

Annual Report

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

December 2017 to November 2018



Quality Assurance Team

Comptroller of Public Accounts

Department of Information Resources

Legislative Budget Board

State Auditor's Office (Advisory)

December 1, 2018



QUALITY ASSURANCE TEAM

- ◆ Comptroller of Public Accounts ◆ Department of Information Resources ◆
◆ Legislative Budget Board ◆ State Auditor's Office (Advisory) ◆

TO: Governor Greg Abbott
Lt. Governor Dan Patrick Speaker Joe Straus
Legislative Budget Board Members

FROM: Glenn Hegar, Texas Comptroller of Public Accounts
Nick Villalpando, Interim Executive Director, Department of Information Resources
Julie Ivie, Assistant Director, Legislative Budget Board

DATE: December 1, 2018

SUBJECT: 2018 Quality Assurance Team Annual Report

The attached report is the Quality Assurance Team Annual Report on monitored major information resources projects at Texas state agencies. Projects are assessed to determine if they are operating on time and within budget and scope. The analysis is provided by the Quality Assurance Team (QAT) pursuant to the Texas Government Code, Section 2054.1183, and the Eighty-fifth Legislature, General Appropriations Act (House Bill 1), 2018–19 Biennium, Article IX, Section 9.01 and 9.02.

The QAT, which includes representatives of the Comptroller of Public Accounts, Department of Information Resources, Legislative Budget Board, and the State Auditor's Office (advisory member), is charged with overseeing the development of major information resources projects.

An electronic version of this report is available at qat.dir.texas.gov. If you have any questions, please contact Robert Wood of the Comptroller of Public Accounts at (512) 463-3973, Tom Niland of the Department of Information Resources at (512) 475-4700, Richard Corbell of the Legislative Budget Board at (512) 463-1200, or Michael Clayton of the State Auditor's Office at (512) 936-9500.

Attachments

CONTENTS

FACTS AND FINDINGS 1

DISCUSSION..... 2

 BACKGROUND 2

 PROJECT PERFORMANCE OBSERVATIONS..... 3

 OBSERVATIONS AND TRENDS..... 3

 OBSERVATION 1: DURATION AND BUDGET OF PROJECTS..... 3

 OBSERVATION 2: TIMEFRAME OF PROCUREMENT ACTIVITIES..... 3

 OBSERVATION 3: CANCELED PROJECT 4

 QAT-MONITORED PROJECTS’ STATUS 4

 COMPARISON OF 2017 AND 2018 PROJECT PERFORMANCE..... 8

 PROJECT HIGHLIGHTS DURING THE 2018–19 BIENNIUM 8

 ADDITIONAL QAT OVERSIGHT INITIATIVES 9

 CONTRACT OVERSIGHT 9

 PROJECT OVERSIGHT: PUBLIC DASHBOARD..... 11

 BEST PRACTICES USED BY AGENCIES 14

 CONCLUSION 15

APPENDIX A 16

CONTACT 29

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

The Quality Assurance Team (QAT) includes representatives from the Comptroller of Public Accounts (CPA), the Department of Information Resources (DIR), the Legislative Budget Board (LBB), and the State Auditor's Office (SAO) (advisory member). The team monitored 62 major information resources projects during the December 2017 to November 2018 reporting period. Of these projects, 16 are expected to exceed their original planned duration by more than 10 percent. Two of these 16 are also expected to exceed their initial budgets by more than 10 percent. See Appendix A for additional information¹.

QAT oversees the state's technology major project portfolio, which is a single view of all agency major information resources projects. The phrase major information resources project is statutorily defined in the Texas Government Code, Title 10, Chapter 2054 and in general includes projects with expected development costs of more than \$1.0 million. From December 2017 to November 2018, QAT provided process improvement strategies to state entities that manage the projects in the portfolio.

FACTS AND FINDINGS

- ◆ From December 2017 to November 2018, the state's major technology project portfolio included 62 projects with an estimated total cost of \$1.38 billion. Twenty-two of these projects were approved and scheduled to begin on or after September 1, 2017.
- ◆ Among the 62 projects, 34 projects are currently within both original planned duration and planned costs.
- ◆ 28 of the 62 projects are in various stages of the project development lifecycle stages.
- ◆ The number of projects in the portfolio has decreased, and their total estimated costs have remained fairly consistent since last year's annual report.
- ◆ One project was canceled since last year's annual report.
- ◆ When establishing project milestones, some agencies are not allocating enough time for identifying project requirements, completing procurement activities, submitting contract reviews for QAT approval, and conducting user-acceptance testing.
- ◆ Projects with a short development schedule of less than 28 months are meeting their initial cost and duration estimates at a higher rate relative to projects with longer durations.
- ◆ As of November 2018, 20 projects were reported to be complete or near completion. Thirteen of the 20 projects (65 percent) were within 10 percent of original budget and duration.

¹ Appendix A includes all projects and identifies the initial and current estimated costs and the initial and current estimated durations for these projects.

DISCUSSION

Staff from the CPA, DIR, LBB and SAO serve in a joint capacity on the QAT. QAT reviews and monitors state agency major information resources projects; identifies potential major information resources projects from agencies' Biennial Operating Plans; monitors the status of major information resources projects monthly or quarterly; and provides feedback on agencies' framework deliverables. If the project includes a contract, and the value of that contract changes by more than 10 percent, QAT must approve the contract amendment prior to execution. Agencies issuing contracts for major information technology projects with an expected value of greater than \$10.0 million must obtain prior written approval of the contract from QAT before execution.

BACKGROUND

QAT functions pursuant to the Texas Government Code, Chapter 2054, and the Eighty-fifth Legislature, General Appropriations Act, 2018–19 Biennium (Senate Bill 1), Article IX, Section 9.01 and 9.02. QAT approves, monitors, and reviews major information resources projects. As of September 2017, the team also reviews and approves certain contracts and contract amendments related to those projects. Since its inception, the team has published annual reports that provide the status of these projects.

Each member agency of the team provides staff with expertise in system development, budgeting, and contracting.

DIR's Texas Project Delivery Framework (framework) is required for use during delivery of major information resources projects as defined in the Texas Government Code, Chapter 2054, Information Resources, and for certain major contracts. DIR's framework includes the following phases:

- initiation;
- planning;
- execution;
- monitoring and control; and
- closing.

LBB staff specify procedures for the submission, review, approval, and disapproval of Biennial Operating Plans and amendments, including procedures for review or reconsideration of the LBB's disapproval of a Biennial Operating Plan or its amendments.

CPA staff review contracts, contract amendments, and related solicitation documents. CPA staff also provide input on project framework deliverables.

SAO recuses itself from making recommendations and participating in additional oversight initiatives related to contracting contained in this report. This separation is necessary to ensure that SAO maintains

MAJOR INFORMATION RESOURCES PROJECTS

Pursuant to the 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; and
- any information resources technology project designated by the Legislature in the General Appropriations Act as a major information resources project.

Chapter 2054 does not apply to institutions of higher education that do not submit a Biennial Operating Plan.

its independence so that future audits of contracts and amendments overseen by QAT can be conducted in accordance with professional auditing standards.

Part of this work includes QAT requests for additional information from agencies to facilitate more comprehensive project analyses. For example, QAT may request an updated version of a project plan from an agency to better understand a project's revised scope. Additionally, QAT may require an agency to submit third-party reports, including independent verification and validation reports, when the project is reviewed. Such reports can serve as crucial sources of insight to evaluate information technology (IT) project risks. Finally, QAT intends to continue its practice of requesting SAO to perform project reviews. These reviews have provided valuable input to QAT from an independent perspective.

PROJECT PERFORMANCE OBSERVATIONS

From December 2017 to November 2018, the state's technology project portfolio included 62 projects totaling \$1.38 billion. Twenty-two of these projects were approved and scheduled to begin after September 1, 2017. The remaining 40 projects are in various development stages while no other projects are currently under review. The number of projects has decreased and estimated project costs have remained fairly consistent since the 2017 *QAT Annual Report*.

Since the 2017 *QAT Annual Report*, SAO performed project reviews involving four agencies on behalf of QAT. QAT selected the projects for review based on risks and completion. Results of these reviews were published in SAO's report, *A Report on Analysis of Quality Assurance Team Projects*, SAO Report No. 19-007, November 2018.

OBSERVATIONS AND TRENDS

QAT observations and trends are based on self-reported information as of November 2018. Information reported for projects that are ongoing may change as their implementation progresses.

Although QAT provides oversight for major information resources projects, agencies ultimately are responsible for the successful delivery of their projects.

The following trends and statistics apply to 45 projects that were 30 percent or more complete as of November 2018. Typically, projects that exceed planned durations also are more likely to exceed their budgets, whereas projects within schedule tend to remain closer to the initial budget. (See Figure 2.)

Observation 1: Duration and Budget of Projects

Projects with a shorter development schedule were more likely to meet both their current cost and duration as indicated by the following:

- 27 of 45 projects (60 percent) had an initial duration of 27 months or less; two of these 27 (7 percent) projects exceeded their initial cost and duration estimates by more than 10 percent; and
- 18 of 45 projects (40 percent) had an initial duration of 28 months or more; six of these 18 projects (33 percent) exceeded their initial cost and duration estimates by more than 10 percent.

Longer projects with initial estimated costs of more than \$10.0 million were less likely to be implemented within budget and duration. Eleven of 45 projects (24 percent) have an initial duration of 28 months or more and are expected to cost more than \$10.0 million; five of these projects exceeded initial cost estimates by an average of 76 percent with a range from 15 percent to 211 percent.

Observation 2: Timeframe of Procurement Activities

Using an acquisition plan which provides procurement planning processes can help maintain a project schedule by establishing a realistic timeframe to solicit and manage procurements. This timeframe can prevent delays caused by vendor evaluation and selection. All specifications, software, hardware, training, installation, and maintenance must be addressed in contract negotiations to minimize delays in executing

contracts. Some agencies have reported that the average time for completing procurement activities has exceeded initial estimates by six months to eight months.

Agencies should ensure that an acquisition plan contains sufficient detail regarding the overall structure of a project. Details should include milestone categories, the types of contractual relationships, and procedures for managing the contract. Additionally, standards should be clearly specified for projects from the earliest stages of the planning phase. This specification includes identifying system components and their operating environments. Finally, agencies should consider the following factors to select the appropriate contracting methods:

- whether the solution can be provided by vendors or partners;
- the extent to which the work is well-defined;
- how the project risk will be shared;
- the importance of the task to the schedule; and
- the need for certainty with regard to the project cost.

Agencies should prepare a request for proposal (RFP) consistent with state law and the *State of Texas Procurement and Contract Management Guide*. Typically, an RFP is recommended when factors other than price are to be considered or when objective criteria cannot be defined. Agency procurement staff should be consulted to help determine a reasonable timeline for the procurement process, and should consider the agency's evaluation process and executive sign-off procedures for major purchases. For contracts that are expected to exceed \$10.0 million in value, agencies are encouraged to notify QAT early in the process to prevent unnecessary delay in the final contract review. When evaluating vendors that bid on contracts, it is important to evaluate their past performance and current financial status. The final vendor selection should be made using the original approved selection criteria, including end-user feedback.

Data Center Services (DCS) agencies should engage the DCS team before posting a solicitation to include appropriate solicitation language asking vendors to offer a solution option that is hosted in a State Data Center; provide for better long-term network planning; and consult on DCS exemptions from the State Data Center if necessary.

Observation 3: Canceled Project

One project was canceled in the state's major technology project portfolio due to a loss of federal funding. This project will not be reinitiated, because the federal grant would need to be renewed each federal fiscal year for ongoing support and maintenance.

The Office of Court Administration (OCA) grant application to complete the Statewide eCitation System project was denied by the approval authority, the Texas Traffic Records Coordinating Committee (TRCC). The grant was denied because funding for ongoing support of approximately \$366,000 per year was not intended for grant funding to cover the ongoing maintenance and support. OCA notified the vendor that the contract was being terminated immediately, in accordance with the terms of the contract.

The contract with the vendor began in February 2018. The vendor had submitted the project work plan to OCA for acceptance, and payment was made for the deliverable. At the time of the cancellation, OCA had expended \$461,697 dollars on the estimated \$4.8 million project. The project, which was estimated to take 2.5 years to complete, was approximately 20 percent complete when cancelled.

QAT-MONITORED PROJECTS' STATUS

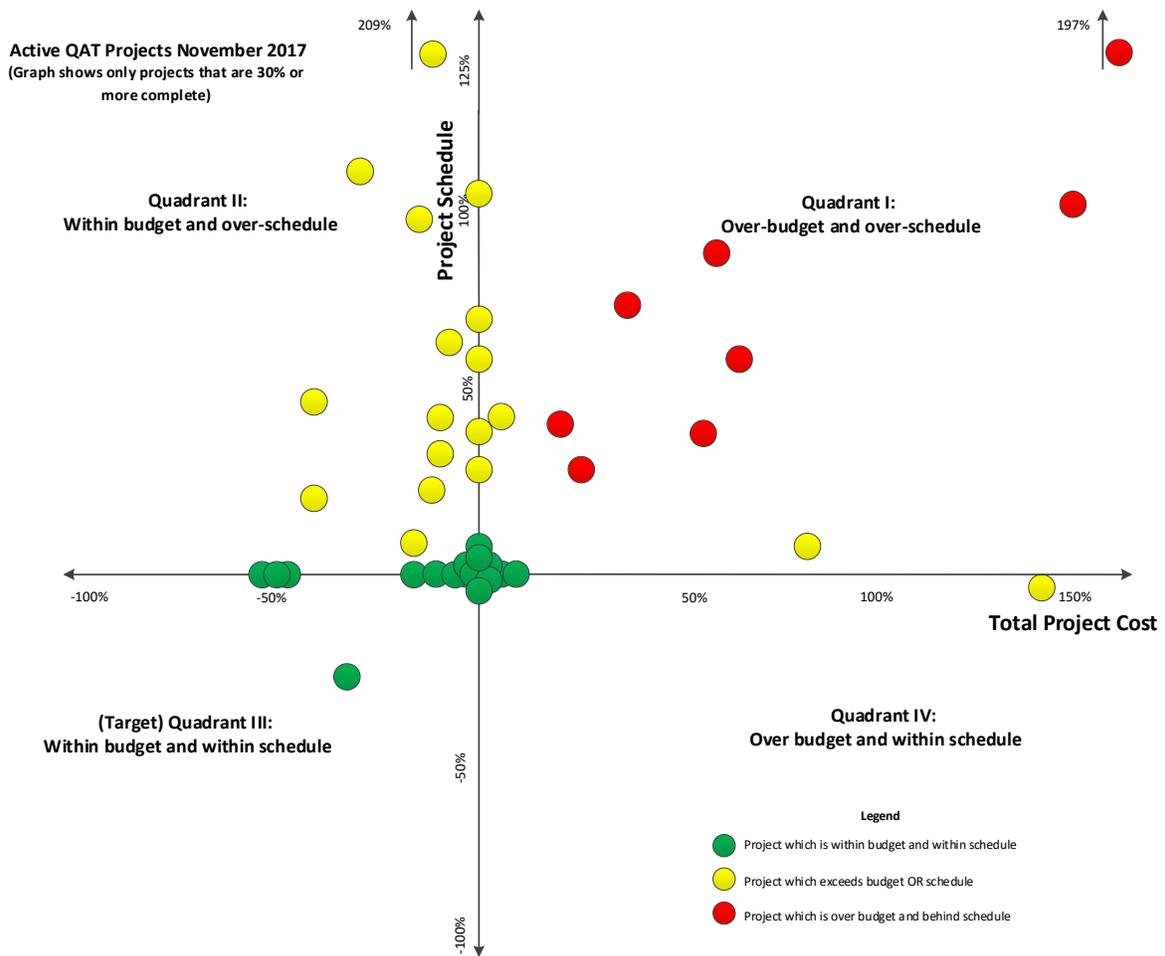
The Texas Government Code, Section 2054.151, states that "[t]he legislature intends that state agency information resources and information resources technology projects will be successfully completed on time and within budget and that the projects will function and provide benefits in the manner the agency

projected in its plans submitted to the department and in its appropriations requests submitted to the legislature.”

Figures 1 and 2 show the status of QAT-monitored projects that were 30 percent complete or more as of November 2017 and November 2018, respectively. Each circle on the two graphs represents a project. Projects that are less than 30 percent complete are not included in this analysis because these projects may be in the planning or procurement phase.

Figure 1 shows the 47 projects that were reported as 30 percent or more complete as of November 2017. Observations made during project oversight are included.

FIGURE 1
STATUS OF QUALITY ASSURANCE TEAM-MONITORED PROJECTS, AS OF NOVEMBER 2017



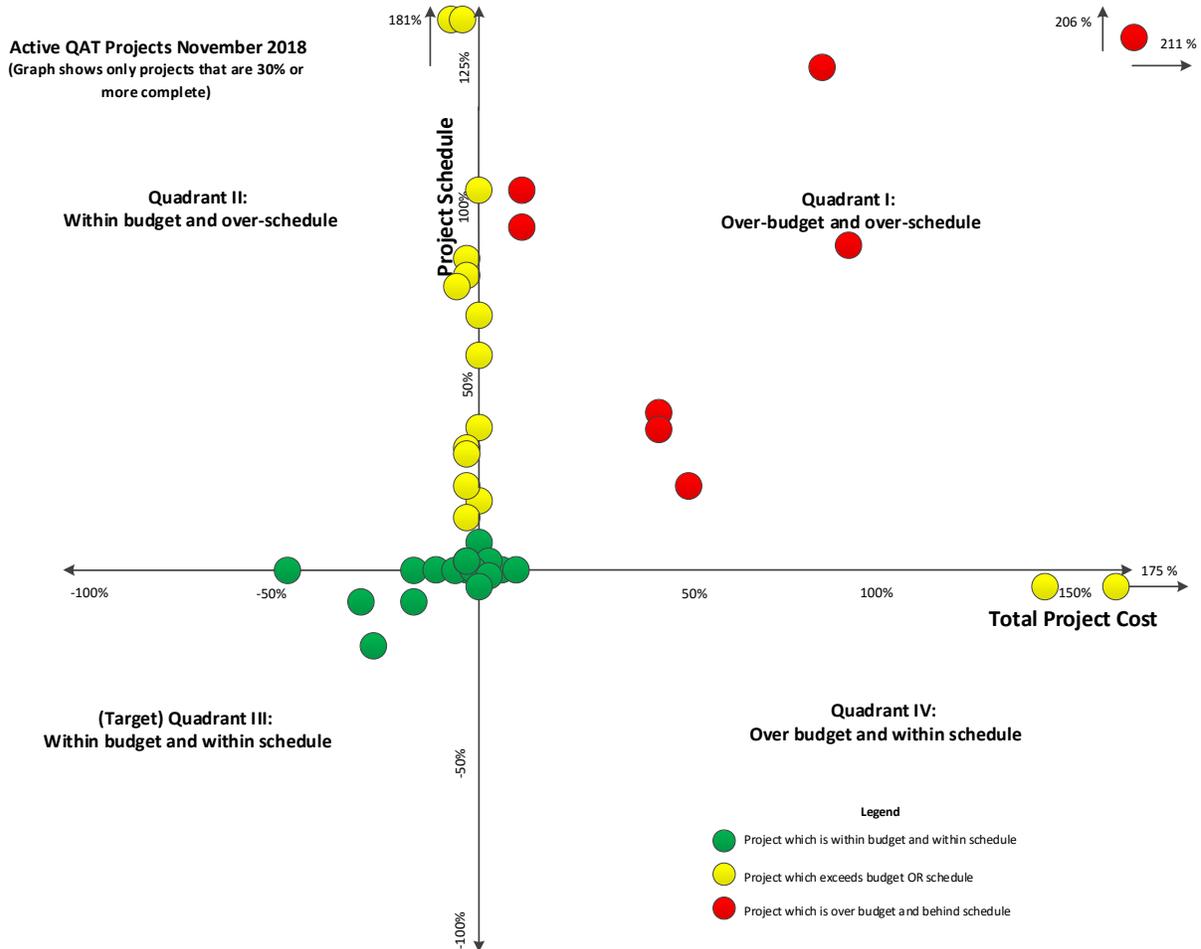
NOTES:

- (1) Each circle on the graph represents a project that was at least 30 percent complete.
- (2) Among the 47 projects, 16 projects, or 34 percent, are currently on or under their original estimated cost AND original estimated duration (green circles).
- (3) Among the 47 projects, 19 projects, or 40 percent, are currently exceeding their original estimated cost OR original estimated duration (yellow circles).
- (4) Among the 47 projects, 12 projects, or 26 percent, are currently exceeding their original estimated cost AND original estimated duration (red circles).

SOURCE: Agency self-reported monitoring reports.

Figure 2 shows the 45 projects that were reported as 30 percent or more complete as of November 2018. Observations made during project oversight are included.

FIGURE 2
STATUS OF QUALITY ASSURANCE TEAM-MONITORED PROJECTS AS OF NOVEMBER 2018



NOTES:

- (1) Each circle on the graph represents a project that was at least 30 percent complete (45 of 62 projects). It is assumed that a project within 10 percent of its budget or schedule is considered successful; results greater than 10 percent will change the dots' color. See Appendix A for further information on each project.
- (2) Among the 45 projects, 21 projects, or 47 percent, are currently on or under their original estimated cost AND original estimated duration (green circles).
- (3) Among the 45 projects, 16 projects, or 33 percent, are currently exceeding their original estimated cost OR original estimated duration (yellow circles).
- (4) Among the 45 projects, 8 projects, or 18 percent, are currently exceeding their original estimated cost AND original estimated duration (red circles).

SOURCE: Agency self-reported monitoring reports.

The position of each project in **Figures 1 and 2** is determined by comparing each project's current cost and duration to its initial cost and duration estimates. The initial cost and duration estimates were included in the agency's submission of its business case for project approval by QAT.

Figures 1 and 2 do not include other project performance criteria such as product quality, scope, end-user experience, and the extent to which the system or project satisfies the requirements. QAT will include these metrics in future annual reports. Similar types of criteria are available in other documents that agencies are required to submit to the state, such as the Execution Capability Assessment, Technical Architecture Assessment, and the Post-Implementation Review of Business Outcomes reports.

Beginning in January 2018, QAT expanded project measurements to include scope and quality as required by the Texas Government Code, Section 2054.159. These additional performance indicators were established in the Texas Administrative Code by DIR.

COMPARISON OF 2017 AND 2018 PROJECT PERFORMANCE

For projects reporting 30 percent or more completion as of November 2017, 45 percent were within their original estimated cost and original estimated duration while 26% exceeded both cost and duration. For projects reporting 30 percent or more completion as of November 2018, 43 percent are within their original estimated cost and duration while 18 percent exceeded both cost and duration. This consistency may be attributed to the agencies' following actions:

- providing reasonable timeframes related to procurement activities;
- allocating more time to developing initial costs, benefits, quality, and scope;
- managing projects in correlation to the agency project management office;
- waiting for further releases before incorporating new requirements on existing projects;
- thoroughly identifying system requirements; and
- dividing large-scale, system replacement projects into multiple, smaller-scale projects.

Projects with durations of three years and less are becoming common for projects, as information technology often becomes obsolete after that period. Despite this trend for shorter durations, some large-scale systems could have a development duration of five years or more. QAT has observed that these large-scale projects are the most likely to be over budget or behind schedule.

PROJECT HIGHLIGHTS DURING THE 2018–19 BIENNIUM

As previously mentioned, projects lasting less than 28 months were more likely to be successful (i.e., meet their cost and duration estimates). QAT monitored multiple successful projects during fiscal year 2017, including the following:

- The Texas Department of Insurance (TDI) procured a commercial off-the-shelf (COTS) document-management system with integrated modules, such as workflow, collaboration, and automatic document retention. This system replaced the Exigen Visiflow system that TDI used for document storage and workflow processing. The old system was at the end of its useful life, and its manufacturer no longer provided support.

POST-IMPLEMENTATION REVIEW OF BUSINESS OUTCOMES

A Post-implementation Review of Business Outcomes (PIRBO) describes the expected benefits and outcomes compared to the realized benefits and outcomes of implementing a major information resources project. In that report, the agency also identifies the lessons it learned that can be used to improve agency-level or state-level processes.

The agency must submit a PIRBO to QAT within six months after a project has been completed.

A second PIRBO must be submitted two years after project completion.

TDI began the document management project during fiscal year 2016. The initial estimated project cost was \$4.0 million. The initial planned project start and finish dates were December 2, 2015, and August 31, 2018, respectively. In June 2017, TDI used a Department of Information Resources Cooperative Contract to procure a COTS cloud-based system, which decreased the project cost to \$2.4 million. The agency implemented the project under budget and within duration.

- The Department of State Health Services (DSHS) began its Mental Health Integration Project during fiscal year 2016 to upgrade, migrate, and transform the mental health functions of the legacy Client Assignment and Registration (CARE) system. CARE is used by DSHS and was used at the Department of Aging and Disability Services. The system is operated by the Health and Human Services Commission. DSHS modernized the system by migrating mental health records and functionality from the legacy mainframe systems. DSHS also integrated mental health and substance abuse health information from the Clinical Management for Behavioral Health Services system.

The initial estimated project cost was \$7.0 million, and the project was estimated to start October 1, 2015, and finish August 31, 2017. In June 2017, the agency increased the project scope to support a new program model for local behavioral health authorities. The new model integrates the delivery of behavioral health services and service providers for mental health services and substance use disorder services within local health authorities' oversight. DSHS kept the project on time for delivery, including this modification.

Large technology projects that require longer than 27 months to complete are complex and often require multiple components to be developed and integrated into a customized solution. The following example shows this complexity:

- The core application for the Teacher Retirement System's (TRS) pension administration system is more than 26 years old. The system has become obsolete operationally with inefficient hardware or software technology. The system is difficult and costly to maintain, less resilient, and presents a high degree of security risk.

TRS began the TRS Enterprise Application Modernization project during fiscal year 2012. The initial estimated project cost was \$96.1 million with initial planned project start date of September 1, 2011, and finish date of March 30, 2017. Currently, the project is 33 percent over budget and 46 percent over schedule. The estimated cost of the project increased to \$114.9 million due to updated benefit calculations and the addition of contingency operations.

The finish date for the project was extended to August 31, 2018, due to the following factors: (1) a project improvement phase being added to the original program scope to prevent high risks from materializing; and 2) approval of change requests relating to products, services and data storage. In November 2016, the finish date for the project was extended to August 31, 2019. The agency identified additional critical functionality that was needed before the first phase was completed. Some of this functionality is a result of missed requirements while others are a result of additional reporting requirements and rule changes that have occurred during the past two years.

In June 2016, the agency increased the estimated project costs to \$122.5 million due to project changes resulting from legislative actions. In May 2018, the agency increased costs from 128.0 million due to Phase 1 Stabilization, including correction of coding defects, installation of a new operating system and the addition of system testing. This action also extended the schedule to October 31, 2019.

ADDITIONAL QAT OVERSIGHT INITIATIVES

Contract Oversight

Pursuant to the Eighty-fifth Legislature, General Appropriations Act, 2018–19 Biennium, Article IX, Section 9.01, any contract for the development of major information resources projects with an expected value of

greater than \$10.0 million must be reviewed and approved by QAT before it can be executed by an agency. QAT will review the contract to ensure that it follows the best practices established in the *State of Texas Procurement and Contract Management Guide* and all applicable rules and regulations. QAT may provide feedback regarding reviewed contracts and reserves the right to waive the contract review requirement within certain circumstances. QAT currently has four contracts in review that are estimated to be valued at more than \$10.0 million and require review and approval, shown in Figure 3.

FIGURE 3
CONTRACTS WITHIN QUALITY ASSURANCE TEAM REVIEW, AS OF NOVEMBER 2018

AGENCY	CONTRACTS
Health and Human Services Commission	Provider Management and Enrollment System
Texas Department of Transportation	Modernize Project and Portfolio Management
	Toll Operations Back-office System
	Outsourced Managed Information Technology Services

NOTE: Contract costs and duration are not known until the contract is executed.
SOURCE: Quality Assurance Team.

The Comptroller of Public Accounts (CPA), Statewide Procurement Division (SPD), published the *State of Texas Procurement and Contract Management Guide* (TPCMG) in June 2018. The guide combined the objectives of the previously published *Texas Procurement Manual* and the *Texas Contract Management Guide* and updated best practices and laws in state contracting. TPCM provides state agencies guidance regarding the full procurement cycle, and QAT conducts contract reviews based on adherence to the practices within the guide.

Amendments that increase a contract's value by 10 percent or more require prior written approval from QAT. This requirement also applies if the expected total value of an amended contract element exceeds the total value of the same element in the initial contract by 10 percent or more. QAT may provide feedback regarding reviewed amendments, and may waive the amendment review requirement within certain circumstances. This approval is required to ensure continuity of services to the state's taxpayers.

Agencies must notify QAT when they advertise a request for proposal, request for bid, or other similar process common to the competitive bidding processes for a major information resources project. Additionally, agencies must notify QAT within 10 business days of awarding a contract for a major information resources project valued at greater than or equal to \$10.0 million for QAT review.

QAT also has fostered increased collaboration among oversight agencies, enabling DIR, CPA, LBB, and SAO to partner on training initiatives through CPA's mandatory procurement training and continuing education programs. QAT also has provided improved insight into statewide contracting issues, informing the focus of SPD's continuing education offerings. The Procurement Oversight and Delegation team within SPD, which administers the Contract Advisory Team, has collaborated with QAT to provide additional oversight of state agencies' adherence to contracting requirements. Although the teams cannot catch everything in the state's decentralized system, the increased communication and partnership has enabled better overall oversight.

QAT also collaborates with agencies to provide feedback regarding contracts that are not subject to formal approval. For example, QAT is collaborating with DIR on its Next Generation DCS procurement. Because this project is not for system development, QAT will not review and approve the contract formally. As required by statute, the solicitation will be reviewed by the Contract Advisory Team (CAT), and QAT will coordinate with CAT to remain informed regarding the planned DCS procurements. Considering the complexity and the number of agencies affected by DCS services, QAT also may request that DIR periodically provides QAT with updates or documents related to the project.

Project Oversight: Public Dashboard

As of September 1, 2017, as required by Senate Bill 1910, Eighty-fifth Legislature, Regular Session, 2017, agencies must submit an execution capability assessment to determine their capability for implementing a project. The intent is to decrease agencies' financial risk, and to increase the probability of the project's successful implementation. Additionally, agencies must perform technical architecture assessments, as required by Senate Bill 533, Eighty-fifth Legislature, Regular Session, 2017, in consultation with DIR, of the proposed technical architecture for projects to ensure that industry-accepted architecture standards are being utilized.

As a result of House Bill 3275, Eighty-fifth Legislature, Regular Session, 2017, DIR, in consultation with QAT, developed performance indicators in the areas of schedule, cost, scope, and quality. QAT's public dashboard beginning in October 2018, reflects this information to provide state leadership, state agencies, and the public with the ability to view details of major information resources projects online and to track their progress. All agencies will eventually report schedule and performance indicators for QAT projects. QAT is collaborating with agencies to develop and report such indicators.

The QAT dashboard includes interactive graphics developed by LBB staff. The link can be found under figure 4. The dashboard will be updated monthly and will show a summary of projects monitored by QAT each month, along with the detailed performance metrics by project for the month. Figure 4 shows the QAT dashboard.

The performance indicators for the areas of budget, schedule, scope, and quality reported from state agencies for each project are calculated in the following manner:

- Schedule performance index (SPI) – SPI is a standard project management measure of how close the project is to being completed compared to the schedule. As a ratio it is calculated by dividing the budgeted cost of work performed, or earned value, by the planned value.
- Cost performance index (CPI) – CPI is a standard project management measure of the financial effectiveness and efficiency of a project. It represents the amount of completed work for every unit of cost spent. As a ratio it is calculated by dividing the budgeted cost of work performed, or earned value, by the actual cost of the work performed.

Project Level Schedule Performance Index and Cost Performance Index Rating

Corresponding Color

0.90 or greater	Green
Between 0.80 and less than 0.90	Yellow
Less than 0.80	Red

- Scope performance – Is a measure derived from the reviewing the budget impact of project scope changes over the preceding 12 months.
 - Scope changes that impacted budget by 10% or less are considered Green
 - Scope changes that impacted budget by >10% and less than or equal to 20% are considered Yellow
 - Scope changes that impacted budget by >20% are considered Red

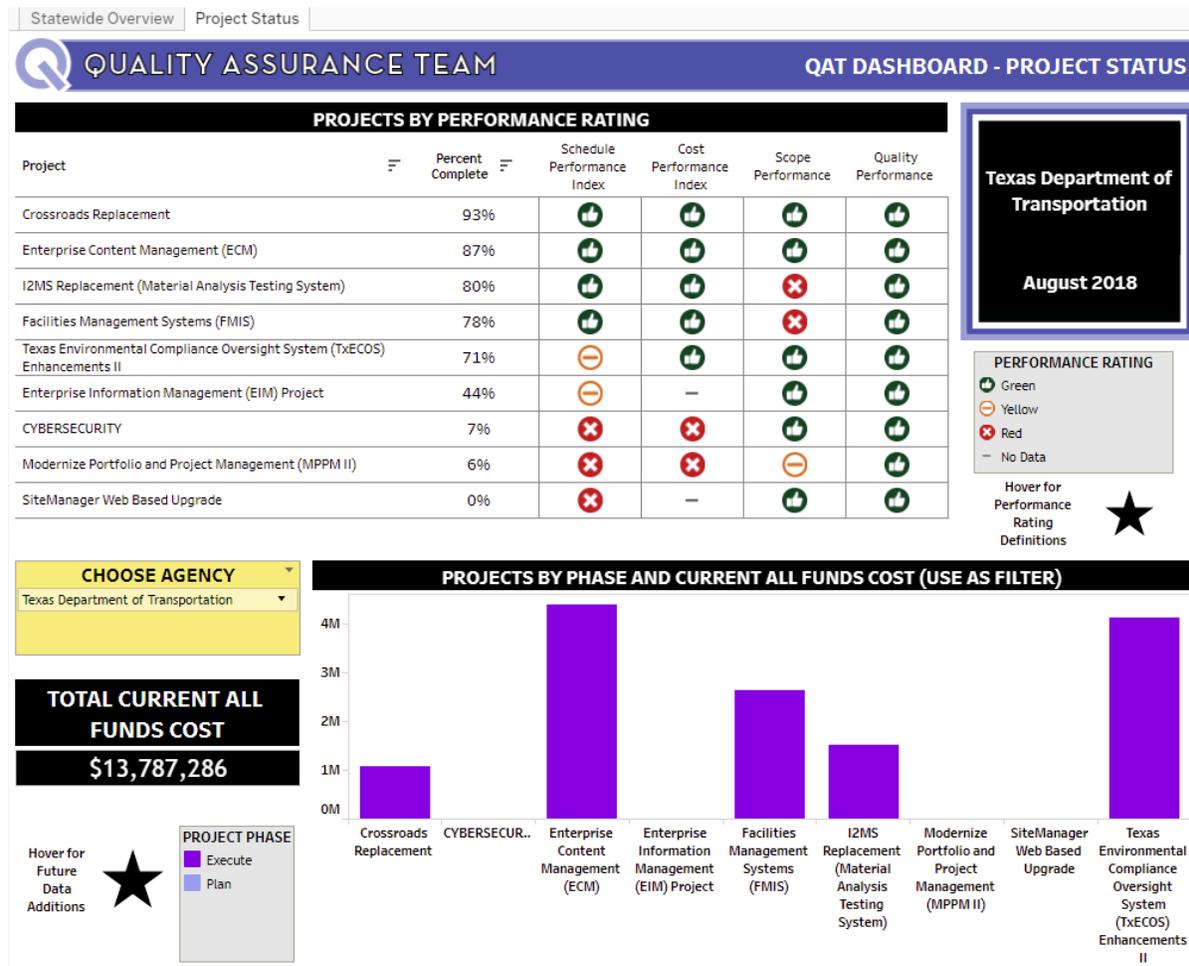
Scope Performance Index

Scope changes in the preceding 12 months that impact the project budget by an increase of:	Corresponding Color
10% or less	Green
Greater than 10% and less than or equal to 20%	Yellow
Greater than 20%	Red

- Quality performance – Is a measure derived from a series of quality measures specific to each project and each project phase. Quality is measured throughout the project lifecycle during project deliverable reviews, during testing, and after the system has implemented. The quality of vendor performance will also be measured. Quality Performance is measured against agency developed Quality Management Plans or Quality Registers.

Quality Performance Index	Corresponding Color
Project is achieving its stated quality objectives.	Green
Project is missing some of its quality objectives and requires agency management notification.	Yellow
Project is not achieving its quality objectives and requires agency management intervention.	Red

FIGURE 4
QUALITY ASSURANCE TEAM DASHBOARD, NOVEMBER 2018



SOURCE: <https://public.tableau.com/profile/state.of.texas.lbb#!/vizhome/DIRFINAL/StatewideOverview>

As required by Senate Bill 533, DIR implemented the Statewide Project Automated Reporting (SPAR) system to track and review projects. Agencies that are implementing major information resources projects enter project data directly into the SPAR system for review by QAT. Additionally, the SPAR system will track whether an agency has considered cloud computing service options as required in Senate Bill 532 Eighty-fifth Legislature, Regular Session, and whether the agency has considered QAT best practices as required in Senate Bill 533. To ensure that agencies understand all requirements associated with these projects, the use of the Project Delivery Framework, the use of the SPAR system, and the public dashboard, DIR provides training to agency staff through agency visits, individual trainings, and DIR sponsored forums. Agencies are encouraged to request trainings directly with DIR at <https://dir.texas.gov/>

As part of continuous process improvement efforts, QAT and DIR are collaborating on several developments to help agencies improve the delivery of projects. Figure 5 shows these improvements efforts.

FIGURE 5
QUALITY ASSURANCE TEAM AND DEPARTMENT OF INFORMATION RESOURCES IMPROVEMENTS
AS OF NOVEMBER 2018

- The Quality Assurance Team (QAT) and the Department of Information Resources (DIR) will emphasize bringing best practices in modern information technology project management outreach and training with agencies using various methods: webinars, individual training, classroom settings, and electronic delivery of content.
- QAT will coordinate information sharing with the Legislative Budget Board Contracts Oversight and Technology Team.
- QAT may require a project demonstration after project deployment.
- The Texas Administrative Code, Chapter 216, which pertains to project management practices, was revised during fiscal year 2018 to help agency practitioners manage legislative changes with regards to projects.
- QAT requires an execution capability assessment for review, which helps decrease the agency's risk in implementing the project.
- QAT requires a technical architecture assessment for review, which helps ensure that an agency is using industry-accepted architecture standards in planning for implementation.

SOURCE: Quality Assurance Team.

BEST PRACTICES USED BY AGENCIES

After reviewing agency project frameworks, QAT identified the following best practices that contribute to the success of state agency information systems:

- divide large projects into smaller, more manageable projects with schedules of less than 28 months and less than \$10 million budget;
- allocate adequate time to identify project requirements, prepare for procurement activities with vendors, and perform user-acceptance testing;
- engage the DCS team before posting a solicitation to include appropriate solicitation language asking vendors to offer a solution option that is hosted in a State Data Center; provide for better long-term network planning; and consult on DCS exemptions from the State Data Center if necessary;
- include security planning in the initiation phase of the project and include code review, vulnerability testing and scanning throughout the project lifecycle; conduct a penetration test of the application and remediate findings before moving to production;
- develop methods to quantify major information resources project benefits;
- engage an independent verification and validation company for projects valued at greater than \$10.0 million to help oversee complex projects; agency budgets should accommodate the estimated cost;
- retain original estimates regarding scope and defer new requirements and functionality to a new project or phase at a later time;
- create a phase gate process that requires acceptance of the system test deliverable, i.e. remediation of all severity 1 and severity 2 system test defects and correction of any performance testing deficiencies, prior to allowing the project to proceed to the user-acceptance testing phase.
- include network performance and capacity planning as part of project scope particularly when new types of data (e.g., electronic images of customer files) are sent to field offices as a result of the project; and

- consider the use of modular contracting to decrease project risk and to incentivize contractor performance while meeting an agency's need for timely access to rapidly changing technology. Modular contracting divides large systems into small, independent modules of work, developed by one or more vendors, which can be combined to form a complete system. Agencies also can remediate problems with individual modules or vendors without jeopardizing the success of the entire project.

QAT identified strategies that agencies should use to ensure an appropriate methodology for project selection, control, and evaluation based on alignment with business goals and objectives. Figure 6 shows these strategies as of November 2018.

FIGURE 6
STRATEGIES FOR AN APPROPRIATE PROJECT METHODOLOGY

- | | |
|---|--|
| <ul style="list-style-type: none"> • Provide adequate time for project procurement activities. • Consider the allowable funding for a biennium when planning a project and contract. • Include employee benefit costs as part of full-time-equivalent position costs when reporting project costs in monitoring reports. • Consider requirements and standards in the Texas Administrative Code, Chapter 213, Electronic and Information Resources Accessibility, during software analysis, development, and testing. • Submit project benefits realization documents on schedule. These documents often are submitted late or are submitted with missing or inadequate information. | <ul style="list-style-type: none"> • Conduct a thorough analysis of resource availability before submitting a project to agency management for approval; failure to adhere to this practice can lead to unrealistic expectations. • Submit quarterly monitoring reports within 30 days after the quarter's end. Monitoring reports often are submitted late or with inaccurate or inconsistent information. • Submit a contract amendment change order when change orders or amendments increase the total contract amount by 10 percent or more. |
|---|--|

SOURCE: Quality Assurance Team.

CONCLUSION

Agencies retain ultimate responsibility for project management and success. QAT seeks to increase transparency and provide guidance to agencies executing major information resources projects. To this end, QAT provides recommendations to enhance an agency's ability to satisfy commitments made to state leadership. Projects that stay on track provide adequate time for procurement activities, align scope with approved budgets, and defer new requirements until a later phase or new project can be initiated. QAT will continue to collaborate with agencies and state leadership to execute effective project oversight projects.

APPENDIX A

MAJOR INFORMATION RESOURCES PROJECTS REPORTED TO THE QUALITY ASSURANCE TEAM

ORDERED ALPHABETICALLY BY AGENCY

(Data is self-reported by the agencies. Original budgets do not include operational costs after implementation.) Expenditures to date are actual expenditures and do not include agency obligation costs. A 'TBD' for Scope or Quality indicates the agency will report those metrics on their next monitoring report. A 'TBD' for Budget or Schedule indicates the project has either not started or just started and not able to report costs yet. Individual performance metrics color coding is defined on pages 10 and 11 of the report.

Colored circles are identified for projects that are reported as 30 percent or more complete as of November 2018.

● Indicates the project is currently exceeding the original estimated cost AND original estimated duration by more than 10 percent.

● Indicates the project is currently exceeding the original estimated cost OR original estimated duration by more than 10 percent.

● Indicates the project is currently within 10 percent of the original estimated cost AND original estimated duration.

AGENCY	PROJECT	(IN MILLIONS)			PERCENTAGE COMPLETE	ORIGINAL ESTIMATED DATES	CURRENT ESTIMATED DATES
		ORIGINAL BUDGET	CURRENT BUDGET	EXPENDITURES TO DATE			
Commission on State Emergency Communications	State-level Digital 9-1-1 Network (1)	\$14.7	\$14.7	\$8.7	40%	09/15 to 08/18	09/15 to 08/18
	Budget Performance – ●						
	Schedule Performance – ●						
	Scope Performance – ●						
	Quality Performance – ●						
Comptroller of Public Accounts	Centralized Accounting Payroll and Personnel System (CAPPS) Performance Management – Agency Deployment FY 17 Project (2)	\$4.4	\$4.4	\$1.9	100%	11/16 to 12/17	11/16 to 12/17
Comptroller of Public Accounts	Centralized Accounting Payroll and Personnel System (CAPPS) Human Resources/Payroll – Agency Deployment FY17 (2)	\$16.2	\$16.2	\$13.4	100%	09/16 to 09/17	09/16 to 09/17
Comptroller of Public Accounts	Centralized Accounting Payroll and Personnel System (CAPPS) Financials – Agency Deployment FY18	\$15.7	\$15.7	\$12.0	98%	09/17 to 10/18	09/17 to 10/18
	Budget Performance – ●						
	Schedule Performance – ●						
	Scope Performance – TBD						
	Quality Performance – TBD						

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

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● Indicates the project is currently within 10 percent of the original estimated cost AND original estimated duration.

AGENCY	PROJECT	(IN MILLIONS)				PERCENTAGE COMPLETE	ORIGINAL ESTIMATED DATES	CURRENT ESTIMATED DATES
		ORIGINAL BUDGET	CURRENT BUDGET	EXPENDITURES TO DATE				
Texas Workforce Commission	● Enterprise Contracting System Phase II	\$1.7	\$1.7	\$0.9	76%	09/17 to 08/18	09/17 to 12/18	
	Budget Performance – ●							
	Schedule Performance – ●							
	Scope Performance – ●							
	Quality Performance – ●							
Texas Workforce Commission	● Enterprise Data Warehouse (EDW) Project	\$4.6	\$4.6	\$0.5	29%	12/17 to 11/19	12/17 to 08/19	
	Budget Performance – ●							
	Schedule Performance – ●							
	Scope Performance – ●							
	Quality Performance – ●							
Texas Workforce Commission	● Short Time Compensation (Shared Work) Portal Project	\$3.0	\$2.8	\$0.3	23%	12/18 to 02/20	12/18 to 08/19	
	Budget Performance – ●							
	Schedule Performance – ●							
	Scope Performance – ●							
	Quality Performance – ●							
Texas Workforce Commission	● WorkInTexas (WIT) Project	\$18.4	\$10.0	\$1.15	42%	09/17 to 08/19	09/17 to 08/19	
	Budget Performance – ●							
	Schedule Performance – ●							
	Scope Performance – ●							
	Quality Performance – ●							
Total Current Project Costs			\$1.38					

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

(Data is self-reported by the agencies. Original budgets do not include operational costs after implementation.) Expenditures to date are actual expenditures and do not include agency obligation costs. A 'TBD' for Scope or Quality indicates the agency will report those metrics on their next monitoring report. A 'TBD' for Budget or Schedule indicates the project has either not started or just started and not able to report costs yet. Individual performance metrics color coding is defined on pages 10 and 11 of the report.

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- Indicates the project is currently within 10 percent of the original estimated cost AND original estimated duration.

AGENCY	PROJECT	(IN MILLIONS)			PERCENTAGE COMPLETE	ORIGINAL ESTIMATED DATES	CURRENT ESTIMATED DATES
		ORIGINAL BUDGET	CURRENT BUDGET	EXPENDITURES TO DATE			

NOTES:

- (1) The Quality Assurance Team requires agencies to include informational and capital costs associated with the System Development Life Cycle for project costs to date.
- (2) A Post-implementation Review of Business Outcomes report is due within six months of project completion and closeout. This project completed prior to performance metrics being implemented.
- (3) The Comptroller of Public Accounts revised the project cost to \$15.0 million based on vendor responses.
- (4) The Department of Family and Protective Services recently began providing monitoring reports to QAT, which were approximately one year behind schedule.
- (5) In March 2018, the Texas Department of Transportation (TxDOT) terminated the contract with the vendor for failing to deliver milestones on time. TxDOT is using its in-house vendor, NTT Data, to develop the solution architecture and to implement an agile development methodology.
- (6) The General Land Office delayed the start date by one year to August 30, 2018, due to the Governor's statewide emergency declaration for Hurricane Harvey.
- (7) OCA canceled the project due to the cancellation of grant funding.

SOURCE: Quality Assurance Team information from agency monitoring reports. Original costs and schedules derived from agency business case submission at time of project approval.

CONTACT

An electronic version of this report is available at qat.state.tx.us. If you have any questions, please contact Robert Wood of the Comptroller of Public Accounts at (512) 463-3973, Tom Niland of the Department of Information Resources at (512) 475-4700, Richard Corbell of the Legislative Budget Board at (512) 463-1200, or Michael Clayton of the State Auditor's Office at (512) 936-9500.