



A response to California Energy Commission Request for Offers

For

**Data Validation and In-house Publishing  
13-409.00-006**

Kate Spiess  
1516 9<sup>th</sup> Street, MS-7  
Sacramento, CA 95814-5512  
(916) 651-6588  
Kate.spiess@energy.ca.gov

Steve Turtletaub, PMP  
Managing Partner  
sturtletaub@AndesLLC.com  
(916) 492-1100

*Presented on behalf of:*

**Andes Consulting, LLC**  
757 Santa Rita Way  
Sacramento, CA 95864  
CMAS # 3-14-70-2477D  
CA SBE # 49020

## Table of Contents Technical Proposal

Table of Contents Technical Proposal.....	2
Cover letter.....	3
1.0 Executive Summary.....	4
2.0 Technical Proposal.....	5
2.1 Management.....	5
2.2 Resource Experience.....	5
2.3 Approach to the Scope of Work.....	6
3.0 QFER Data Validation and Publishing Resumes.....	19
4.0 Cost Proposal.....	30
5.0 Proposal Checklist.....	30
6.0 Company and Consultant References.....	30
Appendix A - Draft Project Schedule.....	37

## Cover letter

April 7, 2014

Ms. Kate Spiess  
California Energy Commission  
1719 24TH Street  
Sacramento, CA 95816

Subject: Proposal Cover Letter  
Reference: CEC RFO 13-409.00-006 for Data Validation and In-house Publishing

Dear Ms. Spiess:

Andes Consulting is pleased to present the following proposal in response to the California Energy Commission's Request for Offers for Data Validation and In-house Publishing Services. Andes Consulting is proposing Mr. Keith Busloff as the key software development resource to fulfill the requirements and tasks set forth in the Scope of Work. Mr. Busloff has over 25 years of Microsoft .NET architecture and software development experience, has excellent documentation skills, and has worked for the California Energy Commission on complex Microsoft .NET software development projects. Mr. Steve Turtletaub, PMP, will serve as the engagement manager and will fulfill the project management tasks associated defined in the Statement of Work. Mr. Turtletaub has over 26 years of State of California project management, business analysis, systems development, contract management, and procurement development experience.

As requested in the Request for Offers, Andes Consulting has attached the following support documentation to this proposal:

- ✓ A cover letter which includes a binding signature
- ✓ Contractor and Consultant references
- ✓ CMAS contract and base GSA price list
- ✓ State std. 204

The undersigned, Steve Turtletaub, is the managing partner of Andes Consulting, LLC and is authorized to sign and commit Andes Consulting to the terms of the RFO, the RFO Response, and resulting contract.

We look forward to the opportunity to serve the California Energy Commission. Please feel free to contact me at (916) 549-3725 or via email at [sturtletaub@andesllc.com](mailto:sturtletaub@andesllc.com) should you have any questions about our proposal response.

Sincerely,



Steve Turtletaub, PMP  
Managing Partner  
Andes Consulting, LLC

## 1.0 Executive Summary

Andes Consulting, LLC (Andes) understands that developing the Integrated Energy Planning Report (IEPR) electricity and natural gas demand forecasts (PRC § 25301/SB-1389) are a mission critical function at the California Energy Commission (Commission). We understand the challenges faced by the Commission with regard to ensuring that accurate, timely, defensible, and transparent data be used when building the IEPR forecasts. We concur that current computer automation and standardization techniques can assist with data validation between the utilities and other data sources, permitting the Commissions' QFER staff to redirect its focus from data administration to improved data and trend analysis. Shifting focus from data entry and correction of data errors to more analytical functions will significantly boost the accuracy, reliability, transparency, and value of IEPR electricity and natural gas demand forecasts.

Andes has years of experience working with the Commission on EIPR related software projects and has successfully completed a number of other software projects for State of California agencies. We understand the Commission's mission, processes, and culture and believe we can effectively develop the solution describe in RFO 13-409.00-006.

Keith Busloff, our proposed software development resource has 25 years of software design and development experience. *Keith will serve as the technical lead on this project and will be located at the Commission's office in downtown Sacramento.* He will design, develop, implement, test, train staff, and document the software used to maximize automation of data processing, validation, and in-house publishing of QFER data.

We understand that the key objectives of this project are:

- Develop automated comprehensive data enhancement algorithms that allow: (a) mapping historical SIC code data into NAICS codes; (b) analyzing unclassified data categories; (c) aggregating energy consumption data by a wide variety of data groupings; (d) compiling format and load self-generation data.
- Develop data validation routines that allow: (a) analyzing trend and statistical analysis; (b) understanding the benchmark process and how to compare new data; (c) analyzing requirements for user-specified non-form data; (d) analyzing NAICS accuracy reporting; (e) researching capability to populate missing historical data.
- Develop In-House Data Publication Capabilities that will: (a) improve QFER response time in supporting the IEPR forecast production schedule; (b) support automated report generation algorithms to accelerate staff response to in-house and external data requests.
- Ensure all upgrades and expansions are fully compliant with current standards of the Energy Commission's Information Technology Services Branch (ITSB).
- Test all software upgrades and expansions and resolve issues found during testing.
- Document all software upgrades and expansions: include a user's guide and a programmer's guide for QFER staff, and an administrator's guide for the ITSB administrator.
- Train QFER and ITSB staff in the use and maintenance of all software upgrades and expansions.
- Provide post-implementation, on-site debugging and maintenance for a specified time interval.

In addition to Mr. Busloff, Mr. Steve Turtletaub, PMP will serve as the engagement/project manager on this project. Mr. Turtletaub has over 26 years of project management and complex information management project implementation. Although the majority of the time for this project will be allocated to Mr. Busloff, Mr. Turtletaub will be responsible for the overall success of the project and for specific project management tasks. Mr. Turtletaub, with Mr. Busloff's assistance, will take the lead for fulfilling the deliverables described Tasks 5 and 7. Tasks and resource hours allocated to the 7 Task Statements are defined in Section 2.3 our *Approach to the Scope of Work*.

Why Select Andes Consulting?

Andes Consulting has extensive experience in delivering State of California information technology projects within scope, on time, and within budget. Our lead technical resource has over 25 years of custom software development experience. His experience includes designing and developing complex business applications for the Energy Commission. Andes Consulting understands the Commission’s mission, processes, and policies and have participated in and led a number of successful projects for the California Energy Commission.

## 2.0 Technical Proposal

### 2.1 Management

Title	Name	Telephone	Email
Project Manager	Steve Turtletaub, PMP	(916) 549-3725 (cell) (916) 492-1100 (office)	sturtletaub@andesllc.com

### 2.2 Resource Experience

Keith Busloff is an Information Technology professional with over 25 years of software architecture, design, development, and implementation experience. Keith has extensive experience with ground up, custom software development, data transformation, and post implementation support. Keith holds a Bachelor of Science degree in Computer Science.

**Keith Busloff Skill Level Qualifications**

Contractor Qualifications	Minimum Years	Desired Years	Keith Busloff
○ Microsoft .NET Framework 4.0, ASP .NET framework, classes and Security Models , Active Directory Concepts	5	7	9
○ IIS 7.5, HTML, XML, Visual Studio 2010 (projects, coding, debugging, compiling, build installation files), Subversion (SVN), Team Foundation Server (TFS)	5	7	9
○ C# programming, Entity Framework, Repository and Unit of Work Pattern, LINQ, Web Forms, AJAX, Javascript, JQuery	5	7	9
○ ADO.NET, MS SQL Server 2008 R2 Enterprise, MS Access, complex relational database design, database administration, in depth MS SQL (Standard Query Language), stored procedures (Transact-SQL), SQL Server Analysis Services (SSAS), SSIS Programming. Strong Database Analysis and Performance skills.	5	7	24
○ Excel Object Model; MS-Excel & MS-Word Automation (All Versions), PDF and Text manipulation	4	7	20
○ Experience as a high-level technical specialist on the most complex applications. Very knowledgeable in: software design, development, user interface, user controls, business classes, data access, reporting and implementation	4	7	25

## 2.3 Approach to the Scope of Work

Andes Consulting agrees with the Scope of Work tasks and deliverables described in Section III of RFO 13-409.00-006. Our approach to each of the tasks and deliverables is described below in *blue italics*.

### **Task 1. Project Planning, Progress Meetings, and Progress Reports**

#### Description:

Approximately one week following release of the PO, Contractor/PM shall meet with Contract Manager of the Energy Commission in Sacramento, for the purpose of developing a work plan for accomplishing the task objectives of the Agreement. The work plan shall build upon Contractor's proposed plan of Section II.B as modified by Contract Manager during the Task 1 planning meeting. Contractor/PM shall prepare a written draft of the resulting work plan (Technical Memorandum 1), and shall submit it to Contract Manager for approval. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Technical Memorandum 1. Commencing every month thereafter until completion of the Agreement, Contractor/PM shall provide Contract Manager with written progress reports by e-mail (due at month's end) documenting the activities of the previous month, status updates on deliverables listed under Task 2 to 6 below, and setting forth the objectives for the next month. Contractor/PM shall be available to discuss all matters as they concern this project during regular business hours of each week throughout the service period of the Agreement. In order to minimize processing disruption and missed deliverable deadlines, Contractor/PM shall coordinate with Contract manager at least one month in advance regarding planned absences of more than three consecutive days. Contractor will use Microsoft Project 2007/2010 for creating project and work plans and use MS Excel wherever required.

#### Deliverables:

Within 10 calendar days following PO, Contractor/PM shall prepare and deliver Draft Technical Memorandum 1 that contains a work plan, including task-specific budget, for accomplishing all tasks contained in this Work Statement. Within fifteen calendar days following RWA, Contractor/PM shall deliver Final Technical Memorandum 1 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 1. Commencing every month thereafter until completion of the Agreement, Contractor/PM shall e-mail progress reports at month's end describing accomplished activities for the past month and planned activities for the next month.

*Andes Approach: Approximately one week after the release of the PO, our Project Manager and Technical Lead will meet with the Commission Contract Manager to discuss the project work plan and make plans for a project kick off meeting. During this meeting we will review tasks, the schedule, expectations for the Draft Technical Memorandum 1, agenda for the project kick off meeting, and administrative processes. Suggestions for the project kickoff meeting include; project goals and objectives, schedule, expectations, and rules of engagement and should include the Commission team including the project sponsor, ITSB support staff, and subject matter experts.*

*The Draft Technical Memorandum 1 will include the software tools and coding approach that will be used by Mr. Busloff during the development of the QFER system. We also suggest that a meeting be held to review the table described in Task 5 of this RFO. This review meeting will give Commission staff and Andes a chance to review, assess, and update the goals as we begin the project. The first Draft Memorandum would include the results of the review meeting.*

As requested in Section II. B of the RFO, the table below provides resource level of effort for tasks and deliverables.

**Task 1 Resource and Hours Table**

Task	Deliverable	Resource	Hours per Task
1: Project Planning, Progress Meetings, and Progress Reports	Within 10 calendar days following PO, Contractor/PM shall prepare and deliver Draft Technical Memorandum 1 that contains a work plan, including task-specific budget, for accomplishing all tasks contained in this Work Statement. Within fifteen calendar days following RWA, Contractor/PM shall deliver Final Technical Memorandum 1 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 1. Commencing every month thereafter until completion of the Agreement, Contractor/PM shall e-mail progress reports at month's end describing accomplished activities for the past month and planned activities for the next month.	Turtletaub	40
		Busloff	40
2: Develop automated processing, validation, and in-house publishing of QFER Data	Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform and complete the activities outlined in the Task 2 Description above. Additionally, Contractor shall: <ul style="list-style-type: none"> <li>• Prepare Draft Technical Memorandum 2 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.</li> <li>• Prepare Final Technical Memorandum 2 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 2.</li> <li>• As part of the Technical Memorandum 2, Contractor shall ensure that all documents developed across the Software Development Lifecycle (SDLC) shall be submitted to the Contract Manager for review by ITSB. These documents should include but not be limited to: <ul style="list-style-type: none"> <li>○ Business Specification Requirements Document</li> <li>○ System Architecture and Design Document including ERD's, Data Dictionaries and associated technical documentation</li> <li>○ Test cases, Test Plans and Test Results</li> <li>○ Satisfactorily commented source code with documentation to aid in continuity of support and development (even in the event that the original</li> </ul> </li> </ul>	Turtletaub	264
		Busloff	1,920

	programmer's services are no longer available)		
3: Documentation	Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall deliver the documentation products outlined in the Task 3 description above, as follows: <ul style="list-style-type: none"> <li>• Prepare Draft Technical Memorandum 3 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.</li> <li>• Prepare Final Technical Memorandum 3 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 3.</li> </ul>	<i>Turtletaub</i>	17
		<i>Busloff</i>	240
4: Training	Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform the training activities outlined in the Task 4 description above. Additionally, Contractor shall: <ul style="list-style-type: none"> <li>• Prepare Draft Technical Memorandum 4 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.</li> <li>• Prepare Final Technical Memorandum 4 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 4.</li> </ul>	<i>Turtletaub</i>	5
		<i>Busloff</i>	76
5: Post Implementation Review -- A Risk Reduction Analysis	Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform post-implementation risk reduction assessment activities as outlined in the Task 5 description above. Additionally, Contractor shall: <ul style="list-style-type: none"> <li>• Prepare Draft Technical Memorandum 5 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.</li> <li>• Prepare Final Technical Memorandum 5 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 5.</li> </ul>	<i>Turtletaub</i>	256
		<i>Busloff</i>	240

6: Maintenance Support	<p>Based on the work plan schedule scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform the maintenance activities outlined in the Task 6 description above. Additionally, Contractor shall:</p> <ul style="list-style-type: none"> <li>• Prepare Draft Technical Memorandum 6 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.</li> <li>• Prepare Final Technical Memorandum 6 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 6.</li> </ul>	<i>Turtletaub</i>	8
		<i>Busloff</i>	160
7: Final Report	<p>Deliverables: Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1) Contractor shall deliver a final report under the Agreement as follows:</p> <ul style="list-style-type: none"> <li>• Prepare a Draft Final Report that documents all products produced, activities performed, and all related issues/concerns pursuant to all tasks of the Agreement.</li> <li>• Prepare a Final Report that reflects any revisions from Contract Manager. This task will be considered complete and acceptable when Contract Manager notifies Contractor in writing that the Final Report is complete and acceptable.</li> </ul>	<i>Turtletaub</i>	40
		<i>Busloff</i>	10
Totals		<i>Turtletaub</i>	630
		<i>Busloff</i>	2,686

*Appendix A of this response includes a draft project schedule. This schedule will be reviewed and updated during the initial meeting with the Commission Contract Manager and will be used to manage the schedule throughout the life of the project.*

**Task 2. Develop automated processing, validation, and in-house publishing of QFER Data**

**Description:**

All applications must follow section 508 standards of the U.S. Rehabilitation Act (part of the Americans with Disability Act) in addition to conforming to ITSB’s application development standards and contractor guidelines. Contractor shall develop automated data validation routines consistent with Sections I.C and IV.A above, as follows:

1) Develop Automated Comprehensive Data Enhancement Routines:

- a) To import data into the database from old forms [Standard Industrial Classification (SIC) and NAICS], and map SIC data to NAICS codes. This data will be loaded into the data stores for reporting purposes.
- b) To measure and validate unclassified energy consumption (kWh/Therms) quantities as follows: distribute unclassified energy consumption amounts (when non-meaningful NAICS codes have been assigned) to appropriate NAICS codes, NAICS categories, and sectors according to a

- formula prescribed by DAO QFER staff. Under certain conditions, formula will be expanded to reconcile discrepancies outlined in 2b) and 2c) below.
- c) To aggregate across multiple data stores energy consumption totals by any of the following groupings when data for that grouping is available: (i) planning area, (ii) utility service territory, (iii) county, (iv) sector, (v) NAICS category, (vi) NAICS codes, (vii) month, (viii) zip code, (ix) climate zone, (x) customer type, and (xi) rate code.
- d) To compile, format, and load self-generation data (which differs uniquely from utility retail sales data). This data will need to be loaded into newly designed data storage areas.
- 2) Develop Data Validation Routines for Assessing Data Accuracy that, among other things, will:
- a) Notify QFER staff of non-NAICS data irregularities, including performing data verification procedures.
  - b) Perform relevant trend and other statistical analyses. This analysis should include, but is not limited to:
    - cross form comparisons to identify discrepancies between multiple forms submitted by an agency.
    - graphically compare industry and building categories by geographic areas over a chosen series of years
  - c) Import and display consumption amounts from user-specified data sources (aka, Alternate Official Sources or AOS) such as Energy Information Administration, Energy Commission Demand Form 1.1, Federal Energy Regulatory Commission, and utility fiscal-year sales summaries. Add GUI to permit staff to select, enter into designated data fields, reference, and record data drive locations for each AOS. The fields for these amounts will remain blank when not selected by staff. The GUI must permit staff to calculate differences between utility-reported QFER consumption and that from the AOS. Each potential adjustment amount must be displayed to permit staff to select as appropriate. Selected adjustments along with staff-documented selection decisions must be recorded. Selected adjustment amounts must be sortable by staff name with date. Under certain conditions, selected adjustments will be used in formula from a2) above to reconcile and distribute unclassified
  - d) Compare cleansed data to benchmarks and adjust to AOSs, as required.
  - e) Assist in filling missing historical data cells.
- 3) Develop In-House (Non-Web-Based) Data Publication Capabilities:
- a) Develop automated report-generating algorithms to accelerate staff response to in-house and external data requests (e.g., private citizens, non-profit agencies, for-profit consultants, academia & other researchers, students, government agencies, county & city planning groups, legislature, and attorneys).
  - b) Improve QFER data response to the IEPR forecast production schedule.
- 4) In carrying out the above activities, Contractor shall perform the following programming and related activities using ITSB specified Software Development methods:
- a) Identify and document both existing and new business requirements in order to specify, in detail, the users business needs. The resulting business requirements specification document shall be approved by the contract manager and will be the basis for all development work. A requirements traceability matrix shall be created to track changes. Changes requested after the requirements have been signed off will be evaluated for overall project impact including cost and time;
  - b) Design and develop programming code to automate data validation and in-house publishing per work plan. Code should be documented and submitted for peer review by ITSB staff at regular intervals;
  - c) Perform functional and load testing of programming code, and support QFER staff during User Acceptance Testing (UAT) process. The application may be subjected to Vulnerability testing before being deployed into production;
  - d) Regarding issues found during testing, work with QFER and ITSB staff to identify solution options and resolve issues;
  - e) Modify code as needed to implement improvements;
  - f) Document any changes applied to software;
  - g) Train Energy Commission Staff (QFER and/or ITSB) regarding programming changes affecting the function of software;

- h) Implement tested and approved programming enhancements on the production server by following standard ITSB procedures for this purpose. Contractor shall identify early on the required network and server settings and configurations;
- i) Coding should follow security best practices to reduce the risk of applications being exploited or attacked. The Open Web Application Security Project (OWASP) provides best practice guidelines.
- j) Security shall be integrated into the development, verification and maintenance processes.
- k) Source code should not contain any credentials including (but not limited to) usernames, passwords, certificates, token IDs or phone numbers.
- l) Code may be required to be tested by analytics and security software tools such as AppScan, Vericode, Indihang or other approved third party software tools.
- m) No shareware or Open Source software shall be used in the course of developing the application. Any 3rd party software, if used, must be approved by ITSB.
- n) Test and verify to ensure the server is fully functional with the enhancements;
  - o) Ensure that code version control is managed using ITSB's Team Foundation Server(TFS). Code backups shall occur at regular intervals;
  - p) Provide source code with satisfactory documentation upon completion of the project and
  - q) Adhere to Contractor's Performance terms per Section III.E

**Deliverables:**

Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform and complete the activities outlined in the Task 2 Description above. Additionally, Contractor shall:

- Prepare Draft Technical Memorandum 2 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.
- Prepare Final Technical Memorandum 2 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 2.
- As part of the Technical Memorandum 2, Contractor shall ensure that all documents developed across the Software Development Lifecycle (SDLC) shall be submitted to the Contract Manager for review by ITSB. These documents should include but not be limited to:
  - Business Specification Requirements Document
  - System Architecture and Design Document including ERD's, Data Dictionaries and associated technical documentation
  - Test cases, Test Plans and Test Results
  - Satisfactorily commented source code with documentation to aid in continuity of support and development (even in the event that the original programmer's services are no longer available)

*Andes Approach: During the Requirements phase of the project, Andes will work with the Commission to evaluate the existing data and data relationships. This effort will consist of identifying and documenting the following:*

- *How the existing data is stored, linked and categorized (e.g. SIC Codes, NAICS).*
- *How the new NAICS are associated to the existing data sets*
- *How the Energy Consumption data will be aggregated across the existing data stores and then categorized by Planning Area, Utility Service territory, County, Sector, NAICS Category, NAICS Code, Month, Zip Code, Climate Zone, Customer Type and Rate*
- *How Self Generation data will be compiled and loaded in to a new data repository, and then accessed during later phases of the project.*
- *Document the Data Relationships*

*Once the data and data relationships are understood and documented, Andes will work with the Commission to define the algorithms for associating the current SIC codes with NAICS codes, aggregating Energy Consumption data and how Self Generation data will be compiled. To assist with the analysis and algorithm development efforts, Andes will develop SQL scripts to search the existing*

*data sets to find unclassified data, as well as test Energy Consumption aggregation and Self Generation compilation algorithms.*

*It's expected that a new data model will be necessary to support the addition of NAICS codes, Energy Consumption and Self Generation data as well as provide enhanced search capability and in house publication for Commission staff. Andes will work Commission staff to define the new data model, document the model and then create a new repository containing the existing and new data entities or by enhancing the existing repository with the new entities. The new or enhanced existing repository will be designed using standard information technology relational data normalization techniques to reduce data redundancy and optimize query performance.*

*The Commission has requested that Microsoft Entity Frameworks be used for managing the SQL Server based data repository. Andes will use Entity Frameworks to design and create the data model as well as manage the data repository, where appropriate; it's possible that portions of the data model may not be well suited for Entity Frameworks, specifically where large volumes of data are aggregated or queried and optimum performance is desired. In cases such as these, Andes Consulting staff will review the issue with Energy Commission IT and other staff and jointly they will determine whether options such as SQL Server stored procedures and Active Data Object (ADO) should be used instead. After the data model is developed and the data repository is created and ready for data import, Andes will perform the following using standard Microsoft extract, transformation and load (ETL) tools such as SQL Server Integration Services and/or SQL scripts. During this effort Andes will:*

- *Cleanse and Transform the existing SIC categorized data sets into the new data repository*
- *Assign any NAICS code assignment that can be assigned automatically during data transformation.*
- *Aggregate Energy Consumption data and load in to the new repository.*
- *Compile the Self Generation data from external data sources and loaded in to the new repository.*
- *Transform or Load any other data deemed necessary to support QFER data publishing.*

*Andes proposes creating an exception report to identify and any incomplete or missing required data elements for NAICS and SIC code assignment. The exception report will contain key data that can be used for lookup and data entry correction from within the new web application. The exception report will be developed using SQL Server Transact SQL and C#.*

*Andes proposes the design and development of an ASP.NET based web application that provides the following core function:*

- *Data Search by SIC codes, NAICS codes and category, planning area, utility service territory, county, Utility, sector, month, zip code, climate zone, customer type and rate code that enables the following:*
  - *Display Web Pages containing Form and Cross-Tabular visual representation of data by queried data search type.*
  - *NAICS Code Assignment.*
  - *Display Web Pages containing standard formatted report output for CEC and external data requests for QFER data. The reports will be used by CEC staff to query and view results before exporting the reports to Excel for publishing.*
  - *Printing.*
- *Excel data export of data displayed on web pages.*
- *Anchor all Silverlight based graphical statistical analysis forms such as the cross form comparison to identify discrepancies between multiple forms submitted by agencies.*
- *User Menus.*
- *User and Security Administration.*

- Other function as desired by CEC staff.

*During the requirements phase of the project, Andes will work with the Commission to define the specific data search criteria, web page look and feel, report specifications and Excel export formats, NAICS code assignment, and user administration needs. Andes will document the requirements and gain approval from the Commission Contract Manager.*

*During the design phase, Andes proposes the development of a prototype application that will visually demonstrate the key aspects of the web application such as data search, NAICS code assignment and report output. After the prototype is approved by the Commission for look and feel and content, the prototype will be used as the basis for the actual web application.*

*Andes proposes to develop the web application using C#, LINQ, ASP.NET, .NET 4.5, and Entity Frameworks (and Active Data Objects [ADO] and SQL Server stored procedures, where appropriate for performance). In addition, Andes' proposes using the Microsoft Silverlight tool for display of all statistical analysis for enhanced graphics capability.*

*Andes' proposes using Silverlight, Microsoft's client side tool to integrate the ASP.NET based web application with high quality graphics. The following features may be suited for this approach*

- *Identify Discrepancies Form - Identify discrepancies in data between forms submitted by agencies.*
- *Industry and Building Categories - Compare industry and building categories by geographic area over a series of years.*

*Andes will develop the application following all ITSB development standards and best practices including security, coding standards, naming conventions, TFS software version control and backups.*

*Andes will develop the web application in accordance with Section 508 Compliance of the American Disabilities Act by following Microsoft published 508 Compliance best practices.*

*Andes may request Commission approval to use a GNU licensed, open source module for any Excel based data export function to save time and cost.*

*Throughout the course of development, Andes will execute continuous Unit Testing on the software product to ensure that the product is as defect free as possible.*

*Post development, Andes Consultants will*

- *Perform functional System Testing to ensure that the product meets end-to-end functional requirements.*
- *Perform Load and System Testing to ensure that any performance related issues are identified and remedied before production implementation.*
- *Assist ITSB staff configuring the Production Environment.*
- *Assist the ITSB staff implementing the database and application into production.*
- *Document the Database and Application.*

*During User Acceptance, Andes Consultants will develop test scripts and use cases, support Commission staff, assist identifying any issues, and remedy any software product deficiencies.*

**Task 3. Documentation**

Description:

Contractor shall fully document both the existing/unmodified and the automated data validation routines, as follows:

- 1) Programmer’s Guide: Contractor shall provide all source code/scripts and shall prepare a line-by-line narrative explanation of the code/scripts for each component, element, and/or function of each subsystem, with flowcharts and variable dictionary. Scope must encompass the complete software system – both existing/unmodified system software and new upgrades and expansions performed under the Agreement.
- 2) User’s Guide: Contractor shall prepare operating procedures with flowcharts for all system features.
- 3) Administrator’s Guide: Contractor shall prepare detailed instructions for maintaining and updating all system functions and features.

Deliverables:

Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall deliver the documentation products outlined in the Task 3 description above, as follows:

- Prepare Draft Technical Memorandum 3 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.
- Prepare Final Technical Memorandum 3 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 3.

*Andes Approach: Andes Consulting agrees to create or edit the Programmer’s Guide, User’s Guide, and Administrator Guide. Our process for creating, reviewing, and editing such documents includes a structured review and tracking approach. Once the documents have been prepared and readied for Commission review, Andes will track comments in a matrix such as the example provided below.*

Item No.	Document Section and Page	Document Text	Comment/Issue	Comment/Issue Identified by	Resolution
1	1.3, page 17	The aggregation of utility information consists of....	QFER data from utilities should be aggregated as....	J. Smith	Researched specific context associated with the comment and Section 1.3 has been updated.

**Task 4. Training**

Description:

Contractor shall ensure continuous knowledge transfer to Energy Commission Program and ITSB staff through the lifecycle of the project. Contractor shall also fully train QFER staff and ITSB staff regarding all components of both the existing procedures for validating and publishing data and the automated process of data validation and data publication, as follows:

- 1) Contractor shall train QFER staff in the operation of new software/script functions and routines. Contractor shall prepare training documentation and exercises for accomplishing this training task.

Contractor shall perform the number of on-site training sessions approved by Contract Manager in the Task 1 work plan.

2) Contractor shall train authorized QFER and ITSB staff to perform periodic enhancements and updates to the automated process (e.g., update form/field reporting requirements for existing or new utilities), and to perform all maintenance tasks. Contractor shall prepare training documentation and exercises for accomplishing this training task. Contractor shall perform the number of on-site training sessions approved by Contract Manager in the Task 1 work plan.

**Deliverables:**

Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform the training activities outlined in the Task 4 description above.

Additionally, Contractor shall:

- Prepare Draft Technical Memorandum 4 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.
- Prepare Final Technical Memorandum 4 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 4.

*Andes Approach: Andes will provide training as described in Task 4 and will prepare and submit the Draft Technical Memorandum with updates based upon the final design of the QFER system. During this engagement, Andes' approach to training and knowledge transfer will involve three general areas:*

- 1) *Daily and routine knowledge sharing and knowledge transfer – this aspect of training covers the daily interaction between our technical resources and Commission staff. We will be sharing information and documentation as we develop, following an iterative process that includes input from Commission subject matter experts and ITSB staff.*
- 2) *Formal training: We will develop a formal training curriculum for users, administrators, and ITSB staff. The formal training will include training tools that can be used by future trainers.*
- 3) *Lessons learned training: Following implementation and before the end of the maintenance period Andes Consulting will conduct a Lessons Learned session with Commission staff in which we will review what went well, what didn't go well, and remedial steps that should be taken to ensure that past problems aren't repeated.*

## **Task 5. Post Implementation Review -- A Risk Reduction Analysis**

**Description:**

Contractor, in cooperation with Contract Manager and the QFER staff, shall analyze, quantify, and document the post-implementation benefits of the automated process of the Agreement, as described in the following table.

Improvement	Current capabilities of the existing procedures	Desired capabilities of the automated process	Comments
<b>1. Improved data analysis capabilities:</b>			
<ul style="list-style-type: none"> <li>Expanded QFER historical consumption data</li> </ul>	2007 – Current	1980 – Current	Includes SIC data and self generation
<ul style="list-style-type: none"> <li>Availability of comparative data from alternate sources.</li> </ul>	QFER data	QFER, Forecast, FERC and EIA data	
<ul style="list-style-type: none"> <li>Utility data accuracy feedback sped up</li> </ul>	Average time to get feedback about utility data irregularities. Months 12	Average time to get feedback about utility data irregularities Months: 1	
<ul style="list-style-type: none"> <li>Reduction in unclassified consumption data based on improved feedback to utilities.</li> </ul>	Current volume of unclassified data. % of total retail sales: 8	Anticipated volume of unclassified data: % of total retail sales: 3	
<b>2. Improved data publishing capabilities:</b>			
<ul style="list-style-type: none"> <li>Custom Report to sector forecasters</li> </ul>	8 Weeks	2 weeks	
<ul style="list-style-type: none"> <li>Routine data request</li> </ul>	1 week	24 hours	
<ul style="list-style-type: none"> <li>Non-standard data request</li> </ul>	2 weeks	48 hours	
<ul style="list-style-type: none"> <li>Standard web posting</li> </ul>	3 months	3 weeks	Examples: # of customers, kwh per customer, largest energy using industries
<ul style="list-style-type: none"> <li>Automatic data feeds to External website resulting in:</li> </ul>			
<ul style="list-style-type: none"> <li>more frequent uploads to web-site</li> </ul>	Frequency: yearly Delay: 3 months	Frequency: yearly Delay: 3 weeks	
<ul style="list-style-type: none"> <li>no ITSB involvement</li> </ul>	Manual ITSB task	Automated User task	
<b>3. Consistent &amp; Documented processes</b>	Data collection from utilities	<ul style="list-style-type: none"> <li>Data collection from utilities</li> <li>Unclassified processing</li> <li>Data/entry corrections</li> <li>Sic to NAICS translation</li> </ul>	

Deliverables:

Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform post-implementation risk reduction assessment activities as outlined in the Task 5 description above. Additionally, Contractor shall:

- Prepare Draft Technical Memorandum 5 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.
- Prepare Final Technical Memorandum 5 that reflects any revisions from Contract Manager. Contractor shall not commence work on any subsequent tasks until Contract Manager has issued written approval of Final Technical Memorandum 5.

*Andes Approach: Andes Consulting agrees to create the Draft Technical Memorandum 5 in which we document any updates or changes to the QFER database. In addition, this memorandum will include findings associated with the metrics described in the Task 5 table. Findings will include how well the new database meets the defined objectives and measures of success described in the table. The memorandum will also include a section on risk reduction, describing identified risks and associated mitigation steps and the status of mitigation steps. In order to qualitatively and quantitatively assess how well the QFER database adheres to stated objectives, Andes is proposing two related efforts:*

- 1) *Conduct a structured interview with key stakeholders to determine qualitatively how the new database is performing, and*
- 2) *Conduct a comparative analysis of the 12 objectives stated in the Task 5 table.*

*Reporting on the success or failure of meeting these objectives will help determine future modifications or additions to the system or QFER processes.*

## **Task 6. Maintenance Support**

Description:

Following Contract Manager's written acceptance of Technical Memoranda 1 through 6, Contractor shall provide on-demand maintenance support for a number of months to be determined by Contract Manager in the Task 1 work plan. Maintenance scope shall include all components of both the existing procedures and the automated process. On-line and telephone support will be used whenever possible. Periodically, however, on-site visits by Contractor will be required to resolve technical issues.

Contract Manager will determine, document, and prioritize necessary maintenance work and communicate this to Contractor. Contractor shall communicate estimated charges to Contract Manager. Consistent with the remainder of time/funds available in the service period of the Agreement, Contract Manager shall authorize Contractor to expend the proposed work hours/funds to address one or more maintenance issues.

Maintenance support may include but is not necessarily limited to the following activities:

- Modification of software program code/scripts to resolve unanticipated or anomalous operation and performance issues, and
- Test, document, and train staff regarding such modifications.
- Work with ITSB staff assigned to the automated process to ensure a smooth transition of maintenance and operations activities upon contract completion.

This task will be considered complete and acceptable when Contractor resolves each authorized maintenance issue and Contract Manager notifies Contractor in writing that the task deliverables are complete and acceptable.

Deliverables:

Based on the work plan schedule scope, schedule, and task-specific budget approved by Contract Manager in Task 1, Contractor shall perform the maintenance activities outlined in the Task 6 description above. Additionally, Contractor shall:

- Prepare Draft Technical Memorandum 6 that documents all products produced, activities performed, and all related issues/concerns pursuant to this task.

*Andes Approach: Andes Consulting agrees to develop Draft Technical Memorandum 6 with updates and modifications that have occurred. Andes also agrees to have Mr. Busloff available for maintenance and support activities through the life of the contract. Mr. Busloff is local and works in the Sacramento area and will most likely be assigned to another project once we enter the maintenance phase. With that said, as he has demonstrated in the past with the NSHP project, he is available for development and support after moving on to other projects. The Andes Project Manager and the Commission Contract Manager will develop a process in which Mr. Busloff can be contacted and can respond to service requests.*

### **Task 7. Final Report**

#### **Description:**

Contractor shall prepare a final report of essential project milestones that encompass all tasks/activities associated with the Agreement. Scope shall include: (a) a compilation of the seven final technical memoranda approved by Contract Manager for Tasks 1 through 6, (b) a compilation of all monthly progress reports approved by Contract Manager for Task 1, (c) any issues/concerns associated with all tasks/activities performed including potentially unresolved issues/problems, and (d) any other documents directed by Contract Manager.

#### **Deliverables:**

Based on the work plan scope, schedule, and task-specific budget approved by Contract Manager in Task

1) Contractor shall deliver a final report under the Agreement as follows:

- Prepare a Draft Final Report that documents all products produced, activities performed, and all related issues/concerns pursuant to all tasks of the Agreement.
- Prepare a Final Report that reflects any revisions from Contract Manager. This task will be considered complete and acceptable when Contract Manager notifies Contractor in writing that the Final Report is complete and acceptable.

*Andes Approach: Andes agrees to provide the Draft Final and Final Report as described in the work plan.*

## 3.0 QFER Data Validation and Publishing Resumes

Keith Busloff  
Senior Architect and Developer

*Resume of Qualifications*

### Biographical Summary

Keith Busloff is an Information Technology professional with over 25 years of software architecture, design, development, and implementation experience. Keith has extensive experience with ground up, custom software development, data transformation and load, and post implementation support. Keith specializes in development on the Microsoft platform. Keith holds a Bachelor of Science degree in Computer Science.

### Professional Experience

Keith has a broad collection of skills across the information technology enterprise including software development languages and frameworks, software tools, databases, computing platforms, applications servers and methodologies.

- **Languages/Frameworks:** C#, VB.NET, .NET 1.0-4.5, ASP.NET, Entity Frameworks 5, LINQ, MVC, Windows Communication (WCF), Oracle Managed Provider for .NET, Windows Services, Windows Presentation Foundation (WPF), Active Data Objects (ADO), Multithreading, SOAP/Web Services, MS Application Blocks/Ent Lib 2.0-5, .NET Remoting, SSIS, Symmetric/Asymmetric Encryption, Transact-SQL, C, PowerBuilder, TCP Sockets, HTML, LINQ, AJAX, JavaScript, CSS, XML.
- **Tools:** Visual Studio 2003-2010, Silverlight 2.0/3.0, SQL Server Management Studio 2000-2008, TOAD, PDF, EntireX Communicator, NUnit, TFS, Visual Source Safe, PVCS Dimensions, ClearCase/ClearQuest, WRQ Verastream Host Integrator (VHI), Attachmate Extra!, FxCop, TOAD, PowerBuilder, Visio, Eclipse.
- **Database:** SQL Server 4.9-2008, Oracle 8i-11g, Adabas, IBM VSAM, Sybase, Rdb and Digital RMS.
- **Platforms/OS:** Windows, Solaris, HP-UX, AIX and MVS
- **Application/Web Servers:** IIS, tomcat
- **Methodologies and Architectures:** SCRUM, Agile, Rational Unified Process (RUP), Waterfall, Service Oriented Architecture (SOA) and Parallelism.

### Career Summary

**Senior Software Engineer**

**California Student Aid Commission (CSAC)  
Rancho Cordova, CA**

**December 2012 – Present**

Senior Software Engineer for the California Student Aid Commission (CSAC) enhancing subsystems for CSAC's Grant Delivery System (GDS). GDS is an online web application used to manage Cal Grant student financial aid.

- Senior Software Engineer for the Middle Class Scholarship Subsystem (MCS) of GDS. The MCS subsystem provides Cal Grant's for eligible Calif. Students. Designed, developed and integrated the GDS Web application with the MCS subsystem. The MCS development effort consisted of creating and using an Entity Frameworks model of 8 tables and accessing and using the model with LINQ. The development effort for the GDS integration consisted of creating a Web Service with 23 methods that wrapped the GDS Oracle 11g database and its PL/SQL Packages and Procedures for use by MCS. The effort also included developing several GDS Web Pages for user access to the MCS subsystem. Developed using ASP.NET, VB, C#, Entity Frameworks, LINQ, ASP.NET, AJAX, Oracle 11g, Oracle Managed Provider, and PL/SQL Packages and procedures
- Senior Software Engineer for the Foster Youth Grant Subsystem of GDS. The Foster Youth subsystem provides Cal Grant's for eligible Calif. students. Redesigned and developed the ASP.NET front and Oracle database back end of the subsystem from a Classic ASP web application to a .NET 3.5 Web Application. Developed using ASP.NET, VB, C#, AJAX, Oracle 10g/11g, and PL/SQL Packages and procedures.

## Senior Software Engineer

## Foundation for California Community Colleges (FCCC). Sacramento, CA

May 2012 – Sept. 2013

Senior Software Engineer for Vehicle Retirement and Replacement Programs (VRRRM) and the Centralized Clinical Placement System (CCPS).

- The VRRRM applications manage the South Coast Quality Air Management districts VRRRM program where individuals with gross polluter vehicles are provided financial incentives to retire, or retire and replace. Designed and developed the Enhanced Fleet Modernization Application (EFMP), and provide ongoing maintenance and support for both EFMP and the Replace or Scrap (HEROS2) web applications. The VRRRM applications use NET 4.0, ASP.NET, C#, Web Services, SQL Server, SharePoint, T-SQL, Stored Procedures/Functions, Reporting Services, MS Enterprise Library 5.1, Acrobat, JavaScript, AJAX, and CSS.
- CCPS is an online nursing intern management system used for students, colleges and hospitals to schedule internships. Maintain CCPS v1 using VB.NET, ASP.NET and SQL Server and design and develop CCPS v2 using C#, .NET 4.5, ASP.Net, SQL Server, Web Services, JavaScript, AJAX and CSS.

<http://vehicleretirement.com>

<http://claims.vrrrm.org/VRRRMConsumerApp/HEROII/HEROSIIHome.aspx>

<http://ccps.foundationccc.org/>

## Senior Software Engineer

## California Energy Commission (CEC) Sacramento, CA

Sept. 2010 – Apr. 2012

Senior Software Engineer for two web applications for the Calif. Energy Commission (CEC)

- New Solar Home Program (NSHP) - Manages the 700 million dollar New Solar Home Rebate Program for the CEC. NSHP provides retailers, utilities and CEC staff with an end-to-end solution for managing NSHP applications, documentation, approvals, accounting, communication, reporting and system administration. The applications major features include customer relationship management, workflow, document management and Cal Stars accounting integration. NSHP was built using .NET 4.0, ASP C#,

Web Services, Windows Services, SQL Server, T-SQL, Stored Procedures/Functions, SSIS, MS Enterprise Library 5.1, WCF, Acrobat, JavaScript, AJAX, and CSS

- <https://www.newsolarhomes.org>
- Solar Advantage Value Estimator (SAVE) – Provides owners, real estate agents and real estate appraisers the ability to calculate the Present and Future Value of Solar PV equipment installed on residential and commercial real estate parcels. The applications major features include address search and standardization, utility rate assignment, solar system capacity assignment, present value calculations and program administration. SAVE was built using .NET 4.0, ASP.NET, C#, SQL Server, T-SQL Stored Procedures, MS Enterprise Library 5.1, Acrobat, JavaScript, AJAX and CSS
  - <http://www.gosolarcalifornia.org/tools/save.php>

## **Technical Project Manager**

**EMSystems, Inc.  
Folsom, CA**

### **May 2009 – July 2010**

Technical Project Manager on EMSystems Response Manager Application during 2 major releases of the application. Response Manager is an enterprise application used by local and state Government Agencies to manage and send Telephone, Email, and Fax alerts to Emergency First Responders throughout the country. Responsibilities include managing the development and test teams through the Project Planning, Technical Specifications and Design, Development, Stabilization, Migration Testing and Implementation phases for each release. The teams consisted of 10 developers and 8 testers located in the California, Wisconsin and Bangalore, India.

## **Senior Software Engineer**

**Revionics, Inc.  
Roseville, CA**

### **March 2008 – May 2009**

Architect and Senior Software Engineer for the Revionics Grid Computing Platform, Analysis and Portal Configuration tool, the Markdown subsystem

- Architect, Designer and Lead Software Engineer for the Revionics Grid Computing Platform. The Grid is a clustered, module pluggable, N-Tier, Multithreaded, Service Oriented Architecture providing massively-parallel, load-balanced, scalable and high availability processing infrastructure for Revionics Analysis and Portal software products. The Grid is in production and responsible for reducing processing time for multi-terabyte data sets from several days to hours, and smaller datasets from hours to on-demand. The Grid is implemented using C#, .NET 3.5, Windows Communication Foundation (WCF), Windows Services, multithreading, Active Directory (LDAP), SQL Server 2008 and SQL Server Stored Procedures.
- Designer and lead Software Engineer for the Revionics Analysis and Portal Configuration Management subsystem. The subsystem provides Revionics Portal users with the ability to manage their custom rules and rule sets used during Revionics Analysis processing. The subsystem integrates a Silverlight Rich Internet Application with an ASP website using Silverlight 2.0, C#, Windows Presentation Foundation (WPF), ASP, LINC, AJAX, NET 3.5, Web Services, MS Application Blocks, SQL Server 2005, and SQL Server Stored procedures.
- Architect and lead Software Engineer for the Revionics Portal Markdown subsystem. Markdown provides retailers with the ability to manage seasonal and discontinued products for inventory reduction and maximized profitability. Markdown was developed using C#, ASP, AJAX, JavaScript, .NET 3.5, SQL Server 2005, and SQL Server Stored procedures.

## Senior Software Engineer

## California State Teachers Retirement System (CalSTRS). Sacramento, CA

### June 2006 - March 2008

Technical Architect and Lead Developer for the CalSTRS File transfer Services and Secure Employer Website.

- Technical Architect and Lead Developer for the File Transfer Services. The services provide a Uniform Resource Identifier (URI) based data transfer mechanism for files and streams to/from IBM Mainframes, UNIX and Windows Servers. The services use Secure FTP, .NET Remoting, C#, .Net 2.0, Windows Services, Web Services to transfer data to and from UNIX and Windows servers.
- Lead Software Engineer for the Secure Employer Website (SEW) at CalSTRS. SEW is a web application that enables California Counties and school districts to transmit and query member retirement information (payroll, benefits, etc.) to/from the CalSTRS mainframe based retirement system (START). SEW provides a browser interface for counties and school districts to upload and download member retirement information to the mainframe for START mainframe processing, reporting tools to search, display and download PDF reports generated from START mainframe reports, and tools manage users and security. SEW is designed and developed using an n-tier, Service Oriented Architecture (SOA) using extended web services (WSE), .Net server controls, C#, automated File Transfer Protocol (FTP), Data Access, Data, Cache and Security Application Code Blocks, Asymmetric and Symmetric encryption, JavaScript, AJAX, EntireX middleware, SQL Server, database design and T-SQL Stored Procedures, Acrobat PDF and Natural. Keith Busloff is responsible for designing, developing, and maintaining the web services/methods, middleware, data access, security, caching, automated file transfer (FTP), and the file/report upload and download and user management and security web pages.

Keith Busloff used Visual Studio 2005 and 2008, SQL Server Studio 2005, SQL Server Profiler, EntireX communicator, Natural, TSO, CICS, Extra!, Visual SourceSafe, Internet Information Server (IIS), Windows, Windows FTP, Acrobat PDF and Excel tools during the development effort.

## Senior Software Engineer

## State of Calif. Employment Development Dept (EDD). Sacramento, CA

### January 2005 – June 2006

Software Developer for the Paid Family Leave (PFL) project at EDD. PFL is an integration of a mainframe application, an imaging system and a Windows .NET SQL Server based application. PFL interfaces with the mainframe using WRQ VHI to screen scrape over 100 EDD Disability Insurance system screens, and uses remote procedure calls to integrate with a Unisys imaging system. PFL is an n-tier distributed application designed using the Service Oriented Architecture to create over 300 business service objects, over 50 .Net Smart Client forms, and over 250 SQL Server T-SQL stored procedures.

- Designed, developed and tested client forms using C#, and .Net smart client forms and controls that interfaced with custom .NET business objects and the Unisys Imaging system, NUnit unit test scripts that tested the integrity of PFL business objects and services, Transact-SQL stored procedures, ADO, WRQ VHI procedures using C#, T-SQL, ADO, Windows Forms

## Technical Project Manager

## State of Calif. – Dept. of Housing and Community Development (HCD). Sacramento, CA

### Nov. 2003 – Jan. 2005

Technical Project Manager for the Federal Integrated Financial Information Systems (FIFIS) during the design, development and post-implementation phases. FIFIS is a web-based application used by HCD

analysts to manage federally funded public housing grant applications, awards and contracts. The application was developed using an n-tier, Service Oriented Architecture with Java, Enterprise Java Beans (EJB), WebLogic and Oracle.

- Lead the detailed system design efforts that resulted in the creation of the FIFIS system specifications and Use Cases.
- Designed the Data Model, created the database and managed the database environment
- Performed application stress testing
- Developed custom web forms using Java Swing classes
- Developed data access layer using custom controls, stored procedures, and PL/SQL.
- Coordinated System and user acceptance test activities
- Configured the WebLogic development, test and production environment, and deployed the application.
- Responsible for application production implementation

## **Release Manager**

### **Calif. State Retirement System (CalPERS) Sacramento, CA**

#### **Jan 2002 – Aug. 2004**

Release Manager for the California State Retirement System (CalPERS) CDB System (COMET). CDB is a highly complex, enterprise system, implemented over several years. The system was implemented across CalPERS program areas.

- Keith's role was to manage post-production, software enhancement and defect releases of CDB. Responsibilities include: Departmental communication and coordination between the development teams, test team, production support teams and Program Areas, oversee application enhancements and software defect resolution, coordinate change management and manage the technical project plan and delivery schedule
- Manage the CDB implementation efforts during the release cycle and to coordinate implementation activities during production implementation.

## **Principal Consultant**

### **American Management Systems (AMS) Sacramento, CA & Honolulu, HI**

#### **June 1996 – Dec. 2001**

Information Technology (IT) consultant working in the State and Local Government Services practice in Sacramento, CA and Honolulu, HI offices.

- Technical Architect to the State of Hawaii – Dept. of Taxation (DOTAX) ITIMS project. ITIMS was a 53 Million dollar Tax Processing implementation over 4 years.
  - Participated in the Requirements analysis and Joint Application Design (JAD) efforts which resulted in the Software Requirements Specifications (SRS), General System Design (GSD) and the Detailed System Design (DSD)
  - Architected and implemented the inter-island WAN/LAN and coordinated the implementation
  - Designed and participated in the development of custom interfaces between the ITIMS application, IBM VSAM and Adabas data stores and the Oracle 8i database
  - Designed and participated in the development of custom PowerBuilder interfaces to map VSAM and Adabas data with the ITIMS database.
  - Designed the ITIMS Data Model
  - Developed the change control procedures, setup PVCS and managed PVCS change control and application builds

- Application Developer to the State of California - Franchise Tax Board (FTB) PASS project. PASS was a \$23M project to automate FTB's tax audit processes.
  - Designed and developed many Windows forms using PowerBuilder, PowerScript and TransactSQL against a Sybase SQL server database.
  - Designed and developed Unix batch programs using HP-UX C and embedded Transact SQL against a Sybase SQL Server database.
  - Setup and managed the desktop application automated build process.
  - Setup and managed the desktop PVCS source code control processes.
  - Provided software design and development expertise and mentoring to AMS consultants and FTB staff on the PASS project, including tips and techniques necessary to develop n-tier client/server applications using PowerBuilder, Visual Basic, C/C++ and Sybase T-SQL.
- Application Developer to the California State Public Employees Retirement System (CalPERS) – Y2K projects.
  - Designed and developed the CalPERS Supplemental Contribution System that provides accounting management for state employee supplemental retirement contributions, withholdings, balances and distributions. The system is an optional savings plan for state employees to contribute monies for retirement. The client/server system was designed using an n-tier, object-oriented architecture using Rational Rose98 and the Rational Unified Process (RUP). The application was developed using PowerBuilder v6.5, PowerBuilder PFC and Oracle PL/SQL.

## **Software Engineer**

**National Semiconductor, Inc.**

**Santa Clara, CA**

### **June 1994 – June 1996**

Software Engineer for National Semiconductor (NSC) Communication and Computing Group (CCG). My efforts included application design and development, database design, application configuration and production user support for the following projects:

- Department Spending - A 50+ client/server application used by CCG department managers to plan and submit quarterly budgets. Features included dynamic financial database search and reporting, MS-Excel and MS-Word integration, MDI interface, and application security. The application was developed using PowerBuilder and Sybase in a Windows, UNIX and TCP/IP environment.
- Product Costing - A DSS application by CCG financial planners to evaluate semiconductor-manufacturing costs from wafer fabrication through package assembly. The system included dynamic data search, Excel integration, and custom reporting. The application was developed using PowerBuilder, MS Visual, C++, and Sybase.
- PATS - An OLTP and DSS application used by NSC Project Managers to track semiconductor development costs and schedules. The application was developed using PowerBuilder, Sybase, and C.

**Software Engineer**

**Prodata, Inc.**

**Citrus Heights, CA**

**Oct. 1992 – June 1994**

Information technology consultant for the following public and private information technology organizations:

- Interlake, Inc - Provided VAX/VMS and TCP/IP network installation and support in a manufacturing environment.
- Foundation Health, Inc. (FHC) – Provided application design and development of FHC's Prime Billing System (PRIME). Prime was developed using VAX-COBOL, TDMS, ACMS and Rdb in a VAX/VMS environment.
- State of Calif. - Legislative Data Center (LDC) – Provided application design and development expertise for Budget Management System (BMS) using VAX-BASIC, Datatrieve, CDD, Rdb and RMS in a VAX/VMS environment.
- Developed and presented proof of concept solutions to customers for Adabas, Natural/2 and EntireX integration with Client/Server applications.
- Software AG/Electronic Data Systems – Developed a custom reporting subsystem to the Financial Aid Processing System (FAPS) for the Calif. Student Aid Commission using Natural/2 and Adabas in a CICS/TSO environment.

**Senior Programmer**

**The Sacramento Bee**

**Sacramento, CA**

**Aug. 1990 – Oct. 1992**

Senior computer programmer for the Sacramento Bee's corporate Information Technology department. The Sacramento Bee is the major newspaper in the Sacramento area. I worked as a consultant to the Bee's Alternate Distribution Services (ADS) department to automate their manual media distribution processes. I provided inter-departmental communication, computer software design and development, and software implementation and support. Designed and developed the ADS application using Predict, Natural/2 and Adabas in a VAX/VMS environment.

**Systems Engineer**

**Calif. Fairs Services Authority**

**Sacramento, CA**

**Jan. 1988– Aug. 1990**

Computer systems engineer for the California Fairs, where I was responsible for installation, maintenance and support for the Fairs computer systems and networks throughout California. I provided VAX/VMS systems administration and support

**Education**

**Degrees**

Bachelor of Science, Computer Science (1991)

**Institution/Location**

National Univ. at Sacramento

## Steve Turtletaub, PMP Senior Project Manager

## *Resume of Qualifications*

### **Biographical Summary**

Steve has over 25 years of experience in information technology project management, business analysis, and procurement management. He has a interest in government procurement strategies for his entire career. In 1986, Steve wrote his Master Thesis (San Diego State University) on government purchasing strategies and behavior. As a consultant, Steve has provided project management and business process management activities to State of California departments such as the Department of General Services, Employment Development Department, the California Lottery, the California Energy Commission, the California Public Utilities Commission, the California Secretary of State, the California Conservation Corps, and the Department of Transportation. He has worked on projects that vary in size from small to over 100 million dollars in value.

### **Professional Experience**

#### **Government Information Technology Acquisition Activities**

Mr. Turtletaub has written Feasibility Study Reports, Special Project Reports, Complex Information Technology RFPs (working with the Department of General Service/Procurement Division), and RFOs. Mr. Turtletaub has worked with State of California departments during the development of acquisition strategies. He has provided guidance when client departments have worked through resource issues, helping to decide whether a service or skill should be provided by civil service staff or procured via bid. In cases of complex software RFP development, Mr. Turtletaub has assessed the artifacts available to the bidder community and made recommendations to enhance these artifacts. In many cases, Mr. Turtletaub also assisted with the development artifacts such as detailed business rules or system requirements.

Mr. Turtletaub has organized and led pre-bid workshops on behalf of his clients. Mr. Turtletaub has also organized and led post bid confidential discussions with vendors who were participating in multiple response RFPs. Procurement development support clients include the California Energy Commission, California Public Utilities Commission, and California Conservation Corps.

#### **Software as a Service, Custom Software Development/Business Analysis**

Steve has conducted business process reviews and software design methodology for State of California departments. He has led Joint Application Design and Requirement Development sessions in which functional requirements are defined and integrated into the software design and/or procurement document associated with the project. These projects include custom software development such as the DynaSim project for the California Energy Commission and SaaS projects for the California Department of Mental Health, California Department of Health Care Services, Contractors State License Board, California Energy Commission, and California Conservation Corps.

#### **Project Management**

Certified Project Management Professional PMP, (2005). Has served as Project Manager for a number of software development and SaaS projects. Many engagements have started during the procurement or pre-procurement stages. Managed team of project managers and engineers for Verizon's 911 implementation and support program. Coordinated the upgrade of over 100 Public Safety Answering Points (PSAPs) within California and Nevada.

## LAN/WAN Architectures

Migrated a state agency from a Managed client relationship as well as the design and implementation of a conversion from a “fat” client architecture and traditional frame relay Wide Area Network (WAN) to a “thin client” architecture utilizing Citrix technology. Applications, including MS Office, MS Exchange, Visio, 3270 emulation and a variety of other applications were centralized on a “server farm” located at the State of California’s Data Center.

## Career Summary

### Project Manager

### Andes Consulting Sacramento, CA

#### August 2006 - Present

Responsible for client engagement activities with public sector throughout California. Project management duties include scheduling and budgeting for information technology projects.

Steve has served as Sr. Project Manager and Sr. Business Analyst for a number of projects for the State of California. These include:

#### 2013-2014 CA Conservation Corps – Corpmember Recruitment System (CoRe)

Served as IT advisor during implementation of SalesForce.com software project. Prepared client for project by holding requirements sessions and documenting requirements. Wrote the procurement document and evaluation and selection plan.

#### 2013-2014 CA Department of Transportation – Property Control Business Process Review

Served as lead business analyst and engagement manager for the business process review. Documented business processes, including work flow diagrams, staff level evaluations and created logical system diagrams. Identified and documented system, process, and policy issues.

#### 2013-2014 CA Department of Transportation – Warehouse Management Business Process Review

Served as lead business analyst and engagement manager for the business process review. Documented business processes, including work flow diagrams, staff level evaluations, and created logical system diagrams. Identified and documented system, process, and policy issues.

#### 2011- 2013 CA Energy Commission – California Energy Assurance Planning Web Tool

Served as IT project lead during the design and development of the Web Tool. Developed and documented user requirements. Managed implementation and testing of the custom developed project.

2011-2012 California Energy Commission. Steve served as the Sr. Project Manager and Business Analyst for the electronic Filing and Case Management System (eCRMS). During this engagement, Mr. Turteltaub interviewed internal staff, management and external stakeholders who participate in power plant siting and approval processes. He also researched current power plant filing regulations and applied these findings to an Assessment and Requirements report. This complex process was assessed for efficiency and effectiveness and a recommendations report was provided that identified technical alternatives and procurement alternatives for the technical solution ultimately recommended. Mr. Turteltaub then wrote the Feasibility Study Report and RFO in support of the solution. This solution has been successfully implemented.

2010-2011 California Public Utilities Commission. Steve served as Sr. Project Manager and Business Analyst on two projects. Initially, Steve helped assess and recommend network products and services that would enhance the security and infrastructure of the CPUC network. One of the recommendations was to outsource some services due to a critical lack of staff resources and the cost of some of the infrastructure improvements that were recommended. Outsourcing for this service made good

business sense and the CPUC agreed with the assessment and recommendation. Following the approval to outsource, Steve wrote the Request for Offers for the services, created the Evaluation and Selection Plan and coordinated the final award of the contract to the outsource vendor. This solution has been successfully implemented.

2007-2011 California Energy Commission Dynamic Simulation Transportation Energy Model (DynaSim). Steve served as the Technical Project Manager for this software development project. Steve began work during the finalization of the FSR working with Energy Commission staff to assess alternatives and determine the best approach to move forward with the building of the model. Steve held requirements definition sessions with Energy Commission staff and then integrated these requirements into the RFP. He worked closely with the Department of General Services/Procurement Division during the development, evaluation and award of the project. Steve then served as the Project Manager, working on behalf of the Commission to coordinate both Commission and System Integration Activities.

2006 - 2007 California Energy Commission Western Renewable Energy Generation Information System (WREGIS). Steve served as the Senior Project Manager for this software development project. Steve began work during the procurement phase of this project and participated in the final development and evaluation of the RFP. His duties included further elaboration of complex business rules so that the vendors could understand many of the functions involved in tracking and reporting renewable energy generation. During the procurement, Steve participated in the vendor conferences and confidential discussions. He also helped develop the Evaluation and Selection Report (including criteria used to select the vendor). Steve then served as the Sr. Project Manager, working on behalf of the State to coordinate both State and System Integrator activities.

2005 -2007 California Contractors State License Board. Steve served as Sr. Project Manager for a number of information technology projects, including the SaaS based virtual desktop project.

## **Western Region Director**

**Global Secure Corp., Sacramento, CA**

### **May 2005 – May 2006**

Manage sales and implementation of homeland security and public health Software as a Service (SaaS) systems. Duties incorporated customer satisfaction, sales of product, training of product, and implementation/project management of systems. Clients included the California Department of Health Care Services, and Departments of Health for a number of western U.S. states.

## **Partner/Owner**

**Informer Systems, Sacramento, CA**

### **September April 2003 – May 2005**

Manage a staff of sales and support professionals in support of SaaS based 911 database sales and implementation.

Sell and implement off the shelf software projects to public sector customers. Manage client software design and review sessions and delivery to clients.

## **Director of Sales**

**DirectApps, Sacramento, CA**

### **September 2000 – April 2003**

Manage a staff of sales and support professionals. Duties incorporated all aspects of sales management: hiring, terminating, training, budgeting, forecasting, P&L management, and performance evaluation.

Sell and implement custom software development projects, cloud based software as a service, cloud based virtual desktop services, and network services to public sector customers. Manage client software design and review sessions and delivery to clients.

## **Various Positions Verizon (GTE) Corporation Sacramento, CA**

**April 1986 – September 2000**

### ***Senior Account Manager***

Senior Account Manager to the State of California.

Responsible for client engagement and sales of telecommunications products and services to state customers

Initiated and developed relationships with clients prior to and after the sale

Determined and implemented strategic direction of Verizon's account management philosophy with specific State of California accounts.

### ***911 and Public Safety Manager***

Established new GTE's 911 program, including the integration of Sales, Engineering and Project Management into a single cohesive team

Managed successful system integration processes for E911 implementations throughout California and Nevada, achieved highest customer satisfaction grade available

Established new policies for implementation of E911 hardware and network services

Implemented first statistical database for tracking E911 calls in the state

### ***Senior Account Executive***

Sales of Telecommunications Products and Services.

## **Education and Training Summary**

### **Courses Taught by Mr. Turtleaub**

1. PMP Certification Exam Preparation (2007 – 2010):
  - a. Project Management Framework
  - b. Procurement
  - c. Human Resources
  - d. Risk Management
2. Project Triage (2010, 2012) – Assessing projects, determining problems and opportunities, reporting and recommending solutions

### **Degrees/Certifications**

PMP (2005) Certification Number: 226796

Bachelor of Arts (1980)

Master of Business Administration (1986)

### **Institution/Location**

Project Management Institute

San Diego State University

San Diego State University

## 4.0 Cost Proposal

Resource Name	CMAS Classification	CMAS Hourly Rate	Project Hours <sup>1</sup>	Projected Total Cost
Steve Turtletaub, PMP	Project Manager	\$124.00	630	\$78,120
Keith Busloff	Software Developer	\$101.00	2,686	\$271,286

## 5.0 Proposal Checklist

Item	Included
Cover Letter with a Binding Signature	Yes
Contractor References (3)	Yes
Consultant References (3 each)	Yes
Consultant Resumes	Yes
Completed Form 204	Yes
Complete copy of CMAS Contract including price list	Yes

## 6.0 Company and Consultant References

References below cover the following:

Reference Numbers 1, 2, 4 – Andes Consulting LLC – Contractor for Software Development Projects

Reference Numbers 1, 2, 3 – Andes Consulting and Steve Turtletaub, PMP -- Consultant Project

Manager Reference Number 5, 6, 7 – Keith Busloff – Consultant Software Developer

REFERENCE # 1 Andes Consulting and Steve Turtletaub	
<b>1. Contractor or Consultant Info</b>	
Name: Andes Consulting, Steve Turtletaub	Primary Contact Phone Number: (916) 549-3725
Reference is for: <input type="checkbox"/> Contractor <input type="checkbox"/> Consultant <input checked="" type="checkbox"/> Both (if same)	
<b>2. Client info</b>	
Client Name: California Department of Corporations	Contact Name: George Gaborek
Address: 1515 K Street, Sacramento, CA 95814	Contact Phone: (916) 319-9996
<b>3. Project/ Work info</b>	
Name of Project: FIMIS -- Financial Software Development System	Dates Served on Project (from/to): August 1, 2009 – June 30, 2012

<sup>1</sup> From Task 1 Resource Hours Table, Page 7

Project Description: Design and develop .NET software application to support financial processing for bank and financial institutions.			
Contractor or Consultant Involvement on the Project: Andes Consulting, LLC			
Deliverables Prepared By Contractor or Consultant: Software application in Microsoft .NET and SQL, system documentation			
<b>4. Project Measurements and Results</b>			
Original estimated hours on project: 3,200		Actual hours on project: 3,200	
		YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.			X

<b>REFERENCE # 2 Andes Consulting and Steve Turtletaub</b>	
<b>1. Contractor or Consultant Info</b>	
Name: Andes Consulting, Steve Turtletaub	Primary Contact Phone Number: (916) 549-3725
Reference is for: <input type="checkbox"/> Contractor <input type="checkbox"/> Consultant <input checked="" type="checkbox"/> Both (if same)	
<b>2. Client info</b>	
Client Name: California Conservation Corps	Contact Name: Rita Gass
Address: 1719 24 <sup>th</sup> Street, Sacramento, CA 95816	Contact Phone: (916) 341-3244
<b>3. Project/ Work info</b>	
Name of Project: CoRe and C <sup>3</sup>	Dates Served on Project (from/to): December 2013 to present
Project Description: Two efforts – 1) Design and develop software application to support Recruitment System integration with Dept. of Justice database. 2) Provide system architecture design for the C <sup>3</sup> SQL database.	

Contractor or Consultant Involvement on the Project: Andes Consulting, LLC			
Deliverables Prepared By Contractor or Consultant: Software application in Microsoft .NET and SQL, system documentation			
<b>4. Project Measurements and Results</b>			
Original estimated hours on project: 250		Actual hours on project: Still under development	
		YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.			X

<b>REFERENCE # 3 Andes Consulting and Steve Turtletaub</b>			
<b>1. Contractor or Consultant Info</b>			
Name: Steve Turtletaub		Primary Contact Phone Number: (916) 549-3725	
Reference is for: <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Both (if same)			
<b>2. Client info</b>			
Client Name: California Energy Commission		Contact Name: Malachi Weng-Gutierrez	
Address: 1516 9 <sup>th</sup> Street, Sacramento, CA 95814		Contact Phone: (916) 654-4588	
<b>3. Project/ Work info</b>			
Name of Project: DynaSim		Dates Served on Project (from/to): September 2009 through April 2011	
Project Description: Project Manager for DynaSim, the Dynamic Transportation Energy Simulation Model. Service as Technical Project Manager during the development of requirements, RFP, and implementation.			
Contractor or Consultant Involvement on the Project: Andes Consulting, LLC			

Deliverables Prepared By Contractor or Consultant: Project Management Plan, schedule, status reports, RFP (through DGS), Change and Issue Management Plan, Risk Management Plan, Evaluation and Selection Plan, other plans and documents.		
<b>4. Project Measurements and Results</b>		
Original estimated hours on project: 1,600	Actual hours on project: 1,600	
	YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.		X

<b>REFERENCE # 4 Andes Consulting</b>		
<b>1. Contractor or Consultant Info</b>		
Name: Andes Consulting, Kyle White	Primary Contact Phone Number: (916) 549-3725	
Reference is for: <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Consultant <input type="checkbox"/> Both (if same)		
<b>2. Client info</b>		
Client Name: California Department of Fish and Wildlife (CDFW)	Contact Name: Richard Reyes	
Address: 1740 North Market Blvd Sacramento, CA 95834	Contact Phone: (916) 928-6899	
<b>3. Project/ Work info</b>		
Name of Project: ALDS - Automated Licensing and Data System (ALDS)	Dates Served on Project (from/to): January 2011 - December 2011	
Project Description: Software Development and Design in .NET software application to support CDFW's ALDS project. Andes Consulting resources worked with vendor resources to assist in the development and design of the application, as well as worked with the Department's business analysts and SME's to design, develop, and test complex SQL system reports to meet CDFW business needs.		
Contractor or Consultant Involvement on the Project: Andes Consulting, LLC		
Deliverables Prepared By Contractor or Consultant: Software application in Microsoft .NET and SQL, design and testing documentation.		
<b>4. Project Measurements and Results</b>		

Original estimated hours on project: 1,900	Actual hours on project: 1,900		
		YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.			X

<b>REFERENCE # 5 Keith Busloff</b>			
<b>1. Contractor or Consultant Info</b>			
Name: Keith Busloff		Primary Contact Phone Number: (916) 996-8414	
Reference is for: <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Both (if same)			
<b>2. Client info</b>			
Client Name: California Energy Commission – Renewable Energy Office		Contact Name: Le-Quyen Nguyen	
Address: 1516 Ninth Street, Sacramento, CA 95814		Contact Phone: (916) 654-4650	
<b>3. Project/ Work info</b>			
Name of Project: NSHP – New Solar Home Project		Dates Served on Project (from/to): October 1, 2010 – April 15, 2012	
Project Description: Redesign and develop .NET software application to manage New Solar Home Program			
Contractor or Consultant Involvement on the Project: KEMA, Inc.			
Deliverables Prepared By Contractor or Consultant: Requirements, software application in Microsoft .NET and SQL Server, System documentation			
<b>4. Project Measurements and Results</b>			
Original estimated hours on project: 2500		Actual hours on project: 2500	
		YES	NO

Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.		X
--	--	---

<b>REFERENCE # 6 Keith Busloff</b>		
<b>1. Contractor or Consultant Info</b>		
Name: Keith Busloff	Primary Contact Phone Number: (916) 996-8414	
Reference is for: <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Both (if same)		
<b>2. Client info</b>		
Client Name: Foundation for Calif. Community Colleges	Contact Name: Jeremy Tarr	
Address: 1102 Q Street, Sacramento, CA 95811	Contact Phone: (916) 200-7563	
<b>3. Project/ Work info</b>		
Name of Project: VRRRM Applications	Dates Served on Project (from/to): May 1, 2012 – Sept. 30, 2013	
Project Description: Enhance and maintain .NET software application to manage VRRRM applications		
Contractor or Consultant Involvement on the Project: MRI, Inc.		
Deliverables Prepared By Contractor or Consultant: Requirements, software application in Microsoft .NET and SQL Server, support		
<b>4. Project Measurements and Results</b>		
Original estimated hours on project: 1500	Actual hours on project: 1500	
	YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.		X

REFERENCE # 7 Keith Busloff		
<b>1. Contractor or Consultant Info</b>		
Name: Keith Busloff	Primary Contact Phone Number: (916) 996-8414	
Reference is for: <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Both (if same)		
<b>2. Client info</b>		
Client Name: California Student Aid Commission	Contact Name: Sue Kimball	
Address: 11040 White Rock Rd. Rancho Cordova, CA 95670	Contact Phone: (916) 464-8063	
<b>3. Project/ Work info</b>		
Name of Project: Foster Youth Grant and Middle Class Scholarship	Dates Served on Project (from/to): December 1, 2012 – March 10, 2014	
Project Description: Enhance and develop .NET software application to manage Chafee Foster Youth Grant. Design and Develop Middle Class Scholarship application		
Contractor or Consultant Involvement on the Project: Stanfield Systems, Inc.		
Deliverables Prepared By Contractor or Consultant: Requirements, software application in Microsoft .NET and SQL Server, System documentation		
<b>4. Project Measurements and Results</b>		
Original estimated hours on project: 2100	Actual hours on project: 2100	
	YES	NO
Was the project or contract terminated prior to successful conclusion? If "yes," please explain the reason.		X

## **Appendix A - Draft Project Schedule**

The Microsoft Project Schedule can be found on the following pages.

Draft QFER Implementation Plan/Schedule Final

ID	Task Name	Duration	Predecessors	Start	Finish	Resource
1	<b>CEC-QFER Project</b>	<b>511 days</b>		<b>Mon 5/19/14</b>	<b>Thu 5/19/16</b>	
2	Purchase Order Approved	0 days		Mon 5/19/14	Mon 5/19/14	CEC
3	<b>Task 1 Project Planning, Progress Meetings, and Progress Reports</b>	<b>511 days</b>		<b>Mon 5/19/14</b>	<b>Thu 5/19/16</b>	
4	Initial Contract Manager/Engagement Manager Meeting	0 days	2FS+4 days	Thu 5/22/14	Thu 5/22/14	CEC CM,Turtletaub
5	Kickoff Meeting	0 days	4FS+5 days	Fri 5/30/14	Fri 5/30/14	CEC Staff,Andes Staff
6	<b>Develop Tech Memo I</b>	<b>511 days</b>		<b>Mon 5/19/14</b>	<b>Thu 5/19/16</b>	
7	Draft Work Plan and Tech Memo I Due	0 days	2FS+10 days	Mon 6/2/14	Mon 6/2/14	Turtletaub,Busloff
8	CEC Review of Tech Memo I	10 days	7	Mon 6/16/14	Fri 6/27/14	CEC Staff
9	Update Tech Memo I based on Comments	3 days	8FS+1 day	Tue 7/1/14	Thu 7/3/14	Turtletaub,Busloff
10	Submit Final Tech Memo I	0 days	9FS+1 day	Mon 7/7/14	Mon 7/7/14	Turtletaub
11	Submit Monthly Status Reports	511 days	2	Mon 5/19/14	Thu 5/19/16	Turtletaub
12	<b>Task 2 Develop Automated Processing, Validation, and In-House Publishing of QFER Data</b>	<b>273 days</b>		<b>Tue 7/8/14</b>	<b>Fri 8/7/15</b>	
13	Initial Design and Requirements Meetings	21 days	10	Tue 7/8/14	Tue 8/5/14	Busloff,CEC Staff
14	<b>Develop Draft Tech Memo II (Part 1)</b>	<b>50 days</b>		<b>Wed 8/6/14</b>	<b>Wed 10/15/14</b>	
15	Develop Business Specifications Requirements Document	6 days	13	Wed 8/6/14	Wed 8/13/14	Busloff
16	Review of Business Specifications Requirements Document	10 days	15	Thu 8/14/14	Wed 8/27/14	Busloff
17	Update Business Specifications Document	5 days	16	Thu 8/28/14	Thu 9/4/14	Busloff
18	Develop System Architecture and Design Document	7 days	17	Fri 9/5/14	Mon 9/15/14	Busloff
19	Review of System Architecture and Design Document	10 days	18	Tue 9/16/14	Mon 9/29/14	Busloff
20	Update System Architecture and Design Document	5 days	19	Tue 9/30/14	Mon 10/6/14	Busloff
21	Create Test Plan	2 days	20	Tue 10/7/14	Wed 10/8/14	Busloff,Turtletaub
22	Review Test Plan	5 days	21	Thu 10/9/14	Wed 10/15/14	CEC Staff
23	<b>QFER Database Prototype Development Phase</b>	<b>90 days</b>		<b>Tue 10/7/14</b>	<b>Fri 2/20/15</b>	
24	User Interface Development	60 days	22	Thu 10/16/14	Fri 1/16/15	Busloff
25	Database Development	60 days	20	Tue 10/7/14	Wed 1/7/15	Busloff
26	Development and Implement Security Model	10 days	20	Tue 10/7/14	Mon 10/20/14	Busloff
27	Import Sample Data From Various Sources	20 days	25	Thu 1/8/15	Thu 2/5/15	Busloff
28	Informal System Test for Prototype	5 days	27	Fri 2/6/15	Fri 2/13/15	Busloff
29	Demonstration of Prototype	0 days	28FS+5 days	Fri 2/20/15	Fri 2/20/15	Busloff
30	<b>QFER Database Final Development Phase</b>	<b>110 days</b>		<b>Mon 2/23/15</b>	<b>Mon 7/27/15</b>	
31	Busloff	20 days	29	Mon 2/23/15	Fri 3/20/15	Busloff
32	Busloff	20 days	31	Mon 3/23/15	Mon 4/20/15	Busloff
33	Busloff	10 days	32	Tue 4/21/15	Mon 5/4/15	Busloff
34	Busloff	60 days	33	Tue 5/5/15	Mon 7/27/15	Busloff
35	<b>QFER Database Testing Phase</b>	<b>69 days</b>		<b>Tue 5/5/15</b>	<b>Fri 8/7/15</b>	
36	Prepare Test Cases	10 days	33	Tue 5/5/15	Mon 5/18/15	Busloff,Turtletaub
37	Review Test Cases	5 days	36	Tue 5/19/15	Mon 5/25/15	CEC Staff
38	Conduct Formal System Testing	5 days	37	Tue 5/26/15	Mon 6/1/15	Busloff
39	Update QFER Database based on System Testing Findings	5 days	38	Tue 6/2/15	Mon 6/8/15	Busloff
40	Update Test Scripts to Prepare for User Acceptance Testing	6 days	39	Tue 6/9/15	Tue 6/16/15	Busloff
41	Conduct User Acceptance Testing	5 days	40	Wed 6/17/15	Tue 6/23/15	Busloff,Turtletaub,CEC Staff
42	Update QFER Database based upon User Acceptance Results	10 days	41	Wed 6/24/15	Tue 7/7/15	Busloff
43	Go Live with QFER Database	0 days	42	Tue 7/7/15	Tue 7/7/15	CEC,Andes
44	<b>Update Tech Memo II (Part 2)</b>	<b>23 days</b>		<b>Wed 7/8/15</b>	<b>Fri 8/7/15</b>	

Draft QFER Implementation Plan/Schedule Final

ID	Task Name	Duration	Predecessors	Start	Finish	Resource
45	Update the Tech Memo with Test Cases, Test Plans and Results	5 days	43	Wed 7/8/15	Tue 7/14/15	Busloff
46	Deliver Draft Tech Memo II	0 days	45FS+4 days	Mon 7/20/15	Mon 7/20/15	Turtletaub
47	Review Draft Tech Memo II	10 days	46	Tue 7/21/15	Mon 8/3/15	CEC Staff
48	Update Tech Memo II based on CEC Comments	4 days	47	Tue 8/4/15	Fri 8/7/15	Busloff
49	Submit Final Tech Memo II	0 days	48	Fri 8/7/15	Fri 8/7/15	Turtletaub
50	<b>Task 3 QFER Database Documentation</b>	<b>73 days</b>		<b>Tue 5/19/15</b>	<b>Thu 8/27/15</b>	
51	Create Programmer's Guide	10 days	36	Tue 5/19/15	Mon 6/1/15	Busloff
52	Create User's Guide	22 days	51	Tue 6/2/15	Wed 7/1/15	Busloff
53	Create Administrator's Guide	10 days	36	Tue 5/19/15	Mon 6/1/15	Busloff
54	<b>Tech Memo III</b>	<b>14 days</b>		<b>Mon 8/10/15</b>	<b>Thu 8/27/15</b>	
55	Create Draft Tech Memo III for CEC Review	6 days	49	Mon 8/10/15	Mon 8/17/15	Turtletaub, Busloff
56	Review Draft Tech Memo III	5 days	55	Tue 8/18/15	Mon 8/24/15	CEC Staff
57	Update Draft Tech Memo III based on Comments	3 days	56	Tue 8/25/15	Thu 8/27/15	Busloff
58	Submit Final Tech Memo III	0 days	57	Thu 8/27/15	Thu 8/27/15	Turtletaub
59	<b>Task 4 Training</b>	<b>19 days</b>		<b>Tue 6/2/15</b>	<b>Fri 6/26/15</b>	
60	Implement Training of Administrators and ITSB Staff based upon the Programmer's Guide and Administrator's Guide	2 days	53	Tue 6/2/15	Wed 6/3/15	Busloff
61	Implement Training of End Users based upon the User's Guide	5 days	60	Thu 6/4/15	Wed 6/10/15	Busloff
62	<b>Tech Memo IV</b>	<b>12 days</b>		<b>Thu 6/11/15</b>	<b>Fri 6/26/15</b>	
63	Create Draft Tech Memo IV	5 days	61	Thu 6/11/15	Wed 6/17/15	Busloff, Turtletaub
64	Review Draft Tech Memo IV	5 days	63	Thu 6/18/15	Wed 6/24/15	CEC Staff
65	Update Draft Tech Memo IV based on Comments	2 days	64	Thu 6/25/15	Fri 6/26/15	Busloff
66	Submit Final Tech Memo IV	0 days	65	Fri 6/26/15	Fri 6/26/15	Turtletaub
67	<b>Task 5 Post Implementation Review -- A Risk Reduction Analysis</b>	<b>37 days</b>		<b>Fri 8/28/15</b>	<b>Mon 10/19/15</b>	
68	<b>Conduct Analysis based upon CEC Goals and Objectives Specified in the RFO and Updated during Task 1</b>	<b>20 days</b>		<b>Fri 8/28/15</b>	<b>Thu 9/24/15</b>	
69	Interview Stakeholders	15 days	58	Fri 8/28/15	Thu 9/17/15	Turtletaub, Busloff, CEC Staff
70	Document Interview Results	5 days	69	Fri 9/18/15	Thu 9/24/15	Turtletaub, Busloff
71	<b>Quantitative Analysis of Database Functions per Table in RFO (Task 5)</b>	<b>37 days</b>		<b>Fri 8/28/15</b>	<b>Mon 10/19/15</b>	
72	Review comparative data, Utility Feedback Efficiency, Quantity of Unclassified Data	20 days	58	Fri 8/28/15	Thu 9/24/15	Turtletaub, Busloff, CEC Staff
73	Review Data Publishing Capabilities	5 days	72	Fri 9/25/15	Thu 10/1/15	
74	<b>Tech Memo V</b>	<b>12 days</b>		<b>Fri 10/2/15</b>	<b>Mon 10/19/15</b>	
75	Create Draft Tech Memo V	5 days	73	Fri 10/2/15	Thu 10/8/15	Busloff, Turtletaub
76	Review Draft Tech Memo V	5 days	75	Fri 10/9/15	Thu 10/15/15	CEC Staff
77	Update Draft Tech Memo V based on Comments	2 days	76	Fri 10/16/15	Mon 10/19/15	Busloff
78	Submit Final Tech Memo V	0 days	77	Mon 10/19/15	Mon 10/19/15	Turtletaub
79	<b>Task 6 Maintenance Support</b>	<b>220 days</b>		<b>Fri 7/17/15</b>	<b>Thu 5/19/16</b>	
80	Provide Maintenance Support through Life of the Contract	11 mons	43FS+7 days	Fri 7/17/15	Thu 5/19/16	Turtletaub, Busloff
81	<b>Tech Memo VI</b>	<b>12 days</b>		<b>Fri 4/22/16</b>	<b>Mon 5/9/16</b>	
82	Create Draft Tech Memo VI	5 days	80FS-20 days	Fri 4/22/16	Thu 4/28/16	Busloff, Turtletaub
83	Review Draft Tech Memo VI	5 days	82	Fri 4/29/16	Thu 5/5/16	CEC Staff
84	Update Draft Tech Memo VI based on Comments	2 days	83	Fri 5/6/16	Mon 5/9/16	Busloff
85	Submit Final Tech Memo VI	0 days	84	Mon 5/9/16	Mon 5/9/16	Turtletaub
86	<b>Task 7 Final Report</b>	<b>15 days</b>		<b>Fri 4/29/16</b>	<b>Thu 5/19/16</b>	
87	Develop the Final Report including a Compilation of all Technical Memorandum and other Project Closeout Artifacts	10 days	82	Fri 4/29/16	Thu 5/12/16	Turtletaub
88	<b>Tech Memo VII</b>	<b>12 days</b>		<b>Wed 5/4/16</b>	<b>Thu 5/19/16</b>	

Draft QFER Implementation Plan/Schedule Final

ID	Task Name	Duration	Predecessors	Start	Finish	Resource
89	Create Draft Tech Memo VII	5 days	85FS-4 days	Wed 5/4/16	Tue 5/10/16	Busloff, Turtletaub
90	Review Draft Tech Memo VII	5 days	89	Wed 5/11/16	Tue 5/17/16	CEC Staff
91	Update Draft Tech Memo VII based on Comments	2 days	90	Wed 5/18/16	Thu 5/19/16	Busloff
92	Submit Final Tech Memo VII	0 days	91	Thu 5/19/16	Thu 5/19/16	Turtletaub