

**State of California**  
**Franchise Tax Board**

***Workload Growth***

**Feasibility Study Report**  
**FTB FSR 08-04**

**October 17, 2008**

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## **1.0 Executive Project Approval Transmittal**

See attached.

## **2.0 Project Summary Package**

See attached.

## **3.0 Business Case**

### **3.1 Business Program Background**

The Franchise Tax Board (FTB) collects tax revenues and operates other non-tax programs. The department administers these programs through a variety of activities, including: processing both paper and electronically filed returns; answering taxpayer and tax practitioner inquiries, auditing and collection activities for both tax and non-tax debts, and settlements of other civil tax matter disputes that result in protests, appeals, or refund claims.

For example, the FTB and its staff administer California's Personal Income Tax program, the Bank and Corporation Tax Laws, and the Homeowners and Renter's Assistant Programs. These FTB programs and the related laws associated with them secure the tax and non-tax revenues needed to fund other state programs and services for Californians. The FTB also administers laws pertaining to the collection of various non-tax debts, such as court-ordered debt and vehicle registration.

To successfully administer its programs, FTB relies on the use of a full service data center. Computer technology is essential to FTB's Filing, Collection and Auditing programs. For example, the FTB's data center processes, on average, approximately 17<sup>1</sup> million online transactions per month, with a high of 20 million transactions and over 237,000 average batch processes per month, with a high of 298,000. The data center also generates 2.7 million print pages per month of in-house documents, notices, bills and letters during peak season. For fiscal year 2006/07 a total of 32.4 million pages were printed.

In effect, all of FTB's critical programs and processes depend on departmental users having Mainframe access and the appropriate operating capacity to be successful. The Mainframe activity is dependent on sufficient processing capacity and central storage to process these workloads. The Mainframe capacity is measured in MIPS (Millions of Instructions Per Second) and central storage is measured in GB (gigabytes). Currently FTB's Mainframe has Model 602 (2 processors and 914 MIPS) and 64 GB central storage and expects to reach its maximum capacity at the end of FY 2008/09.

In FY 2008/09, FTB's projections<sup>2</sup> indicate that FTB will require additional Mainframe capacity for FTB business managers to maintain service levels required to support critical business programs and processes. Without ample Mainframe capacity, FTB's ability to efficiently and effectively collect revenue and to respond to taxpayers will be negatively impacted<sup>3</sup>.

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<sup>1</sup> The software-reporting tool previously used for online transactions was replaced in August 2007 due to its high cost. The new tool uses a different counting method. The figures generated after August 2007 cannot be converted or compared to the old version and vice versa.

<sup>2</sup> See Table 1 (see Page 5)

<sup>3</sup> See problem statements and impacts in section 3.2 Business Problems or Opportunities

In addition to the technology described in the previous paragraph, FTB also relies on business intelligence information. Currently FTB uses the Enterprise Customer, Asset, Income and Return (ECAIR) Data Warehouse to store data used to develop Business Intelligence (BI) reports.

ECAIR was developed as part of the Integrated Non-filer Compliance (INC) Project (FTB FSR 96-13) and resides on a UNIX platform. Originally named the INC Data Warehouse, its purpose was to deliver improved decision support and program evaluation abilities to the Non-filer Program. The data warehouse was designed to contain all of the detailed historical information about the income records, tax returns and non-filer cases used and/or created by the INC System. This data was further organized into Online Analytical Processing (OLAP) structures that allow Non-filer Program staff to quickly navigate through millions of records to track revenue, identify trends, locate promising non-filer cases or isolate problem cases. In addition, the data warehouse has deployed a query and reporting tool that allows staff direct access to the detailed historical income, tax return and non-filer case data. It also contains a full copy of the INC database which staff utilizes to obtain more current information without impacting the performance of the INC System. Since its inception in 2002, Non-filer Program teams have used the data warehouse's processes and detailed information to review and recover an average of 133,000 non-filer cases each year. These cases were placed in a review status by the INC System and would not have been contacted without that intervention. The value of these recovered cases averages \$90 million a year.

In the past three years, ECAIR has begun to support other areas within FTB including the Audit and Accounts Receivable Management Divisions. It has provided data for a wide variety of the department's key initiatives including Amnesty and the first two years of Ready Return. Both audit and collections staff use ECAIR to obtain data for their Tax Gap efforts. The department's primary Personal Income Tax (PIT) audit modelers have transitioned from using a 35-year-old Mainframe system called the Automated Selection of Tax Returns for Audit (ASTRA) to ECAIR. This transition occurred without the significant costs typically associated with replacing a legacy system. The audit modelers now use ECAIR to support their modeling efforts and generate more than \$75 million annually.

Expanding the current ECAIR Data Warehouse with new data sources has been necessary in order to provide business managers with increased BI capabilities. Greater use of BI has resulted in an increased need for more computer capacity. Without this capacity, FTB will be stymied in addressing revenue opportunities and will not have the necessary data needed to make critical business decisions.

Thus, because of increasing demands on the ECAIR data warehouse and the increased application workload projected for FTB's Mainframe system, FTB needs to procure additional computing capacity. The additional computing capacity is essential to FTB's ongoing effectiveness and therefore, FTB's ability to collect revenue.

### **3.2 Business Problem or Opportunity**

**1. The current Mainframe processor does not have sufficient CPU and memory capacity to effectively and efficiently handle the growth of current application workloads projected beyond FY 2008/09.**

If we do not add more processor capacity we will experience performance degradation that would impact revenue production. Industry guidelines recommend operating at less than 90% of available CPU capacity. During the 2008 peak tax season, the department's capacity planning metric exceeded the industry guidelines by 9 percent using 908 MIPS out of a total of 914. It is projected that the current system will be at full capacity in FY 2009/10 (See Table 1 on Page 5) and based on workload growth projections, will not be able to support the business areas. This could result in severe economic impacts:

- An increase in return processing time resulting in backlogs. When the Mainframe takes longer to process a request, this increases the time it takes to complete a task.
- Customer dissatisfaction and reduction in use of FTB's online services due to increased response times. Online services use information via the Mainframe to process customer requests. This could jeopardize the growing use of online services, which increased 21.44% between 2007 and 2008.

Table 1 (on Page 5) displays MIPS usage by Program for FY 2006/07 baseline, as well as projected MIPS requirements for FY 2008/09 through FY 2013/14. The MIPS projections reflect increases from FY 06/07 to FY 13/14 for all tax programs at 75 percent, Homeowner and Renters Assistance (HRA) at 73 percent and Non-Tax Debt at 73 percent. These increases are based on a historical growth rate of 9.5 percent as well as the growth of CPU usage on the Mainframe as follows:

- A. A direction from Computing Resources Bureau to change Mainframe infrastructure by establishing and promoting physically separate development and production environments for the systems and applications development areas. This separation will eliminate the risk of impact from development and testing areas on production processing, as well as to position FTB within accepted industry standards and to adhere to the IT Infrastructure Library (ITIL) framework. To accomplish this requires additional hardware resources such as CPU and Memory.
- B. Changes in the way FTB uses and processes the taxpayer data due to emerging technologies. As more native Mainframe applications are migrated or updated to include web-based front-ends (which makes them available via PCs), current subsystems and components need to be upgraded to provide additional capacity such as Court Ordered Debt Expansion (CODE), E1099 and Enterprise Architecture System (EASY). In some cases additional Mainframe subsystems and components may be necessary. These subsystems and components include WebSphere, JAVA, DB2, CICS, various performance monitors and Mainframe data communications. To help facilitate future capacity requirements, additional resources (CPU and Memory) need to be augmented.

Table 1 CPU MIPS Usage by Program Area

FY 2006/07 Baseline with CPU MIPS Changes thru FY 13/14								
Workloads	FY 06/07 Actual	FY 07/08 Actual	FY 08/09 Projected	FY 09/10 Projected	FY 10/11 Projected	FY 11/12 Projected	FY 12/13 Projected	FY 13/14 Projected
<b>Personal Income &amp; Corporation Tax Programs</b>								
Taxpayer Assistance	52	63	75	83	90	98	108	118
Tax forms	43	54	64	69	76	84	91	99
Analysis & Recommendations	67	83	98	107	117	128	140	154
Tax Returns	114	141	166	182	199	218	239	261
Payments	96	119	140	153	168	184	201	221
Tax Auditing	34	41	49	54	59	65	71	77
Tax Collection	143	178	207	228	251	275	301	330
Filing Enforcement	7	8	10	11	12	13	14	16
Investigations	84	104	122	134	146	160	175	192
Withholding Services	39	48	57	62	68	74	82	89
<b>Subtotal</b>	<b>679</b>	<b>839</b>	<b>988</b>	<b>1083</b>	<b>1186</b>	<b>1299</b>	<b>1422</b>	<b>1557</b>
<b>Homeowners &amp; Renters Assistance</b>								
<b>Subtotal</b>	<b>19</b>	<b>23</b>	<b>28</b>	<b>30</b>	<b>33</b>	<b>39</b>	<b>43</b>	<b>47</b>
<b>Non-Tax Debt</b>								
DMV Collections	16	20	22	25	27	30	33	35
Court Ordered Debt	16	20	23	24	27	30	32	35
Contracted Services*	5	6	9	10	10	10	12	14
<b>Subtotal</b>	<b>37</b>	<b>46</b>	<b>54</b>	<b>59</b>	<b>64</b>	<b>70</b>	<b>77</b>	<b>84</b>
<b>Total Capacity MIPS Used</b>	<b>735</b>	<b>908</b>	<b>1070</b>	<b>1172</b>	<b>1283</b>	<b>1408</b>	<b>1542</b>	<b>1688</b>
<b>Total MIPS Capacity Available</b>	<b>752</b>	<b>914</b>	<b>1134</b>	<b>1134</b>	<b>1134</b>	<b>1134</b>	<b>1134</b>	<b>1134</b>

\*Reimbursed Services provided by FTB

**2. The current Mainframe processor will not have sufficient storage capacity to avoid degradation in performance for workloads running on the Mainframe.**

Performance degradation impacts all users of the Mainframe. For example FTB auditors and collectors perform a variety of tax compliance functions and assist individuals, business entities, and taxpayer representatives in resolving discrepancies with their accounts. These tax compliance functions include generating notices to taxpayers. A delay in generating taxpayer notices will cause delays in FTB's ability to deposit money owed to the State, decreasing the amount of revenue the State would gain by investing the money. The revenue impact as a result of the delay in generating these notices is conservatively estimated at \$104,581 per day. An interest rate of 4.0% was used, which was based on an average from the State Treasurer's Office short-term rate for calendar year 2007.

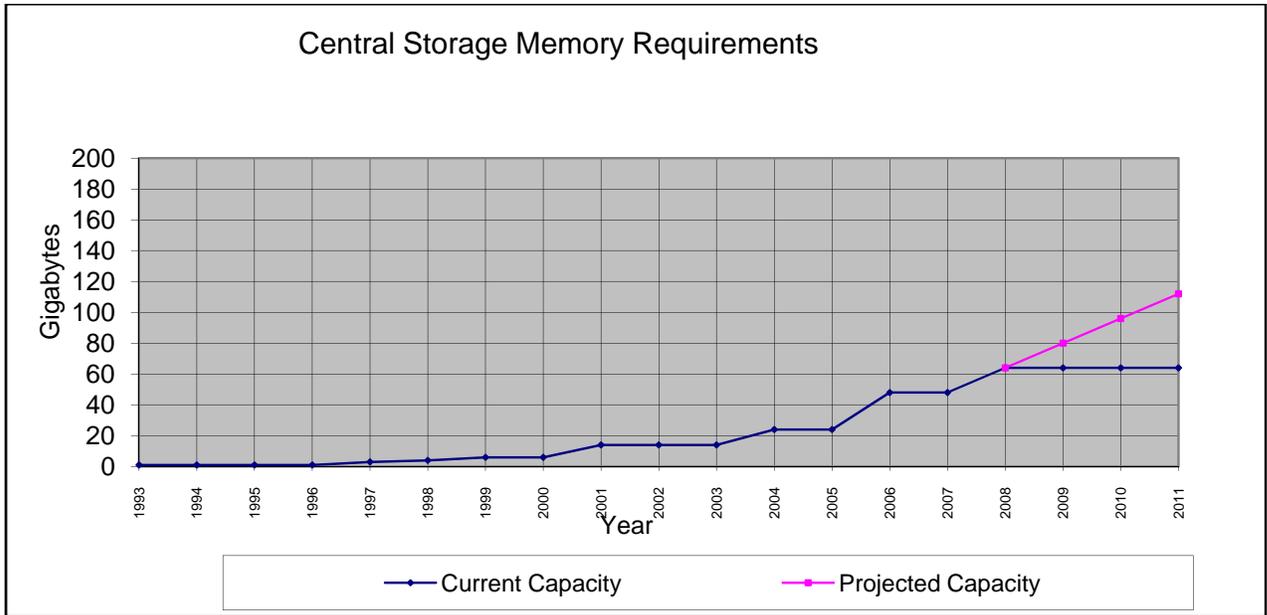
As of May 31, 2008, the Mainframe generated over 1.5 million Personal Income Tax (PIT) Returns and Information Notices (RIN) totaling over \$1.3 billion in revenue.

Additionally, users of the call center who rely on sub-second response times when they are on the phone with taxpayers will not be able to service as many taxpayers if the systems that they need are performing slow. This results in the perception that FTB is providing inadequate customer service.

Computer Programs running on the Mainframe work more efficiently if the information/data they need to function stays in the Mainframes computer's main storage. If the information/data moves out of main storage to another device outside the CPU this is referred to as paging. Paging increases over time indicates that there is a possible need to increase the CPUs main storage. The best position to be in is to not have any paging, but when the situation arises and the system must page, maintaining a level below 20% is acceptable. Currently we are experiencing paging at up to 51% level during normal system operation. To maximize the available CPU processing throughput, sufficient Central Storage (GB of memory) needs to be available for processing work versus using CPU cycles to make room to process work. Table 1 (on Page 5) indicates the CPU projected utilization. The increase includes standard workload growth (based on historical data), possible latent demand workload, and an increase required for testing and development of new technology. Therefore, Central Storage should be correspondingly augmented (see Graph 1).

Graph 1 below shows the Memory historical growth and the projected requirements.

Graph 1



Based on projected workloads in FY 2010/11, the department will experience serious processing slowdown at an estimated rate of 28% due to a combination of CPU and memory limitations. With the current system, sufficient CPU and storage capacity will be unavailable to meet anticipated workload growth.

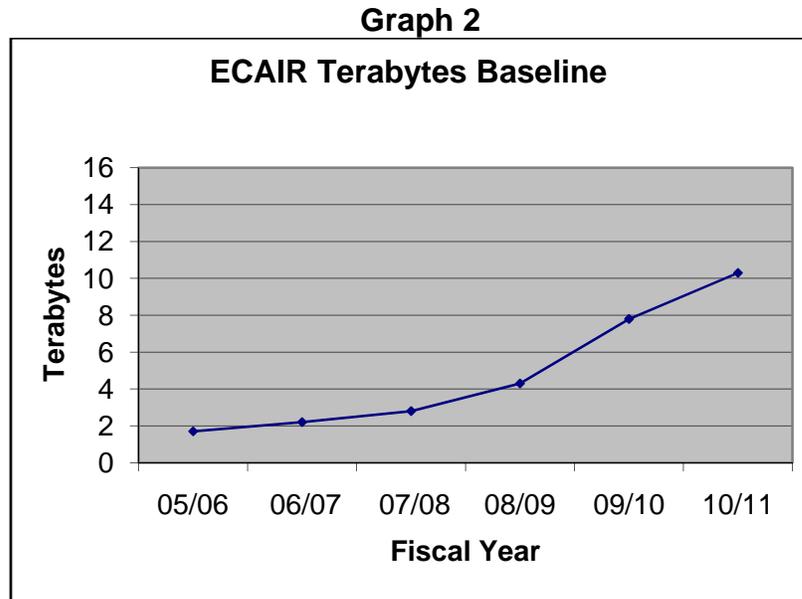
**3. ECAIR is experiencing processing delays which result in a delay finding more nonfilers and candidates for audit. ECAIR is consistently utilizing 95% of its space available. The process and storage capacity of the ECAIR's hardware are nearing their limits.**

Since its inception, the ECAIR has seen a steady growth in the amount of data it processes. However, in the past three years, that growth has accelerated dramatically as new customers have been added and existing customers have expanded their use of data. This growth can be measured across numerous areas. The areas of growth include:

- The amount of data in ECAIR has more than doubled (from 1.7 TB to 3.8 TB);
- The number of parties (taxpayers, dependents, payers, etc.) in ECAIR has grown by 52% (from 50 million to 76 million);
- The number of income records loaded each year has grown by 50% (from 100 million to 150 million);
- The number of income records available to load has grown by 110% (from 150 million to 315 million);
- The number of income sources used by INC has grown 67% (from 12 to 20)
- The number of dedicated users has grown by 50% (from 20 to 30)
- The number of highly complex queries has grown by 400% (from 15 to 75);

- The number of requests for ad hoc queries to run against ECAIR has grown by 133% from 150 to 350).

The following graph displays the steady increase in data stored in ECAIR and the projected need through FY 2010/2011.



This growth has led to many benefits for FTB. The data is used to find more nonfilers and candidates for audit. Outdated systems like ASTRA have been retired without the cost of developing a replacement system. Key initiatives like Ready Return have been prototyped with minimal costs.

However, there has been one significant drawback to this growth. On the storage side, the ECAIR is consistently utilizing 95% of the space available. This can cause significant delays in our data loads because they either fail or must be put on hold until our database administrators (DBAs) and system administrators can free up sufficient space to complete them. More importantly, the performance of the ECAIR has degraded significantly. The time required to perform a weekly update of all of the parties in ECAIR has grown by 138% (from 16 hours to 38 hours). The time needed to complete the simplest ad hoc query has risen by 67% (from 3 minutes to 5 minutes). Finally, and of most concern, is that processes (queries and loads) that could previously run concurrently now must be run separately. This severely limits our flexibility in dealing with customer requests because data loads that would complete overnight or during the weekend three years ago now stretch into the workday and queries that could previously coexist with a data load must now be run as stand-alone processes.

The ECAIR server was purchased in 2001 and has been in continuous use since then. This use has begun to take a toll on the server. There have been three failures of key server components in the past 24 months. Fortunately, these failures have been resolved with a minimal disruption of services. However, as the amount of data and users continue to grow, the server is being placed under additional strain and the likelihood of a prolonged service disruption has grown significantly as the hardware

components continue to age. Any extended service disruption, would severely constrain the audit and nonfiler staff's ability to continue to generate the \$165 million dollars they do each year

### **3.3 Business Objectives**

1. By, December 2009, increase the processing capacity from 914 to 1,337 MIPS to meet projected capacity requirements for FY 2009/10. (Problem statement #1)
2. By December 2009, increase the Mainframe central storage memory capacity from 64 to 80 GB. (Problem statement #2)
3. By May 2010, increase the ECAIR storage capacity from 4 to 14 TB. (Problem statement #3)
4. Increase the processing speed of ECAIR's supporting hardware by a factor of 4 in order to be able to provide our customers with data they need in an efficient and timely manner (Problem statement #3)

### **3.4 Business Functional Requirements**

The following functional requirements describe the characteristics necessary to satisfy the business objectives.

#### **MAINFRAME**

1. The system must have the capacity to maintain a consistent internal response time of less than 0.5 seconds for 97% of the online transactions processed. (Objective statement #1)
2. The system must permit access to each of the online programs from any terminal (TCP/IP, COM-LETE, TSO, CICS, VTAM). (Objective statement #1)
3. The system must be able to meet the following minimum processing requirements during the overnight batch window (1800 to 0500 hours).
  - Support the processing of up to 450,000 personal income tax returns per day.
  - Process the daily edits and math verification of personal income tax returns. Support online Routine Resolution (from 2200 hours to 0015 hours) while the batch processes are executing.
  - Process the daily monetary edit, math verification, and update by 0500, thereby not overlapping production cycles or causing disruption of online activities.
  - Process the non-monetary update by 0500 daily.
  - Process the Bank and Corporation edits, math verification, and update by 0500 daily.
  - Process mission critical backups of both system and database files. (Objective statement #1)
4. Must have processing capacity to deliver all warrants to SCO by 0700 each day. (Objective statement #1)
5. The system must be able to provide a maximum one-hour job turnaround time for program development and user functions during the day shift. (Objective statement #1)
6. The CPU must provide a minimum of 1,697 MIPS. (Objective statements #1)
7. The CPU must perform under control of current IBM software technology. It must provide full support for the z/OS operating system in its augmentation path. It must guarantee compatibility with future IBM software products. It must be configurable to

support IFL, zAAP, and zIIP specialized engines. Major enhancements must be supported within twelve (12) months of availability. (Objective statements #1 & 2)

8. The CPU must have a minimum of 160 GB of memory. (Objective statement #2)

## **ECAIR**

1. Must deliver the storage capacity required to meet the data needs of ECAIR's current and future customers. Specifically, this would include sufficient storage to support the normal growth in ECAIR's existing data sources.
2. Must provide the ability to use existing space more efficiently so that more data can be stored in the same amount of space. (Objective statement #3)
3. Must deliver the ability to access and use data that exists in other databases or platforms. (Objective statement #3)
4. Must deliver the processing capacity that will allow our customers to retrieve the data they need in a timely fashion. Specifically the performance of:
  - Data loads should increase by 500% (i.e., the ECAIR weekly customer update decreases from 38 hours to 7.5 hours);
  - Simple ad hoc queries should increase by 1000% (from 5 minutes to 30 seconds);
  - The complicated audit models should be increased so that the majority of them complete in same amount time as they did in the ASTRA environment. (Objective statement #4)
5. Must deliver the processing flexibility that will allow processes (loads and queries) to run concurrently. This would give us the ability to assign higher priority to mission critical or time sensitive processes. (Objective statement #3)
6. Must deliver supporting hardware that has the reliability required to support the growing number of users and key applications that ECAIR will host. (Objective statement #4)

## **4.0 Baseline Analysis**

### **4.1 Current Method**

#### **MAINFRAME**

FTB uses an IBM z9 model EC 2094-602 processor for Mainframe application processing. FTB's z9 is linked through the FTBNet (FTB's "Intranet"), Local Area Networks (LAN), and Wide Area Networks (WAN) to PCs having access to Mainframe data.

FTB currently utilizes software called COM-PLETE, CICS and TSO as teleprocessing monitors, with major production and development work done under COM-PLETE and CICS. In addition, FTB employs software called Adabas and DB2 as its primary database management systems on the Mainframe. These teleprocessors and databases run on the Mainframe and consume CPU while executing.

For instance, COM-PLETE provides an online environment. Many FTB online business applications either run on or access the Mainframe and they are an essential part of collecting revenue. FTB staff use the following systems in their daily activities:

- **TI: Taxpayer Information System**

Captures updates and stores taxpayer information

- **BETS: Business Entities Tax System**

BETS is the primary tax accounting system for FTB's business entities. This system administers the California Revenue and Taxation Code as it applies to corporations, partnerships and limited liability companies doing business in the State of California.

These systems also interact with the Mainframe:

- **INC: Integrated Nonfiler Compliance**

Identifies potential non-filers, and notifies and secures returns only from those businesses and individuals who do not file returns when they have a filing requirement.

- **PASS: Professional Audit Support System**

Standardizes and documents audit, protest, and legal files and work papers.

- **ARCS: Accounts Receivable Collection Systems**

Evaluates and assigns a risk level to each balance due account 30-45 days after first notice is sent out by the Taxpayer Information System.

Core business areas supported by our current method include PIT, B&C, HRA, and non-tax debt.

## **ECAIR**

ECAIR resides on a UNIX platform and contains all of the detailed historical information about the income records, tax returns and nonfiler cases used and/or created by the INC System. It also captures additional data sources needed to support PIT audit modeling. Data is loaded to ECAIR on a daily, weekly, bi-monthly and yearly basis depending on the data source.

Once the data is loaded into ECAIR it is accessed in a variety of ways. Each month nonfiler case data, tax return data and accounting system information (payments, tax, penalties, fees, etc.) are organized into online analytical processing (OLAP) structures that allow Nonfiler Program staff to quickly navigate through millions of records to track revenue, identify trends, locate promising nonfiler cases or isolate problem cases. In addition, the data warehouse has deployed a query and reporting tool that allows staff direct access to the detailed historical income, tax return and nonfiler case data on a daily basis. Staff can also query a full copy of the INC System database to obtain more current information without impacting the performance of the INC System. ECAIR staff also extracts data from the data warehouse to support the data needs of FTB users on a regular basis.

## **4.2 Technical Environment**

The FTB has a growing enterprise network consisting of various servers, printers, Mainframe and UNIX systems. Most of the LANs function as office automation application

servers; however, the department also has special-purpose LANs for imaging, voiced response, and electronic correspondence functions.

Consistent with the FTB's technology vision as expressed in the Information Technology Strategic Plan (ITSP), the FTB's information technology is not constrained to one specific environment.

#### **4.2.1 Mainframe Infrastructure**

The FTB's current Mainframe infrastructure consists of an IBM z9 Enterprise Class E-Server / 2094-S08 with a capacity of 914 usable MIPS, 64 GB processor memory and 164 ESCON and 32 FICON channels. The Mainframe has special processors zAAP, zIIP and IFL. The Direct Access Storage Device (DASD) has 8.3 Terabytes of usable storage to support all major Tax Program areas including access to online databases utilizing ADABAS, DB2, and VSAM files.

The FTB's full service data center hosts the Mainframe environment. The data center processes approximately 17 million online transactions per month and over 237 thousand batch processes per month during peak processing periods. It also generates over 3 million print pages per month for notices, bills and letters during peak. The Mainframe printer environment utilizes simplex, duplex, simplex with color, and duplex with color (highlight color optional). The FTB supports electronic transmission of 1099 and related data using web technology on the e-Server (Mainframe).

Data center customers and users include all of the FTB's program areas, including Personal Income Tax (PIT), Corporate Income Tax, Homeowner & Renter Assistance (HRA) and various non-Tax debt collections programs. The FTB's data center also provides data storage and processing service to a number of external organizations and agencies such as BOE, EDD, Department of Food and Agriculture, etc.

The Mainframe environment utilizes an Automated Cartridge System (ACS) that supports twenty-four 3490 and twenty 3590 devices with an ACS tape cell capacity of 35,000 internal slots. Furthermore, the Mainframe shares its storage farm with Exchange, which has 3.4 Terabytes for Open Systems database and online backup requirements.

Various Mainframe systems are the final destination for data from all accepted tax returns and forms, regardless of media source. Primary business functions provided by these systems include return validation, accounting, taxpayer and corporation information.

A two processor HP NonStop S7802 with Mainframe connectivity supports the department's data entry process. The system has 16 36-GB hard drives and two gigabit Ethernet cards. The processor is connected to approximately 240 6530 emulation workstations via TCP/IP. A portion of the batch processes and the backup and recovery processes are supported by a total of 24 cartridge drives in a silo environment. In August of 2005, the state of the art S-Series S7802 (formerly Tandem) replaced the Himalaya K10000.

FTB currently employs ADABAS and DB2 on the Mainframe, with both as its primary Mainframe database management systems for Corporation and Personal Income Tax data.

## **4.2.2 Server Infrastructure**

The FTB has a large distributed computing environment attached to its enterprise network consisting of approximately 350 Windows servers, and an estimated 50 UNIX servers. This distributed environment consists of large client/server applications, smaller LAN-based applications and office automation including electronic mail. UNIX servers provide the primary platform for database and applications services required to support the department's large client/server applications, while Windows servers support the small LAN applications and office automation.

UNIX servers include IBM SP/2, IBM RS/6000 and HP 9000. IBM UDB2, Sybase ASE and ORACLE are the common Database Management Systems (DBMS) on these servers. Programming languages for online applications are primarily Power Builder or Java, and COBOL or C for batch applications.

Windows servers include Dell and Compaq, with Windows 2000 or 2003 operating systems and uses Active Directory Services. Microsoft SQL Server is the primary DBMS on these servers. Programming languages for applications accessing these servers are primarily Microsoft based.

The distributed systems use one of two automated tape libraries for backups. ECAIR use the TSM backup with a capacity of 120 terabyte (TB) of tape space. Most other systems use the Legato backup system with a capacity of 143 TB on tape.

## **4.2.3 Network Infrastructure**

The LAN at FTB's campus is the heart of the enterprise network, providing reliability and scalability throughout FTB. There are approximately 6,000 clients supported on the network. Network users have access to the various system applications via infrastructure devices such as routers, switches and the Mainframe. The current enterprise network topology incorporates over 100 GB Ethernet data switches that primarily use the TCP/IP protocol suite.

The campus topology follows a three-tier enterprise model. This model consists of three distinct functional layers: core, distribution and access. The core layer is a ten-gigabit Ethernet switched backbone network, which redundantly interconnects the distribution layer switches to all campus buildings. The distribution layer switches connect to over 70 access layer switches, which terminate to workstations and other network end devices. Additionally, there are multiple server farm switch environments located in the four campus buildings. These server farm switch environments provide fault tolerance to the enterprise servers.

The Wide Area Network incorporates redundant and encrypted (IPSEC/3DES) frame relay communication links to all field offices. The remote environments incorporate a mixture of over 40 Ethernet based switches for their local data network communications.

The current Internet infrastructure supports an interface with multiple firewalls protecting FTB's E-Commerce and internal enterprise network. The Internet DMZ is secured by

multiple border routers and firewalls protecting several DMZ segments. Internal firewalls and Intrusion Detection Sensors protect FTB's internal network.

The external firewalls are high-performance stateful packet-filtering firewalls. The firewalls provide protected gateways into the DMZ segments housing FTB's Web servers and an E-Commerce segment hosting external web applications. Multiple sets of appliance based stateful firewalls provide an extra layer of protection for FTB's internal network. These firewalls act as gateways to provide protection to FTB's internal network from Internet, E-commerce, and web development server segments.

The primary internal firewalls also serve as a Virtual Private Network (VPN) gateway for remote users. Remote users' personal computers are configured with secure clients integrated with personal firewalls.

The Intrusion Detection and Response System (IDRS) provides an extra layer of security in FTB's Internet architecture. The IDRS acts as an alarm that reports potential attacks or misuse at FTB's perimeter.

The existing Internet access point is provided through an Internet Service Provider (ISP) and consists of a point-to-point high speed OC-3 Circuit.

#### **4.2.4 ECAIR Environment**

The ECAIR Data Warehouse primarily exists in the department's distributed computing (UNIX) environment. The one exception to this is that most of the data sources loaded into ECAIR originate from IT systems that operate on FTB's mainframe environment. The databases that make up ECAIR are IBM DB2. These databases reside on an IBM P670 server. ECAIR staff use Business Objects as their query and reporting tool and IBM's DataStage and Quality Stage products as their Extract, Transfer and Load (ETL) tools.

### **5.0 Proposed Solution**

FTB staff will augment the existing CPU by procuring additional processing capacity (914 to 1337 MIPS) and central storage memory capacity (64 to 80 GB). Upgrades to the existing Mainframe software will also be required. In addition, FTB staff will augment the existing ECAIR system by upgrading the software and procuring additional storage (4 to 14 TB) and a new server. This solution includes the cost of financing over a period of 3 years at 4.5% for the upgrades in 2009/2010 only.

#### **5.1 Solution Description:**

1. Hardware: FTB will procure:
  - CPU upgrade from 702 to 603 designation
  - Central Storage Memory upgrade from 64 GB to 80 GB
  - 16 FICON LX (9 Micron) ports to support disk storage at remote location
  - 16 FICON LX (9 Micron) ports to support new storage systems
  - 8 Fibre ports to support connection to open systems / network
  - Warranty
  - 10 terabytes of storage for the existing EMC storage device;

- A server
2. Software: FTB will procure:
    - Software across multiple vendors which are resulting in licensing fees due to hardware upgrades.
    - Upgrade from the current version of DB2 v8 to DB2 Data Warehouse Edition (DWE) v9 or equivalent; which resides on the Mainframe platform.
  3. Technical platform: The proposed solution will consist of upgrading both the Mainframe and UNIX platforms. The technical platform will support FTB's Information Security Policy, and FTB's system performance and availability standards.
  4. Development approach: Vendor support staff will perform all the hardware installation with specific support from Computer Resources Bureau (CRB) staff.
  5. Integration issues: There will be no key systems affected.
  6. Procurement approach: This project will require a number of procurements. Each of these procurements will be completed through competitive bid, California Strategic Sourcing Initiative (CSSI) contracts, Software Licensing Program (SLP) contract; proprietary software purchases and/or a Non-Competitively Bid (NCB) contract.

<b>Procurement</b>	<b>Type</b>	<b>Estimated Cost</b>	<b>Vehicle for Procurement Type</b>
Mainframe Hardware, Contracted Services; and Training for ECAIR	NCB	\$1.2 million*	NCB Contract Justification
ECAIR Hardware	CSSI	\$582,000	Request for Offers
Mainframe Software (approximately 30 contracts)	SLP	\$1.8 million	Proprietary Software Purchase – Request for Pricing
ECAIR Software	SLP	\$200,000	Request for Offers

This figure includes IBM Extended Warranty Estimate\*

The IBM z9 processor and memory upgrades are proprietary to IBM and cannot be mixed and matched with different manufacturer's equipment. In fact, since these processors and memory are already resident in the current equipment installed at FTB, we will need to pay IBM for the necessary microcode to activate these upgraded resources. This upgrade will provide a compatible platform for all current applications on the mainframe and maintain current service levels to data center customers. The CPU will perform under control of current IBM software technology. It will provide full

support for the z/OS operating system in its augmentation path and be compatible with future IBM software products. The goods proposed for acquisition are the only goods that can meet the state's need in accordance with PCC 12102. IBM is the sole manufacturer and distributor of these products as well as the only certified service provider. In addition, the training and contracted services are also required due to proprietary hardware and software upgrades.

Each of the proprietary software products are licensed to FTB and sold by the manufacturer specifically for use on the department's IBM z9 mainframe computer. The manufacturer (vendor) exclusively maintains their proprietary code on their software products. The vendor exclusively sells the code in the form of a license. In this case FTB purchases the license as maintenance and capacity upgrades. No other vendors or third parties are authorized to sell the licenses.

ECAIR currently uses DB2 as its data base software. All of the tables that contain taxpayer data (tax returns, income records, etc.) are in DB2 as are the tables that contain data needed to execute our other software products like Hyperion and Business Objects. DB2 is considered an industry leader in database technology so there is not a technical argument for switching away. There may be database software that is lower cost to purchase, initially, but when you factor in the time and effort to convert our databases to another database software, FTB believes DB2 would remain the low cost alternative.

The Procurement and Asset Management Analyst will prepare an Information Technology Procurement Plan (ITPP). The ITPP will describe the overall strategy necessary to accomplish and manage the acquisitions required for this project by formally documenting that the proposed approach for the acquisition satisfies state requirements. The ITPP will serve as a reference document and become a permanent record of acquisition decisions. The ITPP will be submitted to the Department of General Services for review and approval prior to conducting any procurement associated with this project.

See Project Schedule (Section 6.5.5 for Key Procurement Milestones/Tasks).

7. Technical interfaces: The Mainframe and ECAIR interface with several existing environments. The proposed solution will not add, remove or change any of these interfaces.
8. Testing plan: After the upgrades are installed, CRB staff will complete all system diagnostics. The Software Support Section will test all system software applications and CPU specifications. Business Intelligence and Data Services staff will verify that all existing processes function correctly.
9. Resource requirements:

<b>One time resources:</b>			
<b>FY</b>	<b>PYs/ Hours</b>	<b>Description</b>	<b>Source</b>
08/09	.4 PYs	Perform Project Management and Procurement	Redirected within TSD and FESD
09/10	2.3 PYs	Development	Redirected within TSD
09/10	650 hours	Contract Services for software for installation and migration for ECAIR	BCP

<b>Ongoing resources:</b>			
<b>FY</b>	<b>PYs/ Hours</b>	<b>Description</b>	<b>Source</b>

*\*No ongoing resources have been allocated for this project.*

10. Training plan: Specific training for hardware and software will be provided by the vendor.
11. On-going maintenance: The Procurement & Asset Management Bureau will establish a maintenance contract between FTB and the contractor as well as all software vendors. The Software Support Section and the Mainframe Operations Section staff will support the on-going operation of the software.
12. Information security: The proposed solution will meet or exceed FTB's security requirements as described in the Department's Information Security Policy Manual (ISPM).
13. Confidentiality: Departmental policies and procedures related to information management will be applied in the development, implementation, and maintenance of this proposed solution.
14. Impact on end users: No impact.
15. Impact on existing system: No impact.
16. Consistency with overall strategies: This proposal also contributes to the following departmental strategic goals:
  - Goal #1 Improve Customer Service;
    - Increase our understanding of our diverse customer needs, measure their satisfaction with our current services, and improve those services identified.
    - Improve the speed in which we process tax returns and handle exceptions, including claims for refund, tax return errors, etc.
    - Provide customer service options emphasizing self-service and e-service options.

- Increase the ease and reduce the burden of filing returns and paying taxes for taxpayers and their agents.

Goal #2 Increase Fairness and Compliance with Tax Law;

- Issue timely, accurate, and understandable notices and advice.
- Identify and implement approaches to resolve tax gap issues, such as abusive tax shelters.
- Improve audit selection and speed up the audit and appeal cycle.

Goal #5 Demonstrate Operational Excellence

- Streamline processes and modernize our IT systems for reliability, ease of use, cost effectiveness, speed, and ability to react to change.
- Continually increase productivity of all employees.
- Ensure the utmost availability and quality of our services and systems to keep FTB running smoothly.
- Increase IT systems agility through widespread adoption of standardized software, standard platforms, and solutions.
- Deploy our information technology and compliance resources in alignment with our strategic goals.
- Decrease paper-based processes and move toward a digital office and electronic processes.
- Pursue partnerships with other state and federal organizations to deliver seamless, customer-centered products and services.

17. Impact on current infrastructure: The increase in capacity and functionality will enhance the existing infrastructure.

18. Impact on data centers: It will have no impact to external data centers.

19. Data center consolidation: FTB is a "single-agency, dedicated use data processing center." Data Center consolidation does not apply to FTB.

20. Back-up and operational recovery plan (ORP): FTB has a Comprehensive Continuity of Operations/Continuity of Government (COOP/COG) plan that includes business recovery and operational recovery plans for critical business functions as defined in the FTB Business Impact Assessment. These plans define an overall recovery strategy for business and the IT infrastructure that address the worst case scenario of a temporary or permanent loss of the FTB Central Campus. FTB's overall plan addresses strategies as to how to continue and restore business at alternate locations.

Requirements addressed in this section focus only on changes to existing Business Resumption Plans (BRP) and/or Operational Recovery Plans (ORP) or the development of new plans and recovery capacities, as necessary, which are a direct result of this project.

This proposal will enhance the existing infrastructure. The mainframe (Tier 1) and ECAIR (Tier 3) are part of FTB's critical business components. The ORP is addressed in the Hot Site and UNIX Server Management Group

Plans. The BRP is addressed in the Filing Enforcement/INC Plan. No revisions are necessary to these plans

- 21. Public access: The proposed solution does not provide direct public access to State database by private sector organizations or individuals.
- 22. Costs and benefits: See Section 8.0, EAWs, for cost detail.

<i>Total One-Time Cost: \$4,407,988</i>	
<i>\$ Amount</i>	<i>Description</i>
\$ 283,826	FTB Staff for Development, and Procurement
\$ 47,315	Training and Travel
\$ 241,674	Finance Interest
\$3,835,173	Hardware, Software & Contract Services

<i>Annual Ongoing Cost: \$741,832</i>	
<i>\$ Amount</i>	<i>Description</i>
\$741,832	Hardware & Software Maintenance

Benefits: No monetary benefits are associated with this project. This project will provide the processing speed and capacity to meet FTB's workload growth projections.

- 23. Source of funding: The source of funds for the project will be from internal redirection and a budget augmentation with a budget change proposal (BCP) for FY 2009/10.

<b>One time resources: \$4,407,988</b>			
<b>FY</b>	<b>\$ Amount</b>	<b>Description</b>	<b>Source</b>
08/09	\$ 37,634	.4 PYs FTB Staff for Project Management, Procurement and Internal Oversight	Redirection
09/10	\$ 246,192	2.3 PYs FTB Staff for Development, Training and Procurement	Redirection
	\$ 80,558	Finance Interest	BCP
	\$1,245,891	Hardware and Software	BCP
	\$ 97,500	Contract Services for software installation and migration	BCP
	\$ 47,315	Training and Travel	BCP
10/11	\$1,245,891	Hardware and Software	BCP
	\$ 80,558	Finance Interest	BCP
11/12	\$1,245,891	Hardware and Software	BCP

	\$ 80,558	Finance Interest	BCP
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<b>Ongoing resources: \$2,506,337</b>			
<i>FY</i>	<i>\$ Amount</i>	<i>Description</i>	<i>Source</i>
09/10	\$295,232	New Hardware and Software Maintenance	BCP
10/11	\$ 727,441	New Hardware and Software Maintenance	BCP
11/12	\$741,832	New Hardware and Software Maintenance	BCP
12/13	\$741,832	New Hardware and Software Maintenance	BCP

## 5.2 Rationale for Selection

The proposed solution for the Mainframe meets all of the business objectives and functional requirements necessary to maintain the existing systems without risking major equipment or software failure. In addition, given the current structure of the Mainframe, adding one additional processor best utilizes the system resources for each Logical Partition (LPAR) and effectively handles growth in both existing traditional workloads and e-Business workloads, while maintaining service level objectives, allow higher levels of security and adding the ability to take advantage of specialty engines with no additional costs.

The proposed solution for ECAIR meets all business objectives and functional requirements for the existing system in a manner that makes the most effective use of existing resources and skill sets.

### Software Upgrade

The upgrade from DB2 v8 to DB2 DWE v9 provides the following benefits:

- Moving from a 32 bit to 64 bit architecture will allow increase and better use of our available memory;
- Improved data compression features will save disk space and allow the storage of more data on existing disks;
- The table partitioning features will allow increase the speed of access to most current or most popular data without breaking those tables down by tax year or form type; and
- New data structures (multidimensional clustering tables and materialized query tables) can be created to increase the speed of the queries running in the DW.

In addition, DB2 DWE offers two additional features that will improve the performance of ECAIR. They are:

- Performance Optimization feature; and
- Storage Optimization feature

The selling point of the Performance Optimization feature is that it allows the ECAIR DBAs to assign priority queues to the different groups of users (both individuals and batch

processes) that use the DW. That will allow them to place the audit modelers in a high priority queue and guarantee that their queries receive the maximum amount of resources available. It could also prevent certain types of resource intensive processes from executing during normal business hours. The Performance Optimization feature also allows DBAs to monitor all aspects of performance (database software, operating system, and server hardware) and identify trouble spots or downward trends in performance.

The benefits of the Storage Optimization feature are that they allow improved data compression (at the row level and at backup level). Both allow more data to be stored in some amount of disk space, which frees up memory and improves the performance of both queries and backups.

#### Storage Upgrade

The purchase of 10 terabytes of additional storage will provide sufficient storage for the normal planned growth of ECAIR as well providing capacity to add promising new data sources. Expanding the existing storage device rather than purchasing a dedicated storage device is a more efficient use of FTB resources and will save on installation and energy costs.

#### Server Upgrade

The purchase of the IBM P-570 server will deliver the improved processing capacity that the ECAIR current P-670 processor lacks.

### 5.3 Other Alternatives Considered

#### 5.3.1 Describing Alternatives

##### ALTERNATIVE 1:

FTB staff will augment the existing CPU by procuring additional processing capacity (914 to 1337 MIP) and central storage memory capacity (64 to 80 GB) without financing. Upgrades to the existing Mainframe software will also be required. In addition, FTB staff will augment the existing ECAIR system by upgrading the software and procuring additional storage (4 to 14 TB) and a new server. FTB will procure:

- CPU upgrade from 702 designation to 603 designation
- Central Storage Memory upgrade from 64 GB to 80 GB
- 16 FICON LX (9 Micron) ports to support disk storage at remote location
- 16 FICON LX (9 Micron) ports to support new storage systems
- 8 Fibre ports to support connection to open systems / network
- Warranty
- 10 terabytes of storage for the existing EMC storage device;
- A server

#### Costs:

<b>Total One-Time Cost: \$4,166,313</b>	
<i>\$ Amount</i>	<i>Description</i>
\$ 283,826	2.6 PYs FTB Staff for Development, and Procurement

\$ 47,315	Training and Travel
\$3,835,172	Hardware, Software & Contract Services

<i>Annual Ongoing Cost: \$741,1832</i>	
<i>\$ Amount</i>	<i>Description</i>
\$741,832	Hardware & Software Maintenance

**Benefits:**

No monetary benefits are associated with this alternative.

**Advantages:**

This alternative will provide the processing speed and capacity to meet FTB's workload growth projections through 2009/2010. This alternative is least expensive to meet current workload growth projections.

**Disadvantages:**

FTB's long term goals would not be met.

**6.0 Project Management Plan**

**6.1 Project Manager Qualifications**

Kathy Hardmeyer, a DPM II, in FTB's Technology Services Division (TSD) brings 15 years of Information Technology (IT) experience to the IT Refresh/Workload Growth project team, 12 years of which have been involved in project lead and management related activities for IT systems development. She is a Certified Project Management Professional (PMP) by the Project Management Institute (PMI).

She served as FTB's Child Support Replacement Project Change Control and Quality Assurance Manager for 1 year and 2 years as the CHARMR Project Manager. She was the technical project manager for the 2 year Amnesty Project and 1 year AB911 Project seeing both to a successful conclusion.

She was responsible for leading the development and implementation efforts for the Board of Equalization's Integrated Revenue Information System for 6 years (a \$50 Million dollar project) as the Payments, Fund Allocation and Fiscal Accounting Systems lead and manager of the System Test and Quality Assurance efforts.

**Also see Appendix 1.**

**6.2 Project Management Methodology**

The FTB project management methodology is based on *A Guide to the Project Management Body of Knowledge* (PMBOK) Third Edition; SIMM Section 45, Appendix A; and SIMM Section 200, *Project Management Methodology Guidelines*. For reportable

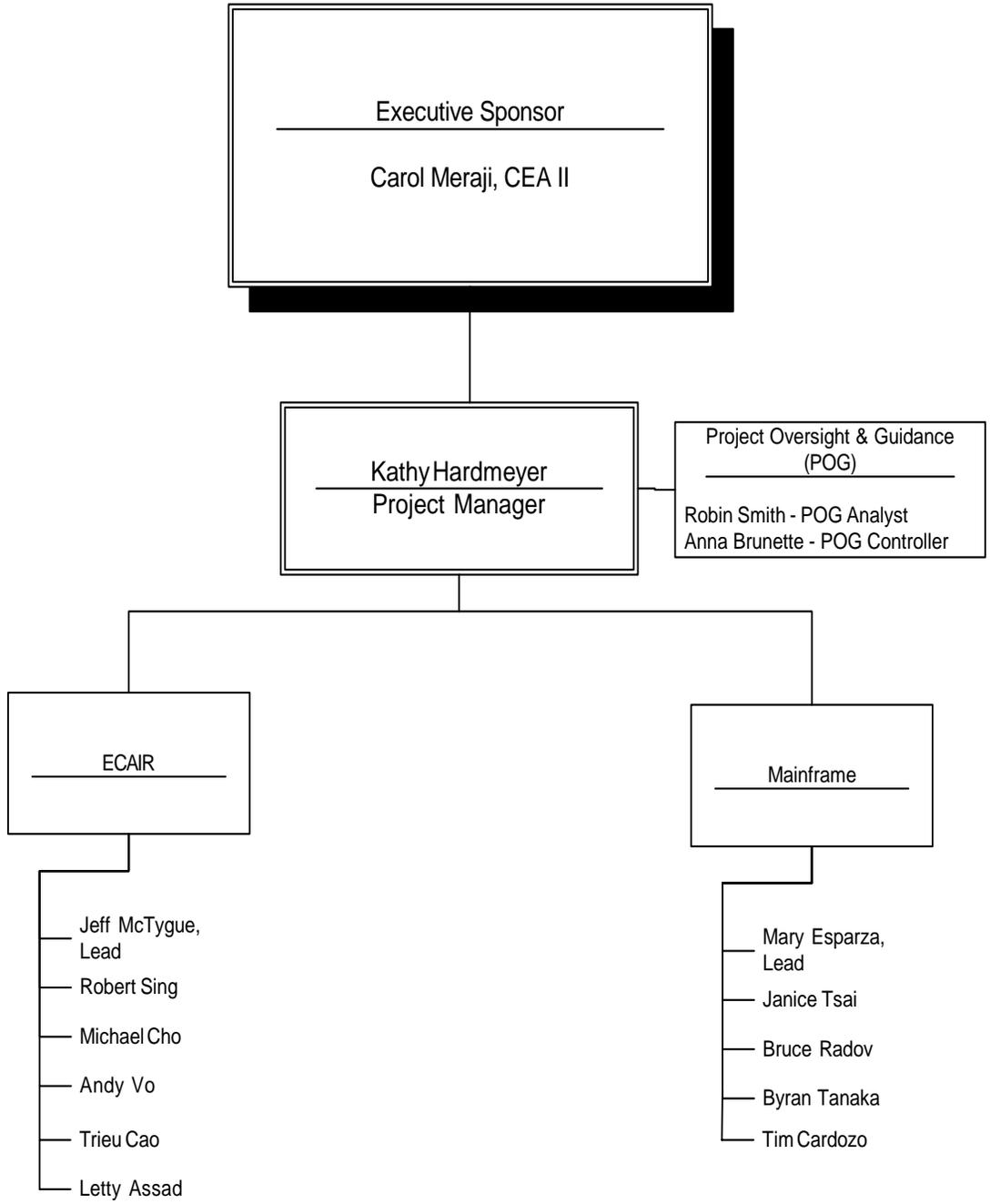
projects, the Project Manager will, at a minimum, implement the required project management practices specified in SIMM 45. For delegated projects, the Project Manager will follow generally accepted project management practices appropriate to the project's level of complexity.

### **6.3 Project Organization**

Project Sponsor: Carol Meraji, Director of the Computer Resources Bureau

Project Customer(s): Data center customers and users include all of FTB's program areas.

# Workload Growth FSR - Organization Chart



## 6.4 Project Priorities

Schedule	Scope	Resources
Constrained	Accepted	Improved

## 6.5 Project Plan

### 6.5.1 Project Scope

The scope of this project is to add sufficient resources (CPU capacity, memory and storage) to support projected workload growth to the existing Mainframe and ECAIR through FY 2013/14.

### 6.5.2 Project Assumptions

The following are major assumptions of this project:

- Capacity needs are based upon historical growth patterns and our best estimate of expected growth through FY 2013/14 and assumes no new program mandates requiring significant use of Mainframe resources.
- Resources will be available to work on the project.
- Funding approved by 7/1/09.
- All infrastructure vendor procurements and contracts will be accomplished within planned timelines.
- The project is a priority for the Department.
- Problem/issue resolution will be handled on a timely basis.
- Proactive risk management strategies will be employed to minimize risk and ensure timely completion of the project.
- Technical staff and end users will receive training to be able to support and use the upgraded infrastructure equipment, as applicable.

### 6.5.3 Project Phasing

Project phases are not applicable to this project.

### 6.5.4 Roles and Responsibilities

Project Team Roles:	Project Team Responsibilities:
Project Sponsor	The Project Sponsor provides guidance and support to project management, ensures the necessary resources are made available, and provides project oversight.
Project Manager	The Project Manager is responsible for schedule planning, resource management, time and budget management, status reporting to the Project Sponsor and oversight organizations.
Project team members	The Project Team is responsible for conducting all activities necessary to achieve the objectives of the project. Activities include: <ol style="list-style-type: none"> <li>1. Document the business functional requirements and work processes;</li> <li>2. Develop improved work processes;</li> <li>3. Conduct system testing;</li> <li>4. Identify personnel necessary for installation and</li> </ol>

	implementation; 5. Identify and resolve installation and implementation issues; 6. Conduct procurement activities.
POG Analyst	The POG analyst monitors the progress of the project and assists in the development, review and approval of required documentation.
POG Controller	The controller will monitor the projects financial progress, track and report expenditures to ensure the project stays within budget.

### 6.5.5 Project Schedule

Task	Start	Finish	Deliverable	Milestone
<b>FY 2008/09</b>				
Obtain <b>Internal</b> FSR approval	07/14/08	07/14/08	FSR	FSR approved internally
Obtain <b>External</b> FSR approval	07/15/08	01/20/09	FSR	FSR approved externally
Start Project	01/20/09	01/20/09		Project started
Develop Mainframe Requirements	01/20/09	03/01/09	System Requirements document, Requirements Traceability Matrix, User Acceptance of Requirements	Requirements completed
Develop ECAIR Requirements	01/20/09	03/15/09	System Requirements document, Requirements Traceability Matrix, User Acceptance of Requirements	Requirements completed
Develop ITPP	01/20/09	03/01/09	ITPP	ITPP completed
Obtain approval of ITPP	03/01/09	04/01/09	ITPP Approval Letter	ITPP approved externally
Develop NCB Contract Justification for Mainframe Hardware and ECAIR Contract Services for Installation and Training	04/01/09	05/01/09	NCB Contract Justification document	NCB Contract Justification completed
Obtain approval of NCB Contract Justification for Hardware and ECAIR Contract Services for Installation Training	05/01/09	08/01/09	NCB Contract Justification document	NCB Contract Justification approved externally
Develop and Release Mainframe for Requests for Pricing for Proprietary Software	04/01/09	08/31/09	Request for Pricing document	Request for Pricing document completed
Develop and Release ECAIR Request for Offers Documents for Hardware and Software	05/01/09	07/01/09	Request for Offers document	Request for Offers document released
Award Mainframe Procurement Contract for	08/01/09	09/01/09	Contract Document (Std. 65)	Contract Executed

Hardware and ECAIR Consultant Services for Installation and Training				
Award Multiple Mainframe Proprietary Software Contracts	04/15/09	08/31/09	Contract Documents (Std. 65)	Contracts Executed
<b>FY 2009/10</b>				
Award ECAIR Procurement Contracts for Hardware and Software	07/15/09	10/01/09	Contract Document (Std. 65)	Contract Executed
Install/Configure Mainframe Hardware/Software	09/01/09	09/30/09	Installation signoff document	Installation completed
Install/Configure ECAIR Hardware/Software	09/01/09	11/15/09	Installation signoff document	Installation completed
Test Mainframe	10/01/09	10/30/09	Test Plan	Testing completed
Test ECAIR Hardware/Software	11/17/09	12/30/09	Test Plan	Test Memo Signoff
System Acceptance - Mainframe	11/01/09	12/29/09	System Acceptance signoff document	System Acceptance completed
Training - ECAIR	08/01/09	09/01/09	Training Plan	Training completed
Implement into Operation - Mainframe	11/28/09	11/30/09	CPU/ Memory Upgraded	Upgrade completed
Implementation- ECAIR	01/02/10	05/30/10	Implementation Plan	Implementation completed
Project Complete	06/01/10	06/30/10	Implementation sign-off document	Implementation completed
Conduct Project Retrospective	07/30/10	08/30/10	Retrospective document	Project Retrospective document completed
Prepare Post Implementation Evaluation Report (PIER)	02/01/11	05/01/11	PIER	PIER completed

## 6.6 Project Monitoring

Per the direction of the Office of the State CIO an Independent Project Oversight Report (IPOR) is not required for this project.

Monthly project status reports will be submitted for project management review and to the Project Oversight and Guidance Section by the 15<sup>th</sup> of the month following the reporting period.

## 6.7 Project Quality

CRB staff will assure the project quality management addresses both the management of the project and the product of the project. Project quality management consists of three processes/phases:

- Quality Planning: identifying the quality standards that apply to the project and determining how to satisfy them.

- Quality Assurance: evaluating overall project performance on a regular basis to determine that the project will satisfy the quality standards.
- Quality Control: monitoring specific project results to determine if they comply with the quality standards and identifying ways to eliminate causes of unsatisfactory performance.

## **6.8 Change Management**

Change Control: The project will use the standard FTB *Change Control Process*.

## **6.9 Authorization Required**

This project requires approval by the Governance Council, the State and Consumer Services Agency, Office of the State CIO, and the Department of Finance.

## **7.0 Risk Management Plan**

### **7.1 Risk Management Approach**

The Risk Management Plan that the FTB has developed to identify, analyze, respond to, monitor, and control project risk is based on *A Guide to the Project Management Body of Knowledge* (PMBOK) 2000, Chapter 11, issued by the Project Management Institute, and SIMM Section 45.

### **7.2 Risk Assessment Worksheet**

The high-level project risks are identified in the Risk Assessment Worksheet – see Appendix 2.

### **7.3 Assessment**

The high-level risk assessment is an initial broad view of the risk associated with the project. The identification of all potential risks uses the project work breakdown structure, project plan, and the PMBOK knowledge areas as input to the process.

#### **7.3.1. Risk Identification**

During the planning stage of the project, risk information is gathered in an initial meeting of the project manager and the project team members. Project staff are asked to bring a list of potential risk items to the meeting. The staff discussion of risks generates a complete list of potential risks.

#### **7.3.2 Risk Analysis and Quantification**

After identifying the potential risks, the project team reviews each risk to determine if it is tangible and measurable. Based on the analysis of each risk, the set of risks that will be formally managed are those deemed most likely to have a negative impact to the project.

### **7.3.3 Risk Prioritization (Severity)**

The priority of the risk is a determination of the importance of the risk based upon 1) potential impact of the risk on the project, 2) the probability of occurrence, and 3) the risk timeframe. The determination of risk priority is a subjective, qualitative process that considers the criticality of internal and external project factors within the specific context of the project. At a minimum, the five highest risks will be tracked in the project Risk Worksheet.

### **7.4 Risk Response**

The project team has identified the risk mitigation response to each of the risks listed in the project Risk Assessment Worksheet. For each response that is accepted, a contingency plan has been developed and is summarized in the *Risk Mitigation and Contingency Plan* template for that risk.

### **7.5 Risk Tracking and Control**

The objective of the Tracking and Control phase is to ensure that all steps of the risk management process are being followed and, as a result, risks are being mitigated. Risk tracking and control involves the oversight and tracking of risk mitigation action plan execution, contingency plan execution, and reassessment of risks, reporting risk status, and recording risk information changes in the project Risk Worksheet.

#### **7.5.1 Risk Tracking**

The project manager is responsible for the high-level oversight of the execution of mitigation and contingency plans for all risks identified in the project Risk Assessment Worksheet. The project manager is responsible for ensuring that the project sponsor is updated and approves of all changes in status for high-severity risks.

#### **7.5.2 Risk Control**

The project manager will reassess the risk information in the project Risk Assessment Worksheet to determine if any changes are needed. For example, the risk severity or timeframe could change, based upon project events or other information. Re-assessment of risk information will be performed on a monthly basis; it may be performed more frequently if needed.

Risk status is included as part of the project status meetings. Risk status reporting will focus on high severity risks. Information presented will include the status of risk mitigation plans, changes in risk severity for known risks, and any new risks identified.

## **8.0 Economic Analysis Worksheets (EAWs)**

See attached EAWs.

## ***List of Attachments***

1. Executive Project Approval Transmittal
2. Project Summary Package
3. EAWs
4. Appendix 1. Project Criticality Evaluation Factor
5. Appendix 2. Risk Assessment Worksheet

**Appendix 1 Project Criticality Evaluation Factors – Reportable Projects**

Factor	Rating	Substantiation of Rating
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<b>Size</b>	Low	One-time costs are < \$5 Million (Low = 1 <i>points</i> )
<b>Project Manager</b>	Low	<ul style="list-style-type: none"> <li>Two or more like projects (<i>Low=1 point</i>)</li> </ul> <b>Project Manager Name and Experience:</b> Kathy Hardmeyer (see Section 6.1)
<b>Project Team</b>	Low	<ul style="list-style-type: none"> <li>Two or more (<i>Low=1 point</i>)</li> </ul> <b>Mainframe - Project Lead and Experience:</b> Mary Esparza has worked as Project Manager on the two most recent FTB Data Center CPU and Memory Upgrade projects. In 2006 the project was \$ 6 million with a schedule spanning 12 months; in 2007 the project was \$ 1.5 million with a 6 month duration. In addition, she was the Y2K Project Manager at Department of Transportation completed in 2001. This was a 3-year, multi-million dollar project whose objective was to make all of DOT's financial applications Y2K compliant. <b>ECAIR – Project Lead and Experience:</b> Jeff McTygue has worked on similar projects which include the upgrade of the ECAIR's DW's Business Objects query and reporting tool and its Essbase OLAP tools. Both of these projects were completed in 2007. He has most recently completed a project to develop a data sharing strategy between BOE, EDD, and FTB. Jeff also served in multiple roles on the INC project which spanned more than 3 years and had a budget over \$30 million. <b>Mainframe - Project Team Names and Experience:</b> Janice Tsai, Bruce Radov, Byran Tanaka, and Tim Cardozo worked on the following projects: <ol style="list-style-type: none"> <li>DOF #1730-130 Mainframe Capacity Augmentation \$1,493,000 1/98 – 11/99</li> <li>DOF #1730-153 CPU Upgrade \$4,671,000 2/1/00 – 12/25/01</li> <li>FTBFSR03-03 CPU Augmentation \$1,872,000 1/12/04 – 12/1/04</li> <li>FTBFSR06-03 Enterprise Information Technology Services Augmentation \$6,000,000. – 11/1/06</li> </ol> <b>ECAIR – Project Team Names and Experience:</b> Robert Sing, Michael Cho, Andy Vo, Trieu Cao, and Letty Assad have all worked on the INC Project.
<b>Project Type Elements</b>	Medium	Component: Mainframe Hardware <ul style="list-style-type: none"> <li>Activity – Update/Upgrade</li> <li>Element – Distributed/Enterprise Server</li> <li>Rating – Low</li> </ul> Component: ECAIR Hardware <ul style="list-style-type: none"> <li>Activity – New Install</li> <li>Element – Distributed/Enterprise Server</li> <li>Rating – Medium</li> </ul> Component: Software <ul style="list-style-type: none"> <li>Activity – COTS/Updates/Upgrades</li> <li>Element – Distributed</li> <li>Rating - Medium</li> </ul>

**Project Criticality Rating:**

<b>(a) Factor</b>		<b>(b) Rating</b>
1	Size	1
2	Project Manager	1
3	Project Team	1
4	Type	2
Total		5
Average		1.25
Rating		Low

## Appendix 2 Risk Assessment Worksheet

Risk ID#	Risk Category	Risk Statement	Impact Low Med High	Probability Low Med High	Exposure Low Med High	Time Frame Short Med Long	Severity Low Med High	Mitigation Response Eliminate Reduce Accept	Risk Status	Status Change Date
1		Late contractor delivery will delay implementation	High	Low	High	Short	High	Eliminate	Open	
2		Concurrent projects may delay customer availability	High	Low	Med	Short	Med	Reduce	Open	
3		Incompatible third party software will not operate on new computer	High	Low	Low	Short	High	Eliminate	Open	
4		Lack of knowledge on new system will likely delay full implementation	Med	Low	Low	Long	Med	Reduce	Open	
5		Incompatible third party hardware will not operate with new computer	High	Low	Med	Short	Med	Reduce	Open	
6		CPU Upgrade in place will cause ESCON connection issues between Patch Panel truck cables & CPU back-plane connections.	High	High	High	Long	High	Eliminate	Open	
7		Full CPU replacement will cause ESCON connection issues between Patch Panel truck cables & CPU back-plane connections.	Med	Med	Med	Med	Med	Eliminate	Open	
8		CPU Upgrade in place causing FTB availability outage of between 1-2 hours.	Med	Low	Low	Low	Med	Eliminate	Open	

**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE**  
**SECTION B: PROJECT CONTACTS**

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<b>1. Submittal Date</b>	<b>October 17, 2008</b>
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	<b>FSR</b>	<b>SPR</b>	<b>PSP Only</b>	<b>Other:</b>
<b>2. Type of Document</b>	<b>X</b>			
<b>Project Number</b>	<b>FTB FSR 08-04</b>			

		<b>Estimated Project Dates</b>	
<b>3. Project Title</b>	<b>Workload Growth Project</b>	<b>Start</b>	<b>End</b>
<b>Project Acronym</b>		<b>01/20/2009</b>	<b>05/15/2011</b>

<b>4. Submitting Department</b>	<b>Franchise Tax Board</b>
<b>5. Reporting Agency</b>	<b>State and Consumer Services Agency</b>
<b>6.</b>	

<b>6. Project Objectives</b>
<ol style="list-style-type: none"> <li>1. By, December 2009, increase the processing capacity from 914 to 1,337 MIPS to meet projected capacity requirements for FY 2009/10 and FY 2010/11.</li> <li>2. By December 2009, increase the Mainframe central storage memory capacity from 64 to 80 GB.</li> <li>3. By May 2010, increase the ECAIR storage capacity from 4 to 14 TB.</li> <li>4. Increase the processing speed of ECAIR's supporting hardware by a factor of 4 in order to be able to provide our customers with data they need in an efficient and timely manner.</li> </ol>

<b>7. Proposed Solution</b>
<p>FTB staff will augment the existing CPU by procuring additional processing capacity (914 to 1742 MIPS) and central storage memory capacity (64 to 160 GB). Upgrades to the existing Mainframe software will also be required. In addition, FTB staff will augment the existing ECAIR system by upgrading the software and procuring additional storage (4 to 14 TB) and a new server. This solution includes the cost of financing over a period of 3 years at 4.5% for the upgrades in 2009/2010 only. The costs of the upgrades in years 2010/2011 do not include a financing option.</p>

**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE**  
**SECTION B: PROJECT CONTACTS**

<b>Task</b>	<b>Start</b>	<b>Finish</b>	<b>Deliverable</b>	<b>Milestone</b>
<b>FY 2008/09</b>				
Obtain <b>Internal</b> FSR approval	07/14/08	07/14/08	FSR	FSR approved internally
Obtain <b>External</b> FSR approval	07/15/08	01/20/09	FSR	FSR approved externally
Start Project	01/20/09	01/20/09		Project started
Develop Mainframe Requirements	01/20/09	03/01/09	System Requirements document, Requirements Traceability Matrix, User Acceptance of Requirements	Requirements completed
Develop ECAIR Requirements	01/20/09	03/15/09	System Requirements document, Requirements Traceability Matrix, User Acceptance of Requirements	Requirements completed
Develop ITPP	01/20/09	03/01/09	ITPP	ITPP completed
Obtain approval of ITPP	03/01/09	04/01/09	ITPP Approval Letter	ITPP approved externally
Develop NCB Contract Justification for Mainframe Hardware and ECAIR Contract Services for Installation and Training	04/01/09	05/01/09	NCB Contract Justification document	NCB Contract Justification completed
Obtain approval of NCB Contract Justification for Hardware and ECAIR Contract Services for Installation Training	05/01/09	08/01/09	NCB Contract Justification document	NCB Contract Justification approved externally
Develop and Release Mainframe for Requests for Pricing for Proprietary Software	04/01/09	08/31/09	Request for Pricing document	Request for Pricing document completed
Develop and Release ECAIR Request for Offers Documents for Hardware and Software	05/01/09	07/01/09	Request for Offers document	Request for Offers document released
Award Mainframe	08/01/09	09/01/09	Contract Document (Std.	Contract Executed

**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE**  
**SECTION B: PROJECT CONTACTS**

Procurement Contract for Hardware and ECAIR Consultant Services for Installation and Training			65)	
Award Multiple Mainframe Proprietary Software Contracts	04/15/09	08/31/09	Contract Documents (Std. 65)	Contracts Executed
<b>FY 2009/10</b>				
Award ECAIR Procurement Contracts for Hardware and Software	07/15/09	10/01/09	Contract Document (Std. 65)	Contract Executed
Install/Configure Mainframe Hardware/Software	09/01/09	09/30/09	Installation signoff document	Installation completed
Install/Configure ECAIR Hardware/Software	09/01/09	11/15/09	Installation signoff document	Installation completed
Test Mainframe	10/01/09	10/30/09	Test Plan	Testing completed
Test ECAIR Hardware/Software	11/17/09	12/30/09	Test Plan	Test Memo Signoff
System Acceptance - Mainframe	11/01/09	12/29/09	System Acceptance signoff document	System Acceptance completed
Training - ECAIR	08/01/09	09/01/09	Training Plan	Training completed
Implement into Operation - Mainframe	11/28/09	11/30/09	CPU/ Memory Upgraded	Upgrade completed
Implementation- ECAIR	01/02/10	05/30/10	Implementation Plan	Implementation completed
Project Complete	06/01/10	06/30/10	Implementation sign-off document	Implementation completed
Conduct Project Retrospective	07/30/10	08/30/10	Retrospective document	Project Retrospective document completed
Prepare Post Implementation Evaluation Report (PIER)	02/01/11	05/01/11	PIER	PIER completed

**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE**  
**SECTION B: PROJECT CONTACTS**

<b>Executive Contacts</b>								
	<b>First Name</b>	<b>Last Name</b>	<b>Area Code</b>	<b>Phone #</b>	<b>Ext.</b>	<b>Area Code</b>	<b>Fax #</b>	<b>E-mail</b>
<b>Agency Secretary</b>	Rosario	Marin	916	653-4090		916	653-3815	<a href="mailto:rmarin@scsa.ca.gov">rmarin@scsa.ca.gov</a>
<b>Executive Officer</b>	Selvi	Stanislaus	916	845-4543		916	845-3191	<a href="mailto:selvi.stanislaus@ftb.ca.gov">selvi.stanislaus@ftb.ca.gov</a>
<b>Budget Officer</b>	Michelle	Fallon	916	845-6702		916	845-0254	<a href="mailto:michelle.fallon@ftb.ca.gov">michelle.fallon@ftb.ca.gov</a>
<b>CIO</b>	Cathy	Cleek	916	845-3310		916	845-9589	<a href="mailto:cathy.cleek@ftb.ca.gov">cathy.cleek@ftb.ca.gov</a>
<b>Project Sponsor</b>	Carol	Meraji	916	845-7531		916	843-0942	<a href="mailto:carol.meraji@ftb.ca.gov">carol.meraji@ftb.ca.gov</a>

<b>Direct Contacts</b>								
	<b>First Name</b>	<b>Last Name</b>	<b>Area Code</b>	<b>Phone #</b>	<b>Ext.</b>	<b>Area Code</b>	<b>Fax #</b>	<b>E-mail</b>
<b>Doc. prepared by</b>	POG Analyst	Robin Smith	916	845-4523		916	845-4523	<a href="mailto:Robin.Smith@ftb.ca.gov">Robin.Smith@ftb.ca.gov</a>
<b>Primary contact</b>	Michael	Mason	916	845-5130		916	845-0552	<a href="mailto:Michael.Mason@ftb.ca.gov">Michael.Mason@ftb.ca.gov</a>
<b>Project Manager</b>	Kathy	Hardmeyer	916	845-7851		916	845-8770	<a href="mailto:Kathy.Hardmeyer@ftb.ca.gov">Kathy.Hardmeyer@ftb.ca.gov</a>

**INFORMATION TECHNOLOGY PROJECT SUMMARY**  
**SECTION C: PROJECT RELEVANCE TO STATE AND/OR DEPARTMENTAL PLANS**

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1.	What is the date of your current Operational Recovery Plan (ORP)?	Date	4/2008
2.	What is the date of your current Agency Information Management Strategy (AIMS)?	Date	8/2007
3.	For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.	Doc.	AIMS
		Page #	7, 8 and 9

Project #	FTB FSR 08-04
Doc. Type	FSR

4.	Is the project reportable to control agencies?		Yes	No
			X	
	If YES, CHECK all that apply:			
	X	a) The project involves a budget action.		
		b) A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.		
X	c) The estimated total development and acquisition cost exceeds the departmental cost threshold and the project does not meet the criteria of a desktop and mobile computing commodity expenditure (see SAM 4989 – 4989.3).			
	d) The project meets a condition previously imposed by Finance.			

**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE  
SECTION D: BUDGET INFORMATION**

<b>Project #</b>	<b>FTB FSR 08-04</b>
<b>Doc. Type</b>	<b>FSR</b>

<b>Budget Augmentation Required?</b>	<input type="checkbox"/>	<input type="checkbox"/>										
	<b>No</b>	<input type="checkbox"/>										
	<b>Yes</b>	<input checked="" type="checkbox"/>	<b>If YES, indicate fiscal year(s) and associated amount:</b>									
			<b>FY</b>	<b>09/10</b>	<b>FY</b>	<b>10/11</b>	<b>FY</b>	<b>11/12</b>	<b>FY</b>	<b>12/13</b>	<b>FY</b>	
			\$1,400,221		\$1,687,615		\$1,702,006		\$375,557		\$	

**PROJECT COSTS**

1.	Fiscal Year	08/09	09/10	10/11	11/12	12/13		TOTAL
2.	One-Time Cost	\$37,634	\$1,717,456	\$ 1,326,449	\$ 1,326,449	\$ 0		\$ 4,407,988
3.	Continuing Costs	\$0	\$295,232	\$ 727,441	\$ 741,832	\$741,832		\$2,506,337
4.	<b>TOTAL PROJECT BUDGET</b>	<b>\$37,634</b>	<b>\$2,012,688</b>	<b>\$2,053,890</b>	<b>\$2,068,281</b>	<b>\$741,832</b>		<b>\$6,914,325</b>

**SOURCES OF FUNDING**

5.	General Fund	\$0	\$1,400,221	\$ 1,687,615	\$ 1,702,006	\$375,557		\$ 5,165,399
6.	Redirection	\$37,634	\$612,467	\$ 366,275	\$ 366,275	\$366,275		\$1,748,926
7.	Reimbursements							\$
8.	Federal Funds							\$
9.	Special Funds							\$
10.	Grant Funds							\$
11.	Other Funds							\$
12.	<b>PROJECT BUDGET</b>	<b>\$37,634</b>	<b>\$2,012,688</b>	<b>\$2,053,890</b>	<b>\$2,068,281</b>	<b>\$741,832</b>		<b>\$6,914,325</b>

**PROJECT FINANCIAL BENEFITS**

13.	Cost Savings/Avoidances	\$0	\$0	\$0	\$	\$	\$
14.	Revenue Increase	\$0	\$0	\$0	\$	\$	\$

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



**INFORMATION TECHNOLOGY PROJECT SUMMARY PACKAGE**  
**SECTION F: RISK ASSESSMENT INFORMATION**

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<b>Project #</b>	<b>FTB FSR 08-04</b>
<b>Doc. Type</b>	<b>FSR</b>

**RISK ASSESSMENT**

	<b>Yes</b>	<b>No</b>
<b>Has a Risk Management Plan been developed for this project?</b>	<b>X</b>	

**General Comment(s)**

The risk management plan that the Franchise Tax Board has developed to identify, analyze, respond to, monitor, and control project risk is based on *A Guide to the Project Management Body of Knowledge (PMBOK) 2000*, Chapter 11, issued by the Project Management Institute, and SIMM Section 45, and SIMM Section 200, *Project Management Methodology Guidelines*, Section 3.10, *Risk Management Plan*, and Section 5.4, *Risk Monitoring Mitigation*.

Department: Franchise Tax Board  
 Project: Workload Growth FTBFSR08-04  
 Date: October 16, 2008

**EXISTING SYSTEM/BASELINE COST WORKSHEET**

All costs are shown in whole (rounded) dollars.

FSR EAW

	FY 2008/09		FY 2009/10		FY 2010/11		FY 2011/12		FY 2012/13		TOTAL	
	PYs	Amts	PYs	Amts								
<b>Continuing Information</b>												
<b>Technology Costs</b>												
Staff (salaries & benefits)	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	145.5	15,286,180
Hardware Lease/Maintenance		259,514		259,514		259,514		259,514		259,514		1,297,570
Software Maintenance/Licenses <sup>1/</sup>		5,092,767		5,092,767		5,092,767		5,092,767		5,092,767		25,463,835
Contract Services		0		0		0		0		0		0
Data Center Services		0		0		0		0		0		0
Agency Facilities		0		0		0		0		0		0
Staff OE&E		60,542		60,542		60,542		60,542		60,542		302,710
Other		0		0		0		0		0		0
<b>Total IT Costs</b>	<b>29.1</b>	<b>8,470,059</b>	<b>145.5</b>	<b>42,350,295</b>								
<b>Continuing Program Costs:</b>												
Staff	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Other		0		0		0		0		0		0
<b>Total Program Costs</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>								
<b>TOTAL EXISTING SYSTEM COSTS</b>	<b>29.1</b>	<b>8,470,059</b>	<b>145.5</b>	<b>42,350,295</b>								

1/ Assumption: No COLA or Inflation built-in software vendor contracts

Department: Franchise Tax Board  
 Project: Workload Growth FTBFSR08-04  
 Date: October 16, 2008

**PROPOSED ALTERNATIVE**

All costs are shown in whole (rounded) dollars.

FSR EAW

	FY 2008/09		FY 2009/10		FY 2010/11		FY 2011/12		FY 2012/13		TOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
<b>One-Time IT Project Costs</b>												
Staff (Salaries & Benefits)	0.4	36,914	2.3	241,464	0.0	0	0.0	0	0.0	0	2.6	278,378
Hardware Purchase		0		553,117		553,117		553,117		0		1,659,351
Software Purchase/License		0		692,774		692,774		692,774		0		2,078,322
Finance Interest Payment <sup>1/</sup>		0		80,558		80,558		80,558		0		241,674
Telecommunications		0		0		0		0		0		0
Contract Services												
Software Customization		0		0		0		0		0		0
Project Management		0		0		0		0		0		0
Project Oversight		0		0		0		0		0		0
IV&V Services		0		0		0		0		0		0
Other Contract Services- Install/Migrate		0		97,500		0		0		0		97,500
TOTAL Contract Services		0		97,500		0		0		0		97,500
Data Center Services		0		0		0		0		0		0
Agency Facilities		0		0		0		0		0		0
Staff OE&E		720		4,728		0		0		0		5,448
Other		0		47,315		0		0		0		47,315
<b>Total One-time IT Costs</b>	<b>0.4</b>	<b>37,634</b>	<b>2.3</b>	<b>1,717,456</b>	<b>0.0</b>	<b>1,326,449</b>	<b>0.0</b>	<b>1,326,449</b>	<b>0.0</b>	<b>0</b>	<b>2.6</b>	<b>4,407,988</b>
<b>Continuing IT Project Costs</b>												
Staff (Salaries & Benefits)	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Hardware Lease/Maintenance		0		65,232		65,232		79,623		79,623		289,710
Software Maintenance/Licenses		0		230,000		662,209		662,209		662,209		2,216,627
Telecommunications		0		0		0		0		0		0
Contract Services		0		0		0		0		0		0
Data Center Services		0		0		0		0		0		0
Agency Facilities		0		0		0		0		0		0
Staff OE&E		0		0		0		0		0		0
Other		0		0		0		0		0		0
<b>Total Continuing IT Costs</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>295,232</b>	<b>0.0</b>	<b>727,441</b>	<b>0.0</b>	<b>741,832</b>	<b>0.0</b>	<b>741,832</b>	<b>0.0</b>	<b>2,506,337</b>
<b>Total Project Costs</b>	<b>0.4</b>	<b>37,634</b>	<b>2.3</b>	<b>2,012,688</b>	<b>0.0</b>	<b>2,053,890</b>	<b>0.0</b>	<b>2,068,281</b>	<b>0.0</b>	<b>741,832</b>	<b>2.6</b>	<b>6,914,325</b>
<b>Continuing Existing Costs</b>												
Information Technology Staff	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	29.1	3,057,236	145.5	15,286,180
Other IT Costs		5,412,823		5,046,548		5,046,548		5,046,548		5,046,548		25,599,015
<b>Total Continuing Existing IT Costs</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>145.5</b>	<b>40,885,195</b>
Program Staff	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Other Program Costs		0		0		0		0		0		0
<b>Total Continuing Existing Program Costs</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>
<b>Total Continuing Existing Costs</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>29.1</b>	<b>8,103,784</b>	<b>145.5</b>	<b>40,885,195</b>
<b>TOTAL ALTERNATIVE COSTS</b>	<b>29.5</b>	<b>8,507,693</b>	<b>31.4</b>	<b>10,116,472</b>	<b>29.1</b>	<b>10,157,674</b>	<b>29.1</b>	<b>10,172,065</b>	<b>29.1</b>	<b>8,845,616</b>	<b>148.1</b>	<b>47,799,520</b>
INCREASED REVENUES		0		0		0		0		0		0

<sup>1/</sup> Financed for 3 years at 4.5% interest rate.







Department: Franchise Tax Board  
 Project: Workload Growth FTBFSR08-04  
 Date: October 16, 2008

**ECONOMIC ANALYSIS SUMMARY**

All costs are shown in whole (rounded) dollars.

FSR EAW

	FY 2008/09		FY 2009/10		FY 2010/11		FY 2011/12		FY 2012/13		TOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
<b>EXISTING SYSTEM</b>												
Total IT Costs	29.1	8,470,059	29.1	8,470,059	29.1	8,470,059	29.1	8,470,059	29.1	8,470,059	145.5	42,350,295
Total Program Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>Total Existing System Costs</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,470,059</b>	<b>29.1</b>	<b>8,470,059</b>	<b>145.5</b>	<b>42,350,295</b>
<b>PROPOSED ALTERNATIVE</b>	<b>PROPOSED ALTERNATIVE</b>											
Total Project Costs	0.4	37,634	2.3	2,012,688	0.0	2,053,890	0.0	2,068,281	0.0	741,832	2.6	6,914,325
Total Cont. Exist. Costs	29.1	8,470,059	29.1	8,103,784	29.1	8,103,784	29.1	8,103,784	29.1	8,103,784	145.5	40,885,195
<b>Total Alternative Costs</b>	<b>29.5</b>	<b>8,507,693</b>	<b>31.4</b>	<b>10,116,472</b>	<b>29.1</b>	<b>10,157,674</b>	<b>29.1</b>	<b>10,172,065</b>	<b>29.1</b>	<b>8,845,616</b>	<b>148.1</b>	<b>47,799,520</b>
<b>COST SAVINGS/AVOIDANCES</b>	<b>(0.4)</b>	<b>(37,634)</b>	<b>(2.3)</b>	<b>(1,646,413)</b>	<b>0.0</b>	<b>(1,687,615)</b>	<b>0.0</b>	<b>(1,702,006)</b>	<b>0.0</b>	<b>(375,557)</b>	<b>(2.6)</b>	<b>(5,449,225)</b>
Increased Revenues		0		0		0		0		0		0
<b>Net (Cost) or Benefit</b>	<b>(0.4)</b>	<b>(37,634)</b>	<b>(2.3)</b>	<b>(1,646,413)</b>	<b>0.0</b>	<b>(1,687,615)</b>	<b>0.0</b>	<b>(1,702,006)</b>	<b>0.0</b>	<b>(375,557)</b>	<b>(2.6)</b>	<b>(5,449,225)</b>
<b>Cum. Net (Cost) or Benefit</b>	<b>(0.4)</b>	<b>(37,634)</b>	<b>(2.6)</b>	<b>(1,684,047)</b>	<b>(2.6)</b>	<b>(3,371,662)</b>	<b>(2.6)</b>	<b>(5,073,668)</b>	<b>(2.6)</b>	<b>(5,449,225)</b>		