QUALITY ASSURANCE TEAM

Legislative Budget Board ♦ State Auditor's Office ♦ Department of Information Resources

TO: Governor Rick Perry
Lt. Governor David Dewhurst
Senator Tommy Williams
Senator Robert Duncan
Senator Juan Hinojosa
Senator Judith Zaffirini
Speaker Joe Straus
Representative Jim Pitts
Representative Harvey Hilderbran
Representative Dan Branch
Representative Sylvester Turner

FROM: Ursula Parks, Director, Legislative Budget Board
John Keel, CPA, State Auditor, State Auditor's Office
Karen Robinson**,** Executive Director and Chief Information Officer, Department of Information Resources

DATE: December 3, 2012

SUBJECT: 2012 Quality Assurance Team Annual Report

The Quality Assurance Team's (QAT) annual report on its activities for 2012 is attached.

The QAT identifies potential major information resources projects from agency *Biennial Operating Plans* that meet certain criteria. QAT monitors the status of major information resources projects on a monthly or quarterly basis, depending on the perceived risk of a project. QAT also meets with agencies to discuss their major information resources projects and the details of the framework deliverables they submit.

During calendar year 2012, QAT monitored 53 projects from 15 state agencies. QAT collected information through analyzing project monitoring reports that agencies submitted to QAT. In December 2011 and January 2012, the State Auditor's Office provided review of 13 major information systems development projects with the QAT. These were on-site reviews at 7 agencies that reported their projects were complete or were nearing completion.

As of October 2012, QAT had received framework business case deliverables for 28 projects for the 2014–15 biennium. A preliminary review of those project deliverables is included in the annual report.

A new checklist is presented in an appendix to the annual report to assist agencies in verifying that they are submitting better information to assist QAT in monitoring projects.

The QAT annual report will be available on the QAT Web site at http://qat.state.tx.us. If you have any questions, please contact Richard Corbell of the Legislative Budget Board at (512) 463-1200, Ralph McClendon of the State Auditor's Office at (512) 936-9500, or Deborah Hujar of the Department of Information Resources at (512) 475-4700.

Attachment

cc: Jonathan Hurst, Director, Governor's
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Annual Report

OVERVIEW OF MAJOR INFORMATION RESOURCES PROJECTS REPORTED TO THE QUALITY ASSURANCE TEAM

Legislative Budget Board

State Auditor's Office

Department of Information Resources

December 3, 2012

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EXECUTIVE SUMMARY

The Quality Assurance Team (QAT) identifies potential major information resources projects from agency Biennial Operating Plans (BOP) that meet certain criteria. QAT monitors the status of major information resources projects monthly or quarterly, depending on the perceived risk of the project. QAT also meets with agencies to discuss their major information resources projects and the details of their submitted framework deliverables[1].

CURRENT STATUS (SECTION 1.1)

During the period from November 2011 to November 2012, 53 projects representing $1.5 billion in major information resources projects are in QAT's state technology project portfolio. These investments increased approximately $200 million since the last annual report. The majority of these projects continue to take longer and cost more than originally estimated. See section 2 for more details on the status of these projects.

As part of the QAT review process, in December 2011 and January 2012 the State Auditors Office provided review of 13 major information systems development projects at 7 agencies. (See Appendix C for more information.)

SAO can assist QAT in those reviews while maintaining its independence. Beginning in fiscal year 2005, SAO delegated voting authority for any QAT-related decisions to approve or disapprove the expenditure of funds to the Legislative Budget Board. That delegation was made to ensure that SAO retains its independence as required by certain auditing standards. SAO delegated this authority again for fiscal years 2012 and 2013.

Major Information Resources Projects

According to Texas Government Code, Chapter 2054, a major information resources project is:

- Any information resources technology project identified in a state agency's *Biennial Operating Plan* whose development costs exceed $1.0 million and that:
  - Requires one year or longer to reach operations status,
  - Involves more than one state agency, or
  - Substantially alters the work methods of state agency personnel or the delivery of services to clients.
- Any information resources technology project designated by the legislature in the General Appropriations Act as a major information resources project.

Because higher education institutions do not add capital budget projects to their *Biennial Operating Plans,* this section of the Texas Government Code does not apply to them.

RECENTLY PROPOSED PROJECTS (SECTION 1.2)

In addition to the 53 current projects, QAT received Framework Business Case deliverables for 28 projects as of October 2012. QAT performed a preliminary review of these project deliverables; Appendix B includes a summary of the projects. These 28 project deliverables were received from eight agencies with estimated costs of $175.3 million. Three projects are identified to begin in fiscal year 2013, while 25 are identified to begin during the 2014-15 biennium. Two projects did not meet the threshold for a major information resource project and they will not be discussed in this report. Based on information obtained from various agencies, QAT could receive business case deliverables for an additional 20 projects for the 2014-15 biennium. This would increase the state's project oversight to approximately 100 projects. During QAT's initial review of the aforementioned Framework Business Case deliverables, several findings have become evident. Further information is provided in Section 3.

PROJECTS NOT REPORTED TO QAT (SECTION 1.3)

QAT identified several projects that meet the criteria of a major information resources project, yet were not reported to QAT. Certain projects at the Department of Aging and Disability Services, the Department of Public Safety and the Health Professions Council fall into this unreported category.

[1] The Department of Information Resources' (DIR's) Texas Project Delivery Framework (Framework) is intended for use during delivery of major information resources projects as defined in Texas Government Code, Chapter 2054, Information Resources, and for certain major contracts.

PROCESS IMPROVEMENTS (SECTION 1.4)

QAT initiated several processes to improve statewide processes for delivery of major information resources projects and to aid agencies in delivering projects within projected constraints of scope, time, and budget. Further information is provided in section 4.

CURRENT STATUS (SECTION 2)

Of the 53 projects in QAT's state-technology project portfolio, 33 are late by an average of 22 months. In addition, 29 of the projects are over their initial budget by an average of $6.8 million or 84 percent. One project was canceled by the agency after it spent an estimated $7.6 million, while another agency terminated a contract in which the vendor had been on the project for three years. (See appendix A for information related to monitored projects).

QAT reviewed, 13 development projects at seven different agencies with the assistance from SAO, (See Appendix D for project review summaries). QAT selected the projects for review because they had been reported as complete or were nearing completion.

Nine of the projects were complete and had been implemented. Three projects are scheduled to be completed in fiscal year 2013. One project expanded its scope and is scheduled to be completed in January 2013. During the reviews, several observations were made.

The first observation is that 12 of the 13 projects were completed late or are projected to be completed late. The average delay for all of the projects was over 14 months, or a 71 percent increase from the original estimated completion dates. The project with the shortest completion time took 19 months. The project with the longest completion time took almost seven years. The longest delay among the projects reviewed was three years. The agencies cited the following reasons for project delays:

- Problems with contractors not completing work on time;
- Federal requirements/standards changed during development of the application;
- Problems with procurement of needed equipment through the state data center services vendor;
- Agencies competing for statewide resources, for example, Data Center Consolidation (DCS) and Statewide Enterprise Resource Planning (ERP) initiatives and
- Agency-driven scope expansion of the project.

The second observation is that improvements are needed when developing the initial project cost estimates. Overall, the 13 projects exceeded their budgets on average by 91 percent. Two projects exceeded their initial budget projections by 475 percent and 280 percent, respectively. One project came in under budget by 16 percent. Another project came in under budget by 44 percent, but the system delivered less functionality than was originally planned.

The third observation is that agencies understated the costs of their projects by not including the costs related to state employees who worked on the project. Six of the 13 projects did not include costs associated with salaries and benefits for state employees. In addition, some agencies that did include salaries for state employees who worked on the project did not include the costs of the benefits.

The fourth observation is that three of the four projects that were complete and had been in production for more than six months did not submit their *Post Implementation Review of Business Outcomes* (PIRBO) report to QAT.

RECENTLY PROPOSED PROJECTS (SECTION 3)

QAT has provided preliminary results for 28 Business Case deliverables submitted from eight agencies. Listed below is a summary of significant observations. See appendix B for a summary of proposed projects from agencies.

- Many projects are initially being submitted without benefits quantified.
- Projects are being requested as financial placeholders without identifying a clear line of accountability within an agency for business outcomes.
- Preliminary major milestones/deliverables are unclear. Perhaps this is related to lack of business problem clarity. Many milestones are set to TBD (waiting on vendor's response). Project planning and management are iterative processes.

- Agency personnel services and agency personnel fringe benefits are not being identified. Some agencies are either using a vendor or providing staff augmentation for development of projects. Agencies should utilize internal staff to oversee a project manager or contract manager supplied by the vendor.
- Projects are being initiated or requested without identifying the project listed in the Information Technology Detail (ITD) plan or the Biennial Operating Plan (BOP). The ITD is submitted with the agency Legislative Appropriation Request (LAR).
- Problem definition is not clearly stated. The starting point of a problem definition is the information gathered in the problem analysis stage. The different aspects surrounding the design problem should be analyzed and should be taken into account in the problem definition.
- Some agencies use the Framework deliverables to address a program containing multiple projects. The Framework is intended to only apply to projects.
- The project's proposed plans to modify or replace the agency's existing software and/or hardware are not provided or are not stated clearly.
- Goals and objectives are not clearly stated.

PROCESS IMPROVEMENT (SECTION 4)

QAT will initiate the use of project deliverable checklists to promote effective planning and outcomes associated with major information resources projects. See appendix F for deliverable checklists.

In December 2012, the Department of Information Resources (DIR) will release Business Case and Business Case Workbook Checklists. Agencies will use these when reviewing business case deliverables before they submit them to QAT.

Agencies must use the Business Case and Business Case Workbook Checklists for any project selected by QAT for monitoring. The checklists were produced using the Framework instructions for guidance. Using checklists will enhance to the quality of deliverables the agencies produce. When agencies submit quality deliverables to QAT, they are likely to result in approval of projects and/or deliverables.

SAO performed a review of statewide processes intended to assist state entities in successfully developing major information resources projects, in July 2012. The scope of the review included major information resources projects started on or after January 2004 and QAT reports from 2007 to March 2012.

The findings of the review were documented in the SAO report, *A Report on Statewide Processes Intended to Assist State Entities in Developing Major Information Resources Projects*, published July 2012.

- Agencies did not always have an effective process in place for the initial planning of their projects.
- Some state agencies failed to report all major information resources projects to QAT as required.
- Some state agencies did not fully complete and submit all deliverables as required by the DIR's Texas Project Delivery Framework.
- Some state agencies omitted the reporting of state staff salaries and benefits in a major information resources project's initial cost estimate and subsequent reports.
- Some state agencies could better identify system requirements and help reduce the need for scope changes at later stages.
- The state does not require agencies to obtain independent verification and validation services for major information resources projects.

- Currently there is not a requirement that agencies respond to the Contract Advisory Team's recommendations for a solicitation that is submitted by an agency for review.

To address these weaknesses the report requests the Texas Legislature to consider requiring the following:

- The release of state appropriations for major information resources projects should be subject to QAT's written approval and notification to the Comptroller of Public Accounts (CPA).
- QAT should obtain a list of current information resources projects that are estimated to cost more than $750,000, certified by each agency's executive director and information resource manager.
- Independent verification and validation (IV&V) services should be performed for major information resources projects. For more information on IV&V see appendix E on page 31.
- Agencies should provide written responses to each recommendation provided by the Contract Advisory Team.

APPENDIX A

MAJOR INFORMATION RESOURCES PROJECTS REPORTED TO THE QUALITY ASSURANCE TEAM ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ORIGINAL BUDGET (IN MILLIONS)	CURRENT BUDGET (IN MILLIONS)	PERCENTAGE COMPLETE	ORIGINAL TIMELINE (YEARS)	CURRENT TIMELINE (YEARS)
Department of Aging and Disability Services	Single Service Authorizations System	$8.7	$11.1	54%	3.25	3.25
Department of Assistive and Rehabilitative Services	ReHabWorks [d]	$2.4	$18.3	87%	2.33	7.9
Department of State Health Services	Health Registries Improvement Project	$1.0	$3.1	76%	1.83	3.21
Department of State Health Services	Pharmacy and Emergency Preparedness Asset Management System	$1.0	$2.0	69%	1.58	3.58
Department of State Health Services	Trauma Registry Improvement System Project	$3.3	$3.3	55%	2.66	3.13
Department of State Health Services	Women, Infants and Children (WIC), WIC Information Network (WIN)	$24.9	$75.9	10%	3.97	9.72
Department of State Health Services	Clinical Management for Behavioral Health Services, Phase Five	$3.9	$3.9	27%	2.0	2.0
Department of State Health Services	Purchased Health Services Unit (PHSU)	$3.6	$5.2	15%	2.19	2.19
Health and Human Services Commission	Enhanced Eligibility	$637.4	$676.8	83%	4.17	5.84
Health and Human Services Commission	EDW—Enterprise Information Management	$100.0	$100.0	6%	9.01	11.17
Health and Human Services Commission	Medicaid Eligibility and Health Information (EHI) Project	$21.2	$27.4	98%	2.98	5.17
Health and Human Services Commission	Lone Star EBT UNIX Migration Project [a,e]	$1.6	$3.1	100%	1.92	2.89
Health and Human Services Commission	Medical Transportation Program Telecommunications Enhancement	$2.2	$5.0	95%	0.73	3.98
Health and Human Services Commission	HR/Payroll Upgrade Project	$9.7	$11.0	87%	1.5	2.0
Health and Human Services Commission	High Availability for State Hospitals and State Supported Living Centers (SSLC's)	$6.1	$6.1	1%	2.0	2.0
Health and Human Services Commission	Security Improvements Project	$2.6	$2.0	40%	2.0	2.0
Office of Attorney General	Child Support Division – Security Management	$7.2	$5.9	28%	4.12	5.75
Office of Attorney General	Child Support Division – Infrastructure Enhancements	$43.5	$59.9	38%	4.08	5.71

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AGENCY	PROJECT	ORIGINAL BUDGET (IN MILLIONS)	CURRENT BUDGET (IN MILLIONS)	PERCENTAGE COMPLETE	ORIGINAL TIMELINE (YEARS)	CURRENT TIMELINE (YEARS)
Office of Attorney General	Child Support Division – Enterprise Content Management	$44.9	$34.9	33%	4.24	5.75
Office of Attorney General	Child Support Division – Enterprise Reporting System	$6.2	$10.1	14%	4.17	5.71
Office of Attorney General	Child Support Division – Rendering OAG Documents and Easy Orders Upgrade	$6.3	$7.4	33%	3.83	5.42
Office of Attorney General	Child Support Division – Establishment & Enforcement Renewal	$54.5	$59.3	22%	5.99	5.99
Office of Attorney General	Child Support Division – Financial Renewal	$40.1	$40.1	0% [f]	4.33	4.33
Office of Attorney General	Crime Victims Legacy Workflow System	$6.8	$4.6	66%	2.67	2.67
Comptroller of Public Accounts	Statewide Enterprise Resource Planning Project—Financials [a,e]	$18.0	$29.4	100%	2.07	2.23
Comptroller of Public Accounts	Statewide Enterprise Resource Planning Project – Human Resources	$18.0	$22.4	77%	2.07	3.44
Comptroller of Public Accounts	Texas Department of Insurance Implementation in Centralized Account and Payroll/Personne System (CAPPS) Comptroller of Public Accounts Texas Department of Insurance Implementation of CAPPS (CTIC) [a]	$2.9	$2.9	100%	0.72	0.72
Teacher Retirement System	TRS Enterprise Application Modernization (TEAM)	$94.6	$115.4	22%	5.01	7.01
Texas Commission on Environmental Quality	Texas Emissions Reduction Plan Database	$1.0	$2.0	90%	2.0	3.5
Texas Commission on Environmental Quality	Permit and Registration Information System II	$3.6	$5.2	30%	2.0	2.0
Texas Department of Agriculture	Texas Unified Nutrition Programs System (TX-UNPS) Project (formerly Consolidated System Project) [a]	$2.5	$2.4	100%	2.0	2.66
Texas Department of Motor Vehicles	Registration and Titling System Refactoring [g]	$28.2	$28.2	0%	6.25	6.25
Texas Department of Transportation	Compass	$13.5	$13.5	95%	4.33	6.84

MAJOR INFORMATION RESOURCES PROJECTS REPORTED TO THE QUALITY ASSURANCE TEAM ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ORIGINAL BUDGET (IN MILLIONS)	CURRENT BUDGET (IN MILLIONS)	PERCENTAGE COMPLETE	ORIGINAL TIMELINE (YEARS)	CURRENT TIMELINE (YEARS)
Texas Department of Transportation	Statewide Traffic Analysis and Reporting System II—Phase I	$1.9	$1.9	7%	1.16	4.83
Texas Department of Transportation	Texas Permit Routing Optimization System (TxPROS)[a]	$1.4	$1.7	100%	4.97	6.97
Texas Department of Transportation	Texas Railroad Crossing Project (TxRAIL II)	$2.5	$2.5	68%	4.34	6.84
Texas Department of Transportation	Highway Performance Monitoring System (HPMS) Conversion to GIS	$2.3	$3.1	22%	2.16	2.99
Texas Department of Transportation	Mainframe Application Modernization Project (Roadmap Project)	$4.0	$1.5	54%	0.83	0.83
Texas Department of Transportation	Information Technology Service Management (ITSM)[a]	$1.9	$1.9	100%	1.17	1.17
Texas Department of Transportation	Texas Environmental Compliance Oversight System (ECOS)	$1.9	$1.9	50%	2.0	2.0
Texas Department of Transportation	Enterprise Business Intelligence System (EBIS)	$6.0	$6.0	8%	3.08	3.08
Texas Department of Transportation	TxTag Customer Service Center Back Office System Project[b]	$8.7	$8.7	9%	1.84	3.09
Texas Education Agency	Consolidated Entitlements Management System (CEMS) Phase I & II[a]	$3.3	$7.8	100%	6.0	6.0
Texas Education Agency	PEIMS Redesign Phase III	$3.8	$3.8	35%	2.0	2.0
Texas Education Agency	SBEC Online Rewrite Phase II[a]	$1.8	$7.6	100%	3.67	4.67
Texas Education Agency	Texas Student Data System (TSDS)	$20.9	$21.8	25%	3.17	3.17
Texas Parks & Wildlife	TxParks[a]	$3.8	$4.4	100%	1.17	4.83
Texas Water Development Board	TxWISE Project	$1.6	$1.8	40%	2.16	3.45
Texas Workforce Commission	Improve Tele-Center Call Handling	$5.7	$3.1	5%	1.5	1.5
Texas Workforce Commission	Improve Fraud Discovery[g]	$3.1	$3.1	0%	1.16	2.33
Texas Workforce Commission	Improve Benefits System User Interface	$7.8	$7.8	5%	3.13	3.13
Texas Workforce Commission	Tax Modernization Project[g]	$10.2	$10.2	0%	3.4	3.4
Texas Workforce Commission	TWIST Child Care Consolidation[a,e]	$2.6	$2.3	100%	2.0	3.0

MAJOR INFORMATION RESOURCES PROJECTS REPORTED TO THE QUALITY ASSURANCE TEAM
ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ORIGINAL BUDGET (IN MILLIONS)	CURRENT BUDGET (IN MILLIONS)	PERCENTAGE COMPLETE	ORIGINAL TIMELINE (YEARS)	CURRENT TIMELINE (YEARS)

[a]Projects have been reported as complete based on estimated timelines submitted by agencies. Current budgets reported from agencies as of October 2012. Though some projects have been reported as complete, some agencies may need to complete a Post Implementation Review of Business Outcomes Report (PIRBO).
[b]The business objectives were not met because the system being developed was not completed and the project was canceled by the agency in August 2011.
[c]TxDOT terminated the vendor on the project. The agency is preparing an RFO to go out in October 2012.
[d]DARS closed the ReHabWorks project in error and sent a letter to QAT and retracted to the PIRBO.
[e]PIRBO report is past due.
[f]This Project has not started. The costs that are being allocated to this project are for the development and server environments.
[g]In procurement phase to-date and initial execution of project (awarded vendor) has not begun at this time.
Source: Latest Framework deliverables or monitoring reports submitted by agencies to the Quality Assurance Team.

APPENDIX B

OVERVIEW OF FRAMEWORK DELIVERABLES SUBMITTED WITH AGENCY LEGISLATIVE APPROPRIATION REQUEST ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ESTIMATED BUDGET (IN MILLIONS)	ESTIMATED TIMELINE (YEARS)	BENEFITS (IN MILLIONS)	COMMENTS
Department of Aging and Disability Services	Balancing Incentives Program[a]	$4.5	2.0	$83.0	Quantitative benefits are shown as gaining $83 million in Federal Funds. Agency is conducting data gathering and assessment; multiple projects will be initiated after completion of initial assessment.
Department of Aging and Disability Services	Single Service Authorization System Phase II	$18.6	3.0	$26.2	Quantifiable benefits include $3.1 million on reduced constituent transaction costs and $23 million in cost avoidance for compliance and protection. A potential loss of enhanced Federal Financial Participation for project costs and saving of $9.7 million. This is attributed to DADS discontinuance of the CARE mainframe system. Project is a continuation from Phase I.
Department of Aging and Disability Services	Protecting People in Regulated Facilities	$12.7	2.0	$76.8	Quantitative benefits include cost avoidance with compliance and protection as well as improved efficiency and productivity.
Department of Aging and Disability Services	Utilizing IT Enhancements to Assist in improving Services for People Living at State Supported Living Centers	$22.5	2.0	$0	No benefits identified. Project appears as a placeholder for funding. Agency states costs will be elaborated and improved by the end of and during the requirements and design phases. Agency will re-submit Framework deliverables.
Department of Family and Protective Services	Assessment Decision Making Tool	$1.6	1.83	$15.9	Quantitative benefits are related to cost avoidance related to compliance and service delivery to constituents.
Department of Family and Protective Services	Child Care Licensing (CCL) Fee Processing	$1.9	1.0	$7.4	Quantitative benefits are related to constituents' manual processes and transaction fees.
Department of Family and Protective Services	Child-Care Licensing Automated Support System (CLASS) Upgrades	$1.2	1.89	$1.5	Quantitative benefits realized in cost avoidance by moving from a manual process to automation.
Department of Family and Protective Services	Child Protective Services – Alternative Response	$1.7	1.0	$61.0	Return on Investment of $61 million from fewer additional staff and increased constituent benefits. This will take place in year five of the project
Department of Family and Protective Services	Information Management Protecting Adults and Children in Texas system (IMPACT) Modernization	$22.1	2.0	$46.6	Quantitative benefits realized by improvements in Child Protective Services (CPS), Adult Protective Services (APS), and Statewide Intake Poligy (SWI) workflow and through improved usability of system. Return on investment of $46.6 million through system improvements will take place in year five of the project
Department of Family and Protective Services	Information Management Protecting Adults and Children in Texas system (IMPACT) Upgrades	$3.4	2.0	$3.7	Quantitative benefits realized in cost avoidance by moving from a manual process to automation.
Department of Public Safety	Automated Fingerprint Identification System and Image Archive Enhancements	$3.7	2.0	$0	No benefits identified by the agency. Framework deliverables were returned and QAT requested re-submission.

OVERVIEW OF FRAMEWORK DELIVERABLES SUBMITTED WITH AGENCY LEGISLATIVE APPROPRIATION REQUEST ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ESTIMATED BUDGET (IN MILLIONS)	ESTIMATED TIMELINE (YEARS)	BENEFITS (IN MILLIONS)	COMMENTS
Railroad Commission	GIS Technology Upgrade	$2.9	2.0	$7.2	Quantitative benefits realized in cost avoidance by improved efficiency and service delivery savings.
Railroad Commission	IT Modernization	$14.0	TBD	$0	No benefits identified by the agency. Framework deliverables were returned and QAT requested re-submission. Costs taken from agency LAR submission. Agency is using this as a placeholder for additional assessment. Business Case does not lists costs, benefits, milestones or statutory obligations.
Texas Department of Criminal Justice	Electronic Document Management System	$14.3	2.0	$4.1	Quantitative benefits realized in improved efficiency and productivity.
Texas Department of Motor Vehicles	WebDealer-eTitle project[a]	$14.0	TBD	$200	Breakeven 5.63 years. Project appears to have been initiated in fiscal year 2012. Milestones incomplete for Phase 2—4 $165 million in benefits through cost avoidance.
Texas Department of Motor Vehicles	Customer Contact Center Self Service	$14.9	TBD	$30	$30 million in benefits realized due to process improvements at the agency. Framework will need to be re-submitted by the agency.
Texas Department of Motor Vehicles	Online Ordering of Supplies	$4.2	TBD	$16.0	$4.7 realized in agency costs savings related to improved efficiency and productivity.
Texas Department of Motor Vehicles	Direct Shipping Plates and Stickers	TBD	TBD	$0	Financials not submitted with Framework deliverables. Deliverables not accepted by QAT. Agency needs to re-submit Framework. After TxDMV created the Workbook, the agency determined cost to operate this model outweighed any benefits
Texas Department of Motor Vehicles	Paperless Workflow Project	$1.5	TBD	$36.0	Quantitative benefits realized due to process improvements at the agency. Framework will need to be re-submitted by the agency.
Texas Facilities Commission	Integrated Workplace Management System	$2.6	2.0	$4.0	Quantitative benefits are related to improved efficiency and workload productivity.
Texas Workforce Commission	Benefits Electronic Correspondence—Claimant View 1.0[a]	$1.1	1.58	$11.1	The project was initially set to begin in September but now has been set to January 2013. Quantitative benefits are related to cost avoidance through compliance and protection.
Texas Workforce Commission	Workforce Systems Common Components	$2.9	1.83	$3.1	Quantitative benefits realized in cost avoidance by providing a more efficient batch processing/scheduling resulting in a 20% reduction of staff time.
Texas Workforce Commission	Tax Electronic Correspondence	$1.5	2.16	$3.2	Quantitative benefits are related to cost avoidance through compliance and protection associated with postage, mailing and print services.
Texas Workforce Commission	Electronic Case Files	$2.0	2.0	$6.6	Quantitative benefits are related to cost avoidance through improved efficiencies related to workflow processes and reduced supplies and materials.
Texas Workforce Commission	Workforce Data Warehouse	$1.5	2.0	$0.5	Quantitative benefits are related to cost avoidance through improved efficiencies.

OVERVIEW OF FRAMEWORK DELIVERABLES SUBMITTED WITH AGENCY LEGISLATIVE APPROPRIATION REQUEST ORDERED ALPHABETICALLY BY AGENCY

AGENCY	PROJECT	ESTIMATED BUDGET (IN MILLIONS)	ESTIMATED TIMELINE (YEARS)	BENEFITS (IN MILLIONS)	COMMENTS
Texas Workforce Commission	PeopleSoft Financial Upgrade	$2.9	2.16	$3.1	Quantitative benefits are related to cost avoidance through compliance and protection related to staff time, consultant services and accessibility issues.
Total Estimated Costs:		**$175.3**			

[a]Project or a phase of the project is scheduled to begin in fiscal year 2013.
Source: Agency submission of Business Case, Business Case Workbooks and Statewide Impact Analysis (August 2012) to QAT.

APPENDIX C

PROJECT REVIEWS AND SUMMARY

As part of the review process, in December 2011 and January 2012 the State Auditors Office provided review of 13 major information systems development projects at 7 agencies. Below are the summaries of those reviews.

Comptroller of Public Accounts—Treasury Operations Project

The review of the Comptroller of Public Accounts's (CPA) Treasury Operations Project (TOP) indicates that the CPA completed all project milestones and that the TOP applications are functioning as intended.

CPA replaced its aging treasury operations' systems to better support its statutory responsibilities related to State Treasury operations. In addition, CPA stated its goal was to reengineer its business processes to gain efficiencies, such as reducing or eliminating time-consuming manual processes, manual reconciliations, duplicate data entries, and paper processing.

CPA began developing and implementing TOP in March 2008, and completed the last milestone on August 31, 2011. Despite the TOP system being complete and in production, CPA staff continued to operate the legacy systems in parallel with the TOP's system to verify that the systems' results are consistent. CPA staff time for this verification procedure was not being charged to the project.

The original estimated project cost was $2,200,000. The costs increased twice, once to $7,747,019 and again to $12,654,954. During the project, the CPA submitted a number of Change Request Forms to QAT, which provided explanations for system changes that resulted in an increased budget.

Department of Family and Protective Services—Fostering Connections

The review of the Department of Family and Protective Services' (DFPS) Fostering Connections (FCON) project indicates that all milestones were completed and applications are functioning as intended. DFPS made modifications to two existing information systems—Childcare Licensing Automated Support System (CLASS) and Information Management Protecting Adults and Children in Texas (IMPACT)—to comply with federal law (Public Law 110-351, Sections 101, 103, 104, 201, 204, and 205) and state law (House Bill 1151 and Senate Bill 2080, Eighty-first Legislature, Regular Session, 2009).

The project began on September 7, 2009, and the final modifications were completed on April 14, 2011. While the development of FCON is complete, FCON was not deployed by the planned completion date of August 21, 2010. Delays occurred due to warranty issues that were found during the third phase of the project; however, there were no additional costs associated with those issues because they were covered with the warranty.

The final cost of the project was $1,262,512, which was 83.5 percent of the original estimated project cost of $1,511,966.

The project is the result of federal legislation that provided for the expansion of services to the children of Texas, in support of DFPS's vision, mission and goals.

Department of State Health Services—Automated Medication Administration Records System Project

The Department of State Health Services' (DSHS) Health Automated Medication Administration Records Systems (AMARS) project is complete and appears to be functioning as intended.

DSHS implemented AMARS to increase patient safety and reduce potential hospital liability by reducing medication errors. AMARS reduces medication errors by matching scans of bar codes on the medication dispensed, the administering nurse's identification badge, and the patient's wristband. In addition, AMARS documents all medications that are administered, as well as all mismatched scans. DSHS contracted with the Mediware Company to implement AMARS.

The AMARS project began July 7, 2007, and DSHS declared the project was complete as of December 23, 2010, 16 months after the initial planned completion date of August 31, 2009. The final reported project cost of $4,785,878 is $8,982 lower than the project's initial cost estimate. Of the total project costs, $88,766 was salary and benefits for state full-time-equivalent (FTE) employees who worked on the project. DSHS did not implement AMARS at one of the 10 facilities originally scheduled for implementation due to issues not related to AMARS. Implementation at that facility was postponed indefinitely. General Revenue Funds were the primary source of funding for the AMARS project, which was authorized by House Bill 15 (Eightieth Legislature, Regular Session).

The agency asserted that eight of the nine facilities in which AMARS was implemented have experienced a decrease in medication errors. One facility did not experience a decrease in medication errors because of process-related issues not related to AMARS, according to DSHS.

During the review, QAT members recommended that DSHS work to identify and quantify the benefits for the AMARS project when completing its PIRBO. The PIRBO was received in September 2012 and DSHS did not identify quantifiable benefits for developing the system.

Department of State Health Services—Health Registries Improvement Project: Birth Defects Registry and Child and Adult Blood Lead Epidemiology Surveillance System

The review of the Department of State Health Services' (DSHS) Health Registries Improvement Project indicates that the project is still in development and the scope increased from the initial project plan. The project now includes three phases:

- Phase 1—MTG Consultants, Inc.'s assessment of a registry model;
- Phase 2—implementation of the Birth Defects Registry by May 2012; and
- Phase 3—the development and implementation of the Child and Adult Blood Lead Epidemiology Surveillance System by August 2012.

As of January 2012, DSHS had completed Phase 1 on time. A single integrated vendor solution, Consilience Maven (Maven), was selected through the procurement process during Phase 1. Phase 2 is in the development stage and Phase 3 is in progress. According to DSHS, there have been some significant delays regarding procurement and installation of equipment within the state's Data Center Services in which Maven, the new software for the Health Registries Improvement Project is housed.

However, DSHS had planned for those delays, so the delays did not significantly affect the overall milestones for the project.

DSHS began the Health Registries Improvement Project on November 2, 2009. As of January 2012, the Health Registries Improvement Project was scheduled to be completed by January 15, 2013. DSHS extended the completion date from the original date of August 31, 2011, due to the addition of the third phase of the project, the Child and Adult Blood Lead Epidemiology Surveillance System.

The Birth Defects Registry using MAVEN appears to be functioning as intended. Because the Human Registries Improvement Project is not complete, DSHS demonstrated the Birth Defects Registry in a test environment. DSHS looks at approximately 90,000 records of potential birth defect cases each year and processes about 22,000 of those records as eligible cases.

Numerous reports can be generated from the new Birth Defects Registry and exported into an Excel spreadsheet more easily and quickly than using the previous system. The Health Registries Improvement Project's initial estimated cost was $749,991. In the Department's Monitoring Report for the first quarter of fiscal year 2011, the Department increased its estimate by 170 percent to $2,024,991 after it received additional federal funding. The Department also reported an increase of the project's estimated cost in the monitoring reports for the third and fourth quarters of fiscal year 2011, each time after the Department had received additional federal funding. After the last reported receipt of federal funds in the fourth quarter of fiscal year 2011, the project's total estimated cost had increased 280 percent to $2,847,991. As of November 30, 2011, the Department had spent $1,462,169. The Department also increased the project's scope by adding Phase 3 and extended the project's timeline. However, the Department did not send formal notification to the Quality Assurance Team (QAT) about the Health Registries Improvement Project's increased costs or expanded scope until September 2011 when the Department submitted Change Control Request and Contract Amendment and Change Order Approval forms.

The new Birth Defects Registry also allows users to be assigned specific roles that define what activities the users can perform within the registry, and it contains an audit trail to track which user makes changes. DSHS employees perform all data entry and DSHS implemented a series of quality assurance checks to help reduce the potential for data entry errors. The Birth Defects Registry contains numerous logic and error checks and will list potential errors.

The Birth Defects Registry allows additional records to be linked to one person. The registry will also notify users if information entered is a possible duplication of information previously entered. In addition, the registry can merge information from duplicated records into one primary record.

DSHS plans to develop the Lead Registry so that it generally operates the same as the Birth Defects Registry using the same Maven software.

Department of State Health Services—Trauma Registry Improvement System Project

The review of the Department of State Health Services' (DSHS) Trauma Registry Improvement System Project indicates that the project is in the early stages of development. DSHS selected the vendor and completed the modeling section of the project. Data conversion was in process at the time of the review. The Trauma Registry Improvement System Project's goal is to replace the current Trauma Registry with a new system. According to DSHS, the existing Emergency Medical Services/Trauma registry is outdated and does not comply with either the National Emergency Medical Services Information System or the National Trauma Data Bank databases. Among the goals for the Trauma Registry Improvement System Project is to align DSHS's Trauma Registry with national data integration and exchange standards and to improve the registry's accessibility, reliability, availability, and performance.

DSHS originally planned to implement the new Trauma Registry system by January of 2012; however, delays have pushed the project's completion date to August 31, 2012. Those delays included:

- A two-month delay due to a server installation delay by the state Data Center Services vendor, Team for Texas; and
- A four-month wait for the National Emergency Medical Services Information System to finalize the newest version of its data elements.

In addition, DSHS submitted a change order to the Change Control Board. The change order will increase the scope of the Trauma Registry Improvement System Project by adding functionality and may extend the completion date to February 2013. According to DSHS, the change order is not expected to increase the total estimated project costs of $3,280,046.

To develop the new Trauma Registry, DSHS selected Consilience, the same vendor it used for the DSHS's Health Registry Improvement Project. According to DSHS, it selected Consilience because its product not only meets the requirements for an Emergency Medical Services/Trauma Registry, but also the technology and interoperability standards the Texas Legislature requires. Auditors observed a demonstration of DSHS's new Birth Defects Registry. DSHSs new Trauma Registry is expected to have similar functionality.

Texas Commission on Environmental Quality—Air Permit Allowable Database

The Air Permit Allowable Database (APAD) project at the Texas Commission on Environmental Quality (TCEQ) appears to be functioning as intended. The project manager provided a full demonstration of the database, highlighting the system's abilities and functionality.

Visionary Integration Professionals, LLC, is completing the APAD project as a deliverable-based contract. Visionary Integration Professionals is responsible for the database design, development/programming, and testing. The project started on September 1, 2009, and was scheduled to be completed by August 31, 2011. However, the completion date was not met and the timeline was extended twice. Large amounts of data being transferred into the database, as well as delays caused by Team for Texas's inability to provide a platform, contributed to project setbacks. TCEQ expected the project to be completed by late January 2012. As of December 15, 2011, the APAD project was approximately 92 percent complete. Additional user interfaces were being added. Approximately 9,000 additional air permits needed to be entered into the database.

The initial estimated cost of the project was $1,253,600. Infrastructure costs and additional state employee hours used to extend the project five months past the original completion date increased the projected overall cost to $1,630,141. Accounting for state employee benefits increases the total estimated cost to $1,715,735. As of December 7, 2011, the project costs, including full-time equivalent positions (salaries and benefits) was $1,543,644, or approximately $290,044 more than initially projected.

The APAD project appears to be working as intended. The database was effectively performing queries, retrieving stored data, tracking permits throughout the permitting process, and producing canned and extemporaneous reports. The agency showed QAT members how the database uses information from the Central Registry (CR), State of Texas Air Reporting System (STARS), and the Consolidated Compliance and Enforcement Data Systems (CCEDS) to produce various reports.

During the demonstration, TCEQ personnel created a report showing actual contaminants versus allowable contaminates for a selected location. Before the implementation of APAD, it would have taken hours to produce a similar report; APAD created the report in a matter of minutes. Users assigned an administrative role can further customize the reports. Users assigned an administrative role also can make changes to APAD that reflect air-quality laws at the state and/or federal level without additional down time or programming.

Texas Commission on Environmental Quality—TCEQ Automated Budget Systems

The TCEQ Automated Budget Systems (TABS) is functioning as intended. TABS include a Budget and Automated Monitoring System module as well as a Legislative Appropriations Request (LAR) module. The Budget and Automated Monitoring System module is used for encumbrance forms, budget adjustments, approvals, change requests, invoices, umbrella vouchers, and several other budget and financial accounting functions. The LAR module is used to develop TCEQ's biennial funding request to the Legislature. The improved functionality of TABS, including interfaces with the Uniform Statewide Accounting System (USAS) and TCEQ's Procurement and Contract Enterprise system, allows for significant increase in efficiency and timesaving among agency staff.

The primary obstacles in the development of TABS were the simultaneous data center transformation (resource scarcity) and the complicated interface with the Procurement and Contract Enterprise system, which required additional resources and funding ($95,000). According to TCEQ's first monitoring report for September through December 2007, TCEQ originally expected the project to take 24 months (from September 1, 2007, to August 31, 2009) and the budget was $1,107,839 before including staff salaries and benefits. According to TCEQ's February to May 2010 quarterly update report, final total expenditures, including full-time equivalent positions (salaries but not benefits) were $2,027,216. Including benefits, the final total was $2,275,167. Contract resources were used only for program coding; TCEQ staff performed system development and other key functions.

TABS' first phase's start date was September 1, 2007, and the project was completed May 14, 2010. This 32.5-month timeline is a 35 percent increase from the project's original 24-month timeline. Although the project has been completed, the LAR module will need further improvements and testing once live data is available.

TCEQ did not submit the Post Implementation Review on Business Outcomes report within the required six-month post implementation timeframe.

Texas Education Agency—Consolidated Entitlements Management System

As of February 2012, the Texas Education Agency's (TEA) Consolidated Entitlements Management System (CEMS) project was still in development.

TEA planned to replace its legacy entitlements information system—the Information Finance Management system—with a new system to automate the business processes used to generate federal entitlements for Individuals with Disabilities Education Act Grants and state-funded Special Education Grants. In addition, TEA planned to develop an entitlement generation system for No Child Left Behind Grants and automate the process used to calculate formula funding.

TEA started the CEMS project on September 1, 2006 and consisted of two phases. The project was originally budgeted to cost $3,295,198 and was expected to be completed by May 2010. In 2008, TEA modified the CEMS project due to anticipated changes in the No Child Left Behind statute. After the revision, the CEMS project consisted of the following phases:

- Phase 1—automating the calculations for the Individuals with Disabilities Education Act Grants and replacing the Information Finance Management system.
- Phase 2 —automating the calculations for No Child Left Behind Grants and replacing the Application Management System, which TEA uses to perform manual student counts and grant adjustments.
- Phase 3—automating the calculations for 10 state-funded grant programs. In addition, TEA will make any changes to CEMS needed to comply with expected statutory changes to the No Child Left Behind statute.

TEA reported that it completed Phase 1 on August 31, 2009. As of February 2012, Phase 2 was in the development stage. TEA had originally planned to complete Phase 2 by August 2011; however, TEA pushed back the completion date to June 2012. TEA stated that the delays were caused by staff reductions at the agency.

A demonstration indicated that the parts of CEMS used to calculate federal entitlement funding related to Individuals with Disabilities Education Act grants and state-funded Special Education Grants appeared to be working as intended. The demonstration provided an overview of a typical grant allocation and showed how an organization's status is modified, how student counts can be adjusted, amounts can be calculated, and other functions. Before implementation of the first phase of CEMS, TEA staff used a tedious and time-consuming process in which they used Microsoft Access databases and Microsoft Excel spreadsheets to calculate funding for Individuals with Disabilities Education Act Grants and state-funded Special Education Grants and then interfaced with various TEA applications. According to TEA, CEMS standardizes the grant calculation and allocation processes, including reporting, and minimizes the time necessary to complete the process.

Texas Parks and Wildlife Department—Business Information System

The Texas Parks and Wildlife Department's (TPWD) Business Information System (BIS) appears to be functioning as intended, however, TPWD did not fully achieve all of the BIS project's intended business goals and objectives. QAT conducted a limited review of project documentation, as well as observed a demonstration of BIS.

BIS was developed and implemented using TPWD staff augmented with contractors hired through the Department of Information Resources' Deliverable Based IT Services and IT Staff Services agreements. The project started on September 1, 2007, with an estimated completion date of September 1, 2008. Due to delays experienced during the development and implementation stages, system deployment did not officially occur until September 1, 2010, with project closeout continuing until October 29, 2010.

BIS project cost was originally estimated at $1,590,041. TPWD reported a final project cost of $4,945,547 to QAT in the project's final Monitoring Report.

A demonstration of BIS showed its reporting capabilities, which allow users to select various reports and set data parameters prior to running reports, and its ability to allow multiple funding sources for purchase orders and projects. TPWD staff also demonstrated the Employee Timesheet System, an application developed in-house, which enables users to charge their time based on the project and/or task on which they worked.

Texas Parks and Wildlife Department—Texas Parks Reservation System

A limited review of the Texas Parks and Wildlife Department's (TPWD) Texas Parks Reservation System (TxParks) project indicated that the system appears to be functioning as intended. This conclusion is based on TPWD's product demonstration, as well as the benefits TPWD realized. The overall purpose for the TxParks project was to replace the legacy reservation system, which had reached its end-of-life, with a more streamlined and efficient system that could provide greater fiscal controls of accounting data.

The TxParks project started on September 1, 2007, and was initially estimated to be completed in approximately one year with a deployment date of November 1, 2008. However, TPWD did not officially put into production the new TxParks system until May 12, 2010, which was 19 months after the original planned implementation date.

In January 2009, TPWD and the vendor, InfoSpherix (now Active Network), amended the initial contract for the TxParks project to include additional functionality. TPWD had previously reported the estimated contract cost to be $3,850,000 for a period of 60 months.

TPWD ultimately changed the contract to a period of 69 months totaling $4,427,500. The contract also included an additional $120,000 in customizations to be paid over the life of the contract. Additionally, in March 2009, TPWD added $25,000 to the overall cost of the TxParks project to pay for the migration of TPWD's future customer reservations into an acceptable file format. In October 2011, the addition of a contract amendment required the vendor to supply dedicated Tier One Software Support for one year to TPWD at a cost of $150,000.

TPWD's Post-Implementation Review of Business Outcomes (PIRBO) report for the TxParks project was due in November 2010; however, the Department had not submitted that report to the QAT as of January 2012.

Texas Department of Transportation—Compass Maintenance Management System

When Texas Department of Transportation's (TxDOT) Compass Maintenance Management System (Compass) was reviewed in January 2012, it appeared to be on track to be implemented in September 2012. The sections of the management system that have been completed were functioning as intended. The purpose of the Compass project was to replace TxDOT's multiple legacy maintenance management systems with a single application that integrates all data in one environment.

TxDOT completed the business case for the Compass project in May 2006. In that business case, TxDOT estimated that full statewide implementation of Compass would take three years and be completed by December 2009. As of January 31, 2012, implementation of Compass was 81 percent complete. The Compass project's 80-month timeline is a 92 percent increase over the project's original 36-month timeline. TxDOT management stated that the project was delayed because the Request For Offer and vendor negotiations required more time than originally anticipated.

The estimated project cost remains at the original $13,550,000. Expenditures as of January 31, 2012 were $8,488,930. TxDOT employees are involved in the implementation of Compass, and TxDOT correctly included salaries and benefits for those employees in the project's budget.

Texas Department of Transportation—Statewide Analysis Model – Version 2 Project

The Department of Transportation's (TxDOT) Statewide Analysis Model – Version 2 (SAM-V2) project completed all milestones and the applications are functioning as intended.

TxDOT upgraded the first version of the Statewide Analysis Model to satisfy the need for a statewide analysis model that is current and provides features necessary to achieve TxDOT's planning goals, as well as to meet federal statutory mandates within Title 23, U.S. Code, Section 135.

TxDOT started the SAM-V2 project in January 2009, and it put the final upgraded model into production in September 2011. TxDOT did not complete the SAM-V2 project by its initial estimated completion date of August 2010. The timeframe was affected by delays in getting necessary approvals, finalizing the purchase order for the project.

The project's final cost was $928,956, which is 55 percent of the original estimated project cost of $1,675,471. There was minimal usage of TxDOT FTE positions on this project. TxDOT reported FTE costs only when staff expended 50 percent or more of their time toward the SAM-V2 project.

TxDOT decreased funding and scope at the beginning of fiscal year 2010. Funds for fiscal year 2009 that were not committed were no longer available after August 31, 2009. TxDOT secured funding for fiscal years 2010 and 2011 and aligned the project's scope to fit the available funding. To reduce the project's scope, TxDOT eliminated the goal of having SAM-V2 operating on a network or the Internet; instead, SAM-V2 will remain a standalone software program.

Texas Department of Transportation—Texas Permit Routing Optimization System Project

The Texas Department of Transportation's (TxDOT) Texas Permit Routing Optimization System (TxPROS) project completed all project milestones and the TxPROS applications appear to be functioning as intended.

TxDOT's Motor Carrier Division replaced its manual mapping and routing system and manual permitting system to better support TxDOT's responsibilities related to oversize/overweight carrier permitting and routing. TxDOT acquired the TxPROS software and integrated it with a new Central Permitting System to provide "true" oversize/overweight automated routing that is Web-based, self-service, and compatible with TxDOT's base Geographic Information Systems architecture. TxPROS is compatible with bridge/construction/pavement data, systems, and processes for locating and tracking structures.

TxPROS also includes required parameters such as vertical clearance, lane width, load ratings, one-way attributes, access roads, turn restrictions, and at-grade railroad crossings along with the functionality to update this information in real time with construction and other district-generated restrictions.

TxPROS and the new Central Permitting System allows customers to self-issue their own permits in real-time or in advance via the Internet for vehicles within a certain grouping of characteristics. (TxDOT's Motor Carrier Division permit officers will service complex permits using TxPROS as an aid). All permits are issued using one electronic base map, eliminating (except for manual backup processing capability) the old paper maps that needed to be updated by hand daily and reprinted often.

According to TxDOT, TxPROS self-permitting application reduced the time necessary to issue oversize/overweight permits. The system allows TxDOT's Motor Carrier Division to meet increasing demand for services, increase the safety of the traveling public, improve TxDOT's tracking of structures that affect oversize/overweight routing, and for the first time, provide the ability to track the transport of oversize/overweight loads on Texas's roadways.

In addition, TxDOT stated its goal was to re-engineer its processes to gain efficiencies, such as reducing or eliminating time-consuming manual processes, duplicate data entries, and paper mapping and route planning.

TxDOT originally planned to begin implementation of TxPROS in September 2004 and complete implementation by August 2009. TxDOT later moved the start date to August 2006. After selecting ProMiles Software Developer as the project's vendor, development of the system began in fall 2007. TxDOT then revised the completion date to December 31, 2009. The project timeline was extended because of delays in the approvals for state data center requests, changes in the scope of the project, and vendor underestimations of level of effort required for development and implementation. The TxPROS project was completed and implemented on August 30, 2011.

It should be noted that even though TxPROS has been implemented as of August 30, 2011, vendor staff continued to work on programming issues. As of February 8, 2012, TxDOT had withheld final payment to the vendor.

APPENDIX D

SUMMARY OF PROJECT REVIEWS 2012

DESCRIPTION		RESULTS				ANALYSIS			
Agency	Project	Late	Complete	Over Budget	Less Functionality	Late in Years	Percent Late	Over / (Under) Budget	Percent Over / (Under) Budget
Department of Family and Protective Services (DFPS)	Fostering Connections (FCON)	Yes	Yes	No	No	0.65	66.7%	($249,454)	-16.5%
Department of State Health Services (DSHS)	Health Registries Improvement Project: Birth Defects Registry & Child and Adult Blood Lead Epidemiology Surveillance System (HRIP)	Yes	No	Yes	No	1.38	75.4%	$2,098,000	279.7%
Department of State Health Services (DSHS)	Trauma Registry Improvement System Project (TRISP)	Yes	No	No	No	0.67	30.7%	$0	0.0%
Department of State Health Services (DSHS)	Automated Medication Administration Records System (AMARS)	Yes	Yes	No	No	1.31	60.9%	($8,982)	-0.2%
Texas Commission on Environmental Quality (TCEQ)	TCEQ Automated Budget Systems (TABS)	Yes	Yes	Yes	No	0.7	35.1%	$1,167,328	105.4%
Texas Commission on Environmental Quality (TCEQ)	Air Permit Allowable Database (APAD)	Yes	No	Yes	No	0.42	21.0%	$462,135	36.9%
Texas Comptroller of Public Accounts (CPA)	Treasury Operations Project (TOP)	No	Yes	Yes	No	0	0.0%	$10,454,954	475.2%
Texas Department of Transportation (TxDOT)	Texas Permit Routing Optimization System (TxPROs)	Yes	Yes	Yes	No	0.12	2.3%	$754,965	53.9%
Texas Department of Transportation (TxDOT)	Statewide Analysis Model—Version 2 (SAM2)	Yes	Yes	No	Yes	1.08	65.1%	($746,515)	-44.6%
Texas Department of Transportation (TxDOT)	Compass (Upgrade)	Yes	No	No	No	1.84	36.8%	$0	0.0%

Texas Education Agency (TEA)	Consolidated Entitlements Management System	Yes	No	Yes	Yes	2.25	60.2%	$3,451,029	84.9%
Texas Parks and Wildlife Department (TPWD)	Texas Parks System (TxParks)	Yes	Yes	No	No	3.16	270.5%	309,893	8.1%
Texas Parks and Wildlife Department (TPWD)	Business Information System (BIS)	Yes	Yes	Yes	No	2	199.5%	$3,355,506	211.0%

Source: QAT.

APPENDIX E

INDEPENDENT VERIFICATION AND VALIDATION (IV&V)

In conjunction with the SAO's July 2012 study of statewide processes intended to assist state entities in successfully developing major information resources projects, QAT supports the use of Independent Verification and Validation (IV&V). IV&V is used for large and complex projects that represent a critical risk to agencies and the State. The definition of IV&V activities is quite broad and includes activities such as assessment, analysis, evaluation, review, inspection, and testing of software products and processes. IV&V processes also include assessing software in the context of the system, including the operational environment, hardware, interfacing software, operators and users. IV&V is to be performed in parallel with software development, rather than at the conclusion of the software development.

Currently, the State of Texas does not require agencies to obtain IV&V for major information resources projects. Some state governments and federal agencies require independent verification and validation services to be obtained for major information resources projects to reduce the risk of reworking the project in the later stages at a higher cost. Although obtaining independent verification and validation evaluations create an initial cost, those services can decrease the risk of having to rework a project in the later stages at a higher cost. The Institute of Internal Auditors' *Global Technology Audit Guide* asserts that finding and fixing a software problem after delivery is often 100 times more expensive than finding and fixing a problem during the requirements or design phases. In addition, a case study published by the U.S. Department of Defense calculated that the return on investment from an IV&V evaluation is 1.25 to 1.82. This means that for every $1 spent on IV&V evaluations, the benefit received would be between $1.25 and $1.82.

APPENDIX F

Business Case Checklist

Agencies must use required Framework tools as defined in statute. A business case must be developed and submitted to the Quality Assurance Team (QAT) for any project classified as a major information resources project, and for certain major contracts. Agencies must resubmit the business case to QAT if the project cost increases more than 10 percent.

This checklist is used by agencies to verify the quality of a business case deliverable prior to submission to QAT.

Instructions to Reviewer:

- Complete the Project Information section; and
- Complete the Review Criteria section.

Responses to questions in the Review Criteria section should be:

- based on the content of the business case under review;
- consistent with the content of the Business Case Workbook; and
- "Yes" or "No", if an item is applicable to the project. If an item is not applicable to the project, the appropriate response is "NA", Responses of "NA" and "No" may require further examination.

BUSINESS CASE CHECKLIST	
PROJECT INFORMATION:	
AGENCY NAME	
PROJECT NAME	
DOCUMENT NAME/VERSION	
REVIEW DATE	

REVIEW CRITERIA	YES/ NO / NA
1. GENERAL	
Was the Business Case submitted as a searchable PDF?	
Was the Business Case completed using the currently published template?	
Were the template title page and the "Using This Template" instructions deleted?	
Does the cover page contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Does the Business Case contain required approval signatures?	
Do page headings contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Is content in the footer area unmodified?	
Do italicized instructions remain within each section and sub-section?.	

REVIEW CRITERIA	YES/ NO / NA
2. GOVERNANCE AND BUSINESS CASE ANALYSIS TEAM	
Is the description of the agency's IT governance structures and processes understandable and adequate? (2.1)	
Are the roles of the business case analysis team, including, the names and titles of agency staff that will fulfill them, listed and described? (2.2)	
3. PROBLEM DEFINITION	
Is the business problem the project would address, including problems related to technology, processes and/or services, described? (3.1)	
Is the business problem described without presupposing a specific solution? (3.1)	
Does the business problem description relate to the existing deficiencies with the agency's operations, processes, or constituent services? (3.1)	
Are stakeholders/customers within the agency and constituent environment identified and described? (3.2)	
Do the stakeholder/customer descriptions include the relation of each to the project? (3.2)	
Are the project's proposed plans to modify or replace the agency's existing software described? (3.3.1)	
Are the project's proposed plans to modify or replace the agency's existing hardware described? (3.3.2)	
4. PROJECT OVERVIEW	
Is project described an actual project, as opposed to a program containing related projects?	
Is the approach the proposed project will use to address the business problem described? (Sub-section 4.1)	
Does the approach specifically state what the project will accomplish (Sub-section 4.1)?	
Does the approach specifically state the relationship of the project to related programs and other project phases? (Sub-section 4.1)	
Are project sequence number(s) from the Information Technology Detail (ITD) for the proposed project specified? (Sub-section 4.1)	
Are the business goals and objectives of the proposed project, including references to business needs described? (Sub-section 4.2)	
Are performance measures that will be used to gauge the proposed project's business outcomes for key processes and services described? (Sub-section 4.3)	
Are assumptions regarding the agency processes and/or services affected by the proposed project listed? (Sub-section 4.4)	
Are limitations or constraints regarding the agency processes and/or services affected by the proposed project listed? (Sub-section 4.5)	
Is software for the proposed project, including technical factors that may be critical to project selection, described? (Sub-section 4.6.1)	
Is hardware for the proposed project, including technical factors that may be critical to project selection, described? (Sub-section 4.6.2)	
Are preliminary major milestones, deliverables, and target dates for the proposed project specified? (Sub-section 4.7)	

REVIEW CRITERIA	YES/ NO / NA
Are specified preliminary major milestones, deliverables, and target dates for the proposed project consistent with other information in the Business Case and the Business Case Workbook?	
5. PROJECT EVALUATION	
Are direct and derived mandate(s) related to the proposed project, including associated statutory citations and penalties, described? (Sub-section 5.1)	
Are titles of strategic plans that the proposed project addresses, including specific goals and objectives in each plan, and the relationship of the project to each of the plans, identified? (Sub-section 5.2)	
Is the proposed project's impact on the use of technology resources at the agency level, including support of the defined architecture and standards for the agency and state, summarized? (Sub-section 5.3)	
Are methods used to calculate business case cost and quantitative project benefit estimates, including estimate factors and underlying assumptions, described at the level of detail specified in the instructions? (Sub-section 5.4)	
Are initial risks, not already identified in the Evaluation Factor worksheet, identified and rated? (Sub-section 5.5)	
Are alternative options, including the option of not implementing any project at all and at least one non-selected project option, described (Sub-section 5.6)	
Are reasons for not selecting each rejected alternative, or an explanation of why at least one rejected alternative is not included, explained? (Sub-section 5.6)	
6. PROJECT SELECTION	
Is the agency-developed methodology used for project selection described? (Sub-section 6.1)	
Is the rationale for why the project was selected above the other alternative solutions, including citations for any market research that was conducted, stated? (Sub-section 6.2)	
Is the information in the graphical summary charts in section 6.2 identical to the information in the completed charts located in the Selection Results worksheet of the Business Case Workbook? (Sub-section 6.2)	
7. GLOSSARY	
Are unique and ambiguous terms defined in the glossary? (Section 7)	
8. REVISION HISTORY	
Is revision history information included for current submission? (Section 8)	
9. APPENDICES	
Are relevant appendices included? (Section 9)	

Business Case Workbook Checklist

Agencies must use required Framework tools as defined in statute. A Business Case Workbook must be developed and submitted to the Quality Assurance Team (QAT) for any project classified as a major information resources project, and for certain major contracts. Agencies must resubmit the Business Case Workbook to QAT if the project cost increases more than 10 percent.

This checklist is used by agencies to verify the quality of a Business Case Workbook deliverable prior to submission to QAT.

Instructions to Reviewer:

- Complete the Project Information section.
- Complete the Review Criteria section.

Responses to questions in the Review Criteria section should be:

- based on the content of the Business Case Workbook under review
- consistent with the content of the business case
- "Yes" or "No", if an item is applicable to the project. If an item is not applicable to the project, the appropriate response is "NA".

BUSINESS CASE WORKBOOK CHECKLIST RESPONSES OF "NA" AND "NO" MAY REQUIRE FURTHER EXAMINATION.	
PROJECT INFORMATION:	
AGENCY NAME	
PROJECT NAME	
DOCUMENT NAME/VERSION	
REVIEW DATE	

CRITERIA	**YES/ NO / NA**
1. GENERAL	
Was the Business Case Workbook submitted as an Excel file?	
Was the Business Case Workbook completed using the currently published template?	
2. COST ANALYSIS	
Does the Cost Analysis worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Are Project Agency Personnel Services – Implementation costs specified? (P1-I)	
Are Project Agency Personnel Services – Maintenance costs specified, if applicable? (P1-M)	
Are Project Agency Personnel Fringe Benefits costs specified? (P2)	
Are Non-Project/Operational Agency Personnel Services – Maintenance costs specified, if applicable? (NP1-M)	

CRITERIA	YES/ NO / NA
Are Non-Project/Operational Agency Personnel Fringe Benefits costs specified, if applicable? (NP2)	
Are Project Contract/Consultant Services – Implementation costs specified, if applicable? (P4-I)	
Are Project Contract/Consultant Services – Maintenance costs specified, if applicable? (P4-M)	
Are Non-Project/Operational Contract/Consultant Services – Maintenance costs specified, if applicable? (NP4-M)	
Are Project—Hardware Procurement costs specified, if applicable? (P7)	
Are Project Maintenance—Hardware costs specified, if applicable? (P9)	
Are Non-Project/Operational Maintenance—Hardware costs specified, if applicable? (NP9)	
Are Project Procurement—Software costs specified, if applicable? (P11)	
Are Project Maintenance—Software costs specified, if applicable? (P13)	
Are Non-Project/Operational Maintenance—Software costs specified, if applicable? (NP13)	
Are Project – Other costs specified, if applicable? (P15 – P23)	
Are costs and the years for which costs are recorded consistent with information in the Business Case?	
3. QUANTITATIVE BENEFITS ANALYSIS	
Does the Quantitative Benefits Analysis worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Are Cost Savings: Improved Efficiency/Productivity benefits specified, if applicable? (A14)	
Are Cost Avoidance: Compliance/Protection benefits specified, if applicable? (A23)	
Are Revenue Generation benefits specified, if applicable? (A30)	
Are Constituent: Service Delivery Savings benefits specified, if applicable? (C9)	
Are Constituent: Regulatory Savings benefits specified, if applicable? (C18)	
Are Constituent: Other Savings benefits specified, if applicable? (C24)	
Is information in the Quantitative Benefits Analysis worksheet consistent with information in the Business Case?	
4. EVALUATION FACTORS	
Does the Evaluation Factors worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Are ratings for Statutory Fulfillment (SF) factors consistent with information in the Business Case section 5.1 Statutory Fulfillment?	

CRITERIA	YES/ NO / NA
Do Statutory Fulfillment (SF) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Statutory Fulfillment (SF) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Are ratings for Strategic Alignment (SA) factors consistent with the information in the Business Case section 5.2 Strategic Alignment?	
Do Strategic Alignment (SA) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Strategic Alignment (SA) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Are ratings for Agency Impact Analysis (IA) factors consistent with values produced in the Financial Analysis and Cost-Benefits Summary worksheets?	
Do Agency Impact Analysis (IA) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Agency Impact Analysis (IA) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Are ratings for Financial Analysis (FA) factors consistent with information in the Business Case section 5.4 Financial Analysis?	
Are ratings for Financial Analysis (FA) factors consistent with the information in the Business Case?	
Do Financial Analysis (FA) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Financial Analysis (FA) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Are ratings for Initial Risk Consideration (RC) factors consistent with information in the Business Case section 5.5 Initial Risk Consideration?	
Do Initial Risk Consideration (RC) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Initial Risk Consideration (RC) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Are ratings for Alternatives Analysis (AA) factors consistent with information in the Business Case section 5.6 Alternatives Analysis?	
Do Initial Alternatives Analysis (AA) factors rated as "5" contain an explanation of the reasons for the rating?	
Do Initial Alternatives Analysis (AA) factors rated as "5" include in the explanation a description of provisions the agency has in place to ensure high scores will be attained and maintained throughout project delivery?	
Is information in the Evaluation Factors worksheet consistent with information in the Business Case?	
5. COST-BENEFITS SUMMARY	
Does the Cost-Benefits Summary worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	

CRITERIA	YES/ NO / NA
Are the benefits identified reasonable, based on costs identified and benefits quantified?	
Is information in the Cost-Benefits Summary consistent with information in the Business Case?	
6. FINANCIAL ANALYSIS	
Does the Financial Analysis worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Is information in the Financial Analysis worksheet consistent with information in the Business Case?	
Based on a comparison of the financial measures with the alternative solutions, is additional justification and/or further examination of the project's solution strategy unwarranted?	
Is Total Net Present Value greater than zero? (A negative net return indicates that the investment cannot be justified based solely on financial benefits.)	
If the Breakeven Point is greater than five years, is the project justified by the value to constituents and other qualitative factors about quantitative benefits?	
Is the Breakeven Point within the ten years indicated on the Financial Analysis worksheet?	
Is the project justified by the value of the investment?	
6. SELECTION RESULTS	
Does the Selection Results worksheet heading contain Agency/Organization Name, Project Name, Version Number and Revision Date?	
Is information in the Selection Results worksheet consistent with information in the Business Case?	

CONTACT

The QAT Annual Report will be available on the QAT website at http://qat.state.tx.us. If you have any questions, please contact Richard Corbell of the Legislative Budget Board at (512) 463-1200, Ralph McClendon of the State Auditor's Office at (512) 936-9500, or Deborah Hujar of the Department of Information Resources at (512) 475-4700.