

Results of Jacobs Engineering's Program Management Monitoring *for the Fort Bend Independent School District*

PREPARED AND SUBMITTED BY:

GIBSON

AN EDUCATION CONSULTING & RESEARCH GROUP

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Introduction

In March 2015, Fort Bend Independent School District (ISD) selected Jacobs Engineering (Jacobs) to be the district's Program Manager for the 2014 \$484 million bond program (herein after referred to as "the Program"). In this role, Jacobs oversees all bond-funded projects for the duration of the Program. Fort Bend ISD has asked Gibson Consulting Group, Inc. (Gibson) in conjunction with PMCM² (Gibson's construction management consulting subcontractor) to conduct audit activities to monitor the district's oversight of Jacobs in fulfilling their roles and responsibilities under the district's contract for Program Management Services, ensuring compliance with the Design & Construction Procedures Manual, and adhering to the Jacobs Engineering's Program Management Plan. This work began in fall 2016 and was completed in May 2017.

Scope and Approach

The scope of this audit involved several aspects of Fort Bend ISD's monitoring of Jacobs' performance and progress:

- **Program performance** – the overall bond program was evaluated in the context of work quality, project and program schedule, and cost.
- **Contract compliance** – the audit team sought evidence to substantiate Jacobs' compliance with contract requirements, including those provisions related to cost monitoring and adjustment and the completion of site observation reports.
- **Staffing** – the audit compared Jacobs' staffing commitment in the contract to actual staffing and analyzed Fort Bend ISD staffing levels dedicated to Jacobs' oversight.
- **Progress reporting** – the audit team evaluated Jacobs' progress reports against best practices for monitoring construction programs as well as the quality of data contained in the progress reports. The audit team also attended Bond Stakeholder Committee meetings in 2017 to observe the communication by FBISD and Jacobs of project and program status, work quality, and financial information (e.g., budget, contingency).

Data were requested to support audit activities in each of the above areas. These data included:

- Organizational charts for Fort Bend ISD and Jacobs
- Staff rosters for Jacobs and Fort Bend ISD
- Job descriptions of FBISD staff
- Board meeting minutes
- Board information packets
- Bid tabulations for the 2014 bond program
- Sample of contractor monthly schedule submittals

- List of any pending litigation related to the bond program

Beginning in January 2017, the audit team obtained direct access to *Prolog*, the Project Management Information System (PMIS) used by Jacobs' and Fort Bend ISD to report all project and program level transactions and communications, as well as progress reporting. Through this access, the audit team was able to audit program information, activities and reporting directly from the system.

Audit Summary

Preliminary audit findings were shared with Fort Bend ISD administration and the Fort Bend ISD Board Audit Committee in March 2017. This report presents the results of the initial assessment (based on data received through February 28, 2017) and additional audit activities conducted through May 20, 2017.

Overall, the bond program is progressing, high quality work is being done, and most projects appear to be on schedule. However, several major findings were noted during this audit. Some have been resolved, and others are still in progress.

- Jacobs appears to have met its contractual obligations with respect to staffing, but Fort Bend ISD was late in filling several of its own key positions including the Executive Director of Design and Construction and the Site Inspector (observation) positions. Further, Fort Bend ISD does not have any positions dedicated exclusively to monitoring Jacobs' activities and performance through analyzing *Prolog* system data as was done during this audit.
- Until noted by the auditors in March 2017, most of the project schedules included in the monthly progress reports were inappropriately based on bid package (multiple project) contract dates and not individual project dates. These have since been corrected.
- The audit team found no documentation that referred specifically to "cost adjustment sessions" as required by the Jacobs contract. These sessions were to be conducted during the design phase if project estimates were more than 3 percent above the original budget. The audit team did review documentation from contractor negotiations that resulted in lower costs however.
- As of March 2017, one elementary school, Patterson Elementary, was at risk of not being completed before the start of school in August 2017. This information was acknowledged by both Fort Bend ISD administrators and Jacobs' program leaders, but they were receiving assurances from the contractor that the school would be completed on time. The audit team's opinion was that unless changes were made, the risk of not opening in time was unacceptably high. The audit team made specific suggestions to Fort Bend ISD to accelerate the schedule, and based on subsequent site observations by the audit team this project now has a higher probability of being finished before the start of school.

- Site observations¹ were not always conducted by Jacobs or FBISD in accordance with construction management procedures. The audit work related to evaluating the site observation frequency was affected by inaccurate project schedule information (mentioned above), as the reported days of site construction were not accurate at the project level. However, after supplemental manual schedules were reviewed and the *Prolog* scheduling information was updated, the audit team still noted gaps in site observations.
- Supplemental program and project progress reporting could have improved FBISD's ability to monitor Jacobs' activity and performance. The district has applied an acceptable level of program and project progress reporting that is made available to the public, but lower-level internal progress reporting would help improve day-to-day management and oversight of individual construction projects.

Five recommendations are made in this report (see Table 1). Other findings noted earlier in the year have already been acted on. All of the recommendations are considered high priority.

Table 1. Summary of Recommendations

Priority	No.	Recommendation
High	1	Implement controls to ensure timely occurrence of site observations.
High	2	Establish check box indicators on Prolog observation reports to track outstanding action items related to non-compliance.
High	3	Take steps to mitigate cost escalation.
High	4	Ensure that future construction contracts hold contractors accountable for project-level deadlines.
High	5	Develop additional progress metrics for internal progress reporting and monitoring.

The remainder of this report presents more detailed information regarding the findings and recommendations organized in the following sections:

1. Staffing
2. Project Schedules
3. Work Quality
4. Project and Program Budget Performance
5. Program Accountability/Progress Reporting

¹ Site observations were to be conducted by Jacobs or Fort Bend ISD staff.

Section 1 – Staffing

This section addresses both Jacobs staffing and Fort Bend ISD staffing related to the 2014 bond program. The district implemented a hybrid organizational structure for the program whereby both Fort Bend ISD and Jacobs' staff work together in the Office of Design and Construction, reporting up through the Jacobs Program Director, who answers to the Executive Director of Design and Construction.

Jacobs Staffing

The Jacobs contract included an organization chart of positions to be assigned for the Fort Bend ISD 2014 bond program. The audit team reviewed these staffing requirements and compared them to the Jacobs' staff roster provided by Fort Bend ISD, which included full-time staff positions located at the Fort Bend ISD Design and Construction Office and part-time Jacobs' staff working from several remote Jacobs' offices.

As of January 31, 2017, Jacobs had the following full-time staff on site at Fort Bend ISD:

- Program Director
- Operations Manager
- Construction Manager
- Controls Manager
- Project Controls
- Project Manager (3)
- Project Engineer (5)
- Project Inspector
- Administrative Assistant

Additional part-time staff included a Furniture Fixtures and Equipment (FFE) Coordinator, a Safety Manager, a Scheduler, a Design Review Team Manager, two *Prolog* support staff and a Project Estimator.

Based on this review and discussions with the Fort Bend ISD Office of Design and Construction leadership, the audit team concluded that Jacobs is meeting or exceeding its contractual requirements for staffing.

Fort Bend ISD Staffing

Fort Bend ISD had been slow in filling several key positions including the Executive Director of Design and Construction and two site inspectors; however, as of April 30, 2017 these have all been filled. It is important to note that:

- The Executive Director of Design and Construction position remained vacant since August 31, 2016 and was filled in April 2017. In the interim, the Chief Operating Officer assumed responsibility for both positions.

- One Fort Bend ISD site inspector was hired during fall 2016; the other was not hired until January 2017. This affected Fort Bend ISD's ability to perform the required site observations during construction activities prior to January 31, 2017. See related discussion site observations in *Section 4 – Compliance* of this report.
- No Fort Bend ISD positions in the Design and Construction Department or other district department were dedicated to monitoring Jacobs' activities in the *Prolog* information system and bringing issues or exception items to the attention of management. As of April 30, 2017, this remained the case.

Section 2 – Project Schedules

This section discusses project-level schedule reporting and monitoring, as well as the schedule of James Patterson Elementary School, which the audit team believed was at risk of not being completed in time for the opening of school in August.

Project-Level Schedule Reporting

Monthly status reports are re obtained directly from the *Prolog* system and posted to the Fort Bend ISD Bond Programs website. These reports have project summaries that include baseline schedules and current start and end dates for the four project stages. Project stages include the design, bidding and negotiations, construction, and move-in stages.

Figure 1 displays the schedule summary as of February 28, 2017 for the Donald Leonetti Elementary School new construction project, with the baseline timelines in teal and the current (as of February 28, 2017) timelines in gray. This schedule shows actual move-in beginning in November 2017, even though the project is actually scheduled to be completed by the start of school in August.

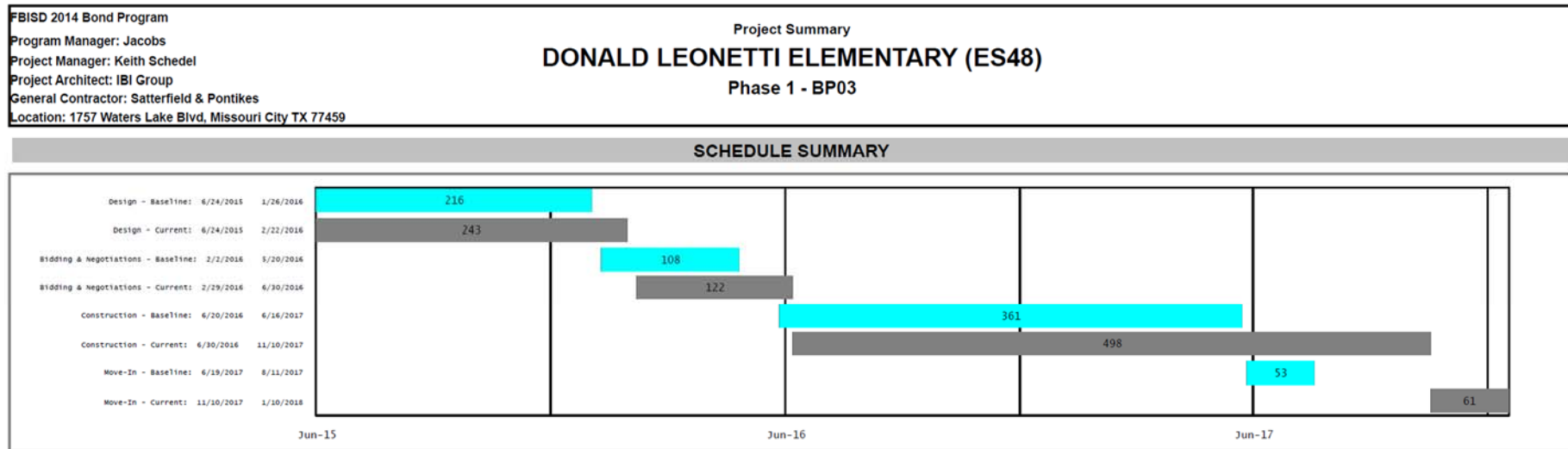
In early March 2017, Gibson was informed that these schedules reflected the dates that the bid package contracts begin and end, as opposed to the actual start and end dates of the phases of individual projects. Bid packages may contain multiple projects with different project schedules for each. The progress reports specifically mention “project” progress, implying that these dates relate to specific construction projects. This was not the case. The Office of Design and Construction asserted that this approach was agreed to up front by district leadership and the board.

Upon notifying the district of this finding, Fort Bend ISD corrected the project information and the following explanatory notice was posted on the bond program website:

“Important Notice: During a recent internal audit of the 2014 Bond Program, it was determined the Schedule Summary reported for each project includes “Construction – Current” and “Move-In – Current” beginning and ending dates that are based on the dates construction contracts begin and end, not on the dates actual construction began and is projected to end. Thus, the dates used, makes it appear as if bond projects are significantly behind schedule, which is not the case. This information was reported to the Board of Trustees’ Audit Committee on Wednesday, March 22, 2017, and staff is working to update the reporting system to ensure stakeholders are able to view the actual project construction beginning and projected ending dates. At this time, we expect the reporting system to be updated by April 15, 2017.”

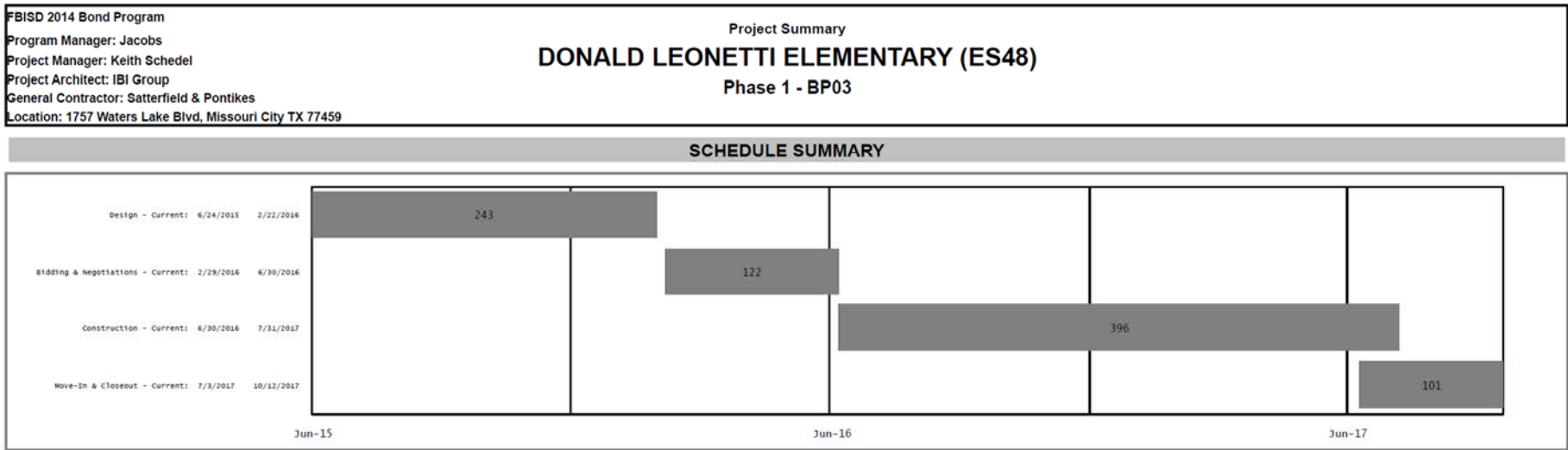
The current dates of all project schedules were revised to reflect the actual start and end dates for all phases of the 96 projects. Figure 2 presents the updated schedule for the Donald Leonetti Elementary project. “Baseline” or original schedule information was removed from the project schedules because these were presented at the bid package level and not the project level.

Figure 1. Donald Leonetti Elementary Project Schedule Summary, February 28, 2017



Source: Fort Bend ISD Bond Programs website, 2/28/2017

Figure 2. Revised Donald Leonetti Elementary Project Schedule Summary, April 30, 2017



Source: Fort Bend ISD Bond Programs website, 4/30/2017

Because the “project” level data relied on by the audit team reflected contract (bid package) and not project dates, the audit team’s efforts to conduct audit testing of project schedules did not result in meaningful findings.

The audit team also relied on the original project schedule dates to perform audit tests related to required site observations during the construction phase. Because the construction periods in the contract (bid package) schedules were longer than the individual project schedules, reliable audit testing could not be performed in this regard either. See *Section 3 – Work Quality* of this report regarding audit testing of site observations.

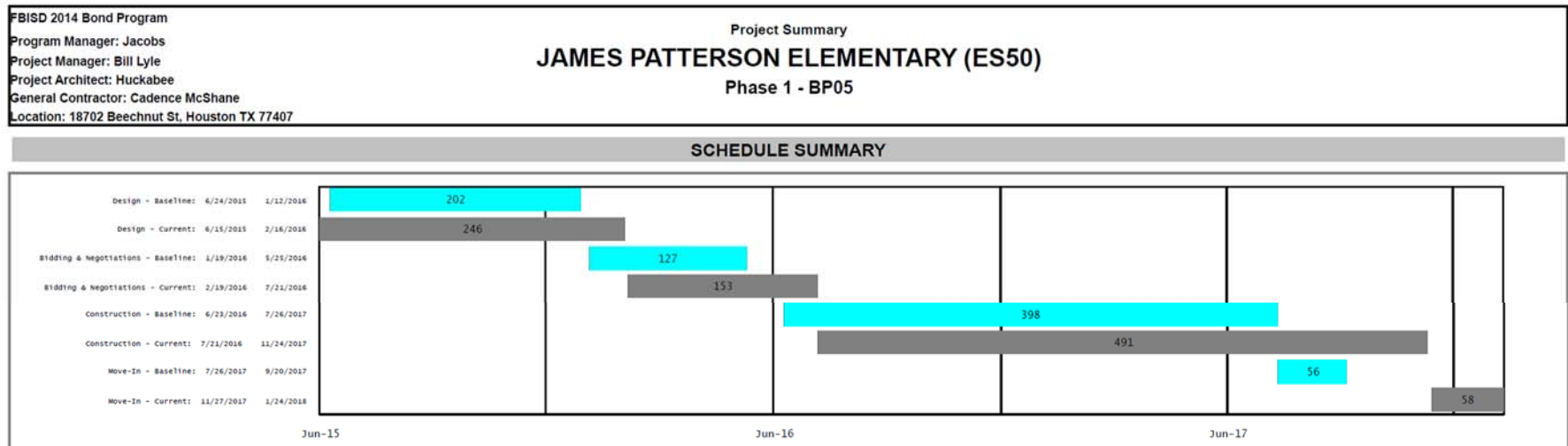
The schedules now publicly posted on the Fort Bend ISD Bond Program website properly reflect the actual start and end dates for all projects in the program. The change affected more than 60 projects.

James Patterson Elementary School

The audit team reviewed schedules on a sample of bond projects in *Prolog* and posted on the Bond Program website and noted completion dates which were not aligned with the districts goals. Similar to the Donald Leonetti Elementary schedule, the schedule for James Patterson Elementary School showed a move-in date beginning in November 2017, three months after the start of school.

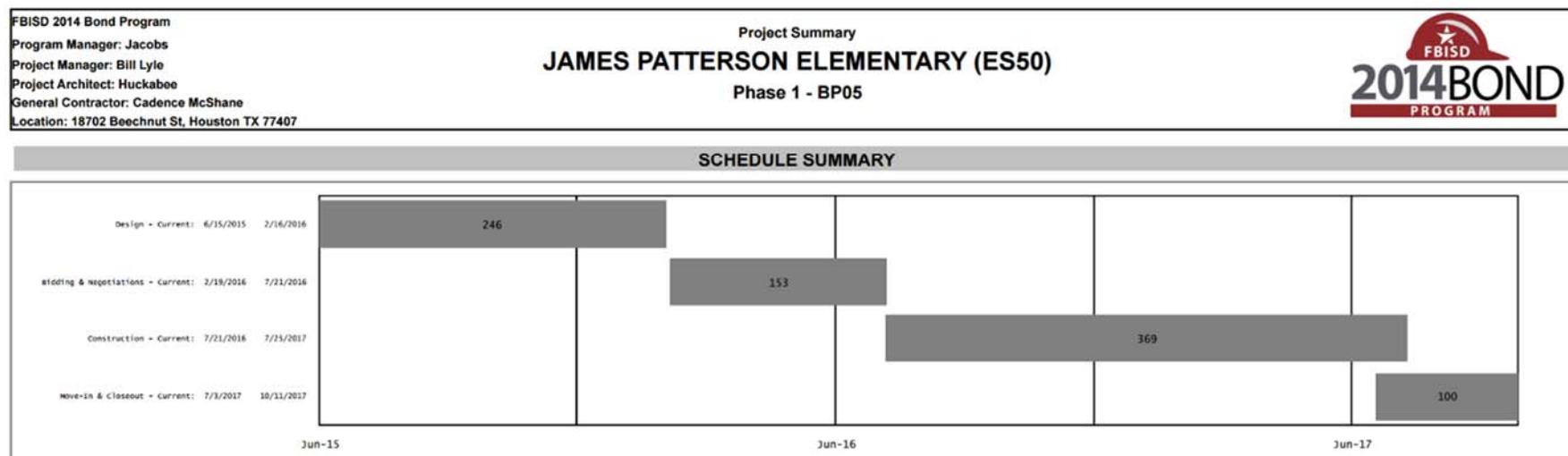
The audit team discussed the Patterson construction project with Fort Bend ISD and Jacobs. Because of the inaccurate project schedule reporting discussed previously, Jacobs and Fort Bend ISD staff said that the anticipated completion date was earlier than reported because the project schedule reflected the contract date and not the project date. Figures 3 and 4 show the Patterson Elementary School progress report as of February 28, 2017 and April 30, 2017. The February progress report shows (in error) that move-in was to start on November 27, 2017, more than three months after the start of school. The April 28, 2017 progress report shows the revised move-in start date of July 03, 2017.

Figure 3. James Patterson Elementary Project Schedule Summary, February 28, 2017



Source: Fort Bend ISD Bond Programs website, 2/28/2017

Figure 4. Revised James Patterson Elementary Project Schedule Summary, April 30, 2017



Source: Fort Bend ISD Bond Program website, 4/30/2017

However, as more was learned about the status of construction at Patterson Elementary, it appeared that this school was at risk of not being finished in time for the start of school in August. The audit team decided that additional audit procedures were warranted. On March 29, 2017 the audit team conducted a site observation at Patterson Elementary. The following observations were made:

- The building had not been closed in (protected from the elements)
- Air handlers were still in crates
- Exterior brick work was far off from completion although supplies were on site
- Site work paving and grading was incomplete
- Contractor trades staff were leaving the project site at approximately 3:00pm

Photograph 1 indicates the condition of the site at the time of the March 29, 2017 site observation.

Photograph 1. March 29, 2017 Patterson Elementary Site Observation



Source: Gibson Consulting Group, Inc.

Project invoices were also reviewed and showed that approximately \$10 million of the \$26 million contract value (38 percent) had been invoiced and 60 percent of the contract time had been expended.

Based on all the data collected and analyzed, it appeared unlikely that the project could be completed in time for the August opening of school. The audit team recommended that Jacobs and Fort Bend ISD meet with the contractor to develop an acceleration plan to improve the chances of the project being completed on schedule.

Specifically, the audit team recommended that:

- Jacobs and the Contractor conduct a "Pull Planning Session" to establish acceptable milestones and set goals for subcontractors. This session essentially starts with the desired completion date and works backwards to determine what must be done by what date.
- Jacobs investigate long lead items and anticipated delivery dates for all required critical materials, including millwork, fixtures, lockers, specialty equipment, and other items not yet on site.
- Fort Bend ISD authorize overtime for certain trades so that more work could be accomplished during the same calendar time.

On May 03, 2017, 35 days later, the audit team performed another site observation at James Patterson Elementary School. The progress was substantial and the site was more active than at the time of the previous site visit. The following observations were noted:

- Brick and masonry were nearing completion
- Roofing was complete
- Gypsum board was being installed
- Overhead piping and ducts were being installed throughout the building
- Ceiling grids were being installed in some areas
- Mechanical equipment including chillers and air-handlers were in place
- Exterior utilities were being brought to the building
- The site was being prepared for final grading

Photograph 2 shows the site on May 03, 2017.

Photograph 2. May 03, 2017 Patterson Elementary Site Observation



Source: Gibson Consulting Group, Inc.

These indicators point to the possibility that the school – or at least a portion of the school – can open on time in August if the current level of activity is sustainable and no other factors beyond the district's control (e.g., weather) impede activity. Jacobs stated that they were developing a contingency plan to open the classroom portions of the facility on time, even if common areas such as the library were delayed several weeks later.

Section 3 – Work Quality

Site Observation Reports

In a prior audit report on Fort Bend ISD construction management, Gibson recommended that the district follow the specifications of district job descriptions prescribing daily site observations on construction job sites. Because of cost considerations, however, the Fort Bend ISD administration decided to apply a modified approach depending on the type of construction project:

- Daily site observations are required for all new construction, classroom addition projects, and the three campuses where major Mechanical, Equipment and Plumbing (MEP) upgrades (denoted “life/cycle/deficiency campuses”) will be performed.
- Weekly site observations are required for all remaining projects in the 2014 Bond Program.

Prior to and during construction, inspectors visit the project sites to observe the progress and create reports to document the work that has been performed and any findings that were noted. The audit team performed several analyses over observation reports in order to determine whether observations were regularly occurring during the construction stage of every project.

In order to perform these analyses, the audit team had to compare the observations reports with the schedules from the *Prolog* system (and the district website). As these schedules reflected inaccurate project dates (see *Section 2 – Project Schedules*) the results of these comparisons were skewed. The details of the original analyses performed and the skewed results are explained below.

Analysis 1: Gibson compared a listing of projects that had observation reports as of 02/06/2017 with the projects that had begun construction.

Results: Based on the schedules within *Prolog* it appeared as though 19 projects that had begun construction had zero observation reports. Nine of the 19 project schedules listed construction start dates ranging from April 20, 2016 to December 05, 2016.

Analysis 2: Gibson compared the dates of the first and last observation reports to the construction start and end dates from the schedules within *Prolog*.

Results: The following projects appeared to be well in to the construction stage before an observation occurred or had construction end dates long after the date of the last observation.

- Twelve projects appeared to have construction start dates more than 30 days before the first observation. The first observation for these projects occurred between 40 and 268 days after construction started.

- The last observation report for six projects were more than 30 days before the construction end date/the date the report was run (02/06/2017). The last observation for these projects occurred between 31 and 139 days before the construction end dates/the date of the report (02/06/2017).
- The Sullivan Elementary School new construction project was one of these projects, with the first observation occurring 268 days after construction started, and the last observation occurring 73 days before construction ended.

Analysis 3: Gibson analyzed the listing of observation reports as of 02/06/2017 to identify the number of days between reports for each project.

Results: The days between reports ranged from 0 to 136. In addition, 31 observations reports over 12 projects were dated more than 7 days after the previous report.

Once the audit team was informed that the posted project schedules on *Prolog* did not reflect project schedules (see *Section 2 – Project Schedules*), an alternative audit plan was developed. Beginning March 09, 2017, a process was put into place to identify and document (separately from *Prolog*) the days of active construction at each school based on site observations. The audit team received the schedules from March 09 to May 10, 2017, used this information to identify observation reports in *Prolog* during this date range, and then compared the actual reporting to the modified plan for site observations described above.

The 13 projects that required daily site observations are summarized in Table 2. This table presents the number of days of active construction for each of the 13 projects, the number of days that were assigned an observer, and the number of actual observations that took place. The last column displays the percentage of the days of active construction that observations occurred.

Table 2. Audit Results – Daily Site Observations

Bid Package	Campus Name	Days of Active Construction	Days with Assigned Observers	No. of Observations	% of Total Days
BP03	Donald Leonetti ES	45	45	36	80%
BP05	James Patterson ES	45	42	32	71%
BP06	James C. Neill ES	45	45	33	73%
BP07	Willowridge HS	44	25	9	20%
BP07	Kempner HS	44	26	5	11%
BP08	Sienna Crossing ES	45	42	27	60%
BP08	Oyster Creek ES	45	42	25	56%
BP09	Clements HS	8	0	0	0%
BP10	Schiff ES	45	45	36	80%
BP10	Cornerstone ES	45	45	35	78%
BP11	Holley ES	45	45	34	76%
BP11	Scanlan Oaks ES	45	45	35	78%
BP30	Ronald Thornton MS	45	45	36	80%

Source: Fort Bend ISD Construction Schedule Worksheets; Site observations reports posted on *Prolog*

The audit team also analyzed the observation reports for the projects that required weekly observations. Table 3 presents the number of weeks that had at least one day of active construction, the number of weeks that had at least one day of active construction assigned to an observer, and the number of weeks of active construction with at least one observation. The last column displays the percentage of the weeks of active construction that at least one observation occurred.

Table 3. Audit Results – Weekly Observations

Bid Package	Campus Name	Weeks of Active Construction	Weeks with Assigned Observers	Weeks with Observations	% of Total Weeks
BP08	Goodman ES	1	0	0	0%
BP08	Hall Stadium	1	0	0	0%
BP09	Athletic Complex	1	1	0	0%
BP12	Mission West ES	8	7	1	13%
BP12	Travis HS	4	3	1	25%
BP13	Don Cook Natatorium	3	2	2	67%
BP13	PFC Admin Annex	6	4	6	100%
BP13	Warehouse Center	1	0	0	0%
BP15	Settlers Way ES	4	4	2	50%
BP15	Austin HS	3	3	3	100%
BP15	Palmer ES	3	0	1	33%
BP15	Pecan Grove ES	3	3	2	67%
BP17	Dulles MS	3	3	1	33%

Bid Package	Campus Name	Weeks of Active Construction	Weeks with Assigned Observers	Weeks with Observations	% of Total Weeks
BP18	McAuliffe MS	4	0	0	0%
BP18	Briargate ES	3	3	1	33%
BP19	Mission Bend ES	4	0	0	0%
BP19	Townwest ES	3	3	2	67%
BP19	Bush HS	3	3	2	67%

Source: Fort Bend ISD Construction Schedule Worksheets; Site observations reports posted on *Prolog*

As evidenced in Tables 2 and 3, observations were not occurring as frequently as required. Based on the above tests, 26 of the 31 projects displayed above (84 percent), had an observation completion rate of less than 80 percent. This is partly due to the lack of observers available to perform observations, as 16 of the projects above had fewer observers assigned than the days/weeks of active construction. However, when the number of days/weeks of active construction assigned to observers is compared to the actual observations that took place, it is evident that those assigned are not consistently performing the observations. Out of the projects that require daily observations, there were a total of 149 days from March 09 to May 10, 2017 that had assigned observers, but did not have a corresponding observation report. Out of those projects that require weekly observations, there were a total of 18 weeks during the same time period that had assigned observers, but did not have observation reports.

In addition, the audit team identified the following during the review of observations:

- Observation reports do not have an indicator for identifying and tracking issues and their resolution.
- Fort Bend ISD did not have a full cadre of site observations staff until early 2017. Despite the change in observation staff, there are still fewer observers than needed to complete the required daily/weekly observations.

Recommendation 1: Implement controls to ensure timely occurrence of site observations.

Site observations should occur daily or weekly during all periods of active constructions for every project in the 2014 bond program, as stipulated by Fort Bend ISD administration, and explained above. While the creation of weekly schedules to track the days of active construction and assign observers to do site observations is a great start, controls need to be put into place to ensure the following:

1. Observers are *assigned* to every day/week (depending on the project) of active construction for all projects in the 2014 bond program.
2. Observations are being *conducted* every day/week (depending on the project) of active construction for all projects in the 2014 bond program.

Management Response:

Staff agrees with this recommendation. Fort Bend ISD is now fully staffed to adequately perform daily/weekly site observations. Weekly schedules have been developed to assign observers to daily/weekly observations at active construction projects.

Recommendation 2: Establish check box indicators on Prolog observation reports to track outstanding action items related to non-compliance.

The district should require Jacobs to modify *Prolog* to force the checking of boxes on observation reports to indicate if non-compliant issues exist. Non-compliant items should be tied electronically to program-level reports that indicate the date of non-compliant items, as well as the tracking of when compliance was reached or whether items are still open. In addition, district management should review this tracking at every weekly project meeting to monitor the list at the executive level.

Management Response:

Staff agrees with this recommendation. Prolog has the capability to track outstanding action items on observation reports. Fort Bend ISD will ensure Jacobs issues a weekly report to track the quality control issues. The report will be reviewed during the weekly construction progress meetings and documented in the meeting minutes.

Section 4 – Project and Program Budget Performance

Board Approval of Budget Changes

The total 2014 Bond Program budget is \$484 million. When excess or deficient funds are identified within a particular project budget an action item is taken to the Board of Trustees to approve the budget changes. The project background is presented with the budget information that summarizes the bidding, evaluation and awarding history of the construction project. A summary of budget changes by project type as of May 15, 2017 is presented in Table 4.

Table 4. Budget Changes by Project Type

Project Type	Original Budget	+ Budget Changes	- Budget Changes	Total Budget Changes	Current Budget
New Construction	\$195,970,865	\$9,198,870	(\$6,065,425)	\$3,133,445	\$199,104,310
Additions w/Renovations	\$21,807,295	\$6,831,848	\$0	\$6,831,848	\$28,639,143
Renovations	\$160,138,886	\$7,450,203	(\$12,517,460)	(\$5,067,257)	\$155,071,629
District Wide	\$106,082,954	\$1,676,460	(\$6,453,308)	(\$4,776,848)	\$101,306,106
Total	\$484,000,000	\$25,157,381	(\$25,036,193)	\$121,188	\$484,121,188

Source: Prolog Budget Report Schedule as of May 15, 2017

The majority of the \$25,157,381 decrease in the 2014 Bond Program budget came from the following three sources:

1. Sullivan Elementary School New Construction project – decrease of \$4,000,000
2. Clements High School Renovations project – decrease of \$3,947,281
3. District Wide Classroom Additions Not Identified – decrease of \$6,453,308

Gibson tracked these budget changes to board meeting packets to validate that they were all properly approved by the Fort Bend ISD Board of Trustees. The audit team noted that all budget changes were properly approved by the Board without exception.

Program Contingency

Fort Bend ISD did not establish a program-level contingency reserve, but did establish contingency reserves for each project. The sum of these reserves were approximately \$25 million, or 5.16 percent of the bond program. Since the inception of the program, some projects came in under budget due to lower cost or the determination that the project was no longer necessary due to shifts in school enrollment patterns (e.g., a new school wing no longer needed). Several projects came in over budget, some due to design changes, and others due to the addition of square footage to the size of a new school, and other factors.

Fort Bend ISD applied unused project funds and available reserves to develop a program contingency for use on other projects having overages. Each month the board receives a report on the program contingency which includes additions to the reserves and proposed uses of the reserves. The board has approved all requests for the use of reserves. Appendix A presents the Program Contingency Report of April 17, 2017. This report shows a remaining program contingency balance of \$1,857,885. There are additional project level contingency funds available however.

Cost Adjustment Sessions

The Agreement for Program Manager Services between Fort Bend ISD and Jacobs states that when overages in excess of 3 percent of the original budget are detected during the design phase, the Program Manager will schedule and conduct cost adjustment sessions with the Architect, Contractor (for CMAR projects) and Fort Bend ISD for the purpose of bringing cost estimates for each project within the approved Project Cost Model. These sessions are described as cost reconciliation, or value engineering, to return estimated or actual bid costs back into budget, when estimates or bids reflect overages beyond 3 percent.

The audit team searched the *Prolog* PMIS to locate any meetings identified as “cost adjustment sessions.” No meetings in *Prolog* included any reference to cost adjustment sessions. Separately, the audit team requested data from Jacobs (through Fort Bend ISD) that would provide any evidence that a cost adjustment session took place. Documentation was provided by the district showing cost savings achieved during the bidding phase, but not during the design phase of work, and no documents provided by Jacobs made any specific reference to cost adjustment sessions.

Cost Escalation

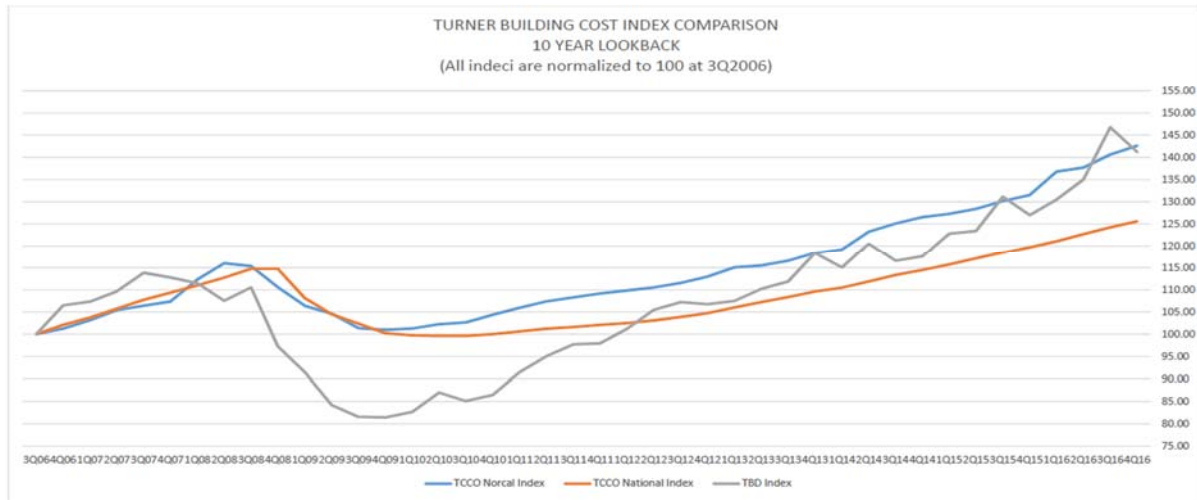
The construction costs in Houston and across the country have been steadily escalating over the past three to four years, which has created challenges for buyers of construction services nationwide as well as in the State of Texas and specifically Fort Bend ISD. At the time the Fort Bend ISD 2014 bond Issue passed, over \$3 billion in K-12 bond issues passed in the Houston metropolitan area. Many of those programs are still ongoing.

Construction cost escalation is driven and sustained by several factors, including:

- Continued strong regional and national economic recovery
- Construction industry contractors and subcontractors at their capacity
- Shortage of labor availability both at the trades level and professional level

Nearly all indicators show strong growth, and very few downturn precursors are evident (e.g., slight lag in western area of country in growth of architectural awards). Figure 5 presents a 10-year history of three Turner Construction cost indexes normalized to 100 at the 3rd quarter of 2016. These indices are commonly used in the industry to evaluate cost trends. Each of these indices points toward steady historical growth in costs.

Figure 5. Turner Construction Company Industry Cost Indices, 2006 through 2016



Source: Turner Construction Company (TCCO)

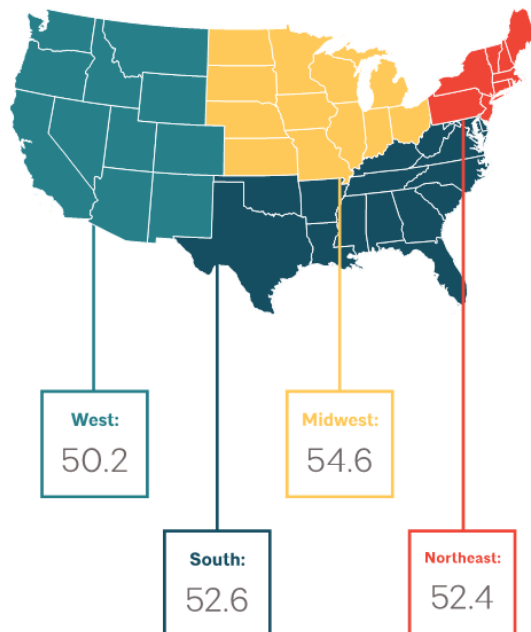
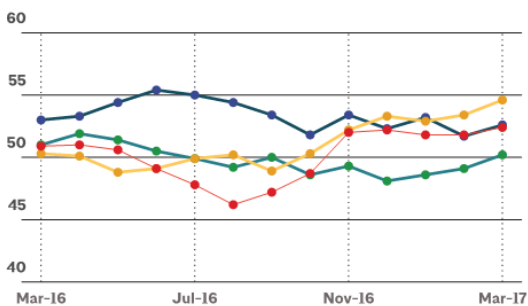
The south region, which includes Texas, is the only region that has had consistent cost increases in each of the past thirteen months, and has had the highest index in 9 of the months. Figure 6 shows the Turner Construction monthly construction cost index for all regions over the past year.

Figure 6. Regional Construction Cost Indices, March 2016 to March 2017

Regional

Firms in all regions report business upturn

*Graphs represent data from March 2016–March 2017 across the four regions. 50 represents the diffusion center. A score of 50 equals no change from the previous month. Above 50 shows increase; Below 50 shows decrease. 3-month moving average.



Source: Turner Construction Company (TCCO)

Projected costs are also expected to increase. Industry economists are forecasting an 8 percent increase this year, falling to 6 to 7 percent following two years, and reverting thereafter to the long term mean of 4 to 5 percent annually.

Recommendation 3: Take steps to mitigate cost escalation.

Fort Bend ISD and Jacobs should analyze and evaluate market risks on future project budgets and schedules and prepare for cost escalation. Maintaining adequate contingency funds and owner reserves is necessary, as is maintaining schedules. In an escalating market, each month of delay can add 0.5 percent or more to the project cost.

An approach for the remaining work on this bond program, as well as future bond programs, should include the following elements:

- **Commitments** – make commitments as early as possible
- **Schedule** – make every effort to maintain or improve schedule, especially on projects still in planning or design
- **Contractors** – continue striving to be “client of choice” through recognized practices already in place, including: on-time invoice payment, speedy resolution of changes, and partnering
- **Tracking** – continue project budget/scope reconciliations as market conditions evolve
- **Scope** – establish baseline scope and avoid scope creep

Management Response:

Staff agrees with this recommendation. As required by contract, Jacobs is working to mitigate cost escalation by conducting value engineering sessions, cost reconciliations, and change order negotiations for all projects. FBISD will ensure that the cost adjustment sessions are documented properly in Prolog.

Section 5 – Program Accountability/Progress Reporting

Construction Contracts

Construction contracts exist for each bid package, which can include multiple projects. The audit team reviewed a sample of Fort Bend ISD construction contracts and noted that contracts only specify end dates to Bid Packages and not individual projects. There are no project-level milestones in the contract to hold contractors accountable for project completion.

The contracts reviewed include a single contract completion date even though the contract may include several different projects, with differing completion dates needed for each. Contractors are only bound to contract final completion, which can be months after substantial completion of individual schools or projects.

Further, to bind the contractor now to a date of substantial completion for needed occupancy, Fort Bend ISD would likely have to pay acceleration costs to contractors to gain contractual commitments for project completion to meet the Districts required school opening dates.

Progress Reporting

Fort Bend ISD progress reports are developed directly from the Prolog information system and are maintained real-time on that system. Quarterly, these progress reports are presented to the Board and also posted on the district's web site. These reports represent all formal progress reporting for the 2014 Bond Program.

While adequate for high level status reporting, other measures of progress and status are not formally tracked, such as:

- Status of overall buyout of contracts (%)
- Comparison of budgeted cost vs. actual bids in hand
- Monthly use of contingency vs. remaining contingency balance
- Schedule status and report on schedule changes
- Quality status (# and days outstanding on notices of non-compliance)

Recommendation 4: Ensure that future construction contracts hold contractors accountable for project-level deadlines.

All future contracts should contain fixed dates for completion including milestones for occupancy, ensuring completion in accordance with District needs. The contracts should contain clauses for liquidated damages for missing milestones or occupancy dates.

Fort Bend ISD may want to negotiate project milestones in existing contracts if contractors are not willing to commit informally to meet the project move-in deadlines required by the district. Any schools currently behind schedule should be evaluated as to how to accelerate the work to assure completion and occupancy based on the district's needs. See related discussion in *Section 2 – Project Schedules* of this report regarding James Patterson Elementary.

Management Response:

Staff agrees with this recommendation. Fort Bend ISD will work with legal counsel to modify the language in the contract to allow for the inclusion of substantial completion dates for each individual project within a bid package. Once the language is modified and approved, future projects within a bid package will have identified project-level substantial completion dates.

Recommendation 5: Develop additional progress metrics for internal progress reporting and monitoring.

Fort Bend ISD should develop supplemental metrics and progress reports for internal use only. Figure 6 presents a sample report with sample data incorporating the above metrics.

Figure 6. Sample Internal Report on Supplemental Progress Metrics

Fort Bend Independent School District				report date:		5/19/2017	
Bond Program - Project Status Report							
				Previous Month Status		Change this Month	
Notices of Non-Compliance		Items Identified	Items Closed	Items Identified	Items Closed	Items Identified	Items Closed
1	March 2017	27	4				
2	February 2017	32	18	32	2	0	16
3	January 2017	25	19	25	15	0	4
4	December 2016	18	18	18	11	0	7
5	November 2016	44	42	44	42	0	0
6	October 2016	37	36	37	35	0	1
7	All Previous Months Combined	290	288	290	288	0	0
Total		473	425	446	393	0	28
Bid Awards versus Project Budgets		Original Budget	Net Modifications	Current Budget	Bid Award	Difference	
1	Project Name	\$ 11,150,537	\$ 208,119	\$ 11,358,656	\$ 10,851,741	\$ (506,915)	
2	Project Name	\$ 10,724,236	\$ 438,885	\$ 11,163,121	\$ 11,831,571	\$ 668,450	
3	Project Name	\$ 13,421,571	\$ (777,053)	\$ 12,644,518	\$ 11,648,371	\$ (996,147)	
4	Project Name	\$ 11,413,613	\$ 714,110	\$ 12,127,723	\$ 12,544,605	\$ 416,882	
5	Project Name	\$ 14,972,969	\$ 51,853	\$ 15,024,822	\$ 15,573,396	\$ 548,574	
6	Project Name	\$ 14,804,547	\$ 805,697	\$ 15,610,244	\$ 15,573,798	\$ (36,446)	
7	All Previous Combined	\$ 142,892,603	\$ 243,136	\$ 143,135,739	\$ 142,173,165	\$ (962,574)	
Total		\$ 219,380,076	\$ 1,684,747	\$ 221,064,823	\$ 220,196,648	\$ (868,175)	
Scope, Budget and Contingency					Amount	Contingency Balance	
1	Opening Contingency Balance				\$ -	\$ -	
2	Project Name	Description of item / scope change			\$ (34,265)	\$ (34,265)	
3	Project Name	Description of item / scope change			\$ 20,327	\$ (13,939)	
4	Project Name	Description of item / scope change			\$ 42,399	\$ 28,460	
5	Project Name	Description of item / scope change			\$ (11,747)	\$ 16,713	
6	Project Name	Description of item / scope change			\$ (11,078)	\$ 5,636	
7	Project Name	Description of item / scope change			\$ 69,123	\$ 74,758	
Current Contingency Balance						\$ 74,758	
Forecast versus Plan							
Spending	Program to Date	+1 Month	+2 Months	+3 Months	Remainder	Total	
Original Plan	\$ 25,869,423	\$ 12,658,903	\$ 1,314,587	\$ 15,987,436	\$ 48,903,576	\$ 104,733,925	
Current Plan / Forecast	\$ 28,425,980	\$ 13,924,793	\$ 1,117,399	\$ 16,786,808	\$ 44,478,945	\$ 104,733,925	
Difference	\$ 2,556,557	\$ 1,265,890	\$ (197,188)	\$ 799,372	\$ (4,424,631)	\$ -	
Progress	Program to Date	+1 Month	+2 Months	+3 Months	Remainder	Total	
Original Plan	25.1%	8.1%	9.2%	6.0%	51.6%	100.0%	
Current Plan / Forecast	26.0%	9.2%	8.7%	7.1%	49.0%	100.0%	
Difference	0.9%	1.1%	-0.5%	1.1%	-2.6%	0.0%	

Source: Gibson Consulting Group, Inc.

Management Response:

Staff agrees with this recommendation. Fort Bend ISD will work with Jacobs to develop a comprehensive executive level report within Prolog that will capture key indicators such as:

- PCO changes
- Scope, Budget, Contingency
- Outstanding Non-conformance issues
- Budget Changes

Appendix A – Program Contingency Report

For: Fort Bend ISD Board of Trustees
Date: April 17, 2017
Action: Consent: Consideration and Approval -
Budget Amendment Regarding Use of
2014 Bond Program Contingency
Funds
References: Board Policy CV (Local)
District Goal 5
Department: Operations

Recommendation

Consideration and possible approval of the use of 2014 Bond Program Contingency as presented herein.

Summary

Several 2014 Bond Program bid packages and related project budgets have been presented to the Board for consideration on April 10, 2017. The table below shows the budget (shortage)/surplus for each project included in Bid Packages 16, 20, 24A, and 26A.

Bid Package Number	Project	Budget (Shortage)/Surplus
16	Armstrong ES	(\$90,132)
	Austin Parkway ES	(\$247,655)
	Barrington Place ES	(\$490,647)
	Colony Meadows ES	\$143,674
	Glover ES	(\$1,049,921)
	Total	(\$1,734,681)
20	Brazos Bend ES	(\$25,444)
	Sartartia MS	\$892,173
	Total	\$866,729
24A	Dulles ES	\$167,047
	Total	\$167,047
26A	Ridgemont ES	\$170,261
	Total	\$170,261

The following table shows the cumulative bond program contingency balance as of January 2017, and the proposed April 2017 contributions or uses, and the projected cumulative balance pending Board action:

Proposed Activity: April 2017	Budget (Shortage)/Surplus
Cumulative Program Contingency as of January 23, 2017	\$2,379,450
Contributions	
Colony Meadows ES Budgeted Project Surplus	\$143,674
Sartartia MS Budgeted Project Surplus	\$892,173
Dulles ES Budgeted Project Surplus	\$167,047
Ridgemont ES Budgeted Project Surplus	\$170,261
January 2017 Interest	\$9,080
Contribution Sub-Total	\$1,382,235
Uses	
Armstrong ES Budgeted Project Shortage	(\$90,132)
Austin Parkway ES Budgeted Project Shortage	(\$247,655)
Barrington Place ES Budgeted Project Shortage	(\$490,647)
Glover ES Budgeted Project Shortage	(\$1,049,921)
Brazos Bend ES Budgeted Project Shortage	(\$25,444)
Use Sub-Total	(\$1,903,799)
Net Proposed Activity April 2017	(\$521,564)
Cumulative Program Contingency as of April 2017	\$1,857,885

(Note – The “Cumulative Program Contingency as of April 2017” is rounded to the nearest dollar.)

Staff is seeking Board approval to use \$1,903,799 of the 2014 Bond Program Contingency to fund the projected budget shortages for the projects shown above.

Recommended by:

Charles E. Dupre
Superintendent of Schools

Submitted by:

Oscar Perez
Chief Operations Officer