Framework for details on this scoring analysis.

9.6 Conclusions and Recommendations

9.6.1 Conclusions

Based on the analysis presented in this report, the TAAA Team recommends Alternative 3 as the best long-term solution for California's child welfare program. The analysis clearly shows that continuing M&O of the current CWS/CMS while simultaneously redeveloping a new SACWIS application using a web services-based technical architecture will benefit the State financially while helping to meet its business needs and strategic goals.

Alternative 3 clearly provides the best implementation of the business and technical criteria with primary differentiating factors being the ease of overall maintenance and support; ease of supporting functional changes through an integrated, flexible, extended architecture; and openness of the architecture. Alternative 3 was ranked best in time for being able to reach full benefit realization with a completely redeveloped system (including the unfulfilled SACWIS and additional business functionality) within 36 months. Alternative 3 was also ranked as the best cost option with the lowest ten-year TCO among all of the alternatives (Alternative 1 - \$1.49B; Alternative 2 - \$1.31B; Alternative 3 - \$1.17B). The ten-year TCO for Alternative 3 TCO is also

lower than the current system's ten-year projected cost of \$1.28B that would not include the four major unfulfilled SACWIS functionality.

Detracting factors include one-time development costs that are higher than Alternative 1 (Alternative 1 - \$120M and Alternative 3 - \$136M) and operational risks associated with the development and cutover to a new system and schedule and financial risks common to all large IT projects. To mitigate these risks and to provide early delivery of existing business functionality, the TAAA Team has recommended that Alternative 3 be implemented as a redeveloped system, which will greatly reduce the initial requirements definition effort. This approach would produce a system that employs a look and feel consistent with the current interface to minimize user impact and includes the enhanced performance and flexibility provided by the new architecture. The development would include updates to address priority pain points defined by the user and would establish the environment in which the additional county business needs (including the four major unfulfilled SACWIS functions) will be developed.

Alternative 2 (continue to maintain and upgrade the existing CWS/CMS but evolve the CWS/CMS technical architecture to a web services based infrastructure over 8 years) ranked second based on its ability to meet the business and technical criteria with the introduction of an open and more flexible architecture.

Detracting factors include the highest one-time development costs of all three alternatives (Alternative 1 - \$120M; Alternative 2 - \$183M; Alternative 3 - \$136M) and significant risks related to maintaining two systems across an extended period. Maintaining two systems includes the complexity of utilizing multiple user interfaces, synchronizing data between the two systems, impacting county worker work flow, and supporting redundant requirements. Alternative 2 also scored worst in time to benefit realization by being the last alternative to deliver the full benefits associated with its implementation. Another detracting point is that Alternative 2 is the only alternative that requires the support of two production systems and federal funding would only apply to the costs for one of them.

Alternative 1 (continue to maintain and upgrade the existing CWS/CMS within the limits of the current technical architecture employed by CWS/CMS) ranked last in all evaluation categories except risk. Alternative 1 was assessed as low risk because it is in an operational environment with mature processes and the degree of risk to implement additional functionality, including the four major unfulfilled SACWIS functions, is lower than that of the other two alternatives.

Detracting factors include highest overall cost (Alternative 1 - \$1.49B), less flexibility to deliver updates, limited ability to accommodate interfaces, inability to provide security at the level needed, and complexity involved with new development efforts.

9.6.2 Recommendations

9.6.2.1 Alternative 3 Provides the Best Long-Term Solution

The TAAA Team recommends that the State pursue Alternative 3 based on the analysis presented in the TAAA report. Overall, Alternative 3:

- Provides the best solution to meet the current and future needs for the delivery of child welfare services;

- Establishes a new strategic technology direction that meets the needs of county, State and federal stakeholders;
- Provides for the lowest ten-year TCO; and
- Promotes open competition for the procurement of goods and services.

9.6.2.2 SACWIS Recommendation

The TAAA Team further recommends that the State act to implement the unfulfilled SACWIS functionality based on the priority of the business needs defined by the CWS/CMS users. In particular, the adoptions case management functionality and automated interfacing of information between systems will provide social workers and management with a significant improvement in the capture, processing and reporting of case data, resulting in greater efficiency in service delivery and improved quality of data reporting. The State's implementation of the unfulfilled SACWIS functions will:

- Provide the best solution to meet known business requirements for the delivery of child welfare services and provides social workers with the necessary tools to ensure Child Safety, Child and Family Well-being, and Permanency for the Child;
- Demonstrate willingness to meet federal requirements for SACWIS compliance and lays the foundation for future SACWIS completion;
- Result in a lower ten-year TCO for SACWIS automation, as a result of maintaining the current level of federal financial participation; and
- Promote open competition for the procurement of goods and services, providing greater choices to the State and federal stakeholders.

9.6.2.3 Additional Recommendations – A Roadmap for the Future

Alternative 3 provides a new strategic technology direction for California's CWS/CMS. The detailed planning and execution of this new direction will be challenging, but provide significant benefits to children, their families, and communities as social workers become equipped to more effectively perform their jobs.

The TAAA Team recommends that the State prioritize the following additional functionality in the future California CWS/CMS:

- **Adoptions Case Management Functionality** – Adoptions Case Management functionality is necessary to expedite the adoption process to reduce the number and length of foster care placements. The way to achieve the best child and adoptive parent match is for case workers to quickly identify and document a child's medical, behavioral, and cultural needs. Adoptions Case Management would achieve that goal by improving adoptions data quality and the achievement of permanence.
- **Data Warehouse Functionality** – A data warehouse will provide the necessary reporting capabilities for non-technical county social work staff to monitor their workload and outcome measure performance mandated by the federal government and the Legislature (AB 636, Chapter 678, Statutes of 2001). The CWS/CMS currently does not provide standard and ad hoc graphical reports for social work supervisors and management to easily track their progress toward achieving improved outcomes. We believe the State should provide uniform

statewide capabilities to enable counties to monitor performance, improve data quality and achieve program outcomes.

- **Mobility Support** – Mobility is a critical component for improved social work practice and better outcomes for children. Identifying foster home availability and initiating placement while in the field will result in less disruption to the child. Additionally, workers need the ability to enter critical case information in a timelier manner from the field to achieve improved data quality and the achievement of program outcomes.

Should the State adopt the proposed strategy, the TAAA Team further recommends the roadmap for Alternative 3 be adjusted to provide an early implementation of the data warehouse and mobility infrastructure. These high-priority needs can be implemented as the first stages of Alternative 3 and will provide county and State users with benefits within the first year of implementation. These recommended roadmap adjustments include the proper sequencing to ensure specific technical components are in place to support the timing of these implementations. However, as part of the planning process, it is advised that the roadmap be reviewed with key stakeholders to ensure the top priorities are properly defined.