



PUBLIC SECTOR

State of California Resources Agency
California Bay-Delta Authority
Conceptual Future Business Model

Final Report

March 28, 2006

ADVISORY



KPMG LLP
Suite 800
400 Capitol Mall
Sacramento, CA 95814

Telephone 916 448 4700
Fax 916 554 1193
Internet www.us.kpmg.com

March 28, 2006

Mr. Mike Chrisman, Secretary
Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Dear Secretary Chrisman:

KPMG is please to submit the third report of the Organizational and Business Process Assessment – the Conceptual Future Business Model.

We have developed this report to serve as an attainable vision, to guide, not dictate, the implementation of the 10-Year Action Plan developed by your CALFED team. As recommended in this report, accompanying detailed implementation planning activities are needed to fully define the milestones that are achievable considering known or anticipated constraints within the immediate and long-term planning horizons.

The analysis presented here would not have been possible without the input of CBDA management and staff. Thanks to this collaboration, we feel strongly that this analysis provides a strong guidepost for future improvement.

If you have any questions or require further information, please contact me at (916) 554-1158.

Sincerely,
KPMG LLP

A handwritten signature in black ink that reads 'R. T. O'Neill'. The signature is written in a cursive, flowing style.

Robert T. O'Neill
Principal

Table of Contents

I.	Executive Summary.....	1
II.	Introduction.....	3
III.	Organizational Structure.....	11
IV.	Business Processes	19
	IV.1 – Strategic Planning	19
	IV.2 – Program Tracking	27
	IV.3 – Contracts Development	38
	IV.4 – Grants.....	45
V.	Technology Architecture.....	51

Appendix A – Grant Procedures, Roles and Responsibilities

Appendix B – Considerations in Implementing the Enterprise Information Technology Architecture

I. Executive Summary

This report documents a Conceptual Future Business Model for the California Bay Delta Authority (CBDA) agency. The scope of the assessment includes the following:

- **Future Organizational Structure** – including a structure chart, and description of divisions, reporting relationships, and roles/responsibilities.
- **Future Conceptual Business Processes** – including process models and descriptive narrative for the following business processes: Strategic Planning, Program Tracking, Contracts Development, and Grants;
- **Technology Architecture** – including a high-level system diagram and narrative description of technology components.

The intended audience for this document is CBDA executive management and Resources Secretary Mike Chrisman. Once finalized, we anticipate that the report will be shared with participating stakeholders.

This report is based upon KPMG’s prior Current (‘As Is’) Assessment analyses delivered on December 30, 2005 and is also developed to support the recommendations developed by the Little Hoover Commission and the California Department of Finance (DOF). (Section II– Introduction provides a complete project background and also summarizes these related analyses).

This analysis of a future business model includes a detailed listing of future design principles documented within the sections of this report, including principles for the organization structure, business processes, and technology architecture. In addition, a broader set of

themes has been identified. These are organized around the following four groups – people, process, data, and technology:

- **Organization – Supporting the New Governance Structure and Action Plan:** The new CBDA mission will support a reconstituted policy group, and will be housed within the Resources Agency. The CBDA will focus on supporting Executive Leadership Counsel (ELC) and executive decision-making by focusing on Bay-Delta program-wide strategic planning, program tracking, communications, adaptive management and science. Accordingly, and in support of the recommendations of the Little Hoover Commission and recent 10-year Action Plan, the new organization structure will organize its staff around divisions that directly support this mission (For example, the current ERP and Water Management Divisions will be replaced by ‘Strategic Planning’ and ‘Program Tracking’ Divisions.) This will help to clarify the lines of responsibility and authority.
- **People – Strengthen Strategic Planning and Program-Wide Performance Tracking:** Within the new organization structure, CBDA staff will have a prominent focus in communication, planning, performance measurement and tracking, data management, reporting and continuous business process improvement. Training, policies/procedures, management methods and tools, and information technology will be key to success.
- **Process – Leverage Information Technology for Process Efficiency and Effectiveness:** Future business processes will leverage modern computing technology in securing and promoting the flow of decisions and information and helping to improve efficiency, effectiveness and accuracy. Processes will better focus on data management and reporting of decision-

useful information especially project and program performance and financial reporting. Reducing current paper-based, administrative burdens will increase the timeliness and value of information reported.

- **Technology and Data – Build CALFED Corporate Database:** In the current environment, computer technology supports basic tasks (word processing, spreadsheets, e-mail, distribution lists, etc.). There are a few business applications and databases in place, however they are managed by local program managers and are not leveraged by the CBDA and implementing agencies. CBDA serves – now and in the future – as a central clearinghouse of CALFED business information. In the future business model, computer technology is used to support strategic business functions including central data management, financial tracking, and performance tracking and reporting. The decision-value of information will be increased via timely web-enabled data sharing and reporting. Current, accurate, and accessible information, available through central data management, will strengthen CBDA’s value-add to implementing agencies, regional stakeholders, the legislature and congress, and the general public. It will also help improve process efficiency and effectiveness.

CALFED has had many successes; however additional changes are needed to further improve the CBDA and the CALFED Program to meet the challenges of one of California’s most important natural resources, the Bay-Delta.

The conceptual future business model should be implemented in manageable stages, focusing first on areas of high priority based on management’s assessment of business needs and risks.

An implementation approach is outlined in Figure I.1 on the following page.

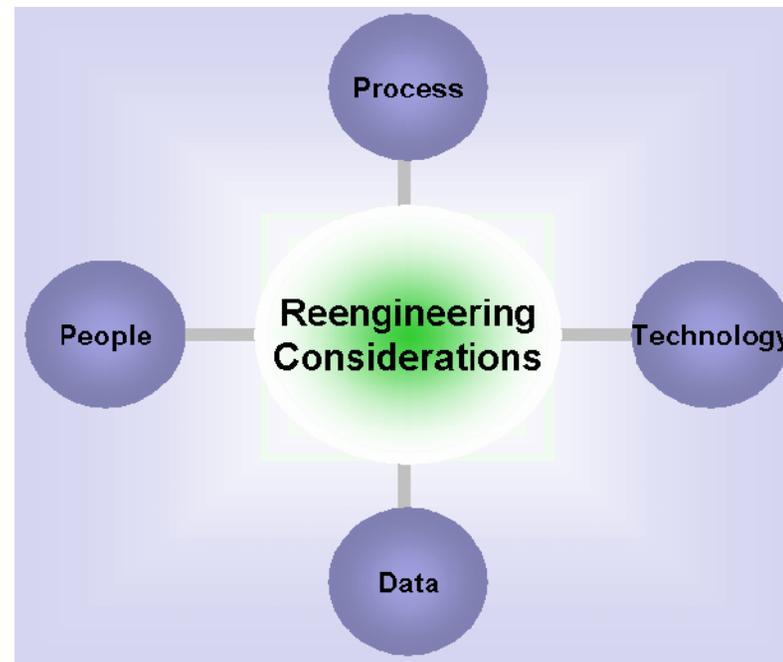


Figure I.1 – CBDA Implementation Approach

I. Implementation Management and Control

1. Initiate Implementation Planning Team and Approach
2. Define and Implement Reporting/Communications
3. Define and Implement Management Controls

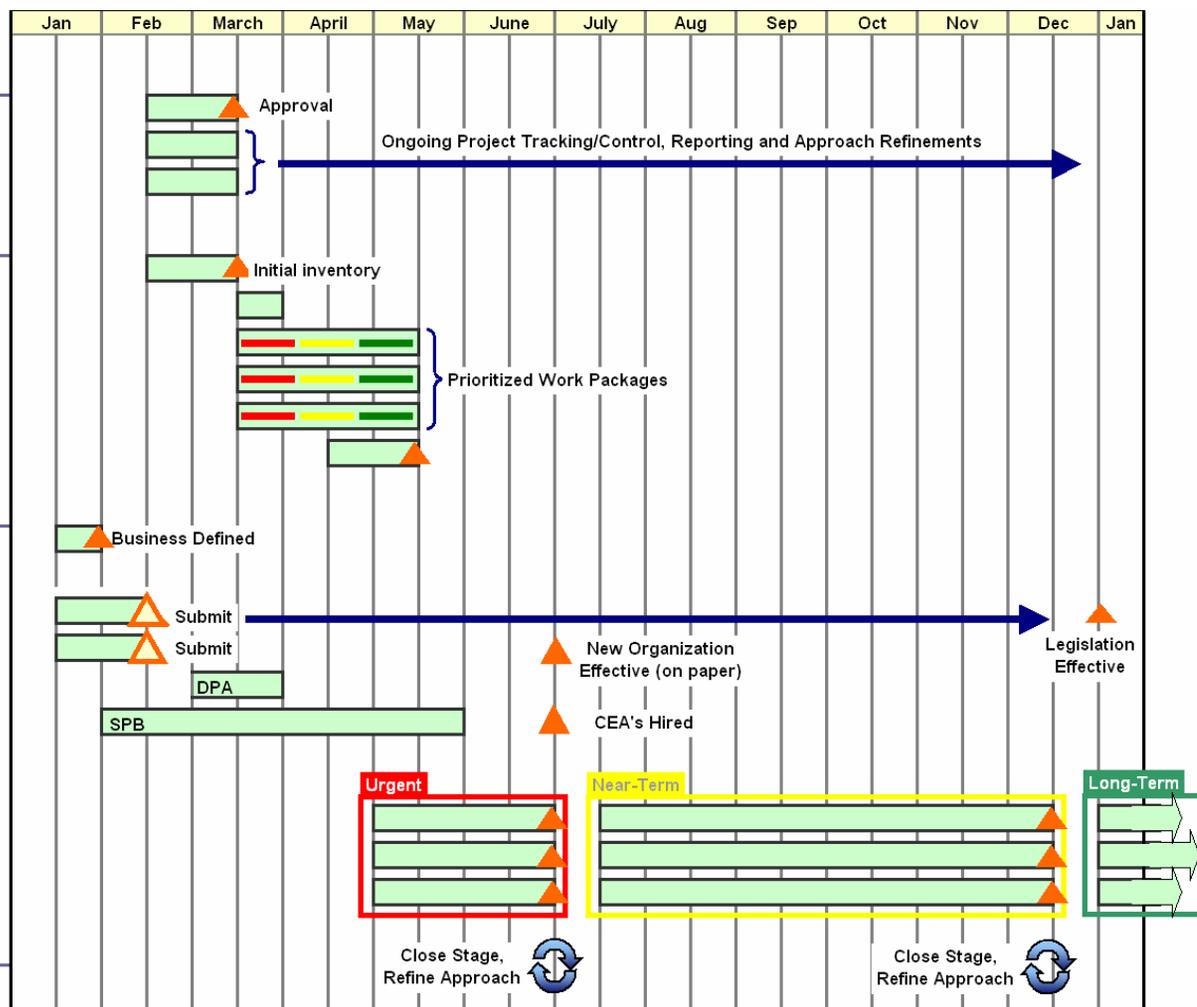
II. Develop Implementation Plan

1. Develop Initial Work Packages Inventory
2. Develop 'Pilot' Work Package to Confirm Approach
3. Develop Implementation Work Pkgs - CBDA Operations
4. Develop Implementation Work Pkgs - Agency Transition
5. Develop Information Technology Roadmap
5. Finalize Implementation Plan

III. Execute Implementation Plan

1. Define Mission and Scope of Operations
2. Obtain Necessary Approvals:
 - a. Submit draft legislation for approval
 - b. Submit BCP for approval
 - c. Submit Reorganization Proposal
 - d. Submit CEA Proposal for approval
3. Track 1: Execute Implementation Work Pkgs - CBDA Operations
4. Track 2: Execute Implementation Work Pkgs - Agency Transition
5. Track 3: Execute Information Technology Roadmap

IV. Close Implementation Stage



I. Implementation Management and Control – Implementing the new model will require carefully managing myriad factors, including expectations and change management, schedule management, implementation outcomes and risks to name a few. These factors apply to any ‘project’ endeavor that involves deliverables, timeline and resources. Accordingly, the CBDA implementation should be managed as a formal project and include certain management methods and controls, including the following:

1. *Initiate Transition Planning Team and Approach* – The implementation team charter will be defined and approved. This includes defining and documenting implementation scope, objectives, constraints, team organization and responsibilities. CBDA executive management will review and approve, formally initiating implementation activities.
2. *Set Reporting and Communications* – Expectations will be managed on an ongoing basis through formal internal CBDA and Resources status reporting as well as collaborative working sessions with implementing agencies and reporting/communications with the policy group (Executive Leadership Council – ELC), and others as deemed appropriate.
3. *Define and Implement Management Controls* – The personnel responsible for managing the implementation will continuously monitor project schedule, deliverables, staff utilization, and other factors. Refinements to the implementation plan (outlined below) will be applied as

needed based upon new information. Updates will be presented to CBDA management for approval.

II. Develop Implementation Plan – The new model will be implemented in primarily three major tracks – CBDA operations, transitioning of work to implementing agencies, and information technology. Planning efforts should include decomposing these tracks to manageable units of work (‘work packages’). Generally, this includes the following:

1. *Develop Initial Work Packages Inventory* – The mission, key products and customers will be defined for CBDA overall and for each Division within the organization. Work teams will be assigned to develop an initial inventory of core functions and products within each business Division. These should be collectively evaluated and ranked according to implementation ‘urgency’, based on business needs or areas of risk. The prioritized inventory will then be organized by implementation ‘track’, as defined below.
2. *Develop ‘Pilot’ Work Package to Confirm Approach* – A ‘work package’ is structured documentation that defines a manageable subset of the overall CBDA implementation plan. It can directly relate to a single, identifiable work function or product (e.g., Strategic Plan) or other logical grouping. The objective in this step is to quickly develop an initial work package document that will confirm the overall approach and identify issues.
3. *Track 1: Develop Implementation Work Packages - CBDA Operations* – Based on the initial inventory

performed above, a sub-team will be initiated to formally document work packages for the functions/products that are to be retained within CBDA.

4. *Track 2: Develop Implementation Work Packages - Agency Transition* –A sub-team will be initiated to formally document work packages for the functions/products that are to be transitioned to implementing agencies or retired.
5. *Track 3: Develop Information Technology Roadmap* – A sub-team will be initiated to develop an initial scope and overall implementation plan (‘roadmap’) to guide efforts. This includes prioritizing specific technology enabled solutions as identified in the body of this report. These include a common CALFED corporate database, as well as functional capabilities in fiscal tracking, project management, performance tracking, communications, and science, for example.
6. *Finalize Implementation Plan* – The priority ranking drafted earlier, will be further refined and documented across three implementation stages:
 - a. *Stage 1 Implementation – Urgent*: These are the implementation packages that should be in place by **June 30, 2006**.
 - b. *Stage 2 Implementation – Near Term*: These are the implementation packages that should be in place by **December 30, 2006**.

- c. *Stage 3 Implementation – Long Term*: These are the implementation packages that should be in place at a date to be determined, after **December 30, 2006**.

Individual implementation work packages, by track, will be consolidated into a formal Implementation Management Plan including deliverables, schedule, resources, and risks.

III. Execute Implementation Plan – Once the Implementation Plan is formally developed and approved, the activities are formally executed in conformance to the plan and under the guidance and control of the ongoing management activities defined in Phase I above. Provided below is an outline of a possible approach to implementation:

1. *Define Mission and Scope of Operations* – The mission, key products and customers will be defined for CBDA overall and for each Division within the organization. As shown in Figure I.1, this activity occurs in parallel with development of the implementation plan above and is important in guiding the development of implementation work packages.
2. *Obtain Necessary Approvals* – Certain approvals are necessary from state control agencies. These include the following:
 - a. *Submit draft legislation for approval*: CBDA management has drafted legislation that, if approved, will provide certain efficiencies to

- internal contract procedures in unique cases. These should be submitted in February, for approval in January 2007.
- b. *Submit BCP for approval* – The formal Budget Change Proposal (BCP) should be submitted in February to allow for staffing and organizational changes to be effective by the 2006/2007 fiscal year, commencing July 1, 2006.
- c. *Submit Reorganization Proposal* – Though an approval is not needed, the proposal documenting the reorganization should be submitted to the Department of Personnel Administration (DPA) by March 2006 to ensure DPA is informed of the new organization structure.
- d. *Submit CEA Proposal for approval* – The new CEA positions require approval by the State Personnel Board. This should be submitted immediately to allow adequate time for reviews, refinements as may be needed resulting in approval by July 1, 2006.
3. *Track 1 - Execute Implementation Work Package for CBDA Operations* – This track entails implementation activities specifically focused on bringing the new CBDA business operation on-line. Suggested staging of work is as follows:
- a. *Stage 1 – Urgent (by July 1, 2006)*
- ✓ Development of policies/procedures for day-to-day operations

- ✓ Development of duty statements
- ✓ Development of product / service delivery schedule
- ✓ Development of customer satisfaction approach and metrics
- ✓ Finalize internal process performance measures

3.2 *Stage 2 - Near Term (by December 30, 2006)*

- ✓ Development of CBDA Strategic Plan
- ✓ Development of Performance Measures Conceptual Framework and Adaptive Management
- ✓ Development of Fiscal Tracking Conceptual Framework
- ✓ Develop Communications Plan
- ✓ Develop integrated reporting process
- ✓ Develop Science Agenda

3.3 *Stage 3 - Long term (after December 30, 2006 TBD)*

- ✓ CBDA data integration
- ✓ CBDA functional integration
- ✓ Implement Communications Plan
- ✓ Implement integrated project management and reporting processes
- ✓ Implement Science Agenda and Performance Framework

4. *Track 2 - Execute Implementation Work Package - Agency Transition* – This track entails implementation activities specifically focused on transition of specific units of work to the implementing agencies. The staging of work – urgent, near-term, and long-term – will be defined during development of the Implementation Plan. Suggestions are as follows:

a. *Stage 1 – Urgent (by July 1, 2006)*

- ✓ ERP Program Management
- ✓ ERP Contracts and Grants
- ✓ Water Management

b. *Stage 2 - Near Term (by December 30, 2006)*

c. *Stage 3 - Long term (after December 30, 2006)*

5. *Execute Information Technology Roadmap* – As defined fully in the body of this report, information technology (I/T) plays a vital enabling role in the conceptual future business model. CBDA’s role as ‘steward’ of CALFED information is supported by the integration of data and functions through leveraging I/T to support strategic business needs. Considerations below are organized around urgent, near term and longer-term stages. For example, the complete integration of data and business functions supporting performance and fiscal tracking is anticipated within the long-term horizon. However, a structured ‘strategic’ analysis defined and documented is in the near term (including data, applications, and support strategies). The strategy documents should also identify specific near-term ‘quick strike’ solution opportunities, to

achieve rapid improvement in the quality and timeliness of data sharing, in key areas. This will also help to build enthusiasm for the longer-term I/T solutions. The quick strike solutions should be targeted to one or a few specific business process areas, selected based on a risk/return analysis, documented within the strategy documents. For example, areas to consider for quick strike automation may include the internal contracts process, or the exchange of fiscal tracking information with implementing agencies:

d. *Stage 1 – Urgent (by July 1, 2006)*

- ✓ Plan and staff the IT Organization
- ✓ Initiate development of an I/T Strategic Plan
- ✓ Perform data needs assessment for performance/fiscal tracking
- ✓ Assess infrastructure and support

e. *5.2 Stage 2 - Near Term (by December 30, 2006)*

- ✓ Finalize I/T Strategic Plan
- ✓ Develop Data Management Strategy
- ✓ Develop Applications Strategy
- ✓ Develop Infrastructure and Support Strategy
- ✓ Develop performance/fiscal tracking feasibility/alternatives assessment and initiate procurement activities for long term solution
- ✓ Implement quick strike data sharing solution. Alternatives and cost/feasibility should be

evaluated of industry tools that provide a graphical, controlled, web-based interface for data capture and sharing. For example, initial license costs and configuration of Adobe Forms©, may range between \$400K and \$600K for a medium sized system that would enable the online submittal and tracking of performance and cost information from the CALFED implementing agencies. Other costs should be defined in a project cost estimate and may include hardware, software, internal direct staff costs, external consulting costs, and indirect staff costs (e.g., the staff time of implementing agency and management staff). It is important that the quick strike solution provides an incremental first step in support of – and does not conflict with – the long-term solutions listed below. These types of considerations will be fully examined in the strategic and alternative analyses as defined above.

f. *5.3 Stage 3 - Long term ((after December 30, 2006)). Note: The scope and costs of the longer-term I/T solutions should be defined within a formal, structured cost/benefit or feasibility alternatives analysis:*

- ✓ Implement performance/fiscal tracking solution
- ✓ Data integration – CALFED Corporate Database
- ✓ Functional integration

- ✓ I/T Solutions supporting Science
- ✓ Geospatial application systems
- ✓ Implement infrastructure and support strategy

III. Close Implementation, by Stage – Closing activities include various actions such as validating that the objectives were met, formal documentation, discussion of lessons-learned, and formal communication. Elements of these activities should be performed for each stage (urgent, near-term, long-term) and implementation work package as defined above. Lessons-learned are particularly key in determining whether or not modifications are needed to the management plan for other tracks or implementation work packages not yet complete.

II. Introduction

The California Bay-Delta Act of 2003 (Act) assigned the California Bay-Delta Authority (CBDA) the responsibility for overseeing the implementation of the CALFED Bay-Delta Program (CALFED) for the 25 state and federal agencies working cooperatively to improve the quality and reliability of California's water supplies while restoring the Bay-Delta ecosystem. The Act established the CBDA as the new governance structure and charged it with providing accountability, ensuring balanced implementation, tracking and assessing Program progress, using sound science, assuring public involvement and outreach, and coordinating and integrating related government programs.

The goal of the CBDA is to use leading business and government practices to coordinate and direct the implementation of the CALFED Program.

The Governor's May Budget Revision for the fiscal year 2005-2006 called for an independent program review of the CALFED Program and charged the Secretary for Resources, Mike Chrisman, with the responsibility for leading the project. The Little Hoover Commission, the Department of Finance, and the independent consulting firm KPMG performed separate and complementary aspects of the Independent Review. These reviews have resulted in the following observations:

- **The Little Hoover Commission** identified several major governance issues and challenges confronting the CALFED Program. These included concerns related to the CALFED Program's vision and mission, leadership and accountability, performance management, and public involvement. The Little Hoover Commission recommends that the State's

policy-makers establish a statewide water policy in which the CALFED Program is allowed to focus on the Delta's most critical problems. The Commission also stated that the CBDA as a coordinating entity should be eliminated and replaced by a leadership structure that has the authority to accomplish CALFED's mission. In the area of performance management, the Commission found that the CALFED Program needs to implement a strategic, performance-based culture that fosters the development of new knowledge and uses science effectively, in decision-making. Finally, the Commission felt that the CALFED Program must provide more meaningful opportunities for the public to participate in its processes and increase transparency and accountability.

- **The Department of Finance's** fiscal and program review summarized the use of funds expended by the CALFED Program since its inception. The DOF identified several opportunities for improvement in the CALFED Program's fiscal management and accountability. First, the DOF indicated that the CALFED Program needs to develop a formalized process for identifying its expenditures and set up consistent cost allocation plans. Second, the DOF stated that the CALFED Program should establish better internal communication, coordination, and financial reconciliation procedures and formal procedures for reporting and tracking local expenditures. Lastly, the DOF identified the need to improve the collection and verification of the data the CALFED Program provides in its annual report.
- **KPMG's** review provided the opportunity for significant stakeholder input regarding the CALFED Program and CBDA. It also provided insight into changes needed in the present organization structure and business processes to

support the new governance structure and mission. The review entailed the following three parts:

- ✓ *Stakeholder Assessment*: KPMG’s stakeholder outreach efforts established that stakeholders were concerned with the lack of a strategic vision for the Delta, the CALFED Program/CBDA’s governance structure and authority, and the CALFED Program’s current priorities. It also revealed the need for a concerted communication effort by the CALFED Program and the desire for a strong, independent science program.
- ✓ *Current (‘As Is’) Assessment of Organization and Business Processes*: KPMG’s internal review into the CALFED Program, CBDA organization and business processes indicated the need for a new organizational design and business processes consistent with the Little Hoover Commission’s and the Department of Finance’s (DOF’s) recommendations. One that emphasizes improved project management; better use of information technology; and enhanced data collection, reporting and communication efforts within the CALFED Program and the CBDA.
- ✓ *Conceptual Future Business Model*: The report presented herein provides a conceptual overview of a suggested future organizational structure and supporting business processes. As already outlined in Section I, the future model includes (a) a significantly revised organization structure that supports the Little Hoover Commission’s recommendations for governance while also better delineating the mission and responsibilities of CBDA versus those of the implementing agencies; and (b) reengineering business processes that leverage modern information technology in strengthening

processes efficiency while also better supporting information management and decision making.

KPMG has approached this third and final phase of the project as follows:

- First, KPMG conducted a meeting with CBDA project executive management to review and classify the initial considerations identified within the Current “As Is” Assessment deliverable. The considerations were reviewed to determine the relevance to the future business environment and linkage to the recommendations and findings of the recent Department of Finance (DOF) and Little Hoover Commission (LHC) reports.
- KPMG then participated in successive discussions regarding alternative organizational structures. This joint analysis centered upon the objectives and governance structure proposed by the LHC and the business direction documented in the CALFED10-Year Action Plan.
- KPMG then developed conceptual future business process models and organization models compliant with State regulations and based on an understanding of industry leading practices.
- KPMG also developed and documented a conceptual information architecture and governance structure, including conceptual schematic diagrams and supporting narrative describing technology components.
- The report was submitted in draft and client comments were incorporated where appropriate.

This deliverable was developed under the assumptions and constraints identified in the Deliverable Expectations Document (DED) submitted on January 17, 2006.

III. Organizational Structure

The future CBDA organization structure is designed to support the revised governance model as defined by the Little Hoover Commission and adopted within CBDA's 10-Year Action Plan. Specifically, key governance changes include the following:

- Secretary for Resources will be the State lead
- The Policy Group will be re-established, as the Executive Leadership Council (ELC)
- Authority board will be abolished and BDPAC restructured
- Implementing agencies will be responsible for CALFED implementation, with the exception of the Science program which will remain the responsibility of CBDA
- The Water Commission will provide independent oversight and also review the state water plan
- CBDA staff will be assigned to the Resources Agency to support the Secretary and the ELC. The ERP and Water Management divisions and the Policy/Finance unit will be eliminated. Two new divisions will be created to support a new mission – Strategic Planning, and Program Performance and Tracking Divisions.

As a result of these governance changes, the following benefits are expected:

- Clearer roles and responsibilities
- Better understanding of customer needs and expectations
- Realistic expectations – do fewer things, and do them better

- Reduced conflict with implementing agencies
- Increased success as an organization
- Increased CALFED success

A central tenet of the new governance and organization structure is to better define the mission and scope of responsibility of CBDA versus those of the implementing agencies. As noted above, the new organization adopts the principle of “Doing fewer things, and doing them better” to better support the decision-making process. Specifically, the more refined focus of the CBDA will be in Bay-Delta strategic planning, program tracking, science, and communication. Adaptive management will be applied to continuously calibrate business process and decision-making based on new and changing information. The demarcation of roles between CBDA, implementing agencies and state leads can be broadly described as follows:

- ***Strategy direction will be the responsibility of state leadership.*** A comprehensive, statewide water strategy is an essential prerequisite to restoring the Bay-Delta and guiding CALFED. As recommended by the Little Hoover Commission, the state water strategy should be formally endorsed by the legislature and accompanied by budget, bond, and other legislative tools to advance the strategy. Specific goals set and articulated by the Governor, identifying the critical areas of focus and also areas of disagreement needing attention. This strategic direction will then guide the operational and tactical implementation activities of the CBDA and implementing agencies.
- ***Tactical implementation will be the responsibility of the CBDA.*** The CBDA will be responsible for managing at the program level. It is a layer above project management. The

focus is *tactical*, and is concerned with tracking and integrating the elements and output of individual projects in order to achieve predefined strategic CALFED goals and performance targets which are set by science.

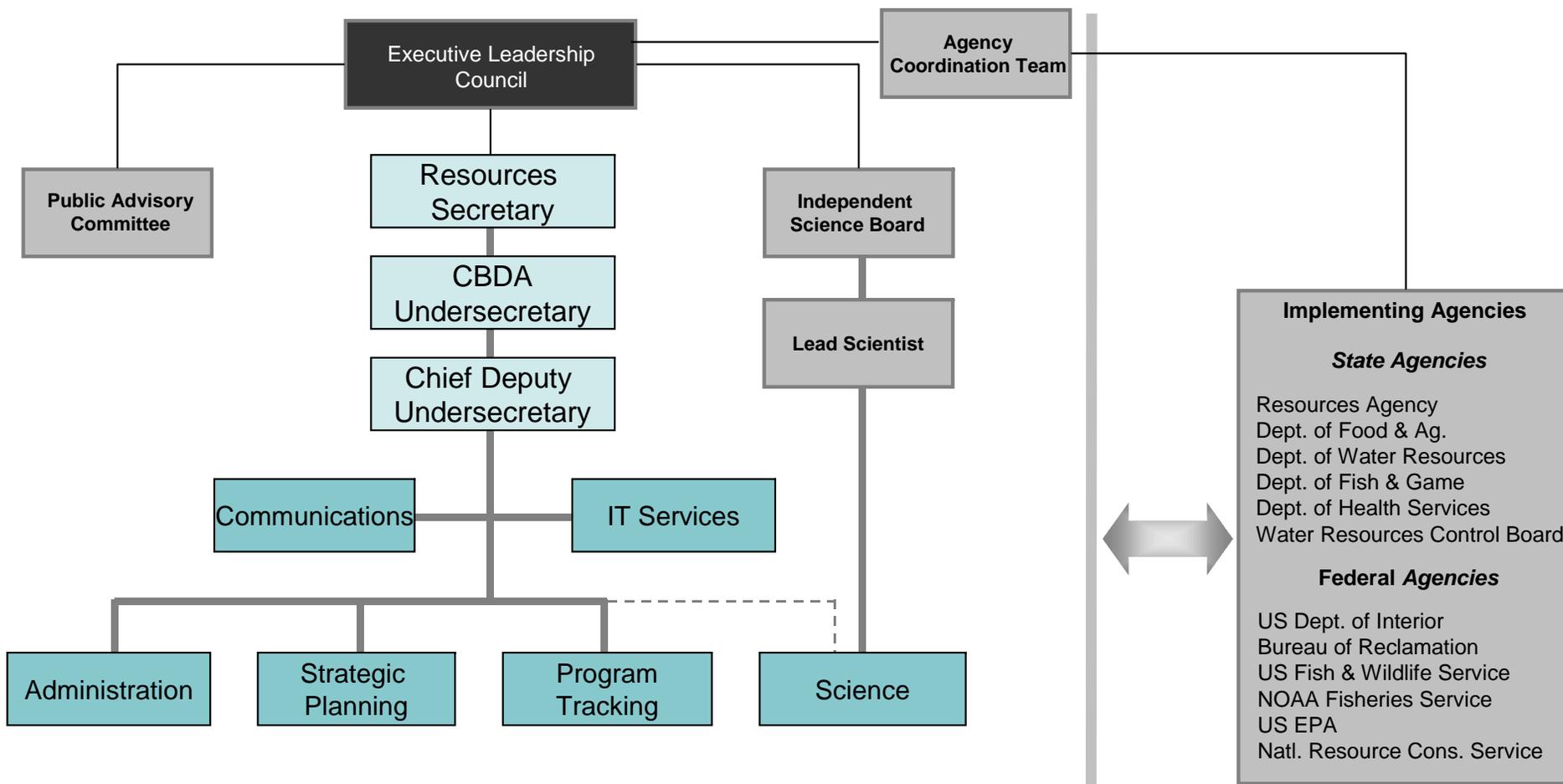
- **Operational implementation will be the responsibility of implementing agencies.** This involves managing individual projects within a program. The focus is *operational*, and is concerned with ensuring that the output of the individual project is delivered on time, on budget and in compliance with contract delivery and quality standards.



Figure III.1 below presents a future CBDA organization structure that is designed to support the new governance decisions and yield the key benefits noted above. The responsibilities of each new operating Division are outlined below.

- **Administration Division:** The mission of this division is to support the administrative needs of the undersecretary and CBDA staff. This includes maintaining core competencies in human resources, accounting and budgeting, contracts development and grants preparation. Tracking of performance and deliverables related to executed contracts and grants will be the responsibility of the business divisions.
- **Information Technology Services Division:** Information technology (IT) planning and support will be the responsibility of a separate IT division that reports directly to the Chief Deputy Undersecretary.
- **Communications Division:** The CALFED program is founded on the principal of bringing greater transparency, public involvement, and accountability to implementation decisions and activities. In applying this principal, the CBDA will very much rely on public outreach as well as formal (annual) reporting activities. Communications is a vital component of information management. The future mission of this division is to coordinate communications efforts to all constituents, including the Legislature, ELC, Secretary, Water Commission, regional and environmental groups, the implementing agencies and the public. Communications strategy will be based on a formal Communications Plan.

Figure III.1 – Future Organization Structure



Considerations for developing the Communications Plan include the following:

- ✓ *Associate Customers to Programs, Regions, and Processes:* Analysis should be performed to clearly define the customers, their need for information (what information is needed, why, when, and in what form) and how that need is best fulfilled.
- ✓ *Clearly Identify the Users of Financial Information:* The management and reporting of funding status by program, should be strengthened through clear fiscal reporting policies and procedures and web-based automation. This should include ongoing, clear, unambiguous reporting of funds that remain available compared to the anticipated funding needs of the program. Consideration should be given to periodic updates of the Finance Plan.
- ✓ *Continuously Review Communication Plan:* The communication plan should be a ‘living’ document; continually reviewed and revised. The plan should have a feedback loop including customer surveys, feedback from workshop or regional meeting participants, web statistics, etc.
- ✓ *Specify Implementation Resources:* The communication plan should leverage the personnel resources of each core business partnership, including DWR, DFG, and implementing agencies, etc. Success very much depends on delivering a shared message, embraced by these collaborative partnerships.

- ***Strategic Planning Division:*** The mission of the future ‘Strategic Planning’ division is to support the ELC by developing and maintaining the CALFED five-year Strategic Plan and monitoring progress against that plan. This includes ensuring conformity of the Strategic Plan with the statewide water strategy, coordinating CALFED activities related to Delta Vision, HCP’s, and Programmatic Environmental Compliance, and also evaluating performance against the Strategic Plan. The evaluation of performance will be at the strategic – system-wide – level and will be focused on the defined outcome-based performance measures identified by program and linked to the Strategic Plan. Performance tracking will entail the following:
 - ✓ Evaluating system-wide performance measures and linkage to CALFED goals;
 - ✓ Reviewing program implementation plans,
 - ✓ Facilitating development of a program-wide coordinated budget for the Resources Secretary; and
 - ✓ Identifying potential areas of conflict and managing strategic issues/risks that materially impact progress.
- ***Program Tracking Division:*** The mission of the future ‘Program Tracking’ division is to support the ELC by tracking program progress and fiscal performance across CALFED core objectives. The evaluation of program progress and performance will be at the program level and will be focused on the defined administrative performance measures such as schedule, cost and resources. The application of industry management practices will be valuable in infusing structure and rigor to the supporting

business processes and helping to ensure efficient and effective flow of information. Key benefits of these practices are outlined in Figure III.2 below. Responsibilities of the this division also include the following:

- ✓ Provide public access to program performance information;
 - ✓ Develop and maintain system-wide performance databases; and
 - ✓ Monitor the quality of information collected and report information to the Executive Leadership Council (ELC), legislature, and the general public.
- **Science Division:** The purpose of the CALFED Science Program is to provide a comprehensive framework for providing new information and scientific interpretations necessary to implement, monitor, and evaluate the success of the CALFED Program. An overriding principle of the Science Program is adaptive management. New information and scientific interpretations will be used to confirm or modify all aspects of the CALFED Bay-Delta Program Implementation Plan. The role of the Independent Science Board, the Lead Scientist, and Adaptive Management is outlined in Figure III.3.

The CBDA science program will be responsible for incorporating credible science, coordinating and integrating the activities of the implementing agencies science teams and ensuring that the overall focus and direction of the CBDA Program and individual implementing agency projects remains consistent with the goals of the Bay-Delta restoration program. Specifically, the CBDA Science program will:

- ✓ Support the priorities as set by the Independent Science Board (ISB), and formally documented in the Science Agenda
- ✓ Provide and report on independent reviews (peer review, workshops, advisor panels, etc.) to support the implementing agencies
- ✓ Develop system-wide conceptual models and performance measures and provide an initial framework and ongoing assistance, to implementing agencies, in performance measurement
- ✓ Award annual research grants
- ✓ Coordinate the application of available scientific resources and personnel among the Implementing Agency teams to best focus on priority tasks
- ✓ Refine the overall vision of the CDBA Strategic Plan based on scientific review and adaptive management principles
- ✓ Develop and administer the CBDA Bay-Delta geospatial database
- ✓ Support the Strategic Planning and Program Tracking Divisions in the synthesis and analysis of system-wide performance information to assess actual project and system responses as components of the overall CBDA strategic plan

Figure III.2 – Benefits of Applying Industry Management Practices

The CBDA staff is essential to orchestrating the CALFED effort. Within the future governance structure, staff responsibilities will include formal program-level tracking utilizing practices from the ‘project management’ industry. Benefits include:

- **Centralized and systematic coordination of CALFED efforts:** The CBDA will be responsible for clearly defining roles, responsibilities, program scope, and program tracking. Accordingly, the CBDA will also serve as the center-of-excellence for program/project management, program/project governance and reporting standards and advice.
- **Consistency in implementation efforts:** Process consistency provides improved predictability of performance on all programs and aids in the adoption of a common language for program and project-level reporting as well as issue and risk management.
- **Organized and structured management performance review:** The independent Science program will finalize performance measures. The CBDA will be responsible for implementing procedures for reporting against these measures. Consistent reporting creates a strong basis for understanding the ‘true’ status of projects and programs and for rapid elevation of issues and barriers.
- **Centralized tracking of risks:** The central CBDA will help to ensure that risks are ‘owned’. More specifically, the CBDA in conjunction with the Science program holds the responsibility of anticipating areas of risks, identifying those risks, classifying them in terms of potential program impact, facilitating development and implementation of risk mitigation strategies. Also critical is communicating risks and mitigation strategies in accordance with a formalized communication plan.
- **Implementation of Computerized Management/Reporting Tools:** Robust project management tools are available for monitoring and controlling progress of programs within a multi-project environment. At CALFED these tools will be especially important in identifying and tracking the ‘critical path’ linkage within the programs and across multiple projects. These tools include *dashboard reporting* and summary status indicators for management's assessment of status, issues, risks, and barriers.
- **Strengthened learning environment under common leadership:** Program managers will work together in understanding issues and risks that span programs and CALFED regions. The common CALFED data repository will be key in managing the knowledge base of performance measures, issues, risks and building models to anticipate impacts across programs or regions.

Information Technology Services Division: The mission of this division is to ensure that information technology is effectively applied in support of the organization's mission and goals. Responsibilities include the following:

- ✓ Develop and implement formal IT Strategic Plan
- ✓ Develop integrated Data Management Strategy, including data security and retention
- ✓ Build and support web-enabled CALFED corporate database
- ✓ Develop and implement integrated applications strategy
- ✓ Assess and support network tools and security:
- ✓ Finalize and implement IT policies and procedures
- ✓ Finalize, implement and test Operational Recovery Plan (ORP)
- ✓ Assess and acquire skilled IT resources and processing capability where needed.

Figure III.3 – Role of the ISB, Lead Scientist, and Adaptive Management

The Independent Science Board

The goal of CALFED's Independent Science Board (ISB) is to verify effective science use and infuse new knowledge into the program by leveraging the knowledge and experience of independent scientists. The ISB will advise and make recommendations on science in all CALFED program elements and provide scientific advice and guidance to the CBDA management team.

This ISB will advise the CALFED Executive Leadership Council (ELC) and implementing agencies on emerging issues, review research and monitor CALFED regional plans and associated performance measures. In addition it will perform oversight and provide peer reviews to meet specific CALFED program needs. Fortifying the management of CALFED creates a new opportunity to embed adaptive management into decision-making and to bolster the capacity of science to inform those decisions.

The Lead Scientist

As a member of the CALFED ELC, the lead scientist will help provide leadership, coordination, and influence to implementing agency managers and their use of science to develop and modify management strategies.

The lead scientist will continually examine CALFED's procedures and policies and recommend ways to use science to improve performance. The lead scientist should not dictate management practices, but should translate scientific knowledge into practical management strategies through the leveraging of adaptive management practices.

Adaptive Management

CALFED Program managers are committed to employing adaptive management practices. Adaptive management refers to management interventions that are crafted to accomplish clear goals based on conceptual models or hypotheses. Based on performance data and results, the management intervention is adapted based on what was learned. In a general sense, adaptive management infuses continuous learning into management decisions. The implementation of adaptive management requires a strong change management discipline.

Adaptive management requires program and project managers to explicitly use data to make changes within their implementing agencies authority and coordinate their efforts with partner agencies. The data will also be beneficial in addressing policy, budget, or other issues that need to be resolved by the CALFED Policy Group, the Secretary for Resources, Governor's office, and the Legislature. The data also can be used to help diagnose problems and guide researchers who are trying to provide a scientific basis for decision-making.

IV. Business Processes

This purpose of this section of the report is to present future conceptual process models for the following selected processes:

- **Strategic Planning** – This process of developing and maintaining the CALFED strategic plan includes linkage with the statewide water strategy and the monitoring and reporting of outcome-based performance measures, in accordance with targets set in the plan.
- **Program Tracking** – This includes the processes of gathering program performance and fiscal information.
- **Contracts Development** – A conceptual future business process model is presented that is designed to leverage information technology in addressing current problems.
- **Grants** – This discussion is focused on future Science program grants

For each process, the discussion includes an overview of the current business problem, the future design principles developed to address the business problem, and a process flow diagram of the future conceptual process model.

IV.1 – Strategic Planning

IV.1.1 Process Objective and Background

The objectives of the future ‘Strategic Planning’ process is to accomplish the following:

- Develop and maintain the CALFED five-year Strategic Plan, and ensure conformity with the statewide water strategy;
- Support key strategic decisions that are made by the ELC;
- Track system-wide progress against the Strategic Plan, including:
 - ✓ Evaluating system-wide performance measures and linkage to CALFED goals;
 - ✓ Reviewing program implementation plans,
 - ✓ Facilitating development of a program-wide coordinated budget for the Resources Secretary; and
 - ✓ Identifying potential areas of conflict and managing strategic issues/risks that materially impact progress.
- Coordinate CALFED activities related to Delta Vision, Habitat Conservation Plans HCP), and Programmatic Environmental Compliance.

This function is not formally supported in the current environment. Program managers and regional coordinators currently examine the integration among programs and also provide input to program planning and annual reporting by documenting key annual accomplishments. However, processes and procedures are currently not in place to formally define the linkage of CALFED actions with

statewide water strategy and evaluate performance at this strategic level.

KPMG has defined a set of conceptual design principles that define the future Strategic Planning process. These are outlined below and form the basis for the conceptual future process model that follows.

IV.1.2 Solution Design Principles

The future Strategic Planning process will encompass the following (Additional considerations are presented in Figure IV.1.1):

1. **People** – The staff responsible for the Strategic Plan will be the CBDA experts of the statewide water strategy and the linkage with the overarching goals of CALFED, as defined in the ROD. These staff will also be knowledgeable in the strategic directions and issues/risks of each of the program elements and the integration between the programs. The supporting design principles include the following:
 - 1.1. *Develop staff expertise in statewide water strategy* – This includes a thorough knowledge of Bulletin 160, related business needs and concerns of the ELC, and the implementation aims and expectations of the public advisory committee.
 - 1.2. *Implement matrix teams to develop and maintain specific products* – Ongoing work teams may include the following:
 - ✓ *Performance Measures Framework Team* – An internal team comprising representatives from Program Tracking, Strategic Planning, Science and Communications Divisions. The purpose is to review and confirm the framework that is

used by the implementing agencies in their development of performance measures.

- ✓ *Strategic Budget Coordination Team* – A working team comprised of Strategic Planning, Fiscal Tracking and agency administrative staff. The purpose is to define an integrated program-wide, strategic budget that can be used to guide development and maintenance of the more detailed Bay-Delta Finance Plan. The budget will define, over a five-year planning horizon, the future CALFED funding needs and strategies to address those needs (including ‘beneficiary pays’ opportunities). The strategic budget will be developed with the Strategic Plan.
- ✓ *Strategic Performance Monitoring and Issue Management Team* – An ongoing working team comprised of Program Tracking, Strategic Planning, Science and agency staff. Purpose is to apply adaptive management in the review and refinement of the issues/risks impacting program progress and in developing actions to address those items.
- ✓ *CALFED Strategic Implementation Plan Review* – An internal team comprised primarily of Strategic Planning, Program Tracking and Science staff. Purpose is to develop an integrated and consolidated implementation timeline that spans programs, and also to highlight the key milestones, anticipated issues/risks, and role of Science.

Figure IV.1.1 – Strategic Planning Considerations

Strategic Planning will include anticipating and documenting strategic CALFED objectives, tying those objectives to statewide water strategy, and then defining the processes, methods, outputs and resources needed to monitor those objectives. Considerations include the following:

- ***Tie the Strategic Plan to State Water Strategy with Regional View:*** The CALFED Strategic Plan will primarily focus on the Delta, as established in the recent 10-year Action Plan. The integration and impacts with other regions, however, should also be assessed and documented within the Strategic Plan and explicitly tied to the regional views of the comprehensive state water strategy.
- ***Ensure Public Involvement:*** The Strategic Planning process will work with Communication Division personnel in ensuring an adequate level of public involvement in the planning process. This includes plan reviews and discussion by the state advisory committee, as well as regional meetings and other forums as needed. The Strategic Plan will also explicitly tie to the overall CALFED Communication Plan. This is to ensure that required information is distributed, in the appropriate form, to specific customers during planning and implementation processes.
- ***Leverage Regional Subcommittees:*** The current nine BDPAC subcommittees will be reconstituted into regional subcommittees, and will also participate and provide important input into the CALFED Strategic Planning efforts.
- ***Implement Issue/Risk and Conflict Management:*** The Strategic Planning process will play an important role in identifying any variance within the statewide water strategy. Issues and risks will be identified, classified, analyzed, and proposed mitigation strategies will be elevated to the science and policy groups as necessary.
- ***Tracking Scope and Schedule ‘Critical Path’ Milestones:*** Tracking at the program level will be accomplished within the ‘Program Tacking’ process. Here the focus is in further consolidating that analysis to the strategic level, spanning all program elements. CBDA will establish procedures for tracking program-wide milestones against the strategic performance objectives identified in the Strategic Plan.
- ***Tracking Costs – CALFED Coordinated Budget:*** The CBDA will put processes in place to ensure that programs and projects are completed on time and within the approved funding budget. The analysis of the program-wide, coordinated CALFED budget, should apply the techniques of ‘earned value’ to gauge the status of each program initiative and of the overall CALFED budget.

- 1.3. *Train staff in management practices* – As with Program Tracking staff, the personnel supporting the Strategic Planning process will be skilled in applying industry standard management practices. Certification by the Project Management Institute (PMI) or similar standards organization will help to build a core competency in managing programs at this ‘strategic’ level. This includes the abilities to consolidate (at a strategic level) the milestones, performance outcomes, input/resource requirements, budget, and issues/risks that span programs.
- 1.4. *Finalize and implement policies and procedures in program management* – This includes documenting roles/responsibilities, accountability, flow of information, process instructions, work products, and quality control procedures in information management, financial management, work products/deliverables, and schedule. Particular attention should be paid in delineating the roles of CBDA staff versus implementing agency staff.
2. **Process** – A conceptual model of the future Strategic Planning business process is presented in Figure IV.1.3. Process design principles include the following:
 - 2.1. *Leverage information technology to streamline the flow of information and control quality* – The CALFED corporate database will serve as the centralized corporate repository for the Strategic Plan and support analysis including program-wide budget and implementation planning analysis.

Work steps and information flow shall be tightly controlled through the use of automated business rules executed by automated workflow technologies.
 - 2.2. *Monitor outcome-based performance measures and manage issues/risks through formal, chartered work teams* – The Program Tracking process will be responsible for monitoring program administrative performance measures and fiscal information on an ongoing basis. Strategic Planning will be concerned with evaluating the higher-level, ‘outcome’ based measures against the goals of the Strategic Plan, and facilitating the resolution of issues/risks that may impact program-wide progress. This analysis is important in updating the Strategic Plan and defining actions to address anticipated issues/risks. Clearly, this is closely associated with the monitoring that is performed within Program Tracking and the performance measures framework established by the Science program. Accordingly, a work team will be established as a forum to consolidate this strategic review, and will comprise representatives from Program Tracking and Science.
3. **Technology** – The new business process shall leverage modern computer technologies to accomplish the following:
 - 3.1. *Automate and control workflow* – The CALFED Corporate Database application will provide controlled access by all participants in the Strategic Planning process based on define user privileges. Information flow will be tightly managed. For example, an issue/risk register will be automatically

managed including trigger notifications where action is needed or overdue. System controls will enforce automated workflow based on pre-defined staff responsibilities and decision flow. The system will also provide management information that will track status of the Strategic Plan updates and automatically notify pre-defined personnel in cases of delay or issues needing resolution.

3.2. *Enforce the linkage of outcome-based program performance measures with CALFED Strategic Goals* – The quality of the process and information is greatly improved when the process can enforce it’s business rules (requirements) related to the logging and tracking of program performance and fiscal tracking information. These rules will be applied to help ensure conformity and data quality during the posting of this information and reporting within the Strategic Plan.

4. **Data** – The new environment leverages modern database technology. This provides an opportunity to better manage and control the information needed to support decisions. Specific features include the following:

4.1. *Build integrated, common CALFED Corporate Database* – Examples of Strategic Planning data sets include the following:

- ✓ *Strategic Plan* – Sample contents are presented in Figure IV.1.2.
- ✓ *Performance framework and measures* – including outcome-based measures as well as the program-wide coordinated budget and critical path milestones.

- ✓ *Implementation plan* – including linkage with Science Agenda, Communication Plan
- ✓ *Rules and controls* – related to information management, fiscal management, program and project management, schedule management and reporting
- ✓ *Issue and risk register* – categorizes, prioritizes, and includes issue/risk impact assessment, owner, and resolution or mitigation strategies and due date.

Figure IV.1.2 – Strategic Plan Sample Contents

- ***Statewide Goals***
- ***CALFED Goals***
- ***Program Goals and Performance Targets***
- ***Strategic Direction***
 - ✓ *Scope*
 - ✓ *Funding (Coordinated Budget)*
 - ✓ *Critical Path Milestones*
 - ✓ *Role of Science (Science Agenda)*
 - ✓ *Strategic Implementation Plan*
 - ✓ *Communication Plan*
 - ✓ *Risk Management Plan*

- ✓ *Other corporate data* – including the Science Agenda and science deliverables, and internal as well as external/published reports. Through secured web-enabled technology, the data and reports will be available to a wide constituency depending on user privileges.
- 4.2. *Maintain process performance measures data and continuous review* – The following process measures should be considered:
- ✓ Elapsed time in developing and updating the Strategic Plan
 - ✓ Number of active issues/risks by risk level (high impact on program performance, medium, low)
 - ✓ Issue/Risk ‘Aging’ report, showing number of outstanding issues/risks that have elapsed by week, month.

IV.1.3 Future Conceptual Process Model

Figure IV.1.3 presents a diagram of the Conceptual Future Process Model for Strategic Planning. Process highlights include the following:

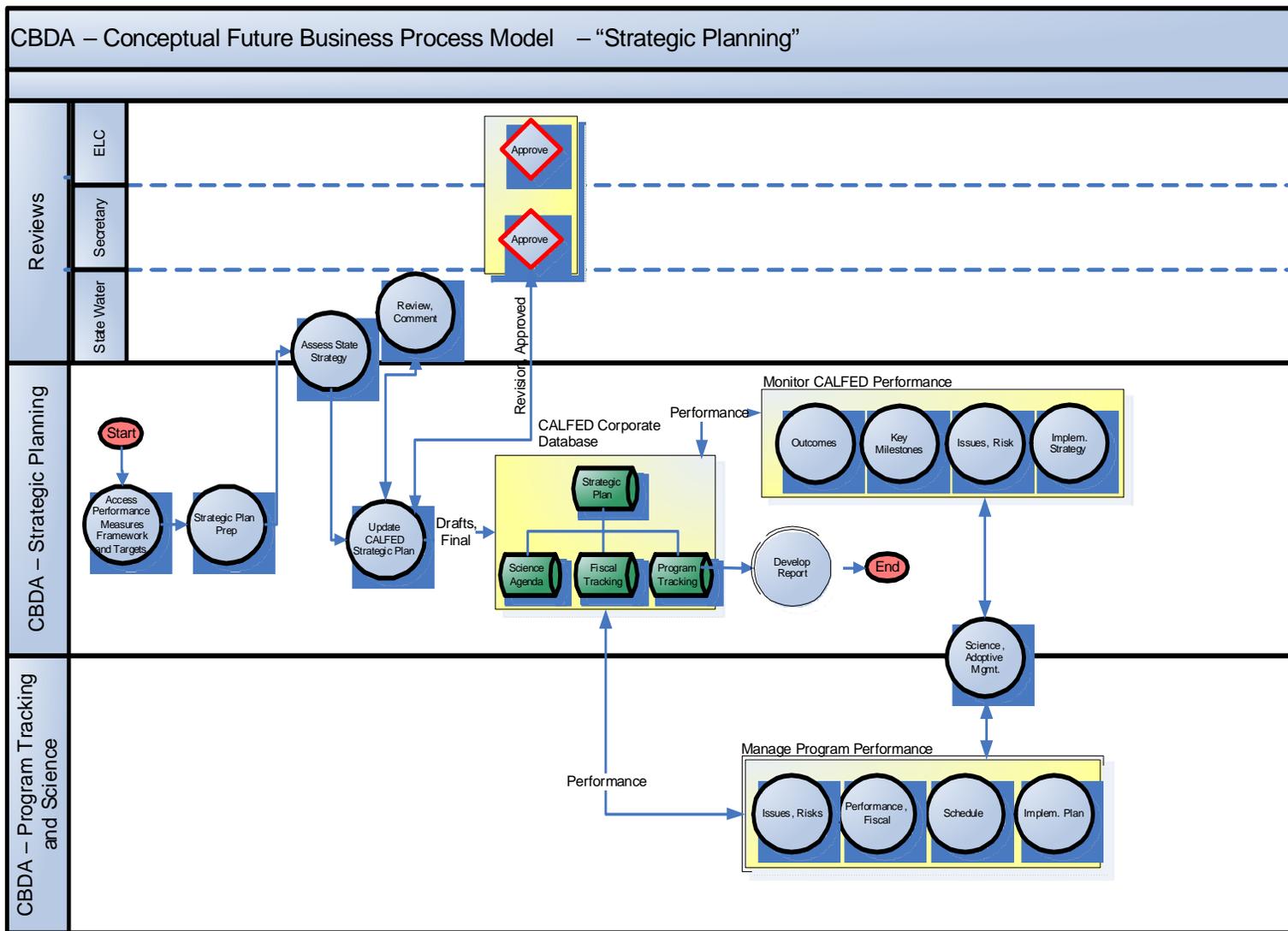
1. ***Assess Performance Measures Framework*** – A working team comprised of CBDA Program Tracking, Strategic Planning, Science and Communications Divisions personnel will be responsible for reviewing and confirming on an annual or other periodic basis the performance measures framework. The team will perform a qualitative assessment

to determine strengths of the framework as well as areas that may need improvement.

2. ***Strategic Planning Preparation*** – The annual updates to the Strategic Plan will formally start with development of an approach and timeline. The assessment of the performance measures framework and input of program performance and issues/risks from the Program Tracking team are key inputs to planning the work.
3. ***Assess State Strategy*** – The Strategic Planning team will work jointly with state water representatives in understanding current status and issues regarding the state water strategy and Bulletin 160. The CALFED linkage to the state water strategy will be understood and documented, including performance outcomes, areas of impact, issues/risks and the role of Science.
4. ***Performance Monitoring and Issue/Risk Management*** – This activity represents the continuous monitoring of key outcome measures by program element, and the linkage of these measures to CALFED goals and the state water strategy as documented in the Strategic Plan. This also includes a working team including Program Tracking, Communications and Science personnel to consolidate and associate program issues (including Science) and risks to a business strategy used in managing program-wide progress. The Strategic Planning team will work towards the early identification of strategic issues/risks that may materially impact CALFED program progress, and will develop mitigation strategies to address those items.
5. ***Update Strategic Plan*** – Based on the analyses defined above – state water strategy, program performance, issues/risks – the Strategic Planning team will perform

annual updates to the 5-Year Strategic Plan. The Secretary for Resources and ELC reviews will be conducted to approve the plan and authorize the recommendations included in the plan. The plan will be integrated with updates to the Communication Plan and Science Agenda.

Figure IV.1.3 Future Process Model – Strategic Planning



IV.2 – Program Tracking

IV.2.1 Process Objective and Background

The objective of the future ‘Program Tracking’ process is to track program status and outcomes and fiscal performance across CALFED core objectives. This also entails the following responsibilities:

- Provide information to support key decisions that are made by the policy group;
- Provide public access to program performance information;
- Develop and maintain system-wide performance databases; and
- Monitor the quality of information collected and report information to the policy group, Governor’s office, legislature, and the general public.

In the current environment, this function is supported by a variety of CBDA personnel including program managers, regional coordinators, and policy/finance staff. Currently, tracking information is reported in the following key reports:

- **Program Plans** – The program plan is intended to describe what has been accomplished; identify ongoing and planned activities and schedules; identify available funding and additional funding needs; and document the efforts to integrate programs necessary to achieve balance. As documented in the Current (‘As Is’) Assessment report, the goal of clearly documenting planned activities, funding needs and integration has proven to be a significant challenge in the current environment.

- **Annual Report** – The Annual Report is intended to provide a “look back” at the accomplishments of the Program and help to identify gaps where the Program may need to focus and overall Program Implementation ‘balance’. To do this, the Annual Report is expected to detail the status of implementation for all elements of the CALFED Program and sets the stage for projects in the coming year. The most important component of this report is the ‘Annual Statement of Progress’, which is intended to present a realistic summary of accomplishments during the prior fiscal year and the anticipated activities for the coming year. However, the various Independent Review activities found the goal of documenting a ‘complete’ picture of CALFED status has remained elusive.
- **Crosscut Budget and Finance Plan** – The CBDA, in coordination with the implementing agencies, is responsible for carrying out the financial tracking obligations as defined in the California Water Code sections 79400, et seq., and further prescribed in the ROD and Implementation Memorandum of Understanding. This is supported primarily by the annual crosscut budgeting process, which presents prior-year, current-year and budget-year funding by program. Future funding needs have been further analyzed and documented in the draft 10-year CALFED Bay-Delta Program Finance Plan (January, 2005). This report provides a financing framework through 2014; specifically, the plan documented a revenue sources strategy that reduced dependency on the State’s general fund. This effort was responsive to the ‘beneficiary pays’ principal identified in the ROD. As documented in the Current (‘As Is’) Assessment report, a variety of issues undermined the

timeliness, efficiency and quality of fiscal tracking information presented within these reports.

KPMG has assessed the current environment problems and issues and has defined a set of future design principles for improvement. These are outlined below and form the basis for the conceptual future process model that follows.

IV.2.2 Solution Design Principles

In the future environment, the CBDA will add value to the CALFED decision making process by tracking program performance and fiscal progress within clear lines of responsibility and procedure, by leveraging modern information technology and through application of industry management practices. The future design principles spanning people, process, technology, and data include the following:

1. **People** – Success depends on having staff that are knowledgeable in industry practices in ‘program and project management.’ Leveraging this expertise depends in turn on establishing internal communications channels that provide a timely and free-flow of decision support information. The future environment should include the following:
 - 1.1. *Train staff in management practices* – This includes training in methodologies, standards, techniques, and tools. Staff that achieves management certification by the Project Management Institute (PMI) or similar standards organization will be able to apply their skills in understanding and tailoring the methods applicable to the program tracking function. In addition they will serve as a central

knowledgebase of management standards and practices for the implementing agencies.

- 1.2. *Finalize and implement policies and procedures in program management* – This includes documenting roles/responsibilities, accountability, flow of information, process instructions, work products, and quality control procedures in information management, financial management, work products/deliverables, and schedule. Particular attention should be paid in delineating the roles of CBDA staff versus implementing agency staff.
- 1.3. *Implement matrix teams to develop and maintain specific products* – Ongoing work teams may include the following:
 - ✓ *Performance Measures Framework Team* – An internal team comprising representatives from Program Tracking, Strategic Planning, Science and Communications Divisions. The purpose is to review and confirm the framework that is used by the implementing agencies in their development of performance measures.
 - ✓ *Program Plan Coordination Team* – A working team comprised of Program Tracking and agency staff. The purpose is to provide an organized forum for agencies to present any issues/concerns regarding their development of program plans and allow CBDA staff input.
 - ✓ *Performance Monitoring and Issue Management Team* – An ongoing working team comprised of Program Tracking, Strategic Planning, Science and agency staff. Purpose is

to apply adaptive management in the review and refinement of the issues/risks impacting program progress and in developing actions to address those items.

- ✓ *Annual Reporting Team* – An internal team comprised primarily of Program Tracking and Communications personnel. Purpose is to consolidate annual accomplishments, issues, and risks. Input from Strategic Planning and Science personnel will also be important.

2. **Process** – The new business process shall be streamlined, tightly controlled and efficient owing to the following operating features:

- 2.1. *Clearly delineate the responsibilities of the agency and CBDA in developing the program plans* – The formal policies and procedures will be important in removing any ambiguity in ‘who does what’. The agencies shall be responsible for developing individual program plans and presenting those plans to the ELC for review and discussion. CBDA will provide facilitation assistance through working teams, for the purpose of providing a forum in identifying and resolving issues and provide process guidance to help ensure reporting uniformity and clarity. A more detailed description of CBDA’s responsibilities is included in Figure IV.2.1.
- 2.2. *Leverage information technology to streamline the flow of information and control quality* – The CALFED corporate database will serve as the centralized corporate repository for program planning and performance information. Work steps

and information flow shall be tightly controlled through the use of automated business rules. The errors and inefficiencies associated with the handoffs of paper or spreadsheets will be greatly reduced.

2.3. *Monitor performance and manage issues/risks through formal, chartered work teams* – CBDA’s value-add in program tracking is derived from implementing a structured procedure in monitoring performance and fiscal information on an ongoing basis. The agency will be responsible for capturing performance and fiscal tracking information and posting this information to the CALFED database at regular intervals. A CBDA internal monitoring team shall be established including representatives from Strategic Planning and Science. The purpose of this team is to evaluate program performance against the framework and targets that have been established.

2.4. *Consolidate key accomplishments and issues/risks in an annual report to the ELC and Legislature* – The CALFED Corporate Database will provide a direct, automated means to extract, transform, and consolidate the decision-useful information required by CBDA policy group, Legislature and outside constituents.

3. **Technology** – The new business process shall leverage modern computer technologies to accomplish the following:

3.1. *Automate and control workflow* – Integrated functionality is needed to manage and control the sequence of decisions and the flow of information.

The CALFED Corporate Database application will provide controlled access by all participants in the program tracking process based on defined user privileges. These participants include internal CBDA staff (program tracking, strategic planning, Science, Communications, executive management), agency staff, ELC, and Legislature for example. System controls will direct automated workflow based on pre-defined staff responsibilities and decision flow.

The application should provide management information that will track status of individual program plans and provide automated notification/flags in cases of delay or issues needing resolution. Also critical, is the automated support of issue/risk management during ongoing program monitoring activities.

- 3.2. *Enforce performance and fiscal tracking business rules set by CBDA Program Tracking staff* – The quality of the process and information is greatly improved through a process that enforces business rules (requirements) related to the logging and tracking of program performance and fiscal tracking information. Program Tracking staff will set these rules, after conferring with executive management, the ELC, and the Department of Finance (for fiscal tracking requirements). These rules will be applied to help ensure conformity and data quality during the posting of this information (by agencies) and reporting.

4. **Data** – The new environment leverages modern database technology. This provides an opportunity to better manage and

control the information needed to support decisions. Specific features include the following:

- 4.1. *Build integrated, common CALFED Corporate Database* – Examples of program tracking data sets include the following, by program:
 - ✓ *Performance framework and measures* – including outcome measures as well as fiscal/cost and schedule
 - ✓ *Implementation plan* – including linkage with Science Agenda, Communication Plan
 - ✓ *Rules and controls* – related to information management, fiscal management, schedule management and reporting
 - ✓ *Issue and risk register* – categorize and prioritize issues and risks, including issue/risk impact assessment, owner, resolution or mitigation strategies, and due date.
 - ✓ *Other corporate data* – including strategic planning, science data, and internal as well as external/published reports. Through secured web-enabled technology, the data and reports will be available to a wide constituency depending on user privileges.
- 4.2. *Maintain process performance measures data and continuous review* – The following process measures should be considered:
 - ✓ Program planning elapsed time
 - ✓ Program expenditures to date

- ✓ Number of active issues/risks by risk level (impact on program performance - high, medium, or low)
- ✓ Issue/Risk 'Aging' report, showing number of outstanding issues/risks that have elapsed by week, month.

Figure IV.2.1 – Program Tracking Responsibilities

- **Tracking Scope and Risk:** The CBDA will establish procedures for identifying project-level issues of scope and risk. Procedures will be defined for the agencies to elevate those issues to the CBDA, and then further to the science or policy group as necessary. A clear scope statement and control procedures will help to keep programs and individual projects focused on goals of the CALFED Strategic Plan.
- **Tracking Schedule:** The CBDA will establish project-level control standards for use by agencies in managing individual projects against contractual schedule deadlines. Consideration will be given to applying ‘earned value’ techniques including schedule variance (in dollar and percentage terms), and estimated time to completion. A focus on project and program ‘critical path’ milestones will be useful in keeping from ‘getting lost in the details’.
- **Tracking Costs:** The CBDA will put processes in place to ensure that programs and projects are completed within the approved funding budget. The techniques of ‘earned value’ should also be applied here. This technique provides a means to synthesize the current ‘cost status’ of the project utilizing a simple, understandable quantifiable metric. The CBDA will then aggregate earned value to gauge the status of the program overall. Additional considerations include the following:
 - *Improve the Management and Documentation of Funding ‘Status’ Information:* A Finance Plan will undergo annual updates.
 - *Update Project Categorization:* As required by the ROD and MOU, regular updating and prioritizing of the list of projects by category will help to reduce ambiguity when consolidating financial amounts.
 - *Clarify and Document Rules for Crosscut Reporting:* The CBDA should strengthen the partnership with the Department of Finance throughout financial tracking activities. This includes DOF led workshops to clarify and document the rules for crosscut reporting as well as to share practices for tracking and reporting program funding status information.
 - *Improve Reliability of Grant/Local Match Data:* The CBDA will work closely with implementing agencies and local stakeholders in identifying procedures to improve the collection and reporting of local match information. This will be documented to include a clear definition of responsibilities and accountability, as well as agreed-upon methods to validate and track the information.

Figure IV.2.1 – Program Tracking Responsibilities (Continued)

- **Tracking Quality (Performance):** Performance must drive CALFED implementation and decision-making. This shall comprise the following:
 - *Employ accepted management practices:* The CBDA will apply industry-accepted procedures in Quality Management practices to help ensure that the program will satisfy the needs for which it was undertaken. The science program will be primarily responsible for identifying the quality and performance standards to apply to each program (quality planning) and evaluating overall program performance against those standards (quality assurance). The CBDA will then apply the necessary procedures to ensure that the quality management and performance reporting processes are functioning as intended.
 - *Collaborate with program workgroups and lead agencies:* Inter-agency workgroups will be formed to focus on specific projects. They will have a single designated leader, a clear mission and will be held accountable for progress. The CBDA will establish the procedures for applying and tracking performance measures established by science, to workgroup projects.
 - *Performance management led by science:* Performance (quality) measures will be formalized and applied consistently across all programs and projects, and then monitored on an ongoing basis. The CBDA Science Program will have lead responsibility for quality and performance management practices.
 - *Keep it simple:* Performance measures should be ‘SMART’ – simple, measurable, achievable, realistic, and time-based.

IV.2.3 Future Conceptual Process Model

The design principles outlined above have been used to guide development of the conceptual future process models shown in Figure IV.2.2 – Program Tracking, and Figure IV.2.3 – Fiscal Tracking. Process highlights include the following:

Performance Tracking (see Figure IV.2.2):

1. **Assess Performance Measures Framework** – A working team comprised of CBDA Program Tracking, Strategic Planning, Science and Communications Divisions personnel will be responsible for reviewing and confirming, on an annual or other periodic basis, the performance measures framework. The team will perform a qualitative assessment to determine strengths of the framework as well as areas that may need improvement. Refinements, if any, can be elevated to the ELC before start of program planning preparation activities.
2. **Program Plan Preparation and Facilitation** – Planning rules and timeline will be defined in a joint working session with CBDA and agency staff and then posted to the CALFED Corporate Database. The implementing agencies will be responsible for developing the program plan in accordance with documented rules and requirements. CBDA will operate in a facilitation role and provide an organized forum for agencies to present any issues/concerns regarding plan development and allow CBDA staff input.
3. **Performance Monitoring and Issue/Risk Management** – After the implementing agencies post/report program plans, the CBDA will then conduct ongoing monitoring of program progress against defined performance measures. This will also include a structure working team for managing issues and risks. CBDA will add value in facilitating identification of issues/risks that

may materially impact program progress, in developing actions to address those items, and reporting and tracking those actions. Early identification and mitigation of issues and risks should provide significant value to overall program progress.

4. **Annual Reporting** – The CBDA will consolidate annual accomplishments, issues and risks, by program. Reporting decisions will be managed through a working team including the Communications as well as Strategic Planning and Science, as needed.

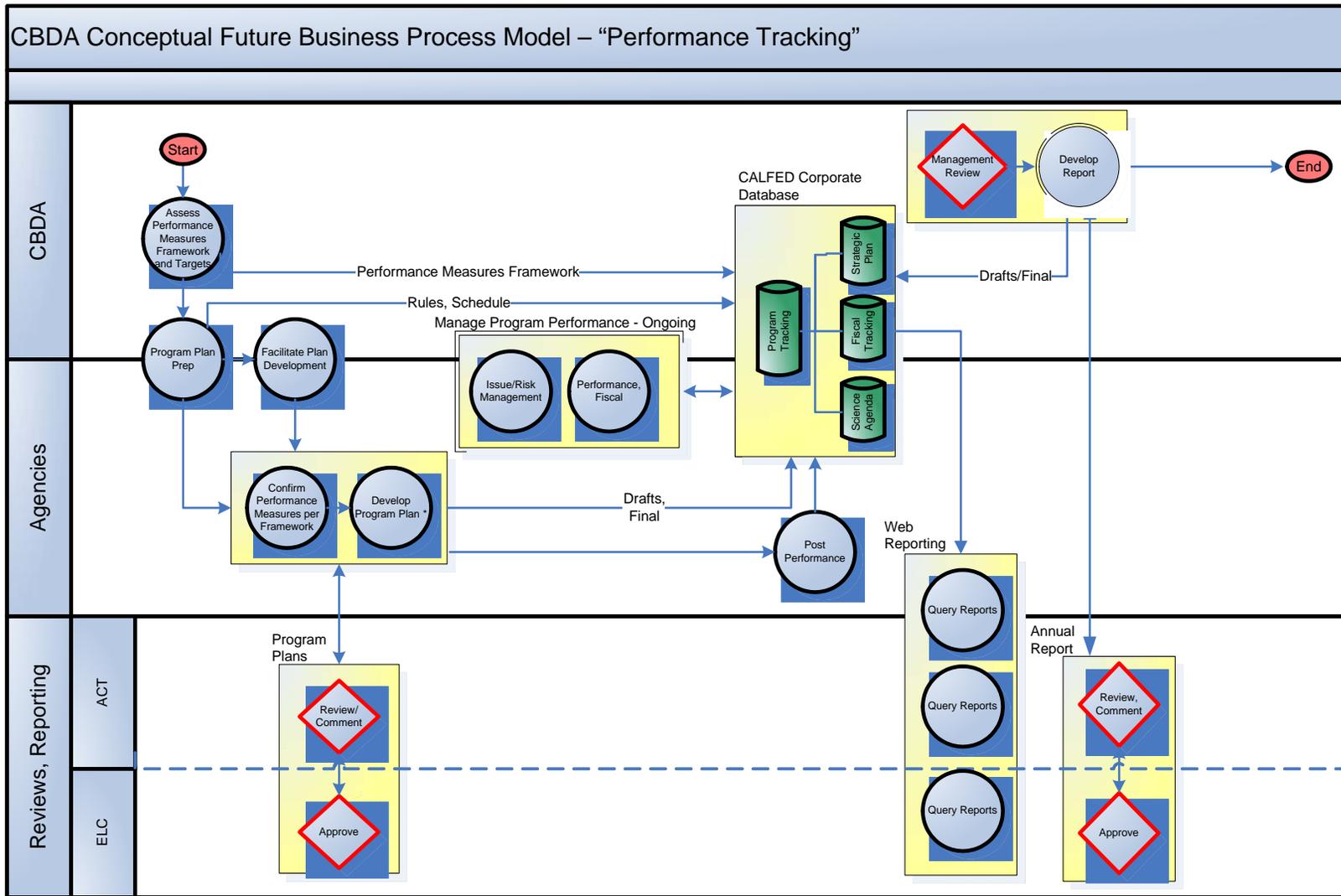
Fiscal Tracking (see Figure IV.2.3):

1. **Crosscut and Funding Plan Preparation** – An initial meeting will be conducted with the Department of Finance to review and update, if necessary, the rules for reporting the crosscut budget. CBDA and agency staff will also work together to prepare the activities necessary in updating the Funding Plan. The crosscut budget, Funding Plan rules, and planning timeline will then be posted to the CALFED Corporate Database.
2. **Facilitate and Assess Fiscal Tracking** – The implementing agencies will be responsible for collecting and documenting fiscal information into the CALFED Corporate Database. CBDA staff will operate in a facilitation role and provide the system, data structure, and requirements that will guide this process. The agencies will then be responsible for logging crosscut budget and fiscal information throughout the year. Based on this information, the CBDA will conduct ongoing fiscal monitoring including a comparison of projected funding need against budget, by year. Any gaps will be evaluated and logged in the issue/risk register. These will then be discussed in working teams with agency staff and strategies developed to mitigate the gaps and risk areas. Overall, this process is geared

to early identification and mitigation of issues and risks and improving the quality and timeliness of information delivered to decision makers.

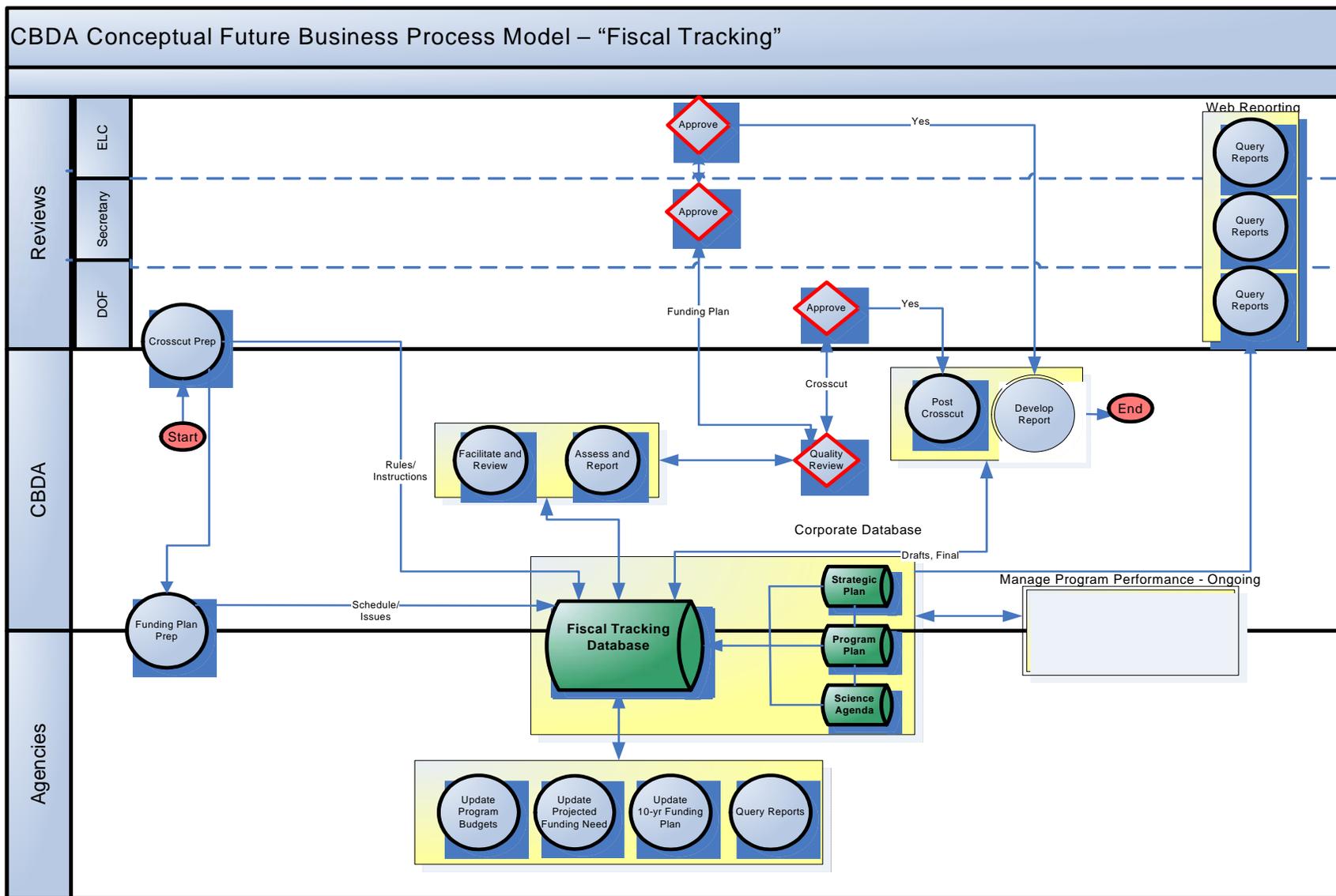
3. ***Crosscut and Funding Plan Reporting*** – The analysis and strategies defined above will be documented within the Corporate Database by the implementing agencies. CBDA will add value in consolidating this analysis in a formal crosscut budget report delivered to the Department of Finance and an updated Funding Plan delivered to the ELC for approval.

Figure IV.2.2 Future Process Model – Performance Tracking



* Does not show process details

Figure IV.2.3 Future Process Model – Fiscal Tracking



IV.3 – Contracts Development

IV.3.1 Process Objective and Background

This section of the report presents a conceptual redesign of the business process supporting the development of CBDA contracts. This does not include administration of contracts once executed. The discussion includes future redesign principles and process flow diagrams. The discussion focuses on the initial ‘development’ stages of contract processes including development of the contract package, reviews, and executed signatures.

The goal of the contracts business processes is to develop contractual documents to support the business needs of CBDA and CALFED, and do so on a timely basis and in conformance with applicable state procedures and requirements. As defined in detail in KPMG’s review of the current environment (the ‘CBDA Current (As Is) Assessment’ deliverable), current processes are hamstrung by several problems. These are summarized as follows:

- **Lack of adequate staff knowledge and training:** Contract staff are relatively new and lack sufficient experience and training in the nuances of state contact procedure and CBDA program needs. The communication channels between contracts and business units appear weak, limiting the free exchange of information/perspectives and furthering an environment of ‘silos’, lack of team spirit and divisional boundaries.

- **Procedures are preliminary, and not well understood:** Draft procedures documentation awaits finalizing and formal implementation.
- **The flow of work is manual, paper-intensive, slow, and inefficient:** As shown in the detailed process flow diagram presented in the ‘CBDA Current (As Is) Assessment’ deliverable, the current contracts flow of work is severely hampered by a serial, paper-driven process involving numerous handoffs and reviews. Until recently, an automated tracking tool has not formally been in place to track basic ‘status’ and other process performance information. Tracking is via a variety of spreadsheets. Accountability and records control is also unclear in the current environment. Overall, the process is regarded as slow and inefficient. This, together with occasional lost or misplaced documents, has triggered frustration by program staff in the business units.

Based on these key problem areas, and the overall assessment of the current environment, KPMG consultants developed a future conceptual process model for the contracts business process.

IV.3.2 Solution Design Principles

The principles below represent the key operating features of the environment. These principles – including people, process, data, and technology – are developed to resolve the problems identified in the current environment (as noted above) while also serving to guide the development of the future conceptual process model (presented in the subsection that follows).

1. **People** – Success depends on having staff that are knowledgeable in state contract requirements and CBDA business needs. This entails the following:
 - 1.1. *Implement formal and continuous training* – Contracts personnel and program administrative staff should be trained in (a) state contracts procedure, as well as (b) baseline training of CBDA programs and divisions. Key contract staff should pursue certification training provided by DGS.
 - 1.2. *Finalize and implement procedures and ‘user guides’, by contract type* – Finalizing policies and procedures will help in clarifying accountability, quality control, and compliance. ‘User guides’ should be developed and maintained for each contract type. They will be used by program personnel in developing key portions of the contract package. These guides should be written in plain, easy to understand language and include step-by-step instructions and pitfalls to avoid.
 - 1.3. *Implement formal and informal communication channels* – Business and contract-related information should be freely shared between administrative/contract staff and Division personnel in formal weekly meetings, as well as informal topical meetings to share perspective and build a sense of partnership and teamwork.
2. **Process** – The new business process shall be streamlined, tightly controlled and efficient owing to the following operating features:
 - 2.1. *Push key decisions forward in the process* – The ‘STD213’ should be pushed as early in the

contract development process as possible. As shown in the future conceptual process model below, this should include an initial presentation to the Chief Deputy Director of the ‘business case’ for a proposed contract. The business case approval will represent only an approval to proceed in developing the complete contract package, and will be based on the business merits in supporting CALFED business needs as well as fundamental compliance and fiscal requirements. The formal Chief Deputy Director and Legal Office review and signature will take place later in the process, after the complete contract package is developed.

- 2.2. *Delegate detailed reviews to management, limiting executive review to exceptions based on business risk* – The pre-approval (‘business case’) presentation and review outlined above will be conducted during formal, weekly Division meetings and encompass one or many contract proposals that may be submitted by the Division management for consideration. This is an efficient, agenda-controlled meeting that results in executive pre-approval to proceed with the contract(s). It is not the formal approval. Once the complete contract package is developed, the contract undergoes a detailed review in three parallel tracks – compliance, legal and fiscal. The complete contract package is forwarded to the Chief Deputy Director and Legal Counsel for final review and signature. Contracts that are not at variance with the initial pre-approval business case and have no outstanding issues from the

‘track’ reviews do not require a detailed examination by executive management and Legal Counsel, however they should do so on an occasional basis as a quality control step. Only contracts that are at variance with the initial business case or having issues stemming from the ‘track’ reviews will trigger detailed executive and legal review and discussion.

- 2.3. *Perform work task in parallel where possible along three key tracks (business, compliance, funding)* – Process efficiency and streamlining will be derived from dividing the sections of a contract into its reasonably discrete components and then developing those components in parallel where possible (contingent on staff skills, availability). Examples are in developing the detailed statement of work (SOW), while other staff are addressing the DGS requirements pertaining to rate, sub-contracting, and civil service requirements. These activities will culminate in a business track review/approval by the Division Deputy Director. Other areas involving parallel work are in compliance review (involving the contract manager) and funding approvals (fiscal officer).
- 2.4. *Regulations, legislative efficiencies and master service agreements* – As of the date of this report, CBDA was pursuing (a) ‘Architectural and Engineering’ (A&E) regulations based on DWR regulations, and (b) legislation for increasing the ‘final’ delegated internal approval authority for contract execution from the current requirement

of \$50 thousand to \$250 thousand contract value. If approved, these would help to streamline the overall contract process (i.e., eliminating DGS reviews for contracts below this threshold) and provide needed clarification and some flexibility with respect to A&E services. CBDA should continue to pursue these areas of regulation and legislative efficiency. As a secondary alternative, CBDA should consider seeking DGS approval for ‘master services agreement’ (MSA) authority, to allow pre-qualification of specialized vendor skills (e.g., environmental assessment, science panels).

3. **Technology** – The new business process will leverage modern computer technologies to accomplish the following:
 - 3.1. *Automate and control workflow* – The existing contract and ERP tracking databases should be integrated into a single application platform, and implemented agency-wide to allow controlled access by contract and program management personnel. All contracts will be developed in a digital format, with automated controls in place to enforce business rules established by contract type and to automate workflow based on pre-defined staff responsibilities and decision flow. The application should provide management information that will track status of individual contracts and provide automated notification/flags in cases of delay or issues needing resolution. The tracking database should also allow contracts staff to better track the elapsed time in accordance

with documented timelines and improving the process where needed.

- 3.2. *Enforce business rules set by legal, fiscal and compliance officers* – The tracking system will house the standard legal, state compliance, and fiscal requirements (business rules) by contract type. These rules will be enforced by the system through the development of the automated contract package, and may be refined where appropriate, based on strict user privileges controlled by the system.
- 3.3. *Enforce business rules set by executive management, by contract* – The pre-approval ('business case') presentation defined above will also include the identification, by executive management, of certain requirements or thresholds (i.e., 'business rules') for contract types or individual contracts as may be desired. Examples are contract deliverable or performance criteria, funding criteria and budget limits, etc. These shall be specified within the tracking database (preferably during the pre-approval meeting) by executive management (or designee) through a controlled user interface. The tracking system shall enforce these pre-approval business rules throughout the subsequent processes involving development of the complete contract package by business division and contract personnel. Any variance to the pre-approved business rules will be identified in the tracking system and automatically trigger a detailed review with executive management. In cases not

involving a variance, a detailed review by executive management is not mandatory.

4. **Data** – The new environment leverages modern database technology. This provides an opportunity to better manage and control the information needed to support decisions. Specific features include the following:
 - 4.1. *Build integrated, common contract tracking database* – The tracking system introduced above should house a common data structure to support the complete contract lifecycle – from development, through execution and implementation. This should be designed using modern database techniques, reducing duplicate or anomalous data and ensuring robust security controls for updates and reporting. For example, a single, uniform contract number should link data for a specific contract and also provide ease of lookup, reporting, data sharing and status tracking. Information will be accessible to contracts, program, and management staff based on pre-defined user privileges.
 - 4.2. *Implement records management in compliance with state standards* – The electronic contracts database and hardcopy records shall be in strict compliance with all necessary state administrative procedure.
 - 4.3. *Maintain process performance measures data and continuous review* – Process performance targets should be set including effectiveness (i.e., quality, error rates) and efficiency (i.e., timeliness). The following process measures should be considered:

- ✓ Contract development elapsed time, by contract
- ✓ Number of active issues and errors identified by contract
- ✓ Approval percentage, for internal and DGS approvals

The tracking system should automatically track measures such as these for each contract so that the data can be later evaluated. In addition, periodic customer service surveys should be conducted to provide necessary data to measure user satisfaction and highlight areas that warrant corrective action.

IV.3.3 Future Conceptual Business Model

The design principles outlined above have been developed to address the weaknesses of the current contract development environment thereby improving process effectiveness and efficiency, and helping to address current staff frustrations. To achieve this, the principles have been used to guide development of the conceptual future process model shown in Figure IV.3.1. Process steps generally comprise the following:

1. **Develop and document business case** – Business managers are responsible for developing a straightforward business case for each potential contract. This will summarize the purpose of the contract, linkage to CALFED objectives, the expected deliverables/products, scope of services, budget and funding,

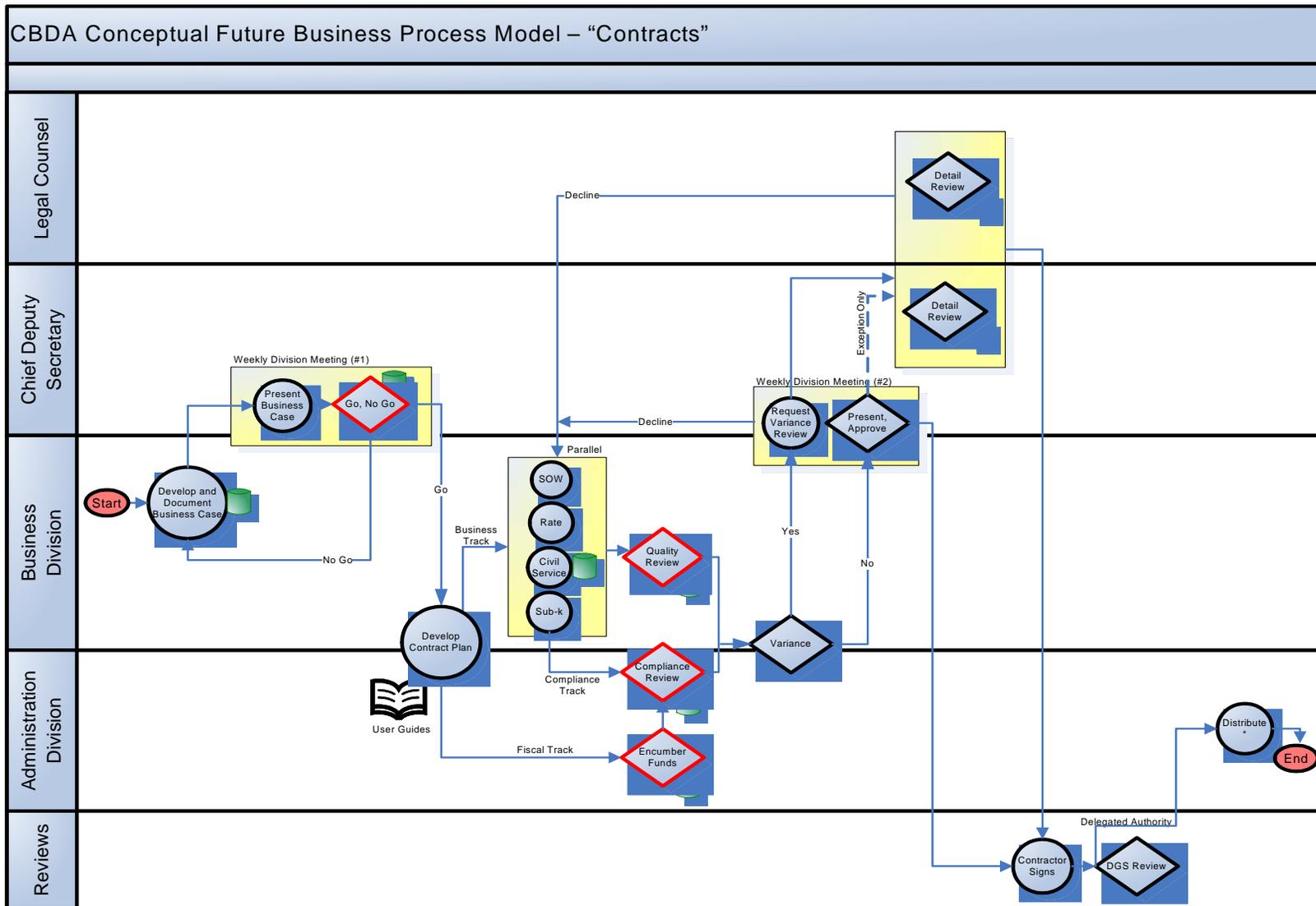
solicitation type, and areas of risk. The business case is documented as an electronic record within the tracking database.

2. **Present business case, go/no go decision** – Business division managers are responsible for presenting the business case to executive management. This is for early pre-approval to proceed, before significant investment of staff time. Contracts that are allowed to proceed ('Go' decision) will be documented in the tracking system, including relevant business rules set by executive management (see design principles above). The presentation will be conducted during formal, frequent executive staff contract meetings where the division sponsor can engage the executive management team. The intent of this frequent (weekly) meeting is to address all potential contracts.
3. **Develop contract plan** – Contracts that are allowed to proceed, will then undergo a joint meeting with the business division and administrative division contract lead personnel. The objective is to clearly specify the essential requirements to be followed, based on contract type (e.g., solicitation type, civil service requirements, competition, etc.). The plan parameters are specified within the tracking system electronic record. The business division lead will also be directed to the appropriate 'User Guide' documentation, based on contract type, which must guide the subsequent development of the contract package.
4. **Develop contract package** – The business division lead takes ownership of contract components. Using automated workflow capabilities of the tracking system, the business lead may delegate portions of this effort to staff in a joint parallel effort.
5. **Conduct reviews** – The completed contract package undergoes technical reviews, using only the secured electronic record, in three tracks – business, compliance and fiscal track. Note that

reviews may occur in parallel, using the secured electronic record. Once all approvals are attained, funding is encumbered

6. ***Present completed contract for executive approval*** – The tracking system has applied all required business rules throughout the processes preceding this step. Accordingly, the tracking system will identify any variance to these rules (e.g., variance to budget, funding, solicitation, etc.). The reviews conducted in Step 5 will also confirm these areas of variance and contract staff will work with the business division lead to resolve the variance or document the reason for variance as may be needed. Contracts having no variance do not require full review by executive management or legal counsel; a high-level quality review should suffice. Contract is initialed by legal, and then sent to the contractor for signature. Following contractor signature, the authorized CBDA executive (Chief Deputy Director) signs the contract.
7. ***Detailed reviews (exception basis)*** – Contracts having a substantiated variance will automatically trigger detailed review and discussion before signature by legal or distribution to contractor for signature.
8. ***DGS reviews and close*** – Signed contracts are delivered to DGS for final approval, except those that fall within the delegated authority.

Figure IV.3.1 Process Model – Contracts



* Does not show details.

IV.4 – Grants

IV.4.1 Process Objective and Background

The CALFED Agencies fund projects that are identified as supporting CALFED objectives. Collectively these agencies have allocated to date nearly \$2 billion in grant funds for projects to expand groundwater storage, ensure efficient water use, increase water recycling, and restore ecosystems. These grants are funded through bond funds approved by California taxpayers – Propositions 204, 13, and 50.

In the current business environment, grant solicitations are leveraged to support the activities of the ERP, Water Management, and Science programs. In the future business environment, the responsibility for administering grants supporting the ERP and Water Management programs will be transitioned to the respective implementing agencies. That leaves the administration of Science grants within the responsibility of CBDA staff in the future environment.

This section identifies a conceptual future business process model associated with the initiation and processing of Science Grants, including supporting guidance regarding roles and responsibilities, procedures and forms.

IV.4.2 Future Design Principles

The conceptual future business-processing model for grants was developed based on the key future design principles listed below. These are the key features of the operating environment that are designed to address current limitations while also helping to improve

efficiency, effectiveness, and accountability to the development and administration of grants.

Although these principles are presented in context of the future Science program, many of these concepts can be equally applied to the other program areas (e.g., ERP). Accordingly, CBDA should present and discuss these principles with the implementing agencies for their consideration.

- **Planning:** *Require recipients to submit Project Assessment and Evaluation Plan (PAEP)* – Defining how project performance will be assessed, evaluated, and reported, will guide tracking of recipient progress against this plan.
- **Role of Science:** *Use a Science Panel to inform grant solicitations* – The panel will establish grant program objectives based on the latest scientific information regarding the Delta.
- **Tracking Progress:** *Require recipients to submit Quarterly Progress Reports* – The report will include a work statement description of tasks and deliverables completed, project schedule status, funds expended, and progress against the measures identified in the PAEP.
- **Responsibilities and Procedures:** *Formalize policies/procedures around a controlled, 9-step cycle* – The discussion below defines each step. The objective is to implement a tightly controlled, stepwise, business process that minimizes – or eliminates – any ambiguity regarding roles/responsibilities, sequence of steps, rules, documentation and performance. This includes procedures

for controlling, payment, extensions, change of scope, termination, and close out.

IV.4.3 Future Conceptual Business Model

The principles outlined above have been used to guide development of the conceptual future process model shown in Figure IV.4.2. This model is intended only as a conceptual overview of the ‘development’ of grants, and does not include details related to the PSP process or ongoing grants administration. As can be seen from the figure, the concepts already described related to the development of ‘contracts’ are likewise relevant to the development of grants. These include:

- ***Push key decisions forward in the process*** – The initial business case approval will represent only an approval to proceed in developing the complete grant package, and will be based on the business merits in supporting CALFED business needs as well as fundamental compliance and fiscal requirements.
- ***Delegate detailed reviews to division managers*** – Once the complete grant package is developed, the grant undergoes a detailed review in parallel tracks coordinated by Division management. Only grants that are at variance with the initial business case and detailed review or having issues stemming from the reviews will trigger detailed executive and legal review and discussion.
- ***Perform work task in parallel where possible*** – Process efficiency and streamlining will be derived from dividing the

sections of a grant into its reasonably discrete components and then developing those components in parallel where possible (contingent on staff skills, availability).

A more detailed description of grant activities is outlined below. Additional supporting details – including procedures/controls, roles and responsibilities – are presented in Appendix A

1. ***Grant Solicitation Package*** – The Proposal Solicitation Package (PSP) is the process used to plan, develop, and issue a series of grants for a specific plan year and to provide notice to potential grantees of potential CBDA Science Grants. The contents of the Grant Solicitation Package are presented in Figure IV.4.1.
2. ***Processing Grant Agreement*** – The Science Program staff should prepare Grant agreements with assistance from the CBDA Grants and Contracts Office. The agreement is prepared based on the information provided in the science grant application. The contents of the Grant Agreement are presented in Figure IV.4.1.

An overarching goal of the Science Grants Program is to help improve adaptive management by ensuring that the science coming out of the Delta informs policy decisions. The Delta Science Panel will establish the grant program objectives based on the latest scientific information relative to the Delta. The Science Program will convene a small panel of science experts to review and synthesize the latest relevant scientific information relative to the Delta. The science panel will review, summarize the synthesize research and scientific work performed to date in the Delta along with other pertinent literature, enlisting input from other Delta science experts when needed. Information

from the science panel will be used to inform the development of program solicitation objectives for the annual program plan.

3. **Review and Processing of Grant Award Package** – The responsibility for processing the science grant award packages rests with the Grants and Contracts Office of the Administration Division. This office will be responsible for assembling the award package, routing for approval of signatures, mailing to the recipient, and receiving and distributing executed grant documents. Roles and responsibilities are provided in Appendix A.
4. **Progress Reports** – The Science Grant recipients will be required to submit written quarterly narrative progress reports. Due dates will be specified in the Work Statement. Each progress report will include the status of (1) work statement tasks; (2) deliverable products as identified in the work statement, (3) project schedule and progress toward performance measures identified in the Project Assessment and Evaluation Plan (PAEP). Progress Reports will also report on the financial status and compare the project budget to costs to date. Roles and responsibilities are provided in Appendix A.
5. **Payment Request** – Payment requests will be required to be submitted only together with a quarterly progress reports. All payment requests must be submitted using a completed Payment Request form. The form must be accompanied by backup documentation (e.g. copies of paid invoices, receipts, personnel time records), and a short narrative. Appendix A includes payment procedures, roles and responsibilities.
6. **Term Extensions** – Grant terms may be extended for science projects that are unable to complete prior to the end of the grant term. CBDA should consider a maximum extension of 6 months prior to the liquidation date of the grant funds. Recipients must request term extensions in writing prior to the end to the grant term date. They must provide justification for the extension and a revised term end date. Extension requests must be signed by the recipient's authorized representative. All grant terms extension letters of approval should be signed by the Grants and Accounting Office. A Grant Extension Request Route Slip should be utilized in the processing of grant extension requests. Roles and responsibilities are provided in Appendix A.
7. **Change of Scope** – Revisions to the agreement should be allowed provided the proposed changes are within the scope of the original project, as approved by the CBDA. If the Science project was appropriated funds via a bond act or legislation, any changes must be consistent with the enabling authorization. Select control procedures and roles/responsibilities are included in Appendix A.
8. **Cancellation/Termination** – The recipient should be allowed to cancel a grant award for any reason prior to signing the grant documents by notifying CBDA in writing that they do not wish to accept the award.

Once the document is executed (i.e. signed by the CBDA and recipient authorized representative), the grant may be terminated

for two reasons: (1) breach or (2) convenience. These are further defined in Appendix A.

9. **Close Out** – When a recipient completes a project they should submit the following documents in addition to any products listed in the work statement. Roles and responsibilities are provided in Appendix A.
- A final administrative report, which meets the deadline and requirements, outlined in the programs Terms and Conditions.
 - A final Financial Status Report and/or Payment Request form requesting reimbursement for any expenses and/or release of applicable retention.
 - Completion of the requirements of the Project Assessment and Evaluation Plan (PAEP)
 - Any other documents that may be required by the specific program as outlined in the programs Terms and Conditions as well as Special Conditions.

Figure IV.4.1 – Contents of Grant Solicitation Package and Agreement

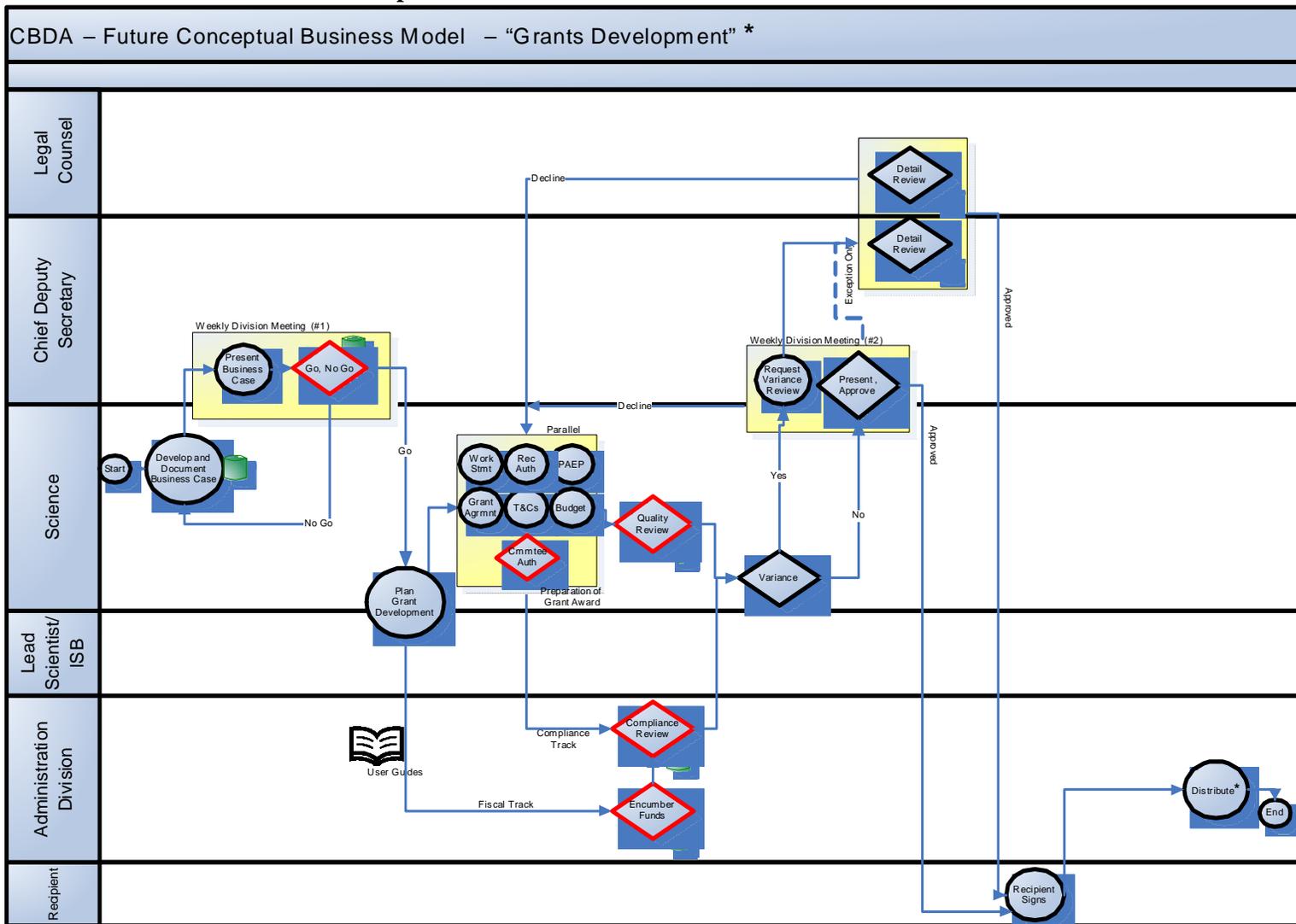
- ***Grant Solicitation Package:***

- ✓ Brief description of program
- ✓ Eligible projects
- ✓ Type of funding (grants, loans, contingent awards)
- ✓ Total dollar available and award minimums and maximums
- ✓ Match requirements (if applicable)
- ✓ Statement on method of award
- ✓ Schedule
- ✓ Instructions on how to obtain an application and sample forms or template to be used.
- ✓ Instructions on how to prepare Project Assessment and Evaluation Plan (PAEP)

- ***Grant Agreement:***

- ✓ Grant Agreement form or funding agreement form signed by the Chief of Administration for CBDA and the grant recipient.
- ✓ Terms and Conditions. Standard boilerplate terms and conditions for each project should be used without modification unless specifically approved by legal counsel.
- ✓ Work Statement. Provides detailed task-by task description of project activities and includes products, milestones and due dates.
- ✓ Project Assessment and Evaluation Plan (PAEP)
- ✓ Budget. An itemized budget for the project. Includes line item budgets (e.g. personnel, contractual, indirect) and designates CBDA funds and match share funds (if applicable).
- ✓ CBDA, Science Panel, or Water Commission Resolution authorizing the grant award.
- ✓ Recipient Resolution. For applicable recipients (e.g. local government, municipal water agencies, public foundations) a resolution from the governing body authorizing the application and designating a representative.

Figure IV.4.2 Process Model – Grants Development



* Process Flow does not include Distribution details or processes supporting PSP or Grant Administration

V. Technology Architecture

V.1 Background

CALFED is a data intensive business operation. Vast amounts of information ultimately tie to CALFED programs and individual projects. CBDA should be seen as a central clearinghouse of much of this data, and has an obligation, in accordance with the ROD and State Administrative Manual (SAM), to manage this data and then communicate decision-useful information. Information technology (IT) can play a key role in fulfilling this obligation.

The purpose of this section is to present a conceptual Enterprise Information Technology Architecture (EITA) to support the future business model. This includes an outline of current problems, a discussion of future technology components, and a discussion of IT governance.

The EITA in the current business environment can be generally described as rudimentary. Business processes rely heavily on paper handoffs and standard office automation toolsets (spreadsheets, word-processing and e-mail) for managing and sharing information. There are a few computer database tools for tracking work, however these are not widely used to support program-wide management decisions. Although managing the corporate data asset in the current fashion appears to support CALFED's current business operations, it is viewed as a major limitation to future process integration and efficiency.

KPMG performed a detailed risk review of current IT issues and limitations in four broad categories – applications, data, infrastructure, and support. The results of the subjective risk analysis are presented in the figure below. As shown, in KPMG's assessment, the significant limitations in these areas impart significant business risk, especially in the areas of data management and applications support. Details of KPMG's review are documented in the "CBDA Current (As-Is) Assessment" report. The issues are summarized as follows:

- **Applications:** Business processes are **not** tightly integrated through modern software applications such as document management or automated workflow applications. This brings about a very inefficient business environment reliant on paper based manual workflow, prioritization and processing. In turn, this can increase the chance of errors and misplaced documents. KPMG regards the business risk as 'high' in this area. Specific problem areas include the following:
 - ✓ Application support limited to basic end-user tasks (desktop tools):
 - ✓ Few enterprise business applications:
 - ✓ No direct access to CALSTARS or HR/Payroll
 - ✓ Many distributed 'homegrown' applications makes it difficult to manage:
- **Data:** Although managing the corporate data asset in the current file-based method appears to support CBDA's current report-centric business operations, it will not facilitate the governance and business needs of a revised CBDA. KPMG views the current file based environment as a

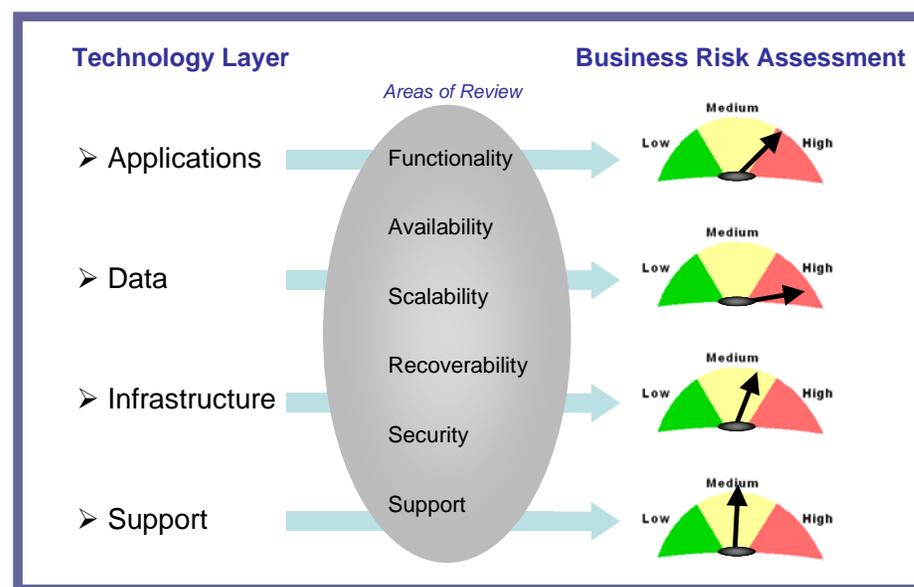
major limitation to future process integration and efficiency, and rates the business risk as ‘high’. Problem areas include:

- ✓ No central management strategy/database for core business data
- ✓ Core data housed in network user files and documents

■ **Infrastructure:** CBDA is supported by server hardware housed at CBDA and the Health and Human Services Data Center (HHSDC, now part of the Department of Technology Services). Based on discussions, it appears CBDA’s underlying technology infrastructure has not advanced substantially since the agency was created. The infrastructure appears to be stable and the network reliable; however, there are important areas of weakness. KPMG has subjectively gauged the business risk related to technology infrastructure as ‘medium’ to ‘high’ requiring immediate attention in the key areas noted. Problem areas include:

- ✓ Lack of a formal IT Strategic Plan and an enterprise information technology architecture
- ✓ Poor or no system and data integration
- ✓ Outdated and no longer supported network platform
- ✓ Unclear data management and retention approach (SAM compliance in question):
- ✓ Lack of network management tools

Figure V.1 – Information Technology Risk Assessment



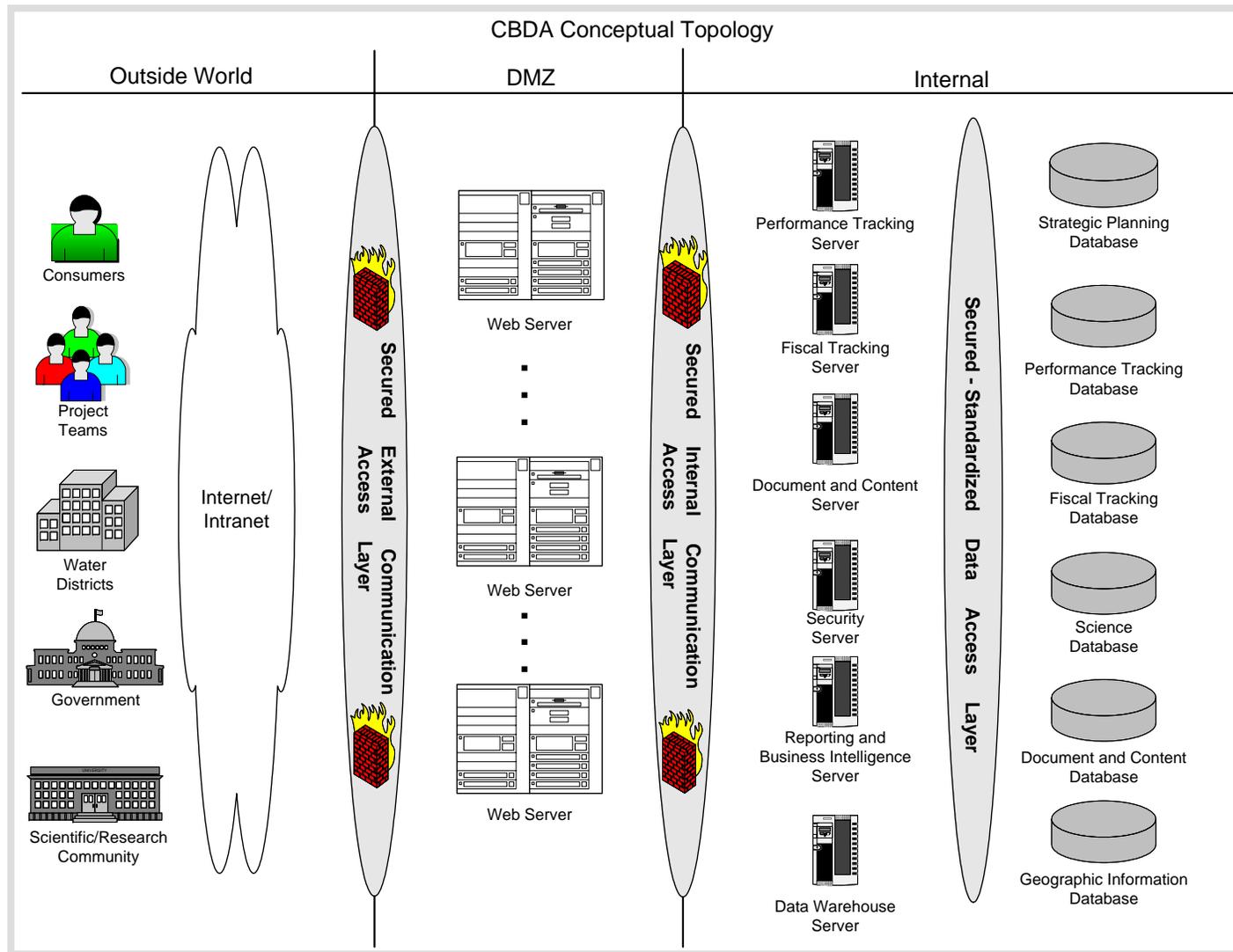
- **Support:** IT support is provided by internal CBDA Information Technology staff for basic network and office automation support. E-mail and web server support is provided by the Health and Human Services Data Center (HHSDC). Based on discussions, KPMG notes the following areas of concern:
 - ✓ Internal IT control appears to be understaffed, and the support expectations (charter) is unclear
 - ✓ IT staff are concerned about the costs, scope and quality of HHSDC support
 - ✓ HHSDC operational recovery/fail over support is unclear
 - ✓ Data retention policy is unclear
 - ✓ IT staff are concerned about apparent HHSDC policy constraints for web functionality/statistics:
 - ✓ Limited remote access for CBDA staff

V.2 Future Technology Components

The future Enterprise Information Technology Architecture (EITA) is developed to support CBDA's central role as a 'clearinghouse' of decision-useful CALFED information. The technology components are defined below and also visually presented in Figure V.2 – Future Technology Architecture. Together, these components are designed to address current technology issues while also supporting future business needs and adapting to business changes:

- **Secured Connectivity from the 'Outside World':** This component of the Future Technology Architecture is focused on providing external users secured connectivity to the CBDA corporate network. As shown in Figure V.2, external users include all entities that are outside the CBDA internal corporate network. This includes implementing agencies, legislature and other government entities, regional/district representatives, science and research communities, the general public and CBDA staff accessing network resources from an external location. Security is maintained through browser-based interfaces that apply secured signon and authentication protocols. There are two important features to this technology:
 - ✓ Applying browser-based external communications technology standards eliminates the need for implementing customized applications, at external user desktops, to serve this connection need.
 - ✓ Security is controlled across the entire technology architecture through the application of user-based permissive access logic. Virtual Private Network (VPN) access to specific applications can also be applied for additional security protection.
- **Secure Access to Applications and Data ('DMZ'):** Once connection is established, this component of the Future Technology Architecture is focused on managing secured access to internal applications and data. This is typically achieved through physical separation, in the form of a technology "firewall" comprised of Web servers and internal CBDA application servers.

Figure V.2 – Future Enterprise Information Technology Architecture (EITA)



A common configuration, as shown above, would be the use of two firewalls to create a security ‘demilitarized zone’ (DMZ) that manages secured information exchanges passing through the firewalls. This functions generally as follows:

- ✓ In the DMZ, a Web Server, such as WebSphere and Apache, intercepts the requests and forwards them to the corresponding application servers through the firewall.
- ✓ The sensitive portions of the business logic and data reside behind the second firewall, which filters requests based on protocols, and permissive access rights.

As new applications are introduced into the CBDA environment, a normal step in the implementation plan would be to research and enhance the firewall and related security components to allow the new application to execute properly.

- **Internal - Applications:** The Business Processes presented in the new conceptual business model (Strategic Planning, Program Tracking, Contracts Development and Grants) may be enabled through the use of “commercial off the shelf” (COTS) software applications. Selecting the right software solution for the future CBDA will require a requirements-driven procurement process. CBDA should perform a structured evaluation process to help determine which applications best meets their new business requirements. Considerations include the following:
 - ✓ *Application Server:* The application portion of the technology architecture serves as a gateway between

the client or customer requesting access and the data needed to reply to the request. The application server infrastructure component passes the request to the correct application for execution. COTS solutions such as WebSphere and Jboss provide this capability.

- ✓ *Performance Tracking Application:* One of the items CBDA is charged with is ensuring that their capital investments in projects are managed appropriately and to produce project management and outcome information that describes ongoing status of those projects and the value they are producing (e.g., if the impact to the Delta ecosystem is occurring as expected, did the application of adaptive management techniques provide a benefit). The project data collected must provide appropriately detailed data such that the outcome measurements can be validated.
- ✓ *Project and Portfolio Management Application:* Key to successfully implementing the conceptual future business model is to standardize the data and tools for managing a portfolio of projects and consolidating and reporting that information at the program level to CBDA. COTS solutions that provide Project and Portfolio Management (PPM) could address this need. PPM applications such as Primavera, CA Clarity (formerly Niku) and MS Project, are examples. Integrated functionality of these tools includes project planning, tracking,

resource assignment (i.e. people or things) and reports. The information gathered in the PPM database can be reviewed by the Independent Science Board and allow them to select the data that would provide their performance measures. Timely and useful performance information will further enable the ISB to input to the ELC sound advice and recommendations for adaptive management actions.

Implementation of a PPM solution will require collaboration with the Implementing Agencies and carefully assessing and designing data, technology and procedural requirements. This will provide the CBDA an excellent opportunity to start process improvement activities that will benefit them in the long run as they grow toward a mature organization.

Additionally, CBDA should consider building a Program “dashboard” as a management-reporting tool. A dashboard comprises a set of organization-specific metrics pertinent to project delivery and enables managers to “manage by exception” (that is take action when a tolerance range has been exceeded). Data-gathering processes across all Implementing Agencies must be set up with senior management support.

- ✓ *Fiscal Tracking Application:* The state budgeting and CALFED crosscut budgeting processes are reliant on data at the appropriate level of detail in order to be effective in building the respective budget documents. An extensive data requirements

assessment should be performed – including a thorough evaluation of technology and process issues and constraints – as the basis in determining the viability of applicable COTS products. Additionally, direct access to statewide financial and personnel systems, such as CALSTRS or HR/Payroll, should be examined through the use of appropriate interface software and a secure networking environment. The goal would be to provide a technology-enabled process that provides reliable and consistent management and tracking of CALFED Implementing Agency Program funds to the task level. Vendors such as Microsoft, Primavera and JD Edwards have focused on a government version of their fiscal management products.

- ✓ *Document and Content Management Application:* COTS applications, such as Documentum, Filenet, Imanage, etc, would allow CBDA to organize and manage all of the unstructured information and content in their enterprise. This information currently exists in many different digital forms: text documents, engineering drawings, still images, XML, audio and video files, and many other file types and formats. Enterprise Content Management (ECM) solutions help to create, organize and manage content with common desktop applications and easy-to-use content authoring templates. It can also capture and incorporate existing content from a variety of sources. It adds intelligence by creating categorizations via tags that make search and retrieval faster and more efficient. All of this

functionality has one purpose—to leverage enterprise knowledge assets for effective program management.

- ✓ *Enterprise Reporting and Modeling Application:* The Reporting application provides users a way to create, save and enhance reports based on the data contained in the collection of databases. The tools, such as Business Objects Enterprise or the reporting capabilities of SQL Server 2005, are progressing to the point of being able to generate reports in near real-time. These reports can be triggered by business performance management events, calendars, etc., or as ad-hoc requests.
- ✓ *Data Warehouse Application:* A data warehouse is a database or series of databases that provides the reporting needed to support management decisions. The data warehouse integrates data from the various operational systems and is typically loaded from these systems at regular intervals. Data warehouses contain historical information that enables analysis of business performance over time.

CBDA should consider the selection of an appropriate Database Management System (DBMS) that works well supporting Data Warehouse functionality such as Oracle, DB2 or even a data warehouse specific product like TeraData.

One of the standard tools used in database and data warehouse environment performs data Extract/Transform/Load (ETL) functions on data from numerous databases and incorporates it into the

database or data warehouse. Vendors, such as Informatica and TIBCO, provide tools that allow a company to bring in data from a “System of Record” (i.e. an Implementing Agency), transform the data if needed to fit CBDA attributes, and then load the new data into the database or data warehouse managed by the CBDA.

Another leading practice for ensuring data quality is to standardize the way in which applications and users access the data. This library of data access services provide a means for allowing users or applications authorized to add/change/delete data to have the appropriate access and those that need to reference that data to have only read access.

- ✓ *Security and Identity Management Application:* Vendors, such as Netegrity provide the services that will allow CBDA to define the level of application access and data rights for each authorized user.
- **Internal – Database:** The importance of the data component cannot be over-stated. It is the core foundational area that drives the business processes and enables the delivery of decision useful CALFED information. For CDBA to become the ‘clearing house’ of decision useful CALFED information, it needs to define it’s data requirements, data relationships, data architecture and implement the proper data management infrastructure to accumulate, store and protect this corporate asset. A robust Enterprise Information Architecture (EIA) will be critical in supporting CBDA’s business requirements and continually adapting to ever-changing business needs. The EIA blueprints created during

initial IT Strategic Planning will be managed on an ongoing basis. Listed below are the types of databases that may support CBDA's future architecture:

- ✓ *Performance Tracking Database*: This includes the data attributes that provide program and project data and their relationship to the projects the Implementing Agencies are engaged in. It also includes the data attributes that allow full context searches of the program management data across all Implementing Agencies.
- ✓ *Fiscal Tracking Database*: This includes the data attributes that provide budget and expenditure data and their relationship to the overall program and the projects the Implementing Agencies are engaged in. It also includes the data attributes that allow full context searches of the budget and expenditure data.
- ✓ *Document and Content Database*: This includes the attributes that provide program and project documents and data and their relationship to the projects the Implementing Agencies are engaged in. It also includes the attributes that allow full context searches of the program management data and documents across all Implementing Agencies. These databases provide for the organizing and managing of documents and the publishing of content through multiple channels. For example, a single piece of content may be published simultaneously to web site, broadcasted as a fax, printed as a text document, and sent to a hand held wireless device.
- ✓ *Enterprise Reporting and Modeling Database*: This database is normally part of the application and is

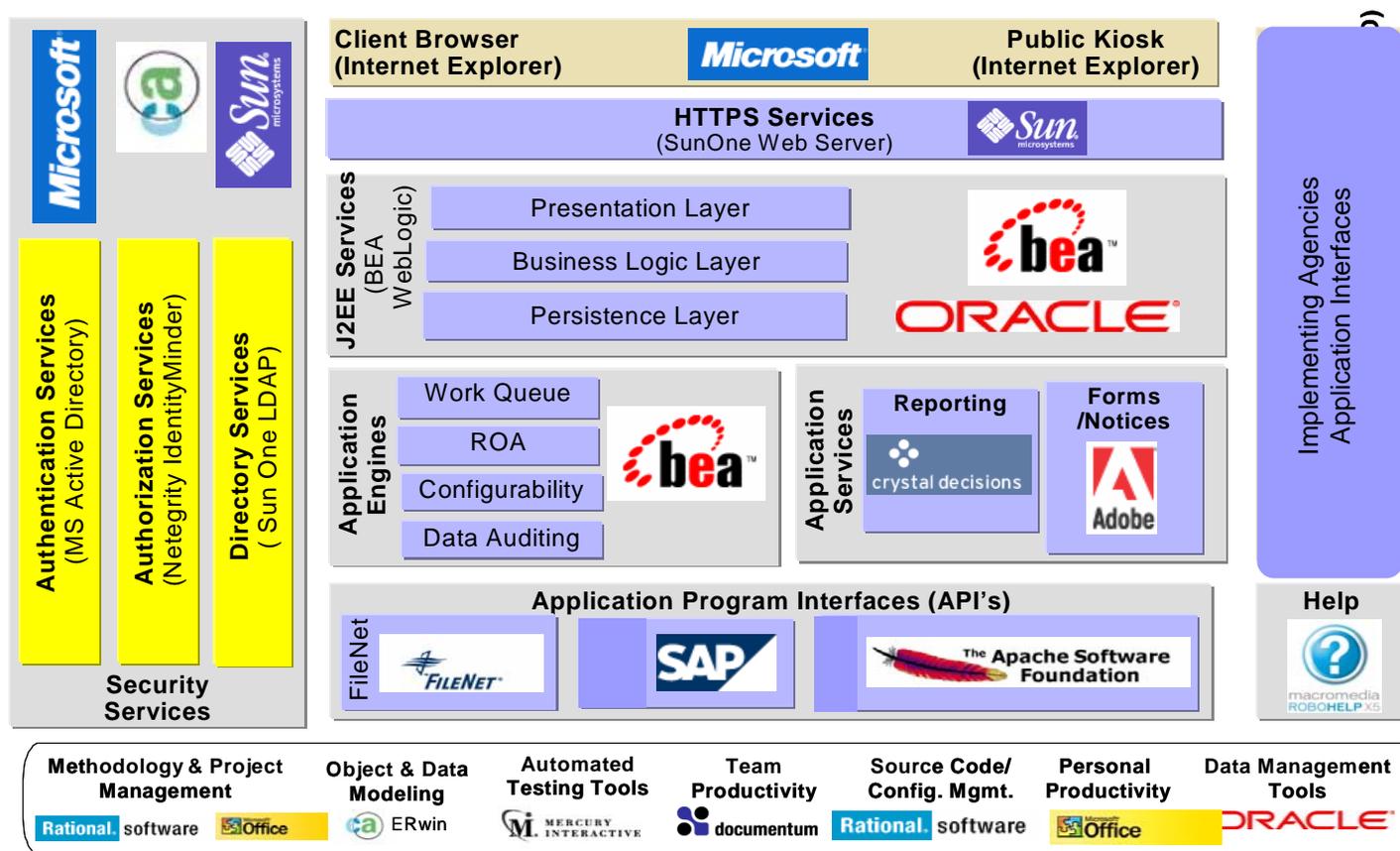
used to store the report "templates" for repeated use. This includes relationship logic for allowing for "merging" of data attributes from different databases, etc.

- ✓ *GIS Data Warehouse Database*: This includes the data attributes that allow for the textual description of geographic entities. It also includes the attributes that allow for the creation and maintenance of geographic images effectively (GeoSpatial data); attributes that allow for the creation and maintenance of geo-spatial models; and attributes that allow full context searches of the geographic entities.

- **Internal – Middleware**: Middleware technologies provide the "glue" for systems and data that participate in the web-enabled distributed environment. Figure V.3 presents a 'sample' list of vendors who provide middleware components. Vendors such as TIBCO, Bea, Sun, IBM and Oracle, provide an array of modules that include functions such as business process modeling, automated work flow, business activity monitoring, complex event processing, extract/transform/load utilities, rich internet applications and business integration.

Depending on the Enterprise Architecture framework decided upon – and supporting business goals and priorities – infrastructure constructs such as Service Oriented Architecture and Web Services could be leveraged by CBDA effectively.

Figure V.3 – Middleware Solution Vendors



V.3 IT Governance

The demands on IT organizations have never been higher. In addition to fulfilling their traditional responsibilities, IT organizations must now:

- Run IT like a business by forecasting and delivering results with accuracy and precision
- Align IT spend with business priorities, rapidly adjusting as conditions change
- Demonstrate measurable business value from technology investments
- Take advantage of outsourcing, consolidation and other cost reduction vehicles
- Communicate effectively with business partners and other stakeholders to create transparency, accountability and ownership
- Operate in accordance with today's stringent corporate governance requirements

The bullets above have an underlying assumption: the IT organization is managed from the business perspective by an experienced Chief Information Officer (CIO) and has an existing Enterprise Information Technology Architecture (EITA) in place.

The CBDA future depends on the implementation of a professional IT Organization, managed by an experienced CIO with a formal EITA in place. These attributes will provide the CBDA with the

capacity and capabilities to develop and implement repeatable processes, gather data and provide information as required by the ROD and govern IT assets and resources effectively.

CBDA should consider the following steps:

- Design an IT organizational framework with the skills needed to support and manage the information related assets of the CBDA enterprise.
- Assemble a governing body for cross-functional IT management and establish the rules by which this body will be governed.
- Demonstrate to the IT communities in the Implementing Agencies that through the consistent use of technology, processes, people, and governance that an adaptive technological architecture can be implemented.
- Leverage major IT initiatives to define, plan and implement a common EITA infrastructure that shares resources across the organization and fully supports the organization's functional mission.

Appendix B provides further details including graphical representations of an EITA governance framework.

V.4 Implementation Considerations

Successful implementation of the EITA and supporting governance structure will require careful assessment of objectives, needs and issues and skilled coordination of activities and resources. This requires applying formal management standards, such as those promulgated by the Project Management Institute (PMI). Significant

risks are inherent in any endeavor involving aligning IT to support business strategy; managing these risks is especially critical in this case considering the parallel efforts to re-engineering the underlying business processes. Key areas of consideration include the following:

- **Linkage of IT and Business Strategy:** A strategic information technology plan should be developed in a structured process including identifying technology vision, goals, issues/constraints and time-based strategic initiatives (projects). This planning effort should include broad participation from executive management, program management, as well as key business partners (implementing agencies and control agencies). The explicit alignment of IT strategy to the ‘re-engineered’ business direction cannot be overstated. Industry examples are numerous of costly or failed IT efforts owing to lack of business linkage and/or executive commitment.
- **IT Leadership:** The ability of the CBDA to achieve its goals of becoming the “clearing house” of CALFED related information, implementing Science, and managing and reporting of CALFED funds and performance outcome measures depends on the implementation of a professional IT Organization. This organization would be managed by an experienced CIO and have a formal proficient technology architecture in place. These attributes will provide the CBDA with the capability to develop and implement repeatable processes, gather data and provide information as required by the ROD, and effectively govern and evolve their technology investments.
- **Integrated Data Management and Retention Strategy:** Data should be viewed as a strategic business resource and controlled centrally through a formalized and industry-standard data management procedure. A comprehensive data management strategy should be developed that supports the overall IT strategy, addresses near-term weaknesses and importantly sets the foundation for implementing a centralized CALFED data and applications repository (as defined below). The strategy must also address SAM compliance.
- **Web-enabled CALFED data repository:** CALFED will strengthen its value proposition to the implementing agencies by operating as the central clearinghouse of program (and project) information. A central data repository (data warehouse) could be housed at CBDA and contain an agreed-up data structure that manages project and program information at a reasonable level of detail. Information and reports would be accessible by all authorized users, including for use by the implementing agencies in monitoring critical-path milestones, issues and risks. The design would embrace a revised performance reporting method and standardized (and ‘normalized’) data set. Implementing agencies would report status through a web-enabled facility in such a way that is less burdensome than current methods (agency acceptance and ‘buy in’ would be critical to success). The information would be analyzed by CALFED regional and program managers in an ongoing service to identify issues and opportunities throughout the year.
- **Integrated Applications Strategy:** An integrated applications strategy should specify the functional

applications that are needed to support the overall IT strategy. Consideration should be made for enterprise applications such as document workflow and management, business intelligence reporting tools and web-enabled project management for example. The focus should be in better integrating and controlling core business functions and data.

- **Infrastructure:** CBDA should consider a complete overhaul of the current technology infrastructure and bring the components up to current technology standards and provide secure connectivity among CALFED partnering organizations, CALFED Intranet and the world wide Internet. In addition the new infrastructure must provide the following:

- ✓ Local Area Network (LAN) servers providing standard back-office services including file serving, back-up, printing, etc.
- ✓ Current “interim” network services provided by the HHSDC including email and web services.
- ✓ Network management tools.
- ✓ Automated work flow capabilities
- ✓ Security and identity management
- ✓ Network monitoring and fraud detection tools

CBDA will need to assess their current network design to determine what changes are required to meet their processing needs of the future. .

All of the infrastructure changes must be driven from an IT Strategic Plan and an enterprise architecture that is derived from the strategic business goals of CBDA and it’s CALFED partners.

- **Support:** IT is vital that a thorough assessment be performed regarding the scope and level of technical and end-user support services necessary to support the new EITA. IT management and staff should consider developing new Service Level Agreements and Memorandums of Understanding (MOU’s) necessary to provide a sustained level of service to the CBDA. Appendix B-3 provides a listing of possible technology support services for consideration.

Appendix A – Grant Procedures, Roles and Responsibilities

A.1 Grant Award Package

Roles and responsibilities include the following:

- Grants and Contracts Office produce final version of grant award and route package for approval signature.
- Administration Division reviews grant award and signs off on completeness review.
- Budget Office verifies grant term to ensure end date does not exceed fund liquidation, check fiscal year fund balance for availability of funds, and verify account codes.
- Accounting Office checks grant term, check Controller's balances and Allotment Expenditure Ledger for fund availability verify account codes, encumber grant funds, and sign funding agreement.
- Grants office then prepares award letter, and mails grant award to recipient for signature along with payment request form and guidelines.
- Grants Office receives signed documents from recipient, check for original signatures of authorizing representative.
- Chief of Administration reviews grant award, and signs Grant Agreement.
- Grants office prepares executed letter agreement and mails executed copy back to recipient. Distribute signed

documents to CBDA grants project manager and accounting office.

A.2 Recipient Progress Report

Roles and responsibilities include the following:

- **Project Manager:**
 - ✓ Review progress report to ensure project is proceeding according to the terms of the grant agreement.
 - ✓ Verify that all products due during the quarter have been received and where required, provide written approval to the recipient.
 - ✓ Prepare a progress evaluation and authorization statement summarizing activities and noting any issues requiring attention.
 - ✓ Forward original copies of progress report, progress evaluation/payment authorization to Grants and Contracts Office.
- **Grants and Contracts Office**
 - ✓ Review progress report and evaluation/payment authorization, and act upon any administrative issues.
 - ✓ Record report date in database and maintain copy in grant file.

A.3 Payments

Control procedures include the following:

- All required quarterly reports have been submitted and are satisfactory to the CBDA project manager;
- Applicable contracts and/or subcontracts have been reviewed and approved by the CBDA project manager;
- All products due have been submitted and are satisfactory to the CBDA project manager;
- All applicable project requirement described in the applicant's Progress Assessment and Evaluation Plan (PAEP) have been satisfied;
- All appropriate permits or permit waivers from governmental agencies have been issued to the recipient and copies have been received by the CBDA project manager;
- Payment should generally be made on a reimbursement basis for recipient expenditures. As a general rule, advance payments will be not be allowed except at CBDA discretion warranted by compelling need. If any advance payments are received from the CBDA, they must be required to be deposited in a separate interest-bearing account. Advance payments should be made only when special circumstances dictate and should not be considered the normal course of business. The CBDA project manager should consider advance payment only if there is a clear disincentive to requesting payment in arrears. Contracts and/or subcontracts with scheduled payment are not sufficient reason to receive advances.
- Other prepayment conditions as may be required by the terms and conditions of the grant agreement have been met.
- Unless otherwise specified in the grant agreement, all payment requests should be paid by the CBDA within 30 calendar days of receipt of the payment request. The project manager and the Grants and Contracts Office should be allowed 10 days each for the review. The State Controller's Office will require an additional 15 calendar days to issue the warrant.
- Policies, procedures and electronic forms governing retention percentage, as well as payment request disputes should be established and accompany the Grant Solicitation Package as well as executed grant agreements. Standard forms should be used for:
 - ✓ Progress Evaluation/Payment Authorization
 - ✓ Grants Payment Request
 - ✓ Invoice Dispute Notification

Roles and responsibilities include the following:

- **Accounting Office:**
 - ✓ Receive, date stamp and log payment request.
 - ✓ Complete Grant Payment Request route slip
 - ✓ Submit route slip, payment request, and backup to CBDA project manager

- **Project Manager:**

- ✓ Receive and log payment request
- ✓ Review payment request:
 - Check for signature of authorized representative on Payment Request form.
 - Verify accuracy of Payment Request form
 - Check narrative and backup documentation (e.g. paid invoices, time records) to ensure that items being invoiced are allowable costs to the project that are included in the grant budget.
- ✓ Check grant agreement to ensure any prepayment conditions have been met and products received.
- ✓ Verify all required progress reports have been received including Progress Assessment and Evaluation Requirements.
- ✓ If disputing payment request, prepare an Invoice Dispute Notification form and mail to recipient, with copies to the Grants and Accounting Offices. Resolve dispute with recipient.
- ✓ If payment request is satisfactory, sign payment request and route slip.
- ✓ Complete and sign Progress Evaluation/Payment Authorization form.
- ✓ Forward approved payment request, backup documentation, Progress Evaluation/Payment

Authorization form and any products or progress reports to Grants and Contracts office.

- **Grants and Contracts Office:**

- ✓ Review payment request
- ✓ Compare expenditures to date with previous payment request
- ✓ Verify accuracy of information on the Payment Request form
- ✓ Ensure backup documentation is provided and supports the expenditures reported in the narrative and Payment Request form.
- ✓ Review all necessary products have been received.
- ✓ Record payment in database and grant file
- ✓ When payment request is satisfactory, sign and forward original payment request form to Accounting for processing

- **Accounting Office:**

- ✓ Schedule payment and forward to Controllers for payment to recipient.

A.4 Term Extensions

Roles and responsibilities include the following:

- **Project Manager:**
 - ✓ Review term extension request. Verify request is signed by recipient's authorized representative.
 - ✓ If not approved send written response to recipient explaining reason for not approving request. If approved, sign request and indicate revised extension date. Forward to Grant and Contracts Office.
- **Grants and Contracts Office:**
 - ✓ Review request and check if revised date is no later than six months prior to liquidation date of the grant funds
 - ✓ Complete extension route slip, prepare copies of extension letter and route for approval signatures.
- **Project Manager:**
 - ✓ Sign and forward copies of extension letter
- **Budget Office:**
 - ✓ Check revised term to ensure date does not exceed fund liquidation and sign route slip.

- **Accounting Office:**

- ✓ Check revised term, sign route slip and sign copies of extension letter.

- **Grants and Contracts Office:**

- ✓ Enter new term date into master file of Science Grants database.
- ✓ Mail original letter to recipient, distribute copies to Accounting and Project Manager, and grant file.

A.5 Change of Scope

Select control procedures include the following:

- It should be a requirement that grant recipients obtain prior approval of the CBDA project manager and Grants and Contracts Office for changes to the work statement or transfers among cost categories that exceed 10 percent of the total approved budget.
- Payment should not be authorized for work performed prior to CBDA approval.
- For grants that include federal funds, amendments may also require prior written approval from the federal grantor agency.

Roles and responsibilities include the following:

- **Project Manager:**
 - ✓ Obtain written request from recipient detailing and justifying proposed changes to the award.
 - ✓ Review request.
 - ✓ If not approved send written response to recipient detailing reasons for not approving request. If approved, prepare revised work statement and/or budget and forward to Grants and Contracts Office along with original copy of recipients request.
- **Grants and Contracts Office:**
 - ✓ Reviews revision and sign copies of revision and make pending copy.
 - ✓ Send approval letter to recipient requesting recipient sign and return original to the Grants and Contracts Office.
 - ✓ Upon receiving signed original, insert original into agreement and send copy to Project manager and a copy to Accounting Office.

A.6 Termination

The executed grant agreement may be terminated for either breach or convenience. These are described as follows:

- **Event of Breach** – CBDA may terminate an agreement in the event of any breach by the recipient of the conditions of

the grant agreement. In the event of breach, the project manager should notify the Administration Division who will engage the CBDA's Legal Office on termination procedures.

- **Termination for Convenience** –The CBDA should establish procedures where it may at its option; terminate an agreement in whole or part, upon giving thirty days advance notice in writing to the recipients by certified mail. The project manager should contact the Grants and Contracts office and CBDA Legal Office to commence termination procedures.

The recipient may terminate an agreement in whole or in part when both the CBDA and the recipient agree that continuation of the project will not produce beneficial results commensurate with the further expenditure of funds. Both parties should agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated.

In the event of partial termination, the CBDA should pay the recipient for all services satisfactorily completed and expenses incurred prior to notice of termination which could not by reasonable efforts of the recipient have been avoided, but not in excess of agreement maximum payable. The CBDA project manager should determine the disposition of real property, equipment supplies, and materials resulting from the award in accordance with applicable federal rules or circular, which was included as part of the grant award.

A.7 Close Out

Roles and responsibilities include the following:

■ **Project Manager:**

- ✓ Review final administrative report and any closeout documents including the completed PAEP report.
- ✓ Verify that all project tasks have been completed, any special conditions have been met, and all products have been received.
- ✓ Review final Financial Status Report and/or Payment Request form.
- ✓ Complete a Progress Evaluation/Payment Authorization form.
- ✓ Obtain program manager approval and forward approved final administrative report, PAEP report, Financial Status Report and/or Payment Request Authorization form to Grant and Contracts Office.

■ **Grants and Contracts Office:**

- ✓ Review final administrative report to ensure it meets the requirements outlined for the Science Program.
- ✓ Review final Financial Status Report and/or Payment Request form.
- ✓ Compare Expenditures to date with previous payment request.
- ✓ Verify accuracy of information on the Payment Request form.

- ✓ If recipient is requesting reimbursement for expenditures, ensure backup documentation is provided and supports the expenditures reported.
- ✓ Record final payment, final report date, and final completion date in database; change project status to project completed and close out grant file.
- ✓ Forward approved payment request to Accounting for processing.
- ✓ Mark file "Project Completed" and change status in Science Grants database.

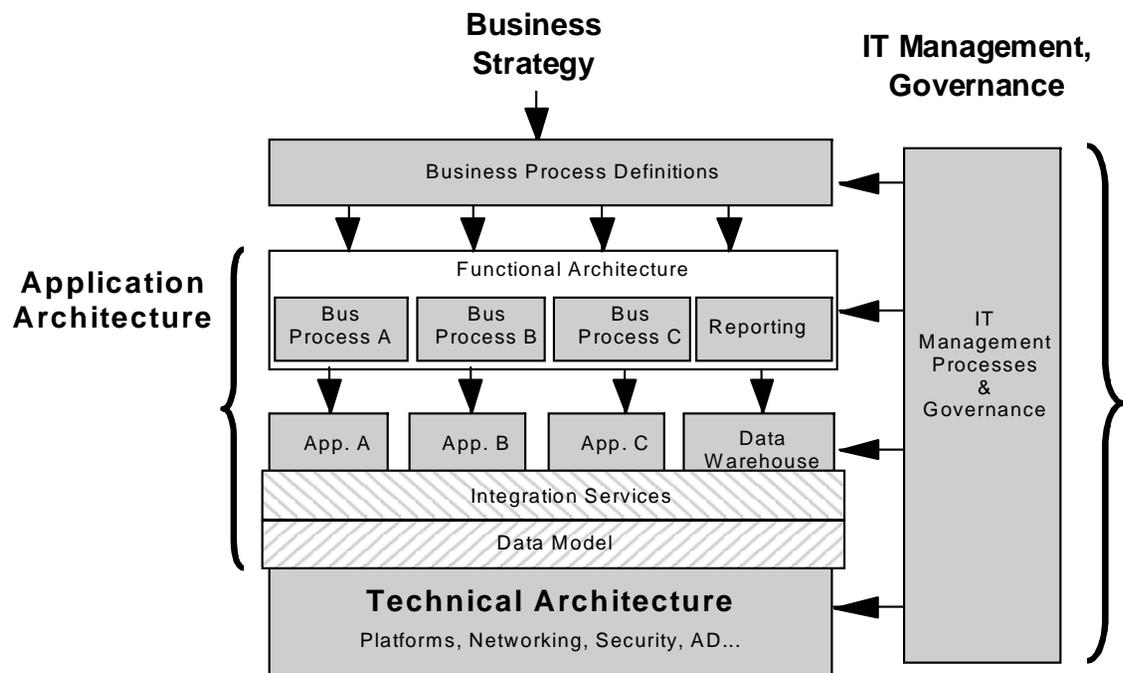
■ **Accounting Office:**

- ✓ Schedule final payment and forward to Controllers Office. Liquidate any balance, mark file "Project Complete" and place in closed files.

Appendix B – Considerations in Implementing the Enterprise Information Technology Architecture

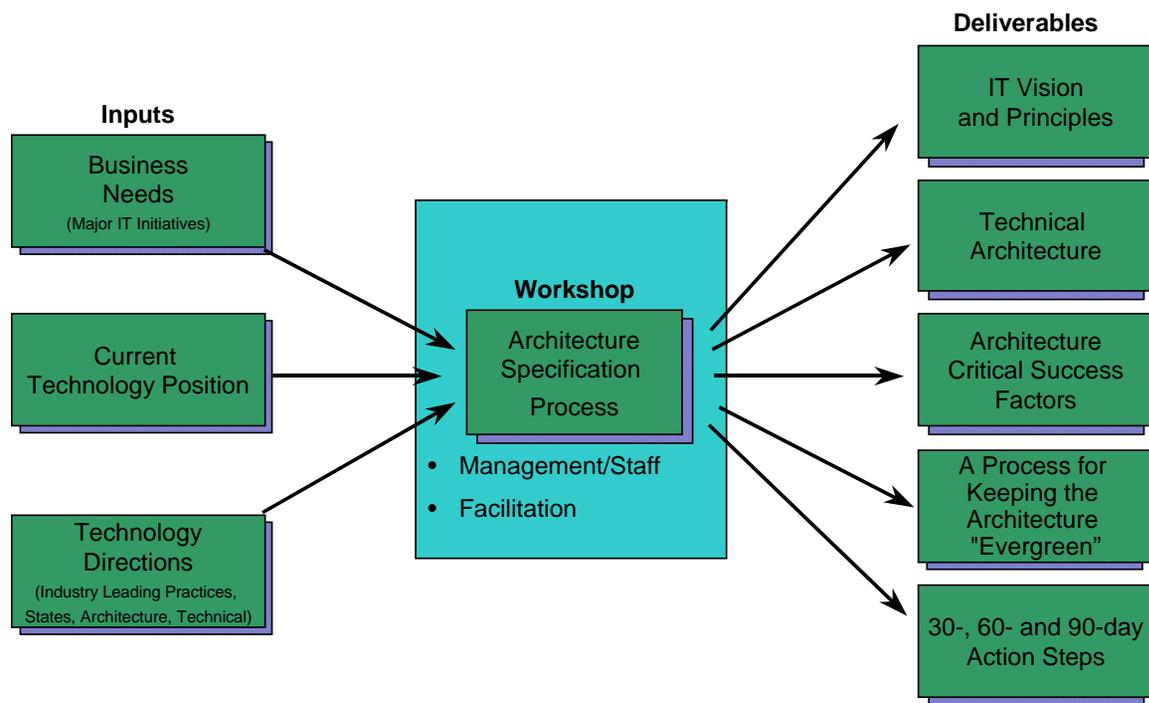
B.1 Alignment of IT Governance and Architectures to Business Strategy

The success of CBDA’s conceptual future business model very much relies on aligning information technology to support business direction. The figure below visually portrays a conceptual linkage of IT governance and architecture to business strategy and processes.



B.2 Considerations in Building an Enterprise Information Technology Architecture

The figure below provides an outline of activities in building an EITA that is properly linked to business strategy.



B.3 Considerations for IT Support Services

The support agreement with the Department of Technology Services (DTS) – HHSDC campus, has prompted some concern with respect to the scope of services received, the quality of those services/service levels and also costs. This should be addressed through dialogue with CBDA and DTS to help confirm and refine where needed. In a future environment that entails integrated corporate applications and data, consideration must also be given to formalizing support service level agreements and MOU's between CBDA's central IT unit and end-users.

The assessment of support services should clearly delineate between the scope and level of services to be provided by DTS, versus those to be provided by internal CBDA or potentially Resources Agency IT staff. The full suite of services includes, but are not limited to, the following:

- ***Data Center Facility***
- ***Data Center Network***
- ***Local LAN/WAN/MAN***
- ***Managed Services***
 - ✓ Performance and Availability Monitoring
 - Monitoring
 - Job Scheduling Software
 - Batch Processing Jobs
 - Printing Support

- ✓ Storage Device and Data Management
- ✓ Resource Management
 - Hardware Configuration
 - Software Configuration
 - Capacity Management
 - Change Management
 - Staging Environment
 - Hardware Refresh
- ✓ Asset Management
- ✓ System Security
- ✓ Disaster Recovery
- ✓ Hardware Procurement

- ***Application Services for Business and Desktop Applications***

- ✓ Application Monitoring, Problem Identification and Resolution
- ✓ Maintenance and Support
- ✓ Database Administration
- ✓ Information Security Administration
- ✓ Change Control
- ✓ Implementation
- ✓ Maintain Application Inventory and Configuration Information

- ✓ Help Desk and Level 1 through Level 3 Support
- ✓ Desktop Support
- ***Management and Key Personnel***
 - ✓ Project Management Methodology
 - ✓ Project Manager
 - ✓ Support Personnel
 - ✓ Roles/Use of Subcontractors
- ***Migration***
- ***Service Levels***
- ***Integration of Existing Resources and Initiatives***
 - ✓ Existing CBDA Networks
 - ✓ CBDA Initiatives